

NISOURCE GAS DISTRIBUTION

D-10018 State College

Columbia Gas of Pennsylvania
Gas Systems Planning

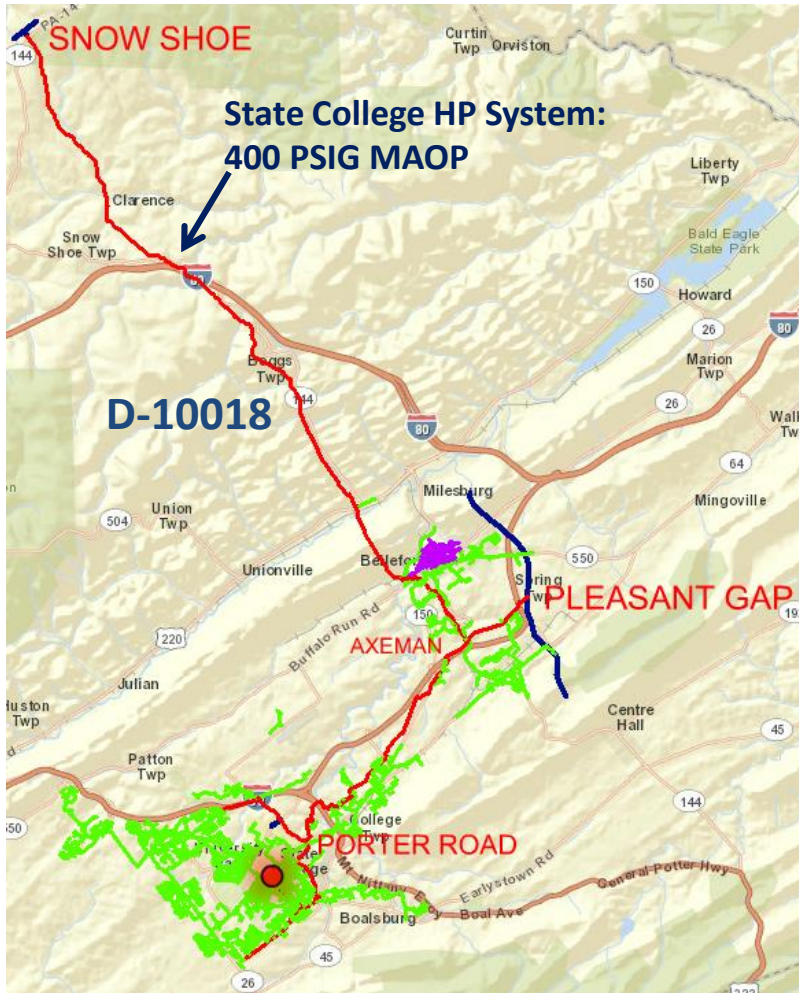
April 2014



Situation

- D-10018 provides a large portion of the supply for the State College market and has an MAOP of 400#
- D-10018, Snow Shoe lateral, has gaps in pressure test and material data
- What are the Replacement Options?

Current State College Configuration



- Peak Total Market Volume = 51,861Dth/d
- Peak Snow Shoe Volume through 8"WTHP lateral = 18,811 dth/day
- Need additional Pleasant Gap volume to supply total market demand
- CPG Snow Shoe contract:
 - DDQ - 11,000 dth/day
 - MDDO - 20,000 dth/day

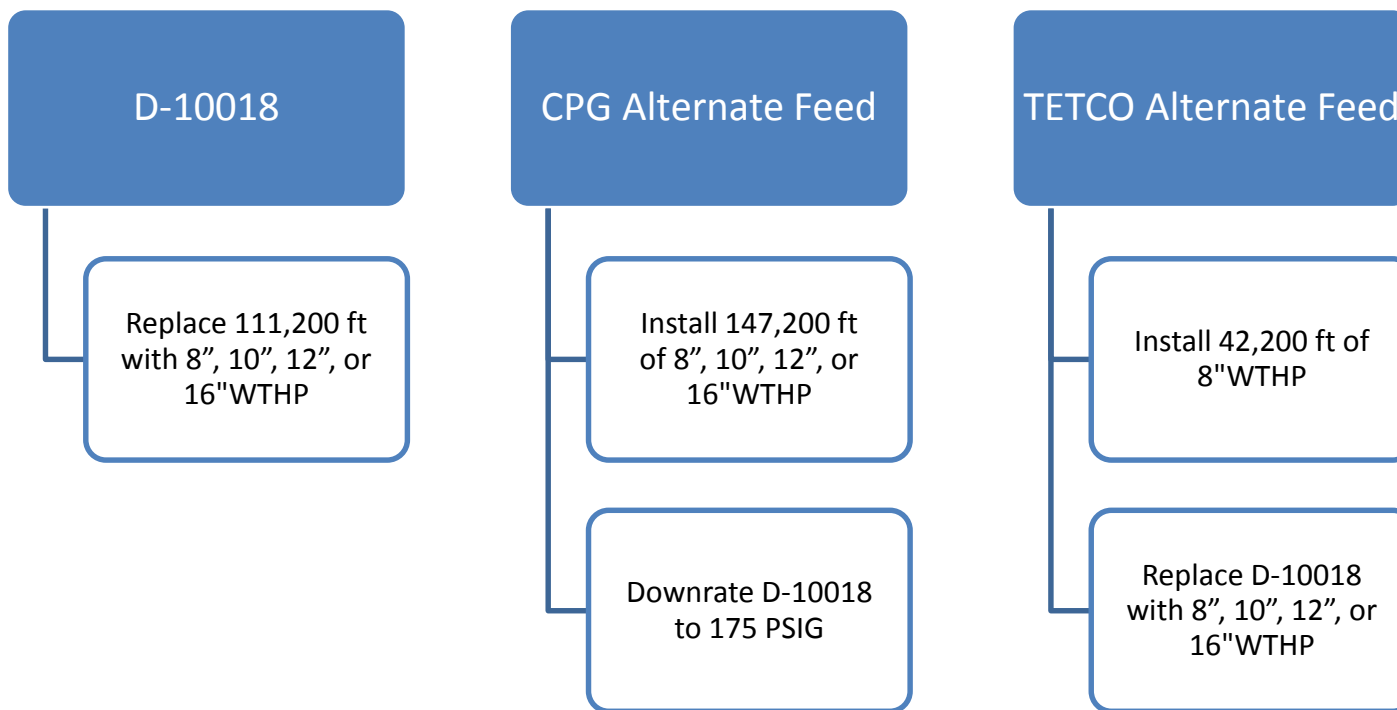
Do we need D-10018?

- From a physical perspective, D-10018 is not needed to supply the market.
- The market can be physically supplied via the TETCO and/or DTI supply points at Pleasant Gap.
- From a supply perspective, D-10018 is valuable as it connects the market to valuable contract assets CPA has with Columbia Pipeline Group
 - Storage contracts allow for no notice service, the ability to balance supply vs demand, and provide balancing and banking service to gas transportation customers
- TETCO & DTI have indicated capacity is limited on their systems
- Capital and/or gas costs impacts to supply the market almost exclusively from TETCO and/or DTI with similar no notice and balancing capabilities are unknown at this point

