April 1, 2020

## VIA ELECTRONIC FILING

Will Seuffert
Executive Secretary
Minnesota Public Utilities Commission

## PUBLIC DOCUMENT TRADE SECRET DATA HAS BEEN EXCISED

Re: In the Matter of the Petition of Minnesota Energy Resources Corporation for Approval of a Gas Utility Infrastructure Cost Rider True-Up Report for 2019, Revenue Requirements for 2021, and Revised Surcharge Factors Docket No. G011/M-20- $\qquad$
Dear Mr. Seuffert:
Minnesota Energy Resources Corporation ("MERC" or the "Company") submits this Petition to the Minnesota Public Utilities Commission (the "Commission") for approval to recover eligible capital costs and operations and maintenance ("O\&M") expense for gas utility infrastructure projects to be undertaken in 2021, adjusted to account for the 2019 gas utility infrastructure cost ("GUIC") rider ("GUIC Rider") true-up, through the Company's gas GUIC Rider pursuant to Minn. Stat. § 216B. 1635 (the "GUIC Statute").

MERC first requested and received approval to establish a GUIC Rider under the GUIC Statute in Docket No. G011/M-18-281 for the Company's forecasted 2019 GUIC-eligible projects and costs. The Commission issued an Order Approving Gas Utility Infrastructure Cost Rider with Modifications and Requiring Compliance Filing in that docket on February 5, 2019, finding that MERC's proposed forecasted 2019 GUIC Rider costs were "incremental; required by federal, state or local agencies; and supported by sufficient detail to meet the information requirements of the GUIC statute." ${ }^{1}$

On April 24, 2019, MERC filed its second GUIC Rider filing with the Commission, requesting recovery of capital costs and O\&M expense forecasted to be incurred in 2020 through the Company's GUIC Rider effective January 1, 2020. ${ }^{2}$ Several rounds of comments have been filed in the 2020 GUIC Rider proceeding by MERC, the Minnesota Department of Commerce, Division of Energy Resources (the "Department"), and the Minnesota Office of the Attorney General-Residential Utilities Division (the "OAG"). Most recently, MERC filed reply comments

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on February 14, 2020, ${ }^{3}$ in response to the January 24, 2020, response comments filed by the Department. ${ }^{4}$ At the time of the filing of this Petition, MERC's 2020 GUIC rider remains pending. And while many issues have been resolved between the Department and the Company, several issues remain disputed.

On June 28, 2019, MERC filed a request for emergency approval to suspend the collection of the GUIC and Natural Gas Extension Project ("NGEP") rider surcharges from the Company's Direct Connect customers. ${ }^{5}$ In its August 26, 2019, Order Suspending GUIC Rider Surcharge for Direct Connect Customers, and Declining to Reopen NGEP Cost Rider Docket, the Commission granted MERC's request to suspend the GUIC rider surcharge as applied to Direct Connect customers. ${ }^{6}$ Consistent with that decision and in consideration of continued concerns regarding the significant risk of bypass posed by those Direct Connect customers, MERC proposed, and the Department did not oppose, to continue to exclude the Company's Direct Connect customers from the 2020 GUIC rider in Docket No. G011/M-19-282.

This Petition reflects the Company's third GUIC Rider filing and first GUIC true-up report. Through this filing, MERC seeks approval of the forecasted 2021 revenue requirement inclusive of MERC's forecasted 2021 GUIC-eligible costs and projects and adjusted to account for the under-recovery of GUIC-eligible costs in 2019 to be recovered through revised per-therm charges by customer class effective January 1,2021 . The GUIC projects and costs planned for 2021 and proposed for recovery in this filing build upon the previously-approved 2019 GUIC Rider and the Company's currently-pending 2020 GUIC Rider request by continuing implementation of MERC's multiyear integrity management and safety initiatives. Continuation of this proactive approach to distribution system safety and integrity management in 2021 is consistent with the GUIC Statute and benefits customers because work undertaken systematically and strategically reduces costs compared to work undertaken in a reactionary or immediate threat mode, and allows utilities to engage in regional planning to minimize inconvenience and costs to customers.

Under the GUIC Statute, a natural gas utility may seek to recover forecasted gas utility infrastructure costs outside of a general rate case through a rider. As proposed in this filing, MERC's 2021 revenue requirement and rate adjustments are based on incremental costs to be incurred in 2021 over and above those investments and costs included in MERC's authorized rates as approved in the Company's most recent rate case, Docket No. G011/GR-17-563.

Consistent with the Company's Commission-approved tariffs ${ }^{7}$; the Commission's February 5, 2019, Order Approving Gas Utility Infrastructure Cost Rider with Modifications and Requiring

[^1]Compliance Filing, and April 25, 2019, Order Approving Compliance Filing in Docket No. G011/M-18-281; and the GUIC Statute, MERC is submitting its 2019 GUIC true-up report, which includes project-specific information and costs for projects completed in 2019, along with a tracker to reconcile costs and recoveries for 2019 under the Company's GUIC Rider.

As provided in this filing: (1) MERC's forecasted 2021 GUIC project costs for which it is seeking recovery in this Petition are reasonable, meet the requirements of the GUIC Statute, and should be approved, subject to future true-up; (2) MERC's calculation of its forecasted revenue requirement for 2021 is consistent with the GUIC Statute, the Commission's February 5, 2019, and April 25, 2019, Orders, and MERC's agreements in Docket Nos. G011/M-18-281 and G011/M-19-282; (3) MERC's proposed adjustment to the 2021 GUIC revenue requirement to include under-recovered 2019 GUIC-eligible costs is reasonable and reflects the Company's actual 2019 GUIC costs and actual 2019 GUIC Rider revenues; (4) MERC has demonstrated that its actual 2019 GUIC project costs were prudently incurred and achieve gas facility improvements at the lowest reasonable and prudent cost to ratepayers; and (5) MERC's proposed apportionment to recover its 2021 GUIC revenue deficiency through customer surcharges by customer class is reasonable and appropriate in consideration of the revenue apportionment most recently approved in Docket No. G011/GR-17-563, the bypass risk posed by MERC's Direct Connect customers, and other rate design considerations. MERC has previously provided, or is providing in this filing, all required filing information under the GUIC Statute.

Through this filing, MERC is requesting approval to implement updated GUIC surcharges by customer class effective January 1, 2021, based on the 2021 forecasted revenue deficiency and 2019 true-up adjustment. MERC projects the annual impact of the proposed surcharge rate on an average Residential customer to be approximately $\$ 19$ and, as discussed in this Petition, would propose to notify customers of the updated 2021 surcharge rates via bill message.

A copy of this miscellaneous filing has been served on the Department and the OAG. The summary of the filing has been served on all parties on the attached general service list.

The nonpublic version of this filing contains Trade Secret data and private data on individuals. In particular, Exhibits E and J include customer names and addresses. This information is maintained by MERC as private customer data and has been excised from the public version of the filing in accordance with Minn. Stat. § 13.679. Additionally, Exhibit K to this filing has been designated as nonpublic in its entirety, as it contains information MERC considers to be Trade Secret as defined by Minn. Stat. § 13.37, subd. 1(b). The information is not generally known to, and not readily ascertainable by, vendors and competitors of MERC, who could obtain economic value from their disclosure. MERC maintains this information as trade secret.

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Please contact me at (414) 221-4208 if you have any questions regarding the information in this Petition. Thank you for your attention to this matter.

Sincerely,


Joylyn Hoffman Malueg
Project Specialist 3
Minnesota Energy Resources Corporation

## Enclosures

cc: Service List

# BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION 

Katie Sieben<br>Valerie Means<br>Matthew Schuerger John Tuma

In the Matter of the Petition of Minnesota Energy Resources Corporation for Approval of a Gas Utility Infrastructure Cost Rider True-Up Report for 2019, Revenue Requirements for 2021, and Revised Surcharge Factors

Chair<br>Commissioner<br>Commissioner<br>Commissioner

Docket No. G011/M-20- $\qquad$

## PETITION

Pursuant to Minnesota Statutes section 216B. 1635 (the "GUIC Statute") and in accordance with Minnesota Rules part 7829.1300, Minnesota Energy Resources Corporation ("MERC" or the "Company") submits this Petition to the Minnesota Public Utilities Commission (the "Commission") for approval to recover the Company's forecasted 2021 eligible gas utility infrastructure project costs, adjusted to account for the 2019 gas utility infrastructure cost ("GUIC") rider ("GUIC Rider") true-up, through customer surcharges by customer class effective January 1, 2021.

As reflected in this filing, MERC has calculated a total 2021 revenue deficiency of \$6,647,683, based on the forecasted 2021 depreciation expense and return on gas utility infrastructure capital expenditures forecasted to be placed into service through the end of 2021 as well as incremental operations and maintenance ("O\&M") expense for projects planned to be undertaken during 2021. MERC's 2021 revenue deficiency calculation includes a true-up adjustment of $\$ 639,859$ related to the under-recovery of actual GUIC project costs incurred in 2019. In particular, as reflected in this filing, the revenues collected through the Company's $\$ 0.00413$ per therm surcharge rate effective May 1, 2019, through December 31, 2019, were $\$ 1,497,598$, while the Company's actual 2019 revenue requirement based on actual GUIC projects completed and placed into service was $\$ 2,137,457$.

MERC's forecasted 2021 revenue requirement of $\$ 6,007,824$ is based on projects to be undertaken through 2021 to comply with federal, state, and local governmental requests to relocate natural gas facilities located in the public right-of-way and to comply with federal and state regulations that require natural gas utilities to implement integrity management programs to assess and improve the safety, reliability, and integrity of its natural gas infrastructure. These costs are consistent with the eligibility requirements set forth in the GUIC Statute and build upon MERC's 2019 GUIC spending, as approved by the Commission in Docket No. G011/M-18-281, and as proposed in the Company's currently-pending 2020 GUIC Rider proceeding, Docket No. G011/M-19-282.

Consistent with the Company's Commission-approved tariffs ${ }^{8}$; the Commission's February 5, 2019, Order Approving Gas Utility Infrastructure Cost Rider with Modifications and Requiring Compliance Filing, and April 25, 2019, Order Approving Compliance Filing in Docket No. G011/M-18-281; and the GUIC Statute, MERC is submitting its 2019 GUIC true-up report, which

[^2]includes project-specific information and costs for projects completed in 2019, along with a tracker to reconcile costs and recoveries for 2019 under the Company's GUIC Rider.

As provided in this filing: (1) MERC's forecasted 2021 GUIC project costs for which it is seeking recovery in this Petition are reasonable, meet the requirements of the GUIC Statute, and should be approved, subject to future true-up; (2) MERC's calculation of its forecasted revenue requirement for 2021 is consistent with the GUIC Statute, the Commission's February 5, 2019, and April 25, 2019, Orders, and MERC's agreements in Docket Nos. G011/M-18-281 and G011/M-19-282; (3) MERC's proposed adjustment to the 2021 GUIC revenue requirement to include under-recovered 2019 GUIC-eligible costs is reasonable and reflects the Company's actual 2019 GUIC costs and actual 2019 GUIC Rider revenues; (4) MERC has demonstrated that its actual 2019 GUIC project costs were prudently incurred and achieve gas facility improvements at the lowest reasonable and prudent cost to ratepayers; and (5) MERC's proposed apportionment to recover its 2021 GUIC revenue deficiency through customer surcharges by customer class is reasonable and appropriate in consideration of the revenue apportionment most recently approved in Docket No. G011/GR-17-563, the bypass risk posed by MERC's Direct Connect customers, and other rate design considerations. MERC has previously provided, or is providing in this filing, all required filing information under the GUIC Statute and in accordance with the Commission's previous orders in Docket No. G011/M-18281.

Through this filing, MERC is requesting approval of:

- A 2021 forecasted revenue requirement of $\$ 6,007,824$ based on the forecasted 2021 depreciation expense and return on gas utility infrastructure capital expenditures forecasted to be placed into service through the end of 2021 as well as incremental O\&M expense for projects planned to be undertaken during 2021, subject to future true up;
- A true-up adjustment of $\$ 639,859$ for the under-recovered 2019 GUIC revenue requirement based on MERC's actual 2019 GUIC project costs and actual 2019 GUIC Rider revenues, inclusive of under-recovered amounts resulting from the suspension of the GUIC Rider surcharge rate applicable to Direct Connect customers effective September 1, 2019, resulting in an overall 2021 GUIC Rider recovery of $\$ 6,647,683$.
- GUIC Rider surcharge rates by customer class based on the methodology outlined in this Petition and consistent with MERC's proposal in Docket No. G011/M-19-282, effective January 1, 2021; and
- Updated GUIC Rider tariff sheets to reflect the 2021 GUIC rate factors effective January 1, 2021.
This filing includes the following:
- A one paragraph summary of filing, in accordance with Minn. R. 7829.1300, subp.1;
- Petition for Approval of Gas Utility Infrastructure Cost Rider True-Up Report for 2019, Revenue Requirements for 2021, and Revised Surcharge Factors;
- Exhibit A: A copy of Minn. Stat. § 216B.1635, Recovery of Gas Utility Infrastructure Costs;
- Exhibit B: Matrix of information included within the petition as required by Minn. Stat. § 216B. 1635 and Commission Orders;
- Exhibit C: Updated tariff sheets to reflect the 2021 GUIC rate factors proposed to be effective January 1, 2021 (MERC Tariff Sheet Nos. 7.20-7.21a);
- Exhibit D: Calculations of the proposed 2021 GUIC-eligible revenue requirement and proposed GUIC Rider surcharge rates by customer class proposed to be effective January 1, 2021;
- Exhibit E: Details regarding MERC's actual 2019 relocation projects required to accommodate public projects in the right-of-way [Public and Nonpublic versions];
- Exhibit F: MERC's currently known 2020 and 2021 right-of-way relocation projects (todate);
- Exhibit G: MERC's 2021 Gas Infrastructure Project Plan Report;
- Exhibit H: Discussion of the magnitude of proposed GUIC costs and known future projects as required by Minn. Stat. § 216B.1635, subd. 4(vi), (vii), and (viii);
- Exhibit I: MERC's 2019 GUIC true-up calculation and tracker balance;
- Exhibit J: Details regarding MERC's actual 2019 obsolete materials replacement projects [Public and Nonpublic versions];
- Exhibit K: Maps of Aldyl-A main replacement (2021) [Public and Nonpublic versions]; and
- Exhibit L: Project schedule for obsolete material replacements (2021).

As discussed in the Petition, MERC proposes to notify customers of the implementation of the new GUIC rate via the following bill message on bills effective the first month the GUIC surcharge takes effect. ${ }^{9}$

Effective Jan. 1, 2021, the GUIC (Gas Utility Infrastructure Cost) Rider Surcharge has been adjusted to the following per therm rate for each of these rate classes: Residential: \$0.02148; Class 1 \& 2 Firm (Sales and Transport): \$0.01143; Class 1 \& 2 Interruptible (Sales and Transport), Class 1 \& 2 Grain Dryer, and Class 1 Electric Generation: \$0.01143; Class 3 \& 4 Firm (Sales and Transport): \$0.00397; Class 3 \& 4 Interruptible (Sales and Transport) and Class 3 Grain Dryer: \$0.00397; and Class 5, Flex, Class 2 Electric

[^3]Generation and Transport-for-Resale: \$0.00166. The GUIC Surcharge will continue to appear as a line item on your bill labeled "Infrastructure Rider."

## I. Summary of Filing

Pursuant to Minn. R. 7829.1300, subp. 1, a one-paragraph summary of the filing is attached.

## II. Service

Pursuant to Minn. R. 7829.1300, subp. 2, MERC has served a copy of this petition on the Minnesota Department of Commerce, Division of Energy Resources and the Minnesota Office of the Attorney General - Residential Utilities Division. The summary of the filing has been served on all parties on the attached general service list.

## III. General Filing Information

Pursuant to Minn. R. 7829.1300, subp.3, the following information is provided:
A. Name, Address, and Telephone Number of Filing Party

Minnesota Energy Resources Corporation
2685 145th Street West
Rosemount, MN 55068
(651) 322-8901
B. Name, Address, Electronic Address, and Telephone Number of Attorney for the Utility

Kristin M. Stastny
Taft Stettinius \& Hollister LLP
2200 IDS Center
80 South 8th Street
Minneapolis, MN 55402
KStastny@Taftlaw.com
(612) 977-8656
C. Date of the Filing and Date Proposed Agreement Will Take Effect

Date of Filing: April 1, 2020
Proposed Effective Date: Upon Commission Approval

MERC respectfully requests that the Commission rule on this filing so recovery under the GUIC Rider may begin during the first billing period in January 2021. In accordance with Minn. Stat. $\S 216 B .1635$, subd. 2, MERC is submitting this Petition more than 150 days in advance of the proposed date for implementation:

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.

## D. Statute Controlling Schedule for Processing the Filing

MERC submits its request for approval of rider recovery under Minn. Stat. § 216B.1635, which authorizes a public utility to petition the Commission outside a general rate case for a rider to recover certain gas utility infrastructure costs. In accordance with Minn. Stat. § 216B.1635, subd. 5,

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.

Under Minn. R. 7829.0100, subp. 11, this petition is a "miscellaneous" filing because no determination of MERC's general revenue requirement is necessary. Comments on a miscellaneous filing are due within 30 days of filing, with replies due 10 days thereafter. ${ }^{10}$
E. Signature, Electronic Address, and Title of Utility Employee Responsible for the Filing


Joylyn Hoffman Malueg
Project Specialist 3
Minnesota Energy Resources Corporation
Joylyn.HoffmanMalueg@wecenergygroup.com
231 W. Michigan Street
Milwaukee, WI 53203
(414) 221-4208

## F. Description of the Filing, Impact on Rates and Services, and Reasons for the Filing

Pursuant to the GUIC Statute, MERC is requesting approval of revised GUIC Rider surcharge rates by customer class effective January 1, 2021, to recover the 2021 revenue deficiency associated with eligible GUIC projects forecasted to be completed and placed into service through 2021, adjusted to account for the 2019 GUIC rider true-up based on actual 2019 GUIC project costs and surcharge recoveries. Under Minn. Stat. § 216B.1635, subd. 1(c), the

[^4]following natural gas projects are eligible for GUIC Rider recovery subject to additional requirements within the statute:
(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.

As discussed in this filing, MERC's proposed 2021 GUIC Rider will allow the Company to recover costs and expenses that have been incurred and will be undertaken in 2021 within these two categories. The GUIC projects and costs planned for 2021 and proposed for recovery in this filing build upon the previously-approved 2019 GUIC Rider approved by the Commission and the projects and costs proposed for recovery in the Company's currentlypending 2020 GUIC Rider proceeding by continuing implementation of MERC's multi-year integrity management and safety initiatives. Continuation of this proactive approach to distribution system safety and integrity management in 2021 is consistent with the GUIC Statute and benefits customers because work undertaken systematically and strategically reduces costs and minimizes inconvenience to customers.

Regarding the 2021 GUIC filing, within the first category above, MERC is projecting incremental capital investments of approximately $\$ 6.34$ million in 2021, for the replacement of natural gas facilities located in the public right-of-way required by the construction or improvement of roads, public buildings, or other public works. The forecast for the right-of-way relocation work is based on MERC's actual costs for right-of-way projects in 2019. MERC's annual right of way project costs increased each year from 2015 through 2018, with a slight decline (approximately $\$ 250,000$ ) in overall costs between 2018 and 2019. Based on MERC's analysis of this historic data, the Company has forecasted its 2021 right-of-way costs based on 2019 actual costs to reflect the most recent actual costs and to reflect the slight decrease in overall costs between 2018 and 2019. Actual annual spending for right-of-way relocation projects is out of MERC's control as the Company is required to remove and relocate its natural gas facilities located in the public right-of-way whenever requested to do so to accommodate a public works project such as a road or sewer project. These costs are subject to true-up based on actual projects and expenditures.

Regarding the second category of costs, MERC has forecasted capital and O\&M spending of approximately $\$ 7.8$ million to comply with federal and state regulatory requirements and standards for how operators validate the integrity of gas distribution assets by identifying risks, systematically performing health and conditions assessments, evaluating and prioritizing repairs to mitigate the risks, and informing customers regarding the installation of safety equipment. Consistent with MERC's approved 2019 scope of GUIC-eligible costs, this category of work for 2021 includes (1) the replacement of existing obsolete natural gas facilities, (2) the survey and assessment of meter sets to identify the need for replacement or modification of existing infrastructure, and (3) the survey and assessment of sewer laterals and mains to identify the need for the repair or replacement of damaged natural gas pipelines as a result of sewer cross bores. Additionally, MERC's 2021 scope of work in this category includes (1) incremental O\&M
expense to map existing service lines in MERC's geographic information system to more fully understand system design, material characteristics, and operating conditions; and (2) costs to continue MERC's excess flow valve customer outreach efforts, consistent with the
Commission's July 31, 2019, Order Accepting Compliance Filings, Requiring MERC to Submit Additional Information, Requiring Annual Compliance Reporting, and Taking Other Action in Docket No. G999/CI-18-41. The $\$ 7.8$ million forecast for 2021 reflects the Company's forecast of specific identified projects to be undertaken and placed into service in 2021.

All of the costs for work to be undertaken in 2021, as proposed in this filing, are incremental; required by federal, state, or local agencies; and supported by the specific information required under the GUIC Statute. Further, consistent with the GUIC Statute and prior Commission decisions, all costs will be subject to annual true-up. All required information and supporting data required under the GUIC Statute is provided in this filing and supporting exhibits.

If additional information is required, please contact Joylyn Hoffman Malueg at (414) 221-4208 or Kristin Stastny at (612) 977-8656.

DATED: April 1, 2020
Respectfully submitted,
TAFT STETTINIUS \& HOLLISTER LLP
/s/ Kristin M. Stastny
Kristin M. Stastny
2200 IDS Center
80 South 8th Street
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Attorney for Minnesota Energy Resources Corporation

# BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION 

Katie Sieben<br>Valerie Means<br>Matthew Schuerger<br>John Tuma

In the Matter of the Petition of Minnesota Energy Resources Corporation for Approval of a Gas Utility Infrastructure Cost Rider True-Up Report for 2019, Revenue Requirements for 2021, and Revised Surcharge Factors

Chair<br>Commissioner<br>Commissioner<br>Commissioner

Docket No. G011/M-20- $\qquad$

## SUMMARY OF FILING

Please take notice that on April 1, 2020, pursuant to Minnesota Statutes section 216B.1635, and in accordance with Minnesota Rules part 7829.1300, Minnesota Energy Resources Corporation ("MERC" or the "Company") filed with the Minnesota Public Utilities Commission a Petition for approval to recover the Company's forecasted 2021 eligible gas utility infrastructure project costs, adjusted to account for the 2019 Gas Utility Infrastructure Cost ("GUIC") rider ("GUIC Rider") true-up, through customer surcharges by customer class effective January 1, 2021. Through this filing, MERC is requesting approval of:

- A 2021 forecasted revenue requirement of $\$ 6,007,824$ based on the forecasted 2021 depreciation expense and return on gas utility infrastructure capital expenditures forecasted to be placed into service through the end of 2021 as well as incremental O\&M expense for projects planned to be undertaken during 2021, subject to future true-up;
- A true-up adjustment of $\$ 639,859$ for the under-recovered 2019 GUIC revenue requirement based on MERC's actual 2019 GUIC project costs and actual 2019 GUIC Rider revenues, inclusive of under-recovered amounts resulting from the suspension of the GUIC Rider surcharge rate applicable to Direct Connect customers effective September 1, 2019, resulting in an overall 2021 GUIC Rider recovery of $\$ 6,647,683$.
- GUIC surcharge rates by customer class effective January 1, 2021; and
- Updated GUIC Rider tariff sheets to reflect the 2021 GUIC rate factors effective January 1, 2021.

MERC's forecasted revenue requirement of $\$ 6,007,824$ is based on projects to be undertaken through 2021 to comply with federal, state, and local governmental requests to relocate natural gas facilities located in the public right-of-way and to comply with federal and state regulations that require natural gas utilities to implement integrity management programs to assess and improve the safety, reliability, and integrity of its natural gas infrastructure. These costs are consistent with the eligibility requirements set forth in Minn. Stat. § 216B.1635.

# BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION 

Katie Sieben<br>Valerie Means<br>Matthew Schuerger John Tuma

In the Matter of the Petition of Minnesota Energy Resources Corporation for Approval of a Gas Utility Infrastructure Cost Rider True-Up Report for 2019, Revenue
Requirements for 2021, and Revised
Surcharge Factors

Chair<br>Commissioner<br>Commissioner<br>Commissioner

## I. INTRODUCTION

Pursuant to Minn. Stat. § 216B. 1635 (the "GUIC Statute"), Minnesota Energy Resources Corporation ("MERC" or the "Company") submits this Petition to the Minnesota Public Utilities Commission (the "Commission") for approval of its 2021 Gas Utility Infrastructure Cost ("GUIC") revenue requirement for recovery through a GUIC surcharge to be effective January 1, 2021. In order to continue to address federal, state, and local requests for the relocation of natural gas assets in the public right-of-way to accommodate public work projects and to continue to promote improved safety and reliability in the natural gas distribution system, MERC is requesting recovery of a total 2021 revenue deficiency of approximately $\$ 6.65$ million. The costs included in this request are consistent with the eligibility requirements set forth in the GUIC Statute and reflect MERC's actual reasonable and prudently-incurred GUIC costs for GUIC projects completed in 2019. ${ }^{11}$

MERC has forecasted significant multi-year program spending for system integrity and safety projects and relocations of infrastructure in the public right-of-way, necessitating out-of-test-year rider recovery under the GUIC Statute. Use of the GUIC Rider to recover GUIC-

[^5]eligible costs will help to reduce rate volatility by introducing gradual rate increases to support the material, yet necessary, capital investments eligible for GUIC Rider recovery.

Gas utility infrastructure costs are costs, not already reflected in the utility's rates, that are incurred for projects involved in (1) the replacement of natural gas facilities required by road construction or other public works by or on behalf of a government agency, or (2) the replacement or modification of existing facilities required by a federal or state agency, including surveys, assessments, reassessment, and other work necessary to determine the need for replacement or modification of existing infrastructure.

MERC seeks approval of a GUIC Rider to recover the costs incurred for these two types of projects: (1) annual return on and of capital investments for the 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 forecasted to be in service through 2021; and (2) annual return on and of capital investments and incremental operations and maintenance ("O\&M") expense for the 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 federal and state agencies. In 2021, MERC is proposing to incur the following incremental costs in order to comply with the Company's distribution integrity management program ("DIMP") and the Commission's orders with respect to excess flow valves ("EFVs"):
(1) Capital costs of approximately $\$ 4.7$ million for the replacement of obsolete materials;
(2) O\&M expense of approximately $\$ 1$ million for stop valve survey work;
(3) O\&M expense of approximately $\$ 1$ million for sewer cross bore survey work;
(4) O\&M expense of approximately $\$ 1$ million for service line mapping; and
(5) O\&M expense of $\$ 101,384$ related to EFV customer outreach.

The majority of these projects are the same types of projects for which the Company received approval by the Commission in the 2019 GUIC Rider in Docket No. G011/M-18-281 and for which the Company has requested approval in its currently-pending 2020 GUIC Rider in Docket No. G011/M-19-282. In addition, MERC is requesting approval of cost recovery for O\&M expense related to mapping Company service lines in MERC's geographic information system ("GIS") and EFV customer outreach, which are explained in more detail later in this filing.

Regarding the relocation projects, the GUIC Statute permits the recovery of costs necessary to relocate natural gas facilities that must be moved to accommodate state and local projects within the public right-of-way. ${ }^{12}$ MERC requests approval of a GUIC Rider surcharge to recover those costs forecasted to be incurred in 2021 to relocate facilities in the public right-ofway as required by governmental agencies. Typically, right-of-way projects are not known in advance. Federal, state, and local government units request MERC to relocate facilities within the right-of-way according to their own schedules and, as a result, MERC oftentimes only knows within the month or a week prior to a right-of-way project commencing.

Regarding MERC's DIMP projects, MERC must comply with federal and state regulations that require natural gas utilities to implement integrity management programs to assess and improve the safety, reliability, and integrity of its natural gas infrastructure. Pursuant to the federal Pipeline Inspection, Protection, Enforcement and Safety Act and Pipeline and Hazardous Materials Safety Administration ("PHMSA") rules, all system operators must know the make-up of their distribution system and adopt written distribution integrity management plans for distribution pipelines. ${ }^{13}$ The law requires distribution system operators to continually identify and assess risks on their distribution systems to remediate conditions that present a

[^6]potential threat to the integrity of their pipeline system. As a result, MERC must incur annual costs and expenses necessary to implement its DIMP program. ${ }^{14}$ The GUIC Statute provides a mechanism for gas utilities to recover costs and expenses of gas utility infrastructure costs associated with the replacement or modification of transmission and distribution facilities required by a federal or state agency. ${ }^{15}$ Further, in its February 5, 2019, Order Approving Gas Utility Infrastructure Cost Rider with Modifications and Requiring Compliance Filing ("February 5, 2019 Order") in Docket No. G011/M-18-281, the Commission expressly recognized that MERC's "efforts to comply with federal DIMP regulations, or with state guidance pursuant to federal safety regulations, meets the definition of a 'gas utility project' under the statute." ${ }^{16}$

As discussed in this filing, MERC requests approval of revised GUIC Rider surcharge rates effective January 1, 2021, to recover MERC's forecasted 2021 revenue deficiency of approximately $\$ 6.65$ million based on projects to be undertaken through 2021 to comply with federal, state, and local governmental requests to relocate natural gas facilities located in the public right-of-way and to comply with federal and state regulations that require natural gas utilities to implement integrity management programs to assess and improve the safety, reliability, and integrity of its natural gas infrastructure. These costs are consistent with the eligibility requirements set forth in the GUIC Statute. Additionally, the requested 2021 revenue deficiency of approximately $\$ 6.65$ million includes the true-up calculation for the underrecovered GUIC-eligible costs actually incurred in 2019.

MERC's Petition includes the following exhibits:
Exhibit A Copy of Minn. Stat. § 216B.1635, Recovery of Gas Utility Infrastructure Costs;

[^7]| Exhibit B | Matrix of information included within the Petition as required by Minn. Stat. <br> § $216 B .1635$ and Commission orders; |
| :--- | :--- |
| Exhibit C | Updates to MERC's GUIC Rider Tariff (Tariff Sheet Nos. 7.20-7.21a); <br> Calculations of the proposed 2021 GUIC-eligible revenue requirement and <br> proposed GUIC Rider surcharge rates by customer class to be effective <br> January 1, 2021; |
| Exhibit D |  |
| Exhibit E | Details regarding MERC's actual 2019 relocation projects required to <br> accommodate public projects in the right-of-way [Public and Nonpublic <br> Versions]; |
| Exhibit F | MERC's currently known 2020 and 2021 right-of-way relocation projects (to- <br> date) ${ }^{17} ;$ |
| Exhibit G | MERC's 2021 Gas Infrastructure Project Plan Report; |
| Exhibit H | Discussion of the magnitude of proposed GUIC costs and known future <br> projects as required by Minn. Stat. § 216B.1635, subd. 4(vi), (vii), and (viii); <br> Exhibit I$\quad$MERC's 2019 GUIC true-up calculation and tracker balance; |
| Exhibit J | Details regarding MERC's actual 2019 obsolete materials replacement <br> projects [Public and Nonpublic Versions]; |
| Exhibit K | Maps of Aldyl-A main replacement (2021) [Public and Nonpublic Versions]; <br> and |
| Exhibit L | Project schedule for obsolete material replacements (2021). |

Approval of MERC's 2021 revenue requirement and proposed surcharge rates will allow the Company to fund the significant right-of-way projects required by various governmental authorities to accommodate public projects and to continue the important initiatives as discussed in this filing to comply with federal DIMP regulations and with state mandates and guidance issued pursuant to federal safety regulations. The GUIC Rider promotes the public interest by allowing MERC to continue to pursue work required under state and federal regulations. MERC is dedicated to operating a safe and reliable gas system for both its customers and the general public. It is, therefore, crucially important that the Company dedicates investments to assess the integrity of MERC's system and to proactively repair and

[^8]replace problematic equipment and materials. MERC's integrity projects are aimed at updating the Company's gas infrastructure to reduce the likelihood of leaks or incidents within the communities MERC serves.

## II. COMPLIANCE WITH GUIC STATUTE AND COMMISSION ORDERS

Generally, a public utility may not change its rates without undergoing a general rate case in which the Commission comprehensively reviews the utility's costs and revenues. However, the Minnesota Legislature has created exceptions to this general policy, allowing a utility to implement a rider with a rate-adjustment mechanism to expedite recovery of certain costs not reflected in the utility's base rates.

The GUIC Statute allows utilities to seek rider recovery of gas utility infrastructure costs, which are defined under the statute as costs incurred in gas utility projects that are in-service but were not included in the utility's rate base in its most recent general rate case or are planned to be in service during the period covered by the filing. ${ }^{18}$ "Gas utility projects" involve either (1) the replacement of natural gas facilities required by road construction or other public works by or on behalf of a government agency, or (2) the replacement or modification of existing facilities required by a federal or state agency, including surveys, assessments, reassessment, and other work necessary to determine the need for replacement or modification of existing infrastructure. ${ }^{19}$

A utility seeking approval of a GUIC Rider must file a petition, accompanied by a "gas infrastructure project plan report," at least 150 days before the rider is to be implemented. The report must be for a forecast period of one year. ${ }^{20}$ The report and petition must list the projects and costs proposed for recovery, including, but not limited to:

- project description and scope, estimated costs, and in-service date;

[^9]- the government entity ordering or requiring the project and the purpose for which the project is undertaken;
- 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;
- a comparison of the utility's estimated costs and the actual costs incurred, including a description of the utility's efforts to ensure that the costs of the facilities are reasonable and prudently incurred;
- 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 magnitude and timing of any known future projects that the utility may seek to recover under the GUIC statute;
- the magnitude of the costs in relation to the utility's base revenue as approved by the Commission in the utility's most recent general rate case, exclusive of gas-purchase costs and transportation charges;
- the magnitude of the costs in relation to the utility's capital expenditures since its most recent general rate case; and
- 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. ${ }^{21}$

The Commission may approve a GUIC Rider if the costs proposed for recovery through the rider are prudently incurred and achieve gas facility improvements at the lowest reasonable and prudent cost to ratepayers. ${ }^{22}$ Costs eligible for rider recovery include not only the plant investment itself but also a rate of return on that investment, income taxes on the rate of return, incremental property taxes, incremental depreciation expense, and any incremental O\&M costs. ${ }^{23}$ As outlined below and in the attached exhibits, MERC's proposed 2021 GUIC Rider meets each of the requirements of the GUIC Statute.

In MERC's 2019 GUIC Rider docket, Docket No. G011/M-18-281, the Minnesota Department of Commerce, Division of Energy Resources (the "Department") and the Minnesota Office of the Attorney General—Residential Utilities Division (the "OAG") both argued that

[^10]MERC had failed to provide all information required by the GUIC Statute, including project descriptions and scope, estimated project costs, and project in-service dates. The OAG also argued that MERC failed to demonstrate that the costs it sought to recover were incremental and failed to sufficiently identify the government requirements supporting its request for cost recovery. The Commission ultimately disagreed, concluding that the costs MERC "seeks to recover through its proposed GUIC rider are incremental; required by federal, state, or local agencies; and supported by sufficient detail to meet the information requirements of the GUIC statute."24

With respect to MERC's proposed costs being incremental, the Commission found:
Both the capital costs and the O\&M costs derive from new projects that are not currently reflected in the Company's base rates or the rates that will flow from the pending rate case; the costs are therefore incremental as required by the GUIC statute. ${ }^{25}$

Like the Company's 2019 and 2020 GUIC filings, as outlined below, MERC's proposed 2021 capital and O\&M costs derive from new projects and work to be undertaken in 2021 that are not currently reflected in MERC's base rates. Consistent with the Commission's prior determinations, those costs are incremental in accordance with the GUIC Statute.

With respect to the OAG's assertion in Docket No. G011/M-18-281 that MERC had failed to adequately identify the federal, state, or local governmental requirements supporting the proposed projects and costs under its DIMP initiatives, the Commission concluded that MERC's "efforts to comply with federal DIMP regulations, or with state guidance pursuant to federal safety regulations, meets the definition of a 'gas utility project' under the statute."26 The Commission has reiterated in various GUIC Rider proceedings that utility compliance with federal and state distribution integrity management requirements satisfies the requirements of the GUIC Statute.

[^11]Regarding the level of detail required for each project proposed under the GUIC Statute, the Commission concluded that MERC's reliance on historic trends and spending was reasonable and sufficient to support the statutory requirements:

Both the Department and the OAG expressed concern that MERC did not provide sufficient detail about its right-of-way relocation costs. This concern is misplaced. The GUIC statute anticipates the use of estimated costs. As MERC has explained, it generally is not informed of future right-of-way relocation work with enough lead time to include specific projects in its forecasts. Therefore, MERC's petition relies on historic spending to support its requested amount. This amount will be trued up annually to actual costs, eliminating any possibility that forecasting will result in overrecovery.
[T]he Commission finds MERC's use of a three-year average of relocation costs reasonable both because these costs have been trending higher in recent years and because any overestimation can be corrected for in the true-up. ${ }^{27}$

The GUIC Statute expressly provides that a GUIC project plan report "must be for a forecast period of one year." ${ }^{28}$ Further, the statute does not specify the level of detail in which "projects" must be identified in a GUIC plan; for example, whether each specific right-of-way relocation project must be identified in the petition and plan or whether the broad project category and scope is what is required. The GUIC Statute directs the Commission to evaluate prudency and actual costs as part of an annual review or true-up process. ${ }^{29}$ Through that process, a utility with an approved GUIC Rider is able to report on details regarding the specific work and cost of the work that is completed. The Commission has recognized the challenges as well as the significant value of forecasted rider recovery under the GUIC Statute, noting that "[t]he costs of [GUIC-eligible] investments can vary widely from year to year and are difficult to forecast with accuracy. Approving a rider ... [provides] the ability to implement multi-year

[^12]pipeline-replacement programs, adjusting the rates annually to correct for over- or under-
recovery." ${ }^{30}$
Ultimately, while MERC acknowledged that details regarding each individual right-of-way relocation project would not be known in advance, the Company provided extensive details regarding historic right-of-way projects, the annual year-over-year increases in spending on such projects, and the planned work to be completed to replace obsolete materials as well as with respect to stop-valve survey work and sewer cross bore survey work. MERC submitted extensive information, including detailed maps showing proposed main replacements and costs related to the replacement of obsolete materials. ${ }^{31}$ Based on the information submitted, the Commission reasonably concluded that MERC's proposed 2019 GUIC spending is supported by "sufficient detail to meet the statutory requirements of the GUIC statute."32

For 2021, as discussed in detail below, MERC continues to face the same constraints regarding the timing of when the Company is informed of right-of-way relocation projects. In particular, MERC is not informed of all specific future right-of-way relocation work with enough lead time to identify all projects that will occur in a subsequent year. For purposes of this filing, the Company has performed trend analysis based on historic right-of-way relocation projects and spending in order to most accurately forecast 2021 right-of-way project costs. Consistent with MERC's approved 2019 GUIC Rider in Docket No. G011/M-18-281 and currently-pending 2020 GUIC Rider request in Docket No. G011/M-19-282, MERC proposes to account for any over- or under-estimation of costs in its future true-up filing, which will include a reconciliation

[^13]and reporting on actual specific projects and costs relative to MERC's 2021 forecast. This filing reflects MERC's true-up for 2019 actual right-of-way projects and costs, as discussed in greater detail below.

With respect to MERC's 2021 DIMP projects, the Company's forecasted 2021 costs for DIMP-related obsolete materials replacement project, stop valve survey project, sewer cross bore survey project, and service line mapping project are based on the specific work to be undertaken during 2021. MERC developed this proposed detailed scope of work based on what the Company concluded would be a reasonable scope of projects to be completed in 2021 in light of the fact that these projects are multi-year efforts. Notably, as discussed in more detail below, delays in the approval of MERC's 2019 and 2020 GUIC Rider petitions have resulted in delays in the implementation of O\&M projects which has caused those projects to take longer than previously projected.

On July 31, 2019, the Commission issued an Order Accepting Compliance Filings, Requiring MERC to Submit Additional Information, Requiring Annual Compliance Reporting, and Taking Other Action in Docket No. G999/Cl-18-41. In that Order, the Commission authorized recovery of EFV compliance costs through GUIC Rider filings. ${ }^{33}$ Consistent with that order, MERC is incorporating forecasted costs related to customer outreach to be incurred in 2021.

## A. Proposed Projects are Gas Utility Projects

Similar to MERC's 2019 and pending 2020 GUIC filings, MERC is requesting approval for GUIC Rider recovery related to two categories of work that are eligible for rider recovery under the GUIC Statute: (1) right-of-way relocation projects, and (2) investments and expense to be incurred in the assessment and replacement or modification of existing

[^14]facilities required by federal and state agencies as part of the Company's compliance with DIMP regulations and the Commission's Order in Docket No. G999/CI-18-41 with respect to EFV customer outreach. Each of these categories is discussed below, and the individual infrastructure and survey projects proposed for 2021 are detailed in Exhibit G, including project descriptions and scope, an explanation of the necessity and benefits to customers, estimated costs, and in-service dates.

Table 1: Proposed MERC GUIC Rider Budget 2021

| Right-of-Way Relocations | $\$ 6,340,000$ |
| :--- | :--- |
| Obsolete Materials | $\$ 4,700,000$ |
| Stop-Valve Survey (O\&M) | $\$ 1,000,000$ |
| Sewer Cross Bore Survey (O\&M) | $\$ 1,000,000$ |
| Service Line Mapping (O\&M) | $\$ 1,000,000$ |
| EFV Customer Outreach | $\$ 101,384$ |
| Total | $\mathbf{\$ 1 4 , 1 4 1 , 3 8 4}$ |

Recovery of these costs through the GUIC Rider is in the public interest, as it enables the Company to continue to invest in the safety of its natural gas system and facilitate public infrastructure projects in MERC's service area throughout the state.

## 1. Right-of-Way Relocations

For 2021, MERC has projected approximately $\$ 6.34$ million in capital spending for road and public work projects meeting the definition of gas utility project under Minn. Stat. § 216B.1635. Consistent with MERC's approved 2019 scope of GUIC-eligible costs and pending 2020 filing, this category of work for 2021 includes 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 the state or a political subdivision. ${ }^{34}$ Such projects fit squarely within the GUIC Statute's definition of gas utility projects, which includes

[^15]"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."35

Consistent with the Commission's decision on MERC's 2019 GUIC Rider and the Company's pending 2020 proposal, MERC has forecasted 2021 right-of-way costs based on recent actual annual costs for such projects. While MERC utilized a three-year average of costs to forecast its 2019 right-of-way project costs, MERC projected its 2020 right-of-way costs based on 2018 actuals, in light of the fact that the Company's annual right-of-way project costs increased each year from 2015 through 2018. ${ }^{36}$ MERC's actual 2019 right-of-way project costs were slightly lower than 2018 and, as a result, MERC is proposing to use 2019 actuals as the basis for the Company's 2021 forecasted right-of-way costs. As shown in Table 2, MERC's actual 2019 right-of-way project costs were approximately $\$ 6,340,000$, while the average of MERC's most recent three years' costs is $\$ 6,395,733$. Because 2019 costs were down slightly from 2018, and because this amount will be trued up based on actual right-of-way project costs, MERC proposes to utilize the lower 2019 actual costs as the basis for establishing its forecasted 2021 expense. ${ }^{37}$

[^16]| Table 2: MERC's Relocation Projects 2017-2019 |  |  |
| :---: | :---: | :---: |
| Project Year | Number of <br> Relocation Projects | Annual Right-of-Way <br> Relocation Costs |
| 2017 | 86 | $\$ 6,257,343$ |
| 2018 | 87 | $\$ 6,589,132$ |
| 2019 | 78 | $\$ 6,340,7244^{38}$ |
| 3-Year Average (2017-2019) | $\mathbf{8 4}$ | $\$ 6,395,733$ |

As shown in Table 2, the three-year (2017-2019) average is very similar to MERC's 2019 actual spend on right-of-way projects. Despite the fact that the three-year average is slightly higher than 2019 actual spend, the Company is requesting recovery of 2021 right-of-way relocation costs based on 2019 actuals, consistent with MERC's request in its currently-pending 2020 GUIC Rider filing. ${ }^{39}$ MERC believes that use of 2019 actual spending is the most reasonable basis for forecasting 2021 as it is based on the most recent experience and captures the slight decline in overall right-of-way project costs experienced in 2019.

Table 3, below, provides a comparison of MERC's approved 2019 right-of-way project cost forecast ${ }^{40}$ against actual 2019 right-of-way capital costs.

## Table 3. Right-of-Way Relocations (2019 Actuals Compared to Approved 2019 Forecast)

| Approved 2019 Forecast | 2019 Actual Costs |
| :---: | :---: |
| $\$ 5,300,000$ | $\$ 6,340,724^{41}$ |

As can be seen in Table 3, MERC's actual costs for right-of-way relocation projects were significantly higher (over \$1 million greater) than the Company's approved forecast of $\$ 5.3$ million. MERC has provided details regarding each right-of-way relocation project completed in 2019 in Exhibit E and has included the actual 2019 costs in the true-up as shown in Exhibit I.

[^17]Details regarding the historic right-of-way relocation work MERC completed in 2019, including an identification of each project, the governmental agency requiring the relocation work, the month the project was placed into service, the project cost, and total footage of main and service line installed for each project is provided in Exhibit E. MERC has previously provided historic detail on its right-of-way projects undertaken from 2015 through 2018 in Docket Nos. G011/M-18-281 and G011/M-19-282.

At the time this filing was prepared, MERC had been provided some preliminary notification regarding 75 potential right-of-way projects for 2020; 11 potential right-of-way projects for 2021; and 4 potential right-of-way projects for 2022. Based on historical projects and costs, MERC expects to be notified of significantly more right-of-way relocation projects in each of these years, consistent with the Company's experience in recent years. ${ }^{42}$ Thus, while MERC cannot currently identify the specific relocation requests that will be made for 2021, it is reasonable to expect that the Company will continue to be required to undertake these relocation projects at the same pace as in recent years and that the resulting costs will be in line with or greater than MERC's recent experience. As a result, MERC's proposal to use 2019 actual costs as the basis for the GUIC revenue requirement calculation for this category of work provides a reasonable estimate of projected costs to be incurred for the replacement of natural gas facilities located in the public right-of-way required by governmental agencies and any difference between the estimated costs and actual expenditures will be subject to future true-up.

The Commission addressed the appropriateness of forecasted right-of-way project costs in the Company's 2019 GUIC Rider in Docket No. G011/M-18-281, concluding that MERC's reliance on historic trends was reasonable and sufficient to meet the statutory requirements.

Both the Department and the OAG expressed concern that MERC did not provide sufficient detail about its right-of-way relocation costs. This concern is misplaced. The GUIC statute anticipates the use of estimated costs. As MERC has explained, it generally is not informed of future right-of-way relocation work with enough lead

[^18]time to include specific projects in its forecasts. Therefore, MERC's petition relies on historic spending to support its requested amount. This amount will be trued up annually to actual costs, eliminating any possibility that forecasting will result in overrecovery. ${ }^{43}$

Further, in its April 25, 2019, Order Approving Compliance Filing in Docket No. G011/M-18-281, the Commission again reiterated its prior conclusion that MERC's reliance on historic costs with respect to its right-of-way projects does comply with the requirements of the GUIC Statute, again rejecting the same Department arguments raised in comments on MERC's compliance filing:

In its February 5 order approving MERC's GUIC rider, the Commission found that the information MERC submitted in its petition complied with the GUIC statute. The order explained that MERC's use of estimates for certain project costs is contemplated in the statute, and that the annual true-up will eliminate "any possibility that forecasting will result in overrecovery."

As for the information required by Minn. Stat. § 216B.1635, subds. $3-4$, the February 5 order explains that MERC "generally is not informed of future right-of-way relocation work with enough lead time to include specific projects in its forecasts." MERC therefore submitted estimates of its right-of-way relocation costs based on historic spending. When MERC submits its annual GUIC true-up filing, it will submit the project-specific information required by Minn. Stat. § 216B.1635, subds. 3-4, at which point the Commission will review the projects and costs for reasonableness and prudence. ${ }^{44}$

The need to utilize historic right-of-way project costs as a basis for forecasted spending stems from the fact that MERC is not notified in advance of actual relocation work that must be undertaken each year. ${ }^{45}$ While some government authorities utilize longer-range planning, the level of detail needed to determine the specific affected facilities and to design a relocation

[^19]project still generally is not known until winter or early spring for that construction season, such that MERC is not able to design projects by the end of the calendar year. ${ }^{46}$ The majority of municipalities and townships requesting right-of-way relocations utilize short-term planning due to funding approvals and, as a result, MERC is often not provided notice of the need to relocate facilities until a couple of months to a week before a project begins. These municipal right-ofway projects are also often modified after their initial presentation or delayed due to funding or other considerations by the local governmental unit. While MERC takes steps to obtain information as early as possible for right-of-way relocation projects to allow the Company to undertake the necessary planning for work to be performed for the relocations, the nature of the planning and funding for these right-of-way projects means that MERC will never have a complete picture of upcoming relocation projects prior to the beginning of a construction season.

## 2. Distribution Integrity Management Work

For 2021, MERC has projected approximately $\$ 7.7$ million in capital and O\&M spending for DIMP-related work meeting the definition of gas utility projects under the GUIC Statute. Consistent with MERC's approved 2019 scope of GUIC-eligible costs and the Company's currently-pending 2020 GUIC request, this category of work for 2021 includes (1) the replacement of existing obsolete natural gas facilities; (2) the survey and assessment of meter sets to identify the need for replacement or modification of existing infrastructure; and (3) the survey and assessment of sewer laterals and mains to identify the need for repair or replacement of damaged natural gas pipelines as a result of sewer cross bores. In addition, MERC is requesting inclusion of $O \& M$ costs to map currently-compiled service line data into the Company's GIS and verify the accuracy of the mapped service line locations, and Commissionapproved costs incurred for customer outreach related to EFVs. These projects fit squarely within the GUIC Statute's definition of gas utility projects, which include "replacement or

[^20]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." ${ }^{47}$ The $\$ 7.7$ million estimate is lower than the Commission-approved 2019 GUIC Rider and the Company's currently-pending 2020 GUIC Rider recovery request, and reflects the Company's forecast of specific projects to be undertaken and placed into service in 2021. The Company has budgeted at a lower level for 2021 DIMP-related work in part due to projected spending for the Rochester Natural Gas Extension Project. However, MERC anticipates that in future years, the capital budget for DIMP-related work will increase to amounts similar to those requested in previous GUIC filings. Details regarding each project category are discussed in Exhibit $G$ and summarized below.

Despite the fact that MERC approaches its DIMP programs with a concrete plan of action, ongoing pipeline inspections may result in the reprioritization of projects as risks are identified that may require more immediate intervention. The need for flexibility in planning is critical in pipeline integrity work, and emergent projects can result in fluctuating costs year over year. The Commission has previously recognized this dynamic in other GUIC Rider proceedings, noting that the costs of these investments can vary widely from year to year and are difficult to forecast with accuracy. ${ }^{48}$ As a result, rider recovery allows the utility the ability to implement multi-year pipeline safety and assessment programs, and adjust the rates annually to correct for over- or under-recovery. ${ }^{49}$

In accordance with the PHMSA Integrity Management Program for Gas Distribution Pipelines Rule, 49 C.F.R. Part 192, subpart P, MERC must determine and implement measures designed to reduce the risks from failures of its gas distribution and transmission facilities.

[^21]Under Subpart P, all natural gas distribution companies are required to develop, write, and implement an integrity management program with the following elements:

- Understand system design and material characteristics, operating conditions and environment, and maintenance and operating history;
- Identify existing and potential threats;
- Evaluate and rank risks;
- Measure integrity management program performance, monitor results, and evaluate effectiveness;
- Periodically assess and improve the integrity management program; and
- Report performance results to PHMSA, and where applicable, also to states.

In addition to federal regulatory requirements, MERC is obligated to comply with state agency (in this case, the Minnesota Office of Pipeline Safety or "MNOPS") requirements, where MNOPS is enforcing federal regulations. For example, MERC has undertaken the sewer cross bore surveys to comply with the acceptable practices and documentation requirements for the installation of gas pipelines outlined in a 2010 safety alert issued by MNOPS. ${ }^{50}$ The safety notice was issued after gas lines had been punctured by sewer cleaning contractors and, on several occasions, "the gas ignited, resulting in significant injuries and property damage."51 Thereafter, the acceptable practices and documentation requirements were issued by MNOPS to help avoid the recurrence of these significant safety issues posed by cross bores when utilities are installing gas mains and services. This MNOPS alert imposes obligations on natural gas system operators to take specified actions for any new installations and also highlights an industry-wide potential safety issue affecting legacy installations.

[^22]The Commission has expressly recognized in prior GUIC Rider dockets that utility compliance with federal DIMP, state implementation of federal safety requirements, and state agency requirements meet the requirements under the GUIC Statute that the replacement, modification, survey, assessment, or other work be required by a federal or state agency. The Commission has specifically stated that:

Under the federal Pipeline Safety Improvement Act of 2002 and regulations issued by the U.S. Department of Transportation's Pipeline and Hazardous Material Safety Administration, operators of natural-gas transmission and distribution pipelines must implement pipeline integrity management programs to assess and improve the safety, reliability, and integrity of their natural-gas infrastructure. ${ }^{52}$

The Commission has consistently approved rider recovery of DIMP investments, determining that these costs meet the statutory requirements for rider recovery as gas utility infrastructure costs. The Commission also concluded, with respect to MERC's specific DIMP-related investments and assessments, that MERC's "efforts to comply with federal DIMP regulations, or with state guidance pursuant to federal safety regulations, meets the definition of a 'gas utility project' under the statute. ${ }^{53}$

Details regarding each of the proposed projects, project costs, and other pertinent information are provided in the following sections.

## a. $\quad$ Replacement of Obsolete Materials-\$4.7 Million Capital Costs

In its 2019 GUIC Rider filing, MERC explained that with GUIC Rider recovery, the Company was proposing to implement a multi-year plan in accordance with its DIMP targeted at the removal and replacement of three types of materials that pose known risks to the Company's distribution system. In particular, MERC identified known risks related to Aldyl-A pipe, copper, and X-Trube pipe.

[^23]Additionally, MERC's filing discussed the need to remove and replace other materials known to pose a significant risk as they are discovered. For example, when bare steel is discovered, it must be replaced to mitigate the risk of future failure. ${ }^{54}$ For the 2021 GUIC Rider, MERC has forecasted $\$ 4.7$ million of capital costs for the replacement of obsolete materials. Each specific project, including the location, obsolete material to be replaced, installation vintage in the case of Aldyl-A, footage of main and number of services, and cost estimates broken out by main and service, is summarized in Table 4, below. Maps showing the specific location of the identified projects are included as Exhibit K to this filing. A schedule of planned work and in-service dates for each project is included as Exhibit L .

Table 4: Obsolete Material Replacement 2021

| Obsolete <br> Material | City | Vintage | Main <br> (footage) | Services <br> (\# of <br> services) | Main <br> Estimate | Services <br> Estimate | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Aldyl-A | Pine City | 1970s | 9,250 | 110 | $\$ 462,500$ | $\$ 260,700$ | $\$ 723,200$ |
| Aldyl-A | Rochester | 1970s | 4,950 | 150 | $\$ 247,500$ | $\$ 355,500$ | $\$ 603,000$ |
| Aldyl-A | Caledonia | 1970 s | 3,400 | 25 | $\$ 170,000$ | $\$ 59,250$ | $\$ 229,250$ |
| Aldyl-A | Crosby | 1970 s | 16,600 | 150 | $\$ 830,000$ | $\$ 355,500$ | $\$ 1,185,500$ |
| Aldyl-A | Buhl | 1970 s | 6,500 | 115 | $\$ 325,000$ | $\$ 272,550$ | $\$ 597,550$ |
| Aldyl-A | Grand Rapids | 1970 s | 2,250 | 55 | $\$ 112,500$ | $\$ 130,350$ | $\$ 242,850$ |
| X-Trube | Various |  |  | 225 | $\$ 0$ | $\$ 533,250$ | $\$ 533,250$ |
| Copper/Bare <br> Steel | Various |  |  | 35 | $\$ 0$ | $\$ 85,400$ | $\$ 85,400$ |
| Stop Valves | Various |  |  | 625 | $\$ 0$ | $\$ 500,000$ | $\$ 500,000$ |
| TOTAL |  |  | $\mathbf{4 2 , 9 5 0}$ | $\mathbf{1 , 4 9 0}$ | $\mathbf{\$ 2 , 1 4 7 , 5 0 0}$ | $\$ 2,552,500$ | $\$ 4,700,000$ |

MERC's forecasted 2021 costs reflect a reasonable projection of costs to be incurred in 2021 for the replacement of Aldyl-A, X-Trube, copper, and bare steel based on the Company's historic costs, experience with obsolete materials replacements, and unique factors affecting Aldyl-A replacements such as non-locatable pipe and the need to obtain easements and

[^24]conduct surveys. For its 2021 forecast, MERC applied the same per-foot cost for main installations as the Company used in its pending 2020 GUIC Rider petition in Docket No. G011/M-19-282, based on consideration of historic costs and experience and unique factors affecting these projects. The Company's service line estimates are derived from the average actual service line replacement costs from 2019. Specifically, based on the most recent actual data for obsolete materials replacement projects including Aldyl-A, copper, and X-Trube, MERC forecasted a cost of $\$ 2,370$ per service for service replacements.

