



2016 Infrastructure  
Tracker Annual Update  
April 14, 2016



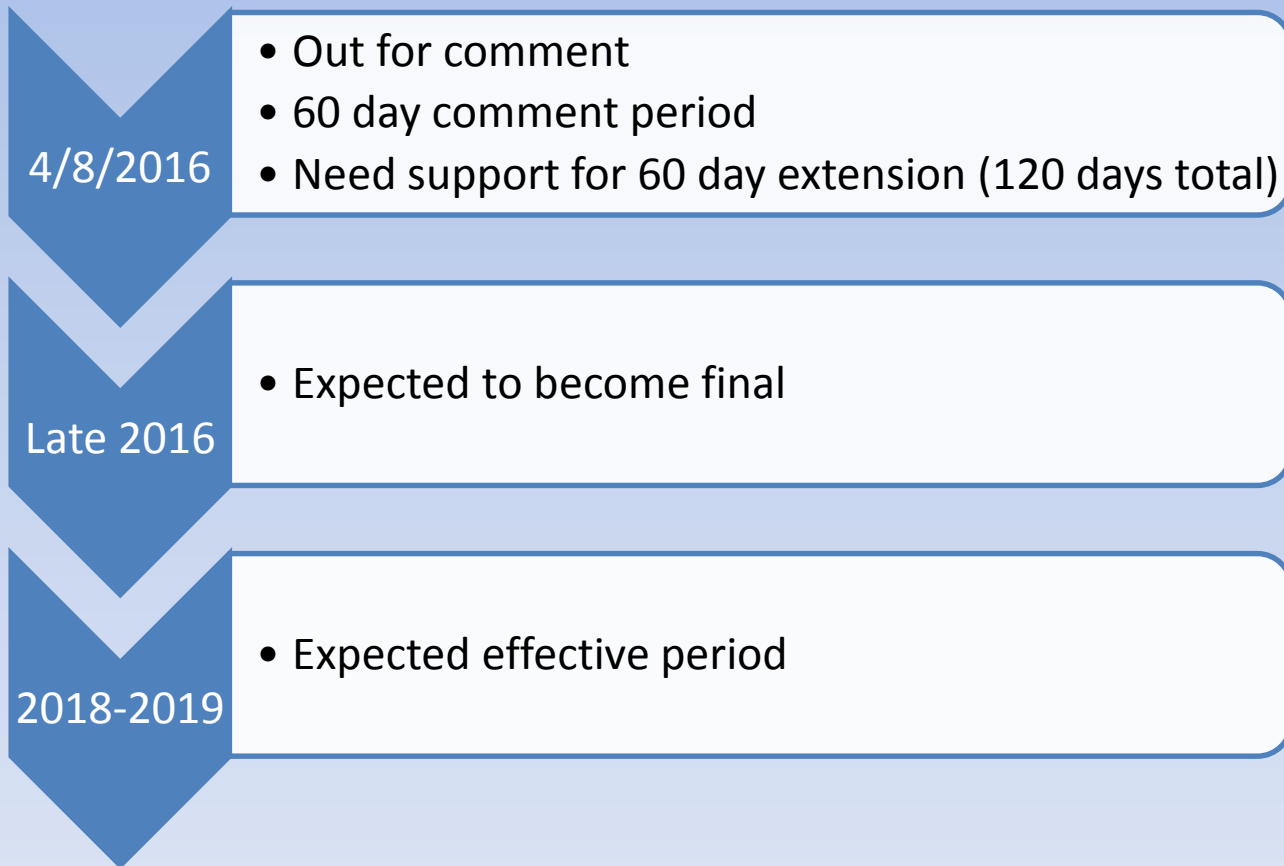
# Agenda

- PHMSA Mega Rule
- Belt Line Replacement
  - Current Projects
  - Public Relations Efforts
  - Scheduling
  - Cost Variance
- High Pressure Replacement
  - Scheduling
  - Prioritization
  - Current Projects
  - Cost Variance

# Pipeline Safety “Mega Rule” (not final)

- New requirements include
  - Increased records
  - Testing of grandfathered pipe
  - Moderate Consequence Areas (MCAs)
  - Assessments of pipelines in MCAs
    - In-line inspection, pressure test, replacement

# Mega Rule Timeline



# Possible Impacts of “Mega Rule”

- Increased costs for testing, data acquisition, or pipe assessments.
- Acceleration of our replacement program.
  - Collaborate with regulators to determine the best path.
- We will update as information becomes available.

# In front of the curve



# Belt Line Replacement






- Belt Line Maps
- Pipe Remaining
- Belt Line 2016
  - Schedule
  - Progress Update
- Work Prioritization
- Public Relations