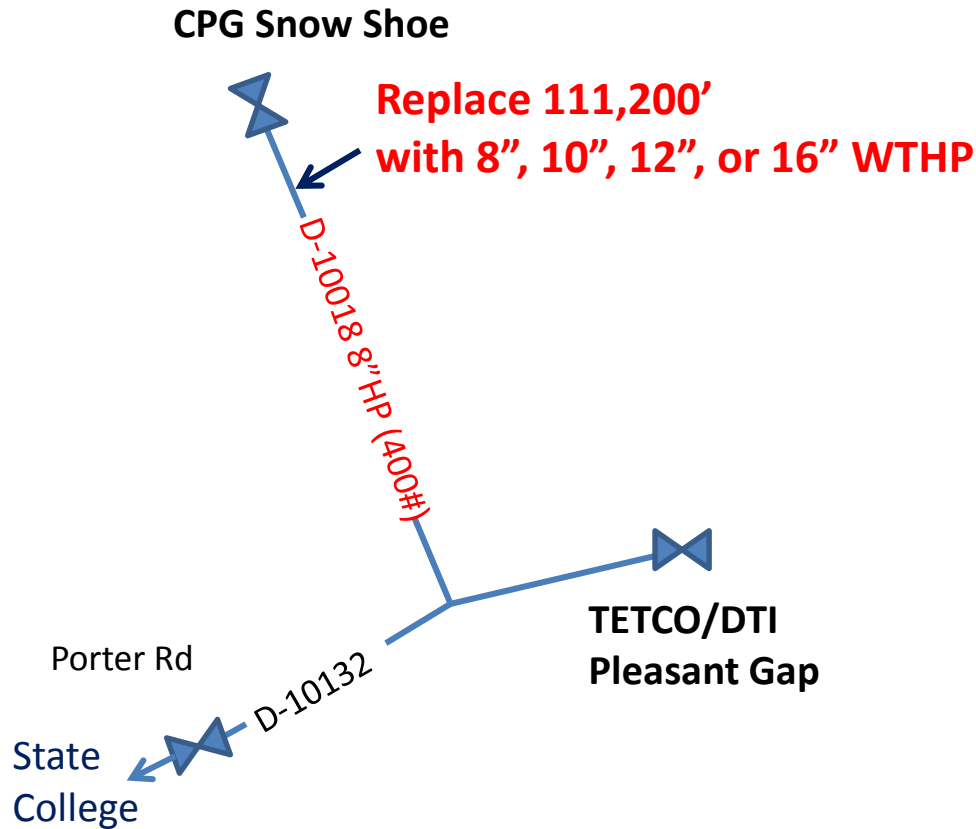
Snow Shoe Replacement Assumptions & Objectives

- Assume CPA wants to retain access to CPG for supply reasons
- Evaluate different replacement diameter options
- Evaluate alternate feed options
- Maximize gas deliveries at Snow Shoe POD due to long-term benefits
 - Greater ability to balance on CPG
 - Substantial GDS supply delivered through CPG
 - CPA holds large storage contracts with CPG allowing for “No Notice Delivery”

D-10018 Snow Shoe Line Options



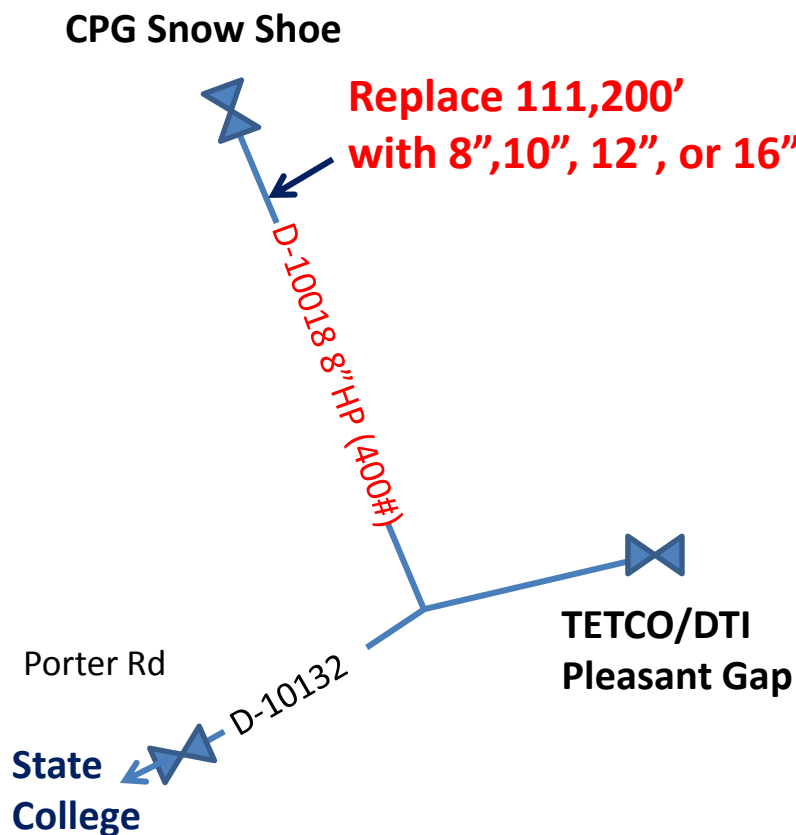
Option 1: Maximum Lateral Capacities After Replacing 111,200 ft of D-10018



Lateral	D-10018 Size	Max Capacity (Dth/d)
D-10018	8"	18,811
	10"	33,749
	12"	53,861
	16"	100,209
D-10132 [after replacing D-10018]	8"	79,519
	10"	80,180
	12"	80,892
	16"	82,044
Total Snow Shoe [D-10018 + D-10132]	8"	18,811
	10"	33,749
	12"	53,184
	16"	72,616

*Note: Total Peak Market Rate = 51,861 dth/d

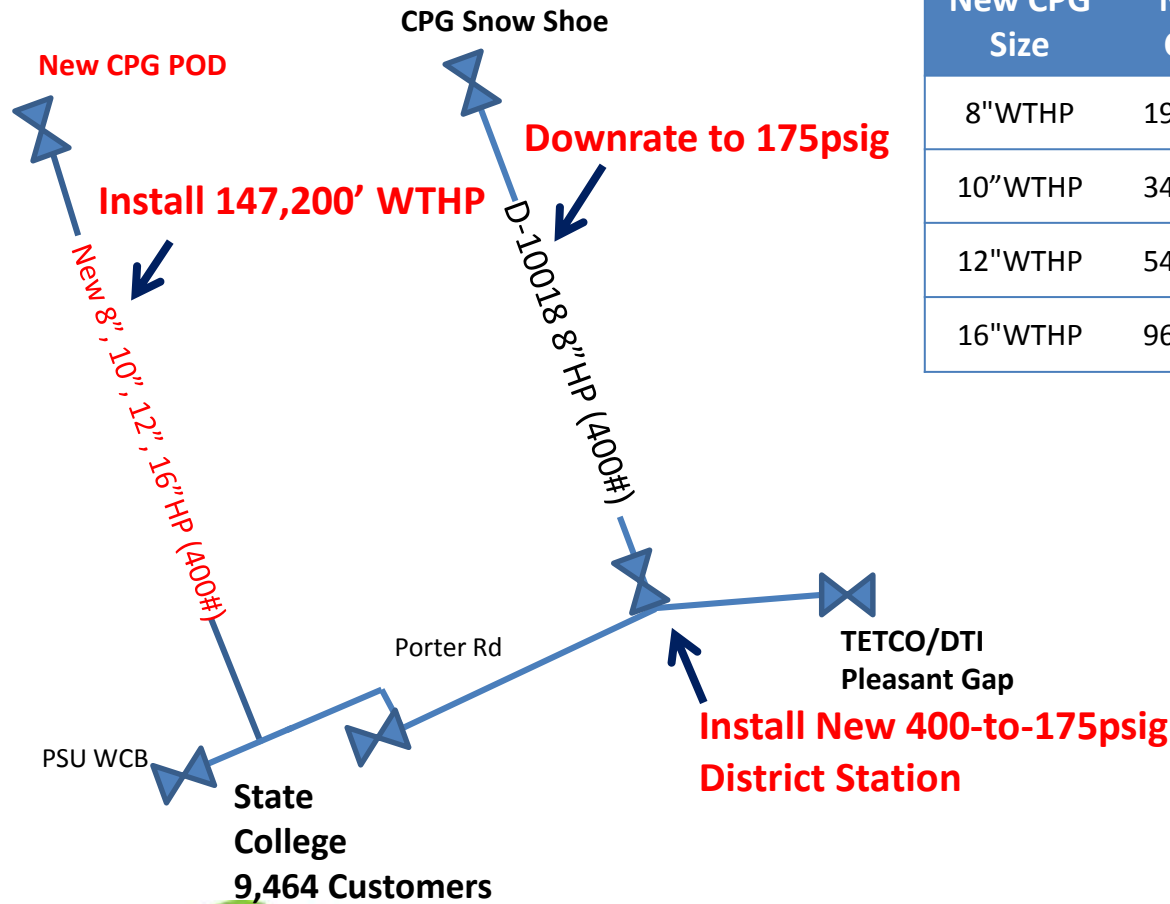
Option 1: Supply and Cost of Replacing 111,200 ft of D-10018



