## SYSTEM CAPABILITIES AND CONSTRAINTS

### Questar Gas System Overview

Questar Gas' system currently consists of over 17,000 miles of pipe serving approximately 975,000 customers. The system operates at pressures that range up to 1,000 psig and is separated into many subsystems in order to deliver the pressures and volumes that customers require. Questar Gas builds system models annually to determine when and to what extent system improvements will be required. Figure 4.1 shows the Questar Gas HP system and service area.

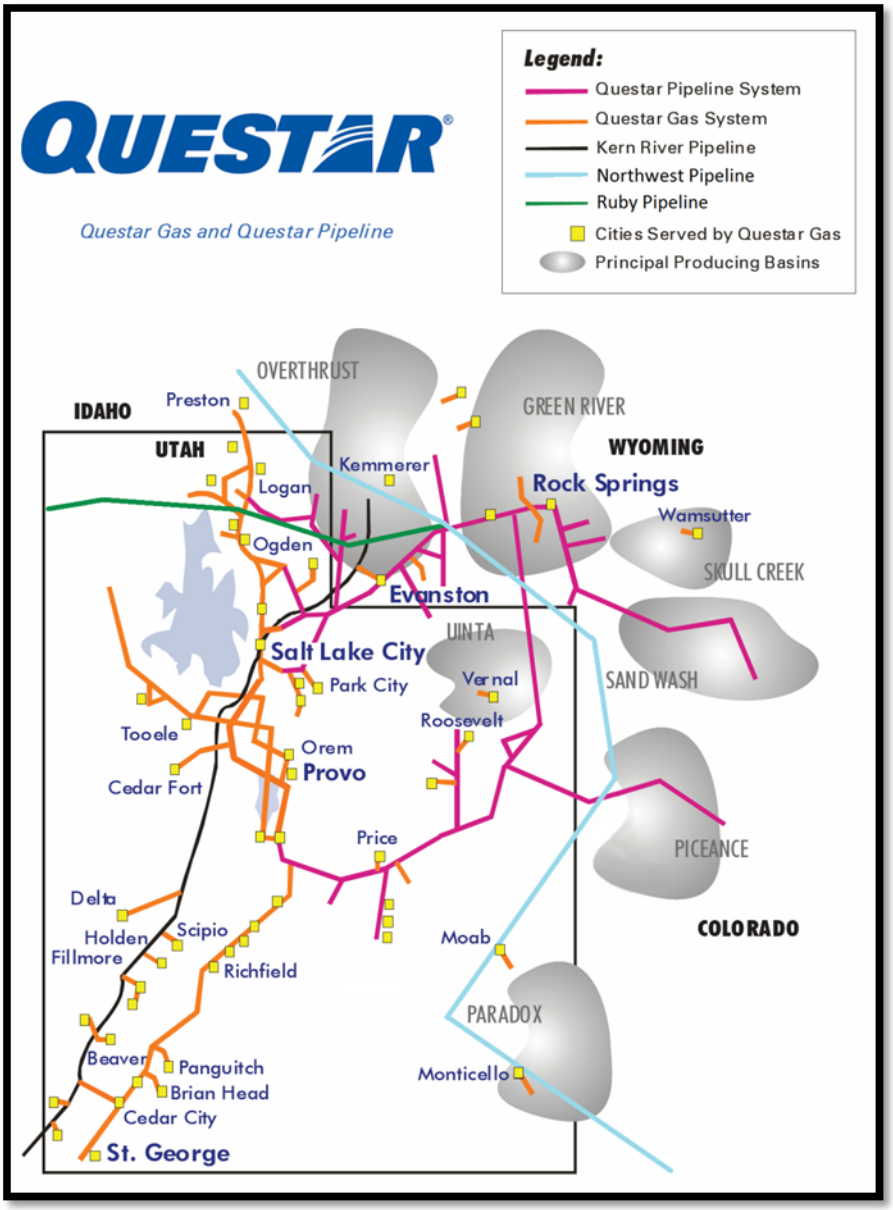



**Figure 4.1: Questar Gas HP System**

## Ongoing and Future System Analysis Projects

*Master Planning Models*

Questar Gas creates Master Planning Models to more accurately predict impacts of system growth. The models are created using growth projections and anticipated growth from specific planned developments in each area. The benefit of using this data is that the resulting pressures in the peak day model will reflect the impact of the specific growth centers and provide improved projections of system impacts during a peak event.

*System Supply Analysis and Joint Operating Agreement (JOA)*

Questar Gas analyzes its gas supply contracts each year to determine if they will meet the coming year's demands. The Company carefully considers the upstream (interstate transmission pipelines) constraints and capabilities as well as the ability to acquire gas to deliver to its system on a peak day. The purpose of this analysis is to determine the amount of gas required on a peak day and if the current contracts (sales and transportation) facilitate this required delivery.

Questar Gas and Questar Pipeline work together each year to update a JOA as part of this analysis. The JOA includes details regarding the pressures and flows available at the jointly operated gate stations, as well as operational responsibilities. One objective of this agreement is to ensure that the Company receives adequate inlet pressures to these stations in order to maintain system reliability. This is a complicated process that requires detailed collaboration due to the fact that the flows at these stations fluctuate through the day to match the changing demands on the Questar Gas system.

*Interruption Analysis*

A number of customers on the Questar Gas system have chosen to purchase service on an interruptible rate utilizing any available system capacity. While the system is not designed for these customers, it is important to understand the temperatures at which an interruption would be expected. The interruption analysis divides the system into interruption zones and determines the temperature at which interruption of a specific zone is appropriate to ensure reliable service to the surrounding firm customers.

*Operational Models*

Questar Gas prepares to respond to unforeseen scenarios by developing and maintaining operational models of the system. Questar Gas maintains these models to represent current conditions that exist in the system. Questar Gas' engineers review these models on an ongoing basis with Questar Gas' Gas Control, Gas Supply, Marketing, Operations, and Measurement and Control departments in order to inform them of expected system conditions.

*Eagle Mountain Modeling*

The Company acquired the natural gas distribution system serving Eagle Mountain in March 2015. Questar Gas is currently mapping the acquired assets and expects mapping to be

complete in the near future. Upon completion of the mapping, Questar Gas will model that system as well.

**System Modeling and Reinforcement**

Questar Gas utilizes steady-state Intermediate High Pressure (IHP) gas network analysis (GNA) computer models to determine the required system improvements needed to maintain operational pressures throughout the distribution system. Questar Gas uses these models to identify the required locations and sizing of new mains and/or regulator stations. Questar Gas also uses the models to compare the required flow from the regulator stations to the maximum delivery capacity of the existing regulator stations. This analysis provides Questar Gas with the information necessary to determine which reinforcements the Company should construct each year. Based on the modeling results, Questar Gas constructs a number of IHP mains, new regulator stations and upgrades to existing regulator stations.

The HP system models have more variables than the IHP system models. Engineers consider gate station capacities, existing supply contracts, supply availability, line pack and the piping system in conducting HP analysis. Because HP projects typically take longer to complete than IHP projects, Questar Gas must identify the need for HP improvements earlier than would be required for IHP projects. Questar Gas and the interstate pipeline companies that supply its system, collaborate to identify potential constraints to ensure that Questar Gas' supply needs are met.

**Model Verification**

Questar Gas verified the accuracy of the steady-state (24-hour period) GNA models using recorded pressure data and calculated demands. Questar Gas' engineers built steady-state models to represent the system conditions that were present on Tuesday, December 30, 2014 using actual data from that day. The Company adjusted the model settings to match the actual temperatures and other conditions for this day. The Company compared the model pressures to actual pressures at 87 verification points and found them to be within 7% of the actual pressures on that day. Seventy-nine of the pressures in the verification model were within 5% of the actual pressure. Based on this analysis, Questar Gas has shown the loads and infrastructure utilized in the GNA models are accurate and the models can confidently be used for their intended purpose.

Questar Gas verified the unsteady-state (hourly results for a 24-hour period) models in the same manner as the steady-state models. The temperatures, gate station flows and pressures are matched as closely as possible. Questar Gas' Central and Northern Regions are the largest connected HP systems with seven gate stations and two maximum allowable operating pressure (MAOP) zones. There are three smaller isolated systems which also require unsteady-state model analysis: Summit/Wasatch, Eastern, and Southern. This analysis has 82 pressure verification points as well as the known pressures and flows from the gate stations. None of the pressure differences at the verification points have error values higher than 7% when compared to the actual minimum and average pressures. Seventy-three of the pressures in the verification model

were within 5% of the actual pressure. The results of these comparisons confirm the accuracy of the unsteady-state models.

**Gate Station Flows vs. Capacity**

The Questar Gas system models must accurately emulate the physical pressure and flow limitations of each specific station. To ensure this, Questar Gas completed a capacity study for each of the gate stations on the system. The Company calculated hourly and daily flow capacities for each station based on facility limitations, set pressures and inlet pressures provided by the upstream pipelines. Some stations have specific minimum pressures based on contractual volumes. Other stations have fluctuating inlet pressures based on the changing flow on the Questar Gas system. For the stations with changing inlet pressures, this analysis was based on the inlet pressures included in the JOA.

**System Pressures**

Once Questar Gas verifies the GNA models and properly sets contractual obligations and station capacities, it uses the models to analyze the gas distribution system to verify that it has adequate pressures in order to supply Questar Gas customers. Questar Gas uses peak models for this analysis. Peak models include firm loads for sales and transport customers. Questar Gas uses the daily contract limits for applicable customers and assumes that interruptible demands are curtailed during the peak day.

*Northern*

The Northern Region includes the distribution system throughout Salt Lake City and northern Utah, including Box Elder, Cache, Davis, Morgan, Salt Lake, Summit, Tooele, Utah, Wasatch and Weber counties. Questar Gas serves this region through interconnects with Questar Pipeline at MAP 164 through the Hyrum, Little Mountain, Payson, Porter's Lane and Sunset stations. Questar Gas also serves the region through multiple smaller taps from Questar Pipeline (MAP 162) and Kern River at Eagle Mountain, Lake Side, Hunter Park and Riverton stations.