As discussed in Docket No. G011/M-19-282, a number of factors impact the average cost for obsolete materials replacement projects including the potential to encounter rock, the need to obtain easements and conduct surveys, and other unusual circumstances. The following factors are also relevant to MERC's actual costs for obsolete materials replacement projects:

- Older vintage Aldyl-A has sometimes been found to be non-locatable. In such circumstances, additional costs will be experienced in order to vacuum excavate to locate mains.
- Obsolete materials replacements require MERC to complete all associated restoration activities following construction.
- The older vintage Aldyl-A to be replaced generally is in more established neighborhoods with larger and more established trees, requiring additional boring to install replacement pipe.
- Surveys are often required for obsolete materials replacement projects to identify any existing rights-of-way and determine the need for any additional easements. If easements are needed, there are also costs to acquire such easements.
- Obsolete materials replacement projects generally will require city or county permitting, including the cost of such permits.
- Some communities require dual main to be installed for new and replacement installations to minimize service crossings, resulting in more installed footage for the replacement of pipe.
- Larger replacement projects require MERC to prepare stormwater pollution prevention plans whereas the road contractor is often responsible for such plans for right-of-way road relocation projects.

These factors support MERC's 2021 forecasted obsolete materials replacement costs. While the actual costs incurred will be subject to true-up, MERC's forecasted 2021 cost estimate reflects a reasonable scope of spending for obsolete materials replacements in 2021. MERC has significant work to do to remove obsolete materials from its system. That effort will necessarily be a multi-year effort and the pace of the work completed can be controlled. The Company's planned spending for 2021 replacements is based in large part on the need to balance removal of risks against avoiding significant rate impacts. In determining the proposed level of annual spending, MERC evaluated historic DIMP project spending as well as other anticipated spending to understand the level of annual investment under DIMP programs that could be supported in rates.

GUIC Rider recovery allows the Company to implement multi-year programs that are comprehensive and cost effective, thus providing benefits to MERC's customers beyond increased safety and reliability. A proactive approach benefits customers because work undertaken systematically and strategically reduces costs compared to work undertaken in a reactionary or immediate threat mode, and allows MERC to engage in regional planning to minimize inconvenience to impacted communities.

## (1) Obsolete Materials - Aldyl-A

PHMSA has issued several Advisory Bulletins about certain polyethylene pipe material called Aldyl-A, a plastic material that becomes brittle over time and is subject to sudden failure from cracking. ${ }^{55}$ Additionally, some of these obsolete installations have been identified as not being locatable, creating additional risk of third-party or MERC contractor damage. As discussed in Docket Nos. G011/M-18-281 and G011/M-19-282, on April 23, 1998, the National Transportation Safety Board (the "NTSB") issued a Special Investigation Report, Brittle-Like

[^25]Cracking in Plastic Pipe for Gas Service, NTSB/SIR-98/01. The report described the results of the NTSB's special investigation of polyethylene gas service pipe, which addressed three major safety issues: (1) vulnerability of plastic piping to premature failures due to brittle-like cracking; (2) adequacy of available guidance relating to the installation and protection of plastic piping connections to steel mains; and (3) effectiveness of performance monitoring of plastic pipeline systems to detect unacceptable performance in piping systems.

The NTSB found that failures in polyethylene pipe in actual service are frequently brittlelike, slit failures, not ductile failures. It concluded the number and similarity of plastic pipe accident and non-accident failures indicate past standards used to rate the long-term strength of plastic pipe may have overrated the strength and resistance to brittle-like cracking for much of the plastic pipe manufactured and used for gas service from the 1960s through the early 1980s.

The NTSB made several recommendations to PHMSA and to trade organizations in its 1998 special investigation report. In response, PHMSA issued advisory bulletins advising natural gas pipeline distribution system operators of the potential for brittle-like cracking of plastic pipes installed between the 1960s and early $1980 s^{56}$ and identifying several environmental, installation, and service conditions in which plastic piping is used that could lead to premature brittle-like cracking failure. ${ }^{57}$

On June 11, 2014, the California Public Utilities Commission issued a Hazard Analysis \& Mitigation Report on Aldyl A Polyethylene Gas Pipelines in California, summarizing the history and risks associated with Aldyl-A pipes. ${ }^{58}$ As discussed in that report, while DuPont modified

[^26]the resin formula used in Aldyl-A pipe over the years, subsequent resin formulations continued to experience low resistance to slow crack growth.

| Approximate Years of <br> Manufacture | Alathon Resin | Relative Resistance to <br> Slow Crack Growth |
| :---: | :---: | :---: |
| $1965-1970$ | 5040 | Low |
| $1970-1972$ | 5043, LDIW | Low |
| $1970-1983$ | 5043, non-LDIW | Medium |
| $1983-1988$ | $5046-\mathrm{C}$ | Medium High |
| $1988-1992$ | $5046-\mathrm{U}$ | High |
| $1992-1999$ | $5046-\mathrm{O}$ | Very High |

On May 26, 2016, the Plastic Pipe Database Committee (the "PPDC") released an update on in-service failures of plastic pipe and components. ${ }^{59}$ For the past 16 years, the PPDC has been receiving information on in-service plastic piping system failures and/or leaks with the objective of identifying possible performance issues. According to the report:

Aldyl failure data continues to be reported. Moreover, as depicted in Figure 1, there are now two peaks of failure data submissions (2000-2005, 2010-2014). Analysis has determined that the range of installation years for these peaks appears consistent. Therefore the installation years are more reflective of materials experiencing failures/leaks. Failure causes demonstrate that installation practices and the operating environment can greatly impact the service life of the Aldyl piping.

Operators should look at the performance of their own piping systems. Each operator serves a unique and defined geographic area and their system infrastructures vary widely based on a multitude of factors, including facility condition, past engineering practices and materials. Each operator should evaluate the actions in light of system variables, the operator's independent integrity assessment, risk analysis and mitigation strategy.

[^27]Based on MERC's DIMP and risk assessment, the Company has determined that replacement of Aldyl-A, as outlined in the Company's 2019, 2020, and this current GUIC Rider filing, is appropriate to reduce known risks on MERC's system.

MERC's system contains Aldyl-A pipe that was installed beginning in the 1960s and through 1983. MERC began its replacement efforts in 2019 with the oldest vintage Aldyl-A piping and intends to continue to replace all Aldyl-A in future years. Table 5 below provides information regarding the known quantity of Aldyl-A on MERC's system at the time the Company began its obsolete materials replacement program targeting Aldyl-A in 2019 as well as forecasted remaining Aldyl-A at the end of 2020 and 2021 based on planned replacements. ${ }^{60}$

Table 5. Known Aldyl-A Main on MERC's System by Decade

| DOT Decade | Miles at End of <br> $\mathbf{2 0 1 9}$ | Projected Miles <br> at End of 2020 | Projected Miles <br> at End of 2021 |
| :---: | :---: | :---: | :---: |
| $1960-1969$ | 10.4 | 6.0 | 6.0 |
| $1970-1979$ | 271.1 | 261.8 | 253.7 |
| $1980-1983$ | 109.5 | 108.1 | 108.1 |
| Total | 391.0 | 375.9 | 367.8 |

During 2019, through MERC's GUIC obsolete materials replacement project, the
Company removed approximately 64,000 feet of Aldyl-A main and approximately 500 Aldyl-A services across its service area. As shown in Table 5, MERC estimates that approximately 390 miles of Aldyl-A main remained on the Company's system at the end of 2019. Details regarding replacement projects completed in 2019 are discussed below and included in Exhibit J

[^28]In 2020, as stated in the Company's filing in Docket No. G011/M-19-282 and shown in Table 5, MERC is targeting the replacement of approximately 15 miles of Aldyl-A main. Following completion of replacement projects in 2020, MERC estimates that it will have approximately 376 miles of Aldyl-A main remaining across the distribution system. In 2021, MERC is planning to remove 8 miles of 1970 s vintage Aldyl-A main and associated services. Maps showing the specific location of the identified projects are included as Exhibit K to this filing and a schedule of planned work and in-service dates for each project is included as Exhibit L.

## (2) Obsolete Piping and Fittings-Copper and X-Trube

MERC has removed nearly all the remaining copper and X -Trube piping on its distribution system. X-Trube piping, thin-walled steel tubing, was installed throughout the industry in the 1960s as a cost-saving measure because it was less expensive than other piping. It is generally not durable, and cannot be repaired. Similarly, copper facilities are some of the oldest and the lines and fittings have been prone to leak and failure. Replacement of these materials is required because these materials have been known to fail and any repair would increase the risk of failure. As a result, MERC must replace the facilities at issue in order to address these known risks.

As indicated in Table 4, above, MERC has allocated a small dollar amount related to the removal and replacement of facilities that contain X-Trube piping, bare steel, and copper. Specifically, MERC is planning to replace approximately 225 X-Trube services in the Company's Southwest, Southeast, and Northwest regions in 2021 as provided in Table 6 below, and will replace bare steel and copper as discovered.

Table 6: Planned 2021 X-Trube Replacements

| Region | Town | Known X- <br> Trube <br> Services After <br> 2020 <br> Replacements <br> Completed | Replacements |
| :--- | :--- | :---: | :---: |
| Northwest | Bemidji | 100 | 75 |
| Southeast | Caledonia | 350 | 50 |
| Southeast | Houston | 6 |  |
| Southeast | Lanesboro | 9 | 9 |
| Southeast | Plainview | 2 |  |
| Southeast | Preston | 37 |  |
| Southeast | Rochester | 158 |  |
| Southeast | Harmony | 29 | 27 |
| Southeast | St. Charles | 13 | 13 |
| Southeast | Stewartville | 1 | 1 |
| Southwest | Tracy | 11 |  |
| Southwest | Trimont | 54 |  |
| Southwest | Truman | 20 |  |
| Southwest | Walnut Grove | 133 | 50 |
| Total |  | $\mathbf{9 2 3}$ | $\mathbf{2 2 5}$ |

MERC notes that since the Company's 2020 GUIC Rider filing, MERC has performed Distribution System Integrity ("DSI") surveys to specifically identify and verify X-Trube services. As a result of those surveys, MERC has identified additional X-Trube services requiring replacement across the state, increasing the total number of known X-Trube services from 997 to 1,024 , and requiring additional replacements. MERC will track replacements of X -Trube services as part of its obsolete materials replacement project for future true-up based on actual project costs.

As discussed in greater detail below, in 2021, MERC is also proposing to undertake the next phase of its service line mapping project - a multi-year effort to map the presumed location of service lines to the Company's GIS and verify the mapped location of said lines in order to have a more accessible and accurate system of records regarding service line installations,
materials, and maintenance. The proposed GIS service line mapping will allow MERC to more accurately "understand system design and material characteristics, operating conditions and environment, and maintenance and operating history," in accordance with PHMSA's Integrity Management Program for Gas Distribution Pipelines Rule (49 CFR Part 192, subpart P).

## (3) Obsolete and Faulty Meter Set Valves and Equipment

As explained in the Company's 2019 GUIC Rider filing, certain types of valves (e.g., the Rockford Eclipse and Mueller Luboseal valves) are known to fail. MERC has had one incident with the failure of a Rockford valve at a commercial facility in Grand Rapids, Minnesota. A gas leak was detected at the facility and the valve disintegrated during the turnoff process, causing gas to blow until MERC's crew could isolate the failure. To detect these known risks, MERC must survey the equipment at all of its meter sets and replace the facilities found to be suspect.

MERC began the survey of its meter sets in 2019 and plans to continue with its program to survey meter set valves in 2021, as discussed below. Any valves that are identified in the survey to be at risk of failure, as well as any obsolete equipment posing an immediate threat, will be replaced and accounted for as part of MERC's obsolete materials program. Identified risks that do not pose an immediate risk of failure will be tracked, analyzed, and scheduled for replacement beginning in 2021.

Through 2019, in the Rosemount region, 427 Rockford Eclipse and 13,565 Mueller Luboseal valves, which pose a risk of failure, have been identified as a result of MERC's meter set surveys. In the Rochester region, 714 Rockford Eclipse and 7,361 Mueller Luboseal valves have been identified. Based on the results of MERC's 2019 surveys and the identified valves requiring replacement, MERC is proposing to spend $\$ 500,000$ to begin replacing Rockford Eclipse valves in 2021. MERC has initially forecasted a cost of approximately $\$ 800$ for each meter set requiring valve replacement based on current contract rates for meter work and materials and is targeting the replacement of 625 valves in 2021. Actual costs for these replacements will depend on the condition of each meter set and affected valves. To the extent
actual costs for replacement of these valves is less than this initial forecast, MERC may be able to complete additional replacements in 2021.

MERC has prioritized the replacement of identified Rockford Eclipse valves in 2021 because these valves pose a higher risk on MERC's system due to their design. In particular, when turning these valves, it is possible for the valve to break off and the design of these valves makes it difficult to verify whether the valve is turning. Replacement of the identified at-risk valves will be a multi-year effort and MERC will account for the actual number of valves replaced and cost of the work completed in its future true-up filing reports.

## b. Meter Set Survey-\$1 Million O\&M

Beginning in 2019, MERC budgeted $\$ 2$ million in incremental O\&M to begin a multi-year initiative to survey all meter sets to assess any risk of failure of valves and other meter set components and to identify the need for replacement of faulty valves. As explained in the Company's 2019 GUIC Rider filing, due to the large scope of this effort and MERC's dispersed service territory, the Company engaged a third-party contractor to perform the survey work. While MERC originally anticipated completing the survey of all meter sets in 2020, delays in the approval of MERC's 2019 and 2020 GUIC rider filings resulted in delays in the commencement of this work and, therefore, fewer surveys being completed than originally projected based on a full 12 months to complete the scope of work. Table 7 below shows the number of meter surveys completed in 2019, as well as the number of meter surveys the Company anticipates completing in 2020 and $2021 .{ }^{61}$

[^29]| Table 7. Meter Set Survey Completion (2019-2021) |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| Region | Total \# Meters | Surveys <br> Completed <br> 2019 (Actual) | Planned <br> Surveys <br> 2020 <br> (Forecast) | Planned <br> Surveys <br> 2021 <br> (Forecast) |
| Southeast | 81,106 | 29,380 | 51,726 | - |
| Central | 64,412 | 52,352 | 12,060 | - |
| Northwest | 27,017 | - | - | 27,017 |
| Northeast | 29,821 | - | 6,850 | 22,971 |
| Southwest | 36,408 | - | 36,408 | - |
| Total | $\mathbf{2 3 8 , 7 6 4}$ | $\mathbf{8 1 , 7 3 2}$ | $\mathbf{1 0 7 , 0 4 4}$ | $\mathbf{4 9 , 9 8 8}$ |

While the Company's currently-pending 2020 GUIC Rider filing in Docket No. G011/M-19-282 anticipated completion of the meter set survey project in 2020 , a significant number of surveys remain to be completed, including all surveys outside of MERC's most dense service areas, necessitating an additional year to complete the full scope of work. MERC is unable to begin work scheduled for 2020 until the Company has some assurance that it will be able to recover costs for the surveys completed in 2020. Moreover, a three-year program timeline is consistent with the Company's original request approved by the Commission in Docket No. G011/M-18-281. MERC now anticipates completing the surveys in Rochester and Rosemount, as well as beginning meter surveys in the Company's more disperse service areas in 2020. MERC proposes to complete all remaining meter surveys in 2021.

MERC proposes a 2021 budget to complete this work of $\$ 1$ million based on the forecasted scope of work remaining to be completed in 2021. Because the Company's 2020 GUIC rider is still pending in Docket No. G011/M-19-282, and MERC does not intend to execute contracts for the 2020 work until the Commission has approved its 2020 rider filing, it is possible that a portion of the work forecasted for 2020 will be delayed to 2021 . To the extent the Commission approves recovery of MERC's 2020 GUIC rider based on 12 months of forecasted sales, it is likely MERC will again under-recovery its actual costs for 2020.

Further, as explained in Docket No. G011/M-19-282, in 2019, MERC began the meter set survey project with meter sets in Rochester and Rosemount, the most densely populated
areas that MERC serves. ${ }^{62}$ But MERC serves 179 communities across the State of Minnesota with a service area that stretches from the northernmost border of the state to the lowa border, across the entirety of Minnesota. While the costs for 2019 surveys were lower than forecasted for the scope of work remaining in 2021, selected contractors will need to spend significantly more time traveling which is likely to increase contractor costs. While MERC has not yet secured contractor(s) for the 2020 or 2021 scope of work, due in part to not having a determination on its 2020 GUIC Rider petition, delays in finalizing contracts are likely to increase costs as contractors commit to other jobs and have fewer resources available.

## c. Sewer Cross Bore Survey-\$1 Million O\&M

As discussed in the Company's 2019 and 2020 GUIC Rider filings, MERC has developed and implemented safety plans to reduce the risk to customers and minimize the threat of sewer cross bores. MERC intends to continue this initiative in 2021. PHMSA's Gas Distribution Pipeline Integrity Management Enforcement Guidance notes that:

Cross bores of gas lines in sewers have been reported at 2-3 per mile in high risk areas - predominately where trenchless installation methods were used for gas line installs and where sewers and gas lines are in proximity of each other. As such, operators must determine the potential for cross bore of sewers resulting in gas lines intersecting with sewers. ${ }^{63}$

While MERC has been inspecting sewer laterals and mains under an ongoing sewer line lateral inspection program since 2014, the Company determined that expanded inspections are prudent and necessary to identify and mitigate the risk posed by a cross bore. As a result, beginning in 2019, MERC expanded its surveys to identify conflicts with the help of a third-party

[^30]contractor, ${ }^{64}$ spending an additional $\$ 1$ million over and above the amount approved for recovery in MERC's 2018 base rates. That $\$ 1$ million in additional spending was approved for recovery in the 2019 GUIC Rider. MERC proposed to continue this multi-year effort in the Company's currently-pending 2020 GUIC Rider filing, with work continuing into 2021. Consistent with the Company's request in its 2019 and 2020 GUIC Rider filings, the Company anticipates an additional 6,500 services will be inspected as part of this survey program in 2021 and anticipates these surveys in 2021 will be focused in the Southwest and Central regions of MERC's service area. MERC's proposed \$1 million spend for these inspections in 2021 is inline with previous forecasts (6,500 sewer surveys at approximately $\$ 150$ per survey) and supported by the Company's 2019 actuals. For comparison, and as explained below, MERC completed 6,621 inspections in 2019, at a cost of $\$ 999,938$. Continuing these surveys is important for the safety of the Company's system and for customers, as gas lines in sewer lines represent an immediate hazard.

In developing its sewer cross bore survey project, the Company developed phases of the project based on the assessment of a variety of risk factors, including: (1) high occupancy facilities where occupants have limited mobility, which may cause a significant delay in evacuation efforts should an incident occur (i.e., hospitals and nursing homes); (2) past cross bore activity; (3) high occupancy facilities where the occupants generally are able to quickly evacuate (i.e., schools, churches, and daycares); and (4) pipe vintage. Further, each work phase included only plastic pipe, which is more vulnerable to damage than steel pipe installations from sewer cleaning equipment; as such, plastic pipe installations are the primary focus of MERC's sewer cross bore survey. MERC's cross bore surveys completed to date have

[^31]focused on plastic pipe installed between September 1, 2000, to September 1, 2010, and the gas facilities of high occupancy areas, including schools, churches, daycares, apartment complexes, hospitals, and nursing homes. In 2021, the Company plans to begin targeting plastic pipe installed from September 1, 1990, to September 1, 2000, unless it can be proven that open trench installation was used. ${ }^{65}$

Again, as in past years, for 2021, the camera inspection of the sewer cross bore survey project will be outsourced because the Company has neither the internal expertise nor the equipment available to perform these specialized inspections. In accordance with MERC's currently-approved GUIC Rider, the true-up mechanism will ensure that actual program costs will be recovered, and any over- or under-recovery will be accounted for in the annual true-up process.

## d. GIS Service Line Mapping-\$1 Million O\&M

MERC is proposing $\$ 1$ million in incremental O\&M expense in 2021 to begin a new project under the Company's GUIC Rider - the GIS service line mapping project. This project is the next step in the Company's mapping project - a comprehensive effort to verify, compile, and map MERC's systems and data, and ultimately link the data to the Company's GIS. The proposed GIS service line mapping will allow MERC to more accurately "understand system design and material characteristics, operating conditions and environment, and maintenance and operating history," in accordance with PHMSA's Integrity Management Program for Gas Distribution Pipelines Rule (49 C.F.R. Part 192, subpart P). Currently, MERC does not have its service lines mapped to GIS, which creates challenges for identifying and remediating service line risks and also increases risks associated with third party damage.

49 C.F.R. 192.1007(a)(3) of PHMSA's DIMP regulations requires natural gas system operators to identify additional information needed and to develop a plan for gaining that

[^32]information over time through normal activities including design, construction, and operations or maintenance activities. MERC's GIS service line mapping project is intended to compile available information and to allow the Company to identify additional information necessary to understand and address risks on the Company's system.

MERC previously requested and received approval to recover a portion of costs for the two initial phases of its mapping project in base rates in Docket Nos. G011/GR-15-763 and G011/GR-17-563. The first phase related to developing the mapping systems and data that MERC's field personnel utilize to locate mains, manage outages, determine flow modeling, and undertake other critical infrastructure tasks. ${ }^{66}$ To improve the quality and utilization of the mapping systems, this phase of the project involved verifying as-built drawings and field data for main. This information allows MERC to verify age, materials, fittings, and similar system components of main, and supports required Minnesota Department of Transportation reporting. The second phase of the MERC mapping project, which began in 2016, involved compiling paper main and service line documentation and information and scanning paper documentation into a comprehensive database. This second phase "was the necessary prerequisite to enable future mapping and linkage to MERC's GIS." ${ }^{167}$

For background purposes, in MERC's 2015 rate case, Docket No. G011/GR-15-736, the Commission authorized costs totaling $\$ 600,000$-approximately $\$ 200,000$ for the main mapping phase of the project and $\$ 400,000$ for the service line documentation phase of the project. ${ }^{68}$ Later, in MERC's 2017 rate case, Docket No. G011/GR-17-563, the Commission allowed

[^33]$\$ 178,563$ in expense related to compiling the service line documentation into a comprehensive database. ${ }^{69}$

With this filing, MERC is proposing to begin the next phase of this project. Specifically, MERC is proposing a multi-year effort to map the presumed location of Company service lines based on known meter and main locations and use available technology to begin linking the service line information to the Company's GIS. This scope of work is necessary to link the service line information that was compiled during phase 2 of the project and to actually map the location of service lines into GIS. To ensure the accuracy of the mapped service lines in GIS, the Company proposes to use a third-party contractor to validate the location of the presumed lines, as MERC currently does not have internal resources to perform this work. MERC has forecasted $\$ 1$ million in 2021 for this multi-year effort based on preliminary cost estimates for this scope of work.

To date, MERC has not undertaken any steps to map its service line data to GIS. Thus, this proposed project is incremental from the scope of work previously approved in MERC's 2018 rate case. Moreover, completion of the service line mapping project is necessary to address the current data gap on MERC's system to allow the Company to identify and track risks, and to help prevent third-party damage from excavation activities.

The proposed service line mapping project qualifies as a "gas utility project" under the GUIC Statute, as this work is "necessary to determine the need for replacement or modification of existing infrastructure that is required by federal or state agency." More specifically, having data regarding the location and material infrastructure in the Company's GIS allows MERC to systematically analyze known risks on the Company's distribution system. This will further MERC's ability to comply with federal regulations that set standards for how operators validate

[^34]the integrity of gas distribution assets by identifying risks and evaluating and prioritizing repairs to mitigate the risks and threats. The costs associated with the Company's proposed service line mapping project are, therefore, recoverable under the GUIC Statute.

As with the other projects included in MERC's GUIC rider request, the reconciliation feature of the GUIC Rider will ensure that only actual costs will be recovered, and any over- or under-recovery will be accounted for in the annual true-up process.

## e. Excess Flow Valve Costs

On July 31, 2019, the Commission issued an Order Accepting Compliance Filings, Requiring MERC to Submit Additional Information, Requiring Annual Compliance Reporting, and Taking Other Action in Docket No. G999/Cl-18-41. In that Order, the Commission authorized recovery of EFV compliance costs through GUIC Rider filings, concluding:
[T]he cost to communicate with affected customers fit squarely within the definition of "gas utility infrastructure costs" under the GUIC statute, as the costs are related to the modification of existing infrastructure required by a federal or state agency. The Commission, as a state agency, has required the gas utilities to undertake the outreach, assessments, and installation of EFVs and natural gas service line shutoff valves, which give rise to such costs. Accordingly, the Commission will allow recovery of prudently incurred EFV costs through GUIC rider filings. ${ }^{70}$

As a result of the Commission's decision authorizing recovery of costs related to compliance with requirements in Docket No. G999/CI-18-41, MERC proposes to include its forecasted costs for customer communications to be incurred in 2021 in this GUIC Rider request.

As explained in MERC's August 1, 2019, Compliance Filing in Docket No. G999/CI-1841, MERC has proposed to visit approximately 20 percent of the decision-makers each year for identified customers who are eligible under the federal standards for EFVs and do not currently have an EFV or curb valve installed. Additionally, MERC proposed to utilize third-party

[^35]contractors to undertake the outreach and customer meetings as the Company does not have internal resources available to complete these meetings. Based on 3,696 customer visits, MERC provided the following estimate of costs to conduct face-to-face meetings:

| Table 8. Cost Estimate for EFV Customer Outreach |  |
| :--- | ---: |
| Face-to-Face meetings, including drive time (3,696 <br> customers) | $\$ 443,520$ |
| Engineering analysis to confirm eligibility for EFV <br> (3,696 customers) | $\$ 63,450$ |
| Total | $\$ 506,970$ |

Based on these cost estimates, MERC proposes to include 20 percent, or $\$ 101,384$, in O\&M expense related to EFV visits in the 2021 GUIC rider revenue requirement. MERC will true-up its actual 2021 costs related to EFV customer outreach in the 2021 true-up reconciliation to be filed in 2022.

Additionally, the Commission has determined that customers requesting installation of an EFV on an eligible existing service line should only be responsible for the cost of excavation and surface restoration related to the installation, and that the remainder of costs related to installation on existing service lines, as well as the costs related to maintenance of such requested installations, should be socialized to all ratepayers. ${ }^{71}$ At this time, MERC does not have a sense of whether customer visits will result in customer requests to install EFVs or curb valves. Thus, to the extent MERC's customer outreach does result in customer requests for installation of EFVs or curb valves, MERC proposes that the costs of those installations and any associated maintenance be deferred for recovery through MERC's 2021 true-up reconciliation to be filed in 2022.

[^36]
## B. Costs Proposed for Rider Recovery are Incremental

Minnesota Statutes section 216B. 1635 provides that only incremental costs shall be recoverable through an approved GUIC rider. In particular, gas utility projects that 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 GUIC report, but in no case longer than the one-year forecast period in the report, are recoverable through a GUIC rider. Further, the GUIC Statute authorizes recovery of incremental property taxes, incremental depreciation expense, and any incremental O\&M costs. ${ }^{72}$

The costs identified for recovery in the 2021 GUIC Rider as outlined in this filing reflect only incremental return on and of GUIC-eligible capital projects that are not included in rate base in MERC's most recent general rate case in Docket No. G011/GR-17-563 and incremental 2021 O\&M expense over and above costs that are included under existing base rates.

In MERC's 2019 GUIC Rider, the OAG took the position that the capital and O\&M costs MERC proposed for recovery through the GUIC rider were not incremental and therefore were not entitled to recovery under the GUIC Statute. The Commission rejected those arguments, concluding that "[b]oth the capital costs and the O\&M costs derive from new projects that are not currently reflected in the Company's base rates or the rates that will flow from the pending rate case; the costs are therefore incremental as required by the GUIC statute.,"33

Consistent with the clear language and intent of the GUIC Statute and the Commission's determinations in Docket No. G011/M-18-281, MERC's 2021 GUIC revenue requirement proposal is structured to ensure that there is no double recovery of costs, and the Company's true-up proposal ensures all costs are trued up to actuals. None of the costs that are proposed to be included in the GUIC Rider are included in rate base or base rates.

[^37]Consistent with MERC's approved 2019 GUIC Rider and pending 2020 GUIC Rider request, the Company will separately track the facilities that are replaced and removed in 2021 and will include an adjustment related to the associated depreciation expense in the true-up to be submitted in 2022 to fully account for that expense.

## C. Projects Do Not Connect New Customers or Constitute a Betterment

In accordance with Minn. Stat. § 216B.1635, subd. 1(1), the GUIC projects do not serve to increase revenues by connecting infrastructure to new customers. Therefore, no adjustment has been factored into the calculation of the GUIC rate for additional customer revenues. MERC is proposing to recover only those costs that will be incurred for the replacement of natural gas facilities located in the public right-of-way required by the construction of public projects, as well as to comply with federal, state, and local regulations that set standards for the safety, reliability, and integrity of MERC's gas distribution assets. As these projects represent safety and relocation activities, and not growth projects, no new customers are connected through these projects.

Additionally, in accordance with Minn. Stat. § 216B.1635, subd. 1(3), the projects and costs MERC has included for recovery through this filing do not constitute a betterment, unless the betterment is based on requirements by a political subdivision or a federal or state agency. The Commission has concluded that an improvement that goes "beyond repair or restoration" rises to the level of a betterment. ${ }^{74}$ The Commission has also stated that making the best engineering decision to restore pipe to its original, safe condition does not constitute a betterment. ${ }^{75} \mathrm{~A}$ utility is not required to use substandard materials to avoid a betterment, nor is a utility required to use materials that complicate, and potentially compromise, ongoing safety inspections of the utility's transmission system.

[^38]None of MERC's historic or proposed projects for right-of-way relocation or distribution integrity management work include increased pipeline capacity in response to a request by existing or new customers to increase capacity. MERC designs all of its integrity management capital replacement projects, including DIMP and right-of-way relocation projects based on flow modeling, engineering standards, best practices, and any applicable governmental mandates to safely and reliably meet existing customer demand (i.e., not to increase load). The projects proposed for inclusion in MERC's 2021 GUIC Rider, as well as the projects completed in 2019, do not serve to increase revenues by connecting new customers to MERC's distribution system.

Any change in the size of pipe installed to replace existing natural gas facilities is determined to be necessary and appropriate in accordance with standards for safety, reliability, and engineering practices, and is not designed to serve additional load. Occasionally, MERC's engineering design of integrity and right-of-way replacement projects does result in the installation of a larger pipe than was being replaced. For example, MERC may design a right-of-way project for the relocation of 2 " pipe located on one side of a road and $6 "$ pipe located on the other side of the road with a single 8 " pipe in order to reduce costs while continuing to serve the same customer load. MERC's right-of-way and DIMP projects are not designed to increase load or serve new customers. Changes in the overall quantity of pipe replaced also is often a result of the design of a right-of-way or obsolete material replacement project. In some circumstances, local governments also require dual main to be installed for new and replacement installations to minimize service crossings, resulting in more installed footage for the replacement of pipe.

## D. Details Regarding the Magnitude and Timing of Costs

Minnesota Statutes section 216B.1635, subdivision 4(2)(vi)-(viii) requires that a petition for approval to recover GUIC costs through a rider include information regarding (1) the magnitude and timing of any known future gas utility projects that the utility may seek to recover through the GUIC Rider; (2) 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; and (3) the magnitude of GUIC in relation to the gas utility's capital expenditures since its most recent general rate case. This information is provided in Exhibit H to this filing.

The projects included for recovery via the proposed GUIC Rider can often individually be relatively small in scope, but taken together can account for a material portion of MERC's ongoing capital investment. Capital spending in 2019 on GUIC-eligible right-of-way relocation projects and DIMP work was approximately $\$ 11.2$ million, representing approximately 14 percent of MERC's overall capital spending in 2019.

## E. Last General Rate Case and Need for Rider Recovery

Minnesota Statutes section 216B.1635, subdivision 4(2)(ix) requires that a GUIC rider petition identify 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.

MERC filed its last general rate case on October 13, 2018, in Docket No. G011/GR-17563 , with a 2018 test year and interim rates effective January 1, 2018. The Commission approved final rates in that proceeding effective July 1, 2019. ${ }^{76}$ As discussed in this Petition, as well as in Docket Nos. G011/M-18-281 and G011/M-19-282, since MERC's 2018 general rate case, the Company has continued to incur incremental capital and O\&M costs for the replacement of natural gas facilities located in the public right-of-way required by the construction or improvement of roads and other public works on behalf of governmental entities. Additionally, MERC has continued to implement multi-year programs under DIMP for the identification and removal of known risks on the Company's distribution system, consistent with applicable federal and state safety regulations and requirements. Recovery of such costs through the GUIC Rider under the GUIC Statute allows MERC to recover the costs associated

[^39]with these important investments outside of the framework of a time-intensive and costly rate case process, and helps to reduce rate volatility by introducing gradual rate increases to support the material, yet necessary, capital investments eligible for GUIC Rider recovery.

## F. Gas Infrastructure Project Plan Report

Minnesota Statutes section 216B.1635, subdivisions 2 and 3 require that a petition for approval of a GUIC Rider include a project plan report providing pertinent information and supporting data on each proposed project including estimated project costs. Additionally, Subdivision 4(2)(iii) of the GUIC Statute requires that the utility provide 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. The 2021 Project Plan Report is included as Exhibit G to this filing.

## G. 2019 True-Up Reconciliation

Minnesota Statutes section 216B.1635, subdivision(4)(2)(iv) requires that a petition for approval to recover GUIC Rider costs include "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." Similarly, in accordance with the Commission's February 5, 2019 Order issued in Docket No. G011/M-18-281, MERC provides support for "the reasonableness and prudence of all costs actually spent at the time of the true-up" in this filing. ${ }^{77}$ Consistent with the requirements set forth in the GUIC Statute, MERC also provides project-specific detail demonstrating its actual 2019 costs and recoveries for GUIC-eligible projects and includes all required project reporting information in Exhibits E, I, and J to this filing. In particular, Exhibit E provides details regarding MERC's actual 2019 relocation projects required to accommodate public projects in the right-of-way, including project descriptions, costs, and in-service dates;

[^40]Exhibit I is MERC's 2019 GUIC true-up calculation and tracker balance showing actual project costs and revenues through 2019; and Exhibit J provides details regarding MERC's actual 2019 obsolete materials replacement projects including project descriptions, project costs, and inservice dates.

In addition to the statutory true-up reporting requirement, the Commission, in its February 5, 2019 Order issued in Docket No. G011/M-18-281, ordered the Company to provide project-specific information related to right-of-way relocations and an adjustment related to depreciation expense to account for expense related to replaced and removed plant in MERC's 2019 true-up report. Further, in the Company's September 17, 2019, Reply Comments filed in Docket No. G011/M-19-282, MERC agreed to provide specific information related to right-ofway relocation costs, the obsolete materials replacement project, and incremental O\&M expense in the 2019 true-up report. This information is detailed below.

## 1. Overview of 2019 True-up

MERC has included the following expenses in the 2019 tracker and true-up adjustment:
(1) actual capital costs and in service dates for obsolete material replacements and right-of-way relocation projects placed into service in 2019, inclusive of an offset to account for depreciation expense related to replaced facilities;
(2) actual O\&M expense for sewer cross bore survey and meter set survey projects; and
(3) incremental O\&M expense related to right-of-way projects.

MERC has included actual costs for only those projects placed into service in 2019 in the 2019 true-up, as shown in Exhibits E, I, and J.

Exhibit I to this filing reconciles the 2019 GUIC tracker account balance and provides the actual costs related to the Company's 2019 GUIC projects, in detail. Table 9, below, shows a comparison of MERC's forecasted 2019 costs and revenue requirement included in the 2019
gas infrastructure project plan and compliance filing submitted in Docket No. G011/M-18-281 and the actual costs incurred and actual revenue requirement based on those costs.

| Table 9. 2019 Estimated and Actual GUIC Project Costs |  |  |
| :--- | :--- | :--- |
| GUIC Project | Forecast from Docket No. <br> G011/M-18-281 | Actual Costs Incurred <br> $\mathbf{( 2 0 1 9 )}$ |
| Right-of-Way Relocation | $\$ 5,300,000$ | $\$ 6,358,679$ |
| Obsolete Materials | $\$ 7,000,000$ | $\$ 4,882,974$ |
| Meter Set Survey | $\$ 2,000,000$ | $\$ 743,911$ |
| Sewer Cross-Bore Survey | $\$ 1,000,000$ | $\$ 999,938$ |
| Total Costs | $\$ 15,300,000$ | $\$ 12,967,547$ |
| Revenue Requirement | $\$ 3,626,315$ | $\$ 2,137,457^{78}$ |

As shown in Table 9 and discussed below, MERC's 2019 costs in total were less than forecasted in Docket No. G011/M-18-281. In particular, while right-of-way relocation costs exceeded MERC's forecast by over \$1 million, MERC's spending on obsolete materials replacement projects were less than forecasted. And while MERC's 2019 spending on the sewer cross bore survey project was almost exactly as forecasted, spending on the meter set survey project was below the budgeted amount. However, as shown in Table 10 below, MERC's actual revenue recoveries through 2019 were still less than the 2019 actual revenue deficiency based on the completed scope of work.

| Table 10. 2019 Over/(Under) Recovery |  |  |
| :--- | :--- | :--- |
| 2019 Surcharge Revenues <br> Collected | 2019 Revenue Deficiency | Over/(Under) Recovery |
| $\$ 1,497,598$ | $\$ 2,137,457$ | $(\$ 639,859)$ |

This under-recovery balance has been incorporated into MERC's 2021 GUIC rider revenue deficiency calculation, as shown in Exhibit D to this filing, to be recovered through the 2021 GUIC Rider surcharge rates.

In Docket No. G011/M-18-281, the Commission ordered MERC to calculate its 2019 GUIC Rider rate factor based on a full 12 months of sales to help smooth the increase to customer rates, noting that any resulting under-recovery of 2019 GUIC costs can be addressed

[^41]in a future rider proceeding. ${ }^{79}$ Ultimately, MERC's 2019 GUIC rider was not implemented until May 2019. As a result, MERC's per-therm GUIC Rider surcharge rate was calculated to recover the forecasted revenue deficiency over 12 months (January 2019 through December 2019) while the charge was actually in place for only 8 months (May 2019 through December 2019). Notably, the excluded months (January through April) include much of the winter heating season, reflecting the higher usage periods of the year. MERC's February 7, 2019, Compliance Filing reflected $877,001,389$ therms of forecasted sales utilized to calculate the 2019 per therm surcharge rate. As reflected in Exhibit I, MERC actually collected GUIC surcharge revenue on 362,614,528 therms in 2019.

In addition to the delays in implementation of the 2019 GUIC Rider surcharge rate and the Commission's decision to apply the surcharge based on a presumed 12 months of usage, as discussed above, on June 28, 2019, MERC requested authorization from the Commission to suspend collection of its 2019 GUIC Rider surcharge from its Direct Connect customers in response to threats by those customers of potential bypass as a result of the GUIC and NGEP rider surcharges. On August 26, 2019, the Commission issued an Order Suspending GUIC Rider Surcharge for Direct Connect Customers, and Declining to Reopen NGEP Cost Rider Docket in Docket Nos. G011/M-18-182, G011/M-18-281, G011/M-19-282, and G011/M-17-563, concluding that "the Direct Connect Customers can credibly threaten to bypass MERC's system, and that the combined effects of the GUIC and NGEP rider surcharges are sufficient to potentially motivate a Direct Connect customer to bypass MERC's system." The Commission approved MERC's proposal to suspend its GUIC Rider surcharge for Direct Connect customers and required that the Company address any potential refunds or surcharges in its next GUIC rate factor adjustment and true-up filings. ${ }^{80}$

[^42]As a result of MERC's suspension of the 2019 GUIC rider surcharge rate of $\$ 0.00413$ per therm applicable to Direct Connect customers effective August 26, 2019, MERC calculates that approximately $\$ 346,000$ of revenues that would have been collected from the Direct Connect customer class, were not recovered for the period August 26, 2019, through December 31, 2019. As discussed above, MERC has proposed to incorporate the total 2019 underrecovery in its 2021 revenue deficiency for recovery in 2021 , inclusive of the foregone revenues resulting from the suspension of the GUIC Rider surcharge for the Direct Connect customers. MERC is proposing to establish surcharge rates by customer class in 2021 based on consideration of the revenue apportionment approved in Docket No. G011/GR-17-563, the risk of bypass posed by the Company's Direct Connect customers, and other relevant considerations. This rate design approach appropriately allocates GUIC costs, including the under-recovery of costs resulting from the suspension of the 2019 GUIC Rider for the Direct Connect class, across MERC's customers based on rate design considerations and the benefits derived from these GUIC investments. Addressing the unrecovered revenues associated with suspension of the GUIC Rider for Direct Connect customers through the true-up mechanism is appropriate given the 2019 GUIC costs are necessary, reasonable, and prudent costs incurred to facilitate public infrastructure projects and address known risks on the distribution system, which provide significant benefits to MERC's non-Direct Connect customers.

MERC provides details regarding each project's 2019 actual costs, performance, and achievements below.

## 2. Right-of-Way Relocations - Capital Projects

In its February 5, 2019 Order issued in Docket No. G011/M-18-281, the Commission stated that the amount associated with right-of-way relocations "will be trued up annually to actual costs, eliminating any possibility that forecasting will result in overrecovery." ${ }^{81}$

[^43]Additionally, in its April 25, 2019, Order Approving Compliance Filing, issued in Docket No. G011/M-18-281, the Commission provided that "[w]hen MERC submits its annual GUIC true-up filing, it will submit the project-specific information required by Minn. Stat. § 216B.1635, subds. 3-4, at which point the Commission will review the projects and costs for reasonableness and prudence." ${ }^{82}$

Exhibit $E$ to this filing provides project-specific information required pursuant to the GUIC Statute for MERC's right-of-way relocation projects completed and placed into service in 2019. This exhibit includes a description for each project, the governmental entity requiring the relocation work, the date the project was completed and placed into service, the main installation costs and amounts, any main removal costs and number of services replaced, service line replacement costs, and capital costs for internal labor, vehicles, and overhead associated with each specific project.

With respect to information regarding installation and retirement quantities and size, as discussed above, in some cases, MERC's engineering design of integrity and right-of-way replacement projects results in the installation of different size or quantity of pipe than was replaced. For example, MERC may design a right-of-way project for the relocation of 2" pipe located on one side of a road and 6 " pipe located on the other side of the road with a single 8" pipe in order to reduce costs while continuing to serve the same customer load. Additionally, in some circumstances, local governments require dual main to be installed for new and replacement installations to minimize service crossings, resulting in more installed footage for the replacement of pipe relative to what is retired. Finally, after right-of-way relocation and obsolete material replacement projects are completed, MERC must manually compile and account for the installed and retired facilities for tracking purposes. As of the time of this filing, MERC was continuing to update and verify some specific project information.

[^44] Rider, Docket No. G011/M-18-281, Order Approving Compliance Filing at 2 (Apr. 25, 2019).

As noted above, MERC's actual 2019 right-of-way relocation project costs significantly outpaced the Company's forecasted costs as approved in Docket No. G011/M-18-281 due to the scope of road and other public work projects across the state. In particular, MERC completed 78 right-of-way relocation projects during 2019 or 1 more than the Company had forecasted in Docket No. G011/M-18-281 based on the average number of right-of-way relocation projects required between 2015 and 2017. MERC's total capital costs for 2019 right-of-way relocation projects completed in 2019 was $\$ 6,340,724-\$ 1,022,769$ greater than MERC had forecasted in Docket No. G011/M-18-281. Additionally, as discussed below, MERC incurred incremental O\&M expense related to four right-of-way projects completed in 2019.

| Table 11. Right-of-Way Projects |  |  |
| :--- | :--- | :--- |
|  | Forecast from Docket No. <br> G011/M-18-281 | $\mathbf{2 0 1 9}$ Actual |
| Costs | $\$ 5,300,000$ | $\$ 6,358,679^{83}$ |
| \# of Projects | 77 | $78^{84}$ |

In its September 17, 2019, Reply Comments filed in Docket No. G011/M-19-282, MERC stated that "[w]ith respect to the Company's 2019 . . . GUIC-eligible ROW projects, MERC intends to track the full project costs (inclusive of restoration) for purposes of calculating any true-up. However, there may be cases where restoration or removal work is not completed before the true-up is prepared for filing. In such cases, MERC proposes to defer those subsequent restoration costs for recovery either in the next year's GUIC rider true up or in a subsequent rate case filing." ${ }^{85}$

Consistent with this agreement, MERC has tracked the full project costs for GUICeligible right-of-way projects and has incorporated these costs into the 2019 true-up, as

[^45]demonstrated in Exhibit E. As discussed previously in Docket No. G011/M-19-282, restoration costs for construction projects are properly accounted for as a project cost. With respect to removal costs, under FERC accounting, removal costs are charged to the accumulated depreciation account rather than capitalized as part of the replacement project. MERC has accounted for 2019 removal costs in accordance with FERC accounting requirements (i.e., by recording such removal costs to accumulated depreciation), as shown in Exhibit I. To the extent MERC incurs any additional costs associated with restoration, those costs will be tracked for future true-up and recovery.

## 3. Incremental O\&M Expense for Right-of-Way Projects

In the Company’s September 17, 2019, Reply Comments filed in Docket No. G011/M-19-282, the Company stated that "while MERC did not forecast any incremental O\&M costs for its 2020 ROW relocation projects or obsolete materials replacement projects, the Company noted that if O\&M costs are incurred, the Company would address them in its true-up reconciliation filing." ${ }^{86}$ MERC agreed "that if the Company incurs O\&M expense associated with actual ROW relocation and DIMP projects... it will provide details regarding the amount of the expense, the account number to which it is charged, and an explanation of how the expense fits within the GUIC-rider." ${ }^{\text {"7 }}$ MERC further agreed "that it will only request recovery of such O\&M expense to the extent it is incremental (i.e., not being recovered in existing base rates)." ${ }^{88}$

MERC made this commitment in its currently-pending 2020 GUIC Rider proceeding in conjunction with 2020 actuals; however, in the interest of consistency, the Company applies its commitment to O\&M expense reporting to the 2019 actuals addressed in this filing. For 2019, MERC incurred incremental O\&M expense for four right-of-way relocation projects, totaling approximately $\$ 18,000$. Table 12, below, summarizes the amount of the expense and the

[^46]account number to which it is charged, and explains how the expense fits within the GUIC Rider. Additional details regarding each of these right-of-way relocation projects is included in Exhibit E.

Table 12. Incremental O\&M for 2019 Right-of-Way Relocation Projects

| Table 12. Incremental O\&M for 2019 Right-of-Way Relocation Projects |  |  |  |
| :--- | :--- | :--- | :--- |
| Project | Account Number | Amount of Expense | GUIC-Rider Eligibility |
| Floodwood (MNDOT) - <br> lowered main for state <br> road project | FERC Account 887.00 | $\$ 2,247$ | Modification of existing <br> natural gas facilities by <br> lowering pipe |
| Elgin -adjust main so <br> as to not interfere with <br> new storm main | FERC Account 887.00 | $\$ 3,143$ | Modification of existing <br> natural gas facilities by <br> lowering pipe |
| Ortonville - lowered <br> main for city road <br> project not originally in <br> conflict | FERC Account 887.00 | $\$ 10,915$ | Modification of existing <br> natural gas facilities by <br> lowering pipe |
| Detroit Lakes - adjust <br> main in conflict with city <br> project | FERC Account 887.00 | $\$ 1,650$ | Modification of existing <br> natural as facilities by <br> lowering pipe |

These four projects reflect unique circumstances under which a governmental entity requires relocation of natural gas facilities located within the public right-of-way to accommodate a road or other public project. However, due to the location of the natural gas facilities affected and the proposed project, MERC was able to address the relocation by lowering existing natural gas facilities rather than replacing those facilities at a new location. Because such projects do not involve the installation of any new pipe or other facilities, they are appropriately accounted for as O\&M expense rather than capitalized. These main lowering projects were completed by MERC's construction contractor, consistent with other capital right-of-way relocation work, and only third-party contractor expense is included in the true-up. Any costs associated with internal labor have been excluded. Such projects are new, incremental projects that were undertaken in 2019, and therefore not reflected in the Company's current base rates as approved in Docket No. G011/GR-17-563.

Inclusion of these costs in the 2019 true-up is consistent with the GUIC Statute. In particular Minn. Stat. § 216B.1635, subd. 1(a)(c)(2) defines "gas utility project" as "the 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." Each of the four projects listed above required the Company to modify its existing infrastructure by lowering existing pipe to perform required state agency work. For example, Elgin Township required that the Company adjust the existing location of its pipe so as to not interfere with the installation of a new storm main. Further, Minn. Stat. § 216B.1635, subd. 4 provides that the Commission may approve recovery 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."

Because the incremental O\&M costs for these 2019 right-of-way relocation projects fall under the GUIC statue and are, therefore, eligible for recovery in the Company's GUIC Rider, MERC has included approximately $\$ 18,000$ for incremental O\&M expense in its 2019 true-up calculation.

## 4. Obsolete Materials Replacement Project

In its September 17, 2019, Reply Comments, filed in Docket No. G011/M-19-282, the Company agreed to report on its Aldyl-A project accomplishment details in this annual true-up filing, including, by project site. Specifically, MERC agreed to provide information regarding (1) locational description of work completed; (2) associated work order number(s); (3) size of AA pipe mains replaced; (4) size of replacement pipe installed; (5) footage of main replaced; (6) total costs net of embedded labor, vehicles, fuel, overhead, etc.; and (7) total replacement costs. ${ }^{89}$

Exhibit J to this filing includes the above information with respect to MERC's 2019 obsolete materials replacement projects including replacement of Aldyl-A, X-Trube, and bare steel. This exhibit includes a description for each project, the governmental entity requiring the

[^47]relocation work, the date the project was completed and placed into service, the main installation costs and amounts, any main removal costs and number of services replaced, service line replacement costs, and capital costs for internal labor, vehicles, and overhead associated with each specific project.

With respect to installation and retirement quantities and size, as discussed above, in some cases, MERC's engineering design of integrity and right-of-way replacement projects results in the installation of different size or quantity of pipe than was replaced. Additionally, in some circumstances, local governments require dual main to be installed for new and replacement installations to minimize service crossings, resulting in more installed footage for the replacement of pipe relative to what is retired. Finally, after right-of-way relocation and obsolete material replacement projects are completed, MERC must manually compile and account for the installed and retired facilities for tracking purposes. As of the time of this filing, MERC was continuing to update and verify some specific project information.

MERC forecasted $\$ 7$ million in 2019 for the replacement of obsolete materials under the obsolete materials replacement project. As shown in Table 13 and Exhibit J, actual capital costs for 2019 obsolete materials replacement projects were $\$ 4,882,974$. MERC's actual spending in 2019 was below the Company's forecast due to the Company's efforts to balance actual spending on right-of-way relocation projects against obsolete materials replacement projects, in an effort to stay within the overall 2019 GUIC capital budget as filed. There were a number of right-of-way projects that were planned for late fall 2019 that did not occur in 2019, resulting in an overall under-spend on 2019 capital projects under the GUIC Rider.

MERC replaced approximately 60,000 feet of Aldyl-A main in 2019 through the obsolete materials replacement project and approximately 500 service lines in connection with those Aldyl-A replacement projects.

| Table 13. 2019 Obsolete Materials Replacement Projects |  |  |
| :--- | :--- | :--- |
|  | Forecast from Docket No. <br> G011/M-18-281 | $\mathbf{2 0 1 9}$ Actual |
| Costs | $\$ 7,000,000$ | $\$ 4,882,974$ |
| Footage of Aldyl-A Main <br> Replaced | 59,554 (Aldyl-A) | 63,992 |
| \# of Aldyl-A Service Lines <br> Replaced | 727 (Aldyl-A) | 502 (Aldyl-A) |

Additionally, during 2019, as shown in Exhibit J, MERC replaced 205 X-Trube service lines in the following locations:

| Table 14. 2019 X-Trube Services Replaced |  |
| :---: | :---: |
| Town | \# of Services Replaced |
| Bemidji | 50 |
| Chatfield | 2 |
| Preston | 1 |
| Caledonia | 3 |
| Eyota | 1 |
| Harmony | 79 |
| Lanesboro | 1 |
| Mabel | 4 |
| Pine Island | 1 |
| Rochester | 6 |
| Thief River Falls | 56 |
| Total | 204 |

Finally, as shown in Exhibit J, MERC completed two bare steel replacement projects in 2019.

## 5. Depreciation Expense Adjustment for Replaced Facilities

In Docket No. G011/M-19-282, both the OAG and the Department recommended that MERC include in its revenue requirements calculation a forecasted offset for depreciation expense associated with the facilities to be removed or replaced as a result of right-of-way and DIMP work. ${ }^{90}$ As explained in the Company's April 24, 2019, petition and September 17, 2019, reply comments filed in Docket No. G011/M-19-282, and consistent with the treatment approved

[^48]by the Commission in MERC's 2019 GUIC Rider proceeding in Docket No. G011/M-18-281, because the specific facilities to be replaced are not known with certainty, the Company proposed to account for replaced and removed plant and to include an adjustment related to the associated depreciation expense in this true-up filing. ${ }^{91}$ The adjustment related to replaced or removed assets would be limited to the depreciation expense associated with the replaced assets. The assets to be replaced are all pipes and valves and are accounted for using group depreciation accounting. ${ }^{92}$

Consistent with the Company's commitment, MERC has accounted for the replaced plant and associated reduction to depreciation expense for retirements recorded in 2019. Exhibit I includes an adjustment to fully account for depreciation expense associated with facilities removed and replaced as a result of right-of-way and DIMP work. In 2019, MERC has reflected a reduction to depreciation expense of $\$ 6,957$. Of this, $\$ 1,612$ is associated with main retirements of $\$ 758,252$ and $\$ 5,344$ is associated with service retirements of $\$ 541,154$. As a result of the 2019 retirements, MERC has reflected reductions to depreciation expense of \$26,690 on an annualized basis for both 2020 and 2021.

As discussed above, MERC has not forecast 2020 or 2021 retirements and associated depreciation expense adjustments but will separately account for the retired facilities that are removed in 2020 and 2021 and will include adjustments related to the associated depreciation expense in the true-up filings to be submitted in 2021 and 2022 respectively to account for that expense.

## 6. Meter Set Surveys

Table 15 below shows the Company's 2019 actual costs for meter surveys completed in Rochester and Rosemount in 2019.

[^49]| Table 15. 2019 Meter Set Surveys |  |  |
| :--- | :--- | :--- |
|  | Forecast from Docket No. <br> G011/M-18-281 | 2019 Actual |
| Costs | $\$ 2,000,000$ | $\$ 743,911$ |
| \# of Surveys | 70,000 | 81,732 |

While the Commission approved a 2019 forecast for MERC's meter surveys in the amount of $\$ 2$ million, due to lower-than-anticipated bids to complete the meter set survey work, costs for the scope of work completed in 2019 was lower (per meter) than originally forecast. As a result, MERC was able to complete slightly more meter surveys than forecasted at a significantly lower overall cost in 2019. In particular, MERC completed a total of 81,732 meter surveys during 2019, approximately 11,732 more surveys than the 70,000 surveys forecasted in Docket No. G011/M-18-281.

