

MAOP Validation at Southern Company Gas

Pipeliners Club of Atlanta Luncheon
November 12, 2018



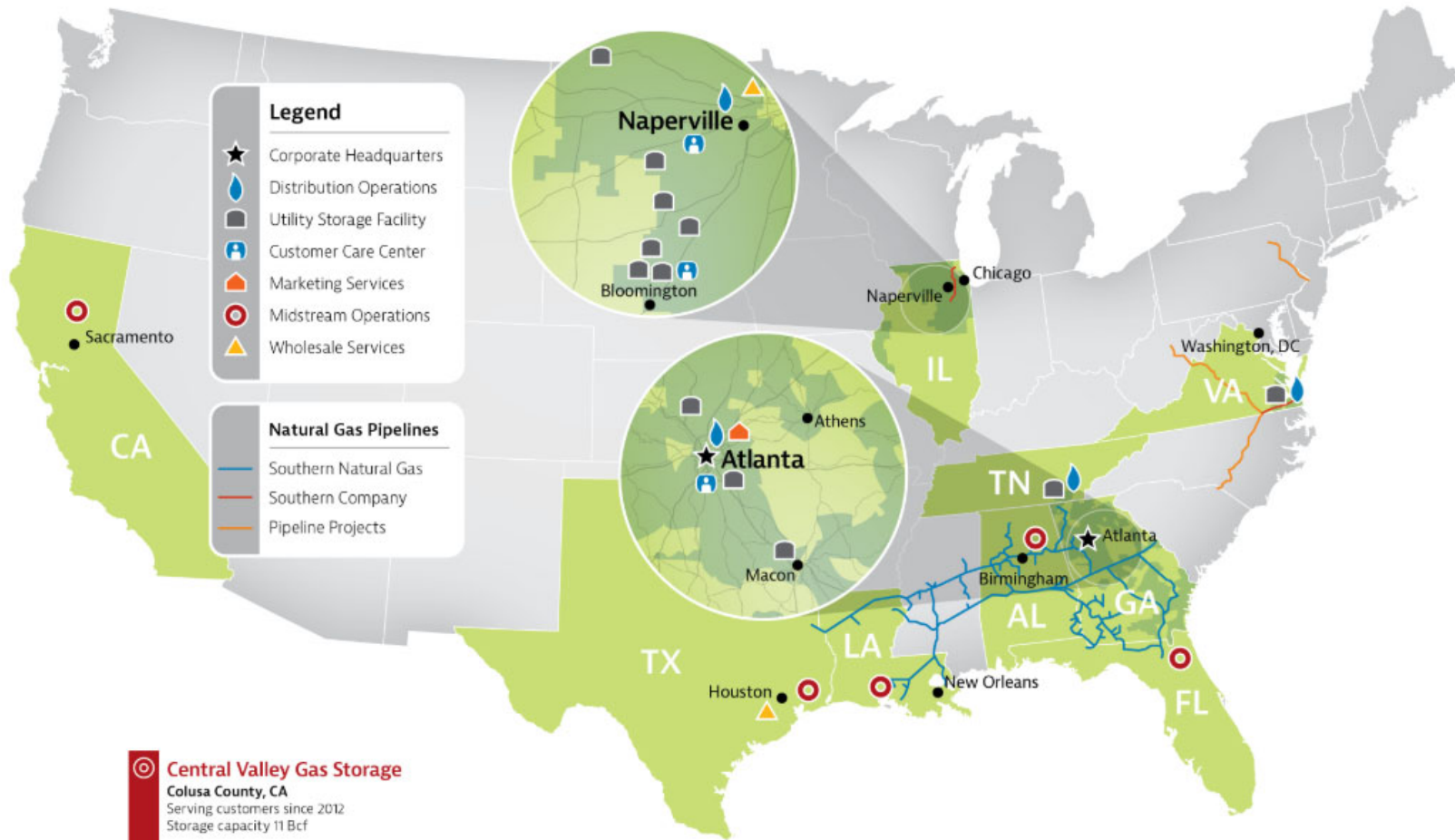
Agenda



The Southern Company Gas approach to MAOP Validation

- Company Background
- MAOP Validation Objectives
- Methodology
- Life After MAOP Validation
- Where Are We Now?

