



December 2022

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 2022, Northern is expected to have completed \$1.2 billion of Asset Modernization investment from the beginning of the program. Over the next ten years, Northern is expected to invest another \$2.3 billion, for a total overall investment of over \$3.5 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 five broad project classifications: (1) Pipeline Assessment; (2) Compression Replacement; (3) LNG Equipment Replacement; (4) Underground Storage Integrity; and (5) Vintage Pipeline Replacement.

The program impacts Northern's operations and maintenance (O&M) expenses as well. While some of the 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.

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 14,300 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. Significant expansion 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 equipment 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 over the last seven years include:

- Replacing compressor units at seven stations: the Brownfield, Texas; Spraberry, Texas; Farmington, Minnesota; Beatrice, Nebraska; Ogden, Iowa; Mullinville, Kansas; and Bushton, Kansas compressor stations.
- Modernizing equipment at Northern's liquefied natural gas (LNG) storage facilities in Garner, Iowa and Wrenshall, Minnesota. Northern replaced the molecular sieve vessels in 2015 and 2016 at the Garner and Wrenshall facilities respectively. As part of an ongoing program to replace obsolescent, original equipment at the Garner facility, Northern also replaced the 480-volt motor control center in 2022, which was installed in 1978. Plans for 2023 include replacement of the 4,160-volt motor control center and the cold box compressor unit.
- Abandoning approximately 580 miles of 1930s vintage A-mainline from Bushton, Kansas to Ogden, Iowa and Palmyra, Nebraska to Sioux Falls, South Dakota as part of the vintage pipeline replacement program.
- Modifying pipelines to make nearly 2,100 miles of large-diameter pipe inspectable, increasing the number of miles modified per year from 164 miles in 2016, to 342 miles in 2022, averaging 361 miles a year since 2019.

While these efforts have maintained the reliability of Northern's system, Northern must continue to implement broader replacement programs for specific Asset Modernization needs.

Asset Modernization as a category was created in 2016 to capture and characterize the significant increase in costs related to the modernization projects. Northern's Asset Modernization program was designed using FERC's policy statement on Cost Recovery Mechanisms for Modernization of Natural Gas Facilities, and it necessarily represents a significant expansion of Northern's historical maintenance and upgrade programs due to the age of the system and updated safety laws and regulations. The costs are captured in the following budget summary categories:

- Pipeline Assessment
- Maximum Allowable Operating Pressure Reconfirmation
- Remote Mitigation Valves
- Compression Replacement
- LNG Equipment Replacement
- Underground Storage Integrity
- Vintage Pipeline Replacement

The Maximum Allowable Operating Pressure (MAOP) Reconfirmation and Remote Mitigation Valve programs are new categories within Northern's Asset Modernization project portfolio. These categories have been added to better capture and understand additional facets of Northern's modernization efforts and are further explained in sections below.

Northern must continue with this Asset Modernization effort to ensure its industry-leading service reliability will not suffer due to increased outage quantities and duration, as well as to comply with increased legal and regulatory requirements as further discussed below. In addition, Asset Modernization is required to ensure continued pipeline integrity and avoid unacceptable pipeline incidents. The industry in general, including distribution utilities, have undertaken similar modernization efforts to replace vintage facilities such as cast-iron pipelines, which pose similar threats to service reliability and public safety.

Capital Expenditures Summary

Northern is completing \$293 million of Asset Modernization projects in 2022, compared with \$290 million in projects completed in 2021. Asset Modernization projects totaling \$2.3 billion are planned from 2023 through 2032, approximately \$327 million greater than the 10-year plan reported in 2021, due to the addition of MAOP reconfirmation projects.

Asset Modernization does not completely replace all vintage facilities on the Northern system, as a majority of the approximately 14,300 miles of pipeline and 184 compressor units will continue to be maintained through more traditional means. The Asset Modernization program only addresses facilities and systems at the end of their useful lives or where replacement or inspections are required by federal regulations.

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 and expanding assessment requirements to include the newly defined moderate consequence areas. The rule expands pipeline integrity assessment requirements by defining moderate consequence areas and requiring 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 to meet requirements of the Mega Rule.

- (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 existing PHMSA MAOP Regulations and other regulations.

As shown in Exhibit No. 1, Northern plans to invest \$554 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 that materializes 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 requirement.

MAOP Reconfirmation

MAOP reconfirmation is a new classification of Asset Modernization. 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, reducing pressure, 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. In 2019, engineering analysis concluded, of approximately 473 miles of pipeline within high consequence areas, moderate consequence areas, and Class 3 locations, 130 miles of pipe required re-establishment of MAOP and to-date, Northern has approximately 93 miles remaining to re-establish.

As shown in Exhibit No. 1, Northern plans to invest \$339 million in MAOP replacement projects during the next 10 years. Per the PHMSA rule, half of these projects must be completed by 2029, with the entire program complete in 2034.

Remote Mitigation Valves

On April 8, 2022, PHMSA revised the Federal Pipeline Safety Regulations applicable to most newly constructed and entirely replaced onshore gas transmission pipelines with

diameters of 6-inches or greater. In the revised regulations, PHMSA requires installation of remote 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 mitigate public safety and environmental consequences. The final rule establishes requirements for remote mitigation valves spacing, maintenance and inspection and applies to construction after April 10, 2023.

Northern is reviewing planned projects to ensure compliance with the new rule. Currently, Northern anticipates spending approximately \$2.4 million per year on projects to install RCVs on existing lines in consequence areas. These projects will be ongoing as Northern assesses risks and opportunities to mitigate the risks on the existing system. Remote mitigation valves will also be installed as required on new pipeline segments and included with the original project (excluded from Asset Modernization).

Compression Replacement

The Compression Replacement category represents the costs to replace vintage compressor units throughout the system, with the priority placed on units based on vintage, criticality to pipeline operations, historical reliability concerns and outlook for future maintainability. The program also pertains to critical compression support auxiliary equipment and infrastructure.

Northern has 99 compression units between 50 and 75 years old. As these facilities reach obsolescence, parts become more difficult – if not impossible – to obtain. In fact, Northern has had to manufacture many of its own replacement parts for obsolete units. Unexpected failures can lead to longer outages while parts are located or fabricated, negatively impacting service to customers. Northern’s compression maintenance costs have increased substantially as a consequence of an aging fleet of compressor units.

To fulfill customer commitments, it is paramount that Northern’s compression fleet maintain high reliability. With over half of these units reaching 80-years old and some 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.

The current Asset Modernization plan includes replacement of up to 45 units over the next ten years. This represents 45% of the 99 vintage compression units and approximately 24% of Northern’s 184 total compression units. Fifteen units have been replaced under this program since 2016

The units targeted for modernization are spread across Northern’s system and are included in both the field and market areas. As a result, many units on the main trunks of the system have replacement plans in the near-term or have already been replaced. Vintage units along the main corridor of Northern’s pipeline system at Brownfield, Texas; Spraberry, Texas; Bushton, Kansas; Mullinville, Kansas; Beatrice, Nebraska; Ogden, Iowa; and Farmington, Minnesota, have been or will be replaced in the near-term to ensure continued reliable service to customers and the public.