D-10018 Size	Snow Shoe Capacity	TETCO/DTI Supply Needed?	Cost
8"WTHP	18,811 Dth/d	Y	\$25.02 MM
10"WTHP	33,749 Dth/d	Y	\$29.47 MM
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16"WTHP	72,616 Dth/d	N	\$55.6 MM

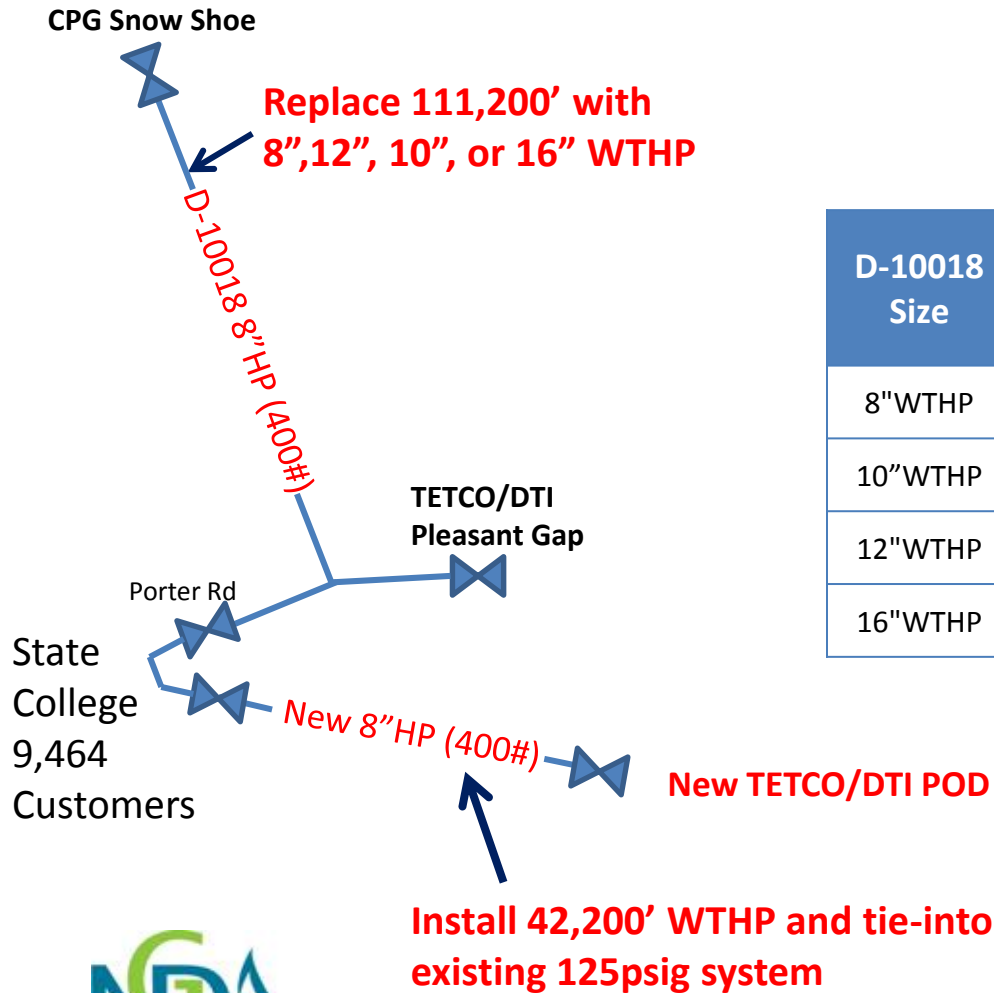
*Note these volumes are greater than existing MDDO at Snow Shoe

Option 2: Supply and Cost of Installing CPG Alternate Main



New CPG Size	New CPG Capacity	TETCO/DTI Supply Needed?	Cost
8"WTHP	19,113 Dth/d	Y	\$33.12 MM
10"WTHP	34,534 Dth/d	Y	\$39.01 MM
12"WTHP	54,718 Dth/d	N	\$45.69 MM
16"WTHP	96,941 Dth/d	N	\$73.6 MM

Option 3: Supply and Cost To Install TETCO/DTI Alternate Main and Replace D-10018



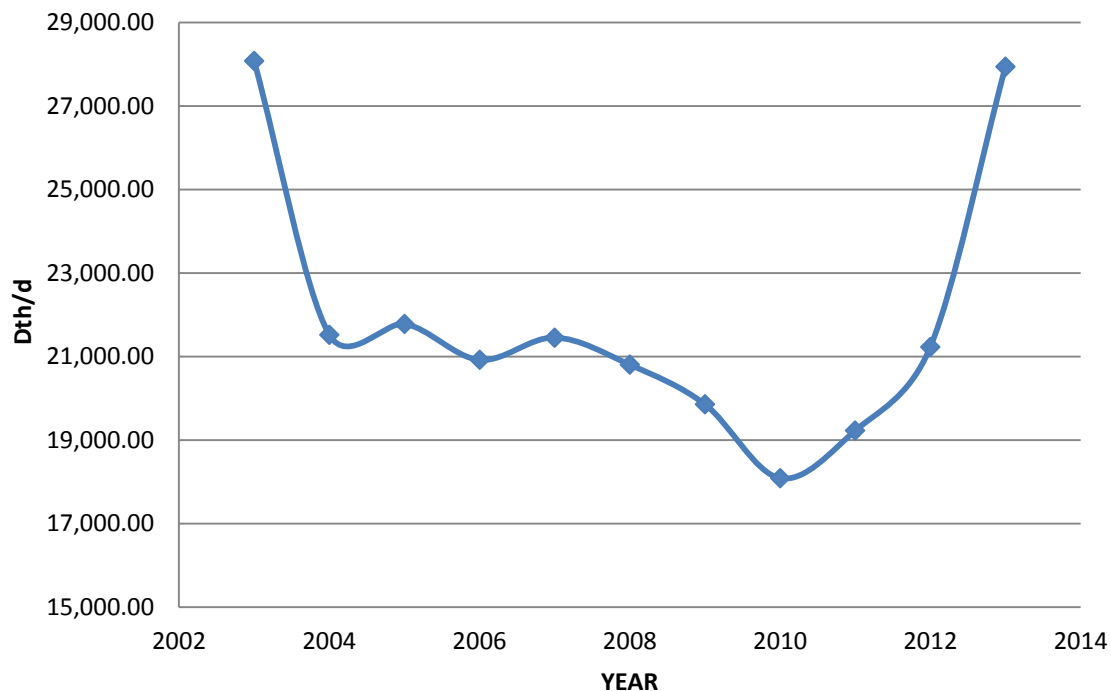
D-10018 Size	Snow Shoe Capacity	TETCO/DTI Supply Needed?	Cost
8"WTHP	20,226 Dth/d	Y	\$35.57 MM
10"WTHP	36,332 Dth/d	Y	\$ 40.02 MM
12"WTHP	53,184 Dth/d	N	\$42.79 MM
16"WTHP	72,616 Dth/d	N	\$66.15 MM

Alternate Route Benefits

- **Eliminates Susceptibility**
 - Allows CPA to continue service to the 9,464 customers downstream of Porter Road in the event D-10132 or Porter Road district station are taken out of service
- **Future Growth Opportunities**
 - Provides additional opportunities for growth in areas where CPA currently does not have distribution facilities
 - ❖ **Alternate CPG Route**
 - Town of Port Matilda ~262 households
 - ❖ **Alternate TETCO/DTI Route**
 - Approximately 55mcfh
 - Small industrial park (27mcfh)
 - Elks Lodge (7mcfh)
 - Few small existing and proposed residential developments (~15mcfh)
 - Individual residential customers (6mcfh)

Projected Volume for State College Market

Total Market Volumes 1-in-20 Design



* P903 report from 2003 to 2012

Projected Growth for State College Market (continued)

- Reviewed Active Customer Counts from 2003 to 2012
 - Average net increase of 2.6% per year
 - Equates to approximately 10.12mcfh per year
 - Total net increase of 2,531 for a total of 12,466 customers
- Reviewed NLTS Projects from 2003 to 2012 (not including PSU)
 - Average load addition of 58.28mcfh per year
- 2014-2015 Forecasts show home sales are steady
 - 2014 Total Estimated Units: 265
 - 2015 Total Estimated Units: 270
- Based on this information, a 20-year total market demand rate of 60,000 Dth/d can be expected