Company Background



Legend

- ★ Corporate Headquarters
- 💧 Distribution Operations
- 🏠 Utility Storage Facility
- 👤 Customer Care Center
- 🏠 Marketing Services
- 📍 Midstream Operations
- 🏠 Wholesale Services

Natural Gas Pipelines

- Southern Natural Gas
- Southern Company
- Pipeline Projects

- 📍 **Central Valley Gas Storage**
Colusa County, CA
Serving customers since 2012
Storage capacity 11 Bcf
- 📍 **Golden Triangle Storage**
Beaumont, TX
Serving customers since 2010
Storage capacity 13.5 Bcf
- 📍 **Jefferson Island Storage & Hub**
Erath, LA
Serving customers since 1995
Storage capacity – 2 caverns, 7.3 Bcf Total
- 📍 **Pivotal LNG**
Houston, TX; Trussville, AL;
Jacksonville, FL (*under construction*)
Serving customers since 2011
pivotallng.com

- 🏠 **SouthStar Energy Services**
Atlanta, GA
Serving customers since 1998
southstarenergy.com
- 🏠 **Sequent Energy Management**
Houston, TX
Serving customers since 2001
sequentenergy.com

- 💧 **Atlanta Gas Light**
Atlanta, GA
Serving customers since 1856
of customers 1,622,000
Miles of pipe 33,500
Storage capacity 6.1 Bcf
atlantagaslight.com
- 💧 **Chattanooga Gas**
Chattanooga, TN
Serving customers since 1890
of customers 66,000
Miles of pipe 1,600
Storage capacity 1.2 Bcf
chattanoogagas.com

- 💧 **Nicor Gas**
Naperville, IL
Serving customers since 1954
of customers 2,228,000
Miles of pipe 34,300
Underground storage 150 Bcf
nicorgas.com
- 💧 **Virginia Natural Gas**
Virginia Beach, VA
Serving customers since 1850
of customers 299,000
Miles of pipe 5,600
Storage capacity .75 Bcf
virginianaturalgas.com

MAOP Validation Objectives



- Anticipated Code Changes



49 CFR Part 192 - Transportation of Natural and Other Gas by Pipeline Minimum Federal Safety Standards

§ 192.517 Records.

(a) Each operator must make, and retain for the useful life of the pipeline, a record of each excavation, including the location, depth, and diameter of the excavation, and the name and address of the contractor who performed the excavation.

the component was manufactured, the manufacturing rating, or the pressure rating. For valves with pipe weld ends, records must document the valve identification number and weld end bevel.

pipe ends must be at least 10 percent of the total length must contain 10 percent of the total number of required excavations, e.g. a 200 mile population would require 15 excavations for each 20 miles. For each population defined

§ 192.607 Verification of Pipeline Material

§ 192.624 Maximum allowable operating pressure verification

■ 30. Section 192.607 is added to read as follows:

§ 192.607 Verification of pipeline material: Onshore steel transmission pipelines.

(a) *Applicable locations.* Each operator must follow the requirements

destructive or non-destructive examinations, and assessments for line pipe at all above ground locations. (2) Develop and implement procedures for conducting destructive tests, examinations, and assessments for buried line pipe at all excavations

cracking, or selective seam weld corrosion using ultrasonic inspection, magnetic particle, liquid penetrant, or other appropriate non-destructive examination techniques. Determination of material property values must

MAOP Validation Objectives



Targeted Assets

- ❖ 2,611 Transmission Miles
- ❖ 514 Stations
 - Regulator Stations
 - Terminals
 - CNG/LNG Facilities
 - UGS Facilities
 - Compressor Stations