Specifically, the Beatrice, Nebraska; Mullinville, Kansas; and Bushton, Kansas, units were replaced in 2016, 2019 and 2020 respectively, to eliminate the last three General Electric LM 1500 units on the Northern system. These obsolete units were becoming increasingly unreliable and difficult to effectively repair, were nearing the end of their useful life for critical rotating components and were only supported by one service entity in the industry.

The Ogden, Iowa, early 1950s vintage horizontal reciprocating compressor units, replaced in 2021, were also obsolete and becoming unreliable. These units were generally unsupported within the industry and 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 through its robust maintenance program and by machining obsolete parts, as needed, before replacing them.

In addition to maintenance and reliability concerns, vintage units also require replacement to comply with more rigorous environmental regulations. For example, the Farmington, Minnesota, early 1960s vintage reciprocating Unit Nos. 1-5 were replaced in 2021, as the station would otherwise fail to meet current emissions limits set by the Minnesota Pollution Control Agency.

Two early 1950's vintage units at the Spraberry, Texas, compressor were replaced in 2022 due to reliability and unit performance concerns. An early 1960's vintage General Electric Frame 3 turbine at the Brownfield, Texas, compressor station was also replaced in 2022. This replacement will reduce service reliability risk to customers at a critical location and give 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 like turbines that remain in-service across the Northern compression fleet.

As shown in Exhibit No. 1, Northern plans to invest \$567 million in Compression Replacement projects during the next 10 years. Northern will replace at least two units 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. Such units would present significant reliability risk to Northern's customers, as equipment of this vintage would be very difficult to maintain, repair, and overhaul given end of useful life of critical components not normally or easily replaced, obsolescence of spare parts, and lack of industry service options. This level of investment also allows Northern to continue to modernize its compression fleet to ensure any future federal or state emissions compliance mandates can be achieved in a timely fashion. This program will continue beyond the 10-year outlook as compressor units age and are replaced.

LNG Replacement

Northern operates peak shaving 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 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 1970's, 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.

Also, as part of the ongoing modernization and replacement of original equipment at the Garner facility, the 4160-volt motor control replacement project will be completed in 2023 with the cold box heat exchanger and the noted refrigeration compressor replacement. The 480-volt motor control replacement project was completed in 2022.

At the Wrenshall LNG facility, vaporizer replacement is planned for 2025. 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 reliable and more costly to maintain. The new replacement LNG vaporizers will help to reduce maintenance costs as well as improve vaporizer reliability. Added to the 10-year plan is the replacement in 2026 of the current 5,900 gallon liquid nitrogen storage tank and associated vaporizer, both original to the facility. 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 plans to invest \$58 million in LNG Replacement projects during the next 10 years. These 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 new PHMSA rule. In 2020, the Safety of Natural Gas Underground Storage Final Rule became effective. This rule gave PHMSA new jurisdiction over the underground storage field wells and reservoirs. The new 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 also created the Underground Storage Integrity capital expenditure program.

Under its reservoir integrity management plan required per this rulemaking, Northern will complete additional observation and natural gas withdrawal wells in the Redfield, Iowa, underground storage field. Additionally, Northern will establish and maintain an undisturbed buffer zone around the storage field to further ensure field integrity. Northern completed the installation of a withdrawal well in 2020 and in 2022.

A notable addition to the 10-year Underground Storage Asset Modernization program is the plan to add a natural gas dehydration and hydrogen sulfide treatment facility to the Lyons, Kansas underground storage system. 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. A new facility located in Lyons, Kansas 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, Kansas 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 health and safety.

As shown in Exhibit No. 1, Northern plans to invest \$60 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

The Vintage Pipeline Replacement projects will replace existing 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 650 miles of vintage mainline and branch line as part of this program, with an additional 330 miles of mainline planned for abandonment through 2029.

Mechanically coupled pipeline joint technology, originating in 1891, and acetylene-welded 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 also used in the initial construction of Northern's system. By 1933, most cross-country pipelines were being constructed with the superior-strength electric resistance arc-welded girth joints, as mechanically coupled and acetylene-welded 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; they cannot be inspected with in-line inspection tools nor hydrostatically tested without incurring significant quantities of leaks. Additionally, much of this pipe is uncoated and is therefore susceptible to external corrosion.

While Northern has successfully operated these facilities for nearly 90 years, these pipelines have reached the end of their useful life. As shown in Exhibit No. 1, Northern plans to invest \$669 million in Vintage Pipeline Replacement projects during the next 10 years. This program is anticipated to continue for approximately 15 years, with large-diameter mainlines being replaced within the next seven years and the program's focus shifting to branch lines and ultimately small-diameter pipelines. The total program cost is currently estimated at \$1.2 billion through 2032 although updates on the total will be provided as out-year projects are more fully prioritized.

In addition to increasing system reliability, the Vintage Pipeline Replacement category is also creating additional system efficiencies. For example, with the additional compression installed at the Beatrice, Nebraska, compressor station in 2021 to replace the capacity reduction associated with adjacent pipeline retirement, there is an expected \$0.7 million decrease in compressor fuel expense due to the resulting system optimization that reduced the need for compressor use at the Palmyra, Nebraska, compressor station.

