



# ASSET MODERNIZATION

The purpose of this communication is to describe, validate, and update the Asset Modernization investment that Northern has made and will continue to make to ensure the safety and reliability of its system, as well as to comply with applicable regulatory requirements. By the end of 2024, Northern is expected to have completed \$1.7 billion of Asset Modernization investment from the beginning of the program. Over the next ten years, Northern is expected to invest another \$2.9 billion, for a total overall investment of over \$4.6 billion in Asset Modernization since program inception.

The Asset Modernization program is intended to significantly reduce the reliability risk inherent in Northern's vintage facilities and the integrity risks that have plagued other operators. Northern classifies its Asset Modernization projects into seven broad project classifications: (1) Pipeline Assessment; (2) Maximum Allowable Operating Pressure Reconfirmation; (3) Compression Replacement; (4) Rupture Mitigation Valves; (5) LNG Equipment Replacement; (6) Underground Storage Integrity; and (7) Vintage Pipeline Replacement.

The program impacts Northern's operations and maintenance (O&M) expenses as well. While some projects result in a reduction to O&M, the net impact is an increase to O&M expenses. The primary O&M cost driver of Asset Modernization is the Pipeline Assessment category, which causes substantial increases to Northern's costs of in-line inspections due to the increased mileage of inspectable pipeline and increased inspection requirements to comply with updated pipeline safety laws and regulations. Many Asset Modernization projects reduce greenhouse gas emissions by replacing leak and emissionprone equipment with newer, more efficient systems.

Facilities of equivalent capacity are installed to replace the capacity of retired pipeline and compressor units. Incremental capacity is not generally created through these replacements; however, Northern has and will continue to pursue efficiencies through project coordination with expansion open seasons.

## **Background**

The Northern pipeline system was built in phases, beginning in the 1930s, with system expansions developed to meet customer needs. Northern currently operates approximately 14,267 miles of pipeline and 55 compressor stations. Approximately 85% of the pipeline mileage was installed prior to the first enactment of federal pipeline safety standards in 1968. Additionally, significant facilities were installed in the 1940s, 1950s, and 1960s, and the utility and reliability of these expansions has been maintained with robust equipment analysis, equipment maintenance programs and proactive parts management. While these facilities are still dependable, they have a finite life, and vendor/product support is no longer available for older equipment as manufacturers move to support newer technology.

Northern has been working to maintain and modernize its system for many years, repairing and replacing components of its transmission and storage plant to ensure continued reliability. Examples of Northern's modernization efforts since 2016 include:

- Replacing compressor units at nine stations within Northern's operational territory.
- Modernizing original 1970s vintage equipment installed at Northern's liquefied natural gas storage facilities in Garner, Iowa and Wrenshall, Minnesota.
- Abandoning approximately 700 miles of large-diameter (greater than 12-inch diameter) 1930s vintage A-mainline from Bushton, Kansas to Ventura, Iowa and Palmyra, Nebraska to Sioux Falls, South Dakota as part of the vintage pipeline replacement program.
- Modifying pipelines to make nearly 2,900 miles of large-diameter pipeline inspectable in the past ten years, modifying an average of 335 miles a year since 2019.
- Creating a program to address needed rupture mitigation valves on Northern's pipeline system with the first eight complete installations expected in 2025.
- Reestablishing maximum allowable operating pressure on approximately 19 of 93 miles of pipeline lacking pressure test data as mandated by the Pipeline and Hazardous Materials Safety Administration.

## **Budget Summary Categories**

### **Pipeline Assessment**

On October 1, 2019, the Pipeline and Hazardous Materials Safety Administration (PHMSA) issued the first of a three-part final rule titled the Safety of Gas Transmission Pipelines: MAOP Reconfirmation, Expansion of Assessment Requirements, and Other Related Amendments (Mega Rule). The rule focuses primarily on reconfirming maximum allowable operating pressures (MAOP) and expanding assessment requirements to include the recently defined moderate consequence areas. The rule expands pipeline integrity assessments. The rule requires MAOP reconfirmation in high consequence areas, moderate consequence areas, and Class 3 locations that operate at or above 30% specified minimum yield strength.

The Pipeline Assessment category captures significant capital expenditures driven by the need to modernize infrastructure for the purpose of accommodating the internal inspection of pipelines and to comply with increased requirements imposed by new and updated pipeline safety laws and regulations. The costs for pipeline assessments fall into two major categories:

- (1) Pipeline modification projects on Class 3 pipeline segments that are operating above 30% specified minimum yield strength not previously assessed with in-line inspection tools.
- (2) Pipeline modifications to increase the percent of the system that is in-line inspection capable with the focus on large-diameter pipelines (greater than 16-inch-diameter) and pipelines operating above 30% of their specified minimum yield

strength in areas outside of high consequence areas, and to assist with meeting other existing regulations.

To date, approximately 75% of Northern's 6,260 miles of 16-inch-or-larger-diameter pipeline is inspectable via inline inspection tools, with six projects increasing inspectable mileage by 208 miles in 2024. In 2025, Northern plans to complete four projects, increasing inspectable large-diameter-pipeline mileage by 223 miles.

As shown in Exhibit No. 1, Northern plans to invest \$552 million in Pipeline Assessment projects during the next 10 years. The large-diameter pipeline modifications are anticipated to be largely complete by 2030 and all projects mandated by the Mega Rule will be completed by 2035.

These projects will continue to have a significant O&M expense impact as a result of subsequent in-line inspections, tool data verification excavations and repair work associated with the inspections. These costs are not included in the capital portion of the work required to make the modifications, and are extremely variable based on the line length, tool technology required, and results of the inspection. Expenses associated with the inspections will be recurring, normally five to 10 years in frequency, depending on the condition of the line and regulatory requirements.

# MAOP Reconfirmation

As noted above, the Mega Rule, issued by PHMSA in 2019, requires MAOP reconfirmation in high consequence areas, moderate consequence areas, and Class 3 locations that operate at or above 30% specified minimum yield strength. While Northern has conducted many reviews to confirm MAOP of its pipelines, if no pressure test record exists for a pipeline, the MAOP must be re-established by completion of a pressure test, an engineering critical assessment, or through pipe replacement. The pipe replacement projects are being captured as part of Northern's Asset Modernization program as these replacements increase pipeline integrity and reliability in areas of consequence.

The majority of Northern's pipelines impacted by the Mega Rule have existing pressure tests and material documentation in support of the MAOP. Of 603 miles of pipeline within high consequence areas, moderate consequence areas, and Class 3 locations, 510 miles of pipeline have adequate pressure test records that establish MAOP. Approximately 93 miles of Northern's pipeline system required reestablished MAOP and through 2024, roughly 19 miles have been reconfirmed. In 2025, Northern plans to reestablish an additional 26 miles of pipeline. Per the PHMSA rule, half of the MAOP reconfirmation projects must be completed by 2029, with the entire program complete in 2034.

As shown in Exhibit No. 1, Northern plans to invest \$532 million in MAOP reconfirmation replacement projects during the next 10 years.

# **Compression Replacement**

The Compression Replacement category represents the costs to replace vintage compressor units as well as related auxiliary equipment and infrastructure. Projects are prioritized based on unit vintage, criticality to pipeline operations, historical reliability concerns, and outlook for future maintainability.

To fulfill customer commitments, it is paramount that Northern's compression fleet maintain high reliability. With more than 60 units reaching 80-years old and 15 units surpassing 90-years old in the next 20 years, a replacement program has been implemented that will mitigate short- and long-term customer reliability risks. Northern will replace at least one unit per year to allow replacement of units and critical auxiliary equipment at a rate necessary to largely avoid relying on units greater than 90 years old. If not replaced, such vintage units would present significant reliability risk to Northern's customers, as the equipment would be difficult to maintain and overhaul given obsolescence of spare parts, lack of industry service options, and end of life being reached on major unit subcomponents that are not normally replaced or available.

Northern has 94 compression units between 50 and 75 years old. The current Asset Modernization plan includes replacement of approximately 45 units over the next ten years, 25% of Northern's 181 total compression units. A total of 21 units have been replaced under this program since 2016, as shown in the table below. The units targeted for modernization are spread across Northern's system in both the field and market areas.