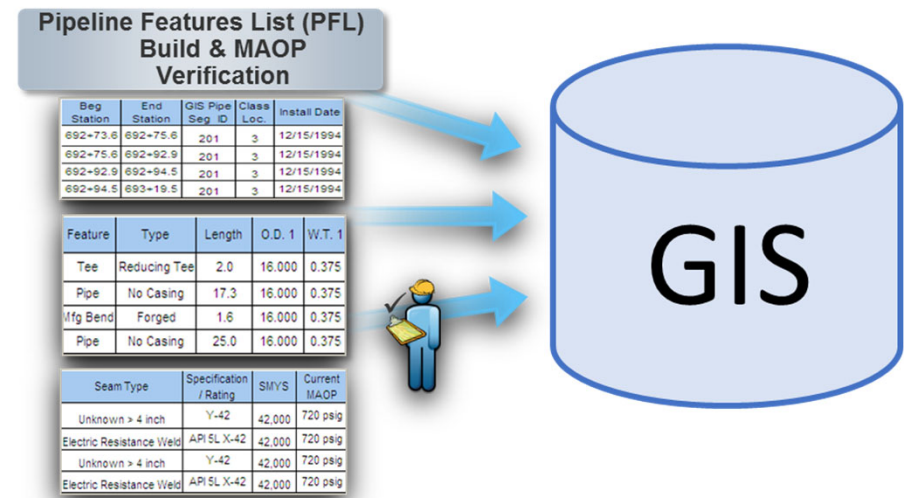
MAOP Validation Objectives



1. Provide Optics
 - Obtain Information to allow for meaningful **prioritization** of findings

SCG MAOP Validation							
Report Date: 2/3/2017							
Issue Number	State	Service Center	Pressure System	Line Alias	Project #	Install Year	PFL Feature #
47	Georgia	Macon	Central Georgia System	SR 19 to Amica Drive Line	17358	2004	800, 803, 805, 806, 812, 815, 817, 926
48	Georgia	Macon	Central Georgia System	Macon LNG to MM2 Line	7-9625-53	9/30/1985	89, 91, 98, 101, 108

2. GIS Modernization
 - Updated with detailed **features** data
 - Refine the process to continually update GIS at the **feature** level



Methodology



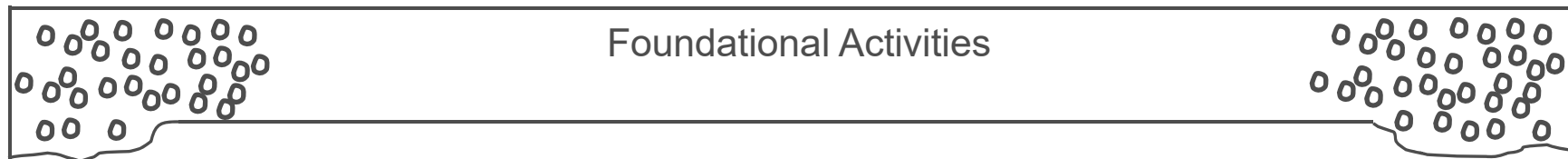
- Single Records Repository
 - Records Review & Staging
- Pipeline Features List (PFL) & Station Features List (SFL) Templates
- Prioritization of PFL Build
- Assumptions (Proxy Values)
- Issues Resolution
- Pilot Build