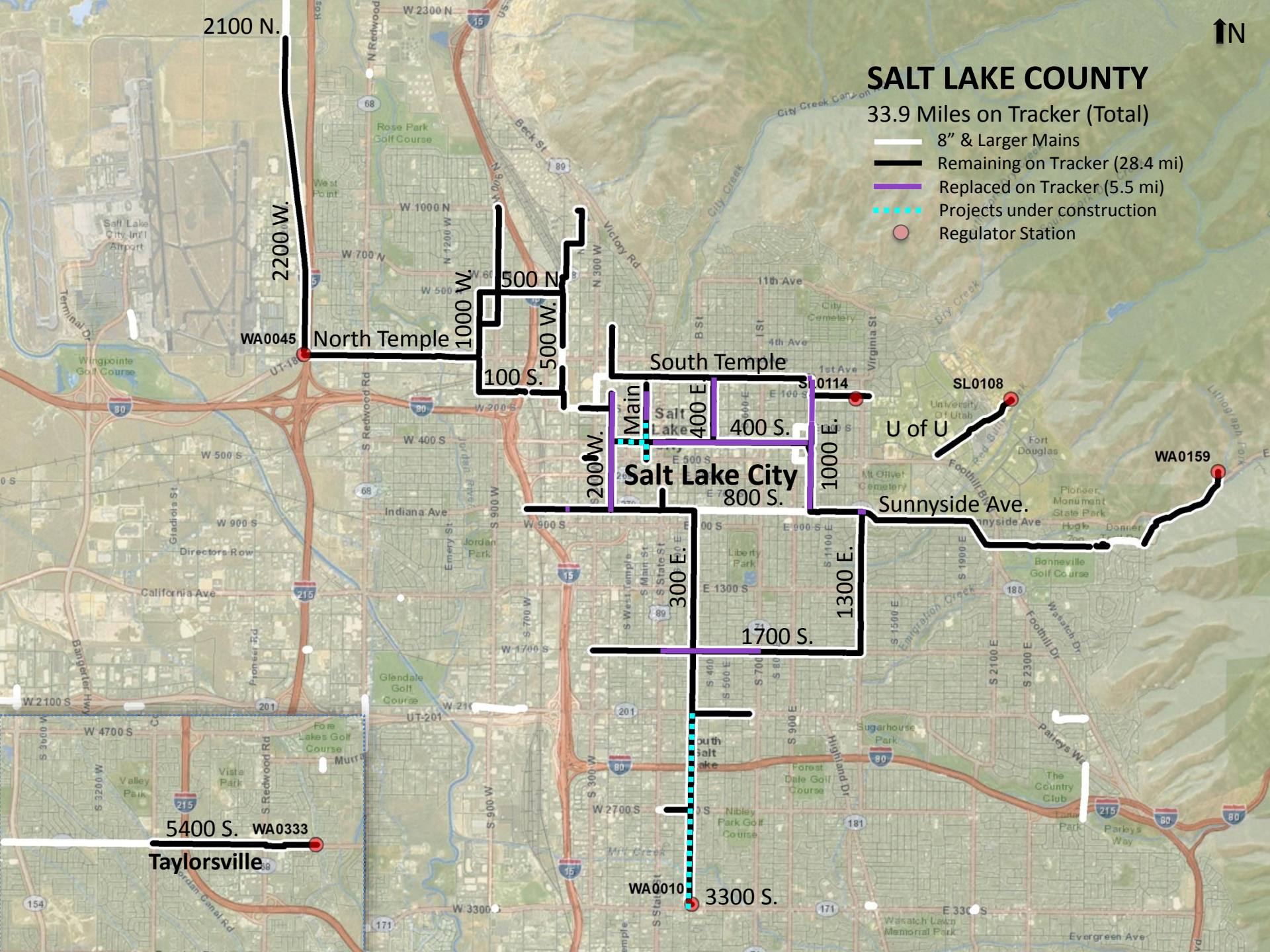




# SALT LAKE COUNTY

33.9 Miles on Tracker (Total)

-  8" & Larger Mains
-  Remaining on Tracker (28.4 mi)
-  Replaced on Tracker (5.5 mi)
-  Projects under construction
-  Regulator Station



2100 N.

2200 W.

WA0045

North Temple

1000 W.

500 N.

500 W.

100 S.

South Temple

200 W.

Main

Salt Lake

400 E.

400 S.

800 S.

Salt Lake City

1000 E.

1011A

SL0108

U of U

WA0159

Sunnyside Ave.