Prior to issuing the request for proposals for 2019 surveys to be completed in Rochester and Rosemount, MERC requested cost estimates from its construction contractor to complete the work in 2019. That contractor, who has significant familiarity with MERC's system, provided a per-meter cost estimate to complete the surveys in the Rosemount and Rochester areas. ${ }^{93}$ On February 5, 2019, MERC issued a request for proposals ("RFP") for its 2019 meter set surveys. Based on responses received to that RFP, MERC awarded contracts to two contractors in 2019. The 2019 meter set surveys were completed by those contractors in 2019 at a per-meter cost plus additional costs for customer outreach, contractor supplies, and charges for applicable hourly rates for gas emergency response.

MERC has accounted for the 2019 actuals for meter set surveys in its true-up calculation such that only actual costs are recovered for 2019.

[^50]
## 7. Sewer Cross Bore Surveys

As explained in Docket No. G011/M-18-281, MERC's first GUIC Rider filing, MERC issued an RFP to obtain bids for a third-party contractor to complete 7,000 sewer cross bore surveys beginning in 2019. Based on responses to that RFP, MERC selected a contractor to begin these assessments in 2019, at a cost of approximately $\$ 150$ per sewer survey. For 2019, the Company requested cost recovery in the amount of $\$ 1,000,000$ based on a forecast of 7,000 surveys at approximately $\$ 150$ per survey ${ }^{94}$, and the Commission authorized recovery in that amount through the GUIC Rider for MERC's 2019 Sewer Cross-Bore Survey work.

In 2019, MERC completed 6,621 sewer surveys. As shown in Table 16 below, the Company's 2019 actual spend for the survey work is almost identical to the amount authorized by the Commission.

| Table 16. 2019 Sewer Cross Bore Surveys |  |  |
| :--- | :--- | :--- |
|  | Forecast from <br> Docket No. <br> G011/M-18-281 | $\mathbf{2 0 1 9}$ Actual |
| Costs | $\$ 1,000,000$ | $\$ 999,938$ |
| \# of Surveys | 7,000 | 6,621 |

MERC has accounted for the 2019 actuals for sewer cross bore surveys in its true-up such that only actual costs incurred for meter set surveys completed in 2019 are accounted for in the true-up calculation.

## H. Reasonableness and Prudence of GUIC Project Costs

Minnesota Statutes section 216B.1635, subd. 4(2)(iv) requires MERC to describe the Company's efforts to ensure the costs of the facilities are reasonable and prudently incurred. In general, and as explained throughout this Petition, MERC's multi-year distribution integrity and safety initiatives are prudent, in themselves, as these initiatives serve to ensure the safety and reliability of MERC's distribution system. Cost recovery for these projects through the

[^51]Company's GUIC Rider is also prudent, as use of the rider helps to reduce rate volatility by introducing gradual rate increases, allows for prompt recovery, and is subject to frequent regulatory review. Moreover, the proactive approach to distribution system safety and integrity management allowed for under the GUIC Statute and through the GUIC Rider benefits customers and results in reasonable costs as work undertaken systematically and strategically reduces costs compared to work undertaken in a reactionary manner, and allows MERC to engage in regional planning to minimize inconvenience and costs to customers.

Specific to MERC's GUIC project costs, the Company employs a strict and comprehensive oversight and review process to ensure that costs are tracked and are reasonable in comparison to forecasted amounts. MERC has implemented significant costcontrol and oversight measures to ensure the reasonableness and prudence of costs as detailed below, and is continually seeking opportunities to expand on the measures already in place.

## 1. Cost Control Measures

The Company's budgeting review and oversight process helps MERC achieve the lowest possible costs for projects undertaken and helps ensure projects and associated costs are appropriately evaluated and prioritized. In developing budgets for future distribution integrity and relocation work, the Company considers historical experience with right-of-way relocation projects and integrity work. All expenditures for GUIC projects must go through the Company's capital and O\&M budgeting process. Company personnel familiar with these projects and project budgets closely monitor capital expenditures in relation to approved budgets to ensure that all costs incurred are reasonable and prudent.

Further, MERC has negotiated a blanket construction contract with its construction contractor for the performance of the majority of the Company's construction work. The majority of the Company's obsolete material and right-of-way relocation projects have been and continue to be performed under this blanket, working as a significant cost control measure. For many
years, MERC's blanket rates have proven to be the lowest rates, even when bid, and are generally the Company's most prudent option to complete projects.

Additionally, under MERC's blanket construction contract, the Company has been able to designate specialized crews to perform much of the obsolete material replacement work. This strategy has helped to ensure the overall reasonableness of project costs because: (1) crews are specialized in the work performed, allowing minimal interruptions and leading to more timely completions; (2) projects are performed on a more consistent basis, allowing for charges to be evenly spread throughout the year; and (3) MERC is better able to manage and plan for future work. Directly to the third point, MERC has held bi-weekly meetings with the contractor to discuss all ongoing and upcoming work in each area. By designating crews specific to the obsolete materials work, MERC could better plan for the construction season and minimize any interruptions of the crews, leading to the completion of work in a more efficient and costeffective manner.

## 2. Financial and Operational Oversight

MERC also utilizes substantial and continuous financial and operational oversight to help ensure that costs incurred for GUIC projects are reasonable and prudent. With respect to financial oversight, the Company monitors major capital expenditures, including GUIC, on a monthly basis to ensure that these charges are reasonable. Capital expenditures are also presented to reviewed each month against budgets and goals. Additionally, each invoice received for GUIC project work is reviewed for accuracy and compared to the designed or estimated quantities to ensure charges are accurate.

For operational oversight, specified Company personnel oversee the DIMP and relocation projects. These personnel communicate with the Company's contractors throughout the construction periods to discuss the status of ongoing and future work, and suggest opportunities for efficiency, like the use of specialized crews for the obsolete materials replacement program, discussed above. And, as explained above, personnel closely monitor
charges associated with the projects included in the GUIC Rider for reasonableness and accuracy.

## 3. Outsourcing to Third-Party Contractors

In general, MERC uses internal resources when the scope of the work to be performed falls within the purview and competencies of the Company, and such internal resources are available. However, due to the large scope of MERC's GUIC projects and the nature of MERC's dispersed service territory, it is necessary for MERC to engage third-party contractors to perform certain aspects of work associated with GUIC projects. For example, the sewer cross bore survey project is outsourced because the Company has neither the internal expertise nor the equipment available to perform the specialized inspection aspect of the program. As discussed previously, MERC issued RFPs for the 2019 sewer cross bore and meter survey work that was performed to obtain competitive bids and pricing. As discussed in Docket No. G999/Cl-18-41, MERC is utilizing third-party contractors to assist with customer outreach efforts related to EFVs because the Company does not have internal resources available to conduct these efforts. Outsourcing these particular projects helps avoid costs related to the purchase of expensive equipment and hiring additional internal resources to perform specialized work.

When third-party contractors are needed, internal and external monitors are in place to ensure that contractor performance is compliant with state and federal standards and costs associated with outsourced work are reasonable. Audits are periodically performed on all crews and copies of those audits are supplied to the Company for inspection. MERC personnel also perform random audits to verify third-party contractor compliance with the Company's procedures and standards, state and federal code, and project-specific requirements. If work is not performed to the Company's specifications, the work is corrected at no expense to MERC. Moreover, all contractor employees are trained on the Company's standards and procedures and qualified to perform requested tasks. Cost review measures are in place as each invoice
received for the work performed by third-party contractors is reviewed for accuracy and compared to the designed or estimated quantities to ensure charges are reasonable.

Moreover, contractual provisions governing contractor performance serve as measures to ensure costs are prudently incurred. The contractual agreements under which MERC's distribution integrity and right-of-way relocation work is performed shield the Company from unexpected costs resulting from the contractor operating outside project specifications. For example, if work is performed outside the project scope without prior approval, the contractor's invoice is subject to non-approval and non-payment. Other provisions addressing the warranty of work, suspension of work, and work changes also serve as control measures.

## III. GUIC RIDER CALCULATION, IMPLEMENTATION, TRACKER, AND TARIFF

## A. Revenue Requirement Calculation

In accordance with Minn. Stat. § 216B.1635, subd. 4, MERC's 2021 revenue requirement calculation, as attached in Exhibit D, includes the currently-authorized rate of return, incremental income taxes, and incremental depreciation expense, related to GUIC investments through 2021, inclusive of the applicable GUIC capital expenditures forecasted in 2020 and actual GUIC-eligible projects completed and placed into service in 2019, along with forecasted 2021 O\&M expense.

MERC calculated the 2021 revenue requirement of $\$ 6,007,824$ based on recovery of the annual depreciation and return on the Company's forecasted 2020 and 2021 spending for capital replacement projects, depreciation and return on MERC's actual 2019 capital projects, and 2021 planned O\&M project costs as discussed above. The 2019 GUIC Rider approved capital projects and pending 2020 GUIC Rider capital projects impact the 2021 revenue requirement as they are still being depreciated and still earning a return in 2021, but have yet to be incorporated into base rates via a rate case. At this time, MERC has not forecasted incremental O\&M or property tax expense related to the 2021 right-of-way relocations or
obsolete materials projects. To the extent that actual expenses are identified as those projects progress in 2021, MERC will seek recovery via the GUIC reconciliation in $2022 .{ }^{95}$

Additionally, MERC's 2021 revenue requirement calculation has been adjusted to account for the 2019 true-up adjustment of $\$ 639,859$ related to the under-recovery of actual GUIC project costs incurred in 2019. As discussed above, the revenues collected through the Company's $\$ 0.00413$ per therm surcharge rate effective May 1, 2019, through December 31, 2019, were $\$ 1,497,598$, while the Company's actual 2019 revenue requirement based on actual GUIC projects completed and placed into service was $\$ 2,137,457$, resulting in an underrecovery of the actual 2019 GUIC revenue deficiency equal to $\$ 639,859$.

The calculation of the revenue requirement was performed using (1) the applicable tax rate under the 2017 Tax Cuts and Jobs Act ("TCJA") ${ }^{96}$; (2) the 9.7 percent return on equity authorized in MERC's 2018 rate case, Docket No. G011/GR-17-563; and (3) prorated accumulated deferred income taxes ("ADIT") in compliance with Internal Revenue Service normalization rules. In particular, the tax gross-up factor of 1.402 reflects the gross revenue conversion factor approved in MERC's 2018 test year rate case in Docket No.G011/GR-17-563. MERC proposes that the GUIC surcharge rate be based on the 2018 test year final authorized weighted average cost of capital of 6.6971 as approved in Docket No. G011/GR-17-563. As shown in Exhibit D, the 2021 revenue requirement is calculated based on the 13-month average incremental addition to rate base. MERC has also included a proration of the projected federal monthly ADIT, per the formula provided in the Treasury Reg. 1.167(1)-(h)(6)(ii).

[^52]For purposes of the true-up, the proration requirement does not apply to the differences between the projected and actual ADIT. Furthermore, pursuant to some recent IRS private letter rulings ("PLRs"), the true-up cannot reverse the effects of the proration. As a result, for the true-up, the Company would propose to adjust the prorated ADIT with the 13-month average of the differences between projected and actual ADIT balances. This methodology preserves the original proration requirement embedded in the projected rates, avoids applying the proration to the projected versus actual differences, and assures the Company complies with the Consistency rule, Code $168(\mathrm{i})(9)(\mathrm{B})$ (applying a 13-month average to all components of rate base). The proration and the true-up adjustment will have a minimal impact on the GUIC Rider rate as proposed, ensures compliance with IRS normalization rules, and do not justify delaying implementation of MERC's GUIC Rider. This approach is consistent with MERC's proposal in Docket No. G011/M-19-282, which the Department did not oppose. ${ }^{97}$

## B. Proposed Rate of Return

The GUIC Statute allows a utility to recover a rate of return on rider investments and provides that the rate "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." ${ }^{98}$ In MERC's 2019 GUIC Rider, the Commission set the rate of return for the GUIC rider equal to MERC's authorized rate of return in the Company's then-pending 2018 general rate case. The Commission expressly rejected the OAG's proposal to set the rate of return equal to the cost of long-term debt, noting that "MERC's GUIC investments are financed through a mix of equity and debt financing, and concluded that MERC's overall rate of return, which reflects a mixture of equity and debt risk, is the most reasonable rate for its GUIC rider."99

[^53]Consistent with the calculations proposed in the Company's 2020 GUIC Rider in Docket No. G011/M-19-282, MERC proposes that the 2021 GUIC revenue deficiency calculation be based on the 2018 test year final authorized weighted average cost of capital of 6.6971 as approved in Docket No. G011/GR-17-563 and the associated gross revenue conversion factor of 1.402. Exhibit D summarizes those revenue requirement calculations. In Docket No. G011/M-19-282, the Department agreed with MERC's use of the Commission's recentlyapproved overall rate of return calculated by using the approved return on equity of 9.70 percent and capital structure, as determined in the Company's recent rate case. ${ }^{100}$ The application of MERC's rate of return in Docket No. G011/GR-17-563continues to be reasonable, appropriate, and consistent with the public interest.

## C. Proposed Sales Forecast, Allocation by Customer Class, and Surcharge Rates by Customer Class

Minnesota Statutes section 216B.1635, subdivision 4(2)(v) provides that a utility's petition for approval of a rate schedule to recover GUIC costs outside of a general rate case must include "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."

Consistent with MERC's currently-pending 2020 GUIC Rider in Docket No. G011/M-19282, MERC proposes to establish GUIC surcharges by customer class for its 2021 GUIC Rider. In particular, MERC proposes the following surcharges for the recovery of its 2021 GUIC revenue requirements as calculated in Exhibit D, over 12 months of forecasted sales in 2021.

[^54]| Table 17. Proposed 2021 GUIC Rider Surcharge Rates |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| Customer Class | Proposed <br> GUIC Rider <br> Surcharge | Average <br> Annual Cost | Total \$ | \% of 2021 <br> GUIC <br> revenue <br> requirement |
| Residential 101 | $\$ 0.02148$ | $\$ 19$ | $\$ 4,154,802$ | $62.5 \%$ |
| Class 1 \& 2 Firm (Sales and <br> Transport) | $\$ 0.01143$ | $\$ 57$ | $\$ 1,326,777$ | $20.0 \%$ |
| Class 1 \& 2 Interruptible <br> (Sales and Transport), Class <br> 1 \& 2 Grain Dryer, Class 1 <br> Electric Generation | $\$ 0.01143$ | $\$ 459$ | $\$ 235,429$ | $3.5 \%$ |
| Class 3 \& 4 Firm (Sales and <br> Transport) | $\$ 0.00397$ | $\$ 762$ | $\$ 19,808$ | $0.3 \%$ |
| Class 3 \& 4 Interruptible <br> (Sales and Transport); Class <br> 3 Grain Dryer | $\$ 0.00397$ | $\$ 7,471$ | $\$ 747,148$ | $11.2 \%$ |
| Class 5, FLEX, Class 2 <br> Electric Generation, <br> Transport-for-Resale | $\$ 0.00166$ | $\$ 1,195$ | $\$ 163,720$ | $2.5 \%$ |
| Direct Connect ${ }^{102}$ | $\mathrm{~N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |  | $\$ 0$ |
| Total |  | $\$ 6,647,684$ | $100 \%$ |  |

As discussed below, this proposed rate design is reasonable and consistent with the public interest based on consideration of the revenue apportionment approved in Docket No. G011/GR-17-563, the potential risk of bypass posed by the Company's Direct Connect customers, and other rate design considerations. It is simplified into four general categories by customer usage classification and provides that sales and transportation customers pay the same GUIC rate based on their size, not their service type, because the type of service the customer is taking is not affected by the type of projects that are being recovered through the GUIC rider.

[^55]
## 1. 2021 Forecasted Sales by Customer Class

As shown in Exhibit D, MERC has developed a 2021 Minnesota jurisdictional sales forecast by customer class in order to allocate the 2021 revenue deficiency and determine the per-therm rate for each applicable customer class. MERC utilized the same methodology and approach to developing this 2021 sales forecast as was used to develop the sales forecasts that were submitted in Docket No. G011/GR-17-563. Consistent with MERC's proposal in Docket No. G011/M-19-282 to exclude the Direct Connect customers from the 2020 GUIC rider surcharge and consistent with the Commission's decision in Docket No. G011/M-18-182 to exclude MERC's Michigan customer from the NGEP rider surcharge, Michigan sales should be excluded from the 2020 GUIC rider. The resulting total Minnesota jurisdictional sales for purposes of determining the 2021 GUIC rider surcharge rates is $876,307,816$ therms. Adjusting for the continued suspension of the GUIC Rider Surcharge for all of MERC's Direct Connect customers, as discussed below, results in total GUIC-eligible sales for 2021 of 622,006,123 therms. Table 18 below summarizes MERC's 2021 forecasted sales by customer class.

| Table 18. 2021 Sales Forecast by Customer Class |  |
| :--- | ---: |
| Customer Class | 2021 Forecasted Sales |
| Residential | $193,400,435$ |
| Firm Class 1 | $8,610,571$ |
| Firm Class 2 | $107,424,745$ |
| Firm Class 3 | $4,988,029$ |
| Interruptible Sales Class 1 and | 272,343 |
| Power Generation Class 1 | $17,792,033$ |
| Interruptible Sales Class 2 | $19,984,032$ |
| Interruptible Sales Class 3 | $3,787,601$ |
| Interruptible Sales Class 4 | $2,525,425$ |
| Interruptible Transport Class 2 | $137,348,623$ |
| Interruptible Transport Class 3 | $27,028,214$ |
| Interruptible Transport Class 4 | $25,864,706$ |
| Interruptible Transport Class 5 | $47,155,178$ |
| Power Generation | $25,824,188$ |
| Flex and Transport for Resale | $254,301,693$ |
| Direct Connect | $\mathbf{8 7 6 , 3 0 7 , 8 1 6}$ |
| Total 2021 Forecasted Sales |  |
| Total 2021 Forecasted Sales | $\mathbf{6 2 2 , 0 0 6 , 1 2 3}$ |
| Excluding Direct Connect |  |
| Customers |  |

Differences between actual GUIC surcharge recovery based on Commission-approved surcharge rates and actual costs incurred for GUIC projects will be captured in the reconciliation process to account for any differences in costs and recoveries, including any differences attributable to sales.

## 2. Customer Class Allocation and Surcharge Rates

In calculating the recommended surcharges by customer class, MERC began with volumetric GUIC rider surcharge rates based on the non-gas revenue apportionment approved in MERC's most recent rate case. In particular, the Commission approved the following revenue apportionment in its Findings of Fact, Conclusions, and Order in Docket No. G011/GR-17-563:

| Table 19. Customer Revenue Apportionment <br> Approved in Docket No. G011/GR-17-563 |  |
| :--- | :---: |
| Customer Class |  |
| ResidentialRevenue <br> Requirement <br> (excluding gas costs) |  |
| Firm Sales | $62.5 \%$ |
| Interruptible Sales | $23.5 \%$ |
| Transport | $3.5 \%$ |

Based on MERC's 2021 revenue requirement as shown in Exhibit D, applying the allocation proportions as approved in Docket No. G011/GR-17-563 would result in the following charges and average annual customer rate impacts:

| Table 20. 2021 Rider Surcharge Calculations under High <br> Level Revenue Apportionment Percentages |  |  |
| :--- | ---: | ---: |
| GUIC Rider <br> Curcharge |  | Average <br> Annual Cost |
| Residential | $\$ 0.02148 /$ therm | $\$ 19.03$ |
| Firm Sales | $\$ 0.01291 /$ therm | $\$ 66.45$ |
| Interruptible Sales | $\$ 0.00556 /$ therm | $\$ 441.50$ |
| Transport | $\$ 0.00134 /$ therm | $\$ 3,021.67$ |

As discussed in Docket No. G011/M-19-282, MERC identified concerns with simply applying the same per therm charge across these broad classifications, noting that such approach is not consistent with the ultimate revenue apportionment and resulting distribution charge rates as approved in Docket No. G011/GR-17-563 nor with the Commission's directive for MERC to narrow the rate differential between interruptible and firm service in order to recognize the risk and value of interruptible service. Further, continued exclusion of Direct Connect customers from the 2021 GUIC Rider surcharge is necessary to prevent bypass by this uniquely-situated group of customers, who do not require any distribution infrastructure to serve them and do not receive any benefits from the GUIC-related investments. Exclusion of the

Direct Connect customers is also consistent with MERC's proposal in the currently-pending 2020 GUIC rider in Docket No. G011/M-19-282, which the Department did not oppose. ${ }^{103}$

Applying the apportionment approved in MERC's most recent rate case and a per-therm charge of $\$ 0.00134$ to the Direct Connect class would result in that class being allocated approximately $\$ 341,323$ of the 2021 revenue requirement. Exclusion of the Direct Connect customer class results in those costs being reallocated among remaining customer classes.

On June 28, 2019, MERC requested authorization from the Commission to suspend collection of its 2019 GUIC rider surcharge from its Direct Connect customers in response to threats by those customers of potential bypass as a result of the GUIC and NGEP rider surcharges. Under MERC's Commission-approved tariffs, Direct Connect customers are defined as "(1) customers who are directly connected to the interstate pipeline with no Company-owned underground distribution facilities where (2) no non-Direct Connect customers are served off of the same point of interconnection."104 MERC's proposal to exclude the Direct Connect customers from the GUIC rider surcharge was intended to addresses the substantial risk of bypass posed by those customers with no distribution infrastructure required to serve them.

On August 26, 2019, the Commission issued an Order Suspending GUIC Rider Surcharge for Direct Connect Customers, and Declining to Reopen NGEP Cost Rider Docket in Docket Nos. G011/M-18-182, G011/M-18-281, G011/M-19-282, and G011/M-17-563, concluding that "the Direct Connect Customers can credibly threaten to bypass MERC's system,

[^56]and that the combined effects of the GUIC and NGEP rider surcharges are sufficient to potentially motivate a Direct Connect customer to bypass MERC's system."105

The Commission concluded that the class of Direct Connect customers was uniquely situated, supporting suspension of the GUIC Rider surcharge with respect to that class: "Here, the Commission is suspending a surcharge due to risk of bypass, which is especially credible when a customer has its own facilities connected to the interstate pipeline. With respect to the risk of bypass, customers who do not have such facilities are not similarly situated to those who do—and different rate treatment may therefore be warranted." ${ }^{106}$ In light thereof, MERC proposes to similarly exclude the class of Direct Connect customers from the 2021 GUIC Rider surcharge.

Exclusion of Direct Connect customers from the 2021 GUIC Rider surcharge is necessary to prevent bypass by this uniquely situated group of customers, who do not require any distribution infrastructure to serve them and do not receive any benefits from the GUICrelated investments. The risk of potential bypass by this class of Direct Connect customers is particularly heightened in light of the Commission's decision not to suspend the 2019 NGEP rider surcharge for that class. In particular, the approximate cost for the Direct Connect customers to bypass MERC's system is $\$ 0.004$ per therm ${ }^{107}$ while the current distribution rate charged to these customers is $\$ 0.0048$ or greater. ${ }^{108}$ Thus, MERC's current distribution rate along with the 2019 NGEP rider surcharge creates a substantial risk of potential bypass by those customers. Exclusion of this class of customers from the 2021 GUIC Rider surcharge is reasonable and necessary to prevent potential bypass.

[^57]As discussed in Docket No. G011/M-18-182, based on MERC's high-level calculation of the impact of bypass by Direct Connect customers on lost margin revenue, the Company would experience approximately $\$ 1.6$ million in lost revenues associated with the Direct Connect customers bypassing. The resulting potential annual rate impact for an average Residential customer would be approximately $\$ 4.83$. Such potential impacts weigh in favor of ensuring bypass by the Direct Connect customers and the associated rate impacts to remaining nonDirect Connect customers is prevented.

Additionally, establishing differential rider rates for firm, interruptible, and transportation service customers within the same class (i.e., class 1, 2, 3, 4, and 5) has the potential to create inappropriate price signals and encourage customers to move from firm to interruptible or from system-sales to transportation service based on the rider rates.

Finally, the transportation customers are disproportionately favored under this revenue apportionment allocation as approved in Docket No. G011/GR-17-563. The GUIC-related projects (which include right-of-way relocation projects and obsolete materials replacements) if reviewed in a fully-allocated class cost of service analysis, would likely not be allocated along the percentages above. The rate case apportionment percentages above include some allocations of customer-related costs, for instance, while the GUIC-related projects are likely to be more a function of throughput or demand.

Therefore, MERC incorporated the following changes to reach its proposed rate design:

- Redistributed the costs that would otherwise have been collected from the Direct Customers to all but the Residential Class. The Residential GUIC rate, therefore, remains at a proposed $\$ 0.02148 /$ therm, consistent with the 62.5 percent apportionment approved in Docket No. G011/GR-17-563. The Class 5 rate becomes $\$ 0.00166 /$ therm. No further allocations were made to these two classes in light of their price-sensitivity.
- Because establishing differential rider rates for firm, interruptible, and transportation service customers within the same class (i.e., class $1,2,3,4$, and 5) has the potential to create unreasonable price signals and encourage customers to move from firm to interruptible or from system-sales to transportation service, the remaining GUIC costs were allocated to the Class 1 and 2 firm, interruptible, and transportation customers at one rate per therm and to the Class 3 and 4 firm, interruptible, and transportation customers at another rate per therm. This appropriately recognizes that the proposed

GUIC-related work does not benefit a system-sales customer more than a transportation customer. In order to determine the amount to be allocated to the smallest nonResidential Classes 1 and 2, MERC used the 23.5\% firm revenue apportionment factor from its last rate case. All remaining costs were allocated to the larger Classes 3 and 4.

Table 21 below summarizes the average annual rate impact by customer class of the proposed 2021 customer surcharge rates.

| Table 21. Proposed GUIC Rider Surcharge Average Annual Customer Impact |  |
| :--- | :---: |
| Customer Class | Average Annual <br> Rate Impact of <br> GUIC Rider Surcharge |
| Residential | $\$ 19.03$ |
| Class 1-2 Firm (Sales and Transport) | $\$ 56.50$ |
| Class 1-2 Interruptible (Sales and <br> Transport), Class 1-2 Ag Grain Dryer, <br> and Class 1 Electric Gen | $\$ 458.93$ |
| Class 3-4 Firm (Sales and Transport) | $\$ 761.84$ |
| Class 3-4 Interruptible (Sales and <br> Transport) and Class 3 Ag Grain Dryer | $\$ 7,471.48$ |
| Class 5, FLEX, Transport for Resale, and <br> Class 2 Electric Gen | $\$ 1,195.04$ |
| Direct Connect | $\$ 0.00$ |

MERC requests that its proposed rate design be adopted for the 2021 GUIC Rider surcharges rather than a flat per-therm rate or one based solely on the 2018 rate case revenue apportionment.

## D. Proposed Rider Surcharge Implementation

## 1. Notice to Customers

MERC proposes to notify customers of the implementation of the GUIC rate via the following bill message, which will appear on bills effective the first month the GUIC surcharge takes effect: ${ }^{109}$

[^58]Effective Jan. 1, 2021, the GUIC (Gas Utility Infrastructure Cost) Rider Surcharge has been adjusted to the following per therm rate for each of these rate classes: Residential: \$0.02148; Class 1 \& 2 Firm (Sales and Transport): \$0.01143; Class 1 \& 2 Interruptible (Sales and Transport), Class 1 \& 2 Grain Dryer, and Class 1 Electric Generation: \$0.01143; Class 3 \& 4 Firm (Sales and Transport): \$0.00397; Class 3 \& 4 Interruptible (Sales and Transport) and Class 3 Grain Dryer: \$0.00397; and Class 5, Flex Class 2 Electric Generation and Transport-for-Resale: \$0.00166. The GUIC Surcharge will continue to appear as a line item on your bill labeled "Infrastructure Rider."

As discussed in Docket No. G011/M-19-282, communication of the final approved new surcharge rates through a bill message is appropriate because (1) customers have already been assessed a GUIC Rider surcharge since May 2019; (2) MERC included a full bill insert that was developed in consultation with the Commission's consumer affairs office with the initial implementation of the GUIC Rider in 2019; and (3) the only change customers will experience in 2021 is the per-therm rate they will see on their bill. Given the cost of bill inserts relative to a bill message, MERC believes its proposal is reasonable. Should the Commission order the use of bill inserts, MERC proposes to recover the actual incremental costs thereof in the 2021 GUIC true-up reconciliation.

In addition to notifying customers of the new rider rates upon implementation, MERC is in the process of undertaking customer outreach to its larger customers regarding the pendency of this proceeding before the Commission and the anticipated impacts of the proposed revised rider rates on annual bills.

## 2. Proposed Termination Date

MERC is proposing that the 2021 GUIC Rider surcharge rates by customer class as outlined in this filing become effective January 1, 2021. In the event the Commission does not approve implementation of MERC's 2021 GUIC rider rates on January 1, 2021, the existing GUIC rider surcharge rates (presumably those pending approval in Docket No. G011/M-19-282)

[^59]would continue to be applied until the Commission authorizes implementation of a new 2021 GUIC rider rate. This is necessary in order to ensure MERC is able to recover its annual revenue requirements on the already-approved GUIC-eligible projects, particularly given delays in the implementation of MERC's 2019 and 2020 GUIC Riders and calculation of rider recovery based on 12 months of sales. Actual costs and recoveries will be tracked through the tracker mechanism to ensure any over-recoveries are refunded or that any under-recoveries are collected in a future true-up adjustment. Similarly, once implemented, MERC would continue the 2021 GUIC Rider surcharge until the Commission approves a revised surcharge rate or implementation of interim rates in a future rate case proceeding. MERC will demonstrate that its actual 2021 costs for GUIC-eligible projects were prudently incurred either through a future trueup report or through information provided in a general rate case proceeding. At that time, parties will have an opportunity to review, and the Commission will have an opportunity to determine, if costs were not prudently incurred.

At the time of this filing, MERC continues to evaluate the need to file a 2021 test year rate case. MERC would like to avoid a general rate case filing, if possible, in the interest of reducing overall ratepayer impacts and expense, and timely approval of this 2021 GUIC Rider Petition will facilitate avoidance of a general rate case filing. In the event the Company has the need to file a 2021 test year general rate case, MERC will provide an update to this Petition to notify interested parties and will make a proposal to roll all of the planned capital investments and O\&M projects as presented herein into base rates. Further, MERC would propose to zero out the existing GUIC rider with respect to the unrecovered rate base value of all GUIC project plant-in-service as of a date certain.

When MERC files its next rate case, the GUIC Rider would zero out with respect to the unrecovered rate base value of all GUIC project plant-in-service as of the beginning of the test year. Unrecovered GUIC-eligible plant balance would be put into rate base for the test year. As discussed in Docket No. G011/M-19-282, the Department has not opposed MERC's proposal to
include any unrecovered GUIC revenue requirement within its rate case filing, eliminating the need for a true-up filing, but has suggested that supplemental rate case filings may be required to update for the estimated rate case amounts, depending on the timing of a rate case filing relative to when GUIC rider billing is suspended as well as to update for forecasted project spending. ${ }^{110}$ MERC agreed with the Department's recommendation to address any true-up recovery through supplemental testimony as necessary. ${ }^{111}$

Finally, MERC notes that the GUIC Statute is currently set to expire June 30, 2023; thus, as this termination period nears, MERC may need to adjust its tariff language and the 2023 revenue requirements test-period term accordingly. MERC has agreed to include a proposal in a future GUIC rider filing to address the termination of the GUIC Statute, whether that occurs June 30, 2023 or is extended.

## IV. CONCLUSION

Based on the foregoing information, MERC respectfully requests that the Commission authorize MERC to recover its forecasted 2021 eligible gas utility infrastructure project costs, adjusted to account for the 2019 GUIC rider true-up, through customer surcharges by customer class effective January 1, 2021, as outlined in this Petition.

[^60]DATED: April 1, 2020

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## Exhibit A

## Minn. Stat. § 216B. 1635 <br> Recovery of Gas Utility Infrastructure Costs

## 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 .

## Exhibit B

# Matrix of Information Included within the Petition as Required by Minn. Stat. § 216B. 1635 and Commission Orders 

## Matrix of Information Required by Minn. Stat. § 216B.1635, Commission Orders, and MERC Agreements

| Citation and Petition Requirement | Location in Filing |
| :---: | :---: |
| Minnesota Statutes section 216B.1635 |  |
| Subd. 1(b). "Gas utility infrastructure costs" or "GUIC" means costs incurred in gas utility projects that: <br> (1) do not serve to increase revenues by directly connecting the infrastructure replacement to new customers; <br> (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 <br> (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. | The projects proposed for inclusion in MERC's 2021 GUIC Rider (1) do not serve to increase revenues by directly connecting to new customers; (2) are not included in current or proposed rates and are planned to be in service by the end of the plan period, 2021; and (3) do not constitute a betterment. <br> Petition at Section II.B and III.C <br> Exhibit G: MERC's 2021 Gas Infrastructure Project Plan Report |
| Subd. 1(c). "Gas utility projects" means: <br> (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 <br> (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. | Petition at Section II.A <br> Exhibit E: Details regarding MERC's actual 2019 relocation projects required to accommodate public projects in the right-ofway <br> Exhibit F: MERC's currently known 2020 and 2021 road relocation projects (to date) <br> Exhibit G: MERC's 2021 Gas Infrastructure Project Plan Report |
| 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 |

## Matrix of Information Required by Minn. Stat. § 216B.1635, Commission Orders, and MERC Agreements

| Citation and Petition Requirement | Location in Filing |
| :--- | :--- |
| petition for rate recovery of only incremental costs associated with projects under <br> subdivision 1, paragraph (c). The report and petition must be made at least 150 days <br> in advance of implementation of the rate schedule, provided that the rate schedule <br> will not be implemented until the petition is approved by the commission pursuant to <br> subdivision 5. The report must be for a forecast period of one year. | Exhibit G: MERC's 2021 Gas Infrastructure <br> Project Plan Report |
| Subd. 3. Gas infrastructure project plan report. The gas infrastructure project <br> plan report required to be filed under subdivision 2 shall include all pertinent <br> information and supporting data on each proposed project including, but not limited <br> to, project description and scope, estimated project costs, and project in-service <br> date. | Petition at Section II.A \& II.F <br> Exhibit E: Details regarding MERC's actual <br> 2019 relocation projects required to <br> accommodate public projects in the right-of- <br> way |

Matrix of Information Required by Minn. Stat. § 216B.1635, Commission Orders, and MERC Agreements

| Citation and Petition Requirement | Location in Filing |
| :--- | :--- |
| $\begin{array}{l}\text { (1) a gas utility may submit a filing under this section no more than once per year; } \\ \text { and }\end{array}$ | $\begin{array}{l}\text { This request for GUIC Rider recovery is } \\ \text { MERC's only request for 2021. MERC's } \\ \text { previously-approved GUIC Rider in Docket } \\ \text { No. G011/M-18-182 was for calendar year } \\ \text { 2019 costs and projects. MERC's most- } \\ \text { recently-filed GUIC Rider in Docket No. } \\ \text { G011/M-19-282 was for calendar year 2020 } \\ \text { costs and projects. } \\ \text { Petition at Section II. }\end{array}$ |
| $\begin{array}{l}\text { (2) a gas utility must file sufficient information to satisfy the commission regarding } \\ \text { the proposed GUIC. The information includes, but is not limited to: }\end{array}$ | $\begin{array}{l}\text { (i) the information required to be included in the gas infrastructure project } \\ \text { plan report under subdivision 3; }\end{array}$ |
| Petition at Section II and II.F. |  |
| Exhibit E: Details regarding MERC's actual |  |
| 2019 relocation projects required to |  |
| accommodate public projects in the right-of- |  |
| way |  |
| Exhibit F: MERC's currently known 2020 |  |
| and 2021 road relocation projects (to date) |  |$\}$| Exhibit G: MERC's 2021 Gas Infrastructure |
| :--- |
| Project Plan Report |
| Exhibit K: Maps of Aldyl-A Main |
| Replacement (2021) |

Matrix of Information Required by Minn. Stat. § 216B.1635, Commission Orders, and MERC Agreements

| Citation and Petition Requirement | Location in Filing |
| :--- | :--- |
|  | $\begin{array}{l}\text { Exhibit E: Details regarding MERC's actual } \\ 2019 \\ \text { acelocation projects required to } \\ \text { way }\end{array}$ |
|  | $\begin{array}{l}\text { Exhibit F: MERC's currently known 2020 } \\ \text { and 2021 road relocation projects (to date) } \\ \text { Exhibit G: MERC's 2021 Gas Infrastructure }\end{array}$ |
| Project Plan Report |  |
| Exhibit K: Maps of Aldyl-A Main |  |$\}$| Replacement (2021) |
| :--- |
| Exhibit L: Project Schedule for Obsolete |
| Material Replacements (2021) |

Matrix of Information Required by Minn. Stat. § 216B.1635, Commission Orders, and MERC Agreements

| Citation and Petition Requirement | Location in Filing |
| :--- | :--- |
| $\begin{array}{l}\text { (iv) a comparison of the utility's estimated costs included in the gas } \\ \text { infrastructure project plan and the actual costs incurred, including a } \\ \text { description of the utility's efforts to ensure the costs of the facilities are } \\ \text { reasonable and prudently incurred; }\end{array}$ | $\begin{array}{l}\text { Petition at Section II.G } \\ \text { Exhibit E: Details regarding MERC's actual } \\ \text { 2019 relocation projects required to } \\ \text { accommodate public projects in the right-of- } \\ \text { way } \\ \text { Exhibit I: MERC's 2019 GUIC true-up } \\ \text { calculation and tracker balance } \\ \text { Exhibit J: Details regarding MERC's actual }\end{array}$ |
| $\begin{array}{l}\text { (v) calculations to establish that the rate adjustment is consistent with the } \\ \text { terms of the rate schedule, including the proposed rate design and an } \\ \text { explanation of why the proposed rate design is in the public interest; }\end{array}$ | $\begin{array}{l}\text { Petition at Section III.C } \\ \text { projects }\end{array}$ |
| Exhibit D: Calculations of the proposed |  |
| 2021 GUIC-eligible revenue requirement replacement |  |
| and proposed GUIC Rider surcharge rates |  |
| by customer class proposed to be effective |  |
| January 1, 2021 |  |$\}$

Matrix of Information Required by Minn. Stat. § 216B.1635, Commission Orders, and MERC Agreements

| Citation and Petition Requirement | Location in Filing |
| :---: | :---: |
|  | Minn. Stat. § 216B.1635, subd. 4(vi), (vii), and (viii) |
| (viii) the magnitude of GUIC in relation to the gas utility's capital expenditures since its most recent general rate case; and | Petition at Section II.D <br> Exhibit H: Discussion of the magnitude of known future natural gas projects and the proposed GUIC recovery as required by Minn. Stat. § 216B.1635, subd. 4(vi), (vii), and (viii) |
| (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. | Petition at Section II.E |
| 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. | Petition at Section III.B <br> Exhibit D: Calculations of the proposed 2021 GUIC-eligible revenue requirement and proposed GUIC Rider surcharge rates by customer class proposed to be effective January 1, 2021 |
| In the Matter of Minnesota Energy Resources Corporation's Request for Approval of a Gas Utility Infrastructure Cost Rider <br> Order Suspending GUiC Rider Surcharge for Direct Connect Customers, and Declining to Reopen NGEP Cost Rider Docket ${ }^{1}$ <br> Docket No. G011/M-18-281 <br> August 26, 2019 |  |

[^61]Matrix of Information Required by Minn. Stat. § 216B.1635, Commission Orders, and MERC Agreements

| Citation and Petition Requirement |  |
| :--- | :--- |
| 3. MERC shall address any potential refunds or surcharges in its next GUIC rate- <br> factor adjustment and true-up filings. | Petition at Section II.G |
| In the Matter of a Commission Investigation into Natural Gas Utilities' <br> Practices, Tariffs, and Assignment of Cost Responsibility for Installation of <br> Excess Flow Valves and Other Similar Gas Safety Equipment <br> ORDER AcCEPTING ComPLIANCE FILINGs, REQUIRING MERC TO SUBMIT ADDITIONAL <br> INFORMATION, REQURING ANNUAL COMPLIANCE REPORTING, AND TAKING OTHER <br> AcTION <br> Docket No. G999/CI-18-41 July 31, 2019 |  |
| 5. The Commission will allow recovery of EFV costs through GUIC rider filings. | Petition at Section II.A.2 and II.G |
| In the Matter of the Petition of Minnesota Energy Resources Corporation for <br> Approval of 2020 Gas Utility Infrastructure Cost (GUIC) Rider Revenue <br> Requirement and Revised Surcharge Factor |  |
| ADDITIONAL REPLY CommENTS OF MINNESOTA ENERGY RESOURCES CORPORATION |  |
| Docket No. G011/M-19-282² $\quad$ February 14, 2020 | Petition at Section II.G <br> Exhibit E: Details regarding MERC's actual <br> If the Company incurs O\&M expense associated with actual ROW relocation or <br> DIMP projects in 2020, it will provide details regarding the amount of the expense, <br> the account number to which it is charged, and an explanation of how the expense <br> fits within the GUIC rider. MERC also agrees that it will not request recovery of such |

[^62]Matrix of Information Required by Minn. Stat. § 216B.1635, Commission Orders, and MERC Agreements

| Citation and Petition Requirement | Location in Filing |
| :--- | :--- |
| O\&M expense to the extent it is incremental (i.e., not being recovered in existing <br> base rates). |  |
| MERC agreed to report on Aldyl-A project accomplishment details in the Company's <br> annual true-up filing, including, by project site: (1) locational description of work <br> completed, (2) associated work order number(s), (3) size of Aldyl-A pipe mains <br> replaced, (4) size of replacement pipe installed, (5) footage of main replaced, <br> (6) total costs net of embedded labor, vehicles, fuel, overhead, etc., and (7) total <br> replacement costs. | accommodate public projects in the right-of- <br> way |
| MERC agreed to reflect the corrected revenue requirements model in any <br> compliance and future GUIC filing schedules. | Exhibit J: Details regarding MERC's actual <br> 2019 obsolete materials replacement <br> projects |

[^63]
## Exhibit C

Updated Tariff Sheets to Reflect the 2021 GUIC Rate Factors Proposed to be Effective January 1, 2021 (MERC Tariff Sheet Nos. 7.20-7.21a)

## Clean Tariff Sheets

## 1. APPLICABILITY

Applicable to bills for natural gas service provided under all utility rate schedules, as approved by the Minnesota Public Utilities Commission (MPUC). Effective August 26, 2019, the GUIC Rider rate is suspended for Direct Connect Customers, who are subject to service under Tariff Sheet No. 6.50.
2. RIDER

The Gas Utility Infrastructure Cost (GUIC) rider statute (Minn. Stat. § 216B.1635) permits a public utility to petition the MPUC outside of a general rate case for a rider to recover the revenue deficiency from projects not already included in utility rates that have been incurred for:
A. 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
B. 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.
3. RATE

The GUIC Rider rate for any customer class will be the MPUC-approved rate for that customer class. Such GUIC Rider rates may be volumetric, a flat fee, or some other form of approved recovery.

## 4. TERM

The GUIC Rider rate will be established for each customer group and be based on the annual revenue requirements for costs associated with forecasted natural gas infrastructure projects eligible for recovery under Minnesota Statute Sections 216B. 1635 that are determined by the Commission to be eligible for recovery under this GUIC Rider.

The Company will file a GUIC Annual Report each April 1, which will include a reconciliation of the previous full calendar year's GUIC Tracker Account balance, if applicable, as well as support for any request to change the GUIC Rider Rate for a subsequent calendar year. (For example, the year-end 2019 GUIC Rider Tracker Account balance will be applied as a true-up adjustment to the 2021 GUIC Rider rate.) The GUIC Rider rate will be adjusted to reflect new Recoverable GUIC Costs as well as the amortization of the prior year's GUIC Tracker balance as approved by the Commission.

## 5. DEFINITIONS

A. GUIC Tracker: An accounting process used to accumulate any difference between the actual revenue requirement impact of Recoverable GUIC Costs and the actual revenues recovered through the GUIC Rider.
B. GUIC Rider Reconciliation: The GUIC Factor for each customer group may be adjusted annually with approval of the MPUC. The Company will file a GUIC Annual Report on or before April 1, which will include a reconciliation of the previous full calendar year's GUIC Tracker Account balance, if applicable, as well as support for any request to change the GUIC Factor for the subsequent calendar year.
C. Qualifying Projects: Projects eligible for recovery via the GUIC Rider under Minn. Stat. § 216B. 1635 include:
i. 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
ii. 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.
D. Recoverable GUIC Costs: The revenue requirement related to Qualifying Projects not already reflected in rates. The annual revenue requirement for costs associated with the Qualifying Projects includes the currently authorized rate of return on capital investment, incremental income taxes, incremental property taxes, incremental depreciation expense, and any incremental operation and maintenance costs relative to the Qualifying Project(s). A standard model will be used to calculate the revenue requirement related to Qualifying Project(s) for the filing period.

## 6. GUIC RIDER RATES

## A. Currently Authorized GUIC Rider Rate

A separate GUIC Rate may be calculated for each customer class or the same rate may be applied across all or a portion of customer classes, as approved by the MPUC. The GUIC rate shall be calculated to recover the Recoverable GUIC Costs over the period approved by the MPUC. GUIC surcharge rates effective January 1, 2021, are as follows:

| Rate Class | Rate/Therm |
| :--- | ---: |
| Residential | $\$ 0.02148$ |
| Class 1-2 Firm (Sales and Transport) | $\$ 0.01143$ |
| Class 1-2 Interruptible (Sales and Transport), Class 1-2 Ag Grain Dryer, <br> and Class 1 Electric Generation | $\$ 0.01143$ |
| Class 3-4 Firm (Sales and Transport) | $\$ 0.00397$ |
| Class 3-4 Interruptible (Sales and Transport) and Class 3 Ag Grain Dryer | $\$ 0.00397$ |
| Class 5, FLEX, Transport for Resale, and Class 2 Electric Generation | $\$ 0.00166$ |
| Direct Connect | $\$ 0.00000$ |

$\qquad$
Submitted By: Theodore Eidukas
Vice President -Regulatory Affairs
B. Adjustment to GUIC Tracker Account with Changes in Base Rates

Whenever the Company implements changes in base rates as the result of a final Commission order in a general rate case, the Company shall simultaneously adjust the GUIC Tracker Account to remove all costs that have been included in the approved base rates.

Redline Tariff Sheets

## 1. APPLICABILITY

Applicable to bills for natural gas service provided under all utility rate schedules, as approved by the Minnesota Public Utilities Commission (MPUC). Effective August 26, 2019, the GUIC Rider rate is suspended for Direct Connect Customers, who are subject to service under Tariff Sheet No. 6.50.

## 2. RIDER

The Gas Utility Infrastructure Cost (GUIC) rider statute (Minn. Stat. § 216B.1635) permits a public utility to petition the MPUC outside of a general rate case for a rider to recover the revenue deficiency from projects not already included in utility rates that have been incurred for:
A. 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
B. 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.

## 3. RATE

The GUIC Rider rate for any customer class will be the MPUC-approved rate for that customer class. Such GUIC Rider rates may be volumetric, a flat fee, or some other form of approved recovery.

## 4. TERM

The GUIC Rider rate will be established for each customer group and be based on the annual revenue requirements for costs associated with forecasted natural gas infrastructure projects eligible for recovery under Minnesota Statute Sections 216B. 1635 that are determined by the Commission to be eligible for recovery under this GUIC Rider.

The Company will file a GUIC Annual Report each April 1, which will include a reconciliation of the previous full calendar year's GUIC Tracker Account balance, if applicable, as well as support for any request to change the GUIC Rider Rate for a subsequent calendar year. (For example, the year-end 2019 GUIC Rider Tracker Account balance will be applied as a true-up adjustment to the 2021 GUIC Rider rate.) The GUIC Rider rate will be adjusted to reflect new Recoverable GUIC Costs as well as the amortization of the prior year's GUIC Tracker balance as approved by the Commission.

## GAS UTILITY INFRASTRUCTURE COST RIDER (Continued)

## 5. DEFINITIONS

A. GUIC Tracker: An accounting process used to accumulate any difference between the actual revenue requirement impact of Recoverable GUIC Costs and the actual revenues recovered through the GUIC Rider.
B. GUIC Rider Reconciliation: The GUIC Factor for each customer group may be adjusted annually with approval of the MPUC. The Company will file a GUIC Annual Report on or before April 1, which will include a reconciliation of the previous full calendar year's GUIC Tracker Account balance, if applicable, as well as support for any request to change the GUIC Factor for the subsequent calendar year.
C. Qualifying Projects: Projects eligible for recovery via the GUIC Rider under Minn. Stat. § 216B.1635 include:
i. 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
ii. 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.
D. Recoverable GUIC Costs: The revenue requirement related to Qualifying Projects not already reflected in rates. The annual revenue requirement for costs associated with the Qualifying Projects includes the currently authorized rate of return on capital investment, incremental income taxes, incremental property taxes, incremental depreciation expense, and any incremental operation and maintenance costs relative to the Qualifying Project(s). A standard model will be used to calculate the revenue requirement related to Qualifying Project(s) for the filing period.

## 6. GUIC RIDER RATES

A. Currently Authorized GUIC Rider Rate

A separate GUIC Rate may be calculated for each customer class or the same rate may be applied across all or a portion of customer classes, as approved by the MPUC. The GUIC rate shall be calculated to recover the Recoverable GUIC Costs over the period approved by the MPUC.

The GUIC RateGUIC surcharge rates effective January 1, 2021, are as follows:

| Rate Class | Rate/Therm |
| :--- | ---: |
| Residential | $\underline{\$ 0.02148}$ |
| Class 1-2 Firm (Sales and Transport) | $\underline{\$ 0.01143}$ |
| Class 1-2 Interruptible (Sales and Transport), Class 1-2 Ag Grain Dryer, | $\underline{\$ 0.01143}$ |
| and Class 1 Electric Generation | $\underline{\$ 0.00397}$ |
| Class 3-4 Firm (Sales and Transport) | $\underline{\$ 0.00397}$ |
| Class 3-4 Interruptible (Sales and Transport) and Class 3 Ag Grain Dryer | $\$ 0.00166$ |
| Class 5, FLEX, Transport for Resale, and Class 2 Electric Generation | $\$ 0.00000$ |
| Direct Connect |  |

May 1, 2019 shall be $\$ 0.00413$ per therm for all customer classes. Effective August 26, 2019, the GUIC Rider rate is suspended for Direct Connect Customers.
B. Adjustment to GUIC Tracker Account with Changes in Base Rates

Whenever the Company implements changes in base rates as the result of a final Commission order in a general rate case, the Company shall simultaneously adjust the GUIC Tracker Account to remove all costs that have been included in the approved base rates.

Tariff and Rate Book
B. Adjustment to GUIC Tracker Account with Changes in Base Rates

Whenever the Company implements changes in base rates as the result of a final Commission order in a general rate case, the Company shall simultaneously adjust the GUIC Tracker Account to remove all costs that have been included in the approved base rates.