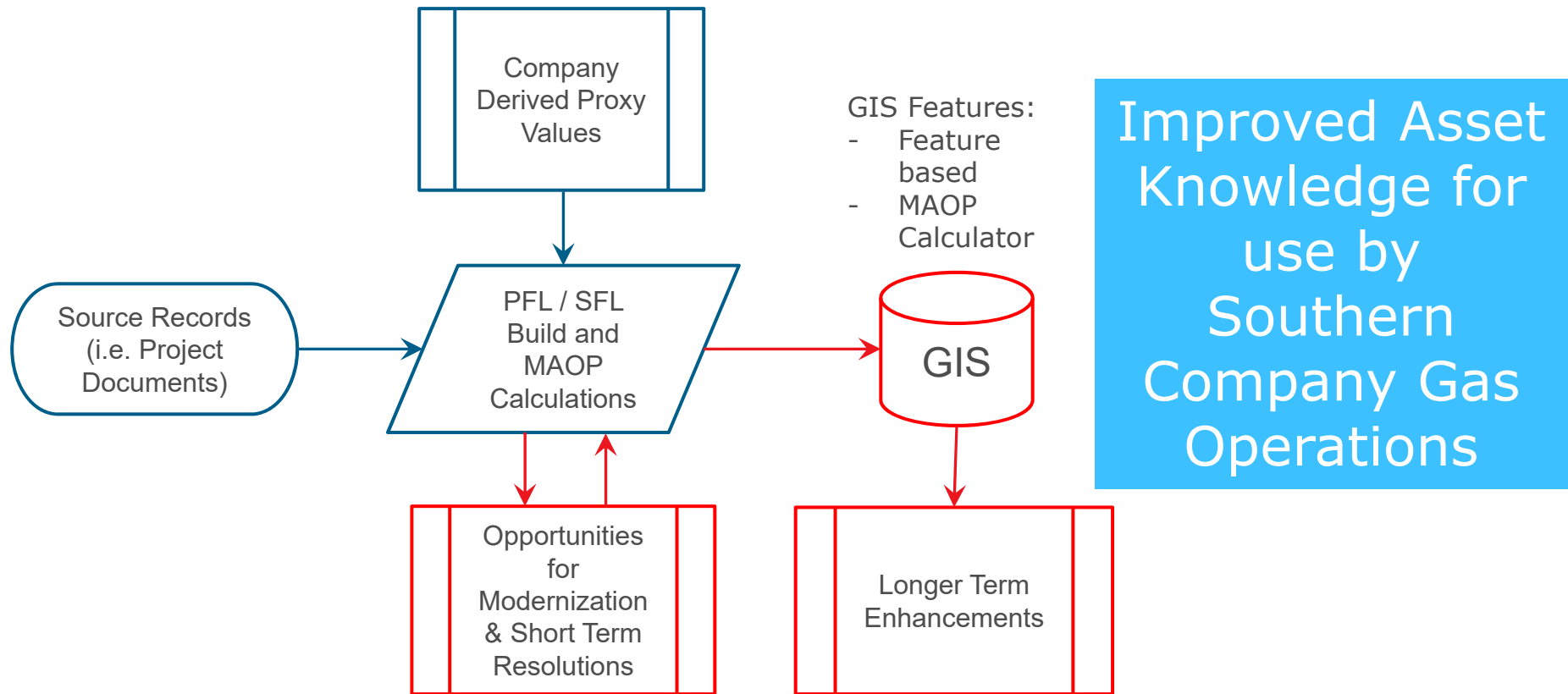
- GIS db

The time to repair the roof is when the sun is shining.

JFK



Methodology



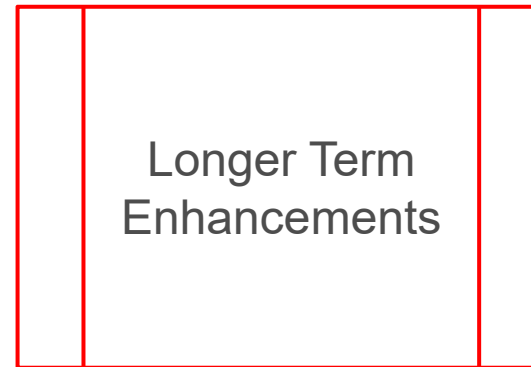
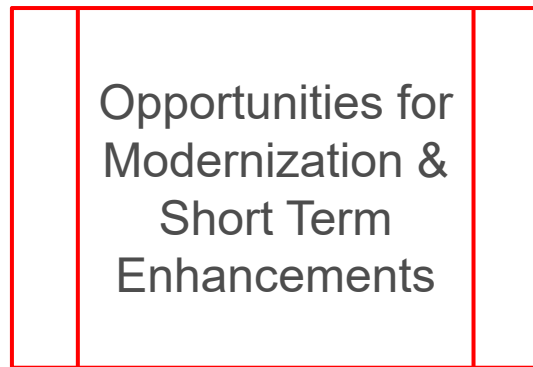
Process Flow