Replacement Year	Location	Vintage	Number of Units	Unit Type
2016	Beatrice, Nebraska	1972	1	General Electric LM-1500 (Turbine)
2019	Mullinville, Kansas	1968	1	General Electric LM-1500 (Turbine)
2020	Bushton, Kansas	1968	1	General Electric LM-1500 (Turbine)
2021	Farmington, Minnesota	1961-1965	5	Ingersoll Rand 616KVT x Qty. 2; Ingersoll Rand 48KVS x Qty. 3 (Reciprocating)
2022	Brownfield, Texas	1968	1	General Electric Frame 3 Model F (Turbine)
2022	Ogden, Iowa	1951-1953	4	Cooper Bessemer 26-H (Reciprocating)
2022	Spraberry, Texas	1953	2	Ingersoll Rand 412KVG (Reciprocating)
2023	Paullina, Iowa	1947	5	Ingersoll – Rand 82KVG (Reciprocating)
2024	Garner, Iowa	1978	1	York 455B (Electric)

Table 1: Compression replacement projects completed as part of Northern's asset modernization program.

When prioritizing compression replacement projects, Northern considers the vintage, continued maintenance ability, repair requirements and overhaul frequency necessary to sustain reliability. As facilities reach obsolescence, parts become more difficult – if not impossible – to obtain. In fact, Northern has manufactured many of its own replacement parts for outdated units. In addition to lack of spare parts, qualified third-party vendor service options and quality of service can rapidly diminish for units as they become rare in the industry. Unexpected failures can lead to longer outages while parts are located or fabricated and qualified repair resources are secured, negatively impacting service to customers.

For example, the Beatrice, Nebraska; Mullinville, Kansas; and Bushton, Kansas units replaced in 2016, 2019 and 2020 respectively, eliminated the last three General Electric LM 1500 units on the Northern system. These 1960s vintage units were becoming increasingly unreliable, with quality of spare parts and service waning, and only one known service option remaining within the industry. Critical rotating components were at end of useful life and not available for replacement. Early 1950s vintage horizontal reciprocating compressor units at Ogden, Iowa were replaced for similar reasons in 2022. Most pipeline companies in North America replaced vintage horizontal compressors years ago, although Northern was able to extract several years of additional life out of the units by self-performing most maintenance and manufacturing spare parts in-house when they were not otherwise available.

In some cases, retirement offers the benefit of extending the service life of other remaining units. For example, replacement of the General Electric Frame 3 turbine in Brownfield, Texas in 2022 gave Northern access to critical spare parts such as rotors, casings, and turbine wheels that are not generally available within the industry and will help extend the service life of nine additional similar turbines across the Northern compression fleet.

In addition to maintenance and reliability concerns, vintage units also require replacement to comply with more rigorous environmental regulations. For example, the Farmington, Minnesota 1960s vintage reciprocating Units 1-5 were replaced in 2022, as the station would otherwise fail to meet current emissions limits mandated by the Minnesota Pollution Control Agency. In general, vintage unit replacements reduce greenhouse gas emissions, as antiquated equipment is replaced with new, more efficient equipment.

This year, Northern replaced the 1970s vintage electric driven C-061 York refrigeration compressor at the Garner, Iowa liquified natural gas facility. The previous refrigeration compressor was increasingly difficult to maintain, creating a reliability risk for this critical unit. In addition to limited technical support from the manufacturer or aftermarket support vendors, spare part lead time was generally longer than six months. Northern opted to install a natural gas-fired unit as increasing operational and electric costs made an electric driven compressor less economical over the long-term.

In 2025, Northern will replace the following vintage units:

• Four 1960s vintage Worthington ML-7 units at the North Branch, Minnesota compressor station

- Three 1950s vintage Clark TLA-6 and two 1960s vintage Allison 501KB units at the Ventura, Iowa compressor station
- One 1960s vintage General Electric Frame 3 turbine unit at the Claude, Texas compressor station

Few of these units are still in-service within the industry and are poorly supported by original equipment manufacturers. Spare parts are high-cost, custom orders that often take more than a year to fulfill, and some critical spare parts not available through any source. Auxiliary equipment required to run these units is becoming increasingly obsolete, warranting expensive custom retrofits and adding to unit downtime risk. Replacing these units in 2025 also allows Northern to avoid over \$20m in capital projects intended to offset reliability concerns with unit and station auxiliary equipment. Finally, replacing these units will also allow for compliance with potential future emissions mandates in each respective state.

As shown in Exhibit No. 1, Northern plans to invest \$671 million in Compression Replacement projects during the next 10 years.

## LNG Equipment Replacement

Northern operates peak shaving liquefied natural gas (LNG) facilities at Wrenshall, Minnesota and Garner, Iowa. The Wrenshall LNG station was installed in 1974, and the Garner LNG station was installed in 1977. These cryogenic facilities each have 2.1 billion cubic feet of LNG storage and can vaporize the stored liquefied gas into useable pipeline gas at a total rate of 300,000 Mcf/day through three vaporization trains. The liquefaction equipment can replace vaporized storage gas with LNG production at a rate of 12,000-17,000 Mcf/day.

The LNG facilities are used as operational storage to support the delivery of hourly peaking volumes, to support the simultaneous receipt and delivery of transportation quantities, and to balance line pack on Northern's system. While vaporization ensures contractual deliveries are not jeopardized, the resultant system flexibility has also proven routinely critical for customer reliability in winter.

This category represents the cost to replace major equipment components at the LNG plants. LNG plant operations also involve significant electrical and electronic control equipment. Electrical system modernization increases the safety and reliability of station motor control centers and electrical power distribution to critical vaporization and liquefaction equipment.

The original facilities were installed in the 1970s, and as a result, much of the equipment has reached the end of its life. Northern has historically maintained older equipment and replaced parts or subsystems versus wholesale replacements. However, in recent years, routine maintenance projects have proven insufficient, and Northern began replacing larger systems or pieces of equipment out of necessity. This equipment either displayed integrity concerns or required replacement due to obsolescence and unavailability of parts. As part of the ongoing modernization and replacement of original equipment at the Garner facility, the LNG refrigeration compressor motor and cold box were replaced in 2024. In addition, all three of the vaporizer emission stacks were replaced with taller stacks to meet environmental permitting requirements.

At the Wrenshall LNG facility, the vaporizer replacement project is planned to start in 2025 with completion in 2026. This project will replace all three of Wrenshall's direct-fired, submerged combustion LNG vaporizers, which are original to the facility and have become less dependable and more costly to maintain. The replacement LNG vaporizers will reduce maintenance costs as well as improve vaporizer reliability. In 2026, the current 5,900-gallon liquid nitrogen storage tank and associated vaporizer, both original to the facility, are scheduled to be replaced. The nitrogen vaporizer will be increased in size to better meet the capacity requirements of the various nitrogen system uses throughout the facility. Replacement of the reactivation gas cooler and purification filters, also original to the facility and nearing the end of serviceable life, are scheduled for replacement in 2027 and 2028.

As shown in Exhibit No. 1, Northern completed approximately \$18.2 million in LNG Equipment Replacement projects in 2024 and plans to invest \$19.5 million in during the next 10 years. LNG Equipment Replacement projects are expected to continue intermittently beyond the 10-year outlook to maintain system reliability.

# **Underground Storage Integrity**

The Underground Storage Integrity category includes projects to ensure compliance with a relatively new PHMSA rule. In 2020, the Safety of Natural Gas Underground Storage Final Rule became effective, giving PHMSA new jurisdiction over the underground storage field wells and reservoirs. The regulations incorporated new industry standards into the pipeline safety regulation that operators are required to implement, including American Petroleum Institute (API) Recommended Practice 1171: Functional Integrity of Natural Gas Storage in Depleted Hydrocarbon and Aquifer Reservoirs. To comply with the regulations, Northern revised its reservoir integrity management plan to include new operating procedures and engineering standards and created the Underground Storage Integrity capital expenditure program.

Under its reservoir integrity management plan required per this rulemaking, Northern drilled five additional observation and natural gas storage wells in the Redfield, Iowa underground storage field. These wells will monitor gas pressure in non-storage strata and replace aging storage wells that lacked physical integrity. Additionally, Northern will establish and maintain three undisturbed buffer zones around the Redfield storage field to further ensure reservoir integrity.