## Exhibit D

## Calculations of the Proposed 2021 GUIC

 Revenue Requirement and Proposed GUIC Rider Surcharge Rates by Customer Class Proposed to be Effective January 1, 2021
## Revenue Requirement on GUIC projects



## Assumptions

1 Forecasted GUIC related right of way and replacement service construction expenditures go into service as spent


| eer Class |  | Average Annual Cost | Total |  |
| :---: | :---: | :---: | :---: | :---: |
| Residential | ¢ 0.02248 | ¢ 19 | 4,154,802 | ${ }^{62.58}$ |
| Class 1.2 Fimm (Sales and Transort) | 0.0114 | $5 \quad 57$ | $5 \quad 1,326,777$ | 20.0\% |
| Class 1-2 Ag Grain Dryer, and Class 1 Electric |  |  |  |  |
|  | \$ 0.01143 |  | 235,429 | 3.5\% |
| Class 3.4 Fimm (Sales and Transport) | \$ 0.00397 | 76 | 19,808 | 0.3\% |
| Class 3-4 Interruptible (Sales and Transport) and Class 3 Ag Grain Dryer | \$ 0.00397 | 7,471 | 747,148 | \% 28 |
| Ss. 5 FLEX, Transort tor Resale, and Class 2 |  |  |  |  |
| Direct Coment |  |  |  | ${ }_{\substack{2.5 \% \\ 0.0 \%}}$ |
|  |  |  | 6,647,683 | 100\% |

GUIC Rider
Total Mains, Services, Stations
Revenue Requirement

|  | Construction Expenditures |  |  | Plant inService Accumulated Accumulated |  |  |  | ADIT Proration <br> Adjust | Adjusted RateBase | Depreciation Return of |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Month | Placed in Service ${ }^{1}$ | CWIP Balance | Balance, net | Depreciation, net | Deferred Tax | Rate Base |  |  |  | O\&M |
| 2019 | Jan-19 | - | - | - | - | - | - | - | - |  |  |
| 2019 | Feb-19 | 562 | 562 | - | - | - | - | - | - | - | 102 |
| 2019 | Mar-19 | 20,140 | 13,656 | 5,911 | 1,134 | (341) | 6,704 | - | 6,704 | - | - |
| 2019 | Apr-19 | 467,460 | 372,374 | 97,148 | 18,627 | $(5,687)$ | 110,088 | - | 110,088 | 12 | 459 |
| 2019 | May-19 | 2,630,831 | 1,721,804 | 1,216,196 | 181,565 | $(57,492)$ | 1,340,269 | - | 1,340,269 | 195 | 1,148 |
| 2019 | Jun-19 | 1,687,541 | 2,064,952 | 2,477,556 | 297,029 | $(98,458)$ | 2,676,127 | - | 2,676,127 | 2,304 | 38,220 |
| 2019 | Jul-19 | 1,336,824 | 1,734,916 | 4,088,442 | 355,955 | $(127,669)$ | 4,316,727 | - | 4,316,727 | 4,416 | 143,385 |
| 2019 | Aug-19 | 1,257,249 | 2,217,726 | 4,653,219 | 560,869 | $(194,117)$ | 5,019,971 | - | 5,019,971 | 6,964 | 288,759 |
| 2019 | Sep-19 | 1,580,658 | 3,337,376 | 5,013,231 | 667,082 | $(231,633)$ | 5,448,680 | - | 5,448,680 | 7,981 | 408,386 |
| 2019 | Oct-19 | 1,366,220 | 2,523,554 | 7,047,133 | 812,278 | $(295,962)$ | 7,563,449 | - | 7,563,449 | 8,707 | 311,523 |
| 2019 | Nov-19 | 654,011 | 1,032,399 | 8,955,068 | 1,041,096 | $(386,665)$ | 9,609,500 | - | 9,609,500 | 11,941 | 326,021 |
| 2019 | Dec-19 | 65,291 | 140,128 | 9,627,253 | 1,313,539 | $(480,006)$ | 10,460,786 | - | 10,460,786 | 14,862 | 225,845 |
| 2020 | Jan-20 | 165 | - | 9,767,545 | 1,297,664 | $(492,183)$ | 10,573,027 | $(7,503)$ | 10,565,524 | 15,875 | 270 |
| 2020 | Feb-20 | 330 | - | 9,767,875 | 1,281,579 | $(504,300)$ | 10,545,154 | $(13,580)$ | 10,531,574 | 16,085 | 270 |
| 2020 | Mar-20 | 1,319 | - | 9,769,194 | 1,265,494 | $(516,420)$ | 10,518,268 | $(18,244)$ | 10,500,044 | 16,086 | 1,618 |
| 2020 | Apr-20 | 230,740 | - | 9,999,934 | 1,249,406 | $(529,362)$ | 10,719,978 | $(21815)$ | 10,698,163 | 16,088 | 330,934 |
| 2020 | May-20 | 505,157 | - | 10,505,091 | 1,232,935 | $(543,834)$ | 11,194,192 | $(24,447)$ | 11,169,745 | 16,471 | 411,308 |
| 2020 | Jun-20 | 1,065,362 | - | 11,570,453 | 1,215,626 | $(561,975)$ | 12,224,104 | $(26,545)$ | 12,197,559 | 17,309 | 749,524 |
| 2020 | Jul-20 | 1,545,632 | - | 13,116,085 | 1,196,550 | $(584,523)$ | 13,728,112 | $(27,606)$ | 13,700,507 | 19,076 | 601,183 |
| 2020 | Aug-20 | 1,800,930 | - | 14,917,014 | 1,174,910 | $(610,928)$ | 15,480,996 | $(26,729)$ | 15,454,268 | 21,640 | 374,897 |
| 2020 | Sep-20 | 1,996,400 | - | 16,913,414 | 1,150,282 | $(641,273)$ | 17,422,423 | $(23,289)$ | 17,399,134 | 24,628 | 264,585 |
| 2020 | Oct-20 | 2,076,170 | - | 18,989,584 | 1,122,342 | $(674,956)$ | 19,436,970 | $(16,483)$ | 19,420,487 | 27,940 | 144,295 |
| 2020 | Nov-20 | 2,166,653 | - | 21,156,237 | 1,090,957 | $(712,257)$ | 21,534,938 | $(5,784)$ | 21,529,154 | 31,384 | 163,984 |
| 2020 | Dec-20 | 2,200,275 | - | 23,356,513 | 1,055,978 | $(752,767)$ | 23,659,724 | 9,506 | 23,669,230 | 34,979 | 58,527 |
| 2021 | Jan-21 | 134 | - | 23,356,647 | 1,017,349 | $(780,706)$ | 23,593,290 | $(17,160)$ | 23,576,130 | 38,629 | 270 |
| 2021 | Feb-21 | 268 | - | 23,356,914 | 978,720 | $(808,646)$ | 23,526,989 | $(31,180)$ | 23,495,808 | 38,629 | 270 |
| 2021 | Mar-21 | 1,071 | - | 23,357,986 | 940,090 | $(836,587)$ | 23,461,488 | $(4,893)$ | 23,419,595 | 38,630 | 1,618 |
| 2021 | Apr-21 | 187,457 | - | 23,545,442 | 901,458 | $(865,198)$ | 23,581,703 | $(4,646)$ | 23,532,057 | 38,632 | 330,934 |
| 2021 | May-21 | 410,396 | - | 23,955,839 | 862,509 | $(895,053)$ | 23,923,295 | $(5,475)$ | 23,868,820 | 38,949 | 411,308 |
| 2021 | Jun-21 | 865,515 | - | 24,821,354 | 822,864 | $(927,889)$ | 24,716,328 | $(56,766)$ | 24,659,562 | 39,645 | 749,524 |
| 2021 | Jul-21 | 1,255,693 | - | 26,077,046 | 781,752 | $(964,302)$ | 25,894,496 | $(56,070)$ | 25,838,427 | 41,112 | 601,183 |
| 2021 | Aug-21 | 1,463,100 | - | 27,540,147 | 738,512 | $(1,003,841)$ | 27,274,818 | $(51,655)$ | 27,223,162 | 43,240 | 374,897 |
| 2021 | Sep-21 | 1,621,903 | - | 29,162,050 | 692,792 | $(1,046,570)$ | 28,808,271 | $(43,052)$ | 28,765,219 | 45,720 | 264,585 |
| 2021 | Oct-21 | 1,686,709 | - | 30,848,759 | 644,323 | $(1,091,998)$ | 30,401,084 | $(29,573)$ | 30,371,511 | 48,469 | 144,295 |
| 2021 | Nov-21 | 1,760,219 | - | 32,608,978 | 592,995 | $(1,140,353)$ | 32,061,621 | $(10,828)$ | 32,050,793 | 51,328 | 163,984 |
| 2021 | Dec-21 | 1,787,534 | - | 34,396,513 | 538,684 | $(1,191,299)$ | 33,743,898 | 13,784 | 33,757,681 | 54,311 | 58,527 |

1 Forecasted GUIC related right of way and replacement service construction expenditures go into service as spent

Gas Mains Summary

|  | Net Plant In Service |  |  | Depr. Calculation |  |  | Accumulated Depreciation |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Additions | Retirements | Net Accumulated Investment | Beginning of the Month Addition | Annual <br> Depr. Rate | Deprec Exp (NetDep) | Retirement | $\begin{aligned} & \text { Cost Of } \\ & \text { Removal } \end{aligned}$ | End Bal |



|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | \$ | 634,811 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1/1/2021 | \$ | 83 | \$ |  | \$ | 16,369,242 | \$ | 16,369,159 | \$ |  | \$ | 24,554 | \$ |  | \$ |  | \$ | 610,257 |
| 2/1/2021 | \$ | 165 | \$ |  | \$ | 16,369,407 | \$ | 16,369,242 | \$ |  | \$ | 24,554 | \$ |  | \$ |  | \$ | 585,703 |
| 3/1/2021 | \$ | 661 | \$ |  | \$ | 16,370,067 | \$ | 16,369,407 | \$ |  | \$ | 24,554 | \$ |  | \$ |  | \$ | 561,149 |
| 4/1/2021 | \$ | 115,590 | \$ |  | \$ | 16,485,657 | \$ | 16,370,067 | \$ |  | \$ | 24,555 | \$ | - | \$ |  | \$ | 536,594 |
| 5/1/2021 | \$ | 253,059 | \$ |  | \$ | 16,738,716 | \$ | 16,485,657 | \$ |  | \$ | 24,728 | \$ |  | \$ |  | \$ | 511,865 |
| 6/1/2021 | \$ | 533,695 | \$ |  | \$ | 17,272,411 | \$ | 16,738,716 | \$ |  | \$ | 25,108 | \$ |  | \$ |  | \$ | 486,757 |
| 71/2021 | \$ | 774,287 | \$ |  | \$ | 18,046,998 | \$ | 17,272,411 | \$ |  | \$ | 25,909 | \$ |  | \$ |  | \$ | 460,849 |
| 8/1/2021 | \$ | 902,179 | \$ |  | \$ | 18,948,877 | \$ | 18,046,698 | s |  | \$ | 27,070 | \$ | - | \$ | - | \$ | 433,778 |
| 9/1/2021 | \$ | 1,000,100 | \$ |  | \$ | 19,948,977 | \$ | 18,948,877 | \$ |  | \$ | 28,423 | \$ |  | \$ |  | \$ | 405,355 |
| 10/1/2021 | \$ | 1,040,061 | \$ |  | \$ | 20,989,038 | \$ | 19,948,977 | \$ |  | \$ | 29,923 | \$ | - | \$ |  | \$ | 375,432 |
| 11/1/2021 | \$ | 1,085,389 | \$ | - | \$ | 22,074,427 | \$ | 20,989,038 | \$ | - | \$ | 31,484 | \$ | - | \$ | - | \$ | 343,948 |
| 12/1/2021 | S | 1,102,232 | \$ | . | S | 23,176,659 | s | 22,074,427 | s | . | \$ | 33,112 | \$ | - | \$ | - | s | 310,836 |
|  | s | 6,807,500 | \$ |  |  |  |  |  |  |  | 5 | 323,974 | S |  | s |  |  |  |

## Gas Mains Summary

| Month | Deferred Income Taxes |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Tax Addition | Tax Depr. | Tax Gain/LLoss) on Retirements | Book/Tax Difference | Bonus Effect | NOL | Deferred Tax |  | End Bal | Rate Base |
|  |  |  |  |  | 0.0000\% | 0.0000\% |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 1/1/2019 | - | \$ : | \$ - | s . | \$ | s | \$ |  | \$ | \$ |
| 2/1/2019 |  | \$ - | \$ |  |  |  |  |  |  | \$ - |
| 3/1/2019 | - | \$ | \$ | \$ | \$ | \$ |  | - | \$ - | \$ - |
| 4/1/2019 | - | \$ | \$ - | \$ - | \$ | \$ | \$ |  | \$ - | \$ - |
| 5/1/2019 | 272,878 | \$ $(4,264)$ | \$ | \$ $(5,044)$ |  | \$ | \$ | $(1,446)$ | $(1,446)$ | 272,212 |
| 6/1/2019 | 828,599 | \$ $\quad(16,389)$ | \$ | \$ (50,714) | \$ | \$ | \$ | $(14,537)$ | $(15,983)$ | 1,120,599 |
| 7/1/2019 | 1,351,495 | \$ (33,006) | \$ | \$ $(44,926)$ | \$ | \$ | \$ | $(12,878)$ | $(28,861)$ | 2,471,137 |
| 8/1/2019 | 231,291 | \$ (13,448) | \$ | \$ (157,661) |  | s | \$ | $(45,193)$ | $(74,054)$ | 2,801,448 |
| 9/1/2019 | $(6,000)$ | \$ $\quad(8,219)$ | \$ | \$ $(48,161)$ | \$ | \$ | \$ | $(13,805)$ | \$ (87,859) | 2,821,585 |
| 10/1/2019 | 1,673,785 | \$ (60,676) | \$ | \$ (141,466) | \$ | \$ | \$ | $(40,551)$ | (128,410) | 4,535,610 |
| 11/1/2019 | 1,790,457 | \$ (75,147) | \$ | \$ $(286,838)$ | \$ | \$ | \$ | $(82,221)$ | \$ (210,631) | 6,455,537 |
| 12/1/2019 | 664,295 | \$ (44,106) | 5 | $(320,683)$ | S | \$ | S | (91,923) | \$ (302,553) | 7,304,487 |
|  | 6,806,800 | \$ (225,255) | 5 | \$ $(1,055,494)$ | s | 5 | s | $(302,553)$ |  |  |
|  |  |  |  |  |  |  |  | $\begin{gathered} \hline \hline 21.0000 \% \\ 7.6646 \% \end{gathered}$ |  |  |



| 1/1/2021 |  | 83 | \$ | $(95,400)$ | \$ | - | \$ | $(70,846)$ | \$ |  | \$ |  | \$ | $(20,308)$ | \$ | (519,082) | \$ | 16,460,416 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2/1/2021 | \$ | 165 | \$ | $(95,401)$ | \$ | - | \$ | (70,847) | \$ |  | \$ |  | \$ | $(20,308)$ | s | (539,390) | \$ | 16,415,719 |
| 3/1/2021 | \$ | 661 | \$ | $(95,408)$ | \$ | . | \$ | (70,854) | \$ |  | \$ |  | s | $(20,310)$ | \$ | (559,700) | \$ | 16,371,516 |
| 4/1/2021 |  | 115,590 | \$ | $(96,846)$ | \$ | - | \$ | $(72,291)$ | \$ |  | \$ |  | \$ | (20,722) | \$ | (580,422) | \$ | 16,441,829 |
| 5/1/2021 | \$ | 253,059 | \$ | (99,718) | \$ | - | \$ | $(74,990)$ | \$ |  | \$ |  | \$ | (21,495) | \$ | $(600,918)$ | \$ | 16,648,664 |
| 6/1/2021 |  | 533,695 | \$ | (106,561) | \$ | . | \$ | $(81,453)$ | \$ |  | \$ |  | \$ | (23,348) | \$ | $(625,266)$ | \$ | 17,133,903 |
| 7/1/2021 | \$ | 774,287 | \$ | $(115,160)$ | \$ |  | \$ | (89,251) | \$ |  | \$ |  | \$ | (25,584) | \$ | (650,849) | \$ | 17,856,697 |
| 8/1/2021 | \$ | 902,179 | \$ | $(123,196)$ | \$ | - | s | (96,126) | \$ |  | \$ |  | s | (27,554) | \$ | $(678,404)$ | \$ | 18,704,252 |
| 9/1/2021 | \$ | 1,000,100 | \$ | (131,590) | \$ | - | \$ | (103,167) | \$ |  | \$ |  | s | (29,572) | \$ | $(707976)$ | \$ | 19,646,357 |
| 10/1/2021 | \$ | 1,040,061 | \$ | (139,089) | \$ | - | \$ | $(109,166)$ | \$ |  | \$ |  | \$ | $(31,292)$ | 5 | (739,268) | \$ | 20,625,202 |
| 11/1/2021 |  | 1,085,389 | \$ | (147, 147) | \$ | - | \$ | $(115,663)$ | \$ |  | \$ |  | \$ | (33,154) | \$ | (772,422) | \$ | 21,645,953 |
| 12/1/2021 | S | $1,102,232$ 6.807500 | s | ${ }_{(1154,562)}^{(1,40088)}$ | S | - | s | (121,450) | s |  | s |  | s | (34,813) | \$ | (807,235) | \$ | 22,680,260 |
|  | 5 | 6,807,500 | s | $(1,400,078)$ | 5 |  | S | $(1,076,104)$ | S |  | s |  | S | (308,461) |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\begin{array}{r} 21.0000 \% \\ 7.6646 \% \end{array}$ |  |  |  |  |



| Month | Net Plant In Service |  |  |  |  | Depr. Calculation |  |  |  |  |  | Accumulated Depreciation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Additions |  | Retirements | $\begin{gathered} \text { Net } \\ \text { Accumulated } \\ \text { Investment } \end{gathered}$ |  | Beginning of the Month Addition |  | $\begin{gathered} \text { Annual } \\ \text { Depr. Rate } \end{gathered}$ |  | Deprec Exp (NetDep) |  | Retirement |  | Cost Of Removal |  | End Bal |  |
| 12/1/2018 | \$ | [A] | \$ [B] | s | [C] |  | [D] |  | [E] |  | ${ }^{[F]}$ |  | [H] |  | [I] |  | [K] |
| 1/1/2019 | \$ | - | \$ | \$ | - | \$ | - | \$ |  | \$ |  | \$ |  | \$ |  | \$ |  |
| 2/1/2019 | \$ | - | \$ | \$ |  | \$ | - | \$ | - | \$ | - | \$ |  | \$ |  | \$ |  |
| 3/1/2019 | \$ | 5,911 | \$ | \$ | 5,911 | \$ | - | \$ | - |  | $(1,134)$ | \$ |  |  |  |  | 1,134 |
| 4/1/2019 | \$ | 91,237 | \$ | \$ | 97,148 | \$ | 5,911 | \$ | - | \$ | $(17,493)$ | \$ |  | \$ |  | \$ | 18,627 |
| 5/1/2019 | \$ | 846,170 | \$ | \$ | 943,318 | \$ | 97,148 | \$ | - | \$ | $(162,158)$ | \$ | - | \$ |  | \$ | 180,785 |
| 6/1/2019 | \$ | 432,761 | \$ - | \$ | 1,376,079 | \$ | 943,318 | \$ | - | \$ | $(81,139)$ | \$ |  | \$ |  |  | 261,924 |
| 7/1/2019 | \$ | 259,390 | \$ | s | 1,635,470 | \$ | 1,376,079 | \$ |  | \$ | $(47,005)$ | 5 |  | \$ |  | \$ | 308,929 |
| 8/1/2019 | \$ | 333,486 | \$ - | s | 1,968,956 | \$ | 1,635,470 | \$ | - | \$ | $(60,700)$ | \$ | - | \$ |  |  | 369,629 |
| 9/1/2019 | \$ | 366,012 | \$ | \$ | 2,334,968 | \$ | 1,968,956 | \$ | . | \$ | $(66,272)$ | \$ | - | \$ |  | \$ | 435,901 |
| 10/1/2019 | \$ | 360,117 | \$ | s | 2,695,085 | \$ | 2,334,968 | \$ | - | \$ | $(64,406)$ | \$ |  | \$ |  | \$ | 500,307 |
| 11/1/2019 | \$ | 117,478 | \$ - | \$ | 2,812,563 | \$ | 2,695,085 | \$ | - | \$ | $(17,127)$ | 5 | - | \$ |  | \$ | 517,434 |
| 12/1/2019 | S | 7,890 | \$ | s | 2,820,453 | S | 2,812,563 | \$ |  | \$ | 4,135 | \$ | . | \$ |  | S | 513,299 |
|  | s | 2,820,453 | 5 |  |  |  |  |  |  | S | (513,299) | S | . | s |  |  |  |
|  |  |  | S |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 5 |  |  |  |  |  |  |  |  |  |  |  |  | \$ | 513,299 |
| 1/1/2020 | \$ | 50 | 5 | \$ | 2,820,503 | \$ | 2,820,453 | \$ |  | \$ | 5,664 | \$ |  | \$ |  | \$ | 507,635 |
| 2/1/2020 | \$ | 100 | 5 | \$ | 2,820,603 | \$ | 2,820,503 | \$ |  | \$ | 5,665 | S |  | \$ |  | \$ | 501,971 |
| 3/1/2020 | \$ | 402 | 5 | \$ | 2,821,005 | \$ | 2,820,603 | \$ |  | \$ | 5,665 | \$ |  | \$ |  | \$ | 496,306 |
| 4/1/2020 | \$ | 70,304 | 5 | \$ | 2,891,309 | \$ | 2,821,005 |  | - |  | 5,666 | \$ |  | \$ |  |  | 490,640 |
| 5/1/2020 | \$ | 153,916 | \$ | \$ | 3,045,225 | \$ | 2,891,309 | \$ | - | \$ | 5,807 | \$ | - | s |  | \$ | 484,834 |
| 6/1/2020 | 5 | 324,604 | 5 | s | 3,369,829 | \$ | 3,045,225 | \$ |  | \$ | 6,116 | \$ |  | \$ |  | \$ | 478,718 |
| 7/1/2020 | \$ | 470,937 | \$ - | \$ | 3,840,767 | \$ | 3,369,829 | \$ | - | \$ | 6,768 | \$ | - | \$ |  | \$ | 471,950 |
| 8/1/2020 | s | 548,724 | \$ - | \$ | 4,389,490 | \$ | 3,840,767 | \$ | - | \$ | 7,714 | \$ | - | \$ |  | 5 | 464,236 |
| 9/1/2020 | \$ | 608,281 | \$ - | \$ | 4,997,772 | \$ | 4,389,490 | \$ |  | \$ | 8,816 | \$ |  | \$ |  | \$ | 455,421 |
| 10/1/2020 | S | 632,587 | \$ | \$ | 5,630,358 | \$ | 4,997,772 | \$ | - | 5 | 10,037 | \$ | - | \$ |  | \$ | 445,384 |
| 12/1/2020 | \$ | 660,156 | \$ - | \$ | 6,290,514 | \$ | 5,630,358 | \$ |  | \$ | 11,308 | \$ | - | \$ |  |  | 434,076 |
|  | \$ | 670,400 | \$ | s | 6,960,915 | s | 6,290,514 | \$ | . | \$ | 12,633 | S | - | \$ |  | \$ | 421,443 |
|  | s | 4,140,462 | \$ |  |  |  |  |  |  | \$ | 91,857 | \$ | - | s |  |  |  |








## Exhibit E

> Details Regarding MERC's Actual 2019 Relocation Projects Required to Accommodate Public Projects in the Right-of-Way


| $\qquad$ | WA |  | GUIC- ROAD RELO SVC REPL W/No MAIN | Governmental Enitity | $\begin{array}{\|c\|} \substack{\text { Const Complete e } \\ \text { Date }} \\ \hline \text { VARIOUs } \\ \hline \end{array}$ | Total Main <br> Footage | Main Installation cost |  | Main Intemal Labor cost |  | Main Removal cost |  | Total Main Cost |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  | \$ |  | s |  | \$ |  |
| Road | Q-4605-000527 |  | 2 FM -GUIC ROAD PROJ - SOUTH HWY (AACKSON) | Jackson County | 6/3/2019 |  | s | 154,479.24 | \$ | 136.03 \$ | s | 300.12 | \$ | 154,915.39 |
| Road | Q.4605-000798 | 284522 | 21 RM-GUIC ROAD Project-ARMINGTON | City of Farmington | 10/2/2/2019 | 6,555 | s | 163,489.23 | s | 144.03 | s |  | s | 163,633.26 |
| Road | Q. $4605-000819$ | 285831 | 5 RO-GUIC RD PRoJECT-HWY52 SP 5507-64 CHAT | MNDOT | 9/9/2019 | 14,370 | s | 430,450.81 | \$ | 49,575.77 | s |  | s | 480,026.58 |
| Road | Q. $4605-000820$ | 285472 | 7 RM-GUIC-ROAD PROJET-EMPIRE TOWNSHIP | Empire Township | 5/31/2019 | 2,940 | s | 68,003.08 |  | 59.88 | s | 240.09 | s | 68,303.05 |
| Road | Q.4605-000827 | 285473 | 9 FM -GUIC ROAD PROIECT (WELCOME) | City of Welcome | 6/21/2019 | 3,394 | s | 151,638.05 | s | 133.51 | s | 2,250.95 | s | 154,022.51 |
| Road | Q.4605-000833 | 285885 | 4 RM-GUIC ROAD PROUECT (LAKEVILIE) | City of Lakeville | 71/2019 | 5,462 | s | 239,736.39 | s | 4,275.77 | s |  | s | 244,012.16 |
| Road | Q-4605-000834 | 28476 | 5 PC-GUIC - 35 AND CSAH 7 R RAD PROIECT | mndot | 5/13/2019 | 559 | s | 12,182.59 | \$ | 8.53 | s | 270.11 | s | 12,461.23 |
| Road | Q.4605-000835 | 285674 | 3 FM-GUIC ROAD Proilect (alibert lea) | City of Albert Lea | 10/7/2019 | 2,783 | s | 262,360.50 | s | 1,588.09 | s |  | s | 263,948.59 |
| Road | Q-4605-000837 | 28633 | WA-GUIC ROAD RELO HWY 10 Project WADENA | MNDOT | 9/16/2019 | 3,418 | \$ | 47,67.45 | \$ | 47.63 | s | 408.29 | s | 48,133.37 |
| Road | Q-4605-000839 | 279587 | CL-GUIC NEW VALVE DUE TO 2016 ROAD | City of Moose Lake | 7/9/2019 |  | s | 1,167.57 | \$ | 0.82 | s |  | s | 1,168.39 |
| Road | Q.4605-000840 | 285305 | 3 Ro-GUIC RD PRoJECT-ELGIN 1ST ST SE | City of Elgin | 4/18/2019 | 475 | s | 41,811.55 | s | 29.27 | s |  | s | 41,840.82 |
| Road | Q-4605-000847 | 28677 | 5 Ro-GUIC ROAD PROIECT (STEWARTVULLE) | City of stewartville | 7/19/2019 | 6,508 | s | 173,935.07 | \$ | 4,385.55 | s | 720.30 | s | 179,040.92 |
| Road | Q.4605-000849 | 286848 | CL-GUIC HERMANTOWN DITCHING (LOWER MAIN) | City of Hermantown | 8/13/2019 |  | s | 2,880.84 | \$ | 2.02 | s |  | s | 2,882.86 |
| Road | Q-4605-000850 | 286595 | 6 FM-GUIC ROAD PROUECT WINNEBAGO(FARMONT) | City of fairmont | 10/28/2019 | 3,040 | s | 84,734,35 | s | 136.59 | s | 1,513.09 | s | 86,384.03 |
| Road | Q-4605-000854 | 286727 | RM-GUIC ROAD PROJECT (SCOOTT COUNTY 8) | Scott County | 7/19/2019 | 2,291 | s | 58,708.52 | \$ | 44.52 | s |  | \$ | 58,753.04 |
| Road | Q.4605-000858 | 286766 | WO-GUIC-ROAD PROIECT (ORTONVILE) | City of ortonville | 5/29/2019 | 207 | \$ | 4,692.00 | s | 3.28 | s | 240.09 | s | 4,935.37 |
| Road | Q.4605-000859 | 286924 | 3 WO-GUIC ROAD PROEECT PHASE 2 (CANBY) | City of Canby | 6/21/2019 | 275 | s | 15,660.90 | \$ | 10.96 | s | 810.33 | s | 16,482.19 |
| Road | Q. 46605000860 | 275989 | WA-GUIC PARK RAPIIS ROUNDABOUT PHASE 1 | MNDOT | 10/5/2019 | 2,152 | s | (11,412.41) |  | (10,585.84) |  |  | s | (21,998.25) |
| Road | Q-4605-000861 | 275989 | WA-GUIC PARK RAPIOS ROUNDABOUT PHASE 2 | MnDot | 7/1/2019 | 2,370 | s | 60,161.47 | \$ | 140.65 | s | 690.29 | \$ | 60,992.41 |
| Road | Q. $4605-000862$ | 287357 | $2 \mathrm{Cl-GUIC} \mathrm{BIWABIK} \mathrm{PROJECT-BIWABIK}$ | City of Biwabik | 4/25/2019 | 359 | \$ | 6,887.01 | \$ | 4.82 | s |  | \$ | 6,891.83 |
| Road | Q.4605-000863 | 28820 | 4 Ro-GUIC ROAD PROIECT-4TH ST SW TIE-IN | City of Rochester | 4/15/2019 | 27 | \$ | 3,445.62 | s | 17,318.17 | s |  | s | 20,763.79 |
| Road | Q-4605-000864 | 288880 | Ro-GUIC - ROAD PROIECT (RUSHHFRD) | City of Rushtord | 6/24/2019 | 4,849 | \$ | 111,524.62 | \$ | 98.21 |  | 510.22 | s | 112,133.05 |
| Road | Q-4605-000866 | 287394 | 1 bM-GUIC WEST AVE ROAD PROIECT Detroit Lk | City of Detroit lakes | 10/24/2019 | 5,183 | s | 134,778.94 | s | 118.69 | s | 1,038.43 | s | 135,936.06 |
| Road | Q-4605-000867 | 286653 | 3 BM-GUIC RELOC MAIN CSAH 15 AND TH7 | Bettrami County | 5/31/2019 | 466 | s | 16,134.82 | s | 11.29 | s | 270.11 | \$ | 16,416.22 |
| Road | Q-4605-000868 | 284307 | 3 FM-GUIC-ROAD PROJECT(ALEERT LLA STABLIES) | City of Albert Lea | 6/21/2019 | 7,973 | s | 190,414.26 | \$ | 167.52 | s |  | \$ | 190,581.78 |
| Road | Q-4605-000871 |  | 3 Ro-GUIC ROAD PROJECT-1 ST AVE SE PHASE 2 | City of Rochester | 9/23/2019 | 646 | s | 44,592.89 | 5 | 555.42 | s |  | s | 45,148.31 |
| Road | Q.4605-000873 | 280693 | 1 RM-GUIC ROAD PROJECT (DAKOTA 50-23) | Dakota County | 11/12/2019 |  | s | 177,027.69 | s | 3,076.16 | s | 60.24 | s | 180,704.09 |
| Road | Q.4605-000881 | 28835 | bm-GUIC will w st and roosevelt rd di | City of Bemidi | 6/3/2019 | 2,799 | s | 182,122.79 | \$ | 14,283.75 | s | 44,295.89 | \$ | 240,702.43 |
| Road | Q-4605-000889 | 28968 | WA-GUIC COUNTY RD 4 ROAD PROIECT | Wadena County | 5/8/2019 | 177 | s | 4,881.81 | s | 3.42 | s | 27.11 | \$ | 5,155.34 |
| Road | Q-4605-000890 | 289128 | 1 RO-GUIC-ROAD PROIECT (MANTORVILE) | City of Mantorille | 5/28/2019 | 1,078 | s | 24,114.49 | s | 2,625.67 | s |  | s | 26,740.16 |
| Road | Q.4605-000891 | 288859 | PC-GUIC ROAD PROJECT NORTH BRANCH WATER | City of North Branch | 5/31/2019 | 1,717 | 5 | 92,323.93 | \$ | 233.18 | s | 840.37 | \$ | 93,397.48 |
| Road | Q-4605-000904 | 287962 | PC-GUIC HWY 95-HEMMINGWAY ROUNDABOUT | MNDOT | 6/12/2019 | 236 | \$ | 6,208.35 | s | 4.35 | s | 540.22 | s | 6,752.92 |
| Road | Q-4605-000906 | 289269 | $9 \mathrm{Cl-GUIC}$ WATER AND Sewer project calumet | City of Calumet | 7/8/2019 | 1,355 | s | 29,460.65 | \$ | 20.62 | s |  | s | 29,481.27 |
| Road | Q. 46605000908 | 28932 | 5 CL - GUIC GRaND RAPIOS 2019 Street Improv | City of Grand Rapids | 6/20/2019 | 688 | s | 26,178.24 | 5 | 1,230.02 | s | 540.22 | s | 27,948.48 |
| Road | Q.4605-000911 | 28645 | 2 Wo-GUIC- ROAD PROJECT (TRACY) | City of Tracy | 8/13/2019 | 1,213 | s | 48,37.96 | 5 | 33.79 | s | 1,512.64 | \$ | 49,884.39 |
| Road | Q-4605-000918 | 289909 | 4 RM-GUIC ROAD PROIECTCREDIT RIVER TWNSP) | Credit River Township | 7/22/2019 | 1,223 | s | 25,618.65 | s | 17.94 | s | 480.18 | s | 26,116.77 |
| Road | Q.4605-000919 | 28905 | 3 Ro-guic rd project-csah 9 RElocations | MNDOT | 11/5/2019 | 7,278 | \$ | 469,123.01 | \$ | 22,961.97 | s |  | \$ | 492,084,98 |
| Road | Q.4605-000922 | 289862 | 3 Cl -GUIC 13TH ST R RHAB PROUECT CHISHOLM | City of Chisholm | 6/14/2019 | 2,178 | 5 | 42,820.20 | s | 29.97 | s | 270.11 | 5 | 43,120.28 |
| Road | Q-4605-000923 | 29093 | wo-GuI- - Road project (LAMBERTON) | City of Lamberton | 6/11/2019 | 85 | \$ | 4,519.10 | s | 3.36 | s |  | \$ | 4,52..46 |
| Road | Q.4605-000924 | 290182 | 3 Ro-GUIC - ROAD PROIECT (SPRING GROVE) | City of Spring Grove | 8/2/2019 | 1,160 | s | 39,070.41 | \$ | 722.44 | s |  | s | 39,792.85 |
| Road | Q-4605-000926 | 29023 | 3 RM-GUIC - Bonalre Path east (rosemount) | City of Rosemount | 6/14/2019 | 820 | 5 | 14,547.11 | \$ | 10.18 | s |  | s | 14,557.29 |
| Road | Q.4605-000927 | 288288 | 3 RO-GUIC-ROAD PROJECT (HWY 30 RUSHFORD) | MNDOT | 7/18/2019 |  | s | 25,906.68 | s | 18.14 | s | 360.15 |  | 26,284,97 |
| Road | Q.4605-000931 | 290230 | 9 Ro-guic - Road Proiect (ZUMBROTA) | City of fumbrota | 8/3/2019 | 964 | 5 | 48,654.95 | s | 1,827.37 | s |  | \$ | 50,482.32 |
| Road | Q-4605-000935 | 290189 | WA-GUIC SEBEKA CSAH 12 PROIECT | MNDOT | 6/13/2019 | 586 | s | 11,214.71 | s | 7.85 | s | 27.11 |  | 11,492.67 |
| Road | Q.4605-000936 | 290198 | 2 Rm-GUIC - quarry road (rosemount) | Dakota County | 6/11/2019 | 685 | 5 | 39,520.47 | \$ | 27.51 | s |  | s | 39,547.98 |
| Road | Q-4605-000995 | 29090 | WA-GUIC HWY 32 AND MARK BIVD ROAD PROJ | MNDOT | 7/31/2019 | 374 | s | 11,636.58 | s | 8.15 | s | 270.11 | s | 11,914,84 |
| Road | Q-4605-000946 | 290158 | 9 PC-GUIC ROAD PROEECT FARFFILD AVE RUSH | Chisago County | 6/17/2019 | 333 | \$ | 6,100.75 | \$ | 4.27 | s | 27.11 | \$ | 6,375.13 |
| Road | Q-4605-000947 | 290636 | PC-GUIC 2019 PINE CITY STREET PROUECT | City of Pine city | 9/16/2019 | 3,445 | s | 87,610,33 | s | 10,211.38 | s |  | 5 | 97,821.71 |
| Road | Q-4605-000970 | 290229 | Wo-GUIC HWY 75 REPLACE (CANBY) | MNDOT | 10/7/2019 | 774 | \$ | 155,003.41 | s | 9,845.44 | s | - | \$ | 164,8488.85 |
| Road | Q.4605-000971 | 291422 | CL-GUIIC CHISHOLM ALLEY ROAD PROJECT | City of Chisholm | 7/23/2019 | 390 | s | 8,135.24 | s | 5.71 | s |  | s | 8,140.95 |
| Road | Q-4605-000976 | 290728 | 2 RM-GUIC ROAD Project donald ave (eagan) | City of Eagan | 101/31/2019 | 2,564 | 5 | 53,314.90 | \$ | 684.58 | s | 720.52 | \$ | 54,720.00 |
| Road | Q-4605-000982 | 291810 | Cl-CO RD 130 RELOCATE 2 Pe maln ranier | Itasca County | 7/2/2019 | 140 | \$ | 3,352.55 | s | 2.35 | s | 270.11 | s | 3,625.01 |
| Road | Q-4605-000987 | 291922 | P PC-W 1st st reconstruction road proiect | City of Rush city | 7/29/2019 | 23 | \$ | 7,931.32 | \$ | 5.55 | s | 816.33 | s | 8,753.20 |
| Road | Q.4605-000988 | 292125 | 3 BM-HANNAH AVE AND 30TH ST NW CITY STREE | City of Bemidil | 7/26/2019 | 187 | \$ | 4,266.82 | \$ | 2.99 | s |  | s | 4,269.81 |
| Road | Q-4605-001010 | 292864 | Cl-GUIC CLOQUET R RAD PROIECT WASHINGTON | Elgin Township | 7/22/2019 | 20 | \$ | 2,650.46 | \$ | 1.88 | s | 408.17 | \$ | 3,060.51 |
| Road | Q-4605-001011 | 292530 | 9 FM-GUIC ROAD Proilect clausenalibert lea) | City of Albert Lea | 7/30/2019 | 1,316 | \$ | 30,653.46 | \$ | 22.26 | s | 240.09 | s | 30,915.81 |
| Road | Q-4605-001016 | 293887 | 7 BM -GUIC E WILLOW AND MADISON AVE | City of Detroit lakes | 8/12/2019 | 456 | \$ | 23,867.31 | s | 16.92 | s | 1,128.47 | \$ | 25,012.70 |
| Road | Q-4605-001017 | 293139 | 5 Ro-GUIC ROAD PROJECT HILL AVE(WANAMINGO) | City of Wanamingo | 8/19/2019 | 542 | \$ | 11,232.36 | \$ | 8.06 |  |  | s | 11,240.42 |
| Road | Q-4605-001027 | 293281 | WA-GUIC 4TH St AND LABREE | City of Thief River Falls | 8/12/2019 | - | \$ | 871.19 | \$ | 0.61 | s |  | s | 87.180 |
| Road | Q-4605-001028 | 293321 | 6 Ro- GUIC RD PROIECT- 2ND St Ne (KASSON) | City of Kasson | 8/26/2019 |  | \$ | 1,469.95 | \$ | 360.80 | s | 360.15 | s | 2,190.90 |
| Road | Q-4605-001033 | 293589 | 2 RM-GUC-ROAD PROJ-SP1904-31(TH50) | MnDot | 8/12/2019 | 447 | \$ | 15,138.31 | s | 12.18 | s | 240.09 | s | 15,390.58 |
| Road | Q-4605-001060 | 293718 | Ro-GUIC RD PR N LINE ST (WYKoff) | Fillmore County | 11/17/2019 | 3,602 | \$ | 71,521.97 | s | 7,125.20 | s | 27.66 | s | 78,924.83 |
| Road | Q-4605-001063 | 294040 | 4 Ro-GUIC 15AVE NW Clvet reloc (rochester) | City of Rochester | 9/30/2019 | 335 | \$ | 11,455.01 | \$ | 10.83 | s | 720.41 | \$ | 12,186.25 |
| Road | Q-4605-001067 | 294532 | 3 BM-GUIC RaNDOLPH AND HIGHLAND | City of Detroit lakes | 10/7/2019 | 683 | \$ | 25,48.05 | s | 24.97 | s | 567.21 | s | 26,080.23 |
| Road | Q-4605-001083 | 294840 | 1 Ro-GUIC EYOTA ALLEY- 1ST ST SE (EYOTA) | City of Eyota | 9/30/2019 | 312 | \$ | 9,675.24 | \$ | 9.67 | s | 360.26 | \$ | 10,045.17 |
| Road | Q.4605-001088 | 295059 | 7 Ro-GUIC 2ND AVE. NW (BYRON) | City of Byron | 10/7/2019 | 646 | \$ | 24,318.02 | s | 616.37 | s | 510.37 | s | 25,444.76 |
| Road | Q-4605-001096 | 295354 | 2 ro-guic red wing st (kenYon) | city of Kenyon | 11/8/2019 | 295 | \$ | 28,055.12 | \$ | 7,095.06 | s | 879.09 | \$ | 36,579.27 |
| Rood | Q.4605-001101 | 293531 | BM-GUIC MINNESOTA AND 3RD ST NW | City of Bemidi | 10/14/2019 | 248 | \$ | 14,537.63 | \$ | 14.54 | s | 510.37 | 5 | 15,062.54 |
| Road | Q.4605-001105 | 295436 | WA-GUIC WADENA BUISNESS PARK SEWER AND W | City of Wadena | 9/23/2019 |  | \$ | 2,001.18 | \$ | 2.00 | s |  | \$ | 2,003.18 |
| Road | Q-4605-001119 | 296549 | 1 Ro-gUIC 14TH ST SE (ZUMBRota) | City of fumbrota | 10/21/2019 | 92 |  | 9,895.63 | s | 9.90 | s |  | s | 9,905.53 |
| Road | Q-4605-001126 | 296781 | 5 Ro-GUIC 16TH St Ne Kasson (Kasson) | city of Kasson | 10/14/2019 | 127 | \$ | 2,633.97 | \$ | 2.63 | s |  | 5 | 2,636.60 |
| Road | Q-4605-001137 | 297344 | 4 RO-ROAD PROIECT STEWARTVILLE-398 10 THNW | Oimsted County | 10/30/2019 |  | \$ | 4,869.94 | \$ | 765.28 | s |  | \$ | 5,635.22 |
| Road | Q-4605-001146 |  | Ro - Gulc - CITY Of WANAMINGO- TALl Gra | City of Wanamingo | 11/4/2019 |  | \$ | 1,070.21 | \$ | 177.53 | s |  | \$ | 1,247.74 |
| Rood | Q.4605-000167 | 298982 | 5 Ro-GUl--EENIK ST R R CROSSING/RD PRoJECT | City of Lewiston | 12/1/2019 | 252 | \$ | 22,093.22 |  | 5,861.36 | s |  | s | 27,954.58 |
|  | Total |  |  |  |  | 121,339 |  | 4,433,186,69 |  | 158,457,34 |  | 67,792.18 |  | 4,659,436.21 |


| Projeat type | wss lement | wr＊ | Projec Name | Number of Senice lines | Total Senice ine footage | Senice enstal cost | Total foject cost | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Road | ${ }^{\text {NA }}$ | 293363 | 3 GuIc－Rood relo sic rel wno Man | 19 | 23301 s | $59,472.05$ ¢ | 59，472，05 |  |
| $\substack{\text { Road } \\ \text { Road }}_{\text {Red }}$ | Q．atios．00527 |  |  | ${ }_{82}^{4}$ | 533 s |  | ${ }_{\text {10，}}^{165.171 .07}$ |  |
| Rood | Q．4605 ．008819 | ${ }_{2858315}^{2035}$ |  | 61 | ${ }_{6,113}^{5,5}$ | 139，170．33 5 | ${ }_{619,196,91}$ |  |
| Road | Q．4605．000820 | 285472 | 7 RM．GULC．ROAD POOIECT－EMPRE TOWNSHP |  |  | $94,88,24$ s | $122,286,29$ |  |
| Road | Q．46655．000827 | ${ }^{2854735}$ | 9 ¢M．GUC R RaO．Proiect welcome | 5 |  | 130112 | ${ }^{161,1323,63}$ |  |
|  |  | ${ }_{28888545}^{2885}$ |  | ${ }_{0}^{12}$ |  |  |  |  |
| Road | Q．4605．000835 | 2885743 | 3 FM．Guic road proiect Aliger len） | 2 | 347 ¢ | 6，557．00 s | 270，505599 |  |
| Rood | Q．4605．000837 | 286336 | 6 Wa．GUIC ROAD Relo hwr 10 Proiect wabena | 10 | 2，293 | 43，629．79 | ${ }_{91,763.16}$ |  |
| Road | Q．4665．000839 | 2795879 | C－GUuIC New Valve due to 2016 foad |  |  |  | 1，16839 |  |
| ${ }_{\text {Road }}^{\text {Road }}$ | Q．atios．00880 | ${ }_{2}^{2833058}$ |  | ${ }_{50}$ | 1.994 | 75，449．71 s ${ }^{\text {s }}$ | ${ }_{\substack{41,840.82 \\ 254485,38}}$ |  |
| Road | Q． 466505.000849 | 2888888 | $9 \mathrm{CL-GUCLHERMANTOWN} \mathrm{DITCHING} \mathrm{(IOWER} \mathrm{MAIN)}$ | 0 |  |  | ${ }_{2,88286}$ |  |
| Road | Q．4605．000850 | 5956 | 6 FM GULC Road Proiect wineagoifarmowt） | ${ }^{13}$ | 1.041 | 25，501 |  |  |
| Rood | Q．4605．000854 | 2867270 |  | 1 | s | 1．594．79 |  |  |
| Road | Q．4．605．5000888 |  | 9 Wo－Gulc－Road Proilct（ OfRionvile） |  |  |  | 4，93537 |  |
| $\underbrace{\text { a }}_{\substack{\text { Road } \\ \text { Rood }}}$ |  | $\underset{2859897}{28924}$ |  | ！ | ${ }_{1,412}{ }^{\text {s }}$ | 26，37．60 ${ }^{\text {s }}$ |  |  |
| Road | Q．46055．000861 | 2753939 | 9 WA．GUIC P PAR R RAPDOS ROUNDABOUUTPMASE 2 | 0 | 5 | 270．64 | 60，992．41 |  |
| ${ }_{\substack{\text { Road } \\ \text { Road }}}^{\text {Red }}$ |  | ${ }_{2885320}^{2837}$ |  | ${ }_{0}^{2}$ |  |  | ${ }_{\text {chem }}^{\text {20，623，79 }}$ |  |
| Road | Q．4605．000864 | 2888085 |  | ${ }^{35}$ | 1.866 s | 65.35 .21 s | 177，448，26 |  |
| ${ }_{\text {Road }}$ | Q．4．605．500886 | ${ }_{2873941}^{2851}$ |  | ${ }^{11}$ | 6,302 | 175，35783 |  |  |
| ${ }_{\text {Road }}^{\text {Road }}$ | ${ }_{\text {a }}^{0.46055000888}$ | ${ }_{283}^{283037}$ |  | ${ }_{36}$ | 2.591 | 60.661 .83 s |  |  |
|  | Q． 46055.500881 | 288506 |  | 。 |  |  | ${ }_{45,14831}$ |  |
| Road | Q．4．665．500873 | ${ }_{28}^{28893355}$ |  | 0 | －334 5 |  |  |  |
| ${ }_{\substack{\text { Road } \\ \text { Road }}}^{\text {coded }}$ |  | ${ }_{280}^{2830585}$ |  | 2 |  | ${ }_{2} 9.0,43,45$ s | 336，878．47 <br> $7,198.9$ |  |
| Rood | Q．46555000880 | ${ }_{2}^{2891281}$ | Sis Ro－guc－roon proict Mantorvile） | 7 | 353 s | 11，626．26 ${ }^{\text {s }}$ | 388，366．42 |  |
| Road | Q．4605．00891 | ${ }_{2}^{288859}$ |  | ： | s | －${ }_{5}$ |  |  |
| Road | Q．4605．500906 | 288269 | 9 c－Guc watr ano sewer roiect caumet | 16 | ${ }_{1}^{1,320}$ s | $41,061.18$ ¢ | 70，529245 |  |
| Road | Q．4665．500098 | 2833325 |  |  |  | 34，386．67 s | ${ }_{\text {cki，335．15 }}$ |  |
| Road | ${ }_{\text {a }}^{\text {Q．4．4655．5000918 }}$ | 286952 <br> 289094 | 2\％Wo－Guic Road prouet（rrach | 0 | 150 ${ }^{\text {s }}$ | 3，397．19 ¢ | ${ }_{\text {a }}^{\text {a，}}$ |  |
| $\substack{\text { Road } \\ \text { Road }}_{\text {Red }}$ |  | ${ }_{2}^{2899055}$ |  | \％ |  | 34，25．39 ${ }^{\text {s }}$ | 492.084 .98 <br> 77376.67 |  |
| Road | Q．4．4655．000923 | 290038 | 34 Wo－GUIC－Road proiect（Lamberton） | 0 | s |  | ${ }_{4,522.46}$ |  |
|  | Q．46655000924 | 2901828 | 288 Ro．Gulc－Road proiject（spring grove） |  |  |  | ${ }_{42,226,30}$ |  |
| ${ }_{\substack{\text { Road } \\ \text { Road }}}^{\text {Red }}$ |  | $\underset{ }{23825388}$ |  | 1 | 800 5 | 9，512．96 |  |  |
| ${ }_{\text {Road }}^{\text {Road }}$ |  |  | 90．GUC－Road Proiect rummeral | 5 | 558 ¢ | 16，302．80 ${ }^{\text {s }}$ | 66，785．12 |  |
| $\underbrace{\text { cos }}_{\substack{\text { Road } \\ \text { Rood }}}$ |  | ${ }_{20}^{2011989}$ |  | ： |  |  |  |  |
| Rood | Q．4605．000945 | 290009 | W Wa Gulc Huw 32 Ano Mank ilvo road prol | 2 | 47 \＄ | 1，486．03 ${ }^{\text {s }}$ | 13，400．87 |  |
| Road | Q．4．6055．000946 | 290158 |  | 0 |  |  | ${ }^{6,375.13}$ |  |
| ${ }_{\substack{\text { Road } \\ \text { Road }}}^{\text {Red }}$ | ${ }_{\text {Qabe }}^{\text {Q．4．4655．5009970 }}$ | ${ }_{2202299}^{20636}$ |  | ${ }_{0}^{21}$ | 1，887 5 | 49，816．58 ${ }^{\text {s }}$ |  |  |
| Road | Q．46655．500971 | 294222 |  | 7 | ${ }^{824} 5$ | 16936882 s | ${ }_{\text {20，027．77 }}$ |  |
| $\substack{\text { Road } \\ \text { Rood }}_{\text {Rod }}$ |  | ${ }_{2}^{29072828}$ |  | ${ }_{0} 6$ |  |  |  |  |
| Road | Q．4605．000987 | 299228 |  | 2 | 150 s | 5，375．10 s | 14，22830 |  |
|  |  | ${ }_{22212854}^{221234}$ |  | 0 |  |  |  |  |
| Road | Q．4605．000111 | 229530 |  | 6 |  | 9，740．94 s |  |  |
| ${ }_{\substack{\text { Road } \\ \text { Road }}}^{\text {Red }}$ | Q．46655．0001016 | 233087 | 7 BM－GUCE EWILOW ANO MAOISON AVE | ： |  | 0 s | 25，01270 |  |
| ${ }_{\substack{\text { Road } \\ \text { Road }}}^{\text {Red }}$ |  | ${ }_{233810}^{231395}$ | Stis | 。 |  | －${ }^{\text {os }}$ |  |  |
| ${ }_{\text {Road }}$ | Q．46655．001028 | 2333212 |  | 0 |  | $0{ }^{5}$ | ${ }^{2,129090}$ |  |
| ${ }_{\substack{\text { Road } \\ \text { Road }}}^{\text {cose }}$ |  | ${ }_{2}^{23353988}$ |  | ${ }_{11}$ |  |  | 15，30．58 <br> 101，8228 |  |
| $\underbrace{\text { a }}_{\substack{\text { Road } \\ \text { Rood }}}$ |  | ${ }_{2}^{29945302}$ |  | ？ | 2065 | 5，930．09 ${ }^{\text {s }}$ | 18，116．34 26，080．23 |  |
| Rood | Q．at605．001033 | $\xrightarrow{298800}$ |  | ${ }_{6}^{6}$ |  |  |  |  |
| Road | Q．4605．0010966 | 2953542 |  | ！ |  |  | － |  |
| $\underbrace{\text { Red }}_{\substack{\text { Road } \\ \text { Rood }}}$ |  | ${ }_{2}^{295353150}$ |  |  |  | 6，236．22 s ${ }^{\text {s }}$ | 21.29876 <br> $2_{2,00318}$ |  |
| Road | Q．4605．001119 | 296599 |  | 。 | ． | 0 s | ${ }_{\text {9，905，} 53}^{20,2018}$ |  |
| ${ }_{\text {Road }}^{\text {Road }}$ | Q．46655．001126 |  |  | O |  | $0{ }^{0}$ | ${ }_{\text {2，}}^{2} 5$ |  |
| ${ }_{\substack{\text { Rood } \\ \text { Rood }}}^{\text {Rood }}$ | ${ }_{\text {a }}^{\text {a．4655 }}$ | ${ }_{2}^{2975880}$ | Ser | O |  |  |  |  |
|  | ${ }_{\text {a }}^{\text {Qatasos．01167 }}$ |  |  | \％ | （6315 | \％${ }^{\text {che }}$ | ${ }_{\text {2 }}$ 27，954．588 |  |