Replacement and New Install Qualifications

- Project Management provided pricing estimates
- Pricing - high level, not budget quality
- Estimates Do Not Include:
 - District Station Replacement
 - POD Replacement
 - Farm Tap Tie-over Service Replacement
- Land Rights have not been confirmed

Cost Comparison For The Options

Option	D-10018 Detail	Alternate Route Detail	Total Cost	Incremental Cost	Total CPG Capacity (Dth/d)	Capacity Cost (\$/Dthd)
<u>D-10018:</u> <ul style="list-style-type: none"> Replace 111,200' 	8" WTHP	N/A	\$ 25.02 MM	N/A	18,811	\$ 1,330
	10" WTHP		\$ 29.47 MM	\$ 4.45 MM	33,749	\$ 873
	12" WTHP		\$ 32.25 MM	\$ 7.23 MM	53,184	\$ 606
	16" WTHP		\$ 55.6 MM	\$ 30.58 MM	72,616	\$ 766
<u>Alternate CPG Line:</u> <ul style="list-style-type: none"> Install 147,200' Downrate D-10018 	Downrate	8" WTHP	\$ 33.12 MM	N/A	19,113	\$ 1,733
		10" WTHP	\$ 39.01 MM	\$ 5.89 MM	34,534	\$ 1,129
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	12" WTHP		\$ 42.79 MM	\$ 7.22 MM	53,184	\$ 805
	16" WTHP		\$ 66.15 MM	\$ 30.58 MM	72,616	\$ 911

D-10018 Replacement Options

Questions ?

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D-10018 State College

Columbia Gas of Pennsylvania

Gas Systems Planning – April 2014 (Original Presentation)