300 E.

1700 S.

1300 E.

5400 S. WA0333

Taylorsville

WA0010





3300 S.

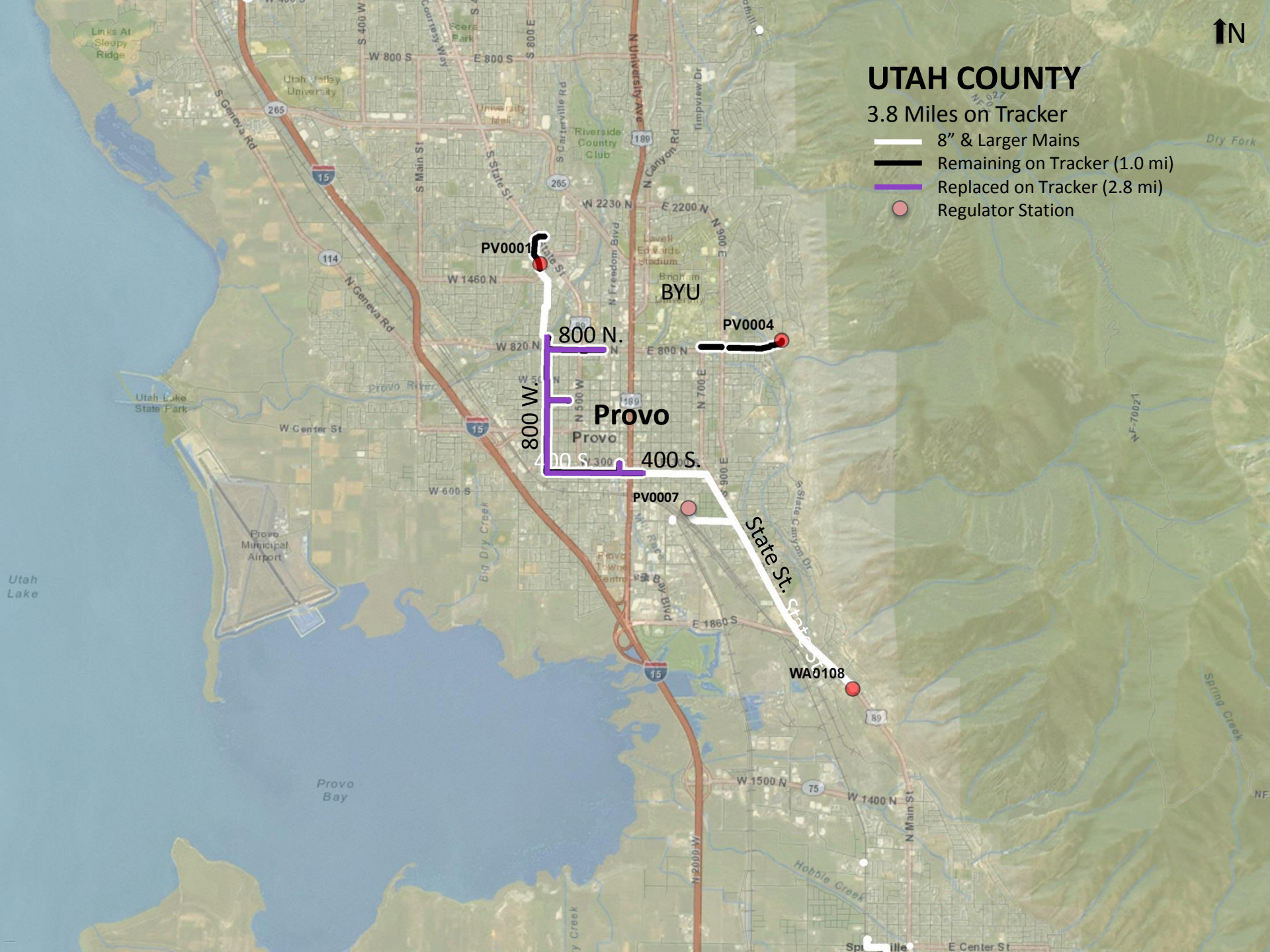




# UTAH COUNTY

3.8 Miles on Tracker

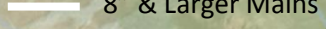
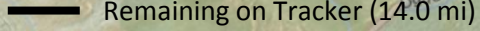
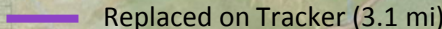

-  8" & Larger Mains
-  Remaining on Tracker (1.0 mi)
-  Replaced on Tracker (2.8 mi)
-  Regulator Station