Conclusion

In summary, Northern will invest approximately \$2.3 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	2022	2023	2024	2025	2026 - 2032	10-Year 2023 - 2032	Regulatory Authority
Pipeline Assessments							
M580D Glenwood-Oakland ILI Mods	11,972,235						Blanket
M510B-16"-I-Mods22 Waterloo-Dubuque-MCA	10,609,699	6,304,855					Prior Notice
M771B Dumas-to-Sunray ILI Modifications El Paso Dumas	5,426,982	3,110,820					Blanket
M630E-30"-I-Mods22 Tescott-Clifton E-MCA	4,347,876						Blanket
M532C Galena to Janesville ILI Mods Wisconsin	4,169,387						Blanket
M815B Gains County Cross Over to Brownfield ILI Modifications	3,298,369						Blanket
Austin 1 Relocation	1,029,829						Blanket
M810B Brownfield to Plainview ILI Mods	784,268						Blanket
MNB86701-8"-I-Mods22 Stillwater-CL3	568,712	3,223,009					Blanket
M680D Stairs and Platforms	463,794						Blanket
M530C-30"-I-Mods21 Oakland-Ogden C-MCA - Phase 2	394,306						Blanket
WIB18101-6"-Replace MP 23.5-24.3 Viola-MCA	371,349						Blanket
SDB92601 Huron BL Moderate Consequence Area Replacement	320,587	1,092,931					Blanket
MNB66801 Grand Rapids BL Mods	317,245	5,674,047					Blanket
M590E-30"-I-Mods23 Beatrice-Palmyra E-MCA	204,381	11,002,686					Blanket
M520C Ogden-to-Ventura In-line Inspection Modifications Ogden	159,991	11,362,223	8,412,096				Prior Notice
M530D-30"-I-Mods23 Oakland-Ogden D-MCA	112,410	9,814,644					Blanket
M440B North Branch-to-Carlton ILI Modifications Carlton Receiver	41,448	1,698,401					Blanket
M836B-16"-I-Mods24 Sid Richardson-Hobbs-MCA				9,196,134			Blanket
Ventura-Faribault D-MCA				7,237,729			Blanket
MNB65101-8"-I-Mods MP 0-16.5 Morris-MCA				5,941,312			Blanket
SDB92002-8"-H-Mods MP 29.4-29.8 Yankton 2nd BL-MCA				4,712,461	6,414,696		Blanket
M640C-24"-Replace MP 30.0-30.6 Bushton-Tescott-MCA				3,489,114			Blanket
NEB43201-12"-H-Mods MP 0-0.03 OPPD BL-MCA				632,156			Blanket
WIB13401-4"-H-Mods MP 0-5 Monroe-MCA				609,313			Blanket
M500B-26"-I-Mods25 Ventura-Faribault B-MCA				16,535,716			Prior Notice
Ventura-Faribault C-MCA				15,809,528			Prior Notice
M520D-30"-I-Mods25 Ogden-Vent D-MCA				6,198,168			Blanket
NEB52902-10"-I-Mod25 MP 0-28 Columbus 2nd-MCA				5,691,292			Blanket
M119B-20"-I-Mods25 Ogden-Redfield B-MCA				4,785,384			Blanket
M119C-20"-I-Mods25 Ogden-Redfield C-MCA				3,830,114			Blanket
M471B-12"-I-Mods MP 76-159 Aberdeen 12-inch-MCA					14,292,964		Prior Notice
MNB73202-12"-I-Mods MP 0-43.8 lacrosse BL-MCA					4,945,364		Blanket
M855C-30"-I-Mods26 Coyanosa-Kermit-MCA					4,743,078		Blanket
IAB60501-16"-I-Mods MP 0-3.5 NGPL Interconnect-MCA					7,527,534		Blanket
MNB75601-10"-I-Mods MP 50.6-79.4 Willmar BL-MCA					4,051,939		Blanket
MNB67702-4"-H-Mods MP 3.27-6.3 St Michael 2nd-MCA					522,226		Blanket
M580C-30"-I-Mods27 Palmyra-Oakland C-MCA					17,070,758		Prior Notice
M850B-16"-I-Mods MP 0-16 Andrews-MCA					7,695,943		Blanket
WIB24001-16"-I-Mods27 Madison-MCA					4,163,120		Blanket
MNB63101-4"-Replace MP 20.8-22.1 Marshall-MCA					3,818,964		Blanket
MNB64301-4"-Replace MP 18.8-19.3 Albany					3,818,964		Blanket
MNB59201-6"-I-Replace MP 0.0-1.2 Paynesville-MCA					3,818,964		Blanket
WIB14701-4"-H-Mods MP 0-8.5 Wisconsin Dells					502,658		Blanket
M530B-26"-I-Mods28 Oakland-Ogden B-MCA					18,023,402		Prior Notice
M581B-20"-Replace MP 13.0-13.4 Palmyra-Hooper-MCA					3,334,613		Blanket
MNB83701-6"-I-Mods MP 8.9-9.2 Springfield BL-MCA					9,058,352		Blanket
TXG54801-12"-I-Mods MP 0-18.9 Shamrock-MCA					7,032,660		Blanket
IAB47601-6"-I-Mods MP 0-11.9 Bristow BL-MCA					4,020,699		Blanket
M580B-26"-Replace MP 37.9-38.7 Palmyra-Oakland-MCA					3,136,781		Blanket
M450B-24"-Replace MP 59.7-61.3 Farmington-NB					3,024,952		Blanket
M500C-30"-Replace MP 39.0-39.5 Ventura-Farmington-MCA					3,024,952		Blanket
M521B-20"-Replace MP 27.6-28.0 Ogden-Waterloo-MCA					3,024,952		Blanket
M520B-20"-Replace MP 27.9-28.3 Ogden-Ventura-MCA					3,024,952		Blanket
IAB62501-10"-I-Mods MP 7.9-50 Grinnell-MCA					2,875,192		Blanket
IAB47601-6"-Replace MP 4.9-5.1 Bristow BL-MCA					2,498,737		Blanket
MNB67802-6"-H-Mods MP 0-1.0 Dayton 2nd BL-MCA					1,437,596		Blanket
M590D-30"-I-Mods25 Beatrice-Palmyra D-MCA				9,763,228			Blanket
WIB18101-6"-Replacement Viola	7,057,192						Blanket
WIB11901-8"-Replace MP 10.6-11.0 Tomah BL-MCA	6,975,205						Blanket
WIB11901-6"-Replace MP 26-45 Tomah 6-inch	6,938,838						Blanket
M580D-30"-I-Mods MP 0-30 Palmyra-Oakland D-MCA	1,611,730	6,362,897					Blanket
M500B-26"-Replace MP 85.7-86.1 Ventura-Farmington	571,060						Blanket
IAB67101-10"-Replace MP 5.6-6.1 Charles City BL-MCA	379,440						Blanket
M805B Plainview to Claude ILI Mods	331,707						Blanket
M600B Clifton-Beatrice	324,007						Blanket
M670C Mullinville-Macksville	216,933						Blanket
M660B Macksville-Bushton	134,562						Blanket
IAB92801 ILI Mods Launcher	105,128						Blanket
M795B Claude to Pampa ILI Mods	104,769						Blanket
SDB92002-10"-Replace MP 15.1-15.4 Yankton 2nd BL-MCA	72,900					3,590,858	Blanket
MNB77001-6"-Replace MP 1.7-2.0 Little Falls		907,839					Blanket
M883B-20"-Replace MP 17.3-17.6 Mitchell-Plymouth-MCA		667,191					Blanket
M471B-20"-Replace MP 82.9-83.2 Paullina-Aberdeen-MCA		451,888					Blanket
WIB11901-10"-Replace MP 1.1-1.7 Tomah BL						5,966,701	Blanket
M670D-30"-X-I-Mods25 Mullinville-Macksville D				9,112,506			Blanket
M520B-26"-X-I-Mods26 Ogden-Vent B					22,341,914		Prior Notice
M710B-20"-X-I-Mods26 Holcomb-Kalvesta B					9,763,210		Blanket
OKG33902-16"-X-I-Mods26 Hemphill Loop					8,587,976		Blanket
MNB83702-8"-Replace MP 8.9-9.2 Springfield 2nd BL-MCA					3,134,239		Blanket
M580B-26"-I-X-Mods Palmyra-Oakland B Iowa-Replace Bridge					9,380,758		Blanket
M660E-30"-X-I-Mods27 Macksville-Bushton E					8,194,013		Blanket
M610B-20"-X-I-Mods27 Albert-Bushton					7,986,485		Blanket
SDB95701-8"-Replace MP 13.7-14.0 Pipestone BL-MCA					4,610,799		Blanket
M560C-24"-I-Mods MP 3.4-4.6 SSC-Paullina C					19,436,866		Prior Notice
M600D-30"-X-I-Mods28 Clifton-Beatrice D					18,319,319		Prior Notice
WIB11901-10"-Replace MP 3.9-4.2 Tomah BL-MCA					6,182,211		Blanket