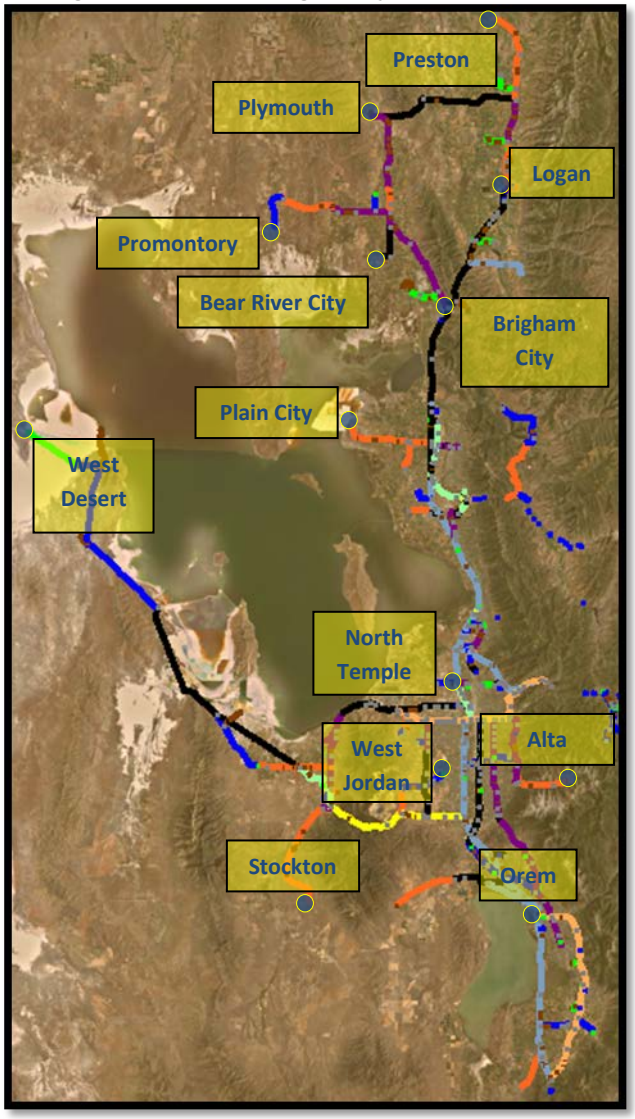
In the steady-state model, the calculated low point in the main portion of northern system is 263 psig, at the endpoint of FL 36 in West Jordan. The next lowest pressure in the Northern Region is at Alta, with a steady-state pressure of 272 psig. These pressures remain higher than Questar Gas' minimum allowable design pressure of 125 psig.

Table 4.1 shows the steady-state pressures at some of the key locations in the Northern Region. Figure 4.2 shows the locations on the system. Questar Gas models these pressures on a peak day at system endpoints, low points in the area and important intersections. Questar Gas builds steady-state models using average daily flows that most closely represent average pressures for the peak day. The unsteady-state GNA models profile demands throughout the day, and represent the pressure fluctuations throughout the peak day.

**Table 4.1: Questar Gas High Pressure System Steady-State Peak-Day Pressures**

| Location | Pressure (psig) |
|---|---|
| Endpoint of FL 29 – Plymouth | 277 |
| Endpoint of FL 36 – West Jordan | 263 |
| Endpoint of FL 48 – Stockton | 313 |
| Endpoint of FL 51 – Plain City | 283 |
| Endpoint of FL 62 – Alta | 272 |
| Endpoint of FL 63 – West Desert | 295 |
| Endpoint of FL 70 – Promontory | 305 |
| Endpoint of FL 74 – Preston | 264 |
| Endpoint of FL 106 – Bear River City | 315 |
| Intersection of FL 29 & FL 23 – Brigham City | 391 |

**Figure 4.2: Northern Region Key Pressures**



The curves shown in Figure 4.3, Figure 4.4 and Figure 4.5 are the expected peak-day pressures for the Northern Region HP system. In the projected unsteady-state models, the low point in the Northern Region is Park City at 120 psig. The next lowest predicted pressure in the Northern Region is in West Jordan at 148 psig.