## EXHIBIT E - DETAILED DATA

|  |  |  |  | Additions |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Project Type | WES Element | Wr* | Project Name | 1 1" Plastic | $2{ }^{2 \prime}$ Plastic | $4^{\text {" Plastic }}$ | 6"Plastic | $8^{\text {" P Pastic }}$ | 1 "Steel |  | 1-1/2" Steel | $2{ }^{\text {" Steel }}$ | $3^{\text {" Steel }}$ | 4 " Steel | $\begin{gathered} \text { Total } \\ \substack{\text { Footage } \\ \text { Installed }} \end{gathered}$ |
| Road | Q.4605-000527 |  |  | 3 | 303 | 6 | 2,874 | 0 |  | 0 | 0 | 0 | 0 | 0 | 3,186 |
| Road | Q-4605-000798 |  |  | 14 | 3,538 | 3,003 | , | 0 |  |  | 0 | 0 | 0 | 0 | 6,555 |
|  | Q.4605-000819 |  |  |  | 10,052 | 4,313 |  |  |  |  | 0 | 0 | 0 | 0 |  |
| Road | Q.4605-000820 |  |  | 0 | 2,940 | 0 | 0 | 0 |  | 0 | 0 | 0 |  | 0 | 2,940 |
| Road | Q.4605-000827 | 2854727 RM-GUUC-ROAD PROIJEC-EMPIRE Township |  | 0 | 970 | 2,295 | 0 | 0 |  | 0 | 0 | 0 | 0 | 29 | 3,394 |
| Road | Q.4605-000833 | 2858854 RM-GUIC ROAD PROJECT (LAKEVILE) |  | 2 | 1,634 | 45 | 3,781 | 0 |  |  | 0 | 0 | 0 | 0 | 5,462 |
| Road | Q. 46005.000834 | 2847615 PC-GUIC $1-35$ AND CSAH 7 ROAD PROJECT |  |  | 559 |  |  | , |  | 0 | 0 |  | 0 | 0 | 559 |
| Road | Q. 46005.000835 | 2856743 FM-GUIC ROAD PROJECT (ALBERT LEA) 2866336 WA-GUIC ROAD RELO HWY 10 PROJECT WADENA |  | 0 | 251 | 24 | 1,000 | 1,508 |  | 0 | 0 | 0 | 0 | 0 | 2,783 |
| Road | Q-4605-000837 |  |  | 0 | 3418 | 0 | , | 0 |  | 0 | 0 | 0 | 0 | 0 | 3,418 |
| Road | Q-4605-000839 | 2795879 Cl-GUIC NEW VALVE DUE TO 2016 ROAD2853058 RO-GUC RD PROECT-ELIN 15T ST SE |  | 0 |  | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 |  |
| Road | Q. 4605 -000840 |  |  | 0 | ${ }_{138}$ | 169 | 0 | 0 |  | 153 | 0 | 12 | 3 | 0 | 475 |
| Road | Q.4605-000847 | 28367745 Ro-GULC ROAD PROUECT (STEWARTVILIE) |  | 0 | 3,979 | 2,529 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 6,508 |
| Road | Q.4605-000849 |  |  | 2 |  |  | 0 | 0 |  |  | 0 | 0 | 0 | 0 |  |
| Road | Q. 4605 -00850 |  |  | 0 | 572 | 2,468 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 3,040 |
| Road | Q. 46605.000854 | 2865956 FM-GUIC ROAD PROJECT WINNEBAGO(FARMONT) |  | 22 | 413 | 1,856 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 2,291 |
| Road | Q.4605-000858 | 2867270 RM-GUIC ROAD PROJECT (SCOTT COUNTY 8) 2867669 WO-GUIC - ROAD PROJECT (ORTONVILLE) |  | 0 | 207 | 0 | 0 | 0 |  |  | 0 | 0 | 0 | 0 | 207 |
| Road | Q.4605-000859 | 2867669 WO-GUIC - ROAD PROJECT (ORTONVILLE) 2869243 WO-GUIC ROAD PROJECT PHASE 2 (CANBY) |  | 0 | 81 | 194 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 275 |
| Road | Q.4605-000860 |  |  | 2 | 2 | 631 | 769 | 748 |  | 0 | 0 | 0 | 0 | 0 | 2,152 |
| Road | Q.4605-000861 | 2759899 WA-GUIC PARK RAPIIS ROUNDABOUT PHASE 2 |  | 1 | 178 | 2,077 | 114 | 0 |  | 0 | 0 | 0 | 0 | 0 |  |
| Road | Q-4605-000862 | 2873572 Cl-GUIC BIWABIK PROUECT-BIWABIK |  | 0 | 359 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 359 |
| Road | Q.4605-000863 | 2880204 RO-GUIC ROAD PROJECT-4TH ST SW TIE-IN |  | 1 | 26 |  | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 |  |
| Road | Q.4605-000864 | 2888805 Ro-GUIC - ROAD PROJECT (RUSHFORD) |  | 0 | 4,848 | 0 | 0 | 0 |  | 1 | 0 | 0 | 0 | 0 | 4,849 |
| Road | Q-4605-000866 | 2873941 BM-GUIC WEST AVE ROAD Project detroit LK |  | 0 | 4,219 | 964 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 5,183 |
| Road | Q-4605-000867 | 2866533 BM-GUIC RELOC MAIN CSAH 15 AND TH 7 <br> 2843073 FM-GUIC-ROAD PROJECT(ALBERT LEA STABLES) |  | 0 | 4 | 462 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 |  |
| Road | Q. 4605 -000868 |  |  | , | 3,667 | 4,304 |  | 0 |  | 0 | 0 | 0 |  | 0 | 7,973 |
| Road | Q.4605-000871 | 2843073 FM-GUIC-ROAD PROJECT(ALEERT LEA STABLES) |  |  |  |  | 646 | 0 |  | 0 | 0 | 0 |  | 0 |  |
| Road | Q-4605-000873 |  |  | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 9,99 |
| Road | Q-4605-000881 | 2883559 BM-GUIC WILOW ST AND ROOSEVELT RD DL |  | 0 | 805 | 10 | 1,061 | 923 |  | 0 | 0 | 0 | 0 | 0 |  |
| Road | Q.4605-000889 | 2890685 WA-GUIC COUNTV RD 4 ROAD PROJECT |  | 1 | 176 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 177 |
| Road | Q.4605-000890 | 2891281 RO-GUIC - ROAD PROJECT (MANTORVILE) |  |  | 1,073 | 0 | , | 0 |  | 0 | 0 | 0 | 0 | 0 | 1,078 |
| Road | Q-4605-000891 |  |  | 1 | 0 | 19 | 1,697 | 0 |  | 0 | 0 | 0 | 0 | 0 | 1,717 |
| Road | Q-4605-000994 | 2888591 PC-GUIC ROAD PROIECT NORTH BRANCH WATER 2879629 PC-GUIC HWY 95-HEMMINGWAY ROUNDABOUT |  | 0 | 236 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 236 |
| Road | Q.4605-000906 | 2892699 C-GUIC WATEER AND SEWER PROJECT CALUMET |  | 0 | 1,355 | 0 | 0 | 0 |  | 0 | 0 | 0 | , | 0 | 1,355 |
| Road | Q.4605-000908 | 2893325 CL-GUIC GRAND RAPIOS 2019 STREET IMPROV |  | 0 | 688 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 |  |
| ${ }_{\text {Road }}^{\text {Road }}$ | Q.4605-000911 | 2866452 Wo-GUIC- ROAD PROIIECT (TRACY)2899094 RM-GUIC ROAD PROIECT(CREDIT RVER TWNSP) |  | 0 | 454 | 493 | 0 | 0 |  | 0 | 0 | 0 | 0 | 66 | 1,213 |
|  | Q.4605-000918 |  |  | 2 | 791 | 430 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 1,223 |
| Road | Q.4605-000919 |  |  | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 7,278 |
| Road | Q.4605-000922 | 2899953 Ro-GUIC RD Prolecrecsat Relocations |  | 0 | 2,178 | , | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 2,178 |
| Road | Q-4605-000923 |  |  | 0 |  | 85 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 |  |
| Road | Q. 4605 -000924 |  |  | 1 | 1,159 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 |  |
| Road | Q. 46005000926 | 2901828 RO-GUIC - ROAD PROJECT (SPRING GROVE) |  | 0 | 820 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 820 |
| Road | Q.4605-000927 | 2882688 RO-GUIC- ROAD PROJECT (HWY 30 RUSHFORD) |  | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 |
| Road | Q.4605-000931 | 2902309 RO-GUIC - ROAD PROJECT (ZUMBROTA) 2901894 WA-GUIC SEBEKA CSAH 12 PROJECT |  | 19 | 375 | 0 | 570 | 0 |  | 0 | 0 | 0 |  | 0 | 964 |
| Road | Q. 46005.000935 |  |  | 0 | 586 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 |  |
| Road | Q.4605-000936 | 2901894 WA-GUIC SEBEKA CSAH 12 PROJECT 2901982 RM-GUIC - QUARRY ROAD (ROSEMOUNT) |  | 0 | 0 | 0 | 685 | 0 |  | , | 0 | 0 | 0 | 0 | 685 |
| Road | Q. $4605-000945$ | 2900909 WA-GUIC HWY 32 AND MARK BIVD ROAD PROJ |  | 0 | 2 | 372 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 374 |
| Road | Q.4605-000946 |  |  | 0 | 333 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 333 |
| Road | Q-4605-000947 | 2901589 PC-GUIC ROAD PROEECT AIRREELD AVE RUSH |  | 0 | 3,445 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 |  |
| Road | Q. 4665 -000970 |  |  | 0 | 0 | , | 0 | 0 |  | - | 0 | 0 | 0 | 774 | 774 |
| Road | Q-4605-000971 |  |  | 0 | 390 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 390 |
| Road | Q.4605-000976 |  |  | 0 | 2,564 | 0 | 0 | 0 |  | 0 | 0 | 0 |  | 0 | 2,564 |
| Road | Q.4605-000982 | 2907282 RM-GUIC ROAD PROJECT DONALD AVE (EAGAN) 2918108 CL-CO RD 130 RELOCATE 2 PE MAIN RANIER |  | 0 | 140 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 140 |
| Road | Q.4605-000987 |  |  | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | ${ }^{23}$ | 0 | 0 |  |
| Road | Q-4605-000988 | 2921253 BM-HANNAH AVE AND 30 TH ST NW CITY STREE 2928644 CL-GUIC CLOQUET ROAD PROJECT WASHINGTON |  | 0 | 187 | 0 | 0 | 0 |  | 0 | 0 | 0 |  | 0 | 187 |
| Road | Q-4605-001010 |  |  | 0 | 0 | 0 | , | 0 |  | - | 0 | 20 | 0 | 0 |  |
| Road | Q-4605-001011 | 2928644 Cl-GUIC Cloauet road proiect WashingTon |  | 0 | 1,316 | 0 | 0 | 0 |  | - | 0 | 0 | 0 | 0 | 1,316 |
| Road | Q.4605-001016 | 2925399 M-GUUC ROAD PROUECT CLAUSEN(ALEERT LEA) |  | 0 |  | 0 | 0 | 0 |  | 0 | 0 | 162 |  | 94 |  |
| Road | Q.4605-001017 | 2931395 Ro-GUIC ROAD PROJEGT HILL AVE(WANAMINGO) |  | 0 | 542 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 542 |
| Road | Q.4605-001027 |  |  | 0 |  | 0 | 0 | 0 |  | , | 0 | 0 | 0 | 0 |  |
| ${ }_{\text {Road }}^{\text {Road }}$ | Q. 46005 -001028 |  |  | 0 | 0 | 0 |  | 0 |  |  | 0 | 0 | 0 | 0 | 0 |
|  | Q.4605-001033 | 2935892 RM-GUIC-ROAD PROI-SP1904-31(TH50) |  | 2 | 445 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 447 |
| Road | Q.4605-001060 | 2937180 RO-GUIC RD PR N LINE ST (WYKOFF) |  | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 3,602 |
| Road | Q.4605-001063 |  |  | 0 | 335 | 0 | , | 0 |  | 0 | 0 | 0 | 0 | 0 | 335 |
| Road | Q-4605-001067 | 2940404 RO-GUC 15 SAVE NW CIVRT RELOC (ROCHESTER) |  | 0 | 0 | 166 | 517 | 0 |  | 0 | 0 | 0 | 0 | 0 | 683 |
| Road | Q-4605-001083 |  |  | 0 | 312 |  | 0 | 0 |  |  | 0 | 0 | 0 | 0 |  |
|  | Q-4605-001088 | 2950597 Ro-GUIC 2ND AVE. NW (BYRON) |  | 2 | 0 | 644 | 0 | 0 |  | , | 0 | 0 | 0 | 0 | 646 |
| Road | Q.4605-000996 |  |  | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 295 |
| Road | Q-4605-001101 | 2953542 Ro-GUIC RED WING St (kenvon) |  | 0 | 22 | 226 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 248 |
| Road | Q.4605-001105 | 2954360 WA-GUIC WADENA BUISNESS PARK SEWER AND W |  | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 |  | 0 | , |
| Road | Q. 4605 -001119 | 2953369 WA-GUUC C CADENA AUSUEESS PARK SEWER ANO W |  | 0 | 0 | 0 |  | 0 |  |  | 0 | 92 | 0 | 0 | 92 |
| Road | Q-4605-0001126 | 2967815 Ro-GUIC 16TH ST NE KASSON (KAS5ON) |  | 27 | 100 | 0 | 0 | 0 |  | 0 | 0 | 0 | , | 0 |  |
| Road | Q-4605-000137 |  |  | 0 | 0 |  |  | 0 |  |  | 0 | 0 |  | 0 |  |
| ad | Q. 4605 -001146 | 297538 | Ro- guic - CITr Of Wanamingo - tall gra | 0 | 0 | , | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 |
|  | Q-4605-001167 | 2988825 | 5 Ro-GUIC-BENIKE St Rr crossing/rD Project |  |  | 0 | 0 | 0 |  | 0 | 。 | 0 | 0 | 。 | 252 |
| Total |  |  |  | 114 | 63,191 | 27,785 | 13,774 | 3,179 |  | 154 | 0 | 309 | 3 | 1,463 | 121,339 |


|  |  |  |  | Retirements |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Note |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Project Type | WBS Ilement | WR \# | Project Name | 3/4" Plastic | $1^{\text {" Plastic }}$ | $\underset{\substack{1-1 / /^{4} \\ \text { Plastic }}}{\text { cos }}$ | 2" Plastic | $3^{\text {" Plastic }}$ | $\begin{gathered} 3^{\prime \prime} \text { Plastic \& } \\ \text { Greater } \end{gathered}$ | 4"Plastic | ${ }^{6}$ " Plastic | 1"Steel | 1-1/4"Steel | $\begin{aligned} & 1-1 / 2 z^{2} \\ & \text { Stelt } \end{aligned}$ | 2 " Steel | 3"Steel | 4"Steel | 6 "Steel | $8^{8}$ Steel | Total footage Retired |  |
| Road | Q-4600-000527 |  |  | 0 | 0 | 0 | -661 | 0 | 0 | -2,834 | -13 | 0 | 0 | 0 | -752 | 0 | 0 | 0 | 0 | $-4,260$ |  |
| Road | Q-4605-000798 |  |  | 0 | 0 | 0 | -6,446 | 0 | 0 | -40 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -6,486 |  |
| Road | Q-4605-000819 | 2858315 RO-GUIC RD PROJECT-HWY52 SP 5507-64 CHAT |  |  |  | 0 | -7,490 |  |  | 139 | 0 |  | 0 | 0 |  |  | 0 | 0 |  | -9,591 |  |
| Road | Q-4605-000820 |  |  | 0 | 0 | 0 | -1,719 | 0 | 0 | 0 | 0 |  |  | 0 | $-1,174$ | 0 | 0 | 0 | 0 | -2,893 |  |
| Road | Q-4605-000827 | 2854739 FM-GUIC ROAD PROJECT (WELCOME) 2858854 RM-GUIC ROAD PROJECT (LAKEVILLE) |  | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 |  | 0 | 0 | -1,679 | -1,743 | 0 | 0 | 0 | -3,422 |  |
| Road | Q-4605-000833 |  |  | 0 | 0 | 0 | -5,038 |  | 0 | -265 | 0 |  | 0 | 0 |  |  | 0 | 0 | 0 | -5,303 |  |
| Road | Q.4605-000834 | 2858854 RM-GUIC ROAD PROJECT (LAKEVILLE) 2847615 PC-GUIC I-35 AND CSAH 7 ROAD PROJECT |  | 0 | 0 | 0 | -497 | 0 | 0 | -175 | 0 |  | 0 | 0 | 0 |  |  | 0 |  | -672 |  |
| Road | Q-4605-000835 |  |  | 0 | 0 | 0 | -179 | 0 | 0 | -451 | -3 | 0 | 0 | 0 | 0 | 0 | 26 | -348 | -727 | -1,734 |  |
| Road | Q-4605-000837 |  |  | 0 | 0 | 0 | .993 | 0 | 0 | 0 | 0 |  | 147 | 1,181 | -3,215 | 646 | 0 | 0 | 0 | -6,182 |  |
| Road | Q-4605-000839 |  |  | 0 | 0 | 0 |  |  | 0 | 0 | 0 |  |  |  |  | 0 | 0 | 0 | 0 | 4 |  |
| Road | Q-4605-000840 | 2795879 CL-GUIC NEW VALVE DUE TO 2016 ROAD 2853058 RO-GUIC RD PROJECT-ELGIN 1ST ST SE |  | 0 | 0 | 0 | 4 | 3 | 0 | 0 | 0 |  | 0 | 0 | -69 | -138 | -11 | 0 | 0 | -225 |  |
| Road | Q-4605-000847 | 2867745 RO-GUIC ROAD PROJECT (STEWARTVILIE) |  | 0 | 0 | 0 | - | 0 | 0 | 13 | 0 |  | 0 | 0 | -3,095 | 0 | -3 | 0 | 0 | -3,111 |  |
| Road | Q-4605-000849 | 2888889 Cl-GUIC HERMANTOWN DITCHING (LOWER MAIN) |  |  |  |  | -2 |  | 0 |  | 0 |  | 0 | 0 |  |  | 0 | 0 |  |  |  |
| Road | Q-4605-000850 | 2855956 FM-GUIC ROAD PROIECT WINNEBAGO(FARMONT) |  | 0 | 0 | 0 | -79 | 0 | 0 | -287 | 0 | 0 | 0 | 0 | -1,330 | 0 | -1,561 | 0 | 0 | -3,257 |  |
| Road | Q-4665-000854 | 2887270 RM-GUIC ROAD PROJECT ( (SCOTT COUNTY 8) |  | 0 | 0 | 0 | - 547 | 0 | 0 | -1,438 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1,985 |  |
| ${ }_{\text {Road }}^{\text {Road }}$ |  | 2867669 WO-GUIC - ROAD PROJECT (ORTONVILLE) <br> 2869243 WO-GUIC ROAD PROJECT PHASE 2 (CANBY) |  | 0 | 0 | 0 | -206 -80 | 0 | 0 | $\stackrel{0}{-188}$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -206 |  |
| Road | Q.4605-000860 | 2869243 WO-GUIC ROAD PROJECT PHASE 2 (CANBY) 2759897 WA-GUIC PARK RAPIDS ROUNDABOUT PHASE 1 |  | 0 | 0 | 0 | -152 | 0 | 0 | -611 | 872 |  | 0 | 0 | 0 | 0 | 0 | 0 | -214 | -1,849 |  |
| Road | Q.4605-000861 | 2759899 WA-GUIC PARK R APPILS R ROUNDABBOUT PHASE 2 |  | 0 | 0 | 0 | 0 | 0 | 0 | -2,222 | -72 |  |  | 0 | 0 | 0 | 0 | 0 | 0 | -2,294 |  |
| Road | Q-4605-000862 | 2873572 CL-GUIC BIWABIIL PROIECT-BIWABIK |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| Road | Q-4605-000863 | 2880204 RO-GUIC ROAD PROIECT-4TH ST SW TIE-IN |  | 0 | 0 |  | 0 | 0 | 0 | 0 | -6 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |  |
| Road | Q.4605-000864 | 2880805 RO-GUIC - ROAD PROJECT (RUSHFORD) 2873941 BM-GUIC WEST AVE ROAD PROJECT DETROIT LK |  | 0 | 0 | 0 | -324 | 0 | 0 | 0 | 0 |  |  | 0 | -1,880 | -1,210 | 0 | 0 | 0 | -3,014 |  |
| Road | Q-4605-000866 |  |  | 0 | 0 | 0 | -2 |  | 0 | 0 | 0 |  | 0 | 0 | -5,837 | -295 | 0 | 0 |  | -6,134 |  |
| Road | Q-4605-000867 | 2873941 BM-GUIC WEST AVE ROAD PROJECT DETROIT LK 2866533 BM-GUIC RELOC MAIN CSAH 15 AND TH 7 |  | 0 | 0 | 0 | 0 | 0 | 0 | -368 | 0 |  |  | 0 | 0 | 0 | 0 | 0 | 0 | -368 |  |
| Road | Q-4605-000868 | 2865533 BM-GUIC RELOC MAIN CSAH 15 AND TH7 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 87 | 0 | -1,683 | 0 | -6,516 | 0 | 0 | -8,286 |  |
| Road | Q-4665-000871 | 2885063 R-GUGIC ROAD PROIECT-15T AVE SE PHASE 2 |  | 0 | 0 | 0 | 0 | 0 | 0 | -423 | -104 |  | 0 | 0 | 0 | 0 | 0 | 0 |  | -527 |  |
| Road | Q-4605-000873 |  |  | 0 | 0 | 0 | -1,845 | 0 | 0 | -8 | -166 |  | 0 | 0 |  | 0 | 0 | 0 |  | -2,019 |  |
| Road | Q-4605-000881 | 2883559 BM-GUIC W WLLOW ST A AD ROOSEEVELT RD DL |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | -1,350 | 0 | 837 | $-1,218$ | 0 | -3,405 |  |
| Road | Q-46655000889 | 2880685 WA-GUIC COUNTY R D 4 R RAD PROIECT |  | 0 | 0 | 0 | -17 | 0 | 0 | 0 |  |  | 0 | 0 | -188 |  | 0 |  |  | --795 |  |
| ${ }_{\text {Road }}^{\text {Road }}$ | ${ }_{\text {Q.4-4605-0008991 }}$ | 2891281 RO-GUIC - ROAD PROJECT (MANTORVILLE) 2888591 PC-GUIC ROAD PROJECT NORTH BRANCH WATER |  | 0 | 0 | 0 | -192 | 0 | 0 | -235 | -1,354 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | $\bigcirc$ | ${ }^{-1,908}$ |  |
| Road | Q.4605-000904 | 2888591 PC-GUIC ROAD PROJECT NORTH BRANCH WATER 2879629 PC-GUIC HWY 95-HEMMINGWAY ROUNDABOUT |  | 0 | 0 | 0 | -1,711 | 0 | 0 | 0 | , |  | 0 | 0 | -6 | 0 | 0 | 0 | 0 | -1,717 |  |
| Road | Q-4605-000906 |  |  | 0 | 0 | 926 | 0 | 0 | 0 | 0 | 0 |  | 833 | 0 |  | 0 | 0 | 0 |  | -1,759 |  |
| Road | Q-4605-000908 |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | . 55 | 0 | . 324 | 0 | 0 | 0 | 0 | -379 |  |
| Road | Q-4605-000911 | 2866452 WO-GUIC - ROAD PROJECT (TRACY) 2899094 RM-GUIC ROAD PROJECT (CREDIT RIVER TWNSP) |  | 0 | 0 | 0 | -200 | 0 | 0 | 0 | 0 |  | 0 | 0 |  | 1 | 686 | 0 | 0 | -887 |  |
| Road | Q-4605-000918 |  |  | 0 | 0 | 0 | -801 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -801 |  |
| Road | Q-4605-000919 | 2899953 RO-GUIC RD PROEECT-CSAH 9 RELOCATIONS |  | 0 | 0 | 0 | 0 | 0 | 0 | -198 | 0 |  | 0 | 0 | -193 | $-6,763$ | -32 | 0 |  | -7,186 | Specific material and size information for additions is still pending. |
| Road | Q.4605-000922 |  |  | 0 | 0 | 0 | -1,694 | 0 | 0 | 0 | 0 | 0 | -366 | 0 | -142 | 0 | 0 | 0 | 0 | -2,202 |  |
| Road | Q-4605-000923 |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 86 | 0 |  | 0 | 0 |  | 0 | 0 | 0 |  | -86 |  |
| Road | Q-4605-000924 |  |  | 0 | 0 | 0 | -11 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | -1,052 | 0 | -48 | 0 |  | -1,159 |  |
|  | Q-4605-000926 | 2901828 RO-GUIC - ROAD PROJECT (SPRING GROVE) 2902533 RM-GUIC - BONAIRE PATH EAST (ROSEMOUNT) |  | 0 | 0 | 0 | -777 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -777 |  |
| Road | Q-4605-000927 | 28882688 RO-GUIC- - ${ }^{\text {POAD PROJECT (HWY } 30 \text { RUSHFORD) }}$ |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | Specific material and size information for additions and retirements is still pending. |
| Road | Q.4605-000931 |  |  | 0 | 0 | 0 | 0 | 0 | -25 | -60 | -15 |  | 0 | 0 | -784 | -673 | 0 | 0 | 0 | -1,557 |  |
| Road | Q-4605-000935 | 2901894 WA-GUIC SEBEKA CSAH 12 PROJECT 2901982 RM-GUIC - QUARRY ROAD (ROSEMOUNT) |  | 0 | 0 | 0 | -591 | 0 | 0 | 0 | , | 0 | 0 | 0 | , | 0 | 0 | 0 | 0 | -591 |  |
| Road | Q-4605-000936 |  |  | 0 | 0 | 0 |  | 0 | 0 | - 5 | 20 |  | 0 | 0 |  | 0 | 0 | 0 |  | -25 |  |
| Road | Q-4605-000945 | 2901982 RM-GULC- -UAARY YOAD (ROSEMOUNT) |  | 0 | 0 | 0 | -2 | 0 | 0 | -601 | 0 |  | 0 | 0 |  | 0 | 0 | 0 | 0 | -603 |  |
| Road | Q-4605-000946 | 2900959 WA-GUIC HWY 32 AND MARK BLIV ROAD PROJ |  | 0 | 0 | 0 | 82 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -82 |  |
| Road | Q-4605-000947 | 2906367 PC-GUUC 2019 PINE CITY STREET PROUECT |  | 0 | 0 | 0 | -750 | 0 | 0 | -22 | 0 |  | 0 | 0 | -916 | -304 | -156 | 0 | 0 |  |  |
| Road | Q.4605-000970 | 2902297 WO-GUIC HWY 75 REPLACE (CANBY) |  |  | 0 |  | 0 |  | 0 |  | 0 |  | 0 | 0 | 0 |  | . 523 | 0 |  | -523 |  |
| Road | Q-4605-000971 |  |  | 0 | 0 | 0 | -229 | 0 | 0 | 0 | 0 |  | 0 | 0 | -49 | 0 | 0 | 0 | 0 | -278 |  |
| Road | Q-4605-000976 | 2914229 CL-GUIC CHISHOLM ALLEY ROAD PROJECT 2907282 RM-GUIC ROAD PROJECT DONALD AVE (EAGAN) |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | -2,570 | 0 | 0 | 0 | 0 | -2,570 |  |
| Road Road | ${ }_{\text {Q.4.4605-0090987 }}$ | 2907282 RM-GUIC ROAD PROJECT DONALD AVE (EAGAN) 2918108 CL-CO RD 130 ReLocate 2 PE MAIN RANIER |  | 0 | 0 | 0 | -109 |  | 0 | $\bigcirc$ | $\bigcirc$ |  | 0 | 0 | ${ }_{-40}$ | $\bigcirc$ | 0 | 0 |  | -109 -40 |  |
| Road | Q-4605-000988 | 2921253 BM-HANNAH AVE AND 30 TH ST NW CITY STREE 2928644 CL-GUIC CLOQUET ROAD PROJECT WASHINGTON |  | 0 | 0 | 0 | -228 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -228 |  |
| Road | Q-4605-001010 |  |  | 0 | 0 | 0 | , | 0 | 0 | 0 | 0 |  | 0 | 0 | 28 | 0 | 0 | 0 |  | -28 |  |
| Road Road |  | 2928644 CL-GUIC CLOQUET ROAD PROJECT WASHINGTON 2925309 FM-GUIC ROAD PROJECT CLAUSEN(ALBERT LEA) |  | 0 | 0 | 0 | -912 |  | 0 | 0 | 0 |  | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 912 |  |
| Road | Q.4605-001017 | 2933877 BM-GUIC E WILLOW AND MADISON AVE |  |  | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 125 | 0 | 0 | 0 | 0 | 0 |  |
| Road | Q-4605-001027 | 2931395 RO-GUC R ROAD PROIECT HLL AVE(WANAMINGO) |  | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 |  | -146 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |
| Road | Q-4605-001028 | 2932810 WA-GUIC 4TH ST AND LABREE <br> 2933216 RO- GUIC RD PROJECT- 2ND ST NE (KASSON) |  | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | , | 0 | 0 | 0 | 0 | 0 | 0 |  |
| Rooad | Q-4605-001033 |  |  | 0 | 0 | , | -445 | 0 | 0 | , | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -445 |  |
| Road | Q-4605-001060 |  |  | 0 | 0 | 0 | -2,047 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -2,047 | Specific material and size information for additions is still pending. |
| Road | Q-4605-001063 | 2937180 RO-GUIC RD P P N LIN ST (WWKOFF) |  | 0 | -1 | 0 | . 56 | 0 | 0 | 0 | 0 |  | 0 | 0 | -406 | 0 | 0 | 0 | 0 | -463 |  |
| Road | Q-4605-001067 | 995323 BM-GUIC RANDOLPH AND HIGHLAND |  | 0 | 0 | 0 | 0 | 0 | 0 | -134 | -554 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | -688 |  |
| RoadRoad | Q-46055001083 |  |  | 0 | 0 |  | 4 |  | 0 | 0 | 0 |  | 0 | 0 | -286 | 0 | 0 | 0 | 0 | -286 |  |
|  | Q-4605-001088 |  | 550597 Ro-GUIC 2ND AVE. NW (BYRON) |  | , | , | -4 |  | 0 | , | 0 |  | 0 | 0 | -15 | -255 | 0 | 0 | 0 | -276 |  |
| Road | Q-4605-001096 | 2953542 Ro-GUIC ReD Wing st (kenYon) |  | 0 | 0 | 0 | , |  | 0 | 0 | 0 |  | 0 | 0 | 0 | -1 | 0 | 0 | 0 |  | Specific material and size additions is still pending. |
| Road | Q-4665-001101 |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | -8 | 213 | 0 | 0 | 0 | -221 |  |
| Road | Q-4605-001105 |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -109 | 0 | 0 | 0 | 0 | -109 |  |
| Road Road | ${ }_{\text {Q a-4605 }}^{\text {a }}$ - 4001119 |  | 665491 RO-GUIC 14TH ST SE (ZUMBROTA) | 0 | 0 | 0 | - 9 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | 0 | -77 | 0 | 0 | 0 | 0 | - -94 |  |
| ${ }_{\text {Road }}^{\text {Road }}$ | ${ }_{\text {Q.4465-001137 }}$ | 67815 Ro-GULC 16TH ST N E KASSON (KASSON) |  | $\bigcirc$ | 0 | 0 |  |  | 0 | 0 | 0 | 0 | 0 | 0 | -115 | 0 | 0 | 0 | 0 | -94 |  |
| Road | Q.4605-001146 |  | 3344 RO-ROAD PROIECT STEWARTVILE- 3988 10THNW 75880 RO- GUIC CITY OF WANAMINOO - TAll GRA | 0 |  | 0 | -160 |  |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 | 0 | 0 | -160 |  |
| Road | Q-4605-001167 | 298882 | Ro-GUIC-BENIKE ST Rr Crossing/RD Project | 0 | 0 | 0 |  | 0 | 0 | 4 | 0 |  | 0 | 0 | , | 0 | 0 | 0 | 0 |  | Specific material and size information for additions is still pending. |
| Lotal |  |  |  |  | -1 | 261 | 37,999 | 3 | 25 | 20,807 | 3,179 |  | 1,682\| | 1,181 | 31,059 | 12,242\| | 20,692 | 1,566 | 941 | -112,305 |  |



[PRIVATE DATA BEGINS



PRIVATE DATA ENDS]



\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline Type \& WR \({ }^{\text {H }}\) \& Related WR \& Op District \& Projetrame \& Address \& city \& Dessription \\
\hline Road Project \& \({ }^{2923412}\) \& \({ }^{2907822}\) \& \({ }^{93}\) \& \& \& Eagan \& Replacment roai proikct \\
\hline  \& \({ }_{29293413}^{291923}\) \& (2907828 \& \({ }_{93}^{93}\) \& \& \& \(\underbrace{\text { Eagan }}_{\text {EAGASAN }}\) \&  \\
\hline Road Project \& 291923 \& 2907282 \& 93 \& \& \& eagan \& RePLICEMENT / Roa Proiect \\
\hline Road Project \& \({ }_{2917318}\) \& 2907282 \& \({ }^{93}\) \& \& \& Eagan \& Replucement Roai proikct \\
\hline \({ }_{\substack{\text { Road Proectet } \\ \text { Road } \\ \text { Project }}}\) \& \({ }_{2919293}^{29137}\) \& 29072882 \& \({ }_{93}^{93}\) \& \& \&  \&  \\
\hline Roas Project \& 291923 \& \({ }_{2007882}\) \& \({ }_{93}\) \& \& \& Eagan \& REPPACEMENT / RRaO Proikct \\
\hline \({ }^{\text {Road Project }}\) \& \({ }^{29262333}\) \& \({ }^{2907882}\) \& \({ }_{93}^{93}\) \& \& \& \({ }_{\text {eagan }}\) \& Replacement /raio proikct \\
\hline  \& \({ }_{29297315}^{2923}\) \& (2907822 \& \({ }_{93}^{93}\) \& \& \& \({ }_{\substack{\text { eagan } \\ \text { Eagan }}}^{\text {end }}\) \&  \\
\hline  \& \({ }_{29}^{291731516}\) \& \({ }_{2907882}^{290782}\) \& \({ }_{93}^{93}\) \& \& \& \(\underset{\substack{\text { EGGAAN } \\ \text { EAGAN }}}{\text { end }}\) \&  \\
\hline Road Project \& \({ }^{22926235}\) \& \({ }^{2907782}\) \& \({ }_{93} 9\) \& \& \& \({ }_{\text {EaGAN }}\) \& Repplacment Road proikct \\
\hline \({ }_{\substack{\text { Road Project } \\ \text { Road Proiect }}}\) \& \({ }_{2950383}^{292134}\) \& \({ }_{269383}^{290728}\) \& \({ }_{98}^{93}\) \& \& \& \({ }_{\text {Efagan }}^{\text {Mora }}\) \&  \\
\hline Road roject \& 2950380 \& 2693363 \& \({ }_{98}\) \& \& \& mora \&  \\
\hline  \& \({ }_{2}^{29898897}\) \& \({ }_{2886336}^{28636}\) \& 89
89 \& \& \&  \&  \\
\hline Road proiect \& 2889178 \& \({ }^{2866336}\) \& 89 \& \& \& WADENA \& MN-TEMP R REPLCE SCC LONG SIDE-425 MTR \\
\hline  \& 2991985
292690 \& \(\underset{\text { 2007282 }}{ }\) \& 89
93 \& \& \& WEAGAN Wadena-Won drcksoc \&  \\
\hline Road Proiect \& 291536 \& 2907822 \& \({ }^{93}\) \& \& \& Eagan \& Replucement roai proikct \\
\hline \({ }_{\substack{\text { Road Project } \\ \text { Road Proieter }}}\) \& \({ }_{28885717}^{29154}\) \& 2907782
26383 \& 93
89 \& \& \&  \&  \\
\hline  \& \({ }_{2981766}^{28887}\) \& \({ }_{2886336}^{20933}\) \& \({ }_{89}^{89}\) \& \& \& WADEENA \&  \\
\hline Road Project \&  \&  \& \({ }_{89}^{93}\) \& \& \& \({ }_{\text {EAGAN }}^{\text {Eat }}\) \& Reppacement Road proicc \\
\hline \({ }_{\text {Read }}\) Road froed \& \({ }_{2889975}^{20975}\) \& \({ }^{28863363}\) \& \({ }_{89} 89\) \& \& \& WADENA \&  \\
\hline  \& \({ }_{2917311}^{292939}\) \& (2907822 \& \({ }_{93}^{93}\) \& \& \& \({ }_{\substack{\text { eagan } \\ \text { EAGAN }}}\) \&  \\
\hline Road Project \& 2917310 \& 2907882 \& \({ }_{93}\) \& \& \& efagan \& Rephacment / Roa Proiect \\
\hline \({ }_{\substack{\text { Road Project } \\ \text { Road Proiect }}}\) \& \({ }_{29171731}^{2917}\) \& \(\xrightarrow{2907782}\) \& \({ }_{93}^{93}\) \& \& \&  \& Replacenert frop proikct \\
\hline Road Proiect \& 2926944 \& 2907822 \& \({ }_{93}\) \& \& \& eagan \& RePLICEMENT / Road Proiect \\
\hline \({ }_{\substack{\text { Road Project } \\ \text { Road } \\ \text { Proiect }}}\) \& \({ }_{29171313}^{29293}\) \& \({ }_{29072882}^{290782}\) \& \({ }_{93}^{93}\) \& \& \& \(\substack{\text { eagan } \\ \text { EAGAN }}^{\text {end }}\) \&  \\
\hline Road roject \& 2926495 \& \begin{tabular}{l}
2907828 \\
\\
\\
\hline 85636
\end{tabular} \& \({ }_{9}^{93}\) \& \& \& Eagan \& REPLCCEMENT/ ROAD PROIECT \\
\hline  \& \({ }_{2981767}^{28873}\) \& (2866336 \& \begin{tabular}{|c}
89 \\
89
\end{tabular} \& \& \& WADEEA \&  \\
\hline \({ }^{\text {Road Project }}\) \& \({ }^{2926236}\) \& \({ }^{29078282}\) \& \({ }_{89}\) \& \& \& EAGAN \& Replacement frai proilct \\
\hline  \& \({ }_{2880170}^{29879}\) \& \({ }_{2693363}^{28636}\) \& \({ }_{94}\) \& \& \& FMMAARMONT-frmmitara soc \&  \\
\hline Road Project \& 2877760

291293 \& 2865956

290357 \& 94 \& \& \&  \& GUIC ROAO Repr <br>
\hline  \& ${ }_{29}^{29167706}$ \& ${ }_{20}^{2906367}$ \& ${ }_{98}$ \& \& \& Pine criv \&  <br>
\hline Road Proiect \& 2916704 \& 200636 \& ${ }_{98}$ \& \& \& Pine city \&  <br>
\hline  \& ${ }_{295197737}^{2917}$ \& ${ }_{29898801}^{29037}$ \& 98
95 \& \& \&  \&  <br>
\hline Roas Project \& 2951734 \& 2988801 \& \& \& \& Re:EYOTADOVEREEOTA SO-C \& GUII R RAD Project / Servic rep licement <br>
\hline Road Proiect \& ${ }_{2}^{2951735}$ \& ${ }^{2298401}$ \& ${ }_{95}^{95}$ \& \& \& RCGEYOTADOUVEREOTA AD-C \&  <br>
\hline ${ }_{\substack{\text { Road Proiect } \\ \text { Road Project }}}^{\text {R }}$ \& ${ }_{2959894}^{2957}$ \& ${ }_{29192988}^{294801}$ \& 95
98 \& \& \&  \&  <br>
\hline Road Proiect \& $\underset{\substack{2956187 \\ 295624}}{ }$ \& $\underset{\text { 2295597 }}{\substack{29597}}$ \& ${ }_{95}^{95}$ \& \& \&  \&  <br>
\hline  \& ${ }_{2955612}^{295124}$ \& ${ }_{\text {2950597 }}^{295937}$ \& ${ }_{95}^{95}$ \& \& \&  \&  <br>
\hline Road Proiect
Road P 隹ete \& 2922597
295689 \& 2906367
263363 \& 98
95 \& \& \&  \&  <br>
\hline Road Project \& 2956126 \& 2950597 \& ${ }_{95}$ \& \& \& rc-brron-bryaon so-c \& Brroon Road proiect / SERVCE Replacement <br>
\hline  \& 2956188
2956125 \& ${ }_{2950597}^{29597}$ \& 95
95 \& \& \&  \&  <br>
\hline Road Project \& 2888465 \& 2856743 \& 94 \& \& \&  \& GUC ROAD REPL <br>

\hline Road Project \& 2888863 \& | 2856743 |
| :--- |
|  |
| 2937180 | \& ${ }_{95}^{94}$ \& \& \&  \& GUIC RRaA Repl <br>

\hline ${ }_{\text {Road }}$ Road Projectet \& ${ }_{29518804}^{296899}$ \& ${ }_{2953535}^{29315}$ \& ${ }_{97}$ \& \& \& BM.BEMIOIBEEMIIN SO-C \&  <br>
\hline Road Project \& 2961541 \& 2953515 \& \& \& \& BM-EEMIDII-EEMID SDC \& GUIC Replact SVC. W/ 1 "LONG SIIE - -250 MTR <br>
\hline  \& $\underset{\substack{296179781 \\ 29618}}{ }$ \& ${ }_{2}^{26933635}$ \& ${ }_{97}^{97}$ \& \& \&  \&  <br>
\hline Roas Project \& 2877257 \& 2865956 \& 94 \& \& \& ${ }_{\text {FM-AARMONT-FRMNTARA SOCC }}$ \& GUICROAD REPL <br>
\hline Road Project \& 287725 \& 2865956 \& \& \& \& FMMAARMONT-FRMNTARA SDCC \& GUIC R Rad Repl <br>

\hline ${ }_{\substack{\text { Road Project } \\ \text { Road Proiect }}}$ \& | 2981788 |
| :--- |
| 298200 | \& 2858854

288727 \& 93
93 \& \& \& LAKEVILE
CREII RVER Twp \&  <br>
\hline ${ }_{\text {Road }}$ Roadioject \& ${ }_{2}^{2987447}$ \& 290099 \& 89 \& \& \& WOD-THE RV L-THPRVV SD-C \& MN-TEMP REPLCE SVC. W/ 1 " SHort Sile - 250 MTR <br>
\hline ${ }_{\substack{\text { Road Project } \\ \text { Road } \\ \text { Roject }}}$ \& ${ }_{\text {29064797 }}^{296388}$ \& ${ }_{29}^{2937180}$ \& 95
95 \& \& \&  \&  <br>
\hline Road roject \& ${ }^{2963941}$ \& 2937180 \& ${ }^{95}$ \& \& \& RC.WWKoff.c.ingstand so \& Crir of Wrooff /WKKof frad Proiect <br>
\hline ${ }_{\substack{\text { Road Project } \\ \text { Road Proiet }}}$ \& ${ }_{2963337}^{29636}$ \& ${ }_{2937180}^{293780}$ \& 95
95 \& \& \&  \&  <br>
\hline Road Proiect \& 2963472 \& 2937180 \& 95 \& \& \& RC.WMKoff.-C.ingsiand so \& WKoof foad prouet / Seracce replacement <br>
\hline ${ }_{\substack{\text { Road Proiect } \\ \text { Road Projeter }}}$ \& 2963345
293348 \& 2937180
2937180 \& ${ }_{95}^{95}$ \& \& \&  \&  <br>
\hline  \& ${ }_{2963346}^{29638}$ \& ${ }_{2937180}^{293780}$ \& \& \& \& Re-WWrofeckekinsilan so \& WKKoff Road Proiect / Service f icilicment <br>
\hline Road Proiect \& ${ }_{2}^{29636397}$ \& 2937180
269353 \& ${ }_{93} 9$ \& \& \&  \&  <br>
\hline Road Project \& \& \& \& \& \& \&  <br>
\hline
\end{tabular}

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Type \& WR. \& Related WR \& Op District \& Projectame \& Const Complet Date \& Month \& Size Installed \& Total Footage Installed \& Size 8 Tree Retired \& Total Footage Retired \& Senice Instalation Cost \& <br>
\hline Road Project \& 2788891 \& 269363 \& ${ }^{93}$ \& \& 4/16/2019 \& \& 4 1" ${ }^{\text {and }}$ d smaler \& 158 \& $1 / 2$ P Pastic \& \& 5 \& 3,37323
27725 <br>
\hline Road Project \& ${ }^{2788893}$ \& ${ }^{2693363}$ \& 93 \& \& 4/1/62019 \& \& ${ }^{4}$ 4 1 "nans smaler \& 90
55 \& 1/2" Pastat \& \& \&  <br>
\hline Road roject \& 2888296

288379 \& ${ }^{2873931}$ \& 97 \& \& 4/25/2019 \& \& ${ }^{4} 1$ I 1 and smaler \& 55
52

5 \& S \& \& \& | 1,76270 |
| :--- |
| $1,316.38$ | <br>

\hline  \& 28783899
28871 \& ${ }^{28873572}$ \& ${ }_{96}^{96}$ \& \& ${ }^{4 / 25522019} 4$ \& \& ${ }_{4}^{4} 1$ 1 1 and smaler \& ${ }_{37}^{52}$ \& 1/2/2 Plastsic \& 148
187 \& \& 1,31638
$1,454,26$ <br>
\hline Road Project \& 2886398 \& 2873941 \& 97 \& \& 4/26/2019 \& \& 41 1" and smaler \& 62 \& $3 / 4 / 4$ Steel \& \& \& ${ }_{1,880,39}$ <br>
\hline Road Project \& ${ }^{2887743}$ \& ${ }^{2873941}$ \& 97 \& \& 4/26/2019 \& \& $4{ }^{1}$ "and smaler \& 40 \& 1/2" Plastic \& \& \& 1,982388 <br>
\hline  \& 2885130

288495 \& ${ }_{2}^{2873941}$ \& ${ }_{95}^{97}$ \& \& ${ }^{4 / 29920129}$ \& \& ${ }^{4}$ 4 1 I'and smaler \& ${ }_{41}^{108}$ \& ${ }^{3 / 44 \text { steel }}$ \& \& \& $2,8,83,89$
1.04767 <br>
\hline Road proiect \& ${ }_{22885207}^{28893}$ \& ${ }_{2288315}^{28815}$ \& 95 \& \& 4/2922019 \& \& 4 11 and smaler \& 40 \& $3 / 4 \mathrm{~A}$ steel \& \& \& 1,047767
$1,071.83$ <br>
\hline Road Project \& 2886304 \& 2873941 \& 97 \& \& 4/30/2019 \& \& 41 1. and smaler \& 52 \& $1 / 2^{\text {P Pasastic }}$ \& \& s \& 1.071783
1,74610 <br>
\hline  \& 2888126

2886139 \& ${ }_{28739941}^{28894}$ \& ${ }_{97}^{97}$ \& \& 4/3072019
$4 / 302019$ \& \& ${ }_{4}^{4}$ 4 1 and smaler \& ${ }_{5}^{57}$ \& 3/4/ Preel \& \& s \& $2,0.06 .69$
2,083,
1 <br>
\hline Road Project \& 2885121 \& ${ }_{22853315}^{28394}$ \& 95 \& \& ${ }_{4}^{4 / 3 / 30 / 202019}$ \& \&  \& ${ }_{61}^{51}$ \& \& \& \& ${ }^{2}$ <br>
\hline Road Project \& 2884992 \& 2888315 \& 95 \& \& 4/30/2019 \& \& 41 " and smaler \& 21 \& 3/4.steel \& \& s \& ${ }^{1,1,089} \mathbf{1}$ <br>
\hline  \& 288833

2886143 \& ${ }_{2}^{28739941}$ \& 97 \& \& 5/1/2019
$51 / 2019$ \& \&  \& ${ }_{125}^{92}$ \& S \& \& 5 \& 2,295999
2,79603 <br>
\hline  \& ${ }_{2888270}^{28873}$ \& ${ }_{2873941}^{28894}$ \& 97 \& \& $5 / 1 / 2019$ \& \& 51 a and smaler \& ${ }_{52}^{125}$ \& $1 / 2$ P Pasastic \& \& s \& ${ }_{\text {1,56212 }}$ <br>
\hline Road Proiect \& 2885034 \& 2873941 \& 97 \& \& 51/2019 \& \& 51 "and smaler \& 141 \& 3/4/ Steel \& \& s \& 3,306.68 <br>
\hline Road Project \& 2888801

286010 \& -284221 \& 93 \& \& 5/1/2019 \& \& 5 ${ }^{\text {a }}$ "and smaler \& 82 \& 1/2" Plastic \& \& s \&  <br>
\hline  \& 2888108
2886013 \&  \& 97 \& \& \$5/20019 5/2019 \& \&  \& 145
52 \& 3/4/ Steel \& \& s \& $3,1,19.20$
$1,377.76$ <br>
\hline Roadromecter \& ${ }_{2885970}^{288013}$ \& ${ }^{2873941}$ \& 97 \& \& 5/2/20019 \& \& 51 51 and smamaler \& 132
13 \& (1/4. Steel \& \& \&  <br>
\hline Road Project
Road Proiet \& 2888994
284990 \& 2888315
288815 \& 95
95 \& \& 5/52/2019 \& \&  \& ${ }_{61}^{63}$ \&  \& 140 \& 5 \& ${ }^{2,143,11}$ <br>
\hline  \& 2888990
288991 \& 2888315

288315 \& ${ }_{95}$ \& \& 5/2/2019 \& \& 5 51 a and smaler \& ${ }_{42}$ \& 3/4.steel \& 131 \& s \& | $1,881.78$ |
| :--- |
| 2,35.07 |
| 2.258 | <br>

\hline Road Project \& 2885082 \& 2873941 \& 97 \& \& 5/32019 \& \& 51 "and smaler \& 44 \& 3/4" Steel \& \& \& ${ }^{2,9296.12}$ <br>
\hline  \& ${ }_{2}^{289937288}$ \& ${ }_{2845221}^{28421}$ \& ${ }_{93}^{93}$ \& \& ¢ \& \& S ${ }^{\text {a }}$ (12 and smaler \& ${ }_{54}^{92}$ \& 1/2" Plastic \& \& \& 2,269.51
1,6883 <br>
\hline Road Project \& 2849373 \& ${ }^{2845221}$ \& 93 \& \& ${ }_{5}^{51 / 22019}$ \& \& 51 and maler \& ${ }_{89} 8$ \& 1/2" Pasatic \& 91 \& 5 \& ${ }^{1}$ <br>
\hline  \& ${ }_{\text {c }}^{288939374}$ \&  \& ${ }_{93}^{93}$ \& \& $\underset{5}{5 / 3 / 212019}$ \& \&  \& ${ }_{89}^{65}$ \& ${ }_{1 / 2 / 2 \text { P Pasastic }}$ \& \& \&  <br>
\hline Road Project \& 2899371 \& ${ }^{2845221}$ \& 93 \& \& ${ }_{5}^{51 / 22019}$ \& \& 51 mand maler \& ${ }_{7} 8$ \& $1 / 2$ " Pastic \& 74 \& 5 \& ${ }^{2} 1,909697$ <br>
\hline  \& 2889370
289369 \& 284221
285221 \& ${ }_{93}^{93}$ \& \& $\underset{5}{5 / 3 / 2 / 2019}$ \& \&  \& ${ }_{56}^{60}$ \& 1/2" Plastic \& \& \& 1,759.07
$1,69.84$ <br>
\hline Road Project \& ${ }^{2887499}$ \& ${ }^{2759897}$ \& ${ }^{89}$ \& \& 5/32019 \& \& ${ }^{5}$ 5 1 "and smaler \& 92 \& $1 / 2{ }^{\text {P Plastic }}$ \& 177 \& 5 \& 1,883.47 <br>
\hline  \& ${ }^{28885157}{ }_{2}^{288001}$ \& 2873941
287341 \& 97 \& \& $\underset{\substack{\text { S/6/2019 }}}{5 / 629}$ \& \&  \& ${ }_{46}^{128}$ \& 3/4" Steel \& \& \& 3,1878.85
1,15222 <br>

\hline Road project \& ${ }^{28893355}$ \& ${ }^{2845221}$ \& 93 \& \& ${ }_{5}^{5 / 6 / 2029}$ \& \& 51 and smaler \& ${ }_{56}^{56}$ \& $1 / 2$ Pr pastic \& \& s \& | $1,605.76$ |
| :--- |
| 1,580 | <br>

\hline  \& 2849361

28969 \& 2848221

284221 \& ${ }_{93}^{93}$ \& \& $\underset{\substack{5 / 6 / 2029 \\ 5 / 2019}}{\substack{\text { a }}}$ \& \&  \& | 55 |
| :---: |
| 40 | \& 1/2" Plastic \& \& \& $1,665.80$

$1,450.43$ <br>
\hline Road Project \& 2899637

289362 \& (284221 \& ${ }_{93}^{93}$ \& \& ¢5/6/2019 \& \& S ${ }^{\text {a }}$ "and smaler \& ${ }_{46}^{42}$ \& 1/2" Plastic \& 45 \& s \& | $1,5150.08$ |
| :--- |
| 1,57875 | <br>

\hline Road foiect \& ${ }_{2}^{2899363}$ \& ${ }^{2845221}$ \& 93 \& \& 5/6/2019 \& \& 5 \% and smaler \& ${ }_{64}^{46}$ \& 1/2 Prastic \& \& \& 1,5787,75
1,8439 <br>
\hline Road Project \& 2899360

2093685 \& ${ }^{2848221}$ \& 93 \& \& ¢5/6/2019 \& \& 5 ${ }^{\text {a }}$ "and smaler \& 74 \& ${ }_{3 / 4}^{1 / 2}$ Preastic \& 76
118 \& \& 1,99495
1,66665 <br>
\hline  \& ${ }^{28885368}$ \& 287394

287391 \& 97
97 \& \& $\underset{\substack{5 / 6 / 2019 \\ 5 / 2019}}{\substack{\text { che }}}$ \& \& ${ }_{\text {a }} 51$ " and smaler \& 65
102 \&  \& ${ }_{55}^{118}$ \& \& $1,666.66$
2,61430 <br>
\hline  \& ${ }_{2874117}^{2887}$ \& ${ }_{2854739}^{28479}$ \& ${ }_{94}^{94}$ \& \& 5/7/2019
$5 / 72019$ \& \&  \& ${ }_{22}^{40}$ \& 1/2" Plastic \& \& \& $1,527.53$
1,07263 <br>
\hline Road Project \& ${ }_{2}^{2849629}$ \& ${ }^{2845221}$ \& 93 \& \& $57 / 72019$ \& \& 51 and maler \& 42 \& 1/2" Pasatic \& 44 \& \& ${ }^{1,51518.72}$ <br>
\hline  \& 28999366 \& ${ }_{2}^{28452221}$ \& ${ }_{93}^{93}$ \& \& 5/7/2019
$5 / 72019$ \& \&  \& ${ }_{94}^{42}$ \& 1/2" Plastic \& \& \& ${ }_{\text {2, }}^{1,119.4 .47}$ <br>

\hline Road proect \& | 2899359 |
| :--- |
|  |
| 23954 | \& ${ }^{2845221}$ \& 93 \& \& $57 / 72019$ \& \& 51 and maler \& 46 \& $1 / 2 /$ Prastic \& \& s \& ${ }^{1,5750.57}$ <br>

\hline  \& 28899356 \& ${ }^{2} 28485221$ \& ${ }_{93}^{93}$ \& \& $5 / 7 / 72019$
$5 / 72019$ \& \&  \& 71
121 \& 1/2" Plastic \& 78
118 \& \& ${ }_{\text {l }}^{\text {1,975.5.01 }}$ <br>
\hline Road Priject \& 2888872

28883 \& 2873941
283941 \& 97 \& \& 5 57/72099 \& \& S ${ }^{\text {a }}$ "and smaler \& 154
128
128 \&  \& 107 \& 5 \&  <br>
\hline  \& ${ }_{2}^{28898131}$ \& 288390885

280 \& 89 \& \& 5/8/2019 \& \& ${ }_{5} 51$ and and smaler \& 128
60 \& 1/2 Plastic \& \& s \& ${ }_{1}^{2,390921}$ <br>
\hline Road Project \& 289133 \& 2890685 \& 89 \& \& 5/8/2019 \& \& 5 Tie over \& 2 \& $1 / 2$ " Pastic \& \& s \& 73424 <br>
\hline Road Project
Road Proiet \& 2888478
288572 \& 2873941
2873941 \& 97
97 \& \& cisk \& \&  \& ${ }_{70}^{132}$ \& $3 / 445$ steel
$3 / 4$ Stel \& 97
120 \& 5 \& 3,212.80
2,43211 <br>

\hline Road Project \& 2885112 \& ${ }^{2873941}$ \& 97 \& \& ${ }_{5}^{5 / 8 / 82019}$ \& \& 51 "and smaler \& 48 \& 3/4/steel \& 100 \& \& | 2,433,49 |
| :--- |
| 2, | <br>

\hline  \& 2885198

2885870 \& ${ }_{28739941}^{28891}$ \& ${ }_{97}^{97}$ \& \& $5 / 8 / 2019$

$5 / 82019$ \& \& S ${ }^{\text {a }}$ (2and smaler \& ${ }_{61}^{114}$ \&  \& | 83 |
| :---: |
| 107 |
| 1 | \& s \& 4,490.77

2, 26.08 <br>
\hline  \&  \& - ${ }_{\text {2873941 }}^{283941}$ \& 97 \& \&  \& \&  \& ${ }^{61} 101$ \& ${ }^{3 / 4 / 5 \text { Peel }}$ \& \& \&  <br>
\hline  \& ${ }_{28889351}^{28851}$ \& ${ }_{28439291}^{2891}$ \& ${ }_{93}^{97}$ \& \& cisk \& \&  \& 100
55 \&  \& \& s \& $2,598.50$
$1,728.40$ <br>
\hline Road Project \& 2849352 \& ${ }^{2845221}$ \& ${ }_{93}$ \& \& 5/9/2019 \& \& 51 Iand mmaler \& 61 \& $1 / 2$ " Pastic \& \& \& ${ }_{1}^{1,830.52}$ <br>
\hline ${ }_{\substack{\text { Road Project } \\ \text { Road Proiet }}}^{\text {ate }}$ \&  \& ${ }^{2848521}$ \& ${ }_{93}^{93}$ \& \& 5/9/12019 \& \&  \& 50 \& (1/2 Prastic \& \& \& $1,613.77$
$1,651.62$ <br>
\hline  \&  \&  \& ${ }_{93}^{98}$ \& \& (5) \& \&  \& 50
64
46 \& 为 $1 / 2 /$ P Pasastic \& \& \&  <br>

\hline  \& ${ }_{2}^{28855575}$ \&  \& ${ }_{97}^{97}$ \& \& ¢ \& \&  \& | 46 |
| :---: |
| 67 | \& ${ }^{3 / 4 / 4 \text { Steel }}$ \& ${ }_{117}^{93}$ \& s \& 299788 <br>

\hline Road foiect \& 2888504

28065 \& 2873941

285427 \& 97 \& \& 5/912099 \& \&  \& 102 \& 3/4" steel \& \& 5 \&  <br>
\hline $\underbrace{\text { ate }}_{\substack{\text { Road Project } \\ \text { Road Proiet }}}$ \& 2886005
286009 \& ${ }_{\text {285842727 }}^{2887}$ \& ${ }_{93}^{93}$ \& \& $5 / 1012019$
$5 / 102019$ \& \&  \& ${ }_{57}^{86}$ \& 1/2/ P Plastictic \& \& s \& $2,3,6890$
$1,88.50$ <br>
\hline Road Project \& 2886067
286610 \& $\xrightarrow{2854727}$ \& ${ }_{93}^{93}$ \& \& S/102019 \& \& ${ }^{5}$ 5 1 "and smaler \& 90 \& $1 / 1 /{ }^{\text {P Pastic }}$ \& \& 5 \& 2,41209

2, 21599 <br>
\hline  \& l \& ${ }^{285872727}$ \& ${ }_{94}^{93}$ \& \& $51 / 102019$
5102019 \& \& ${ }_{\text {che }} 51$ and smaler \& ${ }_{116}^{101}$ \& 1/2P Pasastic \& \& s \& 2,55994
$1,990.35$ <br>
\hline Road Project
Road foriet \& 2889333
289622 \& 2845221
285221 \& ${ }_{93}^{93}$ \& \& $5 / 102 / 219$
51102019 \& \& S ${ }^{\text {a }}$ 1"and smaler \& 36
52 \& (1/2 Plastic \& \& s \& 1.40393
1.67236 <br>
\hline Road Project \& ${ }_{2896519}^{28462}$ \& ${ }_{2845221}^{28421}$ \& 93 \& \& 5/10/2019 \& \& 51 "and smaler \& 46 \& $1 / 2$ " Pasatic \& 69 \& \& ${ }_{1,581112}$ <br>
\hline  \& 2894624
289670 \& ${ }_{2}^{28452521}$ \& ${ }_{93}^{93}$ \& \& $5 / 1012019$
51012019 \& \&  \& ${ }_{42}^{40}$ \& 1/2" Plastic \& ${ }_{86}^{86}$ \& \& $1,489.80$
1,4888
1 <br>

\hline | Road freect |
| :--- |
| Roas Proiect | \& | 28949625 |
| :--- |
| 2850 | \& ${ }^{28452521}$ \& \& \& 5/17202019 \& \&  \& ${ }_{38}^{42}$ \& $1 / 2$ Prastic \& 42 \& \& ${ }^{1} 1.4888 .11$ <br>

\hline  \& 2888866
288567 \& ${ }_{2873941}^{28931}$ \& ${ }_{97}^{97}$ \& \& $5 / 1012019$

$5 / 1322019$ \& \&  \& ${ }_{80}^{80}$ \& $3{ }^{3 / 4 / 4 \text { Steel }}$ \& | 127 |
| :--- |
| 125 | \& s \& 2,102888

2,049,97 <br>
\hline Road Project \& ${ }_{2}^{2888973}$ \& ${ }^{27203424}$ \& 94 \& \& 5/1322019 \& \& 5 Tiever \& 1 \& $1 / 2$ " Pastic \& \& s \& -9,04.64 <br>
\hline  \& 2880614 \& ${ }_{\substack{2854727 \\ 285727}}^{2982}$ \& ${ }_{93}^{93}$ \& \& 5/13/2019 \& \&  \& ${ }_{90}^{61}$ \& 1/2" Prastic \& \& s \& ${ }_{\text {l }}^{1,9654.24}$ <br>
\hline Road Project \& 28860612
280618
280, \& ${ }_{\substack{2854727 \\ \\ 285427}}^{2827}$ \& ${ }_{93}^{93}$ \& \& 5/1322019 \& \& 51 and maler \& 100 \& 1/2" Pastic \& \& s \& ${ }_{\substack{2,639.50}}^{\text {2,4, }}$ <br>
\hline Road roject
Road Project \& ${ }_{2886021}^{2880018}$ \& ${ }_{2854727}^{28347}$ \& ${ }_{93}$ \& \& ${ }_{5}^{51372019} 5$ \& \&  \& ${ }_{56}^{57}$ \& 1/2/ Plasastic \& ${ }_{48}^{53}$ \& s \& ${ }_{\text {1, }}^{1,981.7 .01}$ <br>
\hline $\underbrace{}_{\substack{\text { Road Friject } \\ \text { Road proiet }}}$ \& 2898966
289671 \& 2845221
285221 \& ${ }_{93}^{93}$ \& \& ${ }_{\text {5/132019 }}$ \& \& ${ }^{5}$ 5 1 "and smaler \& ${ }_{96}^{96}$ \& 1/2" Pasatic \& \& 5 \& ${ }_{2}^{1,3477,55}$ <br>
\hline Road Project \& ${ }_{2885839}^{28469}$ \& ${ }_{2873941}^{28821}$ \& \& \& ${ }_{5}^{513132019}$ \& \&  \& ${ }_{53}^{44}$ \& $1 / 4 / 4$ Steel \& ${ }_{96}^{47}$ \& s \& ${ }_{\text {2, } 2121.15}^{1,20.28}$ <br>
\hline  \& 2885686
289688 \& ${ }_{28439211}^{28391}$ \& ${ }_{93}^{97}$ \& \& $5 / 13 / 2019$
$5 / 132019$ \& \&  \& ${ }_{47}^{67}$ \&  \& ${ }_{1}^{117}$ \& s \& 2,37096