Exhibit 1
Asset Modernization Project Detail

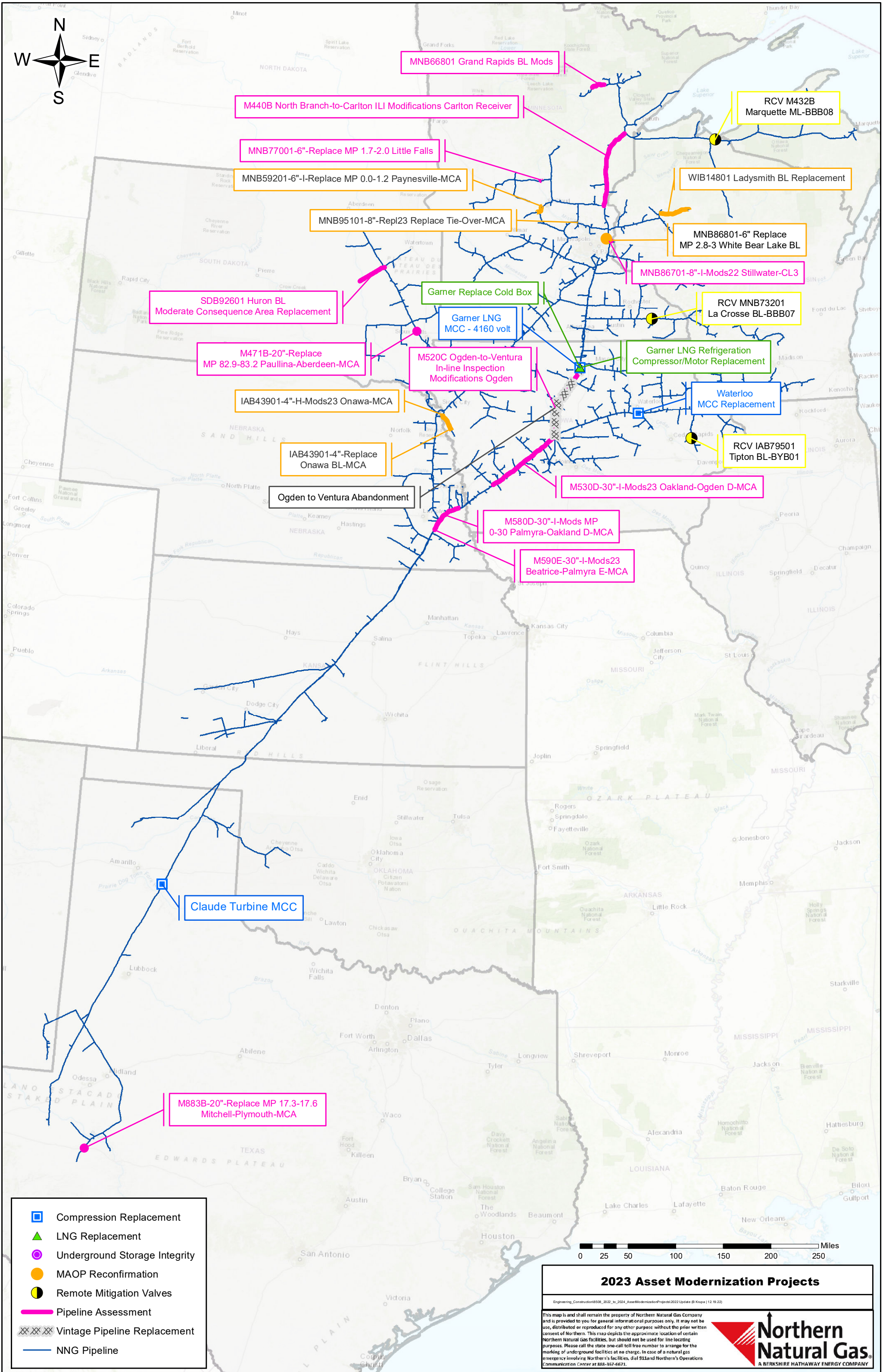
Project Description	2022	2023	2024	2025	2026 - 2032	10-Year 2023 - 2032	Regulatory Authority
M730B-24"-I-Mods29 Sublette-Fowler					12,083,309		Blanket
M725B-24"-I-Mods29 Fowler-Mullinville					7,681,509		Blanket
M470B-16"-Replace MP 36.7-37.1 Paullina-Welcome-MCA					441,353		Blanket
TXG53203-16"-I-Mods Hemphill CO #2 Loop					7,611,754		Blanket
TXG52002-12"-I-Mods Shamrock GL Loop					12,500,628		Blanket
WIB10801-4"-Replace MP 21.3-21.5 Bloomer-MCA					4,669,263		Blanket
MNB95101-8"-Repl23 Replace Tie-Over-MCA					3,663,068		Blanket
MNB92601-4"-Replace Ham Lake					3,532,462		Blanket
MNB77501-16"-Replace MP 50.5-50.9 MN IC BL-MCA					2,968,157		Blanket
MNB65101-6"-Replace Morris					758,627		Blanket
M500B-24"-Replace MP 64.1-64.6 Ventura-Farmington-MCA					505,751		Blanket
Approved Plan for A2 - 2030					129,791		Blanket
Approved Plan for A2 - 2031					17,954,405		Prior Notice
MNB77501-16"-Replace MP 31.7-32.1 MN IC BL-MCA					2,937,500		Blanket
Approved Plan for A2 - 2032					29,083,038		Prior Notice
Subtotal: Pipeline Assessments	68,928,518	61,672,784	40,230,316	71,725,936	380,920,973	554,550,008	
Compression Replacement							
Brownfield Compressor Replacement	22,514,327						2.55(b)
Paullina 1-5 Replacement Compression	25,560,731	9,575,779					2.55(b)
Spraberry Unit 15 Installation	9,072,011						2.55(b)
Ogden Horizontal Compression Replacement	4,663,846						2.55(b)
AM-Alexandria MCC	1,353,667						2.55(a)
Hubbard MCC - 480 Volt	834,033						2.55(a)
Farmington Horsepower Replacement	603,321						2.55(b)
LaCrescent 4160 MCC Replacement	497,771						2.55(b)
LaCrescent 480 MCC Replacement	181,513						2.55(a)
Bushton Compressor Unit 33	177,409						2.55(b)
Mullinville Compressor Unit 27	127,110						2.55(b)
Waterloo MCC Replacement		1,017,035					2.55(b)
Claude Turbine MCC		551,662					2.55(a)
North Branch 1-4 Replacement Compression			34,618,443				2.55(b)
Beaver 14-21 Replacement Compression			27,633,894	29,273,228			2.55(b)
Bushton 26-31 Replacement Compression				29,578,158			2.55(b)
Spraberry 8 and 10 Replacement Compression				14,972,826			2.55(b)
Bushton 23-25 Replacement Compression					30,130,987		2.55(b)
Macksville 1-4 Replacement Compression					59,571,258		2.55(b)
Ventura 14-15 Replacement Compression					29,601,805		2.55(b)
Clifton 27-29 Replacement Compression					60,201,395		2.55(b)
Wrenshall Replacement Compression					59,984,310		2.55(b)
Beatrice 24-25 Replacement Compression					59,609,166		2.55(b)
Approved Plan for A3 - 2031					59,627,812		
Approved Plan for A3 - 2032					61,566,495		
Subtotal: Compression Replacement	65,585,739	11,144,476	62,252,337	73,824,211	420,293,227	567,514,252	