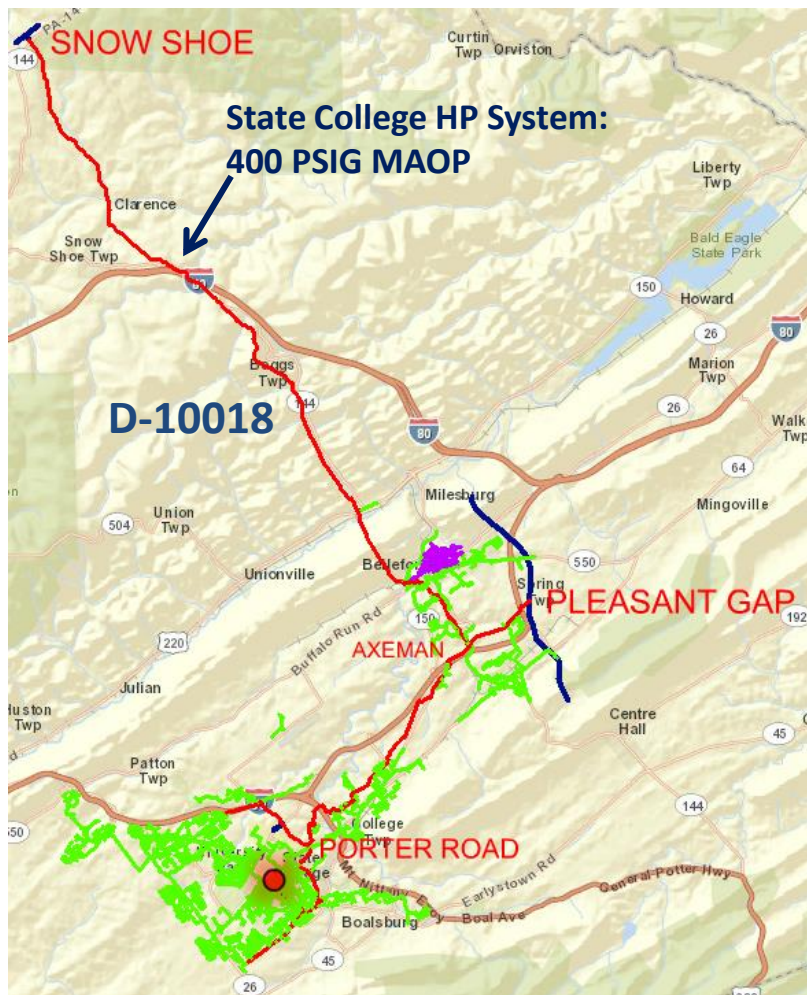
Updated – February 2015



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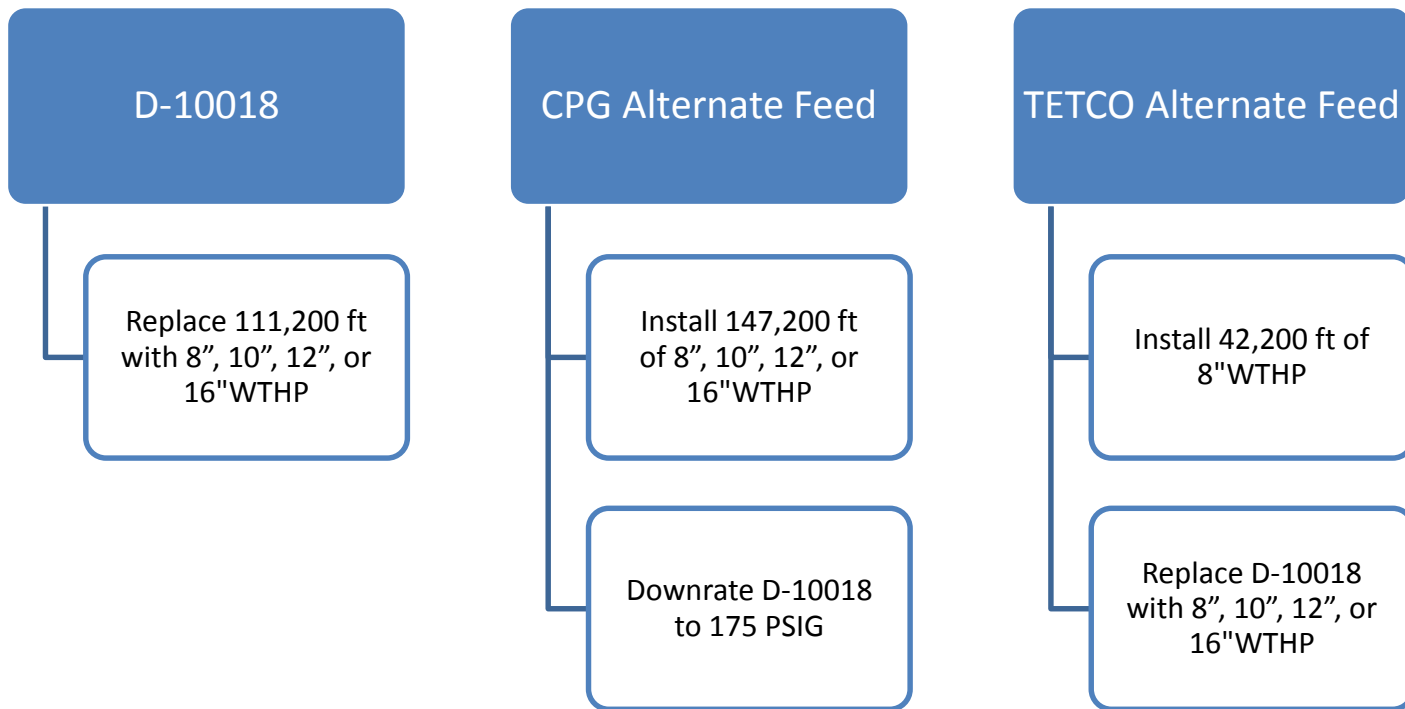
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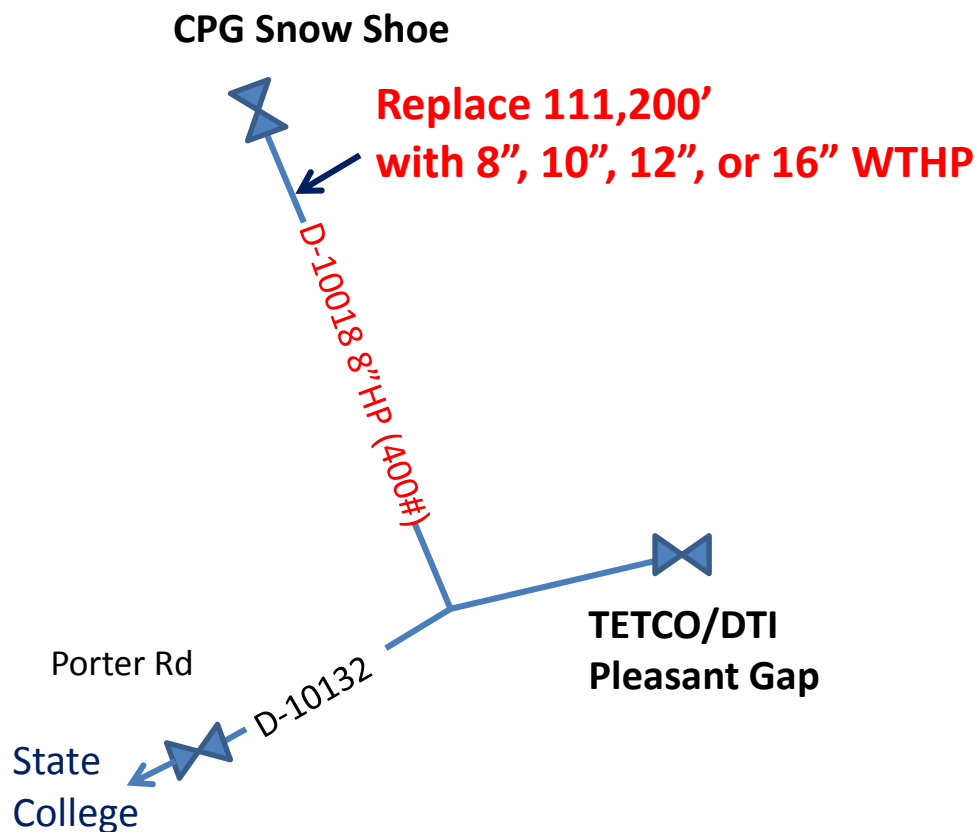
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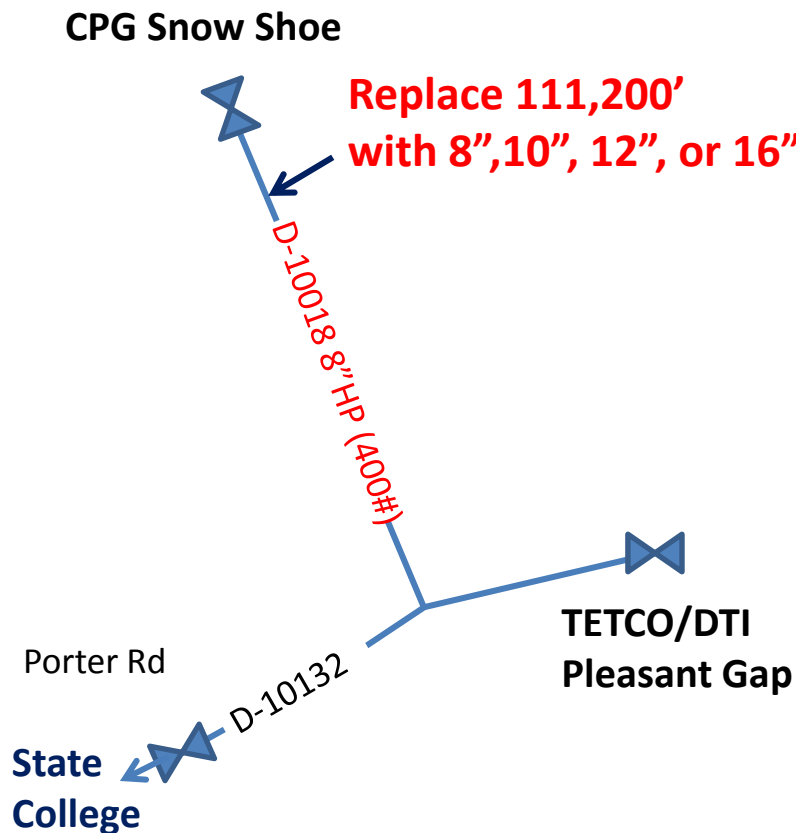
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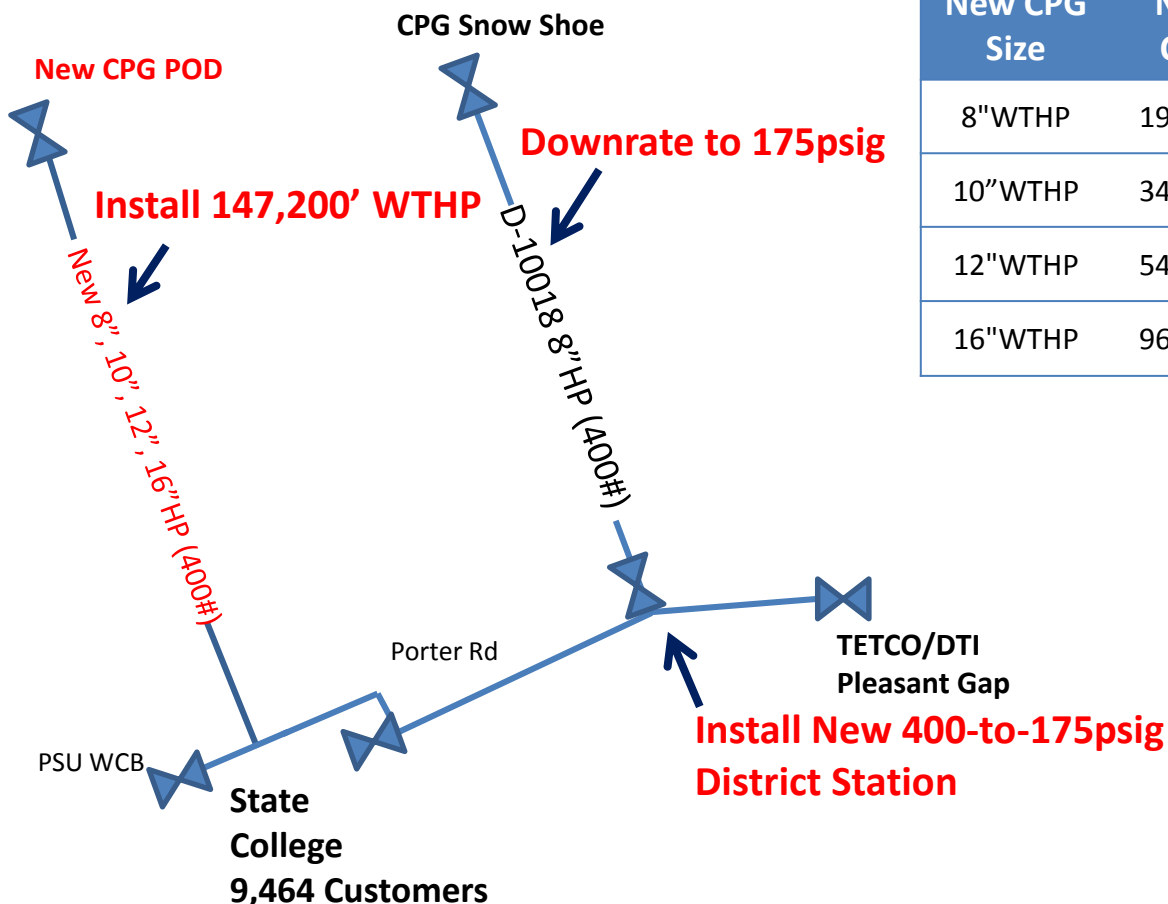
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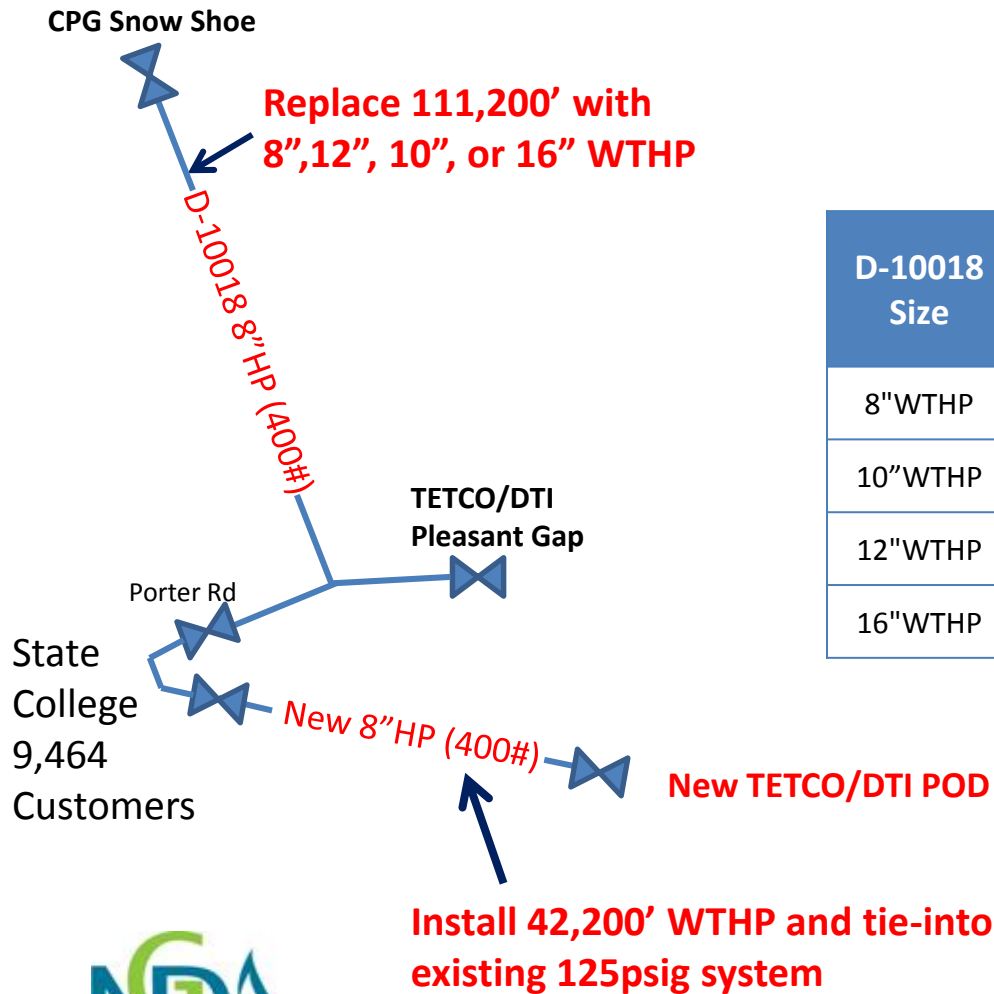
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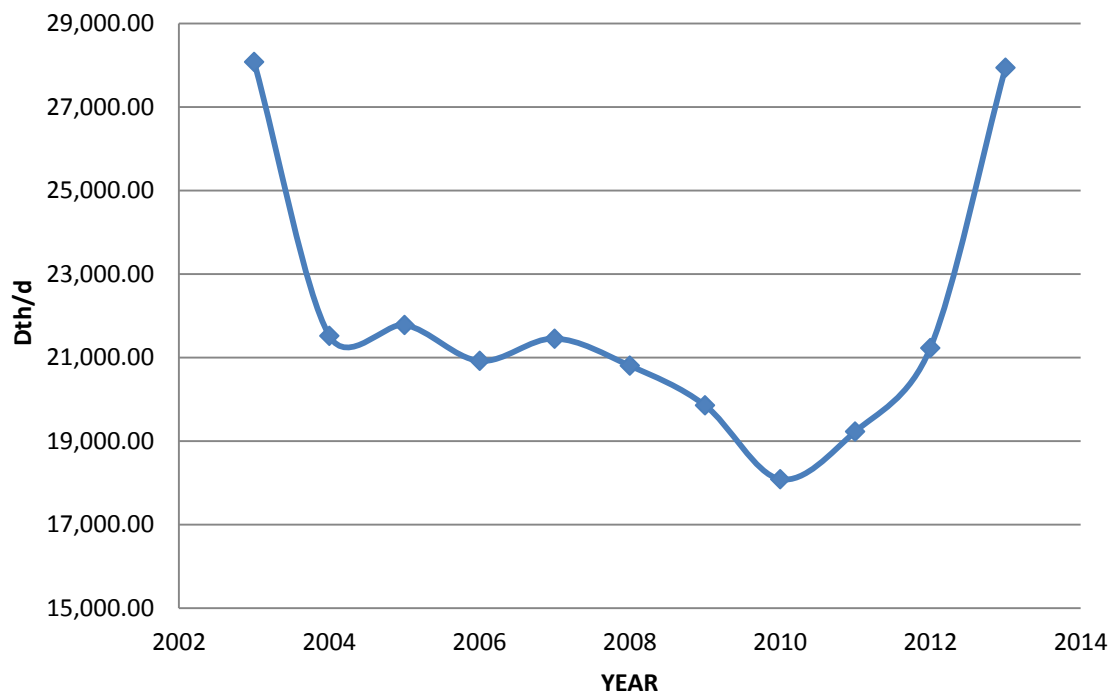
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What's Changed?