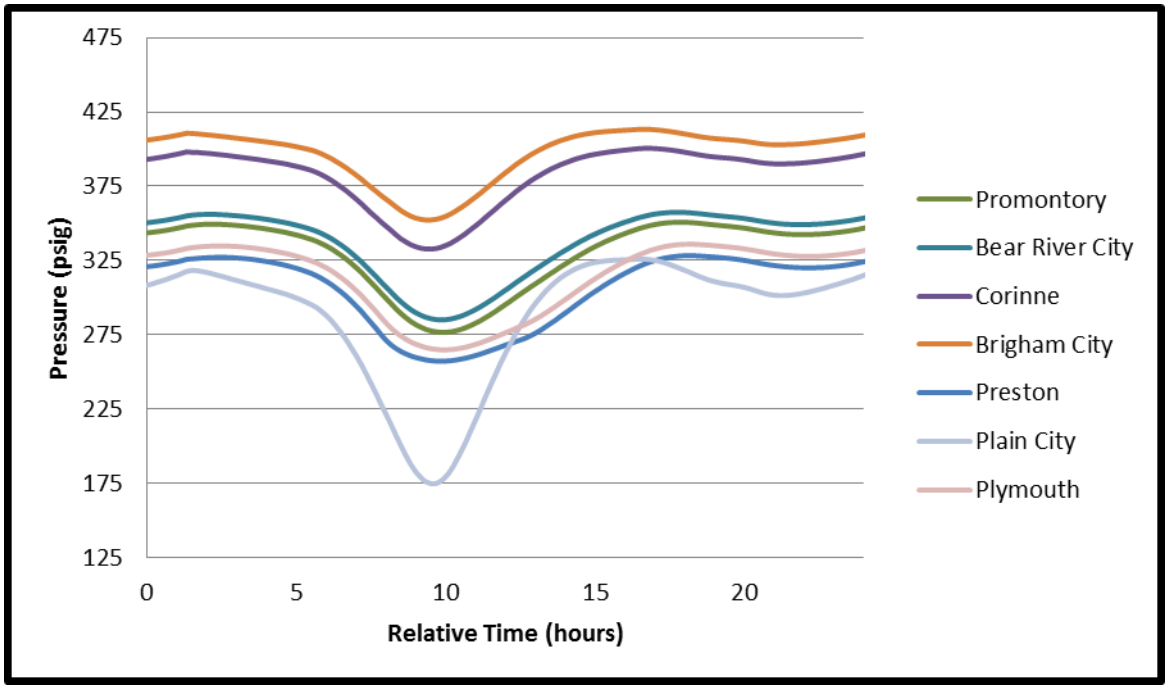



**Figure 4.3: 2015 Northern Peak Day Pressures (North of North Temple)**

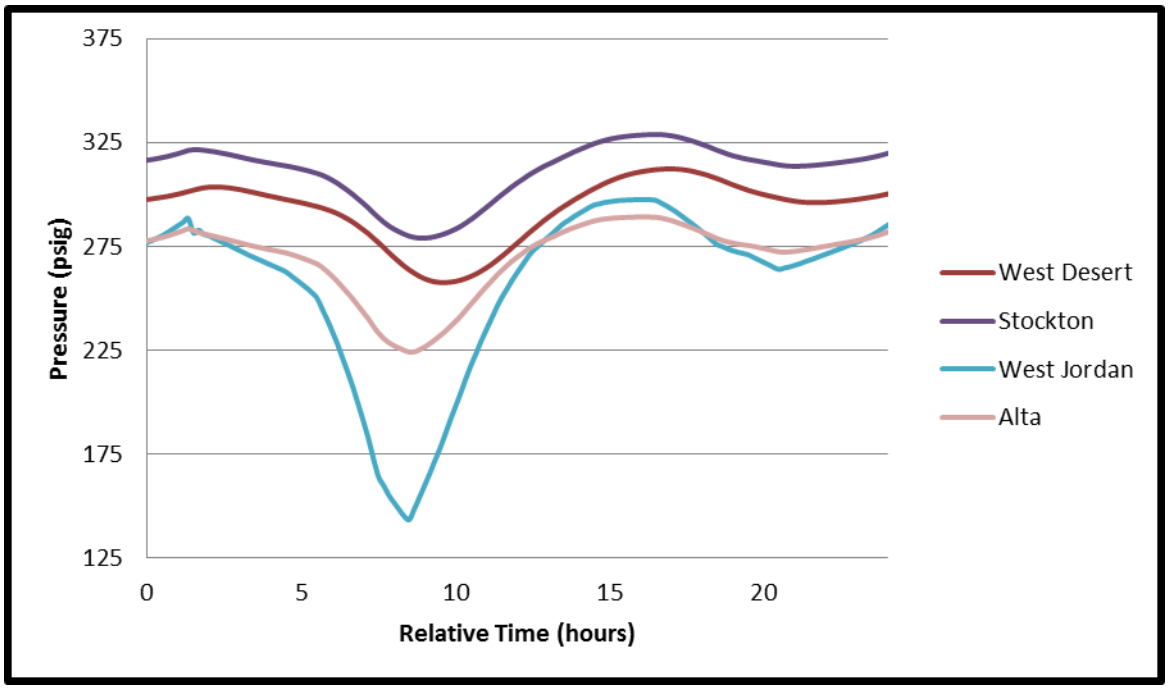



**Figure 4.4: 2015 Northern Peak Day Pressures (South of North Temple)**

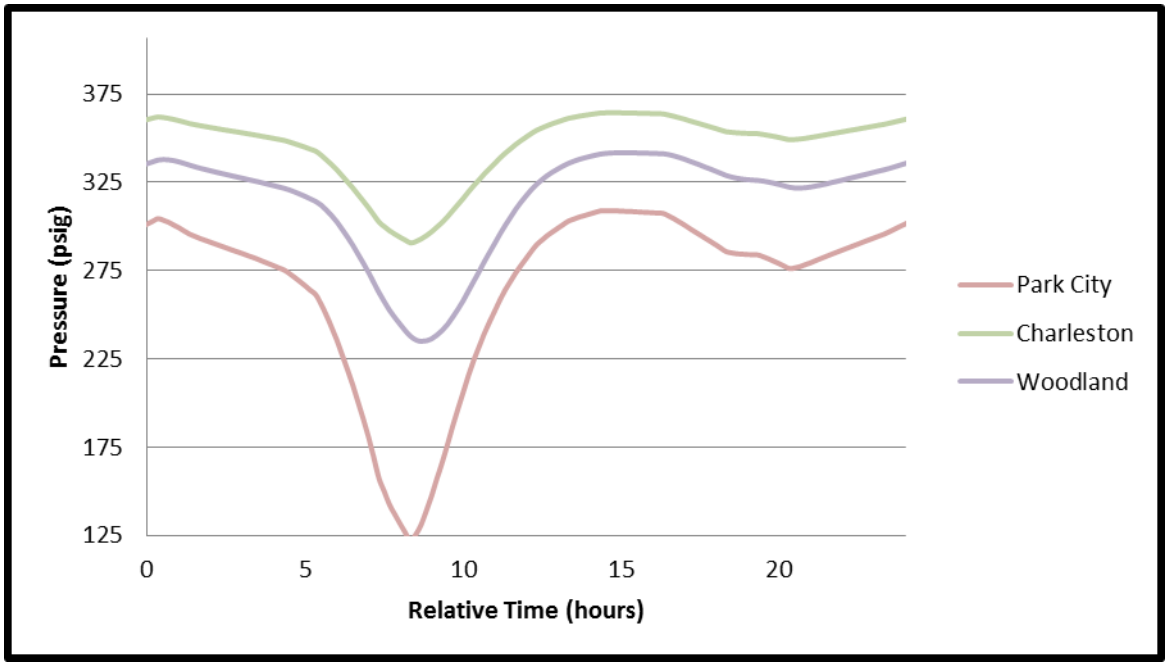



**Figure 4.5: 2015 Northern Peak Day Pressures (Summit and Wasatch Counties)**

The Company will complete a 12-inch extension of FL 99 to Heber prior to the 2015-2016 heating season. The Company expects a resulting minimum pressure in Charleston of 291 psig.

Due to high growth rates occurring in the load center of the Summit Wasatch system, the Company expects pressures to be 20 psig lower than the pressures calculated in the 2014-2015 peak-day model. With the FL 99 extension installed, the models show minimum pressures in the Park City area increasing from 85 psig to 120 psig on a peak day. The Company has determined that all of the district regulator stations served by this system will operate effectively at the expected pressures and will maintain adequate pressure in the area.

*Eastern (North)*

The Eastern (North) Region includes Duchesne, Uintah, Carbon and Emery counties, including the cities of Price and Vernal. This area is served from Questar Pipeline by two gate stations through MAP 163 and MAP 334. FL 89, a pipeline connecting FL 110 on the south end of Vernal to another segment of FL 89 on the north end, was thought to be an 8-inch pipe, based upon information available to Questar Gas when it purchased the system. This year, the Company determined that the pipe was actually a 4-inch pipe. The smaller pipe size reduces calculated model pressures from 135 psig to 87 psig. Questar Gas has identified options for improvements in this area later in this section. Questar Gas has plans to address any peak-day events during the 2015-2016 heating season and is evaluating a variety of long-term solutions.

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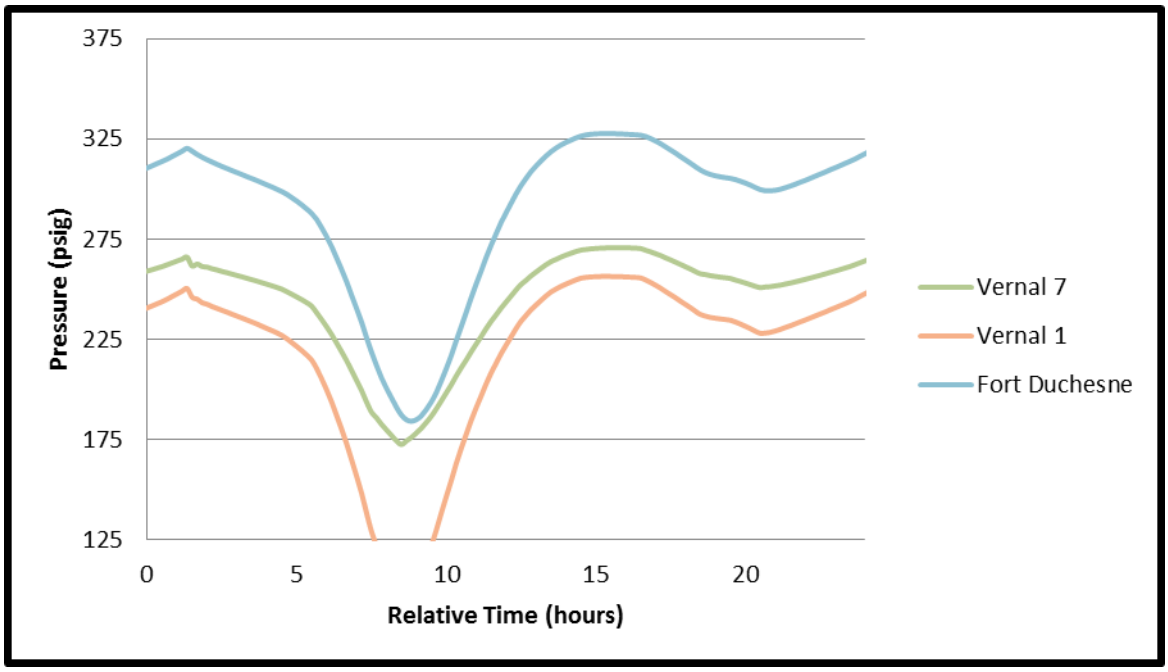


**Figure 4.6: 2013 Eastern (North) Peak Day Pressures**

*Eastern (Northwest Pipeline)*

The Eastern (Northwest Pipeline) Region includes the cities of Moab, Monticello and Dutch John. Questar Gas serves these areas from Northwest Pipeline with two stations in Moab, one station in Monticello and one station in Dutch John.

The system in this area is made up of separate subsystems with individual gate stations connected to Northwest Pipeline. All of the segments in this area have adequate pressures and do not require any improvements to meet the demand for the 2015-2016 heating season.

*Southern (Main System)*

The Southern (Main System) Region encompasses the areas served by the Indianola/Wecco/Central facilities including Richfield, Cedar City and St. George. Questar Gas serves these areas from Questar Pipeline at Indianola station through MAP 166 and from Kern River at Central and Wecco stations.

Using the steady-state model, the lowest modeled pressure on a peak day is 341 psig at Walmart Supercenter west of Hurricane. All segments in this area have adequate pressures and do not require any improvement to meet the existing demand.

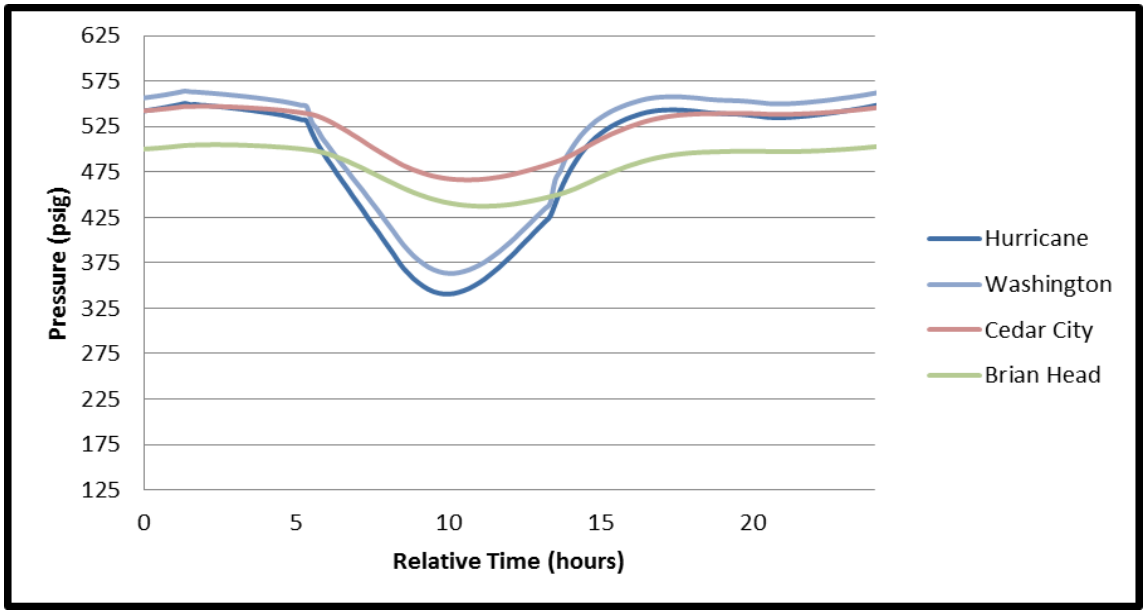


**Figure 4.7: 2013 Southern Peak Day Pressures**

*Southern (Kern River Taps)*

The Southern Region includes towns in Juab, Millard, Beaver, Iron and Washington counties (all towns that are served south of the Payson Gate Station and are not part of the Indianola/Wecco/Central system). These areas are all single feed systems served by Kern River.

The system in this area is made up of separate subsystems with individual taps off Kern River. All segments in this area have adequate pressures and do not require any improvement to meet the existing demand.

*Wyoming*

The Wyoming Region includes Rock Springs, Evanston, Lyman, Kemmerer, Baggs and Granger. These areas are served from Questar Pipeline through MAP 168, MAP 169 and MAP 177 from CIG at Wamsutter and Rock Springs and from Williams Field Services (WFS) at La Barge and Big Piney.

In 2011, the Company installed a new Foothill gate station in Rock Springs in order to provide system redundancy to the city. In the new projected peak-day model, the HP system now requires supply from this new gate station in order to maintain operational pressures at Reliance at the end of FL 30. The Company is currently working with CIG to contract for firm capacity to serve this station.