159837 <br>
\hline  \& ${ }_{2889661}^{284688}$ \& ${ }_{2845221}^{28421}$ \& ${ }_{93} 9$ \& \& 5/3132019 \& \& ${ }_{5} 51$ and smater \& ${ }_{45}^{47}$ \& $1 / 2$ P Plastic \& 50 \& \& ${ }_{1,564,69}^{1.9583}$ <br>
\hline ad Project \& 2899662 \& 2845221 \& \& \& 5/13/2019 \& \& 51 "and smaler \& 48 \& $1 / 22^{\text {P Pastic }}$ \& 52 \& \& ${ }_{1,610,35}$ <br>
\hline
\end{tabular}

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\begin{tabular}{|c|c|c|c|}
\hline Type \& WR * \& Related Wr \& Op District \\
\hline Road Project \& 2860573 \& 2854727 \& \\
\hline Road Project \& 2880590 \& 2854727 \& \\
\hline Road Project \& \({ }^{2901225}\) \& \({ }^{2891281}\) \& \\
\hline Road Project \& 2901234 \& \({ }^{2891281}\) \& \\
\hline Road Project \& 2880979 \& \({ }^{2702342}\) \& \\
\hline Road Project \& \({ }^{2888090}\) \& \({ }^{2702342}\) \& \\
\hline  \& \begin{tabular}{l}
2201772 \\
280346 \\
\hline
\end{tabular} \& - 228833559 \& \\
\hline  \& \({ }_{2850274}^{28936}\) \& \({ }_{2883559}^{28859}\) \& \\
\hline Road Project \& 2887519 \& \({ }^{2883559}\) \& \\
\hline Road Project \& 2887517 \& 288359 \& \\
\hline Road Project \& 2890370 \& 288359 \& \\
\hline Road Project \& 2854952 \& \({ }^{2843073}\) \& \\
\hline Road Project \& 2854958 \& 2883073 \& \\
\hline Road Project \& 2889764 \& 2883559 \& \\
\hline ara Project \& 2860588 \& \({ }^{2884727}\) \& \\
\hline Road Project \& \({ }^{28865959}\) \& \({ }_{2}^{2854727}\) \& \\
\hline Road Project \& 2886956
286535 \& \({ }_{2}^{2854727}\) \& \\
\hline Road froect \& \begin{tabular}{l}
2860563 \\
285655 \\
\hline
\end{tabular} \& \({ }_{2}^{2854727}\) \& \\
\hline Road Project \& \begin{tabular}{l}
2880585 \\
286585 \\
\\
\hline
\end{tabular} \& \({ }_{2858427}^{285727}\) \& \\
\hline Road roject \& \begin{tabular}{l}
2880587 \\
285650 \\
\hline
\end{tabular} \& \({ }_{2858427}^{285727}\) \& \\
\hline Road roject \& \begin{tabular}{l}
2860560 \\
286538 \\
\\
\hline
\end{tabular} \& \begin{tabular}{l}
2859727 \\
\\
285427 \\
\hline
\end{tabular} \& \\
\hline Road roject \& (280338 \& \({ }_{2}^{2854727}\) \& \\
\hline \({ }_{\text {Rosed }}^{\text {Road foecect }}\) \&  \& 2854727
283941 \& \\
\hline Road project \& \({ }_{2}^{28999077}\) \& \({ }_{2}^{2891281}\) \& \\
\hline Road Project \& 2887466 \& 2759897 \& \\
\hline Road Project \& 2854970 \& \({ }^{2843073}\) \& \\
\hline Road Project \& \({ }^{2854990}\) \& \({ }^{2843073}\) \& \\
\hline Road Project \& 2854995 \& 2843073 \& \\
\hline Road Project \& \({ }^{2854993}\) \& \({ }^{2843073}\) \& \\
\hline Road roject \& \({ }^{2889941}\) \& 2883559 \& \\
\hline Road proect \& \({ }^{2889827}\) \& \({ }^{2883559}\) \& \\
\hline Road Project \& 2890088 \& 2693363 \& \\
\hline Road Project \& 2890060 \& 2883559 \& \\
\hline  \& \({ }^{2890147}\) \& \begin{tabular}{l}
2883595 \\
\hline
\end{tabular} \& \\
\hline  \& \({ }^{2889070}\) 288782 \& 2883599
283941 \& \\
\hline Road Project \& \({ }^{2899975}\) \& \({ }^{2885221}\) \& \\
\hline Road Project \& 2876060 \& 2854739 \& \\
\hline Road Project \& \({ }^{2878059}\) \& \({ }^{2854739}\) \& \\
\hline  \&  \& 2888359
288559 \& \\
\hline \& \({ }_{2889946}^{28994}\) \& 2883559 \& \\
\hline Road Project \& 2854955 \& 2843073 \& \\
\hline Road Project \& 2888981

289896 \& 2883559

288559 \& <br>
\hline ${ }_{\text {Rosed }}$ Road foeject \& ${ }_{\text {cker }}^{28888924}$ \& ${ }^{2} 28835599$ \& <br>
\hline Road froject \& 2888915 \& 2883559 \& <br>
\hline Road Project \& ${ }^{2899647}$ \& ${ }^{2845221}$ \& <br>
\hline  \&  \& ${ }_{\text {2845221 }}^{288521}$ \& <br>
\hline Road Project \& 2889649 \& ${ }^{2845221}$ \& <br>
\hline Road Project \& 2899642 \& 284521 \& <br>

\hline Road project \& ${ }^{28988629}$ \& | 288359 |
| :--- |
| 8859 | \& <br>


\hline  \& ${ }^{2020247}$ \& | 2883599 |
| :--- |
|  |
| 88559 | \& <br>


\hline  \& ${ }^{28898985}$ \& | 288359 |
| :--- |
| 28355 | \& <br>

\hline Road Project \& 2889897 \& ${ }^{2883559}$ \& <br>
\hline Road Project \& 2889891 \& 288359 \& <br>
\hline  \& ${ }_{2}^{2899251}$ \& ${ }^{2693363}$ \& <br>
\hline  \& (2899276 \& 28981281 \& <br>
\hline Road Project \& ${ }^{2899278}$ \& ${ }^{2891281}$ \& <br>
\hline ${ }_{\substack{\text { Road } \\ \text { Roaject } \\ \text { Roadroiet }}}$ \& ${ }_{2}^{2899279}$ \& ${ }^{2881281}$ \& <br>
\hline Road Project \& ${ }_{2}^{2880036}$ \& ${ }_{2883559}^{28821}$ \& <br>
\hline Road Project \& ${ }^{2902635}$ \& ${ }^{2873941}$ \& <br>

\hline  \& 2891840 \& | 2873941 |
| :--- |
| 283325 | \& <br>

\hline Roas Project \& ${ }_{2849836}$ \& ${ }_{284521}^{28321}$ \& <br>
\hline Road Project \& 2899640 \& 2845221 \& <br>
\hline Road Project \& 2899634 \& ${ }^{2845221}$ \& <br>
\hline  \& 2894933 \&  \& <br>
\hline Road Project \& ${ }^{2889630}$ \& ${ }^{2845221}$ \& <br>
\hline Road Project \& 2889627 \& ${ }^{2845221}$ \& <br>
\hline  \& 2854997
285994 \&  \& <br>

\hline  \& | 2885994 |
| :--- |
| ${ }_{2} 85988$ | \& 284373

283673 \& <br>
\hline Road Project \& ${ }^{2854986}$ \& ${ }^{2843073}$ \& <br>
\hline ${ }_{\text {Road Prject }}^{\text {Rea }}$ \& ${ }_{2}^{2859985}$ \& ${ }^{2883373}$ \& <br>
\hline  \&  \& 2838373
283073 \& <br>
\hline Road Project \& 2854979 \& ${ }^{2843973}$ \& <br>
\hline  \& ${ }_{2}^{28549987}$ \& 2843073
283373 \& <br>
\hline Road Project \& ${ }_{2}^{2859982}$ \& ${ }_{28843073}^{2843}$ \& <br>
\hline Road Project \& ${ }^{2854978}$ \& ${ }^{2843073}$ \& <br>

\hline  \& | 2859971 |
| :--- |
| 289895 |
|  | \& 2883873

283941 \& <br>
\hline Road Project \& 2854975 \& 2883073 \& <br>
\hline Road Project \& 2859976 \& 2843073 \& <br>
\hline Road Project \& 2002693 \& 2883599

28859 \& <br>
\hline Road Project \& 2902704 \& ${ }^{2883359}$ \& <br>
\hline  \& ${ }^{2888880}$ \& 2883559
2833073 \& <br>
\hline Road Project \& ${ }^{2899921}$ \& ${ }_{2}^{2898628}$ \& <br>
\hline  \& 2899938
285494 \& 2888628
284373 \& <br>
\hline
\end{tabular}

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| Type | WR. | Related Wr | op District | Projectame |
| :---: | :---: | :---: | :---: | :---: |
| Road Project | ${ }^{2933412}$ | ${ }^{2907822}$ | ${ }^{93}$ |  |
| Road Project | ${ }_{2929237}^{29237}$ | ${ }_{\text {2097282 }}^{292}$ | ${ }_{93}^{93}$ |  |
| ${ }_{\text {Road Project }}$ | ${ }_{29292333}^{292313}$ |  | ${ }_{93}^{93}$ |  |
| Road Project | 2917318 | 290782 | ${ }_{93}$ |  |
| ${ }_{\text {Road Project }}$ | ${ }_{291923}^{291737}$ | ${ }_{29072822}^{29028}$ | ${ }_{93}^{93}$ |  |
| Road Project | 2919235 | 2907822 | ${ }_{93}$ |  |
| ${ }_{\text {Road Project }}$ | ${ }_{29292333}^{29233}$ |  | ${ }_{93}^{93}$ |  |
| Road Project | 2977315 | ${ }^{29078282}$ | ${ }^{93}$ |  |
|  | ${ }_{29292355}^{29736}$ | ${ }_{29072882}^{29028}$ | ${ }_{93}^{93}$ |  |
| Road Proiect | 2925134 | 2907828 | 93 |  |
|  | ${ }_{2}^{29593383}$ | ${ }_{2}^{2693363}$ | 988 ${ }_{98}^{98}$ |  |
| ${ }^{\text {Road Proect }}$ | ${ }_{2}^{29443889}$ | ${ }_{2866336}^{209336}$ | ${ }_{89}^{98}$ |  |
| Road Project | 2889176 | ${ }_{2}^{2866336}$ | ${ }^{89}$ |  |
| ${ }^{\text {Road Project }}$ | ${ }_{2}^{2889178}$ | ${ }^{2866336}$ | ${ }_{89}^{89}$ |  |
| Roas Project | 2926490 | ${ }_{200782}^{20368}$ | ${ }_{93}$ |  |
| Road Proiect | ${ }^{29153566}$ | ${ }^{22907828}$ | ${ }_{93}^{93}$ |  |
| Road Proejet | ${ }_{2}^{28885717}$ | ${ }_{2}^{2693363}$ | ${ }_{89}^{93}$ |  |
| Road Proeect | ${ }_{2}^{290976969}$ | ${ }_{2}^{28607388}$ | 89 98 |  |
| Road Proiect | 2297694 | ${ }_{2}^{2868336}$ | 89 |  |
| ${ }_{\text {Road Project }}$ | ${ }_{2}^{28897175}$ |  | ${ }_{93}^{89}$ |  |
| Road Project | 297731 | ${ }^{29078282}$ | ${ }^{93}$ |  |
| ${ }_{\text {Road Project }}$ | ${ }_{2917312}^{291731}$ | ${ }_{2}^{29072882}$ | ${ }_{93}^{93}$ |  |
| Road Project | 297314 | ${ }^{29072828}$ | ${ }_{93}^{93}$ |  |
| ${ }^{\text {Road Project }}$ | ${ }_{2}^{29269993}$ | ${ }_{200782}^{20828}$ | ${ }_{93}^{93}$ |  |
| Road Proiect | ${ }_{29297313}$ | ${ }_{\text {2007282 }}^{29292}$ | ${ }_{93}^{93}$ |  |
| Road Proiect Roas Project | ${ }^{22888773}$ |  | 98 89 |  |
| Road Project | ${ }_{2029767}^{20265}$ | (286336 | ${ }_{98}^{89}$ |  |
| Roas Project | ${ }_{2}^{2907749}$ | ${ }_{286636}^{2036}$ | 89 |  |
| ${ }^{\text {Road Project }}$ | 288077 2877260 | ${ }_{228595956}^{2693}$ | ${ }_{94}^{94}$ |  |
| Road Project | 2914933 | 2908367 | 98 |  |
| ${ }^{\text {Road Project }}$ |  | ${ }_{2006367}^{209367}$ | 988 ${ }_{98}^{98}$ |  |
| Road Project | 2916703 | 2906367 | 98 |  |
| ${ }_{\text {Road Project }}$ | ${ }_{2951734}^{299173}$ | ${ }_{2}^{294884801}$ | 95 95 |  |
| Road Projet | ${ }^{2951735}$ | 2988801 | 95 |  |
| ${ }_{\text {Road Project }}$ | ${ }_{2}^{295977894}$ | ${ }_{2}^{294992928}$ | ${ }_{98}^{95}$ |  |
| ${ }^{\text {Road Project }}$ | ${ }^{2955187}$ | ${ }^{29595957}$ | ${ }_{9}^{95}$ |  |
| ${ }^{\text {Road Profect }}$ | ${ }_{2956102}^{295124}$ | ${ }_{2250597}^{25397}$ | ${ }_{95}^{95}$ |  |
| Road Proect | ${ }_{2}^{29295979}$ | ${ }_{2}^{20633363}$ | 988 ${ }_{98}^{98}$ |  |
| Road Proijet | ${ }_{2}^{295651296}$ | ${ }_{2}^{26356593}$ | ${ }_{95}^{95}$ |  |
| Road Project Road Proiet | ${ }_{2}^{29565188}$ | ${ }_{2}^{2950597}$ | 95 95 |  |
| Roas Project | ${ }_{2888845}^{25185}$ | 2856743 | 94 |  |
| Road Proeect | ${ }_{2}^{288888389}$ | ${ }_{2}^{2853773180}$ | ${ }_{95}^{94}$ |  |
| Road Project | 29681804 | 2953515 | 97 |  |
| ${ }_{\text {Road Project }}$ | ${ }^{295615171}$ | ${ }_{2}^{29593353}$ | 97 97 |  |
| Road Project Road Proiet |  | ${ }_{2}^{285359595}$ | ${ }_{94}^{97}$ |  |
| Roas Project | ${ }_{287253}$ | ${ }_{2855956}^{20856}$ | ${ }_{94}^{94}$ |  |
| Road Project Road Proiet | 298178 <br> 2988200 | 2888854 2887270 | ${ }_{93}^{93}$ |  |
| ${ }_{\text {Road Proiect }}$ | ${ }_{\text {2088247 }}^{298200}$ | 2888770 200099 | 98 89 |  |
| ${ }^{\text {Road Project }}$ | ${ }^{29898988}$ | ${ }^{2937780}$ | ${ }_{95}^{95}$ |  |
| ${ }^{\text {Road Proect }}$ | ${ }_{2963941}^{269797}$ | ${ }_{2937180}^{293770}$ | ${ }_{95}^{95}$ |  |
| Road Proect | ${ }_{\text {2063337 }}^{29634}$ | ${ }_{\substack{293780 \\ 2937180}}$ | 95 95 |  |
| Road Project | ${ }^{298933772}$ | ${ }_{2}^{23371780}$ | 95 95 |  |
| Road Project Road Proiet | ${ }_{2}^{29633345}$ | 2337180 <br> 2937180 | ${ }_{95}^{95}$ |  |
| Road Project | 2963360 | 2337180 | 95 |  |
| Road Project Road Project |  | ${ }_{263363}^{293780}$ | ${ }_{93}^{95}$ |  |
|  |  |  |  |  |




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## Exhibit F

## MERC's Currently Known 2020 and 2021 Right-of-Way Relocation Projects (to-date)

| Location/Town | Local Governmental Unit Requiring Relocation | Project Name | Year |
| :---: | :---: | :---: | :---: |
| Deer River | MNDOT | TH-6 (SP3107-49) | 2019/2020 |
| Wadena | MNDOT | TH-10 (SP 8001-40) | 2019/2020 |
| Adams | City of Adams | 2020 Utility and Street Improvements - 5th St | 2020 |
| Albert Lea | Freeborn County | Bridge Ave | 2020 |
| Albert Lea | City of Albert Lea | James Ave (7th to 8th) | 2020 |
| Albert Lea | City of Albert Lea | W Clark St (S 1st Ave to S Ermina Ave) | 2020 |
| Baudette | City of Baudette | Baudette Road Project | 2020 |
| Bemidji | City of Bemidji | Birchmont Dr NE (10th to 14th) | 2020 |
| Biwabik | MNDOT | TH-135 (SP 6912-79) | 2020 |
| Buhl | City of Buhl | Buhl Road Project | 2020 |
| Byron | City of Byron | 7th St/ 10th Ave Roundabout | 2020 |
| Caledonia | Houston County | CR 3 - Mill and Overlay | 2020 |
| Cloquet | City of Cloquet | Prospect Ave Road Project | 2020 |
| Detroit Lakes | MNDOT | TH-10 (SP 0302-81) | 2020 |
| Dodge Center | City of Dodge Center | Center St/McNeilus Growth | 2020 |
| Eagan | Dakota County | Lexington \& Lone Oak | 2020 |
| Eagan | Dakota County | CSAH 32 (at Rahncliff Rd) | 2020 |
| Eagan | City of Eagan | NE Sewer Upsizing | 2020 |
| Eagan | City of Eagan | Central Parkway Revitalization | 2020 |
| Empire Township | MNDOT | TH-3 (SP1921-103) | 2020 |
| Fairmont | City of Fairmont | Lake Avenue Improvements | 2020 |
| Gilbert | MNDOT | TH-37 (SP 6914-19) | 2020 |
| Grand Rapids | City of Grand Rapids | 2nd Ave NE Street Improvements | 2020 |
| Grand Rapids | City of Grand Rapids | Highway 2 West Trail | 2020 |
| Hermantown | City of Hermantown | Hermantown Street Improvements 531 \& 532 (SAP 202-102-005) | 2020 |
| Houston | City of Houston | Lincoln St | 2020 |
| International Falls | City of International Falls | Local Roads - Shorewood Dr | 2020 |
| International Falls | City of International Falls | 2020 Sanitary Replacement | 2020 |
| International Falls | MNDOT | TH-53 (SP3608-48) | 2020 |
| International Falls | City of International Falls | WTMN - TH63/14th | 2020 |
| Jackson | MNDOT | TH-71 \& Sherman (SP 3205-34) | 2020 |
| Kenyon | City of Kenyon | Red Wing Ave | 2020 |
| LaCrescent | City of LaCrescent | Hill St and Main St | 2020 |
| LaCrescent | MNDOT/City of LaCrescent | Wagon Wheel | 2020 |
| LaCrescent | Houston County | CSAH 6 | 2020 |
| Lakefield | City of Lakefield | Lakefield Street Improvements | 2020 |
| Lakeville | Dakota County | CSAH 70 (Cedar to Kenrick) | 2020 |
| Lakeville | City of Lakeville | 170th St W Improvements | 2020 |
| Leroy | MNDOT | TH-56 | 2020 |
| Lyle | MNDOT | TH-2018 | 2020 |
| Marion | MNDOT | US Hwy 14 Bridge \#55X26 (SP 5503-46) | 2020 |
| Menagha | Wadena County | CSAH 17 (SAP 080-617-008) | 2020 |
| Pengilly | MNDOT | TH-169 (SP 3116-151) | 2020 |
| Plainview | City of Plainview | Others | 2020 |
| Plainview | City of Plainview | 2nd St SW | 2020 |
| Plainview | City of Plainview | Hillcrest Area | 2020 |
| Plainview | MNDOT/Wabasha County | TH-42, CR 27, CR 4 (SP 7901-52) | 2020 |
| Ranier | Koochiching County | Main St (Oak Ave to Co Rd 46) | 2020 |
| Revere | City of Revere | Watermain Replacement | 2020 |
| Rochester | Cascade Township | 55th St NE (Hallmark Terrace and Zumbro Ridge Trailer Parks) | 2020 |
| Rochester | City of Rochester | Bike Path/Mill and Overlay - 3rd, 4th, and Center | 2020 |
| Rochester | City of Rochester | 3rd St NW | 2020 |
| Rochester | City of Rochester | 7th Ave NW/SW | 2020 |
| Rochester | City of Rochester | Broadway Ave | 2020 |
| Rochester | City of Rochester | 9th Ave SW | 2020 |
| Rochester | City of Rochester | Northern Hills Dr NE | 2020 |
| Rosemount | MNDOT | TH-3 \& 170th (SP 1921-102) | 2020 |
| Rosemount | Dakota County | Akron Ave (CR 73) | 2020 |
| Rosemount | City of Rosemount | Biscayne Ave Road Project | 2020 |
| Roseau | City of Roseau | 8th St NE | 2020 |
| Staples | Todd County | Hospital Rd (SAP 077-593-001) | 2020 |
| Thief River Falls | City of Thief River Falls | Westside Flood Damage Reduction Project (RLWD Project \#178) | 2020 |
| Thief River Falls | Pennington County | CR 61 (SAP 057-598-055) | 2020 |
| Thief River Falls | Pennington County | CSAH 8/CSAH 17 (SAP 057-608-010) | 2020 |
| Thief River Falls | MNDOT | TH-1/TH-59 Reconstruction (SP 5701-31) | 2020 |
| Thief River Falls | MNDOT | TH-1 (SP 2702-47) | 2020 |
| Thompson/Esko | Town of Thompson | Hillside Road Paving | 2020 |
| Virginia | MNDOT | TH-53 (SP6918-94) | 2020 |
| Wanamingo | City of Wanamingo | Alley east of Main St | 2020 |
| Wanamingo | MNDOT | TH-57 and 60 (SP 2509-24 \& SP 2511-52) | 2020 |
| West Concord | City of West Concord | Ellington | 2020 |
| Windom | City of Windom | City of Windom Street Improvements | 2020 |
| Wrenshall | City of Wrenshall | Goad Dr, Erickson Ln, \& Mason Dr Street \& Stormwater Improvements | 2020 |
| Wykoff | Fillmore County | Gold St | 2020 |


| Location/Town | Local Governmental Unit Requiring Relocation | Project Name | Year |
| :---: | :---: | :---: | :---: |
| Zumbrota | Goodhue County | CSAH 6 | 2020 |
| Mable | MNDOT | SP 2306-26 | 2020/2021 |
| Stewartville | City of Stewartville | Lakeshore/2nd St | 2020/2021 |
| Aitkin | MNDOT | TH-210 (SP 0119-30) | 2021 |
| Detroit Lakes | City of Detroit Lakes | West Lake Dr | 2021 |
| Frazee | MNDOT | TH-87 (SP0306-31 \& SP0306-32) | 2021 |
| Kasson | MNDOT/City of Kasson | Hwy 57 (SP 2007-43) | 2021 |
| Leroy | City of Leroy | City Water and Sewer | 2021 |
| Leroy | MNDOT | TH-56 (SP 5005-64) | 2021 |
| Rochester | City of Rochester | 2nd St SW | 2021 |
| Rochester | City of Rochester | 10th St SW | 2021 |
| Sandstone | MNDOT | TH-123 from TH-23 to CSAH 30 (SP 5802-24) | 2021 |
| Baudette | MNDOT | TH-72 (SP 3905-10) | 2022 |
| Bemidji | MNDOT | TH-71 Reclaim (SP0410-50) | 2022 |
| Frazee | MNDOT | TH-87 (SP0306-30) | 2022 |
| Castle Rock | Dakota County | County 86 Rebuild | 2021/2022 |
| International Falls | U.S. Customs | Port of Entry Relocation | TBD |

## Exhibit G

## MERC's 2021 Gas Infrastructure Project Plan Report

## 2021 GAS INFRASTRUCTURE PROJECT PLAN REPORT

|  | Project | Project Description | Project Scope | Necessity and Benefits to Customers | Estimated Costs | In-Service Date |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| DIMP |  |  |  |  |  |  |
| Capital |  |  |  |  |  |  |
| 1 | Replacement of Obsolete Materials | Aldyl-A: PHMSA has issued several Advisory Bulletins about certain polyethylene ("PE") pipe material called Aldyl-A, a plastic material that becomes brittle over time and is subject to sudden failure from cracking. There is increased risk for Aldyl-A manufactured before 1973. MERC's system contains PE pipe that was installed beginning in the 1960s and MERC estimates that approximately 390 miles of Aldyl-A main remained on the Company's system at the end of 2019. This multi-year project will continue efforts undertaken in 2019 and 2020 to replace Aldyl-A main, with priority replacement of the main installed before 1973 . | Aldyl-A: MERC plans to replace 42,950 feet of main and approximately 605 services across 6 communities in 2021. <br> Specific details regarding the location, vintage of Aldyl-A, main footage, number of services, and costs are included in Table 4 of the Petition. <br> Maps showing the specific location of the identified projects are included as Exhibit K and a schedule of planned work and inservice dates for each project is included as Exhibit L. | These renewal and replacement projects will deliver an enhanced level of safety to MERC's gas system and address several risk factors including external corrosion, legacy installation techniques, legacy manufacturing techniques, and third-party damage. | \$3,581,350 <br> related to <br> Aldyl-A <br> replacements <br> \$533,250 <br> related to $x$ - <br> Trube service replacements \$500,000 <br> related to stop valve <br> replacements \$85,400 <br> related to copper/bare steel service replacements. <br> Details regarding forecasted costs for each project are provided in Table 4 of the Petition. | Replacements planned for inservice by year-end 2021 and only replacements in service by year-end 2021 will be included for recovery in the GUIC Rider. <br> Exhibit L includes forecasted project schedules and in-service dates for planned AldylA replacements. |


| Project | Project Description | Project Scope | Necessity and Benefits to Customers | Estimated Costs | In-Service Date |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | X-Trube, Copper and Bare Steel: If a leak is detected on X-Trube or copper tubing, MERC must replace, rather than repair, the piping with PE or steel. Replacement is required because these materials are known to fail and repair would increase the risk of failure. So when MERC detects issues on facilities composed of X Trube or copper, the Company must replace the facility at issue. <br> Replacement of bare steel is also important because known steel on MERC's system was installed in the 1930s and was prone to corrosion <br> Stop Valves: Stop valves identified to pose a risk of failure after surveyed pursuant to the meter set surveys discussed below will be replaced under MERC's obsolete materials program. | X-Trube, Copper, and Bare Steel: MERC plans to replace approximately 225 XTrube services in 2021. <br> Details regarding planned X-Trube replacements in 2021 are provided in Table 4 of the Petition. <br> Although MERC has removed all of its known copper and bare steel, any bare steel or copper services that are found will be removed and replaced. MERC will replace any identified copper or bare steel that is identified and track it as part of our obsolete materials program. <br> Stop Valves: MERC plans to replace approximately 625 stop valves in 2021. |  |  |  |


|  | Project | Project Description | Project Scope | Necessity and Benefits to Customers | Estimated Costs | In-Service Date |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Operations and Maintenance |  |  |  |  |  |  |
| 1 | Meter Set Surveys | Stop valves provide the ability to isolate sections of the system in the event of an emergency or incident. For this project, MERC will continue to survey all meter set stop valves. Valves that are identified to pose a risk of failure will be replaced under MERC's obsolete materials program, and the installation costs for the new valves will be tracked under that project. | MERC proposes completing all remaining meter surveys in 2021 to complete this project. In particular, MERC plans to complete surveys of approximately 49,988 meter sets across the Company's service area. | Stop valves provide the ability to isolate sections of the system in the event of an emergency or incident to better protect the public and minimize customer impacts. Ensuring that faulty or obsolete stop valves are replaced will help ensure the continued ability for these stop valves to safeguard the public and customers if an emergency were to occur. | \$1M | Costs to be incurred in 2021 |
| 2 | Sewer Cross Bore Surveys | MERC has been inspecting sewer laterals and mains under an ongoing sewer line lateral inspection program since 2014, and has determined that further inspections are prudent and necessary to identify and mitigate the risk posed by cross bores. | MERC anticipates that approximately 6,500 surveys will be completed in 2021. | Completion of these sewer cross bore surveys reduces the risk to customers and minimizes the threat of future cross bores. | \$1M | Costs to be incurred in 2021 |


|  | Project | Project Description | Project Scope | Necessity and Benefits to Customers | Estimated Costs | In-Service Date |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | For 2021, MERC proposes to continue its efforts to survey services to identify conflicts with the help of a third-party contractor. |  |  |  |  |
| 3 | Service Line Mapping | MERC currently does not have its service lines mapped to GIS, which creates challenges for identifying and remediating service line risks. This project will take the comprehensive database of service line information previously compiled during phase 2 of the Company's mapping project, map the presumed service line information to GIS, and subsequently verify the locational accuracy of the mapped service lines. | MERC will begin linking previously-compiled service line information to the Company's GIS. A third-party contractor will then verify the locational accuracy of the mapped service lines. | Completion of the service line mapping project is necessary to address the current data gap on MERC's system to allow the Company to identify and track risks, and to help prevent third-party damage from excavation activities. | \$1M | Costs to be incurred in 2021 |
| 4 | Excess Flow Valve Costs | In Docket No. G999/Cl-18-41, the Commission authorized recovery of excess flow valve ("EFV") compliance costs through GUIC Rider filings. MERC proposes to include its forecasted costs related to customer | MERC proposes to visit approximately 20 percent of the identified customers who are eligible under the federal standards for EFVs and do not currently have an EFV or curb valve installed, and to utilize a | EFVs are safety devices installed on natural gas distribution pipelines that can reduce the risk of explosions in these pipelines by automatically | \$101,348 | MERC plans to visit <br> approximately 20 percent of identified customers eligible for EFV installation that do not currently |


|  | Project | Project Description | Project Scope | Necessity and Benefits to Customers | Estimated Costs | In-Service Date |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | outreach and customer meetings to those customers who are eligible for but do not currently have an EFV or curb valve installed. <br> To the extent that customer outreach results in installation of EFVs or curb valves, MERC proposes that costs of those installations and associated maintenance be deferred for recovery through MERC's 2021 true-up. | third-party contractor to undertake the outreach and customer meetings. | stopping excessive, unplanned gas flows. It is therefore beneficial, as well as Commission ordered, to engage in customer outreach with information about these safety devices. |  | have an EFV or curb valve installed. |
| RIGHT-OF-WAY RELOCATION PROJECTS |  |  |  |  |  |  |
| Capital |  |  |  |  |  |  |
| 1 | Road and Public Work Projects | 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 the state or a political subdivision. Each year, MERC is | MERC is not informed of specific future right-ofway relocation work with enough lead time to include such projects in the Company's forecast. Rather, federal, state, or local government units request MERC to relocate facilities within the right-of-way | Right-of-way relocations are needed to help ensure construction or improvements of road infrastructure and other public works are able to be completed in a timely, <br> comprehensive, | \$6,340,000 <br> See Table 2 and Section II.A. 1 of MERC's Petition for a discussion of MERC's 2021 forecasted costs related to | Planned for inservice by year-end 2021; only replacements in service by year-end 2021 will be included for recovery in the GUIC Rider. |


| Project | Project Description | Project Scope | Necessity and <br> Benefits to <br> Customers | Estimated <br> Costs | In-Service <br> Date |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | asked to relocate natural <br> gas infrastructure to <br> accommodate public <br> projects constructed <br> within the right-of-way <br> and the number and <br> costs of these requests <br> have increased since <br> 2015. | according to their own <br> planning timelines. <br> MERC is often not <br> requested to relocate <br> facilities until the month <br> or week the right-of-way <br> project begins. While <br> MERC cannot currently <br> identify the specific <br> number of road <br> relocation requests that <br> will be made for 2021, <br> based on historic trends, <br> it is likely the Company <br> will continue to receive <br> these requests at the <br> same or greater pace as <br> in previous years. | relocations |  |  |
| Operations and Maintenance |  |  |  |  |  |

At this time, MERC has not forecasted incremental O\&M expense related to the 2021 right-of-way relocation projects. To the extent that actual expenses are identified as those projects progress in 2021, MERC will seek recovery via the GUIC true-up reconciliation in 2022.

## Exhibit H

Discussion of the Magnitude of Proposed GUIC and Known Future Projects as required by Minn. Stat. § 216B.1635, subd.4(vi), (vii), and (viii)

The magnitude and timing of any known future gas utility projects that the utility may seek to recover under this section.

In future years, MERC anticipates total capital spending on GUIC-eligible projects for right-of-way relocation and integrity work to continue at or above historical levels with a tracker and formal review process to ensure that only the return on and of GUIC-qualified projects will be recovered through the GUIC Rider. As discussed in the Petition, while MERC has budgeted for lower obsolete materials replacement project costs in 2021 relative to recent years due to other planned capital spending in 2021, the Company anticipates increased spending related to distribution integrity management projects in future years.

For 2021, in addition to capital projects, MERC has forecasted GUIC Rider recovery of $\$ 3,101,384$ for incremental operations and maintenance costs for the sewer cross bore survey project, meter set survey project, service line mapping project, and excess flow valve customer outreach project. While MERC expects to complete the meter set survey project in 2021, the Company anticipates these other surveys and projects to continue in future years.

Potential projects that could be included in future GUIC rider recovery, other than the obvious right-of-way projects and DIMP projects, may include MERC's replacement of farm tap customer-owned fuel lines with utility-owned lines meeting federal and state safety and reliability standards, costs related to the installation of excess flow valves and other compliance with Commission directives related to excess flow valves, and system upgrades and replacements to address system pressure issues.
(2) Minn. Stat. § 216B.1635, subd. 4(2)(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.

| 2021 GUIC Revenue Requirement (including 2019 <br> true-up) | $\$ 6,647,683$ |
| :--- | :---: |
| 2018 Rate Case Approved Margin Revenues <br> (Docket No. G011/GR-17-563) | $\$ 110,507,391$ |
| GUIC as \% of Margin | $6.02 \%$ |

(3) Minn. Stat. § 216B.1635, subd. 4(2)(viii)

The magnitude of GUIC in relation to the gas utility's capital expenditures since its most recent general rate case.

| 2021 Forecasted GUIC Capital Expenditures | $\$ 11,040,000$ |
| :--- | :---: |
| 2018 Actual Capital Expenditures | $\$ 68,622,507$ |
| 2021 GUIC Capital Expenditures as \% of 2018 <br> Actuals | $16.09 \%$ |
| 2019 Actual Capital Expenditures | $\$ 81,387,791$ |
| 2021 GUIC Capital Expenditures as a \% of 2019 <br> Actuals | $13.56 \%$ |

## Exhibit I

## MERC's 2019 GUIC True-up Calculation and Tracker Balance

## GUIC Rider 2019 True-up

## Revenue Requirement on GUIC projects

| Line | Description | Reference | $\begin{gathered} \text { Forecasted } \\ 2019 \end{gathered}$ | Actual $2019$ |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Expense | O\&M Expense | 3,000,000 | 1,743,849 |
| 2 | Expense | Depreciation Expense | 133,090 | 57,381 |
| 3 | Rate Base | 13-Month Average Net Plant Value | 5,250,459 | 3,580,946 |
| 4 | Accumulated Deferred Income Tax Proration Adjustment |  | 2,581 | - |
| 5 | Adjusted Rate Base | 13-Month Average Net Plant Value | 5,253,039 | 3,580,946 |
| 6 | Rate of Return | Commission Authorized 2018 Rate Case | 6.6971\% | 6.6971\% |
| 7 | Earnings on Rate Base | Line $5 \times$ Line 6 | 351,801 | 239,820 |
| 8 | Gross Revenue Conversion Factor | 2018 Rate Case Adjusted for Tax Reform | 1.402 | 1.402 |
| 9 | Return on Rate Base | Line $7 \times$ Line 8 | 493,225 | 336,227 |
| 10 |  |  |  |  |
| 11 | Total Revenue Requirement | Line 1 + Line 2 + Line 9 | 3,626,315 | 2,137,457 |
| 12 |  |  |  |  |
| 13 | 2019 Rider Revenue Collected |  |  | 1,497,598 |
| 14 |  |  |  |  |
| 15 | ** Total Adjustment: Over/(Under) Collection - to be collected within the 2021 GUIC Rider |  |  | $(639,859)$ |


|  | Month | Construction Expenditures | CWIP Balance | Plant In Service Balance, net | Accumulated Depreciation | Accumulated Deferred Tax | Rate Base | DFIT Proration Adjust (N/A for Actuals) | Adjusted Rate Base | Depreciation Return of | O\&M |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2018 | Dec-18 | - | - | - | - | - | - | - | - | - | - |
| 2019 | Jan-19 | - | - | - | - | - | - | - | - | - | - |
| 2019 | Feb-19 | 562 | 562 | - | - | - | - | - | - | - | 102 |
| 2019 | Mar-19 | 20,140 | 13,656 | 5,911 | 1,134 | (341) | 6,704 | - | 6,704 | - | - |
| 2019 | Apr-19 | 467,460 | 372,374 | 97,148 | 18,627 | $(5,687)$ | 110,088 | - | 110,088 | 12 | 459 |
| 2019 | May-19 | 2,630,831 | 1,721,804 | 1,216,196 | 181,565 | $(57,492)$ | 1,340,269 | - | 1,340,269 | 195 | 1,148 |
| 2019 | Jun-19 | 1,687,541 | 2,064,952 | 2,477,556 | 297,029 | $(98,458)$ | 2,676,127 | - | 2,676,127 | 2,304 | 38,220 |
| 2019 | Jul-19 | 1,336,824 | 1,734,916 | 4,088,442 | 355,955 | $(127,669)$ | 4,316,727 | - | 4,316,727 | 4,416 | 143,385 |
| 2019 | Aug-19 | 1,257,249 | 2,217,726 | 4,653,219 | 560,869 | $(194,117)$ | 5,019,971 | - | 5,019,971 | 6,964 | 288,759 |
| 2019 | Sep-19 | 1,580,658 | 3,337,376 | 5,013,231 | 667,082 | $(231,633)$ | 5,448,680 | - | 5,448,680 | 7,981 | 408,386 |
| 2019 | Oct-19 | 1,366,220 | 2,523,554 | 7,047,133 | 812,278 | $(295,962)$ | 7,563,449 | - | 7,563,449 | 8,707 | 311,523 |
| 2019 | Nov-19 | 654,011 | 1,032,399 | 8,955,068 | 1,041,096 | $(386,665)$ | 9,609,500 | - | 9,609,500 | 11,941 | 326,021 |
| 2019 | Dec-19 | 65,291 | 140,128 | 9,627,253 | 1,313,539 | $(480,006)$ | 10,460,786 | - | 10,460,786 | 14,862 | 225,845 |

Gas Mains Summary


Gas Mains Summary



Gas Services Summary

| Gas Services Summary |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Month | Net Plant In Service |  |  |  |  |  | Depr. Calculation |  |  |  |  |  | Accumulated Depreciation |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Additions |  | Retirements |  | Accumulated Investment |  | Beginning of the Month Addition |  | Annual Depr. Rate |  | Deprec Exp <br> (NetDep) |  | Depreciation |  | Retirement |  | Cost Of Removal |  |  | Salvage |  |  | End Bal |
|  |  | [A] |  | [B] |  | [C] |  | [D] |  | [E] |  | [F] |  | [G] |  | [H] |  | [I] |  |  | [J] |  |  | [K] |
| 12/1/2018 | \$ | - | \$ | - | \$ | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1/1/2019 | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | \$ |  | - | \$ |  | - | \$ | - |
| 2/1/2019 | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | \$ |  | - | \$ |  | - | \$ | - |
| 3/1/2019 | \$ | 5,911 | \$ | - | \$ | 5,911 | \$ | - | \$ | - | \$ | $(1,134)$ | \$ | 1,134 | \$ | - | \$ |  | - | \$ |  | - | \$ | 1,134 |
| 4/1/2019 | \$ | 91,237 | \$ | - | \$ | 97,148 | \$ | 5,911 | \$ | - | \$ | $(17,493)$ | \$ | 17,493 | \$ | - | \$ |  | - | \$ |  | - | \$ | 18,627 |
| 5/1/2019 | \$ | 846,170 | \$ | - | \$ | 943,318 | \$ | 97,148 | \$ | - | \$ | $(162,158)$ | \$ | 162,158 | \$ | - | \$ |  | - | \$ |  | - | \$ | 180,785 |
| 6/1/2019 | \$ | 432,761 | \$ | - | \$ | 1,376,079 | \$ | 943,318 | \$ | - | \$ | $(81,139)$ | \$ | 81,139 | \$ | - | \$ |  | - | \$ |  | - | \$ | 261,924 |
| 7/1/2019 | \$ | 259,390 | \$ | - | \$ | 1,635,470 | \$ | 1,376,079 | \$ | - | \$ | $(47,005)$ | \$ | 47,005 | \$ | - | \$ |  | - | \$ |  | - | \$ | 308,929 |
| 8/1/2019 | \$ | 333,486 | \$ | - | \$ | 1,968,956 | \$ | 1,635,470 | \$ | - | \$ | $(60,700)$ | \$ | 60,700 | \$ | - | \$ |  | - | \$ |  | - | \$ | 369,629 |
| 9/1/2019 | \$ | 366,012 | \$ | - | \$ | 2,334,968 | \$ | 1,968,956 | \$ |  | \$ | $(66,272)$ | \$ | 66,272 | \$ | - | \$ |  | - | \$ |  | - | \$ | 435,901 |
| 10/1/2019 | \$ | 360,117 | \$ | - | \$ | 2,695,085 | \$ | 2,334,968 | \$ |  | \$ | $(64,406)$ | \$ | 64,406 | \$ | - | \$ |  | - | \$ |  | - | \$ | 500,307 |
| 11/1/2019 | \$ | 117,478 | \$ |  | \$ | 2,812,563 | \$ | 2,695,085 | \$ |  | \$ | $(17,127)$ | \$ | 17,127 | \$ | - | \$ |  | - | \$ |  | - | \$ | 517,434 |
| 12/1/2019 | \$ | 7,890 | \$ | - | \$ | 2,820,453 | \$ | 2,812,563 | \$ |  | \$ | 4,135 | \$ | $(4,135)$ | \$ | - | \$ |  | - | \$ |  | - | \$ | 513,299 |
|  | \$ | 2,820,453 | \$ | - |  |  |  |  |  |  | \$ | $(513,299)$ | \$ | 513,299 | \$ | - | \$ |  | - | \$ |  | - |  |  |

Gas Services Summary

|  |  |  |  |  |  |  |  |  | Se | ervices Sum |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Month | Deferred Income Taxes |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Tax Addition |  | Tax Depr. |  | Tax Gain/(Loss) on Retirements |  | Book/Tax Difference |  | Bonus Effect |  | NOL |  | Deferred |  |  | End Bal | Rate Base |  |
|  |  |  |  |  |  |  |  |  | 0.0000\% |  | 0.0000\% |  | - |  |  | [S] | $[T]=[C]+[K]+[S]$ |  |
|  |  | [L] |  | [M] |  | [ N ] |  | [0] |  | [P] |  | [Q] |  | R] |  |  |  |  |
| 12/1/2018 \$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1/1/2019 | \$ | - | \$ | - | \$ | - | \$ |  | \$ | - | \$ |  | \$ | - | \$ | - | \$ | - |
| 2/1/2019 | \$ | - | \$ | - | \$ | - | \$ |  | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - |
| 3/1/2019 | \$ | 5,911 | \$ | (55) | \$ | - | \$ | $(1,189)$ | \$ | - | \$ | - | \$ | (341) | \$ | (341) | \$ | 6,704 |
| 4/1/2019 | \$ | 91,237 | \$ | $(1,159)$ | \$ | - | \$ | $(18,652)$ | \$ | - | \$ | - | \$ | $(5,347)$ | \$ | $(5,687)$ | \$ | 110,088 |
| 5/1/2019 | \$ | 846,170 | \$ | $(13,525)$ | \$ | - | \$ | $(175,683)$ | \$ | - | \$ | - | \$ | $(50,359)$ | \$ | $(56,046)$ | \$ | 1,068,057 |
| 6/1/2019 | \$ | 432,761 | \$ | $(11,062)$ | \$ | - | \$ | $(92,201)$ | \$ | - | \$ | - | \$ | $(26,429)$ | \$ | $(82,475)$ | \$ | 1,555,528 |
| 7/1/2019 | \$ | 259,390 | \$ | $(9,975)$ | \$ | - | \$ | $(56,980)$ | \$ | - | \$ | - | \$ | $(16,333)$ | \$ | $(98,808)$ | \$ | 1,845,590 |
| 8/1/2019 | \$ | 333,486 | \$ | $(13,448)$ | \$ | - | \$ | $(74,148)$ | \$ | - | \$ | - | \$ | $(21,254)$ | \$ | $(120,063)$ | \$ | 2,218,522 |
| 9/1/2019 | \$ | 366,012 | \$ | $(16,447)$ | \$ | - | \$ | $(82,719)$ | \$ | - | \$ | - | \$ | $(23,711)$ | \$ | $(143,774)$ | \$ | 2,627,095 |
| 10/1/2019 | \$ | 360,117 | \$ | $(18,550)$ | \$ | - | \$ | $(82,956)$ | \$ | - | \$ | - | \$ | $(23,779)$ | \$ | $(167,553)$ | \$ | 3,027,839 |
| 11/1/2019 | \$ | 117,478 | \$ | $(12,461)$ | \$ | - | \$ | $(29,588)$ | \$ | - | \$ | - | \$ | $(8,481)$ | \$ | $(176,034)$ | \$ | 3,153,963 |
| 12/1/2019 | \$ | 7,890 | \$ | $(9,085)$ | \$ | - | \$ | $(4,950)$ | \$ | - | \$ | - | \$ | $(1,419)$ | \$ | $(177,453)$ | \$ | 3,156,299 |
|  | \$ | 2,820,453 | \$ | $(105,767)$ | \$ | - | \$ | $(619,066)$ | \$ | - | \$ | - | \$ | $(177,453)$ |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\begin{array}{r} 121.0000 \% \\ 7.6646 \% \end{array}$ |  |  |  |  |



Gas Stations Summary


Gas Stations Summary



MERC
GUIC Tracker
2019

|  |  | Billed Revenue |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Month | Residential | Commercial/Industrial <br> (Firm and Interruptible) | Transportation | Total | Revenue Requirement ** | Cumulative Tracker Balance |
| Jan-19 |  |  |  |  |  | - |
| Feb-19 |  |  |  |  | 102 | 102 |
| Mar-19 |  |  |  |  | - | 102 |
| Apr-19 |  |  |  |  | 524 | 626 |
| May-19 |  |  |  |  | 2,204 | 2,830 |
| Jun-19 | 26,678 | 25,097 | 191,291 | 243,065 | 51,011 | $(189,224)$ |
| Jul-19 | 14,320 | 21,004 | 171,504 | 206,828 | 168,740 | $(227,312)$ |
| Aug-19 | $(5,080)$ | $(7,593)$ | 191,004 | 178,331 | 329,499 | $(76,143)$ |
| Sep-19 | 13,435 | 15,736 | 171,102 | 200,273 | 455,645 | 179,229 |
| Oct-19 | 22,744 | 23,867 | 81,135 | 127,746 | 362,863 | 414,346 |
| Nov-19 | 78,600 | 72,409 | 99,572 | 250,581 | 397,141 | 560,906 |
| Dec-19 | 106,507 | 92,422 | 91,845 | 290,774 | 315,896 | 586,028 |
| TOTALS | 257,204 | 242,941 | 997,452 | 1,497,598 | 2,083,626 |  |

** Note - Represents a depiction of the monthly calculation of Revenue Requirements, based upon current Rate of Return and Gross Conversion factor applied against the previous month's ending Rate Base balance. This monthly calculation is performed in order to compute a Tracker Balance each month. This monthly calculation of Revenue Requirement will not tie to the computation of Revenue Requirements for the entire year of 2019 based upon a 13-month average.