- Original option chosen – replace DT 10018 with 12 inch pipe
 - Replacement over a period of 2-3 years, with work scheduled to start in 2015
- New information as of February 2015
 - 20,000 Dth/day of FT at Pleasant Gap is available from DTI
 - Cost to replace the 21 miles of D-11018 with 12” is estimated to be \$60 - \$70 million

Key Issues For Discussion

- Stranded Cost of CPG capacity
- Impact to purchased gas costs
- Penn State University contract and access to CPG
 - PSU payment to upgrade CPG POD
- Mainline tap customer abandonment
- Impact to gas supply operations
- Impact to CPA transportation customers
 - Balancing & Banking
 - Standby Service
 - Nominations
- DTI POD capacity & upgrade costs, if any
- Regulatory Impact

D-10018 Replacement Options

Questions ?

Confidential

Snowshoe Lateral Alternative Replacement Options

Nicole Paloney
Director, CPA/CMD Rates and
Regulatory Affairs

March 18, 2015



Columbia Gas® of Pennsylvania
Columbia Gas® of Maryland

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- Alternative Options Considered
- Engineering Assumptions – Alternative Options
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- Other Considerations
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- Questions

Background – Snowshoe Lateral

Does an alternative to replacing 21 miles of transmission line pipe exist?

- D-10018 (Snowshoe Lateral) provides a majority of the supply for the State College market and has an MAOP of 400#
 - gaps in pressure test and material data exist
- No capacity available from DTI or TETCO to offset supply from D-10018
- Decision made in 2014 to replace DT 10018 with 12 inch pipe over a period of 2-3 years
 - Project scheduled to start in 2015 at an
 - Estimated Cost = \$60 - \$70 million
- February 2015 - 20,000 Dth/day of FT at Pleasant Gap now available from DTI

Alternative Options Considered

- Two Alternative engineering solutions identified
 - Option 1 – Abandonment of middle section of existing line, with improvements made at north and south ends of the line to serve existing customers
 - Cost - \$16,100, 000
 - Option 2 – Abandonment of line north of the northern most customer on the line, including abandonment of the Snowshoe POD. Improvements will be required on the south end of the line to serve existing customers
 - Cost - \$24,100,000
 - Additional opportunities for further cost reduction exist in both options
- Both options:
 - Assume DTI POD at Pleasant Gap will be re-built to accommodate additional load and can be taken out of service for new equipment to be installed
 - Abandonment of Snowshoe lateral results in the loss of some redundancy to the system, resulting in a slight increase in the chance of a risk of loss of service if a large single event occurs

Engineering Assumptions – Alternative Options

- Minimal Environmental Issues encountered.
- Rock anticipated. Spot digs would be needed to determine exact amount.
- Access to District Station sites is assumed.
- New Land Rights are able to be acquired.
- Right of Way costs to be negotiated where needed.
- SCADA work as needed in Stations and PODs.
- Minimal Extra Depth.
- Soil Inspections on State Highways only
- DTI POD can be taken out of service for rebuild.
- District Stations can be rebuilt on existing Easements unless already noted.
- Estimates based on historical pricing. Assumed similar bid results for POD, District Sets, and Contract Units.