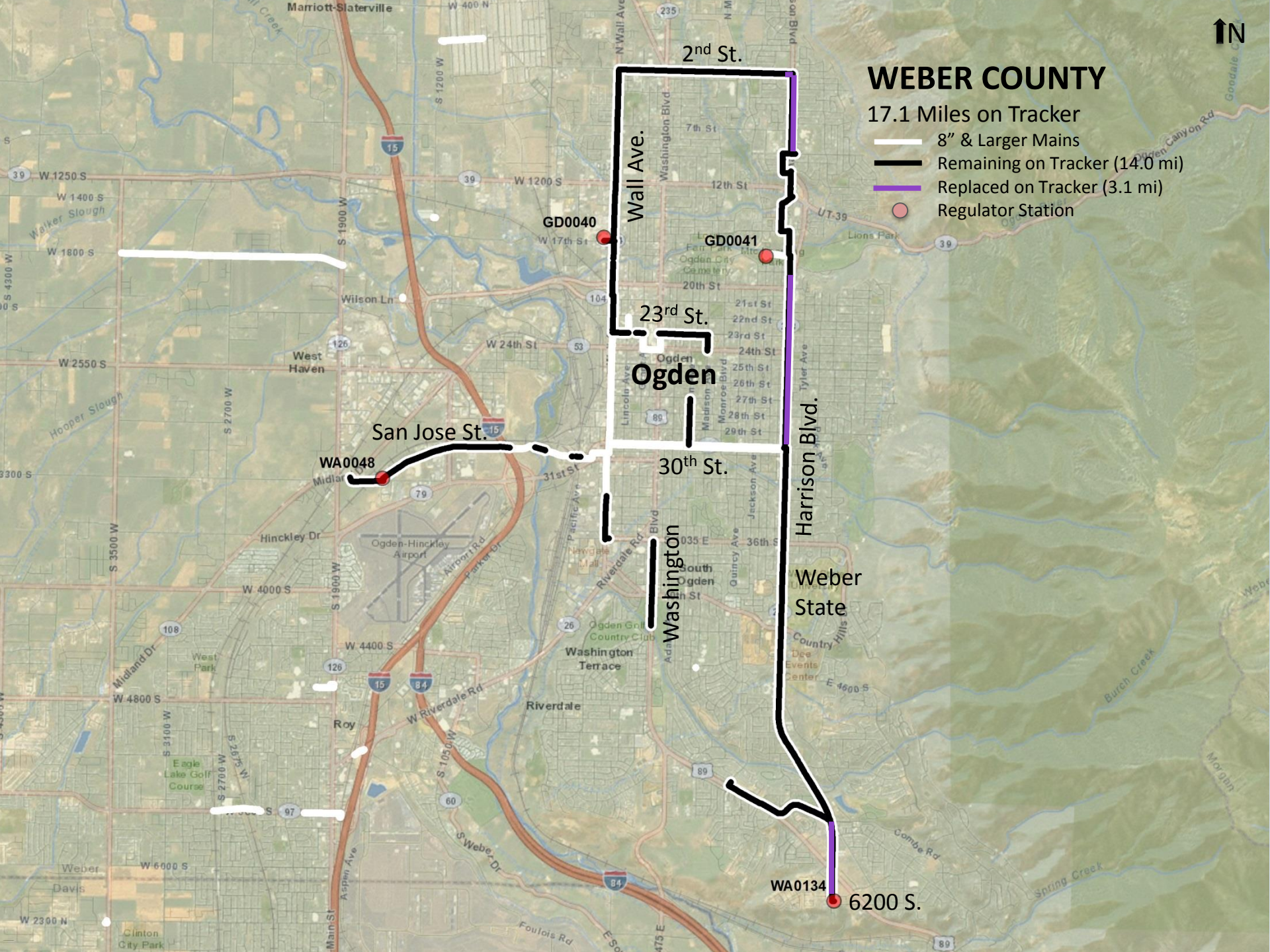




# WEBER COUNTY

17.1 Miles on Tracker

-  8" & Larger Mains
-  Remaining on Tracker (14.0 mi)
-  Replaced on Tracker (3.1 mi)
-  Regulator Station





# DAVIS COUNTY

15.3 Miles on Tracker

- 8" & Larger Mains
- Remaining on Tracker (14.2 mi)
- Replaced on Tracker (1.0 mi)
- Regulator Station

SY0001

Clearfield

CL0007

Freeport Cntr

Bluff Rd.

Gentile St.

Layton

LY0001

KY0001

WA0402

Shepard Ln.

Farmington

WA0215

WA0784

BF0005

Pages Ln.

Bountiful

WA0385

1100 N.

NSL



# Belt Line Pipe Remaining

Salt Lake County		Footage						
Size	Material	1929	1930-39	1940-49	1950-59	1960-69	1970	Total
24"	Steel	0	0	0	0	11,497	0	11,497
20"	Steel	0	0	5,572	0	2,784	0	8,356
16"	Steel	53,992	0	0	0	21	33	54,046
12"	Steel	14,416	0	0	2,100	2,686	0	19,202
10"	Steel	1,884	3,431	7,991	12,046	722	24	26,098
8"	Steel	2,408	0	9	13,031	15,045	0	30,493

**Salt Lake County Footage 149,692**  
**Salt Lake County Miles 28.4**

Utah County		Footage						
Size	Material	1929	1930-39	1940-49	1950-59	1960-69	1970	Total
12"	Steel	0	0	154	0	0	0	154
10"	Steel	0	0	0	0	3,235	0	3,235
8"	Steel	0	0	0	86	1,629	0	1,715

**Utah County Footage 5,104**  
**Utah County Miles 1.0**

Weber County		Footage						
Size	Material	1929	1930-39	1940-49	1950-59	1960-69	1970	Total
16"	Steel	0	0	0	0	17	0	17
14"	Steel	0	0	0	17,753	36	0	17,789
10"	Steel	1,230	5,838	0	12,827	2,401	0	22,296
8"	Steel	2,093	0	3,983	12,431	15,339	0	33,846

**Weber County Footage 73,948**  
**Weber County Miles 14.0**

Davis County		Footage						
Size	Material	1929	1930-39	1940-49	1950-59	1960-69	1970	Total
12"	Steel	0	0	0	0	2,901	0	2,901
10"	Steel	418	0	0	64,553	0	0	64,971
8"	Steel	0	0	0	0	7,336	0	7,336

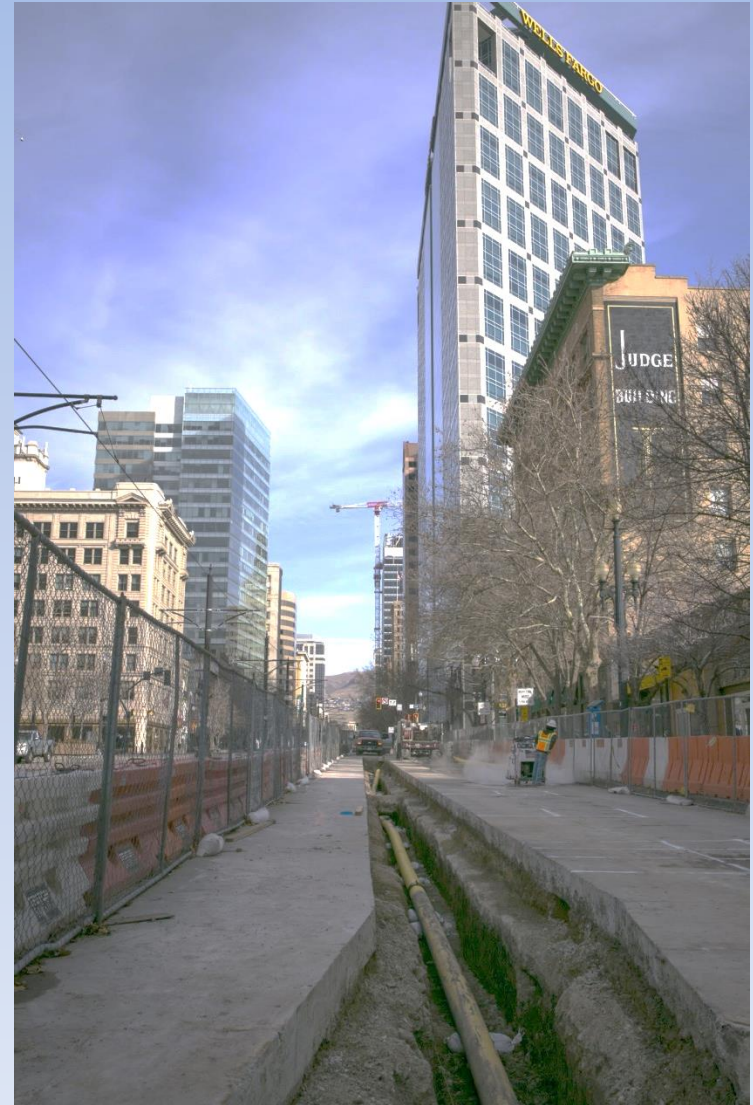
**Davis County Footage 75,208**  
**Davis County Miles 14.2**