## Exhibit J

## Details Regarding MERC's actual 2019 Obsolete Materials Replacement Projects

| Project Type | WBS Element | WR \# | Project Name | Address | city | Description | Governmental Entity | $\begin{gathered} \text { Const Complete } \\ \text { Date } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| AA | NA | 2693360 | GUIC - DIMP SVC REPL - OBSOLETE MATERIALS - AA | ASSORTED | ASSORTED | See service line tab for details | PHMSA (DIMP) | Various |
| AA | Q-4605-000647 | 2746693 | FM-GUIC AA REPLACE-BROADWAY AVE (ALDEN) | broadway avenue | Alden | Replace 60 s vintage AA with $\sim 630^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 5/8/2019 |
| AA | Q-4605-000794 | 2775040 | FM-GUIC AA REPLACEMENT (ALDEN) | MORIN ST \& SCOTTE LN | Alden | Replace 70 s vintage AA with $\sim 720^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 4/29/2019 |
| AA | Q-4605-000795 | 2775065 | FM-GUIC AA REPLACEMENT (ELLENDALE) | 6 th St $\mathrm{N}, 5$ th St $\mathrm{N}, 8$ th Ave E | ELEENDALE | Replace 60 s \& 70 s vintage AA with $\sim 1,810^{\prime} 2 \mathrm{PPE}$ | PHMSA (DIMP) | 6/25/2019 |
| AA | Q-4605-000796 | 2776416 | FM-GUIC AA REPLACEMENT (WELS) | various | WELLS | Replace 60 s vintage AA with $\sim 1,250^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 6/7/2019 |
| AA | Q-4605-000797 | 2775075 | FM-GUIC AA REPLACEMENT (EMMONS) | oakst | Emmons | Replace 60 s vintage AA with $\sim 470^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 4/22/2019 |
| AA | Q-4605-000799 | 2847849 | Ro-GUIC AA REPLACEMENT-9TH ST NW | 9TH ST NW \& W CIRCLE DR | ROCHESTER | Replace 80 s vintage AA with $\sim 4,600^{\prime} 2 \mathrm{PE} / 4 \mathrm{PE}$ | PHMSA (DIMP) | 7/24/2019 |
| AA | Q-4605-000800 | 2847679 | RO-GUIC AA REPLACEMENT-MCNEILUS 1ST SUB | 11 TH AVE \& 8TH ST | DODGE CENTER | Replace 80 s vintage $\mathrm{AA} \mathrm{main} \mathrm{with} 33,850$ ' of $4 P \mathrm{~F} / 2 \mathrm{PE}$. | PHMSA (DIMP) | 9/23/2019 |
| AA | Q-4605-000801 | 2847503 | RO-GUIC AA REPLACEMENT-2ND AVE \& 2ND ST | 2ND AVE \& 2ND ST NW | DODGE CENTER | Replace 80 s vintage AA with $3700^{\prime 2} 2$ PE | PHMSA (DIMP) | 5/16/2019 |
| AA | Q-4605-000803 | 284617 | Ro-GUIC AA REPLACEMENT-DRS 11 OUTLET | CIIIC Center dr nw | ROCHESTER | Replace 80 s vintage AA with $\sim 700^{\prime} 4 \mathrm{4PE}$ | PHMSA (DIMP) | 11/26/2019 |
| AA | Q-4605-000804 | 2846033 | 3 RO-GUIC AA REPLACEMENT-WOODLAKE DR SE | WOODLAKE DR SE | ROCHESTER | Replace 80s vintage AA with $\sim 2,800^{\prime} 2 \mathrm{2PE}$ | PHMSA (DIMP) | 5/6/2019 |
| AA | Q-4605-000805 | 2845753 | 3 Ro-GUIC AA REPLACEMENT-9 1/2 ST SE | $91 / 2$ ST SE | ROCHESTER | Replace 80 s vintage AA with $\sim 2,300^{\prime} 2 \mathrm{2PE} / 4 \mathrm{PE} / 6 \mathrm{PE}$ | PHMSA (DIMP) | 9/9/2019 |
| AA | Q-4605-000806 | 2845617 | RO-GUIC AA REPLACEMENT-STH ST \&12TH AVE | 5TH ST \& 12TH AVE NW | KASSON | Replace 70 s vintage AA with $\sim 3650^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 7/8/2019 |
| AA | Q-4605-000807 | 2845248 | Ro-GUIC AA REPLACEMENT-1ST AVE Ne BYRon | 1ST AVE \& ROLING HEIGHTS CT | BYron | Replace 80s vintage AA with $\sim 7,200^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 5/29/2019 |
| AA | Q-4605-000808 | 2845123 | 3 Ro-guic as replacment-MEADOWLARK ct | meadowlark ct | BYRoN | Replace $605 / 705 / 80$ s wintage AA with $\sim 2,900{ }^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 8/12/2019 |
| AA | Q-4605-000809 | 2844877 | Ro-guic Aa Replacement-Cliff St | CLIFF ST | CHATFIELD |  | PHMSA (DIMP) | 5/24/2019 |
| AA | Q-4605-000810 | 2848834 | 4 Ro-gUIC AA REPLACEMENT-CLIFF CIRCLE | CLIFF CIRCLE | CHATFIELD | Replace 70 s vintage $A A$ with $\sim 460{ }^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 4/29/2019 |
| AA | Q-4605-000811 | 2844752 | 2 Ro-guic ad replacement-bennett st | bennett st | CHATFIELD | Replace 70 s vintage AA with $\sim 680^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 9/16/2019 |
| AA | Q-4605-000812 | 2844610 | Ro-GUIC AA REPLACEMENT-WHALEN VALLEY RD | WAHLEN VALLEY RD | CHATFIELD | Replace 70 s wintage AA with $\sim 1580^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 5/14/2019 |
| AA | Q-4605-000813 | 2844598 | 3 RO-GUIC AA REPLACEMENT-BURR OAK ST NoRTH | burr oak st | CHATFIELD | Replace 70 s vintage AA with $\sim 6250^{\prime} 2 \mathrm{2PE} / 4 \mathrm{PE}$ | PHMSA (DIMP) | 10/28/2019 |
| AA | Q-4605-000814 | 2859356 | 6 RM-GUIC AA REPLACEMENT (LAKEVILLE) | 210TH ST W | LakEville | Replace 80 s vintage $A$ A with $\sim 25^{\prime} \mathrm{PE}$ and $\mathrm{2}^{\prime \prime}$ valve | PHMSA (DIMP) | 7/1/2019 |
| AA | Q-4605-000815 | 2844627 | Ro-gUic Aa Replacement-SpRING valley var | various | SPRING VALLEY | Replace $705 / 80$ s vintage AA with $\sim^{2}, 680{ }^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 11/11/2019 |
| AA | Q-4605-000817 | 2859855 | Ro-GUIC AA REPLACEMENT-60TH AVE NW | 60th ave nw | ROCHESTER | Replace 70 s vintage AA with $\sim 6,090 ' 6$ PE | PHMSA (DIMP) | 12/20/2019 |
| AA | Q-4605-000818 | 2845757 | RO-GUIC AA REPLACEMENT-ST. MARY'S HILL | ST. MARY HILLS | ROCHESTER | Replace $605 / 70$ s vintage AA with $\sim 12,260^{\prime}$ 2PE. | PHMSA (DIMP) | 9/30/2019 |
| AA | Q-4605-000841 | 287997 | PC-GUIC-RUSH CITY A REPLACE 4 IN | various | RUSH CITY | Replace 60 S vintage AA with $\sim 11,770^{\prime} 2 \mathrm{PPE/4PE}$ | PHMSA (DIMP) | 10/29/2019 |
| AA | Q-4605-000865 | 2881359 | FM-GUIC - AA REPLACEMENT (LAKEFILLD) | PLEASANT STREET/3RD AVENUE NORTH | LAKEFIELD | Replace 70 s vintage AA with $\sim 180{ }^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 8/13/2019 |
| AA | Q-4605-000902 | 2893330 | FM-GUIC-AA RETIREMENT BROADWAY (ALDEN) | broadway avenue | Alden | Abandon ${ }^{370}$ ' of 60 s vintage AA. 4 SVCs replaced long side to PE across street. 2 SVCs to be retired. | PHMSA (DIMP) | 5/9/2019 |
| AA | Q-4605-000950 | 2906370 | PC-GUIC 2019 AA REPLACEMENT PROJECT | tth ave ne | PINE CITY | Replace 70 s vintage AA with $\sim 1,030^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 9/16/2019 |
| AA | Q-4605-001073 | 2851183 | 3 PC-GUIC AA REP P PROJECT 2019 MORA | RIVERSIIE ST AND FAIR OAKS DR | MORA | Replace 60 s vintage AA with $\sim, 7700^{\prime} 2$ " PE main | PHMSA (DIMP) | 11/1/2019 |
| AA | Q-4605-001107 | 2801469 | PC-GUIC RUSH CITY AA MAIN REPL 2 IN SECT | various | RUSH CITY | Replace 60 s vintage AA with $\sim 2,340^{\prime} 2 \mathrm{PE}$ | PHMSA (DIMP) | 9/23/2019 |
| AA | Q-4605-001130 | 2968818 | WA-GUIC AA HEWITT PHASE 1 | various | HEWITT | Replace 70 s vintage AA with $\sim 2,500^{\prime} 2 \mathrm{2PE}$ | PHMSA (DIMP) | 12/5/2019 |
| AA | Q-4605-001131 | 2969082 | bM-GUIC LAKEVIEW DR SW | LAKEVIEW DR SW | BEMIDI | Replace 80s vintage AA with $\sim 2,150$ ' 2 PE | PHMSA (DIMP) | 11/22/2019 |
| Bare Steel | Q-4605-000993 | 2922096 | FM-MERC BARE STEEL OAK RIDGE (FAIRMONT) | OAK RIDGE RD | FAIRMONT | Replace ${ }^{5} 445^{\prime \prime 2}$ " bare steel with PE. | PHMSA (DIMP) | 8/12/2019 |
| Bare Steel | Q-4605-001015 | 2931274 | 4 RO-GUIC BARE STEEL10TH ST (ROCHESTER) | 10TH STREET SW | ROCHESTER | Leak Repair replace $\sim 10$ bare steel main. | PHMSA (DIMP) | 7/22/2019 |
| X-trube | NA | 2693360 | GUIC - DIMP SVC REPL - OBSOLETE MATERIALS - x -TRUBE | ASSORTED | ASSORTED | See service line tab for details | PHMSA (DIMP) | Various |
| x-trube | Q-4605-000842 | 2868816 | 6 Ro-GUIC - Xtrube (SPRING GROVE) | 3RD AVENUE SE/4TH AVENUE SE | SPRING GROVE | Install $\sim 2150^{\prime} 2$ " PE Replacement main needed to replace $X$-trube services (repl 900 ' $1-1 / 4$ " WS) | PHMSA (DIMP) | 6/21/2019 |
| X-trube | Q-4605-000852 | 2872976 | Ro-GUIC - xtrube hwy 44 (SPRING GROVE) | HIGHWAY 44 | SPRING GROVE | Retire 95 ' 2 " WS main under roadbed to be replaced with a longside PE service in order to replace $X$-trube service. | PHMSA (DIMP) | 7/24/2019 |
| X-trube | Q-4605-000882 | 2889803 | 3 bM-MAIN REPAIR SERVICE TEE FOR X-TRUBE SERVICE REPL | 510 SCOTT AVE SE | BEMIDI | REPLACE 5' Of 2" STEEL MAIN FOR X -TRUBE SERVICE TEE - GP | PHMSA (DIMP) | 5/6/2019 |
| X-trube | Q-4605-000948 | 2904175 | WA-GUIC MAIN REPLACE MAIN N CONLEY THIEF | 115 Conley ave | THIEF RIVER FALLS | Main replacement to replace 3 X-trube services | PHMSA (DIMP) | 8/12/2019 |
| x-trube | Q-4605-000949 | 2904246 | WA-GUIC X TRUBE REPL TRF | 240 PINE AVE N | THIEF RIVER FALLS | Main extension to replace $X$-trube service. | PHMSA (DIMP) | 6/24/2019 |
| X-trube | Q-4605-001061 | 2939592 | RO-GUIC ROBERT SAUER-3RD AVE (HARMONY) | 340 SE 3RD AVE. | harmony | Install $\sim 370$ of 2 " main to replace $2 X$-trube services | PHMSA (DIMP) | 10/28/2019 |
| X-trube | Q-4665-001062 | 2940147 | RO-GUIC ALLEN DAHL/ 2 ND ST SE (HARMONY) | 1605 STH AVE. SE | HARMONY | Install $133{ }^{\text {a }}$ of 2 " PE main to replace $X$-trube service | PHMSA (DIMP) | 10/28/2019 |
| X-trube | Q-4605-001106 | 2956841 | RO-GUIC LARRY TON- S MAIN AVE (HARMONY) | 355 S MAIN AVE | HARMONY | Main extension to remove $X$-trube cross service | PHMSA (DIMP) | 9/10/2019 |
|  | Total |  |  |  |  |  |  |  |

Minnesota Energy Resources Corporation
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2019 Obsolete Materials Replacement Projects
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| Project Type | WBS Element | WR \# | Project Name | Total Main Footage | Main Installation Cost |  | Main Internal Labor Cost |  | Main Removal Cost |  | Total Main Cost |  | Number of Service Lines | Total Service Line Footage | Service Install Cost |  | Total Project cost |  | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| AA | NA |  |  |  | \$ |  | \$ | - | \$ | . | \$ | . | 5 | 389 | \$ | 12,961.65 | \$ | 12,961.65 |  |
| AA | Q-4605-000647 | 2746693 FM-GUIC AA REPLACE-BROADWAY AVE (ALDEN) |  | 740 | \$ | 21,094.34 | \$ | 14.77 | \$ | - | \$ | 21,109.11 | 6 | 548 | \$ | 14,237.83 | \$ | 35,346.94 |  |
| AA | Q-4605-000794 | 2775040 FM-GUIC AA REPLACEMENT (ALDEN) |  | 792 | \$ | 20,119.11 | \$ | 14.09 | \$ | - | s | 20,133.20 | 5 | 334 | \$ | 8,015.79 | s | 28,148.99 |  |
| AA | Q-4605-000795 | 2775065 FM-GUIC AA REPLACEMENT (ELLENDALE) |  | 1,999 | \$ | 48,105.86 | s | 33.63 | \$ | 720.27 | s | 48,859.76 | 10 | 735 | \$ | 21,450.39 | \$ | 70,310.15 |  |
| AA | Q-4605-000796 | 2776416 FM-GUIC AA REPLACEMENT (WELS) |  | 1,487 | \$ | 26,532.98 | \$ | 18.57 | \$ | 480.18 | s | 27,031.73 | 15 | 1,076 | \$ | 31,636.61 | \$ | 58,668.34 |  |
| AA | Q-4605-000797 | 2775075 FM-GUIC AA REPLACEMENT (EMMONS) |  | 462 | \$ | 16,371.76 | 5 | 3,919.55 | \$ | - | \$ | 20,291.31 | 4 | 252 | \$ | 4,836.90 | \$ | 25,128.21 |  |
| AA | Q-4605-000799 | 2847849 RO-GUIC AA REPLACEMENT-9TH ST NW |  | 5,163 | \$ | 143,989.02 | \$ | 37,182.78 | \$ | - | s | 181,171.80 | 0 |  | \$ |  | \$ | 181,171.80 |  |
| AA | Q-4605-000800 | 2847679 RO-GUIC AA REPLACEMENT-MCNELLUS 1ST SUB |  | 3,886 | \$ | 87,188.99 | \$ | 1,676.29 | \$ | - | \$ | 88,865.28 | 19 | 1,494 | \$ | 40,526.81 | \$ | 129,392.09 |  |
| AA | Q-4605-000801 | 2847503 RO-GUIC AA REPLACEMENT-2ND AVE \& 2ND ST |  | 401 | \$ | 10,489.31 | \$ | 7.34 | \$ | - | \$ | 10,496.65 | 1 | 132 | \$ | 2,900.24 | \$ | 13,396.89 |  |
| AA | Q-4605-000803 | 2846177 Ro-GUIC AA REPLACEMENT-DRS 11 OUTLET |  |  | \$ | 36,383.94 | \$ | 8,891.09 | \$ | - | \$ | 45,275.03 | 2 | 103 | \$ | 4,624.28 | \$ | 49,899.31 |  |
| AA | Q-4605-000804 | 2846033 RO-GUIC AA REPLACEMENT-WOODLAKE DR SE |  | 2,788 | \$ | 60,480.06 | \$ | 52.90 | s | - | \$ | 60,532.96 | 4 | 324 | 5 | 7,549.11 | 5 | 68,082.07 |  |
| AA | Q-4605-000805 | 2845753 RO-GUIC AA REPLACEMENT-9 1/2 ST SE |  | 2,602 | \$ | 100,298.95 | \$ | 13,177.47 | \$ | - | \$ | 113,476.42 | 27 | 1,178 | \$ | 53,427.91 | \$ | 166,904.33 |  |
| AA | Q-4605-000806 | 2845617 RO-GUIC AA REPLACEMENT-STH ST \&12TH AVE |  | 4,181 | 5 | 103,452.43 | s | 17,742.86 | \$ | - | 5 | 121,195.29 | 59 | 3,741 | 5 | 108,061.85 | s | 229,257.14 |  |
| AA | Q-4605-000807 | 2845248 RO-GUIC AA REPLACEMENT-1ST AVE NE BYRON |  | 6,706 | \$ | 158,692.44 | \$ | 139.75 | \$ | - | \$ | 158,832.19 | 54 | 2,214 | \$ | 97,113.51 | \$ | 255,945.70 |  |
| AA | Q-4605-000808 | 2845123 RO-GUIC AA REPLACMENT-MEADOWLARK CT |  | 2,939 | \$ | 65,501.06 | s | 1,457.26 | 5 | - | \$ | 66,958.32 | 19 | 705 | \$ | 34,978.57 | \$ | 101,936.89 |  |
| AA | Q-4605-000809 | 2848877 RO-GUIC AA REPLACEMENT-CLIFF ST |  | 504 | \$ | 19,316.75 | \$ | 17,315.17 | \$ | - | \$ | 36,631.92 | 7 | 528 | \$ | 16,711.79 | \$ | 53,343.71 |  |
| AA | Q-4605-000810 | 2848834 RO-GUIC AA REPLACEMENT-CLIFF CIRCLE |  | 504 | \$ | 23,511.14 | \$ | 16.46 | s | - | \$ | 23,527.60 | 8 | 578 | \$ | 16,130.10 | \$ | 39,657.70 |  |
| AA | Q-4605-000811 | 2844752 Ro-GUIC AA REPLACEMENT-BENNETT ST |  |  | \$ | 15,577.96 | \$ | 360.77 | \$ | - | \$ | 15,938.73 | 8 | 691 | \$ | 19,688.79 | \$ | 35,627.52 |  |
| AA | Q-4605-000812 | 2844610 RO-GUIC AA REPLACEMENT-WHALEN VALLEY RD |  | 1,593 | \$ | 47,372.19 | s | 1,163.49 | s | - | s | 48,535.68 | 13 | 995 | \$ | 25,948.01 | s | 74,483.69 |  |
| AA | Q-4605-000813 | 2844598 RO-GUIC AA REPLACEMENT-BURR OAK ST NORTH |  | 6,224 | s | 245,536.83 | s | 6,352.76 | \$ | (125.00) | \$ | 251,764.59 | 78 | 5,783 | \$ | 200,541.54 | \$ | 452,306.13 |  |
| AA | Q-4605-000814 | 2859356 RM-GUIC AA REPLACEMENT (LAKEVILLE) 2844627 RO-GUIC AA REPLACEMENT-SPRING VALLEY VAR |  |  | s | 5,394.66 | \$ | 3.78 | \$ | 225.00 | s | 5,623.44 | 0 |  | s |  | \$ | 5,623.44 |  |
| AA | Q-4605-000815 |  |  | 3,690 | s | 80,085.72 | \$ | 7,191.37 | \$ | - | \$ | 87,277.09 | 27 | 2,218 | \$ | 53,929.87 | \$ | 141,206.96 |  |
| AA | Q-4605-000817 | 2859855 Ro-GUIC A A REPLACEMENT-60TH AVE NW |  | 6,170 | \$ | 341,120.62 | \$ | 39,105.69 | \$ | - | s | 380,226.31 | 0 |  | \$ |  | \$ | 380,226.31 |  |
| AA | Q-4605-000818 | 2845757 RO-GUIC AA REPLACEMENT-ST. MARY'S HILS |  | 11,257 | \$ | 295,162.47 | \$ | 22,800.77 | \$ | - | \$ | 317,963.24 | 46 | 6,654 | \$ | 151,553.49 | \$ | 469,516.73 |  |
| AA | Q-4605-000841 | 2877997 PC-GUIC-RUSH CITY AA REPLACE 4 IN |  | 8,597 | \$ | 441,372.76 | S | 1,748.19 | \$ |  | s | 443,120.95 | 16 | 1,573 | \$ | 42,624.91 | s | 485,745.86 |  |
| AA | Q-4605-000865 | 2881359 FM-GULC - AA REPLACEMENT (LAKEFILLD) |  | 275 | \$ | 6,737.83 | \$ | 4.92 | \$ | 240.09 | \$ | 6,982.84 | 0 | - | \$ | - | s | 6,982.84 |  |
| AA | Q-4605-000902 |  |  |  | \$ | 168.12 | \$ | 0.12 | \$ | 240.09 | \$ | 408.33 | 0 |  | \$ |  | \$ | 408.33 | Retirement only |
| AA | Q-4605-000950 | 2906370 PC-GUIC 2019 AA REPLACEMENT PROJECT |  | 1,000 | \$ | 22,453.97 | s | 2,775.59 | \$ | 270.19 | \$ | 25,499.75 | 6 | 517 | \$ | 13,840.45 | 5 | 39,340.20 |  |
| AA | Q-4605-001073 | 2851183 PC-GUIC AA REPL PROJECT 2019 MORA |  | 2,678 | \$ | 70,253.20 | \$ | 1,092.60 | s | 316.22 | s | 71,662.02 | 25 | 2,230 | \$ | 60,718.58 | s | 132,380.60 |  |
| AA | Q-4605-001107 | 2801469 PC-GUIC RUSH CITY AA MAIN REPL 2 IN SECT |  | 2,315 | \$ | 54,804.02 | s | 128.94 | \$ | - | \$ | 54,932.96 | 12 | 607 | \$ | 21,598.70 | \$ | 76,531.66 |  |
| AA | Q-4605-001130 | 2968818 WA-GUIC AA HEWITT PHASE 1 |  | 2,468 | \$ | 58,719.22 | s | 9,888.68 | s |  | s | 68,607.90 | 26 | 2,140 | \$ | 56,994.74 | s | 125,602.64 |  |
| AA | Q-4605-001131 | 2969082 BM-GUIC LAKEVIEW DR SW <br> 2922096 FM-MERC BARE STEEL OAK RIDGE (FAIRMONT) |  | 2,091 | \$ | 41,082.96 | \$ | 6,830.32 | \$ | 316.22 | \$ | 48,229.50 | 0 |  |  |  | \$ | 48,229.50 |  |
| Bare Steel | Q-4605-000993 |  |  | 516 | \$ | 10,317.57 | \$ | (227.38) | \$ | 360.41 | \$ | 10,450.60 | 0 | - |  |  | s | 10,450.60 |  |
| Bare Steel | Q-4605-001015 | 2931274 RO-GUIC BARE STEEL10TH St (ROCHESTER) |  | 4 | \$ | 5,470.07 | \$ | 3.83 | \$ | - | \$ | 5,473.90 | 0 |  |  |  | \$ | 5,473.90 |  |
| $x$-trube | NA | 2693360 GUIC - DIMP SVC REPL - OBSOLETE MATERIALS - - -TRUBE |  | - | \$ |  | \$ | - | \$ | - | \$ |  | 200 | 13,884 | \$ | 546,226.36 | \$ | 546,226.36 |  |
| x-trube | Q-4605-000842 |  |  | 2,148 | \$ | 47,643.74 | \$ | 7,607.72 | \$ | - | \$ | 55,251.46 | 24 | 1,321 | \$ | 52,876.10 | \$ | 108,127.56 |  |
| $x$-trube | Q-4605-000852 |  |  |  | \$ | 490.34 | \$ | 0.34 | \$ | - | \$ | 490.68 | 0 | - | \$ | - | s | 490.68 | Retirement only |
| $x$-trube | Q-4605-000882 | 2889803 BM-MAII REPAIR SERVICE TEE FOR X-TRUBE SERVICE REPL |  |  | 5 | 2,116.05 | \$ | (34.73) | \$ | - | 5 | 2,081.32 | 0 | - | \$ | - | \$ | 2,081.32 |  |
| $x$-trube | Q-4605-000948 | 2904175 WA-GUIC MAII REPLACE MAIN N CONLEY THIEF |  | 272 | \$ | 10,043.94 | \$ | 372.72 | \$ | 408.17 | \$ | 10,824.83 | 3 | 217 | \$ | 6,381.81 | s | 17,206.64 |  |
| $x$-trube | Q-4605-000949 | 2904246 WA-GUIC X TRUBE REPL TRF |  | 52 | s | 2,904.27 | \$ | 2.03 | \$ | - | \$ | 2,906.30 | 0 | - |  |  | \$ | 2,906.30 |  |
| $x$-trube | Q-4605-001061 | $\begin{aligned} & 2939592 \\ & 2940147 \end{aligned}$ | Ro-GUIC ROBERT SAUER-3RD AVE (HARMONY) | 370 | \$ | 7,075.72 | \$ | 58.33 | \$ | - | \$ | 7,134.05 | 0 | - |  |  | s | 7,134.05 |  |
| x-trube | Q-4605-001062 |  | RO-GUIC AlLEN DAHL/ 2ND ST SE (HARMONY) | 131 | s | 3,066.68 | \$ | 45.80 | \$ | - | \$ | 3,112.48 | 0 | - |  |  | \$ | 3,112.48 |  |
| $x$-trube | Q-4605-001106 | 2956841 | RO-GUIC LARRY TON-S MAIN AVE (HARMONY) | 116 | \$ | 5,899.46 | \$ | 427.63 | \$ |  | \$ | 6,327.09 | 1 | 110 | \$ | 1,534.14 | s | 7,861.23 |  |
|  | Total |  |  | 87,127 | \$ | 2,762,398.51 | s | 209,364,26 | \$ | 3,451.84 | S | 2,975,214.61 | 730 | 53,271 | \$ | 1,729,620.83 | \$ | 4,704,835.44 |  |

## EXHIBIT J - DETAILED DATA

| Project Type | Wes lement | Wr ${ }^{\text {a }}$ | Project Name | ${ }^{1 \text { " Plastic }}$ | ${ }^{\text {2" Plassic }}$ | 4 - Plassic | $6^{\text {P Plastic }}$ | ${ }^{8}$ P Plastic | ${ }^{1}$ "Steel |  | 12.1/2 Steel | ${ }^{2}$ " Steel | ${ }^{3}$ " Steel | $4^{4}$ Steel | $\begin{gathered} \text { Total } \\ \text { Footage } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| AA | Q.4605-000647 | 274693 | PM-GUIC AA REPLICE-BROADWAY AVE (ALIEN) | 0 | 740 | 0 | 0 | 0 |  |  | 0 |  |  | 0 | 740 |
| AA | Q-4605.000794 | 2775040 | FM-GUIC AA REPLACEMENT (ALDEN) | 0 | 790 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 792 |
| AA | Q-4605.000795 | 2775065 | $5 \mathrm{Fm-GUIC}$ A A RPPICEMENT (ELIENDALE) | 0 | 1,999 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 1,999 |
| AA | Q-4605.000796 |  | 5 FM-GUIC AA REPLCACMENT (WELS) | 0 | 937 | 550 | 0 | 0 |  | 0 | 0 |  |  | 0 | ${ }_{1}^{1,487}$ |
| ${ }_{\text {AA }}$ | Q-4605.000797 |  | 5 FM -GUIC AA REPLACCMENT (EMMONS) | 0 | 460 |  | 0 | 0 |  | 0 | 0 |  |  | 0 | 462 |
| AA | Q.4655.000799 |  | 9 Ro-GUI AA REPIACEMENT-TtH ST NW | 2 | 1,919 | 3,242 | 0 | 0 |  | 0 | 0 |  |  | 0 | 5,163 |
| AA | Q-4655.000880 | 2847679 | $9 \mathrm{Ro-GUIC} \mathrm{~A} \mathrm{~A} \mathrm{REPLCEMENT-MCNELIUS} \mathrm{IST} \mathrm{SUB}$ | 0 | 2,345 | 1,541 |  | 0 |  | 0 | 0 |  |  | 0 |  |
| ${ }_{\text {AA }}$ | Q-4605.000801 | 284503 | Ro-GUIC A A REPICACMEMT-2ND AVE E 2ND ST | 3 | 398 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 401 |
| ${ }_{\text {AA }}^{\text {A }}$ | Q.4605.000803 | 284617 284603 | Ro-GUIC A A REPLCEMENT-DRS 11 OUTLET | \% | 2,788 | 0 | $\bigcirc$ | $\bigcirc$ |  | 0 | 0 |  |  | 0 |  |
| ${ }_{\text {AA }}$ | Q-4655.000805 | 2845753 | 3 Ro-GUIC AA REPLACEMEN-9 $1 / 2$ ST SE | 0 | ${ }_{1}^{2,220}$ | 1,366 | 16 | 0 |  | 0 | 0 |  |  | 0 | ${ }_{2}^{2,602}$ |
| AA | Q-4605.000806 | 2845617 | Ro-GUIC A A REPLACEMENT-STH ST P12TH AVE | 2 | 4,176 | 3 | 0 | 0 |  | 0 | 0 |  |  | 0 | 4,181 |
| ${ }_{\text {AA }}$ | Q.-4605-000807 |  |  | 1 | ${ }^{6,705}$ | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 6,706 |
| ${ }_{\text {A }}$ | Q-4605-000808 |  | 3 RO-GUIC A A RPPICMENENT-MEADOWLARK CT | 0 | 2,937 | 0 | 0 | 0 |  | 2 | 0 |  |  | 0 | 2,939 |
| ${ }_{\text {AA }}$ | Q.-4655.000809 ${ }_{\text {Q }}^{\text {a }}$ | 2884877 28483 |  | $\frac{1}{2}$ | 504 502 | 0 | : | : |  | 0 | 0 |  |  | 0 | 504 <br> 504 |
| ${ }_{\text {AA }}$ |  | 284475 | 2 Ro-GUIC A A REPLACEMENT-EENNET ST | \% | ${ }_{0}$ | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 0 |
| ${ }^{\text {a }}$ | Q-4605.000812 | 2844610 | Ro-GUIC AA REPLACEMENT-WHALEN VALLEY RD | 2 | 1,591 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 1,593 |
| ${ }_{\text {A }}^{\text {AA }}$ | Q.a605.000813 | 2884598 285936 |  | 5 | 4,332 | 1,887 | 0 | 0 |  | 0 | 0 |  |  | 0 | 6,224 |
| ${ }_{\text {a }}$ | Q-.465-000818 | 2845575 | 7 RO GUIC A A REPLACEMENT.ST. MARTS HILS | 0 | 5,780 | 5,477 | 0 | 0 |  |  | 0 |  |  | 0 | 11,257 |
| as | Q.4655.000841 | 287799 | PC-GUIC-RUSH CITY AA REPLACE 41 N | 2 | 222 | 8,373 | 0 | 0 |  | 0 | 0 |  |  | 0 | ${ }_{8,597}$ |
| ${ }^{\text {as }}$ | Q.4605.000865 | 288135 | 9 FM-GUIC - AA REPLACEMENT (LAKEFILI) | 1 | 274 | 0 | 0 | 0 |  |  | 0 |  |  |  |  |
| AA | ${ }^{\text {Q-4605.000902 }}$ | 2893330 | fM-GUIC-AA RETIREMENT BROADWAY (ALIDEN) | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | ${ }^{0}$ |
| ${ }^{\text {AA }}$ | Q.4605-000950 | 290637 | PC-GUIC 2019 A A REPLACEMENT PROIECT | 0 | 1,000 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 1,000 |
| AA | Q-4605-001073 |  | 3 PC-GUIC A AREL PROJECT 2019 Mora | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 |  |
| ${ }^{\text {A }}$ | Q-4605-001107 | 2801469 | PC-GUIC RUSH CITV AA MAIN REPL L IN SECT | 0 | 2,315 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 2,315 |
| ${ }^{\text {a }}$ | Q.4605-001130 | 2968818 | WA-GUIC AA HEWIT PHASE 1 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 2,468 |
| AA | Q-4605-001131 | 296982 | Bm-GUIC Lakeview dr sw | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 2.091 |
| ${ }^{\text {a }}$ | Q-4605-000815 | 284627 | Ro-Guic an Replacement spring valier var | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 3,690 |
| ${ }_{\text {Aa }}^{\text {Aare Steel }}$ | Q.a665.00817 | 2898955 | 5 Ro-GuIC A A Replacement both ave nw | 0 | ${ }_{516}$ | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 6,170 |
| Bare steel | Q-4605-001015 | 2931274 | 24 Ro-GUIC BARE STEELIOTH ST (ROCHESTER) | 0 | ${ }_{0}$ | 0 | 0 | 0 |  | 0 | 0 |  |  | 4 | ${ }_{4}$ |
| X -tube | Q.4605.000842 | 2888816 | 6 Ro-GUIC -xtrube (SPRING GRove) | 0 | 2.148 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 2,148 |
|  | Q.a655.000852 | 2889976 28883 |  | 0 | $\bigcirc$ | 0 | : | 0 |  | 0 | $\stackrel{1}{2}$ |  |  | $\bigcirc$ | ${ }_{2}$ |
| $x$-trube | Q.4605-000948 | 2904175 | WA-GUIC MAIN REPLACE MAIN N CONLEY THIEF | 0 | 272 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 |  |
| X-trube | Q-465-500949 | 290424 | WA-GUIC X TRUEE REPL TRF | 0 | 52 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 | 52 |
| X-trube | Q-4605-001061 | 233959 | 2 Ro-GUIC Robert saukr-3RD Ave (HarMonv) | 0 | 370 | 0 | 0 | 0 |  | 0 | 0 |  |  | 0 |  |
| x-trube | Q-46050000662 | 299014 |  | - |  |  | 0 | 0 |  | 0 | , |  |  |  | ${ }^{131}$ |
|  | Q.4605-001106 | 295684 | 1 Ro-GUIC LARRY ToN-S MAIN AVE (HARMONV) | ${ }_{20}$ | $\begin{array}{r} 116 \\ 47563 \end{array}$ | ${ }^{22,439}$ | ${ }_{16}$ | \% |  | ${ }_{2}$ | 0 |  |  | 4 | - ${ }_{\text {87, } 1127}$ |




PRIVATE DATA ENDS]





PRIVATE DATA ENDS]




\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline Type \& wr \& Related WR \& Op District \& \& Projectame \& Address \& city \& ion <br>
\hline ¢-true \& 2947729
297370 \& 2693360

269360 \& \& ${ }_{95}^{95}$ \& \& \&  \&  <br>
\hline x.trube \& 294574 \& 2693360 \& \& 95 \& \& \& RC.HARMONY-FILMRRCTSSOC \& GUIC XTRUBE RRPLACEMENT <br>
\hline x-trube \& ${ }^{2988369}$ \& ${ }^{2693360}$ \& \& ${ }^{95}$ \& \& \& ${ }^{\text {RC-HARMOONY-FILMMRCLISOCC }}$ \& GUIC Truebe replacement / Service replacement <br>
\hline ${ }^{\text {x }}$ x-trube \& ${ }_{2946883}^{22463}$ \& ${ }_{22533360}^{20330}$ \& \& ${ }_{95}$ \& \& \&  \&  <br>
\hline x.trube \& 2945814 \& 2693360 \& \& 95 \& \& \& rc. Harmonv-fllmert LSoc \&  <br>
\hline ube \& 2945694 \& 2693360 \& \& S \& \& \& RC. HARMONY-FILIMRECTLSOC \& GUIC Trabe servic replacement <br>
\hline ${ }_{\text {x }}^{\text {x-trube }}$ \& ${ }_{2}^{29468837}$ \& 2693360
269360 \& \& 95
95 \& \& \&  \&  <br>
\hline X x trube \& 2947726 \& 2693360 \& \& ${ }_{95}$ \& \& \& RC.HARMONY-FILMMRTL LSoC \&  <br>
\hline $x$ xtrue \& 294579 \& 2693360 \& \& ${ }^{95}$ \& \& \& RC.HARMONY-FILMRETLSDCC \& GUIC XTrueb replacement <br>
\hline x.true \& ${ }^{2945755}$ \& ${ }^{2693360}$ \& \& \& \& \&  \& GUIC Trueb Replacement <br>
\hline ${ }_{\text {x }} \times$ x-trube \& 22944890 \& 26993360

269360 \& \& 95
95 \& \& \&  \&  <br>
\hline $x$-true \& 294573 \& 2693360 \& \& 95 \& \& \& RC.Harmonv-filmert soc \& GUIC XTRUBE REPLACEMENT <br>
\hline ${ }^{\text {x-trube }}$ \& ${ }^{2945827}$ \& ${ }^{2693360}$ \& \& ${ }_{9}^{95}$ \& \& \&  \&  <br>
\hline x-true \& ${ }^{2245357}$ \& ${ }^{2693360}$ \& \& ${ }_{9}^{95}$ \& \& \&  \& GUIC CTRUEE REPLICGEMENT <br>
\hline  \& ${ }_{2}^{29474655}$ \& 2693360
269360 \& \& ${ }_{95}^{95}$ \& \& \&  \&  <br>
\hline X-trube \& 2986350 \& 2693360 \& \& \& \& \& RCPPNESSAND-PNEES SD-C \& REPLACMENT - LEAK REPAR <br>
\hline $x$-trube \& ${ }^{2927069}$ \& ${ }^{2693360}$ \& \& ${ }^{95}$ \& \& \&  \& GUIC XTRUBE REPLICEMENT <br>
\hline ${ }_{\substack{\text { x }}}^{\text {x-trube }}$ \& ${ }_{2948371}^{294697}$ \& 2693360
269360 \& \& -95 \& \& \&  \&  <br>
\hline $x$ xtrube \& 2986609 \& ${ }^{2956841}$ \& \& 95 \& \& \& RC.HARMONY-FILMRECTLSDCC \& GULC X Trube / Service replacement <br>
\hline  \& ${ }_{2}^{265995868}$ \& ${ }_{22693360}^{269360}$ \& \& $\begin{array}{r}89 \\ \hline 95 \\ \hline\end{array}$ \& \& \&  \&  <br>
\hline \& \& \& \& \& \& \& \& <br>
\hline
\end{tabular}

. . . PRIVATE DATA ENDS]

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Type \& WR． \& Related Wr \& Op District \& Projectame \& Const Complete oate \& Month \& Size Insalled \& Total footage Insalled \& Size T Tyee Retired \& Total Footage Retired \& Service instalation Cost \\
\hline Aldy－A \& \({ }^{28554545}\) \& 2775075 \& \& 94 \& 4／18／2019 \& \& \(4{ }^{11}\)＂and smaller \& \& \(1 / 2\) Plastic \& 44 s \& 979.59 \\
\hline Aldy－A \& \begin{tabular}{l}
2885457 \\
\\
285548 \\
\hline
\end{tabular} \& 2775075
2775925 \& \& \& 4／18／2019 \& \& \({ }^{4}\) 41 1 and smaler \& \& 1／2＂Plastic \& \({ }^{84}\) S \& 1，622．74 \\
\hline \({ }^{\text {Aldyl}}\) A \& \begin{tabular}{l}
2854548 \\
285454 \\
\hline
\end{tabular} \& \({ }_{2}^{2775075}\) \& \& \({ }_{94}\) \& 4／1882019 \& \& \({ }^{4}\) 4 1 ＇and smaler \& \& 1／2＂Prastic \& 92 \({ }^{97}\) \& \(\underset{\substack{1,380.10 \\ 884.47}}{ }\) \\
\hline Aldy－A \& \({ }_{2884021}^{25846}\) \& \({ }^{2884834}\) \& \& \({ }_{95}\) \& \({ }_{4}^{4 / 12 / 272019}\) \& \& \({ }_{4}^{4} \mathrm{~A}\) 12 and smamaler \& \& 1／2／P Pasastic \& 37 \({ }^{37}\) \& 854．47
1,47276 \\
\hline Aldy－A \& 2854907 \& 2775040 \& \& 94 \& 4／24／2019 \& \& 4 1＂and smaller \& \& \(1 / 2\) Plastic \& 72 s \& \({ }^{1,5651.53}\) \\
\hline \({ }_{\text {Aldyl }}\) Aldy \& 285999112 \& 2775040
2775040 \& \& 94 \& \({ }_{\text {4 }}^{4 / 2 / 24 / 2012919}\) \& \& \({ }^{4}{ }^{4} 1\)＇and smaler \& \& （1／2＂Plastic \& 735 7 \& li，79906
\(1,996.09\) \\
\hline Aldy－A \& 2854910 \& 2775040 \& \& 94 \& 4／24／2019 \& \& 41 ＇and mmaler \& \& \(1 / 2 /\) Plastic \& \& \({ }^{1,1,068.12}\) \\
\hline Aldy－A \& 2854908 \& 277550 \& \& \({ }_{95}^{94}\) \& 4／24／2019 \& \& \(4{ }^{4}\)＂and smaler \& \({ }^{201}\) \& \(1 / 2\) P Pastic \& 705 \& \begin{tabular}{l}
1.820 .99 \\
\({ }_{2521.13}\) \\
\hline 1
\end{tabular} \\
\hline \({ }_{\text {Aldyl }}^{\text {Ald }}\) \& 2883788
288322 \& 2848834
284834 \& \& 95 \& \({ }_{\text {4／2／2／20019 }}\) \& \& \({ }_{4}^{4} 1\) 12 and smaler \& \& 1／2＂Plastic \& 1005
10
10 \& \(2,521.13\)
2,39908 \\
\hline Aldy -A \& \({ }_{2888864}^{28182}\) \& \({ }_{2844834}^{20464}\) \& \& \({ }_{95}\) \& 4／2／42019 \& \& 4 t 1 and smaller \& \& \(1 / 2\) Plastic \& 60 s \& \({ }_{1}^{1,574,78}\) \\
\hline \({ }_{\text {Aldyl }}^{\text {Aldy }}\) \& 2883918
288881 \& 2844834

284834 \& \& ${ }_{9} 5$ \& ${ }_{\text {4 }}^{4 / 2 / 24 / 2019}$ \& \& ${ }_{4}^{4}$ 4 1 I and smaller \& ${ }_{94}^{92}$ \& 1／2 Plastic \& 92 ${ }_{9}^{92}$ \&  <br>
\hline Aldy－A \& 2883908 \& ${ }^{2884834}$ \& \& ${ }_{9}$ \& $4 / 2 / 42019$ \& \& $4{ }^{\text {1 }}$＇and smaller \& \& 1／2＂Pasastic \& 55 ¢ \&  <br>
\hline Aldy A \& ${ }_{2}^{2883946}$ \& ${ }^{2884834}$ \& \& ${ }_{95}$ \& 4／24／2019 \& \& $4{ }^{1}$＂and smaler \& \& $1 / 2$ P Pastic \& 62 s \& ${ }_{1}^{1,53720}$ <br>
\hline ${ }_{\text {Aldyl }}^{\text {Ald }}$ \&  \& ${ }_{2}^{28476316}$ \& \& ${ }_{94}^{95}$ \& ST／12019
$5 / 2 / 2019$ \& \&  \& ${ }_{50}^{97}$ \&  \& ${ }^{101} 45$ \&  <br>
\hline Aldy－A \& 2854169 \& 2776416 \& \& \& 5／2／2019 \& \& 51 ＂and smaler \& \& 1／2／P Pastic \& 415 \& ${ }^{1,955.24}$ <br>
\hline ${ }_{\text {Aldy }}$ \& 2888563
288535 \& 2886033
286633 \& \& ${ }_{95}^{95}$ \& S5／2019 \& \& S ${ }^{\text {a }}$＂and smaler \& ${ }_{3}{ }_{3}$ \& M $1 / 2$ P Pastic \&  \& 2， 2101029 <br>
\hline Aldy A \& ${ }_{2888861}^{288036}$ \& ${ }^{2886633}$ \& \& ${ }_{95}$ \& 5／3／20019 \& \& ${ }_{5} 51$ 2ans smaler \& 150 \& 1／2／Prasastic \& 87 s \& \％${ }_{\text {2，55．3．38 }}$ <br>
\hline ${ }^{\text {Aldyl }}$ Ady \& 2884106
284100 \& 2844610

284610 \& \& ${ }_{95}^{95}$ \& 5／7／2019 ／9／2019 \& \& Star ${ }^{5}$ \％and smaller \& ${ }_{58}^{47}$ \& 1／2＂Prastic \& | 45 |
| :--- |
| 56 |
| 56 | \& 1，24，${ }^{1,53}$

$1,76,22$ <br>
\hline Aldy－A \& 2884101 \& ${ }^{2844610}$ \& \& 95 \& 5／9／2019 \& \& 51 19ans smaler \& 58 \& $1 / 2 / 2$ Pasastic \& 56 ${ }^{56}$ \& ${ }_{\text {l }}$ <br>
\hline ${ }_{\text {Aldyl }}$ \& 2884102

288999 \& ${ }^{2844610}$ \& \& ${ }_{95}^{95}$ \& ¢ \& \&  \& \begin{tabular}{|}
57 <br>
62

 \& 1／2＂Prastic \& 56 \& 

1，957．31 <br>
$1,231.4$ <br>
\hline
\end{tabular} <br>

\hline Aldy－A \& 2887750 \& ${ }^{22485248}$ \& \& ${ }_{95}$ \& S／9／2009 \& \& 51 and smaler \& 43 \& 1／2＂Pastic \& ¢5 \& （1， <br>

\hline ${ }_{\text {Aldyl }}^{\text {Aldy }}$ A \& ${ }^{28887313}$ \& | 28842288 |
| :--- |
| 2845288 | \& \& ${ }_{95}^{95}$ \& ¢ \& \&  \& ${ }_{56}^{74}$ \& 1／2＂Plastic \& 63

107
10 \& ${ }_{\text {2，}}^{2,576.80}$ <br>
\hline Aldy A \& ${ }^{2839013}$ \& ${ }^{28452488}$ \& \& ${ }^{95}$ \& Stig209 \& \& 51 ＂and smaler \& ${ }^{34}$ \& $3 / 4$＂steel \& 405 \& －1，47．19 <br>
\hline ${ }_{\text {Aldy }}$ \&  \& ${ }^{27276693}$ \& \& ${ }_{94}^{94}$ \& ST／5／2／2019 \& \&  \& ${ }_{98}^{98}$ \& 1／2＂P Pastic \& 25 s \&  <br>
\hline Aldy－A \& 2883172 \& 2746693 \& \& 94 \& 5／9／2019 \& \& 51 ＂and smaler \& 100 \& $1 / 2^{\text {P Pasastc }}$ \& 435 \& 2， 211.37 <br>
\hline ${ }^{\text {AldyP}}$ A－A \& 2893173

2893176 \& 2746593
274693 \& \& ${ }_{94}$ \& 5／9／2019 \& \&  \& ${ }_{98}^{114}$ \& 1／2＂P年积 \& 41 s \& ${ }_{2}^{2,2,682.26}$ <br>

\hline Aldy A \& | 2893168 |
| :--- |
| 288735 | \& | 274693 |
| :--- |
|  |
| 2845248 | \& \& ${ }_{95}^{94}$ \& ¢ $5 / 9 / 2 / 2019$ \& \&  \& 40 \& $1 / 2$ P Pastic \& 54 s \& 2,04779

2 <br>
\hline ${ }^{\text {Aldyl}}$ A－A \& 2887363
${ }_{2}^{288501}$ \& 2884248
285248 \& \& \& ${ }_{5}^{51 / 1202019}$ \& \& ${ }_{5} 51$ ana smaler \& ${ }_{32}^{91}$ \& 1／2／P Pasastic \& ${ }_{89}{ }^{24} 5$ \&  <br>
\hline ${ }^{\text {Aldyl }}$ Ad \& 2887499
288500 \& 28485248
285248 \& \& ${ }_{95}^{95}$ \& $51012 / 219$
$5 / 102019$ \& \&  \& ${ }_{31}^{30}$ \& （1／2 Plastic \& 84 s
87
87 \& 1，779．93
$1,725,27$ <br>
\hline ${ }^{\text {Aldary }}$ A－A \& 边2887500 \&  \& \& \&  \& \&  \& ${ }^{31}$ \& （1／2P Pastic \&  \&  <br>
\hline ${ }_{\text {Aldyl }}$ Aldy \& 28874747
28874 \& 28842488

2845248 \& \& ${ }_{95}^{95}$ \& $5 / 1012019$
$5 / 102019$ \& \&  \& ${ }_{32}^{31}$ \& 1／2＂Prastic \& ¢ ${ }_{86}^{94} 5$ \& li，74．1．94
1,3089 <br>
\hline Aldy 1 A \& ${ }^{2884103}$ \& ${ }_{2}^{2844610}$ \& \& \& 5／13／2019 \& \& 51 1and smaller \& 45 \& $1 / 2$＂Pastic \& 435 \& ${ }_{1,511.66}$ <br>
\hline ${ }_{\text {Aldy }} \begin{aligned} & \text { Aldy } \\ & \text { Aly } \\ & \text { a }\end{aligned}$ \& 2884108
284107 \& 2844610 \& \& ${ }_{95}^{95}$ \& $5 / 13 / 2019$
$5 / 132019$ \& \&  \& 50

49 \& 1／2＂Prastic \& | 48 S |
| :--- |
| 47 | \&  <br>

\hline Aldy A \& | 2884105 |
| :--- |
|  |
| 284104 | \& ${ }^{28446510}$ \& \& ${ }_{9}^{95}$ \& 5／1312019

$51 / 2319$ \& \&  \& ${ }_{4}^{43}$ \& 1／2＂Pasatic \& ${ }_{43}^{41}$ s \& － <br>
\hline ${ }_{\text {Aldyl }}$ Aldy \& 2884104
288514 \& 2844510
2845248 \& \& ${ }_{95}^{95}$ \& 5／13／2919 \& \& Stian smaler \& 35 \&  \& 43
42
4 \& ${ }_{\text {l }}^{1,1,481.40} 1$ <br>

\hline Aldy A \& | 2887235 |
| :--- |
| 288515 | \& － 28.4852488 \& \& ${ }_{95}^{95}$ \& $5 / 3132019$

$5 / 1321919$ \& \&  \& 28
30
28 \& ${ }_{\text {l }}^{1 / 2 / \text { P Pastic }} 1$ \& 32 s \&  <br>
\hline ${ }_{\text {Aldy }}$ Alde－A \& 2887512

288304 \& | 28842288 |
| :--- |
| 2845248 | \& \& \& ${ }_{\text {5 }}^{5 / 313 / 2019}$ \& \&  \& \& 1／2／P Prastict \&  \& ${ }_{1,537.41}^{1,29.13}$ <br>

\hline ${ }_{\text {Aldy }}$ \& | 2887515 |
| :--- |
| 28515 | \& 28482488 \& \& ${ }^{95}$ \& | $5 / 13 / 2019$ |
| :---: |
| $51 / 22019$ | \& \& ${ }_{5} 51$ Iand smaler \& 47 \& $1 / 1 /$ P Pastic \& 49 s \&  <br>

\hline ${ }^{\text {Aldyl}}$ A－A \&  \& 2884248

285248 \& \& \& ${ }_{\text {5 }}^{513132019}$ \& \&  \& ${ }_{34}^{28}$ \& 1／2／Prassic \& | 34 |
| :--- |
| 42 | \& － $\begin{aligned} & 1,2,23.45 \\ & 1,3859\end{aligned}$ <br>

\hline ${ }_{\text {Aldyl }}$ \& | 2854175 |
| :--- |
|  |
| 2854180 | \& | 2776416 |
| :--- |
| 2775416 | \& \& 94 \& $5 / 14 / 2019$

$51 / 42019$ \& \&  \& ${ }_{6}^{60}$ \& ${ }^{1 / 2 . P \text { Pastic }}$ \& 57 s \& 1，594．45
25073 <br>
\hline Aldy－A \& ${ }_{2854178}^{25147}$ \& 2776416 \& \& \& 5／14／2019 \& \& 51 ＇and smaler \& 67 \& 1 1＂plastic \& 64 ¢ \& ${ }_{2,505}^{2,25}$ <br>
\hline ${ }_{\text {Aldy }}$ Aldy \& 2854172

284983 \& | 277646 |
| :--- |
| 284416 | \& \& 94 \& $5 / 14 / 2019$

$5 / 1 / 2019$ \& \&  \& $\underset{\substack{38 \\ 172}}{17}$ \& 1／2P Plastic \& 35 \&  <br>
\hline ${ }_{\text {Aldyl }}^{\text {Ald }}$ A \&  \&  \& \& ${ }^{95}$ \&  \& \&  \& ${ }_{52}^{17}$ \& （e） $1 / 2$ Prastic \& ［175 \&  <br>
\hline ${ }_{\text {Aldyl }}$ Aldy \& 2887470

288727 \& | 2845248 |
| :--- |
| ${ }_{285248}$ | \& \& ${ }_{95}^{95}$ \& 5／4／2／219

$5 / 1 / 2 / 2019$ \& \&  \& 32 \& 1／2＂Prastic \& 94
39
39
s \& 2，266，75
1,5896 <br>

\hline  \& | 2887772 |
| :--- |
| $\begin{array}{l}288799 \\ \text { 28892 }\end{array}$ | \&  \& \& ${ }^{95}$ \& Sh／42019 \& \&  \& 32

34

45 \& 1／2p pasatic \& | 875 |
| :--- |
| 88 |
| 48 | \& （1， <br>

\hline ${ }_{\text {Aldyl }}^{\text {Aldy }}$ \& 2887791

288769 \& | 28425288 |
| :--- |
| 2845248 | \& \& ${ }_{95}^{95}$ \& $5 / 14 / 2019$

$5 / 1 / 2019$ \& \& Star ${ }^{5}$＇and smaller \& 45
35 \& 1／2＂Plastic \& 48 ¢
39 \& $1,84.4 .82$
1,66130 <br>
\hline ${ }^{\text {a }}$ Aldy 1 \& 28877305
$\left.\begin{array}{l}288306 \\ \hline 88\end{array}\right)$ \&  \& \& ${ }_{95}^{95}$ \& ¢ \& \&  \& 52 \& 1／2＂Pastic \& 60 S
47 \&  <br>
\hline ${ }_{\text {Aldyl }}$ Ald ${ }^{\text {a }}$ \& 2887375

288307 \& | 28428248 |
| :--- |
| 2845248 | \& \& \& ${ }_{\text {5 }}^{5 / 14 / 2 / 2019}$ \& \&  \& 35 \& 1／2＂Papstic \& ${ }_{44}^{47}$ ¢ \& ${ }_{1,1,84.06}^{1,957.62}$ <br>

\hline ${ }_{\text {Aldyl }}^{\text {Aldy }}$ \& 2888737

2887308 \& 28482488
285288 \& \& ${ }_{95}^{95}$ \& 5／1／52019
$5 / 152019$ \& \&  \& 37

65 \&  \& | 445 |
| :--- |
| 70 |
| 0 | \& （1， <br>

\hline ${ }^{\text {Aldyl }}$ Ald ${ }^{\text {a }}$ \& | 288738 |
| :--- |
| 2889148 | \& 28825248

284503 \& \& ${ }_{95} 9$ \& ${ }_{\text {5 }}^{5 / 15152019}$ \& \& ${ }_{5} 51$ ana smaler \& \& 1／2＂Prastic \& 168 ${ }^{7}$ \& ${ }_{\text {l }}^{1,2700.24}$ <br>

\hline ${ }_{\text {Aldy }}$ \& | 2887835 |
| :--- |
| 8889 | \& 28485288 \& \& ${ }_{95}^{95}$ \& S／i6／2019 \& \& ${ }_{5} 51$ Iand smaler \& | 30 |
| :--- |
| 32 | \& ${ }^{1 / 2 / 2 \text { P Pastic }} 1$ \& 37 s \& $1,580.82$

1,50425 <br>
\hline ${ }_{\text {Aldy }}$ Aly - A \& ${ }^{28887839}$ \& 2884248
285248 \& \& \& 55／20202019 \& \& ${ }_{5} 51$ and smaler \& ${ }_{30}^{32}$ \& 1／2／P＂Pastic \& ${ }^{47}$ ¢ ${ }^{\text {s }}$ \&  <br>
\hline ${ }_{\text {Aldy }}$ \& 2887966

288952 \& | 2845248 |
| :--- |
| 2845248 | \& \& \& $5 / 202 / 2019$

$5 / 202019$ \& \&  \& ${ }_{36}^{61}$ \& （1／2＂Pastic \& | 72 s |
| :--- |
| 40 | \& 1，534．20

$1,661.30$ <br>
\hline ${ }_{\text {Aldy }}$ Alde - A \& ${ }_{\text {cher }}^{28877881}$ \& 28424248
285288 \& \& \& ¢ 5120202019 \& \& ${ }_{5} 51$ anas smaler \& ${ }_{73}^{36}$ \& 1／2／P Pasastic \& ${ }_{80}{ }^{40}$ \& ${ }_{\text {li，}}^{1,2929.56}$ <br>

\hline ${ }_{\text {Aldyl }}$ Aldy \& （2887877 \& | 28425248 |
| :--- |
| 2845248 | \& \& \& 5／20／2019 \& \&  \& 74

67 \& （1／2＂Passic \& 795
1465 \& $2,334.42$
2，4359 <br>

\hline Aldy A \&  \& | 28452288 |
| :--- |
| 2648 | \& \& \&  \& \&  \& 4 \&  \&  \&  <br>

\hline ${ }_{\text {Aldyl }}$ Aldy \&  \& 2845248

2776416 \& \& \& 5／2012019 \& \&  \& 49 \& 1／2＂Plastic \& | 885 |
| :--- |
| 85 |
| 5 | \&  <br>

\hline ${ }_{\text {Aldyl }}$ \& | 2854143 |
| :--- |
| 2854164 | \& | 277446 |
| :--- |
| 2776416 | \& \& ${ }_{94}^{94}$ \& ¢ \& \& ${ }^{\text {a }}$ \& 110 \& $1 /{ }^{\text {che }}$ \& －112 \&  <br>

\hline ${ }_{\text {Aldyl }}$ Aldy \& ${ }_{\text {2854，}}^{2854164}$ \& 2776416
2776416 \& \& ${ }_{94}^{94}$ \& 5／21212019 \& \&  \& ${ }_{53}^{79}$ \& 1／2／P Plastic \& \％ 75 \& ${ }_{\text {2，}}^{2,117.71}$ <br>
\hline ${ }^{\text {and }}$ Aldy A \& 2854147
2854165 \&  \& \& ${ }_{94}$ \& ¢ \& \& Ster \& ${ }_{80}^{83}$ \& 为 $1 / 2$ Pr platstic \&  \& （2， <br>
\hline ${ }_{\text {Aldyl }}{ }_{\text {aldy }}$ \& 28884165
28419 \&  \& \& \& 5 $5 / 21212019$ \& \&  \& ${ }_{85}^{96}$ \& 1／2＂Plastic \& 100 ${ }^{100} 5$ \& ${ }_{2,171.76}^{2,51.55}$ <br>
\hline ${ }_{\text {Aldyl }}^{\text {Ald }}$ \& 2888483
288425 \& 2884877

284877 \& \& ${ }_{95}^{95}$ \& ¢ \& \&  \& \& \& 135 ${ }_{\text {s }}$ \&  <br>
\hline ${ }^{\text {Aldur }}$ A－A \& ${ }^{28887959}$ \&  \& \& \& 5／21／2019 \& \& ${ }_{5} 51$ and smaler \& ${ }_{42}^{100}$ \& 3／4／steel \& 46 ${ }^{135}$ \& ${ }_{\text {2，05s．52 }}$ <br>

\hline ${ }_{\text {Aldy }} \begin{aligned} & \text { Aldy } \\ & \text { Aly } \\ & \text { a }\end{aligned}$ \& （2887964 \& | 2845248 |
| :--- |
| 2845248 | \& \& ${ }_{95}$ \& 5／21／2019 \& \& ${ }_{5}^{5}$ S ${ }^{\text {a }}$ and smaler \& ${ }_{32}^{32}$ \& \& 38 s \& $1,595.18$

li， 50.80
1 <br>
\hline ${ }^{\text {Aldur }}$ A－A \& ${ }^{28887882}$ \& ${ }^{284542488}$ \& \& \& 5／51／2019 \& \& ${ }_{5}^{5} 1$ 12．and smaler smaler \& ${ }_{43}^{32}$ \& $1 / 2 / 4$ Plastic \& 37
45
4
s \& ${ }_{2,181.14}^{1,50.80}$ <br>
\hline ${ }_{\text {Aldy }}$ \& 2887728
288705 \& 2845248
2845248 \& \& \& $5 / 21 / 2019$
$5 / 21 / 2019$ \& \&  \& ${ }_{34}^{32}$ \&  \& 38 s
40
40 \& 1， 1.64 .707
1.510 .14 <br>
\hline Aldy -A \& ${ }_{2887725}^{281805}$ \& ${ }_{2845248}^{20424}$ \& \& \& 5／2112019 \& \&  \& ${ }_{33}^{34}$ \&  \& ${ }_{37}{ }^{0}$ s \&  <br>
\hline
\end{tabular}



PRIVATE DATA ENDS]

\begin{tabular}{|c|c|c|c|}
\hline Type \& WR \# \& Related WR \& Op District \\
\hline Aldy-A \& 288329 \& 2845757 \& \({ }^{95}\) \\
\hline Aldy-A \& \({ }^{2913469}\) \& 284575 \& \({ }^{95}\) \\
\hline \({ }^{\text {AldyP}}\) Ald \& \({ }_{22925200}^{2929}\) \& 2887997
2877997 \& \({ }_{98}^{98}\) \\
\hline \({ }^{\text {Aldy }}\) Ald \({ }^{\text {a }}\) \& 2922201
226199 \& 287797
287997 \& \({ }_{98}^{98}\) \\
\hline Aldyl-A \& 2926198 \& 2877997 \& \({ }_{98}\) \\
\hline Aldy-A \& 2926197 \& 287797 \& 98 \\
\hline Aldy-A \& \({ }^{2926196}\) \& 2877997 \& \% \\
\hline Aldy-A \& \({ }^{22262951}\) \& \({ }^{287797}\) \& \({ }_{98}^{98}\) \\
\hline Aldy-A \& \({ }^{2899271}\) \& \({ }^{28477679}\) \& \({ }_{95}\) \\
\hline Aldy A \& 2899014
2009050 \& 2847779
287679 \& \({ }_{95}^{95}\) \\
\hline \({ }_{\text {Aldy }}^{\text {Ald }}\) Ald \& \({ }^{2290950}\) \& 2887769
287797 \& \({ }_{98}^{95}\) \\
\hline Adrl|-A \& \({ }_{28292969}^{229304}\) \& \({ }_{2847679}\) \& \({ }_{95}\) \\
\hline Aldy-A \& 289929 \& 2847679
287599 \& \({ }_{95}^{95}\) \\
\hline \({ }_{\text {Aldy }}^{\text {Aldy }}\) Aldy \& \({ }_{22926191}^{29027}\) \& \(\underset{\text { 2887997 }}{28479}\) \& \({ }_{98}^{95}\) \\
\hline Aldy-A \& 2926190 \& 2877997 \& \({ }_{98}\) \\
\hline \({ }^{\text {Aldyl }}\) Ady \& \({ }_{\text {2 }}^{28992688}\) \& \({ }^{2847779}\) \& \({ }_{95}^{95}\) \\
\hline \({ }_{\text {Aldy }}^{\text {Aldy }}\) \& \({ }_{2}^{2900271}\) \& \({ }_{\text {2807679 }}^{284769}\) \& \({ }_{95}^{95}\) \\
\hline Aldy-A \& 289974 \& 2847679 \& \({ }^{95}\) \\
\hline Aldy-A \& \({ }^{2899272}\) \& \({ }^{2847769}\) \& \({ }^{95}\) \\
\hline \({ }_{\text {Aldy }}\) Aldy \& 2899267 \& \({ }_{28}^{28477679}\) \& 95 \({ }_{95}^{95}\) \\
\hline Aldy-A \& 2900272 \& 2847679 \& 95 \\
\hline Aldy-A \& \begin{tabular}{l}
2890011 \\
\\
289095 \\
\hline
\end{tabular} \& 2847769
284799 \& \({ }_{95}^{95}\) \\
\hline Aldy-A \& 2899015