The 2015-2016 peak-day pressures in Reliance are 122 psig (Figure 4.8) with the Foothill station flowing with outlet pressures near MAOP. At 122 psig all of the regulator stations serving Reliance will operate effectively and provide adequate pressures in the area. The Company could construct an extension of FL 111 to Reliance if pressures continue to drop in future years. An alternative to extending FL 111 is to place a district regulator station feeding into the IHP system

at the Foothill gate station. The district regulator station will be able to displace 70 Mcfh which reduces the pressure drop in the HP system and increases pressures at the end of the line to 213 psig. This lower cost solution is a short-term solution that could delay installing an extension of FL 111 for several years.

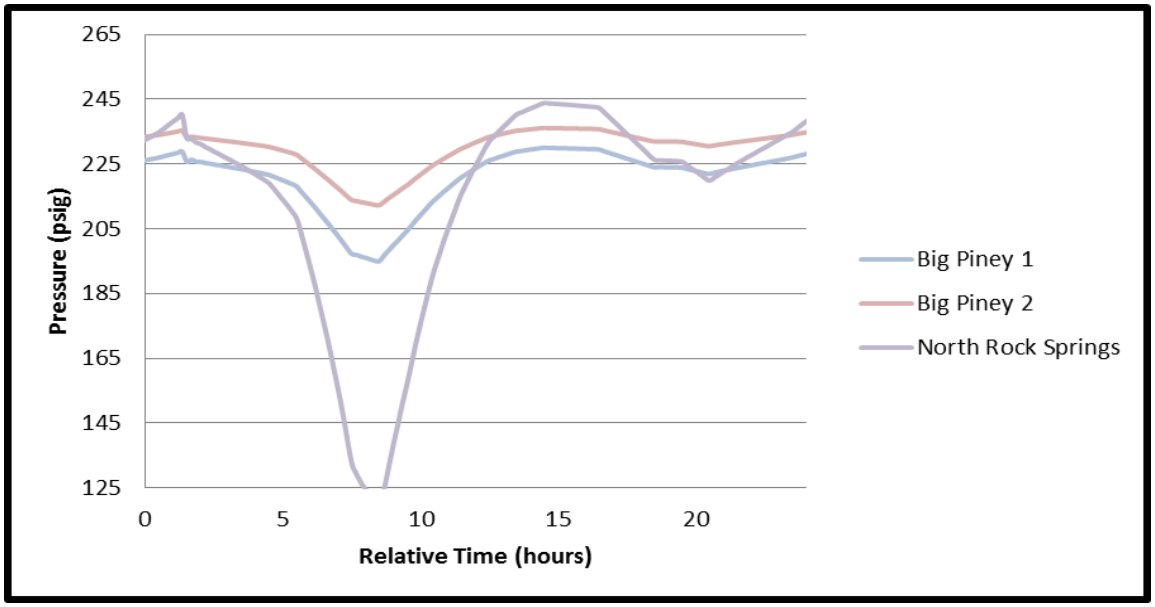


**Figure 4.8: Rock Springs Peak-Day Pressures**

## System Capacity Conclusions

Questar Gas' HP feeder line system is capable of meeting the current peak-day demands with adequate supply and capacity in the system. This system assessment is based on the fact that the gate stations and feeder line systems have adequate capacity to meet average-daily and-peak hourly demands and the supply contracts are adequate. With the exceptions of Vernal, Reliance and Park City, system models show that pressures do not drop below the design minimum of 125 psig. As discussed below, the Company has plans to address these areas. The system will continue to grow along with the demand and Questar Gas will conduct an analysis annually to ensure that the system continues to meet the peak day needs.

Questar Gas will discuss project options in the distribution action plan (DNG Action Plan) for these identified constraints and concerns:

- Increasing demand and limited supply in the Northern and Central Regions
- Low pressures at the endpoint of FL 51 near Plain City
- Low pressures at the endpoint of FL 36 in West Jordan
- Low pressures along FL 54 in Park City
- Demand growth in the Summit/Wasatch Area
- Low pressures in the Vernal HP system
- Demand growth in Rock Springs

**DNG Action Plan**

Questar Gas is currently planning, designing and constructing several reinforcement and replacement projects on its system. The following is a brief description of the major projects anticipated by Questar Gas in 2015 and beyond.

*High Pressure Projects:*

*Station Projects*

1. SL0127 District Regulator Station, Salt Lake City, Utah: Questar Gas' system has been experiencing low pressures in its IHP system in the area between I-215 and 5600 West and I-80 to 2100 South. Historically, the Company has maintained pressures in the area by installing IHP reinforcement projects. However, recent growth in the area has made it necessary to install a district regulator station to meet demand.

   Questar Gas evaluated several options for reinforcing the area, but these options could not provide enough improvement to system pressures. The Company considered two HP options to feed a new district regulator station:

   A) Tap into FL 13 near 2100 South and run pipeline north up Gladiola Street at an estimated cost of $3,250,000; or
   B) Tap into FL 12 near Redwood Road and 900 South, and run the pipeline west along 900 South at an estimated cost of $2,500,000.

   After evaluating and modeling both projects, the Company chose Option B because it was the lowest cost option and could be coordinated with scheduled roadwork on 900 South. This option will improve IHP system pressures in the area from a minimum of 7 psig to a minimum of 28 psig.

   Option B's scope of work includes installing approximately 2.1 miles of 8-inch HP main, and a high-capacity district regulator station. This project will be constructed in 2015 and has a first year revenue requirement of $375,000.

2. HR0002 District Regulator Station, Herriman, Utah: This project is driven by a need to improve IHP system pressures in this part of Salt Lake County. Questar Gas' system has experienced low IHP system pressures in the southern part of Herriman City. If proposed development occurs, system pressures will drop from a current minimum of 23 psig to 0 psig without any improvements. The proposed

project will improve IHP system pressures to 43 psig. Questar Gas obtained property to construct a district regulator station at about 4000 West and 14200 South, near the site of the proposed Salt Lake Community College campus. There was only one viable option for this project; tapping FL 35 on 13400 South, near 4000 West and running pipe south along 4000 West to the new site.

The Company considered one other route that runs parallel to a proposed UTA TRAX extension. However, risk of dynamic stray direct-current (DC) corrosion on the pipe rendered this option unacceptable.

The scope of work for this project includes installation of approximately 1.2 miles of 8-inch HP main and the installation of a high-capacity district regulator station. This project will be constructed in 2015 and has a total estimated cost of $1,450,000 with a first year revenue requirement of $220,000.

3. NL0001 District Regulator Station, North Logan, Utah: This project will improve IHP pressures in Logan, Utah. The Company's growth projections for the area indicate that within 5 years the majority of Logan will be at pressures below 20 psig. The proposed project will increase minimum pressures in the area to nearly 30 psig.

Questar Gas is in the process of acquiring property for this regulator station near 800 East and 2000 North. Additionally, Questar Gas has plans to serve this regulator station by tapping FL 28 at approximately 1800 North and running a line east to 800 East. The line would then head north to the regulator station site. Depending on the final location of the regulator station site, the tap line will be approximately 7,000 lineal feet.

Questar Gas performed analysis to determine the appropriate size tap line to serve the regulator station. The Company considered diameters of 4, 6 and 8-inch pipe. 8-inch pipe will be used because the 4-inch and 6-inch scenarios did not provide sufficient capacity to the station.

Questar Gas anticipates completing this project in 2016 and estimates the total cost to run the 8-inch HP tap line and to install the station will be $1,400,000 with a first year revenue requirement of $210,000. Due to the uncertain status of a final regulator station site, Questar Gas will continue reporting changes to this project as part the IRP Variance Report process.

4. WG0003 District Regulator Station, St. George, Utah: This project is intended to improve IHP system pressures in St. George, Utah. The Company's growth projections indicate that this project will be required prior to the 2017 heating season.

Questar Gas is currently analyzing several locations for the proposed regulator station in an area approximately three miles southeast of downtown St. George. Questar Gas analyzed three different options for providing HP feed to this potential station. All three options require crossing the Virgin River and tapping FL 71. The options are as follows:

A) Cross the Virgin River along the same corridor where the new Mall Drive was recently constructed, run east along 2500 South and south on 3300 East;
B) Cross the Virgin River around 2700 East, run south on Sandia Road, east on 2500 South, and south on 3300 East; or
C) Cross the Virgin River around the power plant area and run south on 240 West.

The Company determined that Option A was the best alternative because it allowed for boring the Virgin River. Both Options B and C would require an open cut of the Virgin River and it is unlikely that permitting agencies would allow an open cut of the Virgin River.

Questar Gas anticipates completing this project in 2016 and estimates the total cost to run the HP tap line and to install the station will be $2,600,000 with a first year revenue requirement of $390,000. Due to the uncertain status of a final regulator station site, Questar Gas will continue reporting changes to this project as part the IRP Variance Report process.

5. NO0001 District Regulator Station, North Ogden, Utah: Residential growth in North Ogden and Pleasant View is the driver for this project. The Company needs a new district regulator station in order to maintain adequate IHP system pressures.

Questar Gas has obtained property for the regulator station near 450 East and 2600 North in North Ogden. Questar Gas analyzed several options for providing

a HP feed to this station and has narrowed it to two options. Both of these options require tapping FL 22. The options are:

A) Tap FL 22, and run east along Pleasant View Drive to the regulator station site at an estimated cost of $4,100,000; and
B) Tap FL 22 and run east along 2700 North to the regulator station site at an estimated cost of $5,990,000.

Both of these options present challenges. Option B is more expensive and the route follows a UDOT highway that was recently reconstructed and does not have any undeveloped shoulders in which to install pipe.

Option A is known to be underlain by a thick concrete surface (the old road). However, investigation has shown the old road's existence is sporadic and it should not be a major obstacle. Given that Pleasant View Drive has less traffic, better shoulders for workspace and that the project will be easier to permit, Questar Gas selected Option A as the preferred route. Questar Gas determined that 8-inch pipe is appropriate for the HP tap line. This project is currently in design and is likely to be constructed in 2017. The estimated first year revenue requirement is $610,000.

6. TG0003 Kern River Tap, Saratoga, Utah: Questar Gas is currently analyzing the need for capacity improvements at this existing tap. System growth in the area will likely require the station capacity to be improved to 225 MMcfd or greater.

   Questar Gas is analyzing options and estimates for this planned improvement and would like to construct this project in 2016 or 2017.