Alternative Option 1

Cost - \$16,100,000

- Serve farm taps #1 thru #26 thru MP line from Snowshoe POD with 6-inch MP Plastic Pipeline.
- Includes the cost of rebuilding Snowshoe station to accommodate smaller load, cost of replacing farm tap set, cost of surveying and permitting (some cost already incurred)
- Customers 26-32 will be abandoned (17,000 feet)
- Serve remaining southern end of D-10018 with of 8-inch High Density Plastic Pipeline.
- Includes cost of Regulator station just north of Axeman, installation of HP pipeline from Axeman to farm tap #33, cost of replacing farm tap sets and cost of re-building 4 reg stations and Bald Eagle set to accommodate lower inlet pressure if needed.



Alternative Option 2

Cost - \$24,100,000

- Abandon Snowshoe POD
- Serve Bellefonte, Bald Eagle and all farm taps from Axeman to farm tap #1 with 91,000 feet of 8-inch High Density Plastic High Density plastic (if this works in the model)
- Include cost of Reg. Station just north of Axeman, installation of high density plastic HP line from Axeman to farm tap #1, cost of replacing farm tap sets and cost of re-building 4 reg stations and Bald Eagle set to accommodate lower inlet pressure if needed



Single Feed Risk

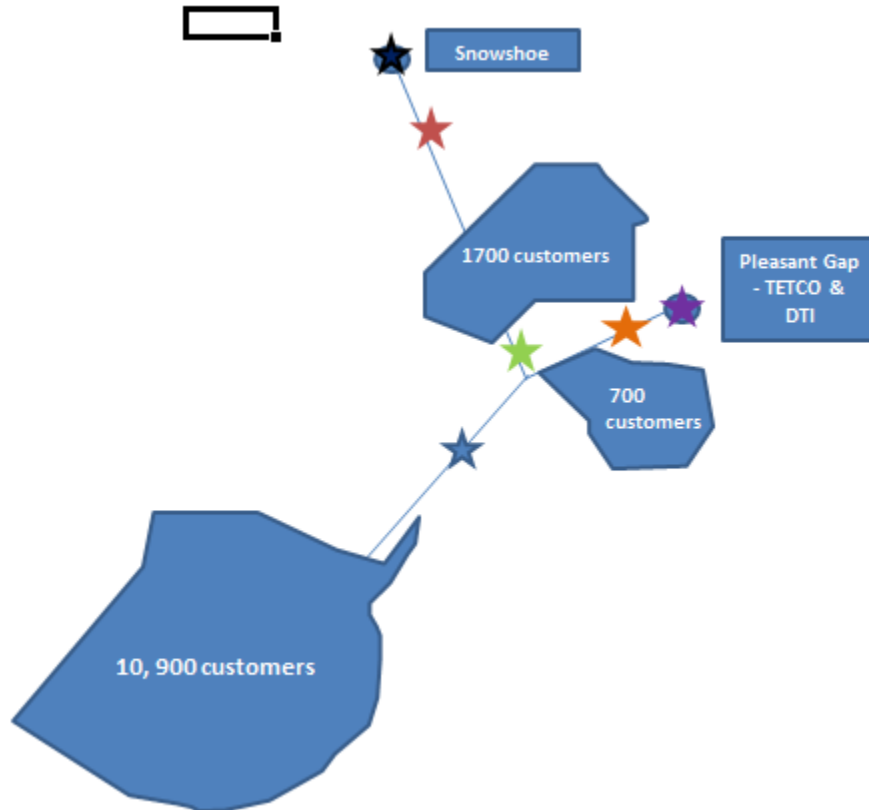
- Current state: three feeds into the Snowshoe lateral system
 - Feeds from both Snowshoe and Pleasant gap (see slide 9)
 - Option 1 eliminates feed from Snowshoe (see slide 10)
- Single Feed Risk exists across NGD

<u>Area</u>	<u>Customer Impact</u>	<u>Estimated Cost to Mitigate (\$000's)</u>	<u>Residual Customer Risk</u>
Toldeo	104,000	\$10 - \$62	39,800 - 0
New Albany	65,000	\$14 - \$122	40,000 - 0
Brockton	60,000	\$50	900
Agawam	54,000	\$20	0
Tannehill	21,000	\$6	6,000
Columbus *	182,000	\$133 - 265	44,000 - 0

* - aggregate estimate for the city of Columbus

- Limited activity to mitigate these risks in other NGD companies
- Engineers have identified potential other routes to mitigate single feed risk
 - Costs for routes to mitigate risk have not been estimated

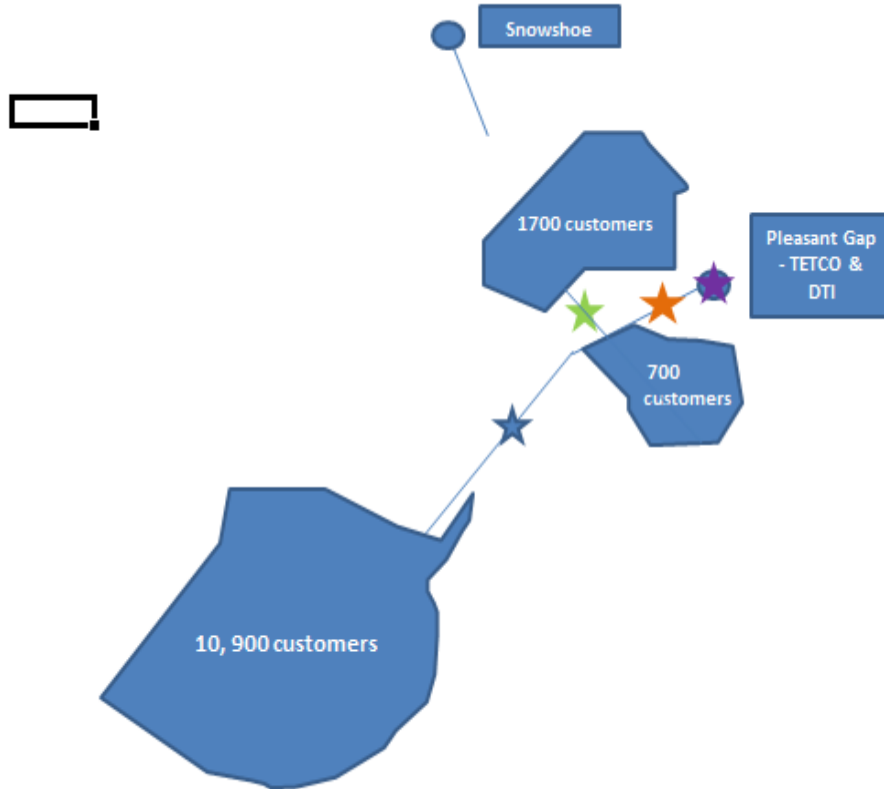
Single Feed Risk



Current State:

Currently, there are three feeds into the system that is the Snowshoe lateral: Snowshoe, DTI and TETCO. Stars represent location where a facility issue could cause large customer outage. The polygons show concentration of customers.

Single Feed Risk



Option 1:

Eliminates Snowshoe feed. Still have feeds from both DTI and TETCO at Pleasant Gap. Stars represent location where a facility issue could cause large customer outage. The polygons show concentration of customers.