LNG Replacement							
Garner LNG Refrigeration Compressor/Motor Replacement	3,772,087	25,610,289					Prior Notice
Garner LNG MCC - 480 volt	3,324,950						2.55(a)
Garner LNG MCC-4160 Volt	218,291	7,606,118					2.55(b)
Garner Replace Cold Box	1,231,257	5,158,477					2.55(b)
Wrenshall Vap Replacements			1,027,632	11,026,918	3,993,314		2.55(b)
Wrenshall Liquid Nitrogen Tank Replacement					325,559		2.55(b)
Wrenshall Reactivation Gas Cooler Replacement					1,208,721		2.55(b)
Wrenshall Purification Filter Replacement					1,616,674		2.55(b)
Subtotal: LNG Replacement	8,546,586	38,374,885	1,027,632	11,026,918	7,144,268	57,573,703	
Underground Storage PHMSA							
Redfield Broderick 16 New Well	7,791,288						Prior Notice
Redfield GSLA Acquisitions	384,613						Non-Jurisdictional
Lyons UGS Gas Storage Lease Acquisitions	313,000						Non-Jurisdictional
Lyons Underground Storage Treatment Facility	102,476				38,839,275		Prior Notice
Redfield - New I/W Wells					3,960,809		Prior Notice
Redfield - New I/W Wells					3,732,373		Prior Notice
Redfield - New I/W Wells					3,979,676		Prior Notice
Redfield - New I/W Wells					3,967,261		Prior Notice
Redfield - New I/W Wells					5,259,249		Prior Notice
Approved Plan for A5 - 2032					208,377		
Subtotal: Underground Storage	8,552,499				59,947,019	59,954,186	
Vintage Pipeline Replacement							
South Sioux City to Sioux Falls Abandonment	70,763,859	2,347,325					FERC 7(b)/(c)
Ventura to Farmington Abandonment	31,532,165	1,949,284	112,833	6,889,105	102,250,664		FERC 7(b)/(c)
Lake City Abandonment	13,888,089						FERC 7(b)/(c)
Plains System Line Replacement	13,105,906						Blanket
Clifton to Palmyra Abandonment	3,397,705						Blanket
Ogden to Ventura Abandonment	2,829,627	37,419,810	1,977,036		772,429		FERC 7(b)/(c)
Auburn Branch Line Abandonment	2,035,179						Prior Notice
Des Moines Branch Line Abandonment	1,546,997			38,241,580			FERC 7(b)/(c)
Council Bluffs Abandonment	434,397						Prior Notice
Copeland BL Tie-Over	430,000						Blanket
Palmyra to Ogden Abandonment	387,239						Prior Notice
Bushton to Clifton Abandonment	304,634						FERC 7(b)/(c)
Branch Lines Rest Blocks	189,783						2.55(a)
Ford County Irrigation Line - KSB30301 Abandonment			1,325,661				Blanket
Columbus Vintage Pipe Replacement - NEB52901					20,139,328		Blanket
Mason City Vintage Pipe Replacement - IAB72001					16,893,048		Blanket
Fort Dodge Vintage Pipe Replacement - IAB69401					7,457,663		Blanket
Beemer Vintage Pipe Replacement - NEB55001					18,430,988		Blanket
Blair Vintage Pipe Replacement - NEB53001					29,712,614		Blanket
Wayne Vintage Pipe Replacement - NEB57001					40,832,160		Prior Notice