This year, Northern completed an engineering design study to add a natural gas dehydration and hydrogen sulfide treatment facility to the Lyons, Kansas underground storage system, with construction anticipated in 2026 and 2027. Currently, Northern performs dehydration and hydrogen sulfide treatment on the storage gas at a facility in Bushton, Kansas, 16 miles away. While Northern has maintained the 1974-vintage facility in Bushton, maintenance efforts and costs have increased substantially in recent years, and the facility experiences frequent outages. A new facility located in Lyons will optimize gas treatment at the withdrawal point of the storage field, similar to Northern's other underground storage facilities. This eliminates the shipment of untreated gas to the Bushton facility. Additionally, the new treatment facility will be constructed according to current codes, regulations, and best practices, which will increase the energy efficiency of the facility, as well as employee safety by providing improved means of ingress and egress.

In 2025, Northern will complete the Cunningham, Kansas storage facility northeast containment system project as part of the underground storage integrity program. This project includes the installation of a water injection well and associated facilities to allow for water injection to prevent the migration of storage gas beyond the limits of the field. The project also includes installation of an observation well and conversion of an existing well to function as a water extraction well. This system will be similar to the existing north extension area containment system.

As shown in Exhibit No. 1, Northern plans to invest \$164 million in Underground Storage Integrity projects during the next 10 years. These projects are expected to continue beyond the 10-year outlook as additional withdrawal well replacements or observation wells are needed. The new wells will slightly increase storage O&M expense to maintain the new facilities.

## Vintage Pipeline Replacement

Vintage Pipeline Replacement projects replace aged pipelines by abandoning mechanically-coupled and acetylene-welded mainlines and branch lines and installing facilities to replace the associated capacity. To date, Northern has abandoned approximately 760 miles of vintage mainline and branch line as part of this program, with an additional 210 miles of mainline planned for abandonment through 2029.

Mechanically-coupled pipeline joint technology, originating in 1891, and acetylenewelded pipeline technology, initially used for pipeline construction beginning in 1911, were historically used in natural gas pipeline applications but were largely discontinued by 1940. These construction techniques were used in the initial construction of Northern's system. By 1933, most cross-country pipelines were being constructed with the superiorstrength electric resistance arc-welded girth joints, as mechanically coupled and acetylenewelded joints are subject to failure from ground movement and can frequently leak natural gas. Furthermore, these joint types are not compatible with modern pipeline integrity assessment methods; the pipelines cannot be inspected with in-line inspection tools nor hydrostatically tested without incurring significant leaks. Additionally, much of this pipe is uncoated and is therefore susceptible to external corrosion.

The approximately 900-miles of acetylene-welded and mechanically coupled largediameter mainlines on Northern's system will be nearly entirely replaced with the abandonment of the 131-miles of 16-inch-diameter mainline between Ventura, Iowa and Farmington, Minnesota. The project will require a Section 7(b)/7(c) filing with the Federal Energy Regulatory Commission (FERC), and the project team commenced project scoping and necessary environmental studies summer 2024 with anticipation of filing the project July 2025. The abandonment is anticipated to be completed in 2028 with capacity replacement projects commencing in 2027.

As the large-diameter mainlines are completed, the program focus is shifting to branch lines, with the abandonment of the 1931-vintage Mason City, Iowa branch line planned for 2025. This project will abandon approximately six miles of 10-inch-diameter branch line, replacing capacity with installation of 2.7 miles of 10-inch-diameter pipeline operating at 800 psig rather than the 500 psig of the vintage line. This project will increase system reliability and integrity, improve operational flexibility, and allow pipeline inspection tool utilization.

In 2026, Northern will replace the remaining seven miles of the 10-inch-diameter, 1932vintage Columbus, Nebraska branch line due to integrity concerns and particularly significant consequences of failure. This project will also increase the maximum allowable operating pressure to 700 psig and include the installation of facilities to support pipeline inspection tools.

While Northern has successfully operated these mostly pre-1940s vintage pipelines with continued focus on safety and integrity, these pipelines have reached the end of their useful life. As shown in Exhibit No. 1, Northern plans to invest \$881 million in Vintage Pipeline Replacement projects during the next 10 years. This program is anticipated to continue for approximately 15 years. The total program cost is currently estimated at \$1.3 billion through 2033 although updates on the total will be provided as out-year projects are more fully evaluated and prioritized.

# **Rupture Mitigation Valves**

In 2022, PHMSA revised the Federal Pipeline Safety Regulations applicable to most newly constructed and entirely replaced onshore gas transmission pipelines with diameters of sixinches or greater. In the revised regulations, PHMSA requires installation of rupture mitigation valves, such as an automatic shut-off valve (ASV) or a remote-control valve (RCV), to minimize the volume of gas released from a pipeline in the case of a pipeline rupture, helping to improve public safety and mitigate environmental consequences. The final rule applies to construction after April 10, 2023, and establishes requirements for rupture mitigation valve spacing, maintenance, and inspection.

In 2024, Northern spent approximately \$5.0 million on projects to install RCVs on four existing pipelines and plans to spend an average of \$5.8 million per year through 2028. These projects will be ongoing as Northern assesses risks and opportunities to mitigate the risks on the existing system. Rupture mitigation valves will also be installed as required on new pipeline segments and included with the original project (excluded from the Asset Modernization program).

# **Conclusion**

In summary, Northern will invest approximately \$2.9 billion over the next 10 years to modernize the pipeline, compression, underground storage, and LNG facilities as described above, resulting in improvements to system integrity, reliability, efficiency, and public safety.