7. Santaquin District Regulator Station: This project is necessary to alleviate low pressures in the IHP system in the southwest corner of town. Due to the location of the load growth, the only method to improve pressures is to add a district regulator station in this area.

   Questar Gas is currently analyzing sizing and route options for this project, but it is likely this project will be needed by the 2017 heating season.

8. Gate Station Projects: Questar Gas is currently analyzing several of its gate stations for capacity to meet peak day loads. Currently there are nine gate stations that are above 92% of maximum capacity. Those gate stations are: Altamont,

Bluebell, Central, Island Park, Kemmerer, Little Mountain, Payson, Hunter Park and Riverton.

Questar is analyzing the most efficient way to increase capacity at these stations. Solutions may include upsizing facilities or getting higher delivered gate-station inlet pressures from the upstream pipeline companies.

9. Compressor Station Retirements: Questar Gas currently has plans to retire three compressor stations on its system. System improvements made within the last several years have made the stations obsolete. The Company expects that as these stations continue to age, operation and maintenance costs will continue to increase. Questar Gas will retire and remove these stations to save ongoing operating and maintenance costs.

   A) Questar Gas will retire the Lark compressor station in 2015. The Lark station is situated in the Southwest corner of the Salt Lake Valley. The estimated cost to retire this station is $478,000.
   B) Questar Gas will retire the Allred compressor station in 2015. The Allred station lies at the head of FL 64 in Indianola. The estimated cost to retire this station is $519,000.
   C) Questar Gas will retire the JW Allen compressor station in 2016. The JW Allen station is located in Weber County. The estimated cost to retire this station is $1,556,000.

*Feeder Line Projects*

1. Feeder Line 99 Extension: Questar Gas has been analyzing this project since 2010. The Company provided a detailed description of this project in the 2011-2012 IRP. For this project Questar Gas plans to install approximately 8.5 miles of 12-inch HP pipeline, 4,200 lineal feet of 8-inch HP pipeline, and a receiver for internal inspection tools. The pipeline will begin at the current termination of FL 99 near Francis, Utah and terminate with a tie-in to Questar Gas' FL 16 on SR-40. The pipeline will largely follow SR-32.

   Construction on this project began in April 2015 and the Company anticipates completing the project in October 2015. The current estimate for this project is $13,200,000 with a first year revenue requirement of $2,000,000.

2. Heber City Reinforcement: The Company discussed this project in detail in the 2011-2012 IRP. Questar Gas is finalizing plans and right-of-way acquisition for this project in 2015. The Company estimates that construction will likely occur in

2016, but is evaluating installing the project later this year. The Company will continue to monitor this project, and report any changes to the schedule as part of the IRP variance report process. The current cost estimate for this project is $2,800,000 with a first year revenue requirement of $420,000.

3. Park City Reinforcement: Growth in the Park City area necessitates system reinforcement. The Company is evaluating options. The most likely option under consideration is to extend the 8-inch- portion of FL 99, which currently terminates near the IHC hospital in Park City, and tie into FL 54 which terminates near Park City High School. Questar Gas will analyze route and sizing options for this project during 2015. This project will likely be required in 2016 or 2017.

4. Vernal Reinforcement: As noted above, Questar Gas discovered errors in information available at the time it purchased the Utah Gas system. Questar Gas believed a portion of the pipe was 8-inch diameter. However, during potholing for another project, the Company discovered a section of the line was actually 4-inch in diameter. The restriction in the pipe has changed pressure projections at the VN0001 station. Current peak day projections show pressures could reach as low as 80 psig. Questar Gas is analyzing the options for this project.

   Questar Gas is still evaluating three alternatives for improvement in this area:

   A) Increase the diameter of FL 89 from Diamond Mountain regulator station to the Island Park gate station to 8-inch;
   B) Install a new gate on the southeast section of FL 110; or
   C) Install a new line across town from Vernal 1 to Vernal 7.

   Questar Gas will complete its analysis and select an option soon. The Company anticipates constructing this project in 2016 and has contingency plans in place in the event a peak day occurs during the 2015-2016 heating season.

5. West Jordan Reinforcement: The West Jordan project will alleviate a low pressure point on the HP system at the end point of FL 36. Current peak day projections indicate that this project should be constructed in 2017. Though Questar Gas is considering a variety of alternatives, it is most likely that the Company will recommend tying the dead end extensions of FL 34 and FL 36 together.

6. FL 111 Extension, Reliance, Wyoming: This project is required to reinforce the HP service into Reliance, Wyoming. The current 4-inch diameter HP feed into the area has reached its capacity. Questar Gas is currently considering options for improving system pressures in Reliance. Though IHP reinforcements will allow

the Company to maintain pressures in the area for the short term, if growth continues, a new HP feed will be necessary.

Questar Gas is currently analyzing route and size options for the feeder line extension and anticipates constructing this project in 2017 or 2018.

7. Feeder Line Replacement Program: Questar Gas is continuing its Feeder Line Replacement program in 2015 with replacements on FL 6, FL 24, FL 26 and FL 34. Replacement project design and material procurement for future projects will also occur in 2015. Pursuant to the Utah Commission's Order Approving the Settlement Stipulation, in Docket No. 09-057-16, the Company filed an infrastructure replacement plan detailing the planned projects, the anticipated costs and other relevant information.

*Intermediate High Pressure Projects:*

1. Belt Line Replacement Program: Questar Gas is continuing its Belt Line Replacement program in 2015 with replacements in Salt Lake City, Ogden and South Ogden. Pursuant to the Settlement Stipulation and Utah Commission's Order Approving the Settlement Stipulation, in Docket No.13-057-05, the Company filed an infrastructure replacement plan detailing the planned projects and anticipated costs.

2. Eastern Utah System Replacements: Questar Gas acquired the distribution systems in Moab, Vernal and Monticello from Utah Gas in 2001. After several years of operation, the Company determined that these systems were in need of replacement.

   In 2009, Questar Gas began a replacement program. The Company has completed replacements in Monticello and work in Moab and Vernal is underway. Questar Gas plans to complete the work as described below.

   *Moab Replacement*s: The Company will replace approximately 53,000 linear feet of main and 225 services. A majority of the main (47,000 linear feet) will be 2-inch plastic pipe and the remainder will be 4-inch plastic pipe. The total estimated project cost for 2015 is $2,000,000 with a first-year revenue requirement of approximately $300,000. The Company plans to complete this project in 2016. There are no viable alternatives for replacement.

   *Vernal Replacements:* The Company will replace approximately 57,000 linear feet of main and 375 services. Of the 57,000 feet of main, about 27,000 linear feet will be replaced with 2-inch plastic pipe and about 30,000 linear feet will be replaced with 4-inch plastic pipe. The total estimated project cost for 2015 is

$2,750,000 with a first-year revenue requirement of about $400,000. The Company plans to complete this project in 2017. There are no viable alternatives for replacement.

3. Mountain View, Wyoming Replacement: Questar Gas began replacing significant portions of the Mountain View system in 2014. The system dates back to the 1950s and due to environmental factors is reaching the end of its useful life. In 2015, the Company will replace approximately 14,425 linear feet of main with 8,125 feet of 4-inch pipe and 6,300 feet of 2-inch pipe. Additionally, the Company will replace 124 service lines. The estimated project cost for 2015 is $1,315,000 with a first-year revenue requirement of about $195,000.

   In 2016, the Company will replace approximately 12,000 linear feet of main with 2-inch pipe. Additionally, the Company will replace 104 service lines. The estimated project cost for 2016 is $1,050,000 with a first-year revenue requirement of $150,000.

*Project Timeline Summary*

| Project Summary Table | | | |
|---|---|---|---|
| Year | Project | Estimated Cost | Revenue Requirement |
| 2015 | SL0127 Regulator Station | $2,500,000 | $375,000 |
| | HR0002 Regulator Station | $1,450,000 | $220,000 |
| | Lark Compressor Retire | $478,000 | N/A |
| | Allred Compressor Retire | $519,000 | N/A |
| | FL 99 Extension | $13,200,000 | $2,000,000 |
| | Moab IHP Replacements | $2,000,000 | $300,000 |
| | Vernal IHP Replacements | $2,750,000 | $400,000 |
| | Mtn. View IHP Replacement | $1,315,000 | $195,000 |
| 2016 | NL0001 Regulator Station | $1,400,000 | $210,000 |
| | WG0003 Regulator Station | $2,600,000 | $390,000 |
| | JW Allen Compressor Retire | $1,560,000 | N/A |
| | Heber City Reinforcement | $2,800,000 | $420,000 |
| | Vernal Reinforcement | TBD | TBD |
| | Mtn. View IHP Replacement | $1,050,000 | $150,000 |
| | TG0003 Remodel | TBD | TBD |
| 2017 | NO0001 Regulator Station | $4,100,000 | $610,000 |
| | Santaquin Regulator Station | TBD | TBD |
| | Park City Reinforcement | TBD | TBD |
| | West Jordan Reinforcement | TBD | TBD |
| | FL 111 Extension | TBD | TBD |

**Activities and Associated Costs for Transmission Lines and Distribution Systems**

*Transmission Integrity Overview*

Questar Gas continues to implement integrity activities for transmission lines as originally mandated by the "Pipeline Safety Improvement Act of 2002" and later codified in the Federal Regulations (49 CFR Part 192, Subpart O). The transmission integrity management regulations require Questar Gas to identify all high consequence areas (HCA) along the segments of feeder lines that are defined as transmission lines.[51] Once the Company identified these HCAs, it calculated a risk score for each segment located in the HCA. These risk scores established the initial priority for when the Company initially assessed each HCA. The Company verifies each HCA and calculates the risk score on an annual basis. Subsequent to this initial assessment, federal regulations require Questar Gas to reassess each HCA at intervals not to exceed seven calendar years from the initial or previous assessment, or sooner based on results of the previous assessment.

Additionally, Questar Gas is required by the transmission integrity rules to conduct additional ongoing preventive and mitigative measures on feeder lines in HCAs and in class 3 and 4 locations.[52] These additional measures include monitoring excavations (excavation standby) near these feeder lines and performing semi-annual leak surveys.