Exhibit 1
Asset Modernization Project Detail

Project Description	2022	2023	2024	2025	2026 - 2032	10-Year 2023 - 2032	Regulatory Authority
Yankton Vintage Pipe Replacement - SDB92001					48,933,290		Prior Notice
Schuyler Vintage Pipe Replacement - NEB41701					17,946,137		Blanket
Ashgrove Vintage Pipe Replacement - NEB47701					15,369,513		Blanket
HDI Yankton Vintage Pipe Replacement - SDB92011					6,770,173		Blanket
Mankato Vintage Pipe Replacement - MNB83001					52,453,339		Prior Notice
Bancroft Vintage Pipe Replacement - NEB56201					3,201,517		Blanket
New Ulm Vintage Pipe Replacement - MNB88301					40,189,429		Prior Notice
Britt Vintage Pipe Replacement - IAB71301					23,433,517		Blanket
Belle Plaine Vintage Pipe Replacement - MNB84401					8,430,245		Blanket
Worthington Vintage Pipe Replacement - MNB87001					30,794,397		Blanket
Irrigation Meter Supply Line Vintage Pipe Replacement - KSB72201					19,564,815		Blanket
Hawarden Vintage Pipe Replacement - SDB94301					15,472,165		Blanket
Audubon Vintage Pipe Replacement - IAB63001					15,273,423		Blanket
Avoca Vintage Pipe Replacement - IAB62301					14,373,441		Blanket
Northwood Vintage Pipe Replacement - IAB73501					5,311,451		Blanket
Mullinville to Sublette Abandonment			1,407,048		16,820,230		Blanket
Subtotal: Vintage Pipeline Replacement	140,942,595	47,570,775	8,945,423	37,898,106	574,876,966	669,291,270	
MAOP Reconfirmation							
WIB14801 Ladysmith BL Replacement	30,266	3,333,892			8,487,096		Blanket
MNB95101-8"-Repl23 Replace Tie-Over-MCA	9,579	286,124					Blanket
MNB86801-6"-Replace MP 2.8-3.0 White Bear Lake BL	7,303	1,509,270					Blanket
MNB59201-6"-I-Replace MP 0.0-1.2 Paynesville-MCA	7,261	2,883,355					Blanket
IAB43901-4"-Replace MP 5.2-5.4 Onawa BL-MCA	852	1,351,325					Blanket
IAB43901-4"-Replace Onawa BL-MCA		609,407					Blanket
IAB63902-6"-Replace MP 5.4 Harlan Loop-MCA			9,052,544				Blanket
WIB11901- Tomah BL					6,991,924		Blanket
MIB11801-4"-Replace MP 1.4-3.6 Hancock-MCA					6,127,058		Blanket
MNB59201-4"-Replace MP 24.6-25.5 Paynesville BL-MCA					4,078,818		Blanket
WIB14601- New Lisbon BL					3,911,565	2,995,446	Blanket
IAB56501-6"-Replace MP 19.1-19.3 Vinton BL					2,704,681		Blanket
WIB13401-6"-Replace MP 4.9-5.1 Monroe BL-MCA					1,489,673	3,989,406	Blanket
IAB90901-6"-Replace MP 1.7-1.8 Otter Creek BL-MCA					1,488,808		Blanket
MNB65101-6"-Replace Morris-CLS			860,841				Blanket
M511B-20"-Replace MP 8.7-9.1 Dubuque TBS 4-Galena-MCA				15,555,233			Blanket
M511B-20"-Replace MP 6.5-6.7 Dubuque TBS 4-Galena-MCA				13,714,492			Blanket
M510B-16"-Replace MP 9.1-9.6 Waterloo-Dubuque TBS 4-MCA				7,713,430			Blanket
M570B-18"-Replace MP 59.5-60.9 Hooper-Sioux City					4,764,239		Blanket
M580C-30"-Replace MP 30.6-31.2 Palmyra-Oakland-MCA					4,764,237		Blanket
MNB87001-6"-Repace Replace Worthington					3,279,575		Blanket
M530C-30"-Replace MP 22.3-23.7 Oakland-Ogden-MCA					2,003,936		Blanket
M860B-30"-Replace MP 16.4-16.8 Spraberry-Florey-MCA					2,003,936		Blanket
M530B-26"-Replace MP 22.1-23.2 Oakland-Ogden-MCA					2,003,936		Blanket
MNB75601-10"-Replace MP 54.3-54.6 Willmar BL-MCA					1,502,952		Blanket
IAB71801-10"-I-Mods MP 0-7.5 Waverly BL-MCA					1,489,433		Blanket
IAB79501-6"-Replace MP 1.1-3.5 Tipton BL					1,489,433		Blanket
IAB73701-6"-Replacement MP 2.2-2.3 Manchester BL-MC					1,489,433		Blanket
IAB56901-12"-I-Mods MP 0-15 Decorah BL-MCA					1,001,968		Blanket
M590C-26"-Replace MP 39.1-39.6 Beatrice-Palmyra-MCA					4,743,418		Blanket
M590D-30"-Replace MP 38.9-39.5 Beatrice-Palmyra-MCA					4,743,418		Blanket
M590B-24"-Replace MP 38.5-39.1 Beatrice-Palmyra-MCA					4,741,144		Blanket
WIB14701-4"-Replace MP 2.7-5.4 Wisconsin Dells-MCA					3,986,508		Blanket
MNB83701-6"-Replace MP 8.9-9.2 Springfield BL-MCA					8,002,394		Blanket
MNB78401-6"-Replace MP 3.1-3.4 Mora BL-MCA					4,980,535		Blanket
MNB78401-6"-Replace MP 18.4-18.5 Mora BL					3,482,579		Blanket
MNB63701-6"-Replace MP 0-0.1 Hanna Mining BL-MCA					9,961,134		Blanket
M580B-26"-Replace MP 30.6-31.2 Palmyra-Oakland-MCA					3,480,567		Blanket
M836B-16"-Replace MP 37.8-38.0 Sid Richardson IC-Hobbs Discharge-MCA					3,002,883		Blanket
M836B-16"-Replace MP 9.3-9.7 Sid Richardson IC-Hobbs Discharge-MCA					3,002,883		Blanket
M581B-18"-Replace MP 61.7-62.1 Palmyra-Hooper-MCA					2,001,922		Blanket
M450B-24"-Replace MP 48-49.3 Farmington-NB-MCA					6,264,585		Blanket
IAB61701-6"-Replace MP 1.8-2.0 Independence BL-MCA					3,024,952		Blanket
WIB12801-4"-Replace MP 0-0.2 Platteville					3,495,205		Blanket
NEB57901-10"-Replace MP 7.6-7.9 Sheldon Pwr Plt BL-MCA					1,694,749		Blanket
IAB48401-6"-Replace MP 5.0-5.2 Osage BL-MCA					997,351		Blanket
SDB92002-10"-Replace MP 15.1-15.4 Yankton 2nd BL-MCA					997,351		Blanket
M520C-30"-Replace MP 27.9-28.5 Ogden-Ventura-MCA					9,050,988		Blanket
MNB86701-8"-Replace MP 0.0-2.9 Stillwater Oak Park BL					6,002,663		Blanket
MNB87501-6"-Replace MP 3.4-3.6 Sherburn TBS #2 BL-MCA					4,045,774		Blanket
MIB11801-4"-Replace MP 1.4-3.6 Hancock-MCA					3,378,240		Blanket
MNB59201-4"-Replace MP 24.6-25.5 Paynesville BL-MCA					2,983,514		Blanket
MNB61801-4"-Replace MP 10-11 Rockford-MCA					2,462,269		Blanket
SDB91901-6"-Replace MP 13.6-13.7 Brookings BL-MCA					2,022,887		Blanket
M520C-30"-Replace MP 49.6-50.0 Ogden-Ventura-MCA					1,989,228		Blanket
IAB44501-6"-Replacement MP 34.2-34.5 Lytton BL-MCA					1,550,057		Blanket
MNB86201-6"-Replace MP 1.8-2.0 Windom BL-MCA					1,517,165		Blanket
M471B-20"-Replace MP 15.4-15.9 Paullina-Aberdeen-MCA					1,437,596		Blanket
MNB62501-6"-Replace MP 1.2-1.3 Granite Falls BL-MCA					1,437,596		Blanket
IAB54001-4"-Replace Class 3 Anamosa					1,366,165		Blanket
WIB10801-4"-Replace MP 21.3-21.5 Bloomer-MCA					1,174,579		Blanket
MNB85701-6"-Replace MP 9.5-9.7 Luverne BL-MCA					4,004,255		Blanket
IAB51201-3"-Replace MP 7.5-8 Monona					1,011,444		Blanket
SDB95701-8"-Replace MP 13.7-14.0 Pipestone BL-MCA					1,007,878		Blanket
MNB78401-6"-Replace MP 18.4-18.5 Mora BL-CLS					1,000,444		Blanket
WIB14401-4"-Replace Sauk City BL					3,953,843		Blanket
MNB78501-8"-Replace MP 9.5 Lake City BL-MCA					958,397		Blanket
MNB63101-4"-Replace MP 20.8-22.1 Marshall-MCA					517,318		Blanket
MNB63701-6"-Replace MP 0-0.1 Hanna Mining BL-MCA					479,199		Blanket
MNB86901-6"-Replace Coon Rapids					287,519		Blanket