Project Description	2024	2025	2026	2027	2028-2034	10-Year 2025 - 2034
Pipeline Assesments						
M600D-30-I-Mods Clifton-Beatrice D - KS	16,917,377					
M530D-30-I-Mods24 Oakland-Ogden D-MCA Oakland Portion	11,298,378					
MNB66801 Grand Rapids Branch Line Modifications	10,812,569					
M500B-26-I-Mods24 Ventura-Faribault B-MCA Owatonna Portion	9,534,072					
M836B-16-I-Mods24 Sid Richardson-Hobbs-MCA	7,536,230					
WIB23601-12-I-Mods24 Beloit-MCA	3 744 483					
M52000 1 12 1 Mode2 4 Belok Mort	3.329.144					
Huron South Dakota 1 TBS Relocation	2,432,022	445,361				
M883B Bakersfield CS Launcher Receiver Mods	2,288,524				2,995,652	
M771B Dumas-Sunray ILI Modifications El Paso Dumas 2024	2,107,187					
0650-M630E Pipe Replacements - MP 2-12-20	2,000,000					
0650-M581B Pipe Replacement Palmyra-Hooper	1,500,000					
WIB13401-4-H-Mods MP 0-5 Monroe-MCA	1,273,590					
M520C Ogden-to-Ventura In-line Inspection Modifications	1,177,273					
M510C Waterloo-Dubuque Block Valve 8 Replacement	535,648					
M855C-30- Coyanosa-Kermit ILI Mods	395,070					
MS10B-10-1-Mods22 Waterioo-Dubuque-MC- Filase 2 M590F-30-I-Mods23 Beatrice-Palmyra E-MCA	313 118					
MNB86701-8-I-Mods22 Stillwater-CL3	235 497					
KSB77101-12-I-Mods28 Mullinville to Dodge City	168,119				3.272.166	
M500C-30-I-Mods25 Ventura-Faribault C-MCA	, -	22,032,181				
M520D-30-I-Mods25 Ogden-Vent D-MCA		8,842,779				
M530D-30-I-Mods25 Oakland-Ogden D-MCA Ogden Portion		7,726,687				
M119C-20-I-Mods25 Odgen-Redfield C-MCA		3,221,431				
M119B-20-I-Mods25 Ogden-Redfield B-MCA		3,221,431				
WIB14701-4-H-Mods MP 0-8.5 Wisconsin Dells		830,484				
CNU10001-8-I-Mods25		352,965				
M500D-30-I-Mods25 Ventura-Faribault-MCA			11,500,000			
M670D-30-I-Mods28 Mullinville-Macksville D			9,245,654			
MNB75601-10-I-Mods MP 50.6-79.4 Willmar BL-MCA			6,531,402			
IAB60501 16   Mode MP 0 3.5 NCPL Interconnect MCA			5,624,156			
SDB92002-8-Replace MP 10 8-12 8 Yankton 2nd BL-MCA			5 215 824			
MNB67702-4-H-Mods MP 3.27-6.3 St Michael 2nd-MCA			522,228			
M580C-30-I-Mods27 Palmyra-Oakland C-MCA			022,220	17,059,743		
M471B-12-I-Mods MP 76-159 Paullina-Aberdeen-MCA				15,705,686		
M670E-30-I-Mods27 Mullinville-Macksville E-MCA				11,300,000		
M850B-16-I-Mods MP 0-16 Andrews-MCA				7,695,598		
NEB52902-10-I-Mod25 MP 0-28 Columbus 2nd-MCA				6,000,000		
WIB24001-16-I-Mods27 Madison-MCA				4,550,000		
MNB91901-8-I-Mods MP 0-11 Princeton Tie-over				3,818,793		
WIB15801-4-I-Mods MP 9-26 Arlington BL-MCA				3,818,793		
IAB60502 16 L Mode MP 0.3 NGPL IC MCA				3,818,793		
Approved Plan for A2 - 2034				3,202,003	40 319 361	
M520B-26-I-Mods29 Oaden-Vent B					22.385.834	
M560C-24-I-Mods MP 3.4-46 SSC-Paullina C-MCA					19.348.663	
M530B-26-I-Mods30 Oakland-Ogden B-MCA					18,101,222	
Approved Plan for A2 - 2031					17,939,402	
OKG33902-16-I-Mods30 Hemphill Loop					12,571,550	
M730B-24-I-Mods32 Sublette-Fowler					12,094,842	
M710B-20-I-Mods30 Holcomb-Kalvesta B					9,741,398	
MNB83701-6-I-Mods MP 8.9-9.2 Springfield BL-MCA					9,057,946	
M610P. 20 L Mode 21 Albert Rushten					8,666,452	
M725B-24-LMods32 Fowler-Mullinville					7,900,000	
MNB65101-8-I-Mods MP 0-16.5 Morris-MCA					7,000,041	
TXG54801-12-I-Mods MP 0-18.9 Shamrock-MCA					7.034.125	
M500B-26-I-Mods29 Ventura-Faribault B-Ventura Portion					6,471,046	
M686B-20-I-Mods33 PEP-Mullinville					6,175,297	
M580B-26-I-Mods Palmyra-Oakland B Iowa-Replace Elbows					5,866,200	
M530B Guthrie Center CS Launcher Receiver Mods					5,500,000	
TXG52002-20-I-Mods33 Shamrock Loop					4,949,573	
OKG33902-16 Hemphill loop-Drip Removals					4,800,000	
IAB88401-16-I-Mods32 Cedar Rapids					4,619,174	
M835B Seminole CS Launcher Receiver Mods					4,350,000	
M530D Guthria Contar CS Launcher Receiver Mods					4,335,016	
M530C Guthrie Center CS Launcher Receiver Mods					4,335,016	
M810B MP 41.13 Launcher Receiver Mods					4,335,010	
M510C Earlville CS Launcher Receiver Mods					4,335.016	

Project Description	2024	2025	2026	2027	2028-2034	10-Year 2025 - 2034
M470B MP 27.45 Launcher Receiver Mods					4,335,016	
M680D Beaver CS-MP 50.74-Launcher Receiver Mods					4,200,000	
TXG53203-16-I-Mods Hemphill CO 2 Loop					4,076,836	
TXG52002-12-I-Mods Shamrock GL Loop					4,034,849	
IAB47601-6-I-Mods MP 0-11.9 Bristow BL-MCA					4,021,536	
KSB81401-16-I-Mods33. Jaybawk Plant					3 660 862	
TXG53203-20-I-Mods Hemphill CO 2 Loop					3 530 493	
TXG53202-12-I-Mods Mathers Ranch-Hemhill CO 1					3,530,493	
TXG52003-16-I-Mods Shamrock GL Loop					3,530,493	
MNB72902-8-I-Mods MP 0-12.5 Alexandria 2nd-MCA					3,334,464	
IAB71901-16-I-Mods MP 0-4.3 Waterloo BL-MCA					3,136,641	
MNB96701-12-I-Mods MP 0-4.2 Flint Hills-MCA					3,024,816	
NEB57901-10-I-Mods MP 0-13 Sheldon Power Plant-MCA					3,024,816	
NEB53002-8-I-Mods MP 0-16 Blair Cargill BL-MCA					3,024,816	
WIB14801.6 L Mode L adv Smith BL					3,024,816	
MB14001-0-1-Mods Lady Smith BL M680C MP 50 69 Launcher Receiver Mods					2,995,052	
M770C MP 46.2 Launcher Receiver Mods					2,995,652	
IAB62501-10-I-Mods MP 7.9-50 Grinnell					2,993,018	
IAB66002-10-I-Mods MP 0-9 Ames 2nd-MCA					2,968,024	
MNB65801-6-I-Mods MP 0-2 Virginia					2,866,902	
MNB78401-6-I-Mods MP 0-18.5 Mora BL-MCA					2,491,532	
M433B MP 70.25 Launcher Receiver Mods					2,250,000	
WIB18601 MP 32.43 Launcher Receiver Mods					2,250,000	
MNB72701 MP 35.34 Launcher Receiver Mods					2,250,000	
M580B-26-I-Mods Palmyra-Oakland B Iowa-Replace Bridge MP53.3					1,851,844	
M380B-26-I-X-Mods Palmyra-Oakland B Iowa-Replace Bridge MP55.2					1,700,053	
MNB67802-6-H-Mods MP 0-1 0 Dayton 2nd BL-MCA					1,497,020	
SDB92002-8-H-Mods MP 29.4-29.8 Yankton 2nd BL-MCA					1 100 000	
SDB92002-8-H-Mods MP 4.47-4.52 Yankton 2nd BL-MCA					1,000.000	
M500E-36-I-Mods MP 0-28.2 Ventura-Farmington-MCA					1,000,000	
MNB83801-12-H-Mods MP 0-0.1 Faribault-MCA					950,000	
TXM85302-24-I-Mods Trans Pecos Lateral					758,170	
TXM85301-24-I-Mods Valero Interconnect					505,447	
Subtotal: Pipeline Assessments	84,928,409	63,929,136	44,181,508	77,030,008	367,070,919	552,211,572
Compression Replacement	00.040.007	45 500 000				
Corport NG MCC 4160 Volt Install and Removal	39,348,287	15,500,000				
Ventura 14-15 Replacement Compression	1 030 360	100,000				
Claude Unit 1 Replacement Compression	490 498	34 710 000	34 267			
AM-Waterloo MCC Replacement	128.238	01,710,000	01,201			
Bushton 26-31 Replacement Compression	,	5,743,000	42,624,000	27,500,000		
North Branch 1-4 Replacement Compression - Contingency		2,358,000				
Spraberry 8 and 10 Replacement Compression			17,157,452			
Spraberry Compressor Units 4 and 5 Replacement			5,143,774	12,981,290		
Bushton 23-25 Replacement Compression				29,945,323		
Plainview Unit 1 Replacement Compression					30,075,302	
Pampa Unit 1 Replacement Compression					30,075,302	
					35,000,000	
Clifton 27-31 Replacement Compression					60 002 407	
Beatrice 24-25 Replacement Compression					40,000,008	
Approved Plan for A3 - 2032					20.000.204	
Approved Plan for A3 - 2033					62,797,825	
Beaver 15-18 Replacement Compression					40,000,000	
Approved Plan 2034					29,210,776	
Subtotal: Compression Replacement	43,340,899	103,307,481	64,959,493	70,426,613	432,175,434	670,869,021
LNG Replacement						
Garner LNG Refrigeration Compressor Motor Replacement Install	14,628,200	250,000				
Garner Replace Cold Box	2,899,317					
Garner Vaporizer Stack Modification	652,284	4 000 700	0.000.000	0.000.000		
Wrenshall Liquid Nitrogen Tank Replacement		1,099,708	651 067	۵,600,000		
Wrenshall Reactivation Gas Cooler Replacement			001,907	1 249 955		
Wrenshall Purification Filter Replacement				.,_ 10,000	1,649.947	
Subtotal: LNG Replacement	18,179,801	1,349,708	6,651,967	9,849,955	1,649,947	19,501,578