*Distribution Integrity Overview*

On December 4, 2009, the Pipeline and Hazardous Materials Safety Administration (PHMSA) issued the final rule titled: "Integrity Management Program for Gas Distribution Pipelines." This final rule became effective on February 12, 2010, with implementation required by August 2, 2011.

The distribution integrity management rule requires operators to develop, write, and implement a distribution integrity management program with the following elements:

> Knowledge; identify threats; evaluate and rank risks; identify and implement measures to address risks; measure performance, monitor results, and evaluate effectiveness; periodically evaluate and improve program; and report results.

Questar Gas continues to implement activities defined in its Distribution Integrity Management Plan for the distribution system. It implements the activities to mitigate the threats that are identified in the plan.

[51] Transmission Lines are those feeder lines (or segments of feeder lines) that are operating (i.e. Maximum Allowable Operation Pressure (MAOP) at or above a pressure that produces a hoop stress of 20% of specified Minimum Yield Strength (SMYS).
[52] Class location as defined by 49 CFR Part 192 (§192.5).

**Transmission Integrity Management**

*Costs*

Table 4.3 details the anticipated costs associated with transmission integrity management.

*Baseline Assessment Plan*

The Baseline Assessment Plan prescribes the methods that the Company will use to assess each HCA. The Company determines these methods based upon the known or anticipated threats to these segments. The most common threats on the pipeline include the following: external corrosion, internal corrosion and third party damage. The Company uses several assessment methods to address these threats including external corrosion direct assessment (ECDA), internal corrosion direct assessment (ICDA), direct visual examination, pressure testing and inline inspection.

The Company completed the Baseline Assessment Plan in December of 2012, with the exception of 1,041 feet of non-contiguous pipe segments located in casings. There were a total of 10 segments located in casings that were not assessed prior to the December 2012 deadline. The Company completed the final assessment for these segments in May of 2013. Questar Gas filed for a special permit to extend the deadline for completing the baseline assessment for these 10 segments.

*External Corrosion Direct Assessment*

ECDA is an assessment method that evaluates the integrity of the pipeline segments for the threat of external corrosion, including segments of cased gas transmission pipelines. Refer to Figure 4.10 for an overview of the ECDA process.

The ECDA methodology is a four-step process. The four steps of the process include:

Pre-Assessment - This step utilizes historic and current data to determine whether ECDA is feasible, identify appropriate indirect inspection tools, and define ECDA regions. ECDA regions are areas along the pipeline that have similar characteristics. There may be multiple regions along a single pipeline segment. Examples of ECDA regions include segments in casings, or segments with different types of external coatings.

Indirect Inspection - This step utilizes above-ground inspection methods (such as close interval survey, pipeline current mapper or DC voltage gradient survey) to identify and quantify the severity of coating faults and areas of diminished cathodic protection. The analysis of this data can help identify areas along the pipeline segment where corrosion may have occurred or may be occurring. The Company uses a minimum of two indirect inspection tools over the entire pipeline segment to provide improved detection reliability across the wide variety of conditions encountered along a pipeline right-of-way. The Company categorizes indications from indirect

inspections according to severity. A third indirect inspection tool is required for initial assessments of the segment.

Direct Examination - This step includes excavations of the pipe for direct examination to determine if there is corrosion occurring on the pipeline. For initial assessments (i.e. first time assessments for an HCA), a minimum of two excavations are required for each ECDA region and a minimum of four excavations in total for the ECDA project. The ECDA project may contain more than one pipeline and more than one ECDA region. Reassessments require a minimum of one excavation per ECDA region and a minimum of two excavations in total for the ECDA project. The Company selects excavation sites based on a review of the data collected during the pre-assessment and the indirect surveys.

The Company uses this information to identify the areas on the pipeline within each region where external corrosion is most likely. The Company must also excavate at a location where it has not identified any indications. The Company uses the information gathered at this site to help validate the effectiveness of the ECDA process. When corrosion or other pipeline damage or coating damage is found during the direct examination step, the Company repairs the pipe or coating. The Company may select additional sites for examination based on the findings of the required direct examinations.

Post-Assessment - This step utilizes data collected from the previous three steps to assess the effectiveness of the ECDA process and determine reassessment intervals and provide feedback for continuous improvement.

*Internal Corrosion Direct Assessment*

ICDA is a process to predict the most likely areas of internal corrosion, including those caused by chemical and microbiologically induced corrosion. ICDA focuses on directly examining locations at which internal corrosion is most likely to occur.

The basis of ICDA is the detailed examination of the most susceptible locations along a pipeline where liquids, if any, would first accumulate in the pipeline. If the locations most likely to accumulate liquids have no indications of internal corrosion, all other locations further downstream are considered to be free from internal corrosion. ICDA relies on the ability to identify locations most likely to accumulate liquids.

The ICDA methodology is a four-step process that is intended to assess the threat of internal corrosion in pipelines and assist in verifying pipeline integrity.

The initial baseline assessment plan includes ICDA However, the plan does not require the ICDA process after the Company has completed the initial assessments for internal corrosion and found no internal corrosion. The Company addresses the threat of internal corrosion through the implementation its internal corrosion plan.

*Visual Examination of Aboveground Pipe and Pipe in Vaults*

The Company assesses aboveground piping (i.e. spans) and piping in vaults by visual examination when the piping is located in an HCA and the Company cannot assess the pipe utilizing other methods.

*Inline Inspection*

When a pipeline has been constructed and configured, or retro-fitted in such a way to allow for inline inspection, the Company assesses the pipe using inline inspection tools commonly called "smart pigs." These tools are equipped with sensors that collect data as the tool travels through the pipeline and can reveal areas of wall loss and dents that may require repair or cutout. Questar Gas has 101 miles of transmission piping (12% of Questar Gas' transmission system) that can be inspected using smart pigs. As the Company replaces aging infrastructure, it designs and builds the new pipelines to accommodate inline inspection tools. Recent advancements in technology allow some limited application of inline inspection tools for non-piggable pipelines. Questar Gas has helped fund these advancements through its research and development program. The Company has used these advanced tools to assess locations of its system that it previously could not assess without this new technology.

The inline inspection tools provide specific data on the condition of the pipeline segment being inspected. The Company analyzes data that it collects along the pipeline segment for defects and areas of concern (e.g. wall loss or dents) and excavates for further evaluation and repair or cut out, if necessary.

*High Consequence Area Validation*

Each year, Questar Gas conducts an on-the-ground survey of all transmission line segments to validate the current HCA as well as identify any new potential sites that may trigger a new HCA. Sites that may trigger a new HCA include the following: office buildings, businesses, community centers, churches, day care centers, retirement centers, hospitals and prisons.

The Company maintains this information in its mapping system and uses it to calculate HCAs along each transmission segment on an annual basis.

**Distribution Integrity Management**

*Costs*

Table 4.4 details the anticipated costs associated with distribution integrity management.

*Implementation*

Questar Gas implemented its written Distribution Integrity Management Plan in August of 2011. Implementation included identifying the threats associated with the distribution system within each operating region as well as calculating a risk score for each identified threat. The risk scores are derived by utilizing known infrastructure data and leak history. The threats and the associated risk scores are validated by operating personnel within each operating region. Once the Company identified the threats and calculated the risk scores for each threat, each operating region identified possible measures that could be implemented or are currently being implemented that would help mitigate the risks on the distribution system. The process of identifying threats and calculating the risk for each threat is ongoing and the Company will reevaluate it on an annual basis.

**Key Performance Integrity Metrics**

Table 4.5 details specific performance metrics associated with the integrity management program.

**New Regulations that May Impact Future Costs Associated with Integrity Management**

The following regulations may have significant impact on Questar Gas:

*Safety of Gas Transmission and Gathering Lines*

PHMSA posted this regulation as an advanced notice of proposed rulemaking on August 25, 2011. It tentatively plans to release a notice of proposed rulemaking in July of 2015. In this rulemaking, PHMSA will revisit the requirements in the Pipeline Safety Regulations addressing integrity management principles for gas transmission pipelines. In particular, PHMSA will address repair criteria for both HCA and non-HCA areas, assessment methods, validating and integrating pipeline data, risk assessments, knowledge gained through the Integrity Management program, corrosion control, management of change, gathering lines and safety features on pig launchers and receivers.

*Miscellaneous Rule*

PHMSA published this regulation as a final rule on March 11, 2015, with an effective date of October 1, 2015. This rulemaking includes the performance of post-construction inspections and qualification of plastic pipe joiners. Post-construction inspection could have a significant impact on Questar Gas.