Exhibit 1
Asset Modernization Project Detail

Project Description	2022	2023	2024	2025	2026 - 2032	10-Year 2023 - 2032	Regulatory Authority
IAB40102-4"-Replace Cambridge 2nd-CLS					254,158		Blanket
M460B-16"-Replace MP 49.5-50.8 Welcome-Mpls 1P-MCA					4,988,019		Blanket
MNB75601-10"-Replace MP 54.3-54.6 Willmar BL-MCA					4,988,019		Blanket
WIB18101-6"-Replacement Viola					4,033,643		Blanket
MNB77501-16"-Replace MP 31.7-32.1 MN IC BL-MCA					3,016,865		Blanket
IAB55302-6"-Replace MP 1.9-2.0 Clarksville BL-MCA					2,867,030		Blanket
IAB54201-6"-Replace MP 17.1-17.2 Hampton BL-MCA					2,479,477		Blanket
IAB55701-6"-Replace MP 13.1-13.3 Tama BL-MCA					2,389,192		Blanket
IAB63901-6"-Replace MP 5.2-5.4 Harlan BL-MCA					2,389,192		Blanket
IAB67101-10"-Replace MP 33.9-34.3 Charles City BL-MCA					2,389,192		Blanket
M450B-24"-Replace MP 63.8-65.8 Farmington-NB-MCA					2,389,192		Blanket
MNB77501-16"-Replace MP 50.5-50.9 MN IC BL-MCA					1,995,208		Blanket
MNB61801-4"-Replace MP 10-11 Rockford-MCA					1,995,208		Blanket
MNB92601-4"-Replace Ham Lake					1,911,354		Blanket
IAB67101-10"-Replace MP 0.4-0.7 Charles City BL-MCA					997,604		Blanket
IAB54001-6"-Replace Anamosa-CLS					997,604		Blanket
MNB62501-6"-Replace MP 1.2-1.3 Granite Falls BL-MCA					997,604		Blanket
IAB66801-8"-Replace MP 2.0-2.3 Cedar Falls BL					748,203		Blanket
IAB53101-3"-Replace MP 3.42-3.50 Jesup-MCA					503,150		Blanket
MNB64301-4"-Replace MP 18.8-19.3 Albany					503,150		Blanket
MNB64301-4"-Replace MP 0-0.25 Albany					477,838		Blanket
IAB44201-12"-Replace Sioux City 1A 12-inch					453,352		Blanket
MNB64301-4"-Replace MP 0-0.25 Albany					5,491,650		Blanket
M820B-26"-Replace MP 0.0-0.4 Hobbs-Plains-MCA					4,992,409		Blanket
IAB55701-6"-Replace MP 14.6-14.7 Tama BL-MCA					4,304,331		Blanket
M820B-26"-Replace MP 6.5-8.1 Hobbs-Plains					1,996,964		Blanket
M521B-20"-Replace MP 52.9-53.3 Ogden-Waterloc					1,996,964		Blanket
MNB77001-6"-Replace MP 1.7-2.0 Little Falls					1,007,186		Blanket
IAB69701-6"-Replace MP 10.0-10.3 Iowa Falls BL-MCA					992,664		Blanket
IAB56501-6"-Replace MP 16.5-16.9 Vinton BL					898,634		Blanket
Subtotal: MAOP Reconfirmation	55,261	9,973,373	37,009,188	36,983,156	254,717,574	338,683,291	
Remote Mitigation Valves							
RCV M432B Marquette ML-BBB08		1,192,143					2.55(a)
RCV IAB79501 Tipton BL-BY01		818,857					2.55(a)
RCV MNB73201 La Crosse BL-BBB07		230,695					2.55(a)
RCV MNB73201-MNB11901-WIB11901 LaCrosse-Tomah BL			1,221,336				2.55(a)
RCV MIB11601 Lake Linden BL-BY03			885,646				2.55(a)
RCV MNB95701 Corcaran BL-DYB01			270,470				2.55(a)
RCV MNB75602-16-inch Willmar C				1,413,034			2.55(a)
RCV IAB74101 Dyersville BL-BYB01 or 02				758,236			2.55(a)
RCV IAB51101 Waukon BL-BYB04 or 05				220,051			2.55(a)
RCV HCA 2026					2,383,092		2.55(a)
RCV HCA 2027					2,388,054		2.55(a)
RCV HCA 2028					2,386,675		2.55(a)
RCV HCA 2029					2,392,587		2.55(a)
RCV HCA 2030					2,387,074		2.55(a)
RCV HCA 2031					2,394,249		2.55(a)
RCV HCA 2032					2,396,356		2.55(a)
Subtotal: Remote Control Valves		2,241,695	2,377,453	2,391,321	16,728,087	23,738,556	
Asset Modernization Total	292,611,198	170,978,025	151,849,478	233,849,648	1,714,628,114	2,271,305,265	



- MNB66801 Grand Rapids BL Mods
- M440B North Branch-to-Carlton ILI Modifications Carlton Receiver
- MNB77001-6"-Replace MP 1.7-2.0 Little Falls
- MNB59201-6"-I-Replace MP 0.0-1.2 Paynesville-MCA
- MNB95101-8"-Repl23 Replace Tie-Over-MCA
- MNB86801-6" Replace MP 2.8-3 White Bear Lake BL
- MNB86701-8"-I-Mods22 Stillwater-CL3
- SDB92601 Huron BL Moderate Consequence Area Replacement
- Garner Replace Cold Box
- Garner LNG MCC - 4160 volt
- RCV M432B Marquette ML-BBB08
- RCV MNB73201 La Crosse BL-BBB07
- Garner LNG Refrigeration Compressor/Motor Replacement
- M471B-20"-Replace MP 82.9-83.2 Paulina-Aberdeen-MCA
- M520C Ogden-to-Ventura In-line Inspection Modifications Ogden
- Waterloo MCC Replacement
- IAB43901-4"-H-Mods23 Onawa-MCA
- IAB43901-4"-Replace Onawa BL-MCA
- Ogden to Ventura Abandonment
- RCV IAB79501 Tipton BL-BYB01
- M530D-30"-I-Mods23 Oakland-Ogden D-MCA
- M580D-30"-I-Mods MP 0-30 Palmyra-Oakland D-MCA
- M590E-30"-I-Mods23 Beatrice-Palmyra E-MCA
- Claude Turbine MCC
- M883B-20"-Replace MP 17.3-17.6 Mitchell-Plymouth-MCA

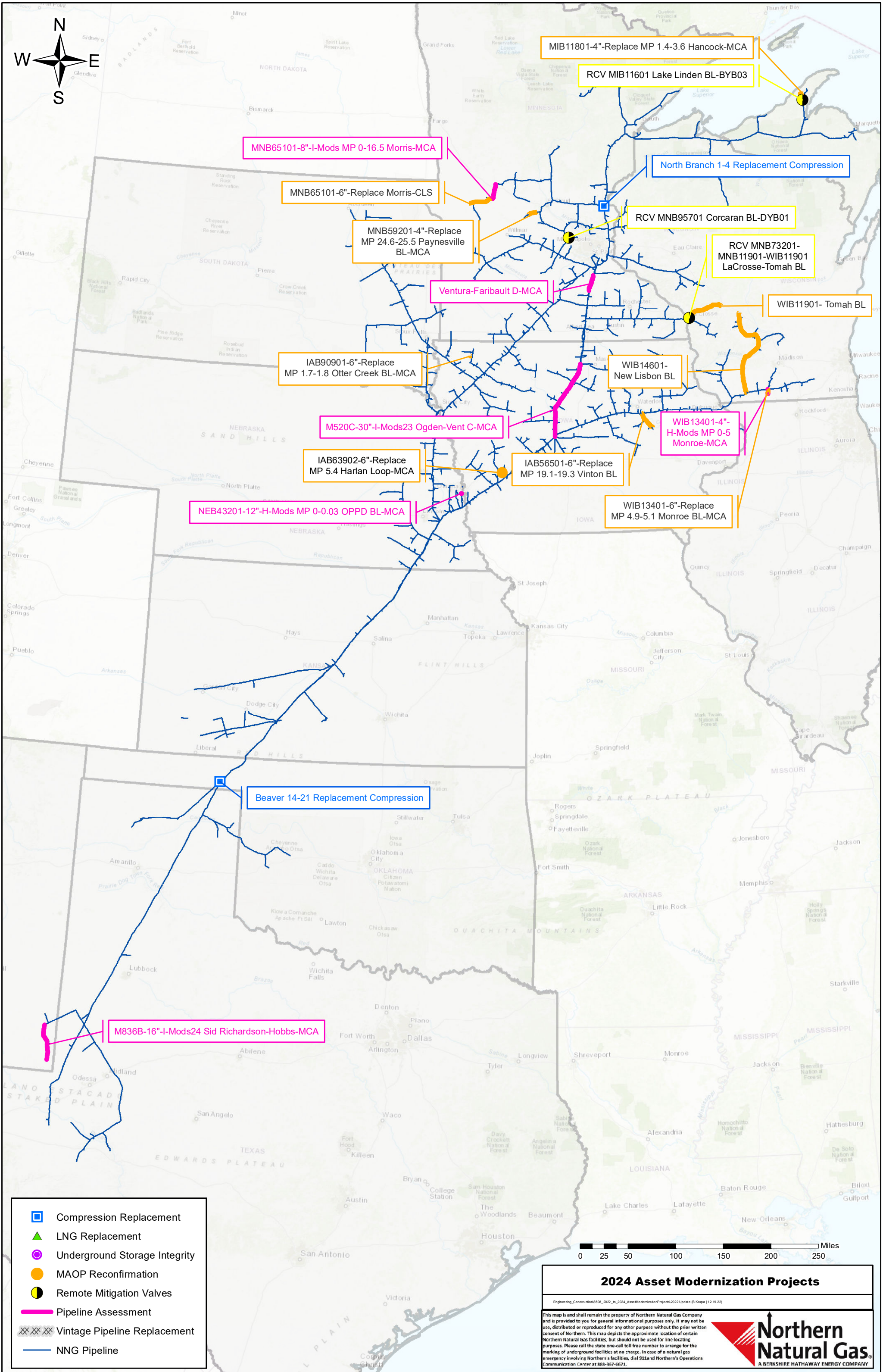
- Compression Replacement
- LNG Replacement
- Underground Storage Integrity
- MAOP Reconfirmation
- Remote Mitigation Valves
- Pipeline Assessment
- Vintage Pipeline Replacement
- NNG Pipeline