Life After MAOP Validation



Objective 1 – Optics on Issues

- Greater level of asset knowledge after MAOP Validation
- Decision Trees to prioritize longer-term resolutions



Life After MAOP Validation



Excellent Asset Knowledge

- ❖ Enhance Piggability
- ❖ Path to Zero Proxy Values

Capacity to Serve Customers

- ❖ System Reliability

MAOP Validation Dataset

Regulatory Compliance

- ❖ Post '70 Pipe Without a Valid Test
- ❖ Valve Spacing

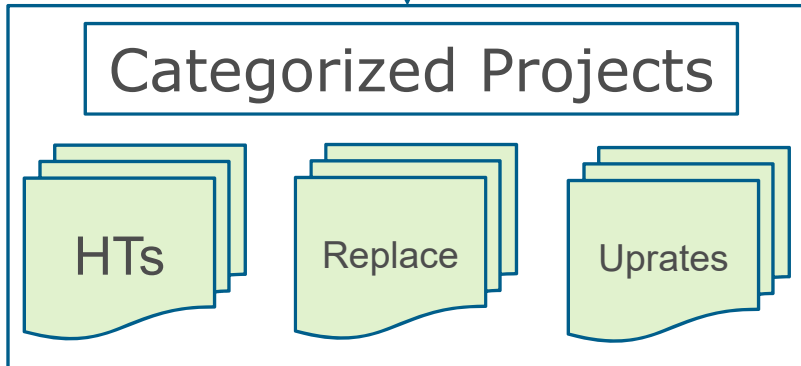
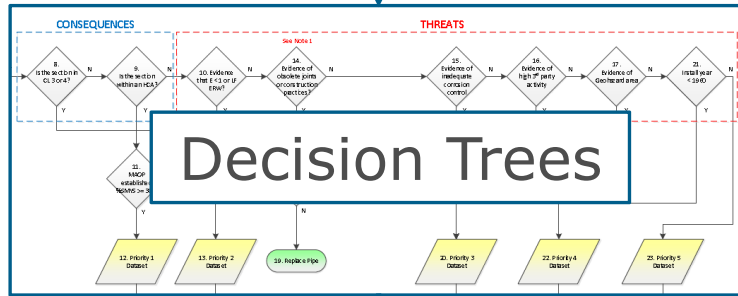
Reduced Risk

- ❖ Pre '70 ERW Pipe
- ❖ Early Era AO Smith Pipe
- ❖ SSAW Pipe

Life After MAOP Validation



MAOP Validation Dataset



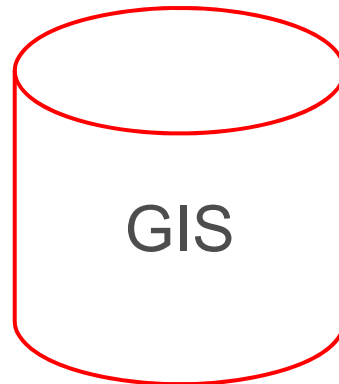
Projects Require Justification & Extents Rationale

Life After MAOP Validation



Objective 2 - GIS Modernization

- As-Builts have to be feature based
- Improved method for loading into GIS
- MAOP Calculator Tool



Where are We Now?



- Completed MAOP Validation for:
 - Roughly 55% of pipelines
 - Roughly 20% of stations
- Implemented Dig Program
- Began Development of Long Term Enhancement Program for completed systems

Summary



Southern Company Gas:

- Is repairing the roof while the sun is shining
- Started MAOP Validation with the end in mind
- Has employed, and continues to build & refine sound processes & technology to meet the stated objectives
- Made significant progress but still has a lot of work to do

Questions?