	Footage	Miles
<b>Salt Lake County</b>	149,692	28.4
<b>Utah County</b>	5,104	1.0
<b>Weber County</b>	73,948	14.0
<b>Davis County</b>	75,208	14.2
<b>Total</b>	<b>303,952</b>	<b>57.6</b>

# Belt Line 2016

- Current 2016 Projects Schedule:
  - Salt Lake County
    - 400 E in SLC (October – March)<sup>1</sup>
    - Main St 400 S Ph2 in SLC (October – June)<sup>1</sup>
    - 300 E in South Salt Lake (February – December)
    - 1700 S in SLC (Fall)
  - Projects deferred until 2017 (\$2M budget reduction)
    - 100 S in SLC

<sup>1</sup>Projects started in 2015



# Belt Line Work 2016

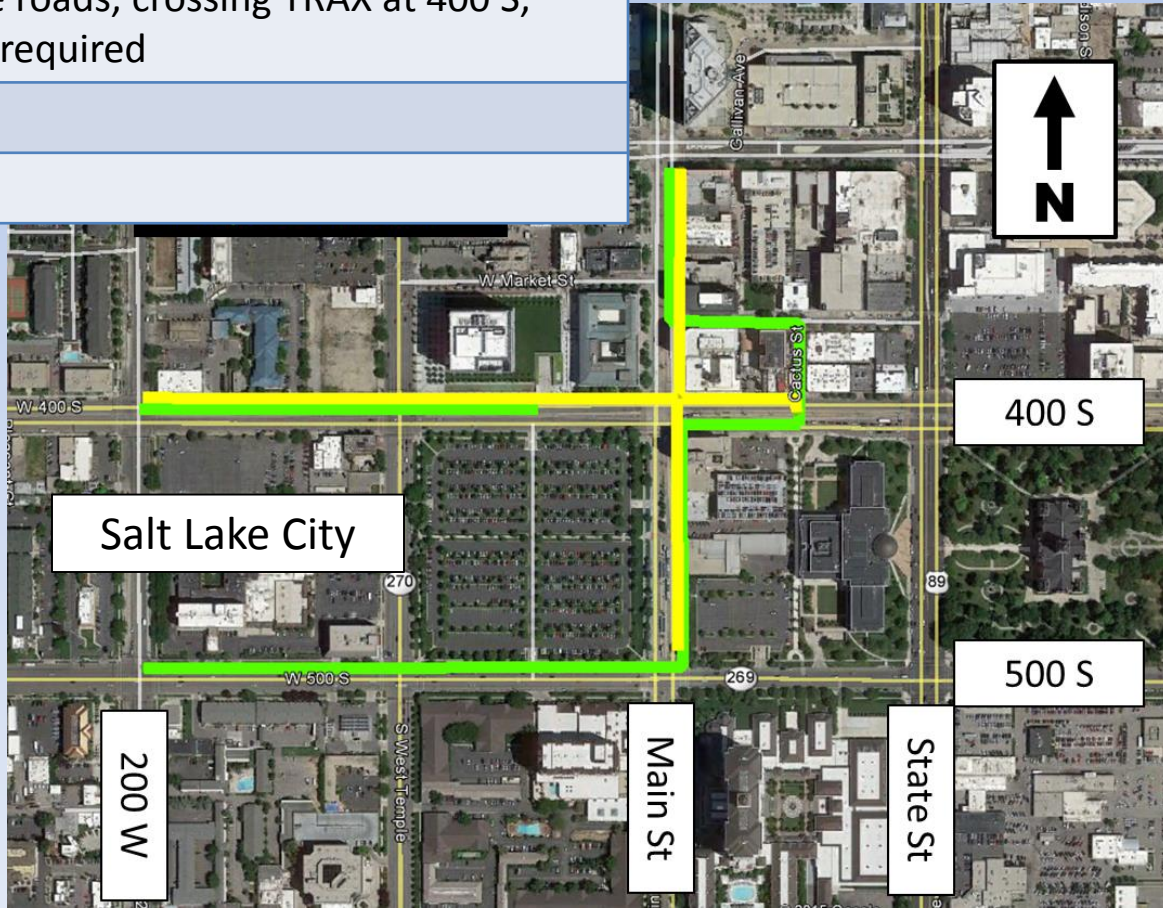
Belt Line:	400 E between So. Temple and 400 S in Salt Lake City, Salt Lake Co.
Construction:	Completed in March
Challenges Include:	No major challenges
2016 Budget:	\$350,000
Footage:	1,400 ft. in 2016 (3,000 ft. total)



# Belt Line Work 2016

Belt Line:	Main St from So. Temple-100 S & 300 S-600 S; 400 S from 50 E to 200 W in Salt Lake City, Salt Lake Co.
Construction:	October 2015 - June 2016
Challenges Include:	Limited workspace, running line, working hour restrictions in State roads, crossing TRAX at 400 S, 2,400 foot reroute required
2016 Budget:	\$ 1,600,000
2016 Footage:	3,500 ft.