289273 \& 2847779
287699 \& ${ }_{95}^{95}$ <br>
\hline ${ }_{\text {Aldy }}^{\text {Aldy }}$ \& ${ }_{2}^{2899273}$ \& 2847769
287769 \& ${ }_{95}^{95}$ <br>
\hline Aldy-A \& 2926205 \& 2877997 \& ${ }_{98}$ <br>
\hline Aldy-A \& ${ }^{2926188}$ \& 287797 \& ${ }^{98}$ <br>
\hline ${ }^{\text {Aldy }}$ A-A \& 22882629 \& ${ }_{28479752}^{28797}$ \& 98
95 <br>
\hline Aldy-A \& 2884700 \& 2844752 \& 95 <br>
\hline Aldy-A \& 2884691 \& ${ }^{2844752}$ \& ${ }^{95}$ <br>
\hline ${ }^{\text {Aldyl}}$ Ald \& 28884566
288498 \&  \& ${ }_{95}^{95}$ <br>
\hline Aldy-A \& 2884625 \& 2844752 \& ${ }_{95} 9$ <br>
\hline ${ }_{\text {Aldyl }}^{\text {Aldy }}$ \& ${ }_{\text {2 }}^{28884544}$ 28535 \& ${ }_{\text {c }}^{28484752}$ \& ${ }_{95}^{95}$ <br>
\hline Aldy-A \& ${ }^{29226185}$ \& 2877997 \& \% <br>
\hline Aldy-A \& ${ }^{2922655}$ \& 287797 \& ${ }^{98}$ <br>
\hline ${ }_{\text {aldy }}^{\text {Aldy }}$ Aldi-A \& ${ }_{2955620}^{29266}$ \& ${ }_{\text {2887679 }}^{28797}$ \& 95 <br>
\hline Aldy-A \& 2883548 \& 2844598 \& ) <br>
\hline Aldy-A \& 2883546

288539 \& 28845988 \& 95 <br>

\hline ${ }_{\text {Aldyl }}^{\text {Aldy }}$ \& | 2883399 |
| :--- |
| 288535 | \&  \& ${ }_{95}^{95}$ <br>

\hline Aldy-A \& 2883547 \& 2844598 \& ${ }_{95}$ <br>

\hline ${ }_{\text {Aldy }}$ \& | 2883599 |
| :--- |
|  |
| 288550 | \& | 2844598 |
| :--- |
| 284598 | \& ${ }_{95}^{95}$ <br>


\hline ${ }_{\text {Aldy }}^{\text {Aldy }}$ AldiA \& | 2883550 |
| :---: |
| 288551 | \& 288459888 \& ${ }_{95}^{95}$ <br>

\hline Aldy-A \& ${ }_{2883541}^{28351}$ \& ${ }_{2}^{28445988}$ \& ${ }_{95}$ <br>
\hline ${ }^{\text {Aldyl}}$ Aldy \& 2888315
288317 \& 284459888 \& ${ }_{95}^{95}$ <br>
\hline Aldy-A \& ${ }_{2883313}$ \& 2844598 \& 95 <br>
\hline Aldy-A \& 2883311

288388 \& | 2844598 |
| :--- |
|  |
| 284598 | \& ${ }_{95}^{95}$ <br>

\hline  \&  \& ${ }_{\text {2084801 }}^{2849598}$ \& ${ }_{95}^{95}$ <br>
\hline Aldy-A \& ${ }^{2951453}$ \& ${ }^{2948401}$ \& ${ }^{95}$ <br>
\hline ${ }^{\text {Aldyl }}$ Ald ${ }^{\text {a }}$ \& 2888759 \& 28845988 \& ${ }_{95}^{95}$ <br>
\hline Aldy-A \& 2882753 \& 2693360 \& 95 <br>

\hline Aldy-A \& | 2888771 |
| :---: |
| 282752 | \& | 2844598 |
| :--- |
|  |
| 284595 | \& ${ }_{95}^{95}$ <br>

\hline ${ }^{\text {Aldy }}$ \& 2888257
288120

2 \& | 2894598 |
| :--- |
| 284598 | \& ${ }_{95}^{95}$ <br>

\hline  \& ¢ \& 20940904 \& ${ }_{95}^{95}$ <br>
\hline Aldy-A \& 2942887 \& 2990094 \& ${ }^{95}$ <br>
\hline Aldy A \& 2888573

2885711 \& | 2884598 |
| :--- |
| 284598 | \& ${ }_{95}^{95}$ <br>

\hline ${ }_{\text {Aldy }}$ Ald $-A$ \& | 2888251 |
| :--- |
|  |
| 28850 |
|  | \& | 2894598 |
| :--- |
| 284598 | \& ${ }_{95}^{95}$ <br>

\hline ${ }_{\text {a }}$ Aldyly ${ }^{\text {ata }}$ \& 哏28885590 \&  \& ${ }_{95}^{95}$ <br>
\hline Aldy-A \& 2881598 \& 2844598 \& ${ }^{95}$ <br>

\hline ${ }^{\text {Aldyl}}$ Aldy \& ${ }_{228100925}^{2885}$ \& | 2844598 |
| :---: |
| 280149 | \& ${ }_{98}^{95}$ <br>

\hline Aldy-A \& 2940327 \& 2881469 \& ${ }_{98}^{98}$ <br>
\hline ${ }_{\text {Aldyl }}^{\text {Aldy }}$ \& ${ }_{2}^{29403336}$ \& 28801499 \& 988 ${ }_{98}^{98}$ <br>
\hline Aldy-A \& ${ }^{2940332}$ \& ${ }^{2801469}$ \& ${ }_{98}^{98}$ <br>
\hline ${ }^{\text {Aldy }}$ A ${ }^{\text {aldy }}$ \& ${ }^{2290334}$ \& 2801469
2801469 \& 98
98 <br>
\hline Aldy-A \& ${ }_{294033}$ \& ${ }_{2814149}$ \& ${ }_{98}$ <br>
\hline Aldy-A \& ${ }^{2940328}$ \& 2881469 \& ${ }_{98}^{98}$ <br>
\hline Aldy-A \& 2882760 \& ${ }^{2844598}$ \& ${ }_{95}^{95}$ <br>

\hline ${ }_{\text {Aldyl }}^{\text {Ald }}$ \& | 2883312 |
| :--- |
| 288314 |
| 1 | \& 28445988 \& ${ }_{95}^{95}$ <br>

\hline Aldy-A \& ${ }_{2883316}^{20831}$ \& 2844598 \& 95 <br>
\hline Aldy-A \& 2883538 \& 2844598 \& 95 <br>

\hline Aldy-A \&  \& | 2844598 |
| :--- |
| 28595 | \& ${ }_{95}^{95}$ <br>

\hline Aldy-A \& 2882752 \& 2844598 \& ${ }_{95}$ <br>

\hline Aldy-A \& | 2888754 |
| :--- |
|  |
|  |
| 28854 | \& ${ }^{28244598}$ \& ${ }_{95}^{95}$ <br>

\hline ${ }_{\text {Aldy }}^{\text {Aldy }}$ Aldy \& 2882574
288250 \& 28845988 \& ${ }_{95}^{95}$ <br>
\hline Aldy-A \& 2882578 \& 2844598 \& ${ }_{9}$ <br>
\hline ${ }_{\text {Aldy }}^{\text {Aldy }}$ \& 2889976
288309 \& (28445988 \& ${ }_{95}^{95}$ <br>
\hline Addy-A \& 1033 \& \& 98 <br>
\hline -A \& \& \& <br>
\hline
\end{tabular}



\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Type \& WR ${ }^{\text {\% }}$ \& Related WR \& op District \& Projectame \& Const Complete otate \& Month \& Size Insalled \& Total Footage Installed \& Size 8 Type Retired \& Total Footage Retired \& Service instalation Cost <br>
\hline Aldy-A \& ${ }^{2882572}$ \& 2844598 \& \& \& 101/2019 \& \& 101 1' and smaler \& \& $1 / 2$ P Pastic \& 40 s \& 1,819.55 <br>
\hline ${ }^{\text {Aldyl }}$ Ady \& 2882576
288588 \& 28845988 \& \& \& $101 / 1 / 2019$
$101 / 2019$ \& \&  \& $\stackrel{5}{10}$ \&  \& -110 ss \& ${ }_{\substack{1,009.65 \\ 29298}}^{\text {and }}$ <br>
\hline Aldy-A \& 2940329 \& 2881469 \& \& \& 101/22019 \& \& 10 \& \& $1 / 2$ P Pasast \& 65 \& $2,929.78$
80,
2,
2088 <br>
\hline Aldyl-A \& 2883839

288999 \& 28445988
28595 \& \& \& 1 1010102019 \& \& ${ }^{10} 10$ and smaler \& \& 1/2" Plastic \& \&  <br>
\hline ${ }_{\text {Aldyl }}^{\text {Ald }}$ \& 2889995
2881381 \& (28445988 \& \& \&  \& \&  \& 70

63 \& $1 /{ }^{1 / 2}$ Prastic \& | 35 |
| :--- |
| 35 | \& ${ }_{2,8898}^{2,991.78}$ <br>

\hline Aldy-A \& 2881360 \& 2844598 \& \& \& 10/10/20019 \& \& $10{ }^{10}$ "and smaller \& \& $1 / 2$ P Pastic \& \& ${ }_{2}^{2,885.63}$ <br>
\hline Aldy-A \& 2881386 \& 2844598 \& \& \& 10/101/2019 \& \& 101 "and smaller \& \& $1 / 2$ Plastic \& 35 \& ${ }^{2,561.28}$ <br>
\hline Aldy-A \& 2880939 \& 2844598 \& \& \& 10/1002019 \& \& 101 "and smaller \& \& $1 / 2$ P Pastic \& 35 s \& $2,919.04$
2,8646 <br>
\hline ${ }_{\text {Aldyl }}$ Aldy \& 2889394

2881002 \& 28445988 \& \& \& (1011/2019 \& \&  \& ${ }_{8}^{86}$ \& 1/2" Plastic \& | 35 |
| :---: |
| 35 | \& 2, ${ }_{2}^{2,8690.43}$ <br>

\hline Aldy-A \& 2888927 \& 2844598 \& \& \& 10/11/2019 \& \& 101 "and smaller \& 26 \& $1 / 2^{\text {P Pastic }}$ \& 31 s \& ${ }_{1,822,93}$ <br>
\hline Aldy A \& 2888935 \& 2844598 \& \& \& 10/1/2/2019 \& \& 101 1" and smaller \& 104 \& 1/2/P Plastic \& \& 3,164,52 <br>
\hline Aldy-A \& 2880942 \& 2844598
284598 \& \& \& (10/11/2019 \& \&  \& \&  \& ¢ 10 S \&  <br>
\hline Aldy-A \& ${ }_{2880940}^{28037}$ \& 2844598 \& \& \& 101/1/2019 \& \& $1010{ }^{10}$ and smaler \& \& $1 / 2$ " Pastic \& 55 s \&  <br>
\hline ${ }^{\text {AldyV}}$ Ady \& 2881379
288134 \& 2844598
284598 \& \& \& (101/4/2019 \& \&  \& ${ }_{61}^{71}$ \& (1/2" Passic \& 10 S
10
¢ \&  <br>

\hline Aldy-A \& | 28883888 |
| :--- |
| ${ }_{2}^{2837}$ | \& ${ }_{2} 28445988$ \& \& \& - $10 / 1 / 4 / 2012919$ \& \&  \& 61 \& 1/2/P Pasastic \& 10 ${ }^{10}$ \&  <br>

\hline ${ }_{\text {Aldyl }}^{\text {Aldy }}$ \& 28777880
28823 \& $\underset{ }{2844598} \times$ \& \& \& (1016/2019 \& \&  \& ${ }_{97}^{75}$ \& 1/2" Prastic \& ¢ 95 \& 2,687.00
3,55122 <br>
\hline Aldy-A \& 2881382 \& 2844598 \& \& \& 10/16/2019 \& \& ${ }^{10} 1{ }^{10}$ and smander \& 93 \& $1 / 2$ P Pastic \& 10 ${ }^{\text {s }}$ \& li, 3 3,20.22 <br>
\hline ${ }^{\text {Aldyl }}$ Ady \& 2881900
288384 \& 2844598
284598 \& \& \& (10/16/2019 \& \&  \& ${ }_{83}^{89}$ \& ${ }_{\text {l/2 }}^{1 / 2 \text { Prassic }}$ \& 55
10
10 \&  <br>
\hline ${ }_{\text {Aldyl }}$ \& 2881297

288390 \& | 2844598 |
| :--- |
| 284598 | \& \& \& 101/162099 \& \& 101 1"and smaller \& 79 \& $1 / 2$ " pastic \& 55 \$ \& ${ }_{2}^{2,2949.92}$ <br>

\hline ${ }_{\text {Aldyl }}^{\text {Aldy }}$ A \& 2883390
28837 \& ${ }_{\text {28845988 }}^{284988}$ \& \& \& - 10101772019 \& \&  \& \& 1/2" Passtic \&  \& 2, ${ }_{2,860989}$ <br>

\hline Aldy A \& | 2881383 |
| :--- |
| 88835 | \& 2844598 \& \& \& 1017172019 \& \& 101 1" and smaler \& 70 \& $1 / 2$ P Pastic \& ${ }^{162}$ s \& ci, <br>

\hline ${ }^{\text {Aldyl }}$ Ald ${ }^{\text {a }}$ \& 2881385
2881380 \&  \& \& \& (101712019 \& \&  \& \& 1/2" Pasastic \& ¢ \&  <br>
\hline Aldy-A \& ${ }^{28881001}$ \& ${ }^{28445958}$ \& \& \& 10/172019 \& \& 100 "nand smaler \& ${ }_{76}^{70}$ \& (1/2 P Pastic \& 95
128
128

s \& | $2,87.51$ |
| :--- |
| 2,7286 | <br>

\hline ${ }_{\text {Aldy }}$ \& 288361
${ }_{2}^{2883936}$ \& ${ }_{\text {2804598 }}$ \& \& \& - 1017178201918 \& \&  \& \& (1/2) Prastic \& 128 S
150 \&  <br>
\hline Aldy A \& 2880988 \& 2844598
284598 \& \& \& (1012182019 \& \&  \& 104

71 \& 1/2" Plastic \&  \& | 3,312.09 |
| :--- |
| 3,1054 |
| 1 | <br>

\hline Aldy 1 \& ${ }_{2}^{28881298}$ \& 284595 \& \& \& 10/18/2099 \& \& ${ }^{10}$ \& 104 \& 1/2" Pasastic \& - 1305 \&  <br>
\hline ${ }^{\text {Aldyr }}$ Ad \& 28881000
281435 \& 28445988 \& \& \& - $101 / 18 / 2019$ \& \&  \& ${ }_{99}^{76}$ \& 1/2" Prastic \& - 142 s ${ }^{3}$ \& $\underset{\substack{2,889.31 \\ 3,28,73}}{\substack{\text { a }}}$ <br>
\hline ${ }^{\text {Aldar }}$ A-A \&  \&  \& \& \& - $101 / 182721919$ \& \&  \& $\begin{array}{r}298 \\ \hline 8 \\ \hline 8\end{array}$ \& \& 262 ${ }^{3}$ \&  <br>
\hline ${ }_{\text {Aldy }}$ \& ${ }_{2963238}^{29338}$ \& ${ }_{\text {2884627 }}^{284627}$ \& \& \& (10123/2019 \& \&  \& 68
106 \& (1/2P Plastic \& 70

100 \& | $1,558.85$ |
| :--- |
| $2,774.62$ |
| 1 | <br>

\hline Aldy A \& ${ }^{2962739}$ \& ${ }_{2}^{2844627}$ \& \& \& 10/23/2019 \& \& $10{ }^{10} 1$ "nand smaler \& 114 \& $1 / 2{ }^{\text {Prastic }}$ \& 123 \&  <br>
\hline ${ }_{\text {Aldyl }}$ Aldy \& ${ }_{29838339}^{29363}$ \& ${ }_{2884627}^{28462}$ \& \& \& - $1010 / 3220199$ \& \&  \& ${ }_{6} 7$ \& 1/2" Prastic \& 70 S
625 \&  <br>
\hline Aldy A \& ${ }^{29827746}$ \& ${ }_{2}^{2844627}$ \& \& \& 10/2/42019 \& \& ${ }^{10} 100$ "12ans smaler \& 102
83 \& 1/2" Pastic \& 107 s
105
150 \& - <br>
\hline ${ }_{\text {Aldy }}$ Aldy ${ }^{\text {a }}$ \& ${ }_{2965774}^{29370}$ \& ${ }_{2884627}^{28462}$ \& \& \& - \& \&  \& 83
111 \& $1{ }^{1 / 2}$ \& lise ${ }^{113}$ ¢ \& ${ }_{2,876.36}^{1,4925}$ <br>
\hline ${ }_{\text {Aldat }}$ \& ${ }^{2962773}$ \& ${ }^{2844627}$ \& \& \& - $10 / 525 / 2099$ \& \& ${ }^{10} 10$ " 1 "nas smaler \& $\begin{array}{r}68 \\ 108 \\ \hline\end{array}$ \& 1/2" Pasastc \& $\begin{array}{r}52 \\ \\ 102 \\ \hline\end{array}$ \&  <br>
\hline Aldy-A \& ${ }_{28888552}^{2931}$ \& ${ }_{2851183}^{209300}$ \& \& \& cole \& \&  \& \& 1" Plastic \& cios ${ }_{52}^{10}$ \& $2,69.980$
$1,788.14$ <br>

\hline Aldy A \& | 2888851 |
| :--- |
| 28589 | \& 2851183

281183 \& \& \& (10)/2920199 \& \& (ta \& ${ }_{85}^{112}$ \& $1 / 2$ Prastic \& 119 s \&  <br>
\hline ${ }^{\text {Aldyl}}$ A-A \& ${ }^{288888871}$ \& ${ }_{2851183}$ \& \& \& - $10 / 2 / 29 / 2 / 2019$ \& \& ${ }_{10} 10$ 1"and smaller \& ${ }_{43}^{85}$ \& 1/2\% Pasastic \& ${ }_{49}^{88}{ }^{\text {s }}$ \& ${ }_{\text {che }}^{2,2,299.912}$ <br>

\hline ${ }_{\text {Aldy }}$ \& | 2989344 |
| :--- |
| 288888 | \& ${ }_{2}^{284465127}$ \& \& \& (1030/2019 \& \&  \& ${ }_{45}^{63}$ \& 3/an steel \& | 65 |
| :--- |
| 40 |
| 40 | \& - <br>

\hline Aldy A \& ${ }^{28588873}$ \& 2851183 \& \& \& - \& \&  \& 102 \& (e) $1 / 2 /$ Prasastic \& ${ }_{9}^{40}{ }_{9}{ }^{\text {s }}$ \&  <br>
\hline ${ }_{\text {Aldy }}$ \& 2858889

288891 \& ${ }_{2851183}^{2851183}$ \& \& \& (10) \& \&  \& ${ }_{85}^{69}$ \&  \& 95 ${ }^{95}$ \& | $2,292.16$ |
| :--- |
| $2,45.25$ |
| $, 2,25$ | <br>

\hline ${ }^{\text {Aldary }}$ A-A \& 2888899
$\substack{288883 \\ \text { 285888 }}$ \& 2851123
$\substack{28183 \\ 285183}$ \& \& \& (10) \& \&  \& ${ }_{89}^{85}$ \& 1/2 Prastic \& - 93 ¢ \&  <br>
\hline ${ }_{\text {Aldy }}$ Aldy \& ${ }_{2}^{285888887}$ \& ${ }_{2851183}^{2851183}$ \& \& \& (10) \& \&  \& ${ }_{81}^{84}$ \& 1/2" Prastic \&  \& 2, <br>
\hline Aldy A \&  \& (2844627 \& \& \& - \& \& ${ }^{10}$ \& ${ }^{118}$ \& 3/4- steel \& 247 ${ }^{86}$ \& li, <br>
\hline ${ }_{\text {Aldyl }}$ Aldy \& 29857745
288847 \& ${ }_{2851183}^{28467}$ \& \& \&  \& \&  \& 57
102 \& $1 / 1 /{ }^{\text {P Pastic }}$ \& 48 ¢
9 \&  <br>

\hline ${ }_{\text {Aldyl }}$ \& | 2888888 |
| :--- |
| 288855 | \& 28551183

281183 \& \& \&  \& \& ${ }^{10} 101$ Inansmmaler \& 61 \& $1 / 2$ " Pastic \& 60 ¢ \&  <br>
\hline ${ }_{\text {Aldy }}{ }_{\text {Aldy }}$ \& 2888885
288874 \& ${ }_{2851183}^{2851183}$ \& \& \& - 10 10/1/2/2199 \& \&  \& 102 \& 1/2" Pasastic \& cons 108 ¢ \&  <br>

\hline ${ }_{\text {Aldy }}$ \& | 2983887 |
| :--- |
| ${ }_{288836}$ | \& 2844627

285183 \& \& \& $111 / 1 / 2099$
$11 / 2019$

1 \& \& ${ }^{10} 11$ 1" 11 and smaler \& ${ }_{1}^{103}$ \&  \& | 4275 |
| :--- |
| 129 |
| 15 | \&  <br>

\hline ${ }^{\text {Aldy }}$ Ald - A \& ${ }_{\text {28888844 }}^{288836}$ \& ${ }_{2851183}^{285118}$ \& \& \& 111/20019 \& \&  \& ${ }_{92}^{120}$ \& 1/2P Pasastic \& 129 ¢
90 \&  <br>
\hline ${ }_{\text {Aldy }}$ \& 2888843
288845 \& 2851183
281183 \& \& \& - 11/2/2019 \& \& ${ }^{111}$ \& ${ }_{98}^{98}$ \& 1/2" Plastic \& - 94 \&  <br>
\hline ${ }_{\text {Aldy }}$ Aldi-A \& ${ }_{28888855}^{28885}$ \& ${ }_{2851183}$ \& \& \& 11/1/2/2019 \& \& 111 "anas smaler \& \& 1/2/ Prastic \&  \& $\underbrace{2,6768}_{2,14179}$ <br>
\hline ${ }_{\text {Aldyl }}$ \& 2858837
288839 \& 2851183

2851183 \& \& \& - $11 / 1 / 2 / 2019$ \& \& (1) \& ${ }_{99}^{144}$ \& (1/2 P Pastic \& 140 ¢
99 \&  <br>

\hline Aldy A \& | 2885881 |
| :--- |
|  |
|  |
| 2858383 | \& ${ }^{28551183}$ \& \& \& -111/2009 \& \& \% \& 96

88 \& (1/2) Pasatic \& \& li, <br>
\hline ${ }_{\text {Aldyl }}$ Aldy \& 2888838

289374 \& ${ }_{2845557}^{285118}$ \& \& \& 111/2019 \& \&  \& \& ${ }^{1 / 2}$ " plastic \& | 89 |
| :--- |
| 74 | \& 2, <br>

\hline Aldy A \& ${ }^{2893303}$ \& ${ }_{\text {2884577 }}$ \& \& \& ${ }^{11 / 1 / 5 / 2019}$ \& \&  \& $\begin{array}{r}122 \\ 1 \\ \hline 1\end{array}$ \& 1/2p Plastic \& 边 126 ¢ \& (2, <br>
\hline ${ }^{\text {Aldyl}}$ Ald ${ }^{\text {a }}$ \& 2982083

288889 \& ${ }_{2851183}^{28467}$ \& \& \& - $11 / 1 / 1 / 2019$ \& \& ${ }^{11}{ }^{11} \mathrm{I}^{\text {and and smaler }}$ \& 92 \& 1/2" Passic \& \& | $1,3,494$ |
| :--- |
| $2,224,45$ |
| 1 | <br>

\hline ${ }_{\text {Aldy }}^{\text {Ald }}$ A \& ${ }_{29562931}^{29618}$ \& $\underset{ }{28844627}$ \& \& \& - $111 / 7 / 72019$ \& \&  \& ${ }_{36}^{92}$ \& 1/2" Pasatic \& ¢ ${ }_{38}^{96}$ \&  <br>
\hline Aldy $=$ A \& 2962992 \& ${ }_{2844627}$ \& \& \& 11/7/2019 \& \& 111 'ands smaller \& 40 \& $1 / 2$ P Pastic \& - 39 s \& ${ }_{\text {l }}^{1,2,606.69}$ <br>
\hline ${ }_{\text {Aldy }}$ Aldy \& ${ }_{29562990}^{296182}$ \& ${ }_{2844627}^{284627}$ \& \& \& - $11 / 7 / 72019$ \& \&  \& \& ${ }^{1 / 2 /{ }^{\text {P Passtic }} \text { (2 Pastic }}$ \& 83
39
39 \&  <br>
\hline Aldy A \& ${ }^{296187 \%}$ \& 2844627 \& \& \& 11/8/2019 \& \& 111 "and smaler \& \& $1 / 22^{\text {P Pasastic }}$ \& 83 s \& ${ }_{\text {2, }, 1949.54}^{1.057}$ <br>
\hline ${ }_{\text {Aldy }}$ Ald \& 2961999

296369 \& ${ }_{2884627}^{284627}$ \& \& \& (11/8/2019 \& \& ${ }^{111} 1$ " 2 and smaler \& \&  \& ¢ 34 s \& 1, 1.852 .18
1,0380
1 <br>
\hline Aldy -A \& ${ }^{2951868}$ \& 2844627 \& \& \& 111/8/2009 \& \& 111 "and smaller \& \& $1 / 2$ P Pastic \& ${ }_{82}$ s \& 2,873,13 <br>
\hline ${ }_{\text {Aldy }}^{\text {Ald }}$ A \& ${ }_{2}^{296985912}$ \& 2844627
284627 \& \& \& 111/1/2019 \& \&  \& ${ }_{40}^{110}$ \& (1/2 P Pastic \& 80
4
42
s \&  <br>
\hline Aldy 1 \& 2997107 \& ${ }_{22048818}$ \& \& \& 11/1/8/2019 \& \& 111 "and smaler \& \& $1 / 2$ " Pastic \& 40 S \& 1,116.60 <br>
\hline ${ }_{\text {Aldyl }}^{\text {Aldy }}$ \& ${ }_{2}^{29717704}$ \& ${ }_{\text {29688818 }}^{2968818}$ \& \& \& - $11 / 1 / 18 / 2019$ \& \&  \& \& 1/2" Plastic \& ${ }_{55}^{92}$ s \& ${ }_{\text {2, }}^{2,00151}$ <br>
\hline Aldy A \& ${ }^{29777706}$ \& 29688818 \& \& \& 11/1/8/2099 \& \& ${ }^{11}$ \& ${ }_{1}^{681}$ \& 1/2) Pastic \& 1515 \& , <br>

\hline ${ }_{\text {Aldy }}$ \& ${ }_{29717712}^{29712}$ \& ${ }_{295888818}^{29688}$ \& \& \& 111/9192019 \& \&  \& ${ }_{82}^{128}$ \& 1/2" Prastic \& | 115 |
| :--- |
| 70 | \& 3,02.39

$2,184.32$ <br>
\hline Aldy-A \& 2971709 \& 2968818 \& \& \& 11/1/2/2019 \& \& $11{ }^{1}$ " and samaler \& \& $1 / 2$ P Pasastic \& - \& $\underbrace{\substack{2,128.432 \\ 3,78}}_{\text {c, }}$ <br>
\hline
\end{tabular}



PRIVATE DATA ENDS]


PRIVATE DATA ENDS]

. PRIVATE DATA ENDS]

## Exhibit K

Maps of Planned Aldyl-A Main Replacements (2021)

## PUBLIC DOCUMENT - TRADE SECRET DATA HAS BEEN EXCISED

Attachment K has been designated as non-public in its entirety, as it contains information MERC considers to be Trade Secret as defined by Minn. Stat. § 13.37, subd. 1(b). The information is not generally known to, and not readily ascertainable by, vendors and competitors of MERC, who could obtain economic value from its disclosure. MERC maintains this information as trade secret.

## Exhibit L

## Project Schedule for Obsolete Material Replacements (2021)


$\qquad$

## CERTIFICATE OF SERVICE

I, Kristin M. Stastny, hereby certify that on the 1st day of April, 2020, on behalf of Minnesota Energy Resources Corporation (MERC) I electronically filed a true and correct copy of the enclosed Petition on www.edockets.state.mn.us. Said documents were also served via U.S. mail and electronic service as designated on the attached service list.

Dated this 1st day of April, 2020.
/s/ Kristin M. Stastny
Kristin M. Stastny

| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Michael | Ahern | ahern.michael@dorsey.co m | Dorsey \& Whitney, LLP | 50 S 6th St Ste 1500 <br> Minneapolis, <br> MN <br> 554021498 | Electronic Service | No | GEN_SL_Minnesota Energy Resources Corporation_General Service List |
| Generic Notice | Commerce Attorneys | commerce.attorneys@ag.st ate.mn.us | Office of the Attorney General-DOC | 445 Minnesota Street Suite 1400 <br> St. Paul, <br> MN <br> 55101 | Electronic Service | No | GEN_SL_Minnesota Energy Resources Corporation_General Service List |
| Sharon | Ferguson | sharon.ferguson@state.mn us | Department of Commerce | 85 7th Place E Ste 280 <br> Saint Paul, <br> MN <br> 551012198 | Electronic Service | No | GEN_SL_Minnesota Energy Resources Corporation_General Service List |
| Daryll | Fuentes | dfuentes@usg.com | USG Corporation | 550 W Adams St <br> Chicago, IL 60661 | Electronic Service | No | GEN_SL_Minnesota Energy Resources Corporation_General Service List |
| Brian | Meloy | brian.meloy@stinson.com | STINSON LLP | $\begin{aligned} & 50 \text { S 6th St Ste } 2600 \\ & \text { Minneapolis, } \\ & \text { MN } \\ & 55402 \end{aligned}$ | Electronic Service | No | GEN_SL_Minnesota Energy Resources Corporation_General Service List |
| Andrew | Moratzka | andrew.moratzka@stoel.co m | Stoel Rives LLP | 33 South Sixth St Ste 4200 <br> Minneapolis, <br> MN <br> 55402 | Electronic Service | No | GEN_SL_Minnesota Energy Resources Corporation_General Service List |
| Catherine | Phillips | catherine.phillips@weenergies.com | We Energies | 231 West Michigan St <br> Milwaukee, <br> WI <br> 53203 | Electronic Service | No | GEN_SL_Minnesota Energy Resources Corporation_General Service List |
| Generic Notice | Residential Utilities Division | residential.utilities@ag.stat e.mn.us | Office of the Attorney General-RUD | 1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131 | Electronic Service | No | GEN_SL_Minnesota Energy Resources Corporation_General Service List |
| Elizabeth | Schmiesing | eschmiesing@winthrop.co <br> m | Winthrop \& Weinstine, P.A. | 225 South Sixth Street <br> Suite 3500 <br> Minneapolis, <br> MN <br> 55402 | Electronic Service | No | GEN_SL_Minnesota Energy Resources Corporation_General Service List |
| Will | Seuffert | Will.Seuffert@state.mn.us | Public Utilities Commission | 121 7th PI E Ste 350 <br> Saint Paul, <br> MN <br> 55101 | Electronic Service | No | GEN_SL_Minnesota Energy Resources Corporation_General Service List |


| First Name | Last Name | Email | Company Name | Address | Delivery Method | View Trade Secret | Service List Name |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Colleen | Sipiorski | Colleen.Sipiorski@wecener gygroup.com | Minnesota Energy Resources Corporation | 700 North Adams St <br> Green Bay, WI 54307 | Electronic Service | No | GEN SL Minnesota Energy Resources Corporation_General Service List |
| Kristin | Stastny | kstastny@taftlaw.com | Taft Stettinius \& Hollister LLP | 2200 IDS Center 80 South 8th St Minneapolis, MN 55402 | Electronic Service | No | GEN SL Minnesota Energy Resources Corporation_General Service List |
| Eric | Swanson | eswanson@winthrop.com | Winthrop \& Weinstine | 225 S 6th St Ste 3500 <br> Capella Tower <br> Minneapolis, <br> MN <br> 554024629 | Electronic Service | No | GEN_SL_Minnesota Energy Resources Corporation_General Service List |
| Mary | Wolter | mary.wolter@wecenergygr oup.com | Minnesota Energy Resources Corporation (HOLDING) | 231 West Michigan St <br> Milwaukee, <br> WI <br> 53203 | Electronic Service | No | GEN_SL_Minnesota Energy Resources Corporation_General Service List |


[^0]:    ${ }^{1}$ In the Matter of Minn. Energy Res. Corp. 's Request for Approval of a Gas Util. Infrastructure Cost Rider, Docket No. G011/M-18-281, Order Approving Gas Utility Infrastructure Cost Rider with Modifications and Requiring Compliance Filing at 6 (Feb. 5, 2019).
    ${ }^{2}$ In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Util. Infrastructure Cost Rider Revenue Requirement and Revised Surcharge Factor, Docket No. G011/M-19-282, MERC Petition (Apr. 24, 2019).

[^1]:    ${ }^{3}$ In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Util. Infrastructure Cost Rider Revenue Requirement and Revised Surcharge Factor, Docket No. G011/M-19-282, MERC Additional Reply Comments (Feb. 14, 2020).
    ${ }^{4}$ In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Util. Infrastructure Cost Rider Revenue Requirement and Revised Surcharge Factor, Docket No. G011/M-19-282, Department Response Comments (Jan. 24, 2020).
    ${ }^{5}$ In the Matter of Minn. Energy Res. Corp. for Approval of a Gas Utility Infrastructure Cost (GUIC) Rider, Docket No. G011/M-18-281, Emergency Request to Suspend GUIC and NGEP (June 28, 2019).
    ${ }^{6}$ In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Util. Infrastructure Cost (GUIC) Rider Revenue Requirement and Revised Surcharge Factor, Docket No. G011/M-18-281, Order Suspending GUiC Rider Surcharge for Direct Connect Customers, and Declining to Reopen NGEP COST RIDER DOCKET at 7-8 (Aug. 26, 2019).
    ${ }^{7}$ See MERC Tariff Sheet Nos. 7.20-7.21.

[^2]:    ${ }^{8}$ MERC Tariff Sheet Nos. 7.20-7.21.

[^3]:    ${ }^{9}$ Notably, while the Commission ordered MERC to provide a customer bill message and bill insert explaining its 2019 GUIC Rider surcharge in its February 5, 2019, Order Approving Gas Utility Infrastructure Cost Rider with Modifications and Requiring Compliance Filing in Docket No. G011/M-18281, MERC is proposing only a bill message (without bill insert) to notify customers regarding the updated GUIC rate, consistent with the Company's proposal in Docket No. G011/M-19-282. Customers have been provided more detailed information regarding the GUIC Rider in 2019, a bill message will help reduce overall customer costs, and is more likely to be read because it appears directly on the bill.

[^4]:    ${ }^{10}$ See Minn. R. 7829.1400, subps. 1, 4.

[^5]:    ${ }^{11}$ Minn. Stat. § 216B. 1635.

[^6]:    ${ }^{12}$ Minn. Stat. § 216B.1635, subd. 1(c)(1).
    ${ }^{13}$ PHMSA published the Integrity Management Program for Gas Distribution Pipelines Rule or the "DIMP Rule" (49 C.F.R. Part 192, subpart P) in December 2009. MERC formally implemented its DIMP in 2011 and before that time, MERC's integrity projects were assessed, prioritized, and implemented as part of its life-cycle planning.

[^7]:    ${ }^{14}$ MERC has also implemented a Transportation Integrity Management Program ("TIMP"), but the Company is not requesting recovery for any 2021 projects attributable to TIMP in this filing.
    ${ }^{15}$ Minn. Stat. § 216B.1635, subd. 1(c)(2).
    ${ }^{16}$ In the Matter of Minn. Energy Res. Corp.'s Request for Approval of a Gas Util. Infrastructure Cost Rider, Docket No. G011/M-18-281, Order Approving Gas Utility Infrastructure Cost Rider with Modifications and Requiring Compliance Filing at 6 (Feb. 5, 2019) [hereinafter, the "February 5, 2019 Order"].

[^8]:    ${ }^{17}$ As discussed in this filing and MERC's previous GUIC Rider dockets, MERC generally is not informed of right-of-way relocation projects with significant lead time to allow for advanced planning or design of these projects. Rather, state and local government units provide notice to MERC on their own schedules based on available funding and other considerations. Often, initial project plans are modified as a result of funding or other considerations and project requirements, design, and timelines must change as a result.

[^9]:    ${ }^{18}$ Minn. Stat. § 216B.1635, subd. 1(b)(2).
    ${ }^{19}$ Minn. Stat. § 216B.1635, subd. 1(b), (c).
    ${ }^{20}$ Minn. Stat. § 216B.1635, subd. 2.

[^10]:    ${ }^{21}$ Minn. Stat. § 216B.1635, subd. 3, 4.
    ${ }^{22}$ Minn. Stat. § 216B.1635, subd. 5.
    ${ }^{23}$ Minn. Stat. § 216B.1635, subd. 4.

[^11]:    ${ }^{24}$ February 5, 2019 Order at 6.
    ${ }^{25}$ February 5, 2019 Order at 6.
    ${ }^{26}$ February 5, 2019 Order at 6-7.

[^12]:    ${ }^{27}$ February 5, 2019 Order at 6-7.
    ${ }^{28}$ Minn. Stat. § 216B.1635, subd. 2 (emphasis added).
    ${ }^{29}$ In particular, Minn. Stat. § 216B.1635, subd. 4(2)(iv) requires "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."

[^13]:    ${ }^{30}$ In the Matter of the Petition of N. States Power Co. d/b/a Xcel Energy, for Approval of a Gas Util. Infrastructure Cost Rider, Docket No. G002/M-14-336, Order Approving Rider with Modifications at 7 (Jan. 27, 2015) ("The clear thrust of the GUIC statute is to establish a mechanism by which utilities may recover out-of-test-year infrastructure investments mandated by federal or state agencies. The costs of these investments can vary widely from year to year and are difficult to forecast with accuracy. Approving a rider ... [provides] the ability to implement multi-year pipeline-replacement programs, adjusting the rates annually to correct for over- or under-recovery.").
    ${ }^{31}$ In the Matter of Minn. Energy Res. Corp.'s Request for Approval of a Gas Util. Infrastructure Cost Rider, Docket No. G011/M-18-281, MERC Reply Comments at Attachment E, pp. 6-8 (Aug. 17, 2018). ${ }^{32}$ February 5, 2019 Order at 6.

[^14]:    ${ }^{33}$ In the Matter of a Comm'n Investigation into Nat. Gas Utils' Practices, Tariffs, and Assignment of Cost Responsibility for Installation of Excess Flow Valves and Other Similar Gas Safety Equipment, Docket No. G999/Cl-18-41, Order Accepting Compliance Filings, Requiring MERC to Submit Additional information, Requiring Annual Compliance Reporting, and Taking Other Action at 6 (July 31, 2019).

[^15]:    ${ }^{34}$ See Minn. Stat. § 216B.1635, subd. 1(c)(1) (defining eligible "gas utility projects" to mean "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").

[^16]:    ${ }^{35}$ Minn. Stat. § 216B. 1635.
    ${ }^{36}$ As discussed in the Company's 2020 GUIC Rider Petition, this approach is consistent with Commission precedent in light of MERC's trend analysis. In particular, " $[t]$ he Commission often employs averaging in ratemaking to smooth costs that vary from year to year. However, where the variation follows a clear trend, averaging can obscure the trend, resulting in inaccurate rates." In the Matter of a Petition by Minn. Energy Res. Corp. for Auth. to Increase Nat. Gas Rates in Minn., Docket No. G011/GR-13-617, Findings of Fact, Conclusions, and Order at 18 (Oct. 28, 2014).
    ${ }^{37}$ February 5, 2019 Order at 6 (noting that this amount will be trued up annually to actual costs, eliminating the possibility that such forecasting will result in over-recovery).

[^17]:    ${ }^{38}$ This number does not include the four O\&M projects, as discussed below, as MERC used the 2019 actual total costs for capital projects as the basis for its 2021 forecast.
    ${ }^{39}$ Notably, MERC's actual road relocation costs for 2019 differ from previously-estimated costs as carryover projects from the preceding year were not included.
    ${ }^{40}$ See February 5, 2019 Order at 10 (approving MERC's petition for recovery of approximately $\$ 5.3$ million in capital investment to relocate natural gas facilities for public works and right-of-way projects).
    ${ }^{41}$ Excludes incremental O\&M costs, as discussed below.

[^18]:    ${ }^{42}$ See Exhibit F for a list of currently-known right-of-way projects for 2020 through 2022.

[^19]:    ${ }^{43}$ February 5, 2019 Order at 6-7.
    ${ }^{44}$ In the Matter of Minn. Energy Res. Corp.'s Request for Approval of a Gas Util. Infrastructure Cost Rider, Docket No. G011/M-18-281, Order Approving Compliance Filing at 2 (Apr. 25, 2019). ${ }^{45}$ MERC responded to extensive discovery both in Docket No. G011/M-18-281 and in this docket regarding the process, lead time, and communication with governmental entities regarding right-of-way relocation work, in support of the fact that the details of specific right-of-way projects are not known in advance. The Commission recognized this fact in both its February 5, 2019, Order Approving Gas Utility Infrastructure Cost Rider with Modifications and Requiring Compliance Filing and its April 25, 2019, Order Approving Compliance Filing in Docket No. G011/M-18-281.

[^20]:    ${ }^{46}$ See MERC's response to Department Information Request No. 9, included as Attachment B to MERC's September 17, 2019, reply comments filed in Docket No. G011/M-19-282.

[^21]:    ${ }^{47}$ Minn. Stat. § 216 B.1635, subd. 1(c)(2).
    ${ }^{48}$ See In the Matter of the Petition of N. States Power Co., d/b/a Xcel Energy, for Approval of a Gas Util. Infrastructure Cost Rider, Docket No. G002/M-14-336, Order Approving Rider with Modifications at 7 (Jan. 27, 2015).
    ${ }^{49}$ See id.

[^22]:    ${ }^{50}$ See Minn. Dep't of Pub. Safety, Alert Notice - MNOPS AL-01-2010 to Natural Gas Pipeline Operators - Preventing Sewer Service Lateral Cross Bores: Acceptable Practices and Documentation

    Requirements (May 10, 2010), available at https://dps.mn.gov/divisions/ops/forms-documents/Documents/Alert\%20Notice\%2001-2010.pdf.
    ${ }^{51} \mathrm{ld}$.

[^23]:    52 In the Matter of the Petition of N. States Power Co., d/b/a Xcel Energy, for Approval of a Gas Utility Infrastructure Cost Rider, Docket No. G002/M-14-336, Order Approving Rider with Modifications at 3 (Jan. 27, 2015).
    ${ }^{53}$ February 5, 2019 Order at 6.

[^24]:    ${ }^{54}$ While MERC has replaced all known bare steel on its system, occasionally the Company discovers additional bare steel while working on its lines. Once discovered, MERC schedules the bare steel for immediate replacement. Since 2019, replacement of bare steel has been tracked as part of MERC's obsolete materials replacement project.

[^25]:    ${ }^{55}$ PHMSA, Pipeline Safety: Updated Notification of the Susceptibility to Premature Brittle-Like Cracking of Older Plastic Pipe, Docket No. PHMSA-2004-19856 (Sept. 6, 2007), available at https://www.phmsa.dot.gov/regulations-fr/notices/07-4309.

[^26]:    ${ }^{56}$ ADB-99-01, Potential Failure Due to Brittle-Like Cracking of Certain Polyethylene Plastic Pipe Manufactured by Century Utility Products Inc., 64 FR 12211 (Mar. 11, 1999).
    ${ }^{57}$ ADB-02-07, Notification of the Susceptibility to Premature Brittle-Like Cracking of Older Plastic Pipe, 67 FR 70806 (Nov. 26, 2002).
    ${ }^{58}$ California Public Utilities Commission, Hazard Analysis \& Mitigation Report on Aldyl A Polyethylene Gas Pipelines in California (June 11, 2014), available at https://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=8947.

[^27]:    ${ }^{59}$ The PPDC is composed of representatives from the American Public Gas Association, the American Gas Association, Plastics Pipe Institute, National Association of Regulatory Utility Commissioners, National Association of Pipeline Safety Representatives, NTSB, and the U.S. Department of Transportation's PHMSA.

[^28]:    ${ }^{60}$ While MERC has undertaken efforts to verify all installed Aldyl-A main on its system, during some periods, Aldyl-A was classified in MERC's system generically as polyethylene ("PE") pipe. The total amount of known Aldyl-A reflected in Table 5 is greater than MERC had previously identified and reported in its prior GUIC Rider filings as a result of some quantities of this material having been categorized as PE Pipe. Table 5 reflects the best available data as of the time this filing was prepared. The Company continues to review its maps and records for accuracy, and will provide any updates in future filings.

[^29]:    ${ }^{61}$ It should be noted that the scope of surveys completed in 2020 will depend on the timing of the Commission's decision approving the Company's currently-pending 2020 GUIC Rider petition in Docket No. G011/M-19-282.

[^30]:    ${ }^{62}$ In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Util. Infrastructure Cost Rider Revenue Requirement and Revised Surcharge Factor, Docket No. G011/M-19-282, MERC Petition at 23 (Apr. 24, 2019) ("This cost estimate is based on the bids MERC received for the work to be performed in 2019 and consider[ing] the travel time that will be required to survey the more disperse portions of MERC's service area that will remain after 2019.").
    ${ }^{63}$ PHMSA, Gas Distribution Integrity Management Program: FAQs, available at https://primis.phmsa.dot.gov/dimp/faqs.htm.

[^31]:    ${ }^{64}$ As discussed in MERC's 2019 and 2020 GUIC Rider filings, although MERC tries to minimize outsourcing DIMP work when possible, in certain instances, external expertise is needed to ensure the safe and efficient completion of system assessments. The camera inspection and some administrative aspects of the Sewer Cross Bore Survey project will be outsourced because the Company has neither the internal expertise nor the equipment available to perform the specialized inspection aspect of the program.

[^32]:    ${ }^{65}$ Many times, conflicts between sewer and gas lines are the result of the past construction practices that were associated with the use of trenchless construction methods for the installation of natural gas lines.

[^33]:    ${ }^{66}$ In the Matter of the Application of Minn. Energy Res. Corp. for Auth. to Increase Rates for Nat. Gas Serv. in Minn., Docket No. G011/GR-17-563, Direct Testimony and Schedules of Seth S. DeMerritt at 49 (Oct. 13, 2017). ${ }^{67} \mathrm{ld}$.
    ${ }^{68}$ In the Matter of the Application of Minn. Energy Res. Corp. for Auth. to Increase Rates for Nat. Gas Serv. in Minn., Docket No. G011/GR-15-763, Findings of Fact, Conclusions, and Order at Order Point 2 (Oct. 31, 2016).

[^34]:    69 In the Matter of the Application of Minn. Energy Res. Corp. for Auth. to Increase Rates for Nat. Gas Serv. in Minn., Docket No. G011/GR-17-563, Findings of Fact, Conclusions, and Order at 7 (Dec. 26, 2018) (adopting the Administrative Law Judge's finding that including $\$ 178,563$ in mapping project expense in the 2018 test year was reasonable).

[^35]:    70 In the Matter of a Comm'n Investigation into Nat. Gas Utils' Practices, Tariffs, and Assignment of Cost Responsibility for Installation of Excess Flow Valves and Other Similar Gas Safety Equipment, Docket No. G999/Cl-18-41, Order Accepting Compliance Filings, Requiring MERC to Submit Additional Information, Requiring Annual Compliance Reporting, and Taking Other Action at 6 (July 31, 2019).

[^36]:    ${ }^{71}$ In the Matter of a Comm'n Investigation into Nat. Gas Utils' Practices, Tariffs, and Assignment of Cost Responsibility for Installation of Excess Flow Valves and Other Similar Gas Safety Equipment, Docket No. G999/Cl-18-41, Order Finding that Excess Flow Valves Comply With Federal Regulations and Taking Other Actions at 7 (Aug. 20, 2018).

[^37]:    ${ }^{72}$ Minn. Stat. § 216B.1635, subd. 4.
    ${ }^{73}$ February 5, 2019 Order at 6.

[^38]:    ${ }^{74}$ See In the Matter of the Petition of N. States Power Co., d/b/a Xcel Energy, for Approval of a gas Utility Infrastructure Cost Rider, Docket No. G002/M-14-336, Order Approving Rider with Modifications at 10 (Jan. 27, 2015).
    ${ }^{75} / d$. at 11.

[^39]:    ${ }^{76}$ In the Matter of the Application of Minn. Energy Res. Corp. for Auth. to Increase Rates for Nat. Gas Serv. in Minn., Docket No. G011/GR-17-563, Order at 1 (June 13, 2019).

[^40]:    ${ }^{77}$ See February 5, 2019 Order at 6.

[^41]:    ${ }^{78}$ Calculated based on the 13-month average 2019 rate base additions as reflected in Exhibit I, consistent with the computation of the revenue requirement in Docket No. G011/M-18-281.

[^42]:    ${ }^{79}$ February 5, 2019 Order at 9.
    ${ }^{80}$ In the Matter of Minn. Energy Res. Corp.'s Request for Approval of a Gas Util. Infrastructure Cost Rider, Docket No. G011/M-18-281, Order Suspending GUIC Rider Surcharge for Direct Connect Customers, and Declining to Reopen NGEP Cost Rider Docket at 8 (Aug. 26, 2019).

[^43]:    ${ }^{81}$ February 5, 2019 Order at 6.

[^44]:    82 In the Matter of Minn. Energy Res. Corp.'s Request for Approval of a Gas Util. Infrastructure Cost

[^45]:    ${ }^{83}$ Includes incremental O\&M expense for right-of-way projects accounted for as O\&M (non-capital projects), as discussed below.
    ${ }^{84}$ The number of projects completed in 2019 includes the four main lowering projects where costs were incurred as O\&M discussed below.
    ${ }^{85}$ In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Util. Infrastructure Cost (GUIC) Rider Revenue Requirement and Revised Surcharge, Docket No. G011/M-19-282, Reply Comments of Minn. Energy Res. Corp. at 8 (Sept. 17, 2019).

[^46]:    ${ }^{86} / \mathrm{ld}$. at 12.
    ${ }^{87}$ ld. at 14-15.
    ${ }^{88} / d$. at 15.

[^47]:    $89 / d$. at 22.

[^48]:    ${ }^{90}$ In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Util. Infrastructure Cost (GUIC) Rider Revenue Requirement and Revised Surcharge Factor, Docket No. G011/M-19-282, OAG Comments at 4-5, Department Comments at 11-12 (Aug. 23, 2019).

[^49]:    ${ }^{91}$ In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Util. Infrastructure Cost (GUIC) Rider Revenue Requirement and Revised Surcharge, Docket No. G011/M-19-282, Additional Reply Comments of Minn. Energy Res. Corp. at 3 (Feb. 14, 2020).
    ${ }^{92} / d$. at 3-4.

[^50]:    ${ }^{93}$ In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Utility Infrastructure Cost (GUIC) Rider Revenue Requirement and Revised Surcharge Factor, Docket No. G011/M-19-282, Reply Comments of Minn. Energy Res. Corp. at 13 (Sept. 17, 2019) (providing the specific per-therm cost estimate in the trade secret version of the filed reply comments).

[^51]:    94 In some cases, the contractor is not able to clear the sewer through the use of a lateral launch and a push camera or rodding is required to verify the sewer is clear.

[^52]:    ${ }^{95}$ Historically, there has been little O\&M expense associated with MERC's DIMP and right-of-way relocation projects and MERC has forecasted no specific O\&M for its 2021 right-of-way relocation projects and obsolete materials program. In some instances, however, it has been necessary to charge an individual relocation project to O\&M expense (e.g., for projects that require only a lowering, rather than replacement, of the main within the right-of-way). MERC will include these O\&M charges, to the extent they occur, in the reconciliation filing for the 2021 GUIC Rider. ${ }^{96}$ The official title of the TCJA is "[a]n Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018." Public Law No. 115-97 (Dec. 22, 2017).

[^53]:    ${ }^{97}$ In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Util. Infrastructure Cost Rider Revenue Requirement and Revised Surcharge Factor, Docket No. G011/M-19-282, Department Response Comments at 22 (Jan. 24, 2020).
    ${ }^{98}$ Minn. Stat. § 216B.1635, subd. 6.
    ${ }^{99}$ February 5, 2019 Order at 8.

[^54]:    ${ }^{100}$ In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Util. Infrastructure Cost Rider Revenue Requirement and Revised Surcharge Factor, Docket No. G011/M-19-282, Department Comments at 19 (Aug. 23, 2019).

[^55]:    ${ }^{101}$ The Residential and firm class rates include both Farm Tap and non-Farm Tap customers.
    ${ }^{102}$ Note that all other customer class surcharge rates exclude any Direct Connect customers within those rate classes.

[^56]:    ${ }^{103}$ In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Util. Infrastructure Cost Rider Revenue Requirement and Revised Surcharge Factor, Docket No. G011/M-19-282, Department Comments at 18 (Aug. 23, 2019). 104 MERC's 3rd Revised Tariff Sheet No. 6.50.

[^57]:    ${ }^{105}$ In the Matter of Minn. Energy Res. Corp.'s Request for Approval of a Gas Util. Infrastructure Cost Rider, Docket No. G011/M-18-281, Order Suspending GUIC Rider Surcharge for Direct Connect Customers, and Declining to Reopen NGEP Cost Rider Docket at 6 (Aug. 26, 2019).
    106 Id. At 7.
    ${ }^{107}$ Docket Nos. G011/M-18-182, G011/M-18-281, G011/GR-17-563 and G011/M-19-282, Super Large Gas Intervenor Comments at 3, Exhibit A at $\mathbf{\|} 15$ (July 11, 2019); Attachment A to MERC Reply Comments (July 18, 2019).
    ${ }^{108}$ Depending on whether the customer is a Class 5 customer and whether they are CIP-applicable or CIP-exempt.

[^58]:    ${ }^{109}$ Notably, while the Commission ordered MERC to provide a customer bill message and bill insert explaining its 2019 GUIC Rider surcharge in its February 5, 2019 Order in Docket No. G011/M-18-281, MERC is proposing only a bill message (without bill insert) to notify customers of the updated GUIC rate. Customers have already been provided more detailed information regarding the GUIC Rider in 2019, and

[^59]:    a bill message will help reduce overall customer costs and is more likely to be read because it appears directly on the bill.

[^60]:    110 In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Util. Infrastructure Cost Rider Revenue Requirement and Revised Surcharge Factor, Docket No. G011/M-19-282, Department Comments at 22 (Aug. 23, 2019).
    111 In the Matter of the Petition of Minn. Energy Res. Corp. for Approval of 2020 Gas Util. Infrastructure Cost Rider Revenue Requirement and Revised Surcharge Factor, Docket No. G011/M-19-282, MERC REpLY Comments at 25-26 (Sept. 17, 2019).

[^61]:    ${ }^{1}$ The August 26, 2019, Order was also issued in Docket Nos. G011/M-17-563, G011/M-18-182, and G011/M-19-282.

[^62]:    ${ }^{2}$ Note that at the time this 2021 GUIC Rider filing, the Company's 2020 GUIC Rider filing was still pending in Docket No. G011/M-19-282. The below-listed filing requirements are not, therefore, Commission ordered; rather, these are filing requirements agreed to by MERC in the docket thus far.

[^63]:    ${ }^{3}$ MERC made this commitment in its currently-pending 2020 GUIC Rider proceeding (Docket No. G011/M-19-282) in conjunction with 2020 actuals; however, in the interest of consistency, the Company applies its commitment to O\&M expense reporting to the 2019 actuals addressed in this filing.