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Underground Storage						
Redfield Broderick 16	479,206					
Lyons UGS Gas Storage Lease Acquisitions	77,604					
Cunningham Northeast Containment System	265,740	21,505,703				
Redfield GSLA Acquisitions	214,029		8 078 000		26.026.106	
I vons Underground Storage Treatment Facility			3 858 303	40 406 851	35 413 961	
Redfield McCarthy No. 3 Disposal Well			0,000,000	40,400,001	15.803.525	
Approved Plan for A5 - 2032					208,377	
Approved Plan for A5 - 2033					5,576,978	
Approved Plan for A5 - 2034					5,702,460	
Subtotal: Underground Storage	1,036,578	21,505,703	12,836,303	40,406,851	89,641,408	164,390,266
Vintage Pipeline Replacement						
M520A Ogden to Ventura Abandonment	4,188,194	50,000				
M500A Ventura to Farmington Abandonment	3,516,477	14,035,691	42,577,797	90,225,000	4,058,073	
IAB65001 Des Moines & Branch Line Abandonment	1,541,529	154,510				
Yankton 1st SDB92001-6-inch-Repl	375 004					
M640A Bushton to Clifton Abandonment	320.018					
Plains System Line Replacement	301,605					
Columbus Vintage Pipe Replacement - NEB52901	106,684	4,227,416	17,838,791			
Mason City Branch Line Replacement		7,992,944				
Holc Meade Cut Relocation			758,743			
Beemer Vintage Pipe Replacement - NEB55001				19,500,000		
NEB46401-Pawnee City Vintage Pipe Replacement				10,134,947	18,800,000	
Fort Dodge Vintage Pipe Replacement - IAB69401				6,342,903	16 000 061	
Vankton Vintage Pine Replacement SDR92001				1,062,649	10,289,301	
Mankato Vintage Pipe Replacement - MNB83001				1,000,000	105 000 000	
Approved Plan for A6 - 2034					70.407.627	
Blair Vintage Pipe Replacement - NEB53001					50,135,822	
New Ulm Vintage Pipe Replacement - MNB88301					45,300,000	
Approved Plan for A6 - 2033					43,202,692	
MNB81201-Austin Vintage Pipe Replacement					41,600,000	
Worthington Vintage Pipe Replacement - MNB87001					37,100,000	
NEB54001-Tekamah Vintage Pipe Replacement					28,800,000	
Schuyler Vintage Pipe Replacement - NEB41701					23,372,438	
Ashgrove Vintage Pipe Replacement - NEB47701					16 747 055	
Audubon Vintage Pipe Replacement - IAB63001					15,300,000	
Belle Plaine Vintage Pipe Replacement - MNB84401					10,900,000	
NEB48401-Papillion Vintage Pipe Replacement					9,500,000	
NEB52001-Elkhorn Vintage Pipe Replacement					9,272,895	
Milford Vintage Pipe Replacement - IAB77201					7,800,000	
West Point Vintage Pipe Replacement - NEB55201					4,748,045	
Subtotal: Vintage Pipeline Replacement	11,613,893	26,716,648	61,425,331	128,521,134	664,638,747	881,301,860
MAOP Recontinuation	11 454 005					
Grinnell Replacement	7 870 0/3					
M511B-20-Replace MP 6.5-6.7 Dubuque TBS 4-Galena-MCA-MR	7,613,643					
M520C-30-Replace MP 49.6-50.0 Ogden-Ventura-MCA-MR	4,827,347					
M771B-30-PT-MP 2.9-3.8 Dumas-Sunray B-MCA-MR	4,430,650					
M500B-26-Replace MP 85.7-86.1 Ventura-Farmington-MR	3,244,359					
M520C-30-Replace MP 27.9-28.5 Ogden-Ventura-MCA-MR	3,964,800					
IAB56501-6-Replace MP 16.5-16.9 Vinton BL-MR	3,024,485					
M836B-16-Replace MP 37.8-38.0 Sid Richardson IC-Hobbs Discharge-MCA-MR	2,930,716					
WIB11901-8-Replace MP 10.6-11.0 Tomah BL-MCA-MR	2,917,416					
M511B-20-Replace MP 8.7-9.1 Dubuque TBS 4-Galena-MCA-MR	2,524,748					
MID 11901-10-Replace MP 3.9-4.2 Toman BL-MCA-MR M500B-26-Replace MP 80 3-80 5 Ventura-Earmington-MCA-MR	2,524,556					
M570B-18-Replace MP 59 5-60 9 Hooper-Sioux City-MR	2,000,000					
IAB69701-6-Replace MP 10.0-10.3 Iowa Falls BL-MCA-MR	1,726.074					
Mullinville Comp Sta MAOP Resolution	1,416,075					
MNB59201-6-I-Replace MP 0.0-1.2 Paynesville-MCA	419,489					
M530B-26-Replace MP 22.1-23.2 Oakland-Ogden-MCA-MR	150,650	7,867,936				
WIB11901-6-Replace MP 26-45 Tomah	120,361	4,896,355	3,200,000			
M580B-26-PT-MP 37.8-38.8 Palmyra-Oakland B-MCA-MR		8,925,368				
M460B-20-PT-MP 79.6-79.9 Welcome-Mpls TBS 1P-MCA-MR		4,359,441				
MIZOR-16-Replace MP 36 7 37 1 Paulling Malaceme MCA MP		3,749,556				
M521C-26-PT-MP 52 8-53 4 Orden-Waterloo C-HCA-MR		3,368,056				
M460B-20-PT-MP 1.9-2.3 Welcome-Mpls TBS 1P-MCA-MR		3,178,908				