█ Existing Belt Line  
█ Proposed Install



# Belt Line Work 2016

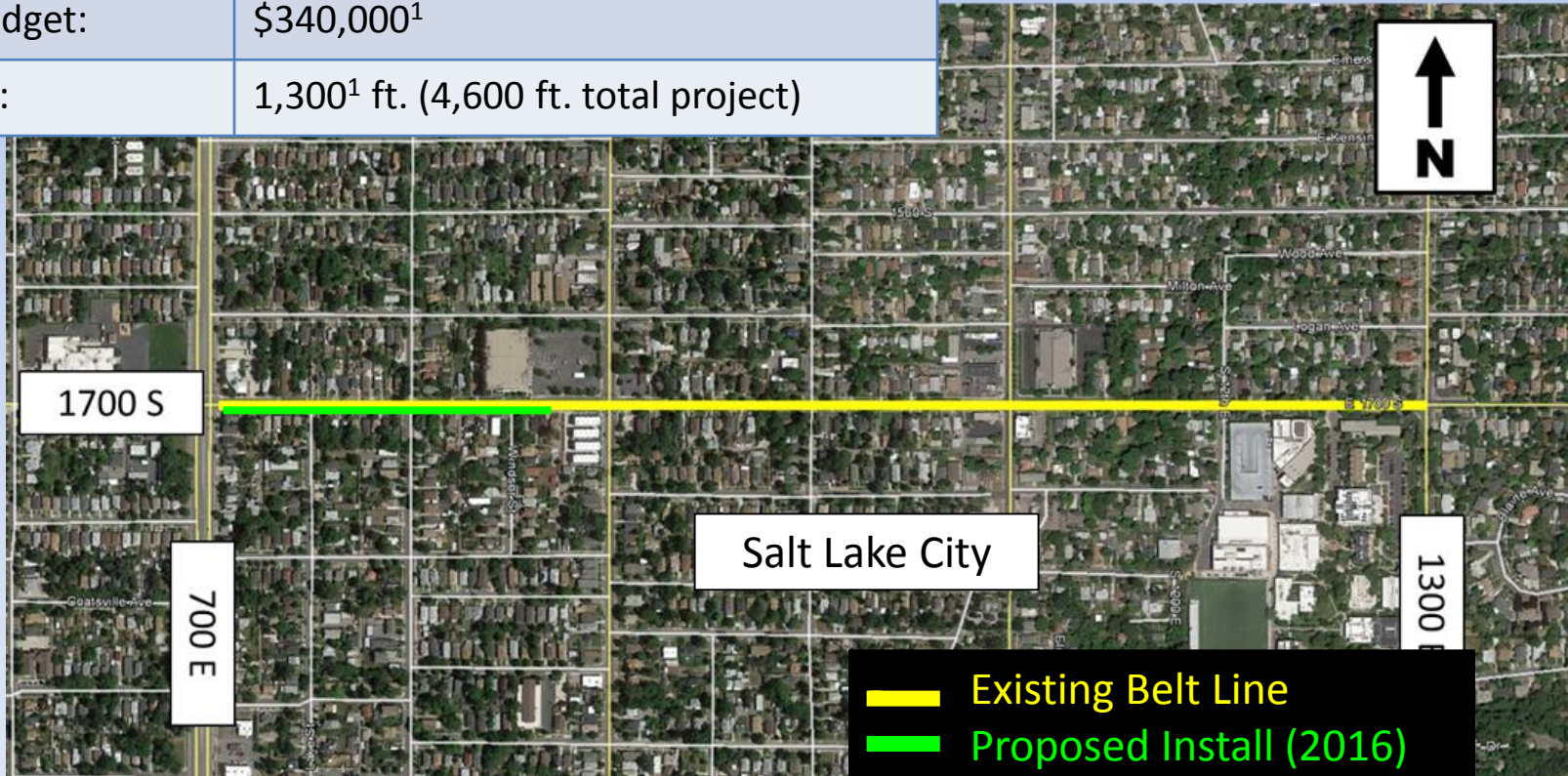
Belt Line:	Salt Lake County Belt Line Replacement – 8,900 ft. 300 E between 2100 S and 3300 S in South Salt Lake
Construction:	February – December
Challenges Include:	Limited workspace, pick and relay due to congested utility corridor
Budget:	\$6,000,000
Footage:	8,900 ft.





# Belt Line Work 2016

Belt Line:	1700 S between 700 E & 1300 E in Salt Lake City, Salt Lake Co.
Construction:	Fall 2016
Challenges Include:	Limited closures and workspace
2016 Budget:	\$340,000 <sup>1</sup>
Footage:	1,300 <sup>1</sup> ft. (4,600 ft. total project)