0 25 50 100 150 200 250 Miles

2023 Asset Modernization Projects

Engineering_Construction\8508_2022_to_2024_AssetModernization\Project\2022 Update (8/12/22)

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MNB65101-8"-I-Mods MP 0-16.5 Morris-MCA

MNB65101-6"-Replace Morris-CLS

MNB59201-4"-Replace MP 24.6-25.5 Paynesville BL-MCA

Ventura-Faribault D-MCA

IAB90901-6"-Replace MP 1.7-1.8 Otter Creek BL-MCA

M520C-30"-I-Mods23 Ogden-Vent C-MCA

IAB63902-6"-Replace MP 5.4 Harlan Loop-MCA

NEB43201-12"-H-Mods MP 0-0.03 OPPD BL-MCA

IAB56501-6"-Replace MP 19.1-19.3 Vinton BL

WIB13401-4"-H-Mods MP 0-5 Monroe-MCA

WIB13401-6"-Replace MP 4.9-5.1 Monroe BL-MCA

MIB11801-4"-Replace MP 1.4-3.6 Hancock-MCA

RCV MIB11601 Lake Linden BL-BYB03

North Branch 1-4 Replacement Compression

RCV MNB95701 Corcaran BL-DYB01

RCV MNB73201-MNB11901-WIB11901 LaCrosse-Tomah BL

WIB11901- Tomah BL

WIB14601-New Lisbon BL

Beaver 14-21 Replacement Compression

M836B-16"-I-Mods24 Sid Richardson-Hobbs-MCA

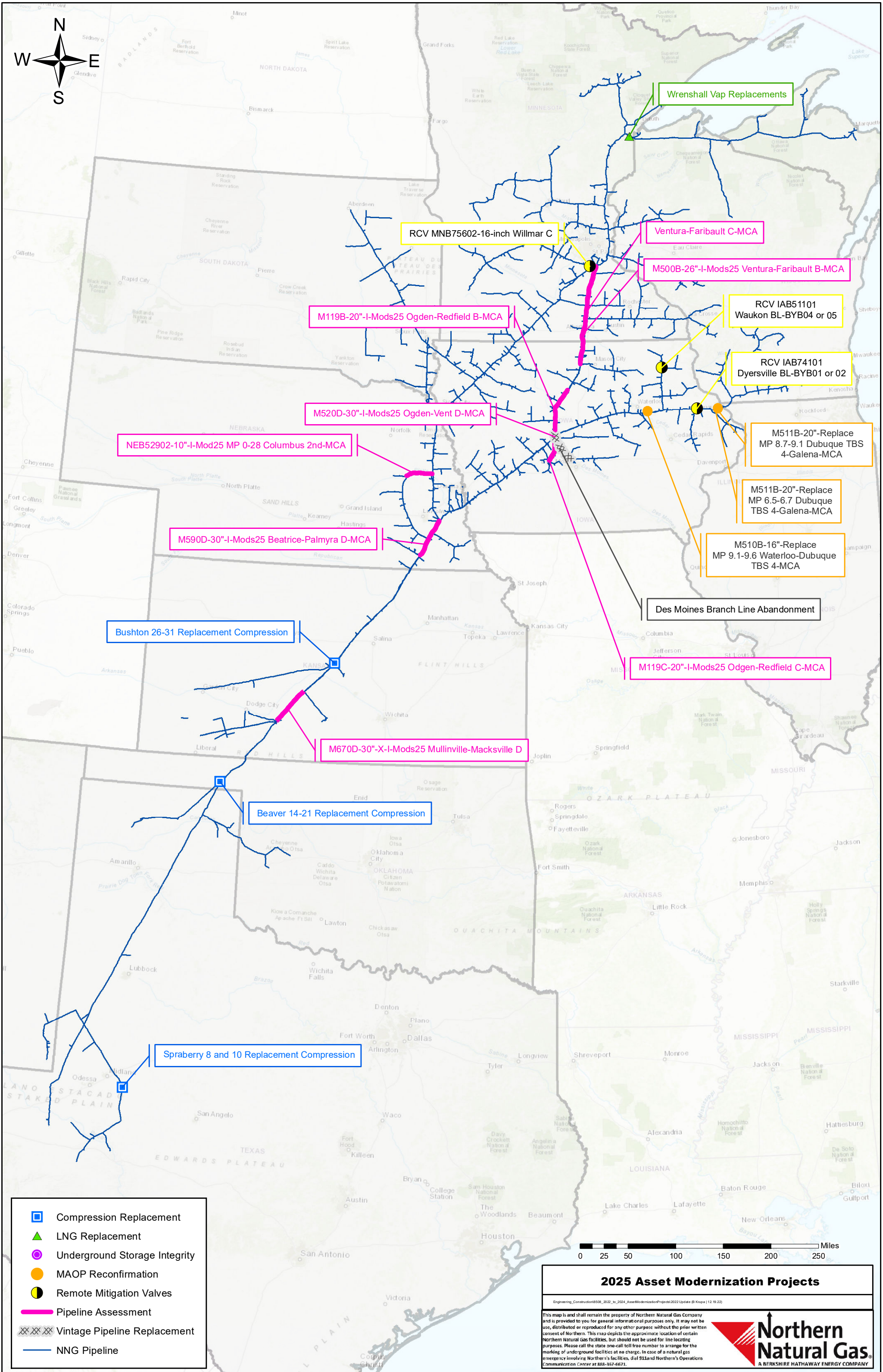
- Compression Replacement
- LNG Replacement
- Underground Storage Integrity
- MAOP Reconfirmation
- Remote Mitigation Valves
- Pipeline Assessment
- Vintage Pipeline Replacement
- NNG Pipeline

2024 Asset Modernization Projects

Engineering_Construction8508_2022_to_2024_AsseModernizationProject2022 Update (8/12/22)

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