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M460C-26-PT-MP 0.0-2.8 MNM80901-Mpls TBS 1-HCA-MR		2,865,177				
M460B-20-PT-MP 97.3-97.7 Welcome-Mpls TBS 1P-MCA-MR		2,416,867				
MS80B-26-PT-MP 31.8-31.9 Palmyra-Oakland B-MCA-MR		1,968,201				
MNB76401-0-Replace MP 3.1-3.4 Mola BL-MCA-MR MNB75601-12-PT-MP 23.0-23.4 Willmar BL-MCA-MR		501 219				
MNB87701-8-PT-MP 20.41-25.0 Elk River BL-MCA-MR		476,595				
MNB87701-8-PT-MP 19.77-20.28 Elk River BL-MCA-MR		242,912				
WIB11901-10-Replace MP 1.1-1.7 Tomah BL-MR			12,600,000			
M530C-30-Replace MP 22.3-23.7 Oakland-Ogden-MCA-MR			10,433,285			
MNB11901-WIB11901-10-Inch River Crossing HDD-WR(H)			4 004 036			
M450B-24-Replace MP 63.8-65.8 Farmington-NB-MCA-MR			3,835,945			
M520B-20-Replace MP 27.9-28.3 Ogden-Ventura-MCA-MR			3,200,000			
MNB75601-8-Replace MP 99.8-100.1 Willmar BL-MR			3,200,000			
MNB77501-16-Replace MP 50.5-50.9 MN IC BL-MCA-MR			3,200,000			
IAB79501-6-Replace MP 1.1-3.5 Tipton BL-MR			3,158,842			
M471B-20-Replace MP 82.9-83.2 Paullina-Aberdeen-MCA-MR			3.000.000			
M630C-26-PT-MP 14.1-14.8 Tescott-Clifton C-MCA-MR			3,000,000			
M471B-20-Replace MP 80.9-81.2 Paullina-Aberdeen-MCA-MR			2,750,000			
M510B-16-Replace MP 47.9-48.1 Waterloo-Dubuque TBS 4-MCA-MR			1,971,587			
MNB87701-20-PT-MP 19.73-19.77 Elk River BL-MCA-MR			752,020			
MNB87001-6-Repace Replace Worthington-CLS			275,248	12 264 810		
MIND///01-WID10201-0-Replace MP1-3.1 Hudson BL-MICA M500C-30-Replace MP 80 7-81 3 Ventura-Earmington-MCA-MR				4 739 257		
IAB65601 Des Moines 1A Relocation				4,000,000		
IAB71801-8-Replace MP 11.37-11.54 Waverly BL-MR				4,000,000		
M430B-20-Replace MP 0.2-0.62 Carlton-Mesabi Iron Range B-MR				4,000,000		
M580C-30-Replace MP 30.6-31.2 Palmyra-Oakland-MCA-MR				3,979,912		
M580B-26-Replace MP 30.6-31.2 Palmyra-Oakland-MCA-MR				3,482,423		
IAB65601-16-Replace MP 0.02-0.5 Des Moines 1A-MR				3,000,000		
M430B-20-Replace MP 10.21-10.55 Carlton-Mesabi Iron Range B-MR				3,000,000		
IAB71801-8-Replace MP 14.74-14.85 Waverly BL-MR				2,250,000		
IAB71801-10-Replace MP 4.05-4.27 Waverly BL-MR				1,800,000		
IAB71801-8-Replace MP 20.74-20.93 Waverly BL-MR				1,800,000		
MNB77601-20-Replace MP 0.0-0.28 Minneapolis TBS 1D BL-MR				750,000		
IAB66002-10-PT MP 4.79-21.48 Ames BL-HCA-MR				700,000		
MNB75601-24-PT-MP 0.0-1.18 Willmar BL-HCA-MR				300.000		
MNB75601-24-PT-MP 2.78-3.83 Willmar BL-HCA-MR				300,000		
MNB75601-24-PT-MP 4.99-5.89 Willmar BL-HCA-MR				300,000		
MNB75601-24-PT-MP 6.76-7.04 Willmar BL-HCA-MR				300,000		
Approved Plan for A7 - 2034					32,818,293	
M820B-26-Replace MP 6 5-8 1 Hobbs-Plains-MR					30,800,934	
M450B-24-Replace MP 48-49.3 Farmington-NB-MCA-MR					9,800,000	
M860B-30-Replace MP 16.4-16.8 Spraberry-Florey-MCA-MR					7,700,000	
M521C-26-PT-MP 27.5-28.1 Ogden-Waterloo C-MCA-MR					7,405,491	
M450B-24-Replace MP 59.7-61.3 Farmington-NB-MR					6,500,000	
M460B-16-Replace MP 49.5-50.8 Welcome-Mpls 1P-MCA-MR					6,024,512	
M640C-24-Replace MP 30.0-30.6 Bushton-Tescott-MCA-MR					4,992,186	
M500B-24-Replace MP 64.1-64.6 Ventura-Farmington-MCA-MR					4,764,523	
M500B-26-Replace MP 37.2-37.7 Ventura-Farmington-MCA-MR					4,764,521	
M500C-30-Replace MP 39.0-39.5 Ventura-Farmington-MCA-MR					4,745,861	
M500C-30-Replace MP 64.4-65.0 Ventura-Farmington-MCA-MR					4,739,257	
M820B-26-Replace MP 0.0-0.4 Hobbs-Plains-MCA-MR					4,500,000	
M630B-24-Replace MP 14.2-14.8 Tescott-Clifton-MCA-MR					4,500,000	
M590C-26-Replace MP 39.1-39.6 Beatrice-Palmyra-MCA-MR					4,500,000	
IAB55701-6-Replace MP 13.1-13.3 Tama BL-MCA-MR					4,304,138	
MNB87501-6-Replace MP 3.4-3.6 Sherburn TBS 2 BL-MCA-MR					4,045,593	
WIB18101-6-Replacement Viola					4,033,462	
MITTE-20-Replace MP 15.0-13.4 Palmyra-Hooper-MCA-MR					4,000,000	
WIB14701-4-Replace MP 2.7-5.4 Wisconsin Dells-MCA-MR					3.986.329	
MIB11801-4-Replace MP 1.4-3.6 Hancock-MCA					3,376,733	
M521B-20-Replace MP 52.9-53.3 Ogden-Waterloo-MR					3,200,000	
MNB81201-8-Replace MP 1.9-2.4 Austin-MCA-MR					3,090,498	
MNB77501-16-Replace MP 31.7-32.1 MN IC BL-MCA-MR					3,026,881	
IAB56901-12-I-Mods MP 0-15 Decorab RI -MCA-MR					3,024,816	
					0,024,010	

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M581B-18-Replace MP 61.7-62.1 Palmyra-Hooper-MCA-MR					3,022,609	
MNB72901-8-Replace MP 37.0-37.5 Alexandria BL-MR					3,010,514	
IAB67101-10-Replace MP 33.9-34.3 Charles City BL-MCA-MR					3,009,948	
IAB56501-6-Replace MP 19.1-19.3 Vinton BL-MR					3,005,974	
M836B-16-Replace MP 9.3-9.7 Sid Richardson IC-Hobbs Discharge-MCA-MR					3,005,372	
M590D-30-Replace MP 38.9-39.5 Beatrice-Palmyra-MCA-MR					3,002,748	
MNB72901-8-Replace MP 11.9-12.2 Alexandria BL-MCA-MR					2,999,524	
MNB79201-10-Replace MP 9.1-9.8 Winona BL-MCA-MR					2,999,524	
WIB14601-12-Replace MP 18.5-18.9 New Lisbon BL-MCA-MR					2,995,311	
MID 1 90 1-0-Replace MP 0.2-0.0 TOMAIL DL-MR					2,992,077	
W/IB1/601-12-Replace MP 80 3-80 5 New Lisbon BL-MR					2,909,747	
MNB59201-4-Replace MP 24 6-25 5 Paynesville BI -MCA					2,303,747	
IAB54201-6-Replace MP 17.1-17.2 Hampton BL-MCA-MR					2,866.902	
M510B-16-Replace MP 9.1-9.6 Waterloo-Dubuque TBS 4-MCA-MR					2,702,701	
MNB75601-8-Replace MP 101.5-101.9 Willmar BL-MCA-MR					2,499,604	
IAB54001-6-Replace Anamosa-CLS-MR					2,479,366	
MNB61801-4-Replace MP 10-11 Rockford-MCA					2,460,953	
IAB55302-6-Replace MP 1.9-2.0 Clarksville BL-MCA					2,389,085	
IAB61701-6-Replace MP 1.8-2.0 Independence BL-MCA-MR					2,389,085	
IAB63902-6-Replace MP 5.4 Harlan Loop-MCA					2,389,085	
IAB73701-6-Replacement MP 2.2-2.3 Manchester BL-MC-MR					2,389,085	
IAB72002-12-Replace MP 7.8-8.1 Mason City BL-MCA-MR					2,250,000	
SDB91901-6-Replace MP 13.6-13.7 Brookings BL-MCA-MR					2,022,797	
WIB14301-6-Replace Portage-MCA-MR					2,021,345	
WIB12801 Platteville 1 Relocation					1,999,683	
MINB92001-4-Replace Ham Lake-CLS					1,911,268	
MS00C-30-FT-MF 37.2-37.9 Ventula-Familigion C-MCA-MR MER57001-10-Replace MP 7.6-7.9 Sheldon Pwr Plt BL-MCA-MR					1,800,000	
MNB63101-4-Replace MP 20 8-22 1 Marshall-MCA					1,094,075	
IAB44501-6-Replacement MP 34.2-34.5 Lytton BL-MCA-MR					1,551,636	
MNB86201-6-Replace MP 1.8-2.0 Windom BL-MCA-MR					1,517,097	
WIB13401-6-Replace MP 4.9-5.1 Monroe BL-MCA-MR					1,504,165	
MNB75601-10-Replace MP 54.3-54.6 Willmar BL-MCA-MR					1,503,618	
IAB48401-6-Replace MP 5.0-5.2 Osage BL-MCA-MR					1,500,000	
M560B-16-Replace MP 5.29-5.73 S Sioux City-Paullina B-MR					1,500,000	
M560B-16-Replace MP 8.48-8.75 S Sioux City-Paullina B-MR					1,500,000	
IAB67101-10-Replace MP 0.4-0.7 Charles City BL-MCA-MR					1,494,372	
IAB67101-10-Replace MP 5.6-6.1 Charles City BL-MCA-MR					1,494,339	
IAB90901-6-Replace MP 1.7-1.8 Otter Creek BL-MCA					1,437,532	
MNB62501-6-Replace MP 1.2-1.3 Granite Falls BL-MCA					1,437,532	
IAB53101-3-Replace MP 3.42-3.50 Jesup-MCA-MR					1,365,980	
IAB03901-0-Replace MP 5.2-5.4 Harian BL-MCA-MR					1,300,000	
SDB95701-8-Replace MP 13 7-14 0 Pinestone BL-MCA-MR					1,300,000	
IAB63901-6-Replace MP 19 7-19 9 Harlan BL-CL S-MR					1,230,000	
IAB55701-6-Replace MP 14.6-14.7 Tama BL-MCA-MR					1,200,000	
WIB10801-4-Replace MP 21.3-21.5 Bloomer-MCA-MR					1,176,439	
IAB66801-8-Replace MP 2.0-2.3 Cedar Falls BL-CLS-MR					1,052,579	
MNB85701-6-Replace MP 9.5-9.7 Luverne BL-MCA-MR					1,011,398	
MNB77001-6-Replace MP 1.7-2.0 Little Falls-CLS-MR					1,007,141	
IAB50901-4-Replace MP 1.0-1.2 Ackley BL-MCA-MR					1,000,916	
WIB12301-6-Replace MP 58.6-58.7 Richland Center BL-MCA-MR					1,000,916	
MNB78401-6-Replace MP 18.4-18.5 Mora BL-CLS-MR					1,000,399	
IAB40102-4-Replace Cambridge 2nd-CLS					1,000,000	
IAB41201-3-Replace MP 0.09-0.20 Denver BL-MR(L)					1,000,000	
IAB41201-3-Replace MP 11.31-11.66 Denver BL-MR(L)					1,000,000	
IAB41201-3-Replace MP 11.71-11.83 Deriver BL-MR(L)					1,000,000	
					1,000,000	
IAB63901-6-Replace MP 5 03-5 12 Harlan BL -MR(L)					1,000,000	
IAB63902-6-Replace MP 5.05-5.14 Harlan BL-MR(L)					1.000.000	
IAB78501-3-Replace MP 3.39-3.83 Bellevue BL-MR(L)					1,000,000	
MNB58201-2-Replace MP 0.00-0.17 Cold Springs BL-MR(L)					1,000,000	
MNB58801-4-Replace MP 3.25-3.34 Adams-Leroy BL-MR(L)					1,000,000	
MNB60401-4-Replace MP 26.53-26.61 Harmony BL-MR(L)					1,000,000	
MNB63401-4-Replace MP 14.94-15.78 Watkins BL-MR(L)					1,000,000	
MNB63401-4-Replace MP 16.16-16.34 Watkins BL-MR(L)					1,000,000	
MNB64301-3-Replace MP 19.05-19.33 Albany BL-MR(L)					1,000,000	
MNB64301-4-Replace MP 7.12-7.52 Albany BL-MR(L)					1,000,000	
MNB67802-6-Replace MP 0.00-0.60 Dayton 2nd BL-MR(L)					1,000,000	
MNR67802 6 Replace MP 0.05 1 12 Device 2nd PL MP(L)					1,000,000	
					1,000,000	