Other Considerations

- Penn State University
 - Current contract language addressing delivery options; CPA not contractually obligated to provide TCO gas to Penn State
 - Delivery by displacement (Summer and Winter)
 - TCO Summer OFOs; Limited Market absorption
 - Potential disparity among other State College Delivery Service (DS) customers
- CPA Delivery Service Customers in State College
 - Current TCO Market Area 36 deliveries vs potential requirement to deliver off DTI or TETCO into State College market
 - Current Tariff language; Need for Future change(s)
 - Banking & Balancing, including EBS – will it remain unchanged?
 - Provide advanced notice to customers and their suppliers; need adequate time to make changes on their end (capacity, commodity, etc.)
- Regulatory
 - Fiduciary responsibility to customers
 - Efficient use of capital
 - Additional funds for age and condition pipe

Other Considerations

- Stranded Cost of CPG capacity
 - Estimated stranded cost of \$350,000

- Mainline tap customer abandonment
 - Option 1 abandons customer 26 – 32
 - Footage no longer required to be replaced – 9,100 feet of 6 inch medium pressure pipe from Snowshoe south and 7,900 feet of 8 inch high density from Axeman North
 - Usage summarization of customers to be abandoned:

Meter/Farm Tap			Annual
<u>Number</u>	<u>PSID</u>	<u>Address</u>	<u>Amount Used</u>
27	500305519	877 Fountain Road	1,411
28	500314080	901 Fountain Road	338
29	500728702	120 Doe Ridge Lane	719
30	500119561	1706 Egypt Hollow Road	1,348
31	500531105	1751 Egypt Hollow Road	1,404
32	500600568	1708 Egypt Hollow Road	<u>519</u>
Total Usage			5,739

**Usage period:
 March 2014 – February 2015**

- Revenue Deficiency - \$397,000

Recommendation

- Option 1
 - Take available capacity from DTI
 - Serve farm taps #1 thru #26 thru MP line from Snowshoe POD with 6-inch MP Plastic Pipeline
 - Abandon line from customer 27 to customer 32
 - Serve remaining southern end of D-10018 with 8-inch High Density Plastic Pipeline
 - Additional opportunities for further cost reduction exists

- No alternate feeds into State College necessary
 - Single feed risk into State College vs other high risk pipe scheduled for replacement

- Cost savings
 - Replacement of 21 miles of transmission line - \$53 Million (estimate)
 - Cost of Option 1 - \$16,100,000
 - Cost Savings - \$36,900,000

Follow Up Items

- Replacement option chosen impacts communications with GDS customers
 - Communications with impacted customers to begin
 - Follow up required for customer reaction update
- Monthly update meetings to be scheduled
 - Negative reaction from Penn State and GDS customers may have an impact of how the project moves forward

Questions



Background

Line D-10018 (“Snowshoe Lateral”) is a 21 mile, high pressure transmission line located in Centre County, Pa. D-10018 currently is, for the majority of the pipeline, an 8-inch Coated Steel Pipeline that was installed in 1958 per Network Express, currently running from Burnside Township heading south below Bellefonte with an overall length of approximately 21.22 miles.. The Snowshoe Lateral provides a large portion of the supply for the State College market, with a maximum allowable operating pressure of 400 pounds.

The area which the Snowshoe Lateral traverses is mountainous terrain and rural nature. Therefore, the area provides limited opportunity for customer growth. At present, Columbia provides service to 40 customers off of the Snowshoe lateral. These customers are served off of farm taps, which require special regulation equipment to monitor pressure.

Initial Replacement Options

Throughout 2013 and into early 2014, operational concerns (gaps in pressure test and material data) resulted in the Columbia reviewing its options to replace line D-10018. Three options were considered, as follows:

- Replace the Snowshoe Lateral
- Construct a CPG alternate Feed
- Construct a TETCO alternate feed

In reviewing these options, Columbia took into consideration a number of factors, including but not limited to, cost, alternate routes and future market growth. Another key consideration in Columbia’s this decision process, was the lack of capacity available on Texas Eastern Transmission Corporation (“TETCO”) and Dominion Transmission (“DTI”) interstate transmission systems at Pleasant Gap at the time Columbia made the decision to replace all 21 miles of the Snowshoe lateral. Based upon the information available at that time, Columbia determined that the best option available to satisfy its obligation to provide safe, reliable service to its customers was to replace the Snowshoe Lateral from the Snowshoe POD to Axeman. Key considerations and decision points are summarized below and in Attachment A.

- The Snowshoe Lateral is not needed to supply the market, but is valuable as it connects contract assets CPA has with the Columbia Pipeline Group
- TETCO and DTI have indicated that capacity is limited on their systems
- An alternate route eliminates susceptibility in the event other facilities are taken out of service and provides some growth opportunities

- Maintaining the Snowshoe Lateral provides long term benefits, as follows:
 - Greater ability to balance on CPG
 - Substantial GDS supply delivered through CPG
 - CPA holds large storage contracts with CPG allowing for “No Notice Delivery”

Additional Capacity Available

In February 2015, while exploring options for capacity for other NiSource Gas distribution entities with DTI, DTI informed NiSource that 20,000 Dth of capacity was available to Pleasant Gap. In January of 2015, Columbia initiated its efforts to upgrade the Snowshoe POD, as per the contractual obligation to Penn State. Equipment was ordered, and the permitting process commenced. Columbia’s budget for the replacement of the Snowshoe Lateral included a forecasted spend of approximately

\$620k in 2015, and \$16.5 annually in 2016-2019. Project work in 2015 focused on improvements to be made to the Snowshoe POD. Once upgrades to the Snowshoe POD were completed, Columbia would move forward with replacement of the pipe.

Replacement of the Snowshoe Lateral vs Other Options

Upon becoming aware that additional capacity was available through DTI at Pleasant Gap, Columbia revisited the Snowshoe Lateral replacement project, in order to determine whether the existence of additional capacity on DTI resulted in alternative supply options that did not previously exist. During the review process, work continued to move forward on improvements to the Snowshoe POD.

In February 2015, subsequent to the DTI capacity becoming available, a cross functional team was gathered to determine what other options, in addition to replacement of the entire Snowshoe Lateral, were available. The team included representatives from various functions, as defined in the response to PSU 1-009 (d). As a result of the additional DTI capacity coming available, a number of additional items were identified for discussion. See summary below and on slide 17 in Attachment B.

- Stranded Cost of CPG capacity
- Impact to purchased gas costs
- Penn State University contract and access to CPG
 - PSU payment to upgrade CPG POD
- Mainline tap customer abandonment

- Impact to gas supply operations
- Impact to CPA transportation customers
 - Balancing & Banking
 - Standby Service
 - Nominations
- DTI POD capacity & upgrade costs, if any
- Regulatory Impact

In exploring alternative options, providing customers safe, reliable service at a reasonable cost was the focus of the team. Three options were considered:

<u>Option</u>	<u>Cost</u>	<u>Cost Savings</u>
1. Replace Entire Snowshoe Lateral	\$53 million	
2. Abandonment of middle section of existing line, improvements made at the north and south end of existing lines	\$19.1* million	\$36.9 million
3. Abandonment of the line north of the northern most customer on the line, including abandonment of the Snowshoe POD. Improvements to be made on the south end of the line to serve existing customers	\$24.1* million	\$28.9 million

*Costs in options 2 and 3 are estimates based on quotes from similar jobs.

Risks of Alternative Options

While options 2 and 3 identified above results in significant capital savings over a period of four years, a number of other risks related to the options were also identified, as described below and in slide 11 of Attachment C.

Penn State University

- Current contract language addressing delivery options; CPA not contractually obligated to provide TCO gas to Penn State
- Delivery by displacement (Summer and Winter)
 - TCO Summer OFOs; Limited Market absorption
 - Potential disparity among other State College Delivery Service (DS) customers

CPA Delivery Service Customers in State College

- Current TCO Market Area 36 deliveries vs potential requirement to deliver off DTI or TETCO into State College market
 - Current Tariff language; Need for Future change(s)
 - Banking & Balancing, including EBS – will it remain unchanged?
- Provide advanced notice to customers and their suppliers; need adequate time to make changes on their end (capacity, commodity, etc.)

Regulatory

- Fiduciary responsibility to customers
- Efficient use of capital
- Additional funds for age and condition pipe

The Decision: Abandon the Middle Section of the Snowshoe Lateral

Ultimately, Columbia determined to bid on the available DTI capacity and cease its plan to replace the Snowshoe Lateral in its entirety. Columbia identified the following reasons in support of this decision:

- Cost savings of \$36.9 million over a period of 4 years, allowing for more high risk pipe to be replaced
- Service remains substantially available to all customers previously delivering through TCO at Snowshoe
- Minimal customer abandonment

For these reasons, Columbia determined that the most prudent course of action was to: (1) secure additional capacity on DTI; (2) abandon the middle section of the Snowshoe Lateral and the service to six (6) farm tap customers; and (3) make necessary improvements to the north and the south end of the line to accommodate the new pipe and new pressures on the line.