1. Project scope for 2016 may be adjusted for available time and budget.

# Public Relations Efforts

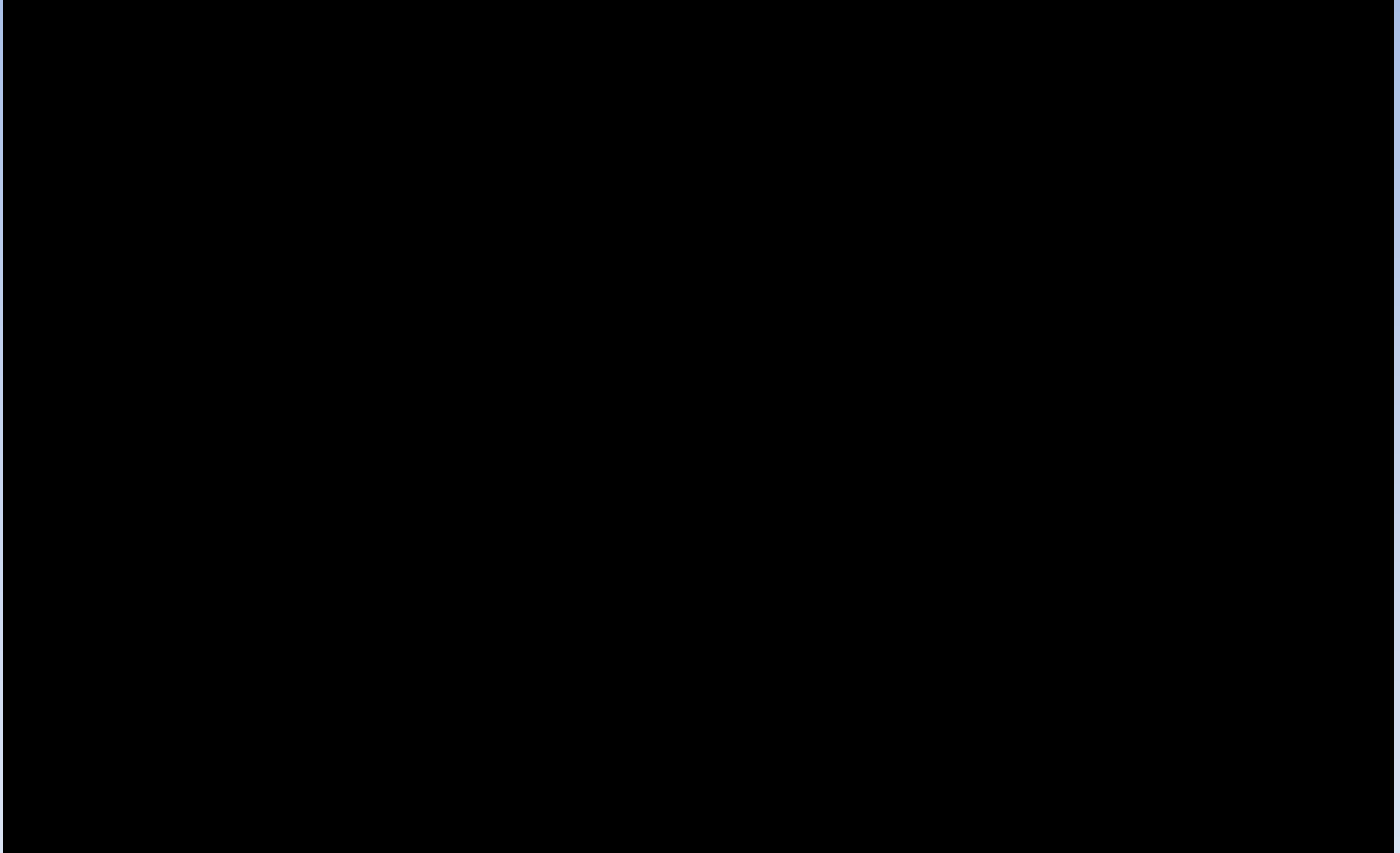
- Praised by Salt Lake City and Ogden City for coordination efforts and public involvement



Main Street in Salt Lake City



# Project Segment Map for Downtown SLC



# Work Prioritization

- How is work prioritized?
  - A schedule based on criterion found in Settlement Stipulation, Docket 13-057-05, Exhibit 5
- Risk = Threats x Consequences
  - Threats
    - Age of pipe, corrosion, equipment failure, excavation damage, incorrect operation, material, natural forces, outside forces, weld & joint failure, other threats
  - Consequences
    - Population density, business districts, critical facilities (hospitals, schools, nursing homes, and churches), main diameters

# Project Segments

- Prioritized by relative risk score

## March 2016 Risk Score Priority

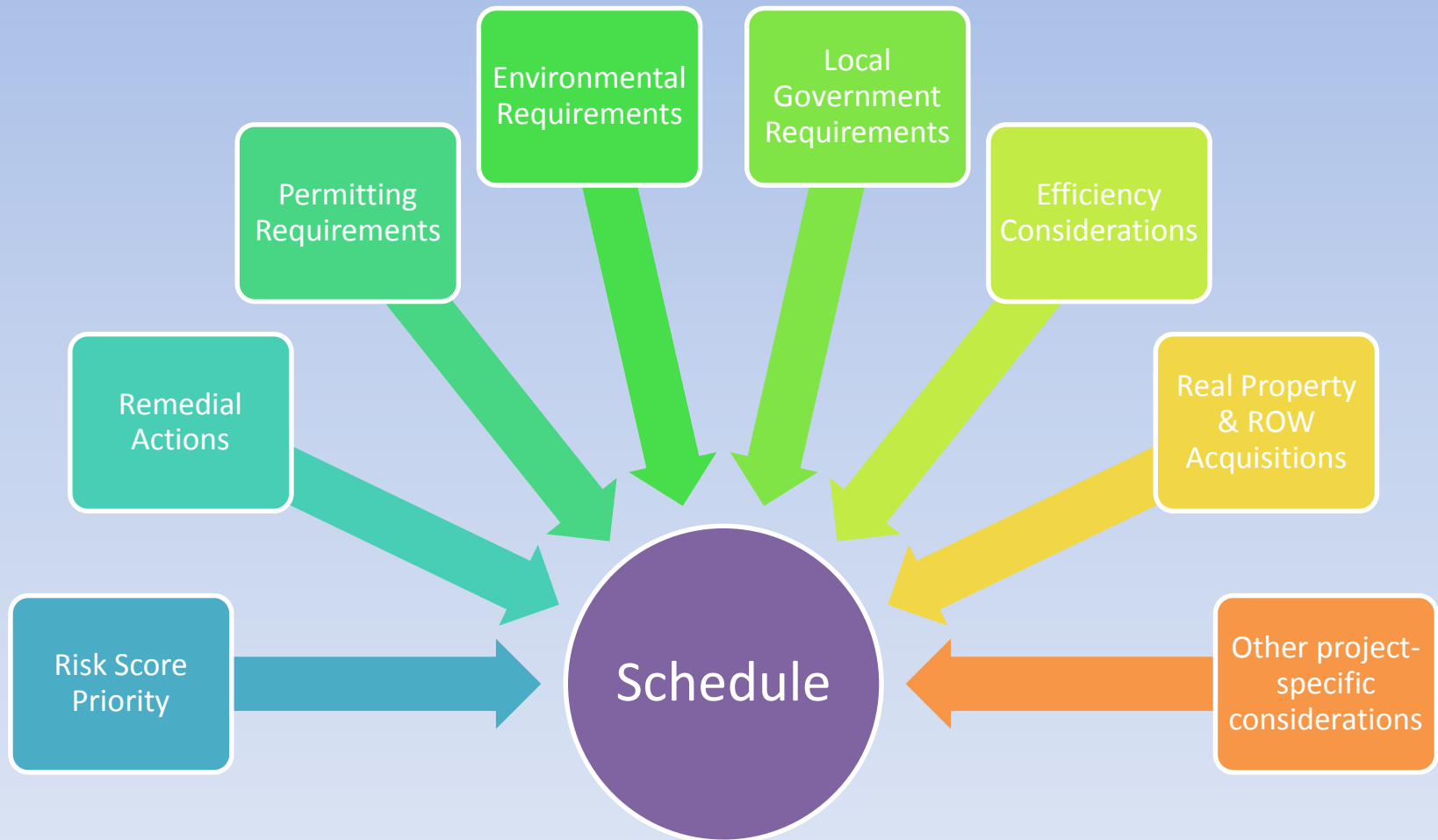
Segment Priority:    **Partially Complete Segments**