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MNB86001-12-Replace MP 10.04-10.11 Redwing BL-MR(L)					1,000,000	
NEB41701-6-Replace MP 35.63-35.74 Schuyler BL-MR(L)					1,000,000	
NEB58401-2-Replace MP 0.35-0.48 Dakota City BL-MR(L)					1,000,000	
SDB92001-6-Replace MP 12.55-12.64 Yankton BL-MR(L)					1,000,000	
SDB92002-6-Replace MP 12.72-12.84 Yankton 2nd BL-MR(L)					1,000,000	
WIB14401-4-Replace MP 4.90-5.01 Sauk City BL-MR(L)					1,000,000	
WIB21001-6-Replace MP 5.15-5.98 Frederic BL-MR(L)					1,000,000	
IAB52001-8-Replace MP 4.0-4.2 Savannah BL-MCA-MR					999,841	
IAB62501-10-Replace MP 32.9-33.2 Grinnell BL-MCA-MR					999,841	
IAB66101-10-Replace MP 4.9-5.1 Marshalltown BL-MCA-MR					999,841	
MNB69801-4-Replace MP 5.5-5.7 Winthorp BL-MCA-MR					999,841	
MNB81201-8-Replace MP 6.3-6.6 Austin BL-MCA-MR					999,841	
WIB12301-8-Replace MP 10.5-10.8 Richland Center BL-MCA-MR					999,841	
Cedar Ave FHCA-M460C-26-Replace-MR					997,465	
IAB47601-6-Replace MP 4.9-5.1 Bristow BL-MCA-MR					997,307	
MNB83701-6-Replace MP 8.9-9.2 Springfield BL-MCA-MR					997,307	
SDB92002-10-Replace MP 15.1-15.4 Yankton 2nd BL-MCA-MR					997,307	
WIB14401-4-Replace Sauk City BL-CLS-MR					958.354	
MNB78501-8-Replace MP 9.5 Lake City BL-MCA-MR					958.354	
NEB53001-6-Replace MP 1.8-2.0 Blair BL-MCA-MR					800.000	
MNB64301-4-Replace MP 18 8-19.3 Albany					800.000	
MNB64301-4-Replace MP 0-0.25 Albany					800.000	
IAB44201-12-Replace Sioux City 1A-MR					800.000	
WIB12801-4-Replace MP 0-0.2 Platteville					750,000	
MNB86901-6-Replace Coon Rapids-CLS					750,000	
IAB43501-3-Replace MP 1 7-1 8 Jewell BL-MCA-MR					749 881	
IAB55301-4-Replace MP 1 8-2 0 Clarksville BL-MCA-MR					7/9 881	
MNB78701-4-PT-Circle Pines BI -HCA-MR(I)					745,001	
IAB51201-3-Replace MP 7 5-8 Monona					507 510	
MNB75601-12-PT-MP 17 6-17 8 Willmar BL-MCA-MR					501 611	
MNB90701-6-Replace MP 0 0-0 03 M500C-MNB8301 TO-MCA-MR					/00 021	
MNB87301-6-PT-MP 0 0-2 02 Anoka-Chanlin BL-HCA-MR					301 305	
WIB14301-6-PT-MP 2 00-2 86 Portage BL-HCA-MR					301,305	
WIB14301-6-PT-MP 4 52-4 64 Portage BL-MCA-MR					300,000	
Subtotal: MAOP Reconfirmation	66 199 026	50 324 786	67 582 085	55 666 /12	358 766 433	532 339 715
Pupture Mitigation Valves	00,199,020	50,524,700	07,302,003	55,000,412	550,700,455	552,555,715
RCV/ MIR11601 Lake Linder PL	2 751 976					
RCV MIBTIOUT Lake Linden BL	2,731,070					
RCV M432B Marquelle ML-BBB08-WIM15501	1,338,234	1 062 200				
DOV/M422D Marguette ML DDD09 Seven 1 TDS	923,043	1,002,390				
ACV M432B Marquelle ML-BBB00-Saxol1 1 1BS	130,000	0.000.574				
		2,238,571				
		2,200,500				
RCV IAB74101 Dyersville BL-BYB01 or 02		1,586,396				
RCV MNB95701 Corcaran BL-DYB01		1,493,976	0.000.000			
Chattield MN #1 TBS Relocation			3,260,000			
RCV WIB18692 Bik Rvr Falls 2 and 3 - CYC07			970,821			
RCV WIB18601 Black River Falls - BYB03			970,797			
MNB/3201-LaCrosse-Tomah 16-inch Relocation MP 62				5,060,000	44.050.405	
KUV HUA - Placeholder					11,956,405	
					2,505,697	
RCV HCA 2033					2,444,284	
RCV M521D Ogden-Waterloo D					1,981,483	
RCV M521C Ogden-Waterloo D					100,000	
Subtotal: Rupture Mitigation Valves	4,996,856	8,581,834	5,201,618	5,060,000	18,987,869	37,831,320
Asset Modernization Total	230,295,462	275,715,296	262,838,306	386,960,973	1,932,930,757	2,858,445,332



# **Project Grouping**

- **Compression Replacement**
- LNG Replacement  $\wedge$
- **MAOP** Reconfirmation
- 0 **Pipeline Assessments**
- **Rupture Mitigation Valves** 0
- Underground Storage PHMSA  $oldsymbol{0}$
- Ο Vintage Pipeline Replacement