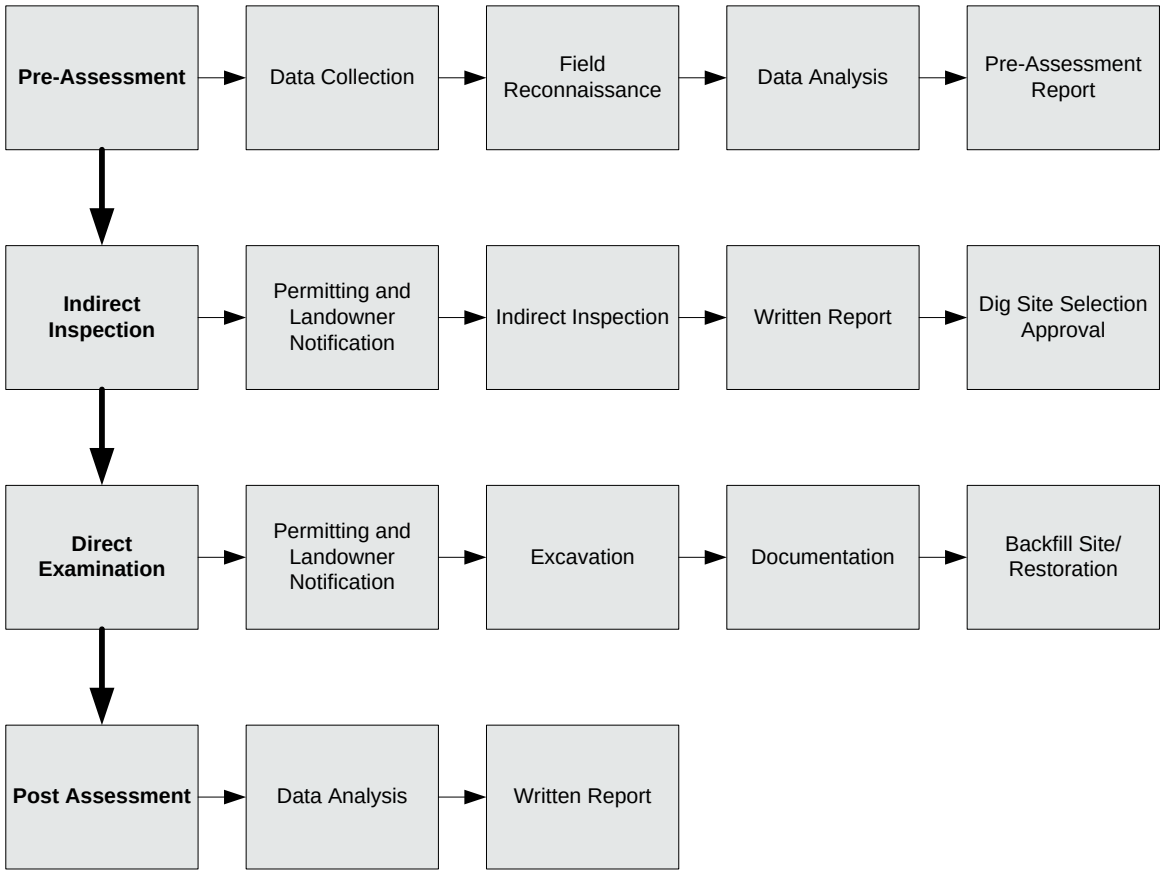


**Figure 4.10 – ECDA Process Overview**

## Table 4.3 – Transmission Integrity Management Costs

**$ Thousands**

| Activity | 2015 | 2016 | 2017 |
|---|---|---|---|
| **Transmission Integrity Management** | | | |
| **ECDA** | | | |
| **Pre-Assessment** | | | |
| 2015 (FL 19, 20, 52, 64, 65, 66, 68, 69, 72, 83, 84, 99, 104) (14 HCA miles @ $2,000/mile) | 28 | | |
| 2016 (FL 10, 14, 26 (uprated portion), 35, 41, 42, 48, 85, 88) (11 HCA miles @ $2,000/mile) | | 22 | |
| 2017 (FL 4, 11, 26 (non-uprate portion), 34, 103) (17 HCA miles @ $2,000/mile) | | | 34 |
| **Indirect Inspections** | | | |
| 2015 (FL 19, 20, 52, 64, 65, 66, 68, 69, 72, 83, 84, 99, 104) (14 HCA miles @ $30,000/mile) | 420 | | |
| 2015 (FL 89, 99, 116) (20 miles @ $30,000/mile) | 600 | | |
| 2016 (FL 10, 14, 26, (uprated portion), 35, 41, 42, 48, 85, 88) (11 HCA miles @ $30,000/mile) | | 330 | |
| 2017 (FL 4, 11, 26 (non-uprate portion), 34, 103) (17 HCA miles @ $2,000/mile) | | | 510 |
| **Direct Examinations** | | | |
| 2014-2015 (FL 23, 28, 29, 70, 71, 74) (20 excavations @ $25,000 each) | 250 | | |
| 2014-2015 (FL 23, 28, 29, 70, 71, 74) (Pipetel[53] 2 sites, 1 casing @ $175,000/site) | 350 | | |

[53] Pipetel is a self-propelled inline inspection tool equipped with wall loss sensors and cameras.

| | | | |
|---|---|---|---|
| 2015-2016 (FL 19, 20, 52, 64, 65, 66, 68, 69, 70, 72, 74, 83, 84, 99, 104) (20 excavations @ $25,000 each) | 250 | 250 | |
| 2015-2016 (FL 19, 20, 52, 64, 65, 66, 68, 69, 70, 72, 74, 83, 84, 99, 104) (Pipetel 3 sites, 2 casings @ $175,000 each) | | 525 | |
| 2015-2016 (FL 89, 99, 116) (6 excavations @ $25,000 each) | 75 | 75 | |
| 2016-2017 (FL 10, 14, 26 (uprate portion), 35, 41, 42, 48, 85, 88) (24 excavations @ $25,000 each) | | 300 | 300 |
| 2016-2017 (FL 10, 14, 26 (uprate portion), 35, 41, 42, 48, 85, 88) (Pipetel 4 sites, 4 casings @$175,000/site) | | | 700 |
| 2017-2018 (FL 4, 11, 26 (non-rate portion), 34, 103) (10 excavations @ $25,000 each) | | | 125 |
| **Post Assessment** | | | |
| 2015 (FL 19, 20, 52, 64, 65, 66, 68, 69, 70, 72, 74, 83, 84, 99, 104) (14 HCA miles @ $1,500/mile) | 21 | | |
| 2016 (FL 10, 14, 26, 35, 41, 42, 48, 52, 85, 88) (11 HCA miles @ $1,500/mile) | | 17 | |
| 2017-2018 (FL 4, 11, 26 (non-rate portion) 34, 103) (17 HCA miles @ $1,500/mile) | | | 26 |
| **ICDA** | | | |
| ICDA Complete, no longer required | | | |
| **Inline Inspection** | | | |
| 2014-2015 Excavations/Validations Digs/Remediation (14 excavations @ $25,000 each) | 125 | | |
| 2015 (FL 104) | 250 | | |
| 2015 (FL 71) | 350 | | |

| | | | |
|---|---|---|---|
| 2015-2016 Excavations/Validations Digs/Remediation (14 excavations @ $25,000 each) | 175 | 175 | |
| 2016 (FL 26) | | 350 | |
| 2016 Excavations/Validations Digs/Remediation (7 excavations @ $25,000 each) | | 175 | |
| 2017 (FL 19) | | | 350 |
| 2017 (FL 21) | | | 350 |
| 2017-2018 Excavations/Validations Digs/Remediation (14 excavations @ $25,000 each) | | | 175 |
| **Direct Examination – Spans and Vaults** | | | |
| 2015 - Vaults (7 @ $15,000/vault) | 150 | | |
| 2016 - Spans Reassessment (5 @ $10,000/span) | | 50 | |
| 2016 – Spans (1 @ $65,000/span) | | 65 | |
| 2016 - Vaults (8 @ $15,000/vault) | | 120 | |
| 2017 - Spans Reassessment (3 @ $10,000/span) | | | 30 |
| 2017 - Spans (1 @ $65,000/span) | | | 65 |
| 2017 - Vaults (8 @ $15,000/vault) | | | 120 |
| **Pressure Test Assessment** | | | |
| 2015 2 Casings ($100K/casing) | 200 | | |

| | | | |
|---|---|---|---|
| 2016 5 pipeline segments $100,000/segment | | 500 | |
| 2017 5 pipeline segments $100,000/segment | | | 500 |
| **HCA Validation** | | | |
| Identified Site Survey (misc. travel expenses 40 days @ $125,000/day) | 5 | 5 | 5 |
| **Excavation Standby** | | | |
| 4 employees (2,080 hrs x 4 x $70/hr) | 582.4 | 582.4 | 582.4 |
| **Additional Leak Survey** | | | |
| 120 hrs @ $70/hr | 8.4 | 8.4 | 8.4 |
| **Additional Cathodic Protection Survey** | | | |
| System Integrity Support - Cathodic Protection (2,080 hrs x $70/hr) | 145.6 | 145.6 | 145.6 |
| New Position (2015) System Integrity Support – Cathodic Protection (2,080 hrs x $70/hr) | 72.8 | 145.6 | 145.6 |
| **Administration** | | | |
| Project Coordination (3 employees (2,080 hrs x 3 x $70/hr)) | 436.8 | 436.8 | 436.8 |
| New Position 2015 Project Coordinator (2,080 hrs x $60/hr) | 62.4 | 124.8 | 124.8 |
| New Position 2015 Engineer – Operations Support (0.5 employee (2,080 hrs x 0.5 x $70/hr)) | 36.4 | 72.8 | 72.8 |
| Data Integration Specialists (2 employees (2,080 hrs x 2 x $70/hr)) | 291.2 | 291.2 | 291.2 |

| | | | |
|---|---|---|---|
| IM Engineer-Intern (1 employee (1,040 hrs @ $30/hr)) | 31.2 | 31.2 | 31.2 |
| Consultant – 3rd Party Plan Review | 25 | 25 | |
| Supervisor M2 (2,080 hrs x $70/hr) | 145.6 | 145.6 | 145.6 |
| Senior Engineer M2 (2,080 hrs x 0.5 x $70/hr) | 72.8 | 72.8 | 72.8 |
| Training (for IM and Engineering personnel) | 22.45 | 22.45 | 22.45 |
| **Transmission Integrity Management Total ($ Thousands)** | $ 5,182 | $ 5,063 | $ 5,369 |

## Table 4.4 – Distribution Integrity Management Costs

**$ Thousands**

| Activity | 2015 | 2016 | 2017 |
|---|---|---|---|
| **Distribution Integrity Management**<br>**NOTE:** *The costs estimated here are based on additional and accelerated actions initiated based on the threats identified. The costs also reflect the administration costs associations with this new regulation.* | | | |
| **Additional and Accelerated Actions** | | | |
| Stray Current Surveys | 350 | 350 | 350 |
| Additional Leak Survey | 300 | 300 | 300 |
| Region Specific Accelerated Actions | 150 | 150 | 150 |
| Mapping Improvements | 456 | 200 | 200 |
| **Administration** | | | |
| New Position 2015 Engineer – Operations Support (0.5 employee (2,080 hrs x 0.5 x $70/hr)) | 72.8 | 72.8 | 72.8 |
| Senior Engineer M2 (2,080 hrs x 0.5 x $70/hr) | 72.8 | 72.8 | 72.8 |
| Training (for IM and Engineering personnel) | 12 | 12 | 12 |
| Consultant – 3rd Party Plan Review | | 25 | 25 |
| **Distribution Integrity Management Total ($ Thousands)** | $ 1,486.4 | $ 1,255.4 | $ 1,255.4 |

## Table 4.5 – HCA Miles Assessed/ Anomalies Repaired

| YEAR | HCA Miles Assessed | Anomalies Repaired |
|---|---|---|
| 2012 | 26.470 | 28 |
| 2013 | 50.367 | 27 |
| 2014 | 54.555 | 20 |

**Environmental Review**

Questar Gas is committed to compliance with environmental laws and regulations. Some of the regulations with which Questar Gas must comply include the National Environmental Policy Act, the Endangered Species Act, the Clean Air Act, the Clean Water Act, the Toxic Substance Control Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act, the Emergency Planning and Community Right to Know Act, the Oil Pollution Act and the National Historic Preservation Act, as well as similar state and local laws that can be more strict than their federal counterparts.