20, 28, 15, **16**, 27, **17**, 9, 7, 26, 14, **4**, **10**, 29, **21**, **5**,  
8, 45, 18, 12, 39, 46, 44, 31, 42, 11, 6, 53, **40**, **37**,  
38, **22**, 36, **41**, 30, 19, **13**, 47, 34, 43, 25, 24, 23, 48,  
49, 51, 50, 32, 33.

Completed segments:

1, 2, 3, 35, 52, 54

# Scheduling Belt Line Replacements



**2016 Risk Score Priority**

Segment Priority:  
**20**, 28, 15, 16, 27,  
**17**, 9, 7, 26, 14, **4**,  
 10, 29, **3**, 21, **5**, 8,  
 45, 18, 12, 2, 39,  
 46 44, 31, 42, 11,  
 6, 53, 40, 37, 38,  
 22, 36, 41, 30, 19,  
 13, 47, 34, 43, 25,  
 24, 23, 48, 49, 51,  
 50, 32, 33.

**Remedial Actions**

Segment **17**; SME info

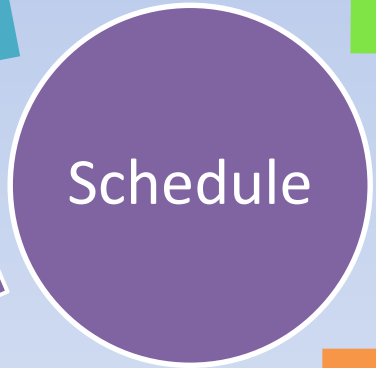
**Permitting Requirements**

**Environmental Requirements**

**Local Government Requirements**

**Efficiency Considerations**

2017 FL Replacement - Segments 49, 50, 51



**Segments started in 2015**  
 Segment Completed in 2016  
 2016 Segments

**2016 Schedule**

Segments:  
 3 (400 E, SLC)  
**4 & 5 (400 S Ph2, SLC)**  
 20 (300 E, So. Salt Lake)  
 17 (1700 S, SLC)

**Other project-specific considerations**

Reviewed March 2016 rankings. No other changes to 2016 schedule of projects.

**Real Property & ROW Acquisitions**

# Belt Line 2015 Cost Variances

Project	Budget	Actual	Variance	Explanation
Salt Lake County	\$6,960,000	\$6,581,644	\$378,356	Installed less footage
Weber County	\$2,650,000	\$5,049,690	\$(2,399,690)	Replaced additional 3,300 ft. (Additional project on Harrison due to Ogden City project conflict)
<b>Total</b>	<b>\$9,610,000</b>	<b>\$11,631,334</b>	<b>\$(2,021,334)</b>	



# High Pressure Replacement

- HP Replacement Program Evaluation Criteria
  - Risk weighting factors
  - Feeder Line Prioritization
  - Risk Prioritization Update
  - Scheduling Feeder Line Replacements
- 2016 Schedule
- 2016 Projects Update
- 2015 Cost Variance



# HP Replacement Program Evaluation Criteria

$$\text{Risk} = \text{Threat} \times \text{Consequence}$$

## Threats

- Construction
  - Pre 1955 – High Risk
  - 1955 - 11/1970 — Medium Risk
  - Post 11/1970\* – Low Risk
- Reconditioned
  - Yes – High
  - No – Low
- Pressure Test Records
  - Not found – High Risk
- Pipe/Equipment Condition
  - SME
- Manufacturing - Pipe
  - Low Frequency Electric Resistance Weld (LF-ERW) – High Risk
  - Electric Flash Weld (EFW) – High Risk
  - Longitudinal Seam Weld Factor < 1.0 – High Risk
  - Pre 1960 – Medium Risk
  - Double Submerged Arc Weld (DSAW)
  - Submerged Arc Weld (SAW)
  - Post 1960 – Low Risk

## Consequences

- HCAs
- Census Data