— NNG F	Pipeline
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26	MAOP Reconfirmation	2025	01144948	01144948: M521C-26-PT-MP 52.8-53.4 Ogden-Waterloo C-HCA-MR
27	MAOP Reconfirmation	2025	01144950	01144950: M460B-20-PT-MP 1.9-2.3 Welcome-Mpls TBS 1P-MCA-MR
28	MAOP Reconfirmation	2025	01144951	01144951: M460B-20-PT-MP 79.6-79.9 Welcome-Mpls TBS 1P-MCA-MR
29	MAOP Reconfirmation	2025	01144952	01144952: M460B-20-PT-MP 97.3-97.7 Welcome-Mpls TBS 1P-MCA-MR
30	MAOP Reconfirmation	2025	01144957	01144957: M560C-24-PT-MP 36.6-36.9 S Sioux City-Paullina C-MCA-MR
31	MAOP Reconfirmation	2025	01144958	01144958: M580B-26-PT-MP 31.8-31.9 Palmyra-Oakland B-MCA-MR
32	MAOP Reconfirmation	2025	01144959	01144959: M580B-26-PT-MP 37.8-38.8 Palmyra-Oakland B-MCA-MR
33	MAOP Reconfirmation	2025	01144964	01144964: MNB75601-12-PT-MP 23.0-23.4 Willmar BL-MCA-MR
34	MAOP Reconfirmation	2025	01145180	01145180: MNB87701-8-PT-MP 19.77-20.28 Elk River BL-MCA-MR
35	MAOP Reconfirmation	2025	01145181	01145181: MNB87701-8-PT-MP 20.41-25.0 Elk River BL-MCA-MR
36	Rupture Mitigation Valves	2025	01127527	01127527: RCV IAB74101 Dyersville BL-BYB01 or 02
37	Rupture Mitigation Valves	2025	01127540	01127540: RCV MNB95701 Corcaran BL-DYB01
38	Rupture Mitigation Valves	2025	01127543	01127543: RCV MNB73201-MNB11901-WIB11901 LaCrosse-Tomah BL
39	Rupture Mitigation Valves	2025	01143153	01143153: RCV MNB75602-16-Willmar C
40	Rupture Mitigation Valves	2025	01145937	01145937: IAB51101 Waukon 1 Relocation

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#### Miles 30 180 240 60 120

# **2025 Asset**

# **Modernization Projects**

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# **Project Grouping**

- **Compression Replacement**
- LNG Replacement  $\triangle$
- MAOP Reconfirmation
- 0 **Pipeline Assessments**
- 0 **Rupture Mitigation Valves**
- Underground Storage PHMSA  $oldsymbol{0}$
- Ο Vintage Pipeline Replacement

— NNG P	ipeline
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MAOP Reconfirmation	2026	01141477		
MAOP Reconfirmation		•••••	01141477: M471B-20-Replace MP 80.9-81.2 Paulilina-Aberdeen-MCA-MR	ł
	2026	01141478	01141478: M471B-20-Replace MP 82.9-83.2 Paullina-Aberdeen-MCA-MR	ć
MAOP Reconfirmation	2026	01141492	01141492: M510B-16-Replace MP 47.9-48.1 Waterloo-Dubuque TBS 4-MCA-MR	1
MAOP Reconfirmation	2026	01141495	01141495: M520B-20-Replace MP 27.9-28.3 Ogden-Ventura-MCA-MR	
MAOP Reconfirmation	2026	01141499	01141499: M521B-20-Replace MP 27.6-28.0 Ogden-Waterloo-MCA-MR	
MAOP Reconfirmation	2026	01141502	01141502: M530C-30-Replace MP 22.3-23.7 Oakland-Ogden-MCA-MR	
MAOP Reconfirmation	2026	01141526	01141526: MNB75601-8-Replace MP 99.8-100.1 Willmar BL-MR	Т
MAOP Reconfirmation	2026	01141529	01141529: MNB77501-16-Replace MP 50.5-50.9 MN IC BL-MCA-MR	
MAOP Reconfirmation	2026	01141541	01141541: WIB11901-10-Replace MP 1.1-1.7 Tomah BL-MR	
MAOP Reconfirmation	2026	01144960	01144960: M630C-26-PT-MP 14.1-14.8 Tescott-Clifton C-MCA-MR	
MAOP Reconfirmation	2026	01144967	01144967: MNB87701-20-PT-MP 19.73-19.77 Elk River BL-MCA-MR	0
MAOP Reconfirmation	2026	XXXXX	MNB11901-WIB11901-16-inch River Crossing HDD-MR(H)	
Rupture Mitigation Valves	2026	01096100	01096100: RCV WIB18692 Blk Rvr Falls 2 and 3 - CYC07	
Rupture Mitigation Valves	2026	01096105	01096105: RCV WIB18601 Black River Falls - BYB03	
Rupture Mitigation Valves	2026	XXXXX	Chatfield MN #1 TBS Relocation	
	MAOP Reconfirmation MAOP Reconfirmation Rupture Mitigation Valves Rupture Mitigation Valves	MAOP Reconfirmation     2026       Rupture Mitigation Valves     2026       Rupture Mitigation Valves     2026       Rupture Mitigation Valves     2026	MAOP Reconfirmation         2026         011414/8           MAOP Reconfirmation         2026         01141492           MAOP Reconfirmation         2026         01141495           MAOP Reconfirmation         2026         01141495           MAOP Reconfirmation         2026         01141502           MAOP Reconfirmation         2026         01141502           MAOP Reconfirmation         2026         01141529           MAOP Reconfirmation         2026         01144960           MAOP Reconfirmation         2026         01144967           MAOP Reconfirmation         2026         xxxxxx           Rupture Mitigation Valves         2026         01096100           Rupture Mitigation Valves         2026         01096105           Rupture Mitigation Valves         2026         xxxxx	MAOP Reconfirmation         2026         011414/8         011414/8:         WMAOP Report Provided and Partial Provided And Partex Partial Provided And Partial Provided And Partial P

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# **2026 Asset**

# **Modernization Projects**

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## **Project Grouping**

- **Compression Replacement**
- LNG Replacement  $\wedge$
- **MAOP** Reconfirmation
- 0 **Pipeline Assessments**
- 0 **Rupture Mitigation Valves**
- Underground Storage PHMSA  $oldsymbol{0}$
- Ο Vintage Pipeline Replacement

— N	ING	Pipe	line
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39	Rupture Mitigation Valves	2027	XXXXX	MNB73201-LaCrosse-Tomah 16-inch Relocation MP 62
38	MAOP Reconfirmation	2027	01145542	01145542: MNB77601-20-Replace MP 0.0-0.28 Minneapolis TBS 1D BL-MR
37	MAOP Reconfirmation	2027	01145532	01145532: M430B-20-Replace MP 10.21-10.55 Carlton-Mesabi Iron Range B-MR
36	MAOP Reconfirmation	2027	01145531	01145531: M430B-20-Replace MP 6.07-6.26 Carlton-Mesabi Iron Range B-MR
35	MAOP Reconfirmation	2027	01145529	01145529: M430B-20-Replace MP 0.2-0.62 Carlton-Mesabi Iron Range B-MR
34	MAOP Reconfirmation	2027	01145528	01145528: IAB71801-8-Replace MP 20.74-20.93 Waverly BL-MR
33	MAOP Reconfirmation	2027	01145527	01145527: IAB71801-8-Replace MP 14.74-14.85 Waverly BL-MR
32	MAOP Reconfirmation	2027	01145526	01145526: IAB71801-8-Replace MP 11.37-11.54 Waverly BL-MR
31	MAOP Reconfirmation	2027	01145524	01145524: IAB71801-10-Replace MP 4.05-4.27 Waverly BL-MR
30	MAOP Reconfirmation	2027	01145523	01145523: IAB66002-10-PT MP 4.13-4.24 Ames 2nd BL-MCA-MR
29	MAOP Reconfirmation	2027	01145522	01145522: IAB66001-10-PT MP 4.79-21.48 Ames BL-HCA-MR
28	MAOP Reconfirmation	2027	01145520	01145520: IAB65601-16-Replace MP 0.02-0.5 Des Moines 1A-MR
27	MAOP Reconfirmation	2027	01145518	01145518: IAB65601 Des Moines 1A Relocation
26	MAOP Reconfirmation	2027	01145144	01145144: MNB75601-24-PT-MP 6.76-7.04 Willmar BL-HCA-MR
20		2021	01140140	

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# **2027 Asset**

120

180

# **Modernization Projects**

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Miles

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