Agencies issuing permits and enforcing these regulations frequently place restrictions on Company activities. Requirements are becoming more stringent over time and are affecting the location and construction of Questar Gas infrastructure. When projects impact the environment, regulatory agencies require permit applications, agency review and public comment periods prior to permit approval. Permit conditions can be rigorous and costly, requiring compliance activities long after project completion. Monitoring may be required for the life of the installation. For example, the U.S. Fish and Wildlife Service may designate critical habitat areas to protect certain threatened and endangered species.

A critical habitat designation for a protected species, such as the sage grouse or desert tortoise, can result in restrictions to federal and state land use. Such restrictions can delay or prohibit access to or use of subject land. Because Questar Gas infrastructure crosses many miles of federal and state lands that include the critical habitat of protected plant and animal species, there can be a material impact on the location of pipeline facilities and construction schedules.

The Clean Water Act and similar state laws regulate discharges of storm water, hydrostatic test water, wastewater, oil and other pollutants to surface water bodies such as lakes, rivers, wetlands and streams. Failure to obtain permits for such discharges or accidental releases could result in civil and criminal penalties, orders to cease such discharges, corrective actions and other costs and damages.

Pre-existing conditions complicating project construction include situations where Questar Gas' pipelines, both new and existing, cross contaminated sites owned by third parties. In many cases, these sites have not been reported to regulatory agencies by the prior owner, and in some cases the boundaries of the sites are unknown, resulting in unforeseen construction interruptions as Questar Gas consults with the regulators on proper remedial activities. Where they have been reported, the sites, usually regulated by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or comparable state regulations, require corrective actions as construction activities proceed.

The Company must determine soils disposition prior to construction (when presence of the contamination is known), properly train employees, equip employees with protective equipment, and invoke proper disposal and decontamination procedures, all of which result in escalated project costs. Also, accidental spills and releases requiring cleanup may also occur in the ordinary course of business, requiring remediation. The Company may incur substantial costs to take corrective actions in any of these cases. Failure to comply with these laws and regulations may result in fines, significant costs for remedial activities, or injunctions. New and revised environmental policy is affecting the industry and Questar Gas specifically, and will result in additional costs to conduct business. For example, federal and state courts and administrative agencies are addressing claims and demands related to climate change under various laws pertaining to the environment, energy use, and development.

In 2010, the U.S. Environmental Protection Agency (EPA) adopted Greenhouse Gas (GHG) Reporting Regulations requiring the measurement and reporting of carbon dioxide equivalent ($CO_2e$) emissions emitted from combustion at large facilities (emitting more than 25,000 metric tons/year of $CO_2e$). Although Questar Gas does not have any single facilities that exceed that threshold, local distribution companies are required to account for the GHG emissions of their customers (residential, commercial and industrial customers using less than 460 MMCF/year of natural gas) annually.

In 2011, the EPA expanded reporting under this regulation to include measurement and reporting of GHG emissions attributed to fugitive methane emissions, requiring on-going measurement and monitoring of methane emissions at Questar Gas regulator and gate-stations. In 2014, Questar Gas reported a total of 7 million metric tons of $CO_2e$ emissions in Utah, with approximately 83,000 metric tons attributed to fugitive (methane) sources.

Questar Gas believes that it is important for the natural gas industry to be able to scientifically estimate methane emissions from leaks and other fugitive sources. In 2013, Questar Gas participated in an Environmental Defense Fund (EDF) project to quantify leakage from local distribution systems. This activity represents one module of a 5-part study to quantify methane emissions across the natural gas value chain. The results of this study, conducted collaboratively with industry, academia, consultants and the EDF, concluded that natural gas emissions from local distribution companies are considerably lower than previous EPA estimates. It is projected that this data will be used to identify more realistic GHG emission factors for the natural gas industry going forward. Figure 4.11 shows Questar Gas' GHG emissions.

The GHG Reporting Rule has essentially developed an "inventory" of $CO_2e$ emissions that could be used in future climate change initiatives. Depending on how new rules evolve, companies subject to the GHG Reporting Rule could be required to pay a fee based on the amount of $CO_2e$ emitted; a system is already in place for emissions of criteria and hazardous air pollutants reported annually under the Clean Air Act. Recognizing that Questar Gas is a

regulated retail distributor of natural gas, the Company anticipates full recovery of costs incurred in collecting the data necessary for reporting carbon emissions and meeting any climate change obligations required under the law.

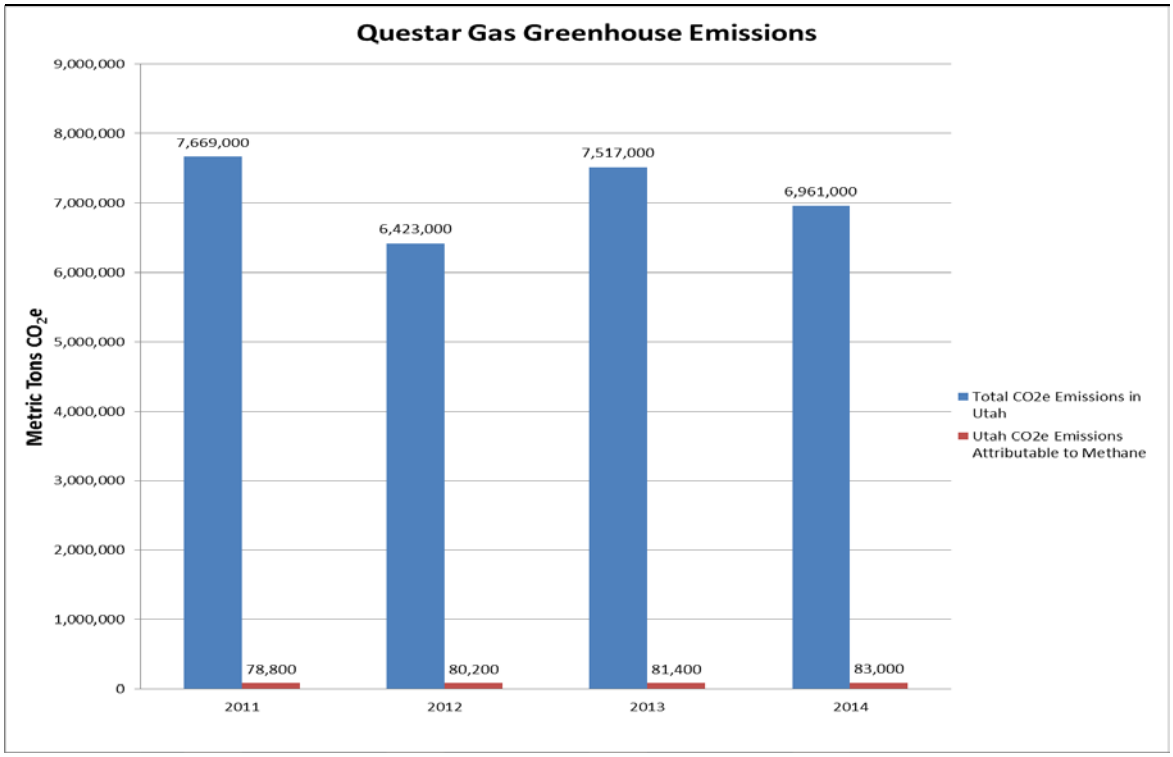


**Figure 4.11**

In January 2015, the Obama Administration issued a "blueprint" outlining the policies it plans to adopt in order to address methane emissions originating from the oil and gas industry. The blueprint announces an overall goal to cut emissions by 40-45% from 2012 levels by 2025. This will occur through a combination of regulatory and voluntary initiatives that the government will roll out over the next two years. It is too early to predict how these new requirements will affect Questar Gas' business, operations or financial results.

In June 2014, the EPA released proposed rules under §111(d) of the Clean Air Act for the control of CO2 emissions from existing fossil-fuel-fired electric-generating power plants. These rules, when final, would require states to adopt plans to reduce CO2 emissions by 30 percent from 2005 levels by 2030. The rule is scheduled to be finalized in mid-2015. Questar Gas believes this rule provides an opportunity to further promote the energy efficiency and emissions saving benefits of natural gas. It is hoped that EPA will allow sufficient flexibility for states to

take advantage of these environmental benefits as they identify compliance options in state specific plans.

Questar Gas expects that greater awareness regarding the benefits of natural gas for high-efficiency residential, commercial, transportation, industrial and electricity generation purposes will result in the advancement of these applications and increased utilization of natural gas-fueled equipment. Greater utilization of natural gas should result in significantly lower U.S. greenhouse gas emissions in comparison with more carbon intensive fuels.

Conservation efforts will also continue to have a positive environmental impact. For example, the Company estimates annual savings of more than 5 MMDth of natural gas from 2007 to 2014. The savings represents the equivalent of about 265,000 metric tons of $CO_2e$ or 55,800 passenger vehicle equivalents (calculated using EPA's GHG equivalence calculator). Lifetime savings attributable to the ThermWise® program totals more than 1.5 million tons of $CO_2e$ or the equivalent of about 315,000 passenger vehicles.

Interest in the use of natural gas as an alternative transportation fuel continues to grow and Questar Gas is actively involved in expanding its refueling infrastructure. However, further federal regulation of $CO_2e$ across the natural gas industry could increase the price of natural gas, restrict access to natural gas resources and/or reduce natural gas demand.

Questar Gas will continue to comply with existing and new environmental rules and regulations that protect employees, the public and the environment. The Company will participate in studies to learn more about the efficiencies of natural gas and its value chain carbon footprint. Company personnel will also continue participating in rulemaking efforts encouraging the expanded use of natural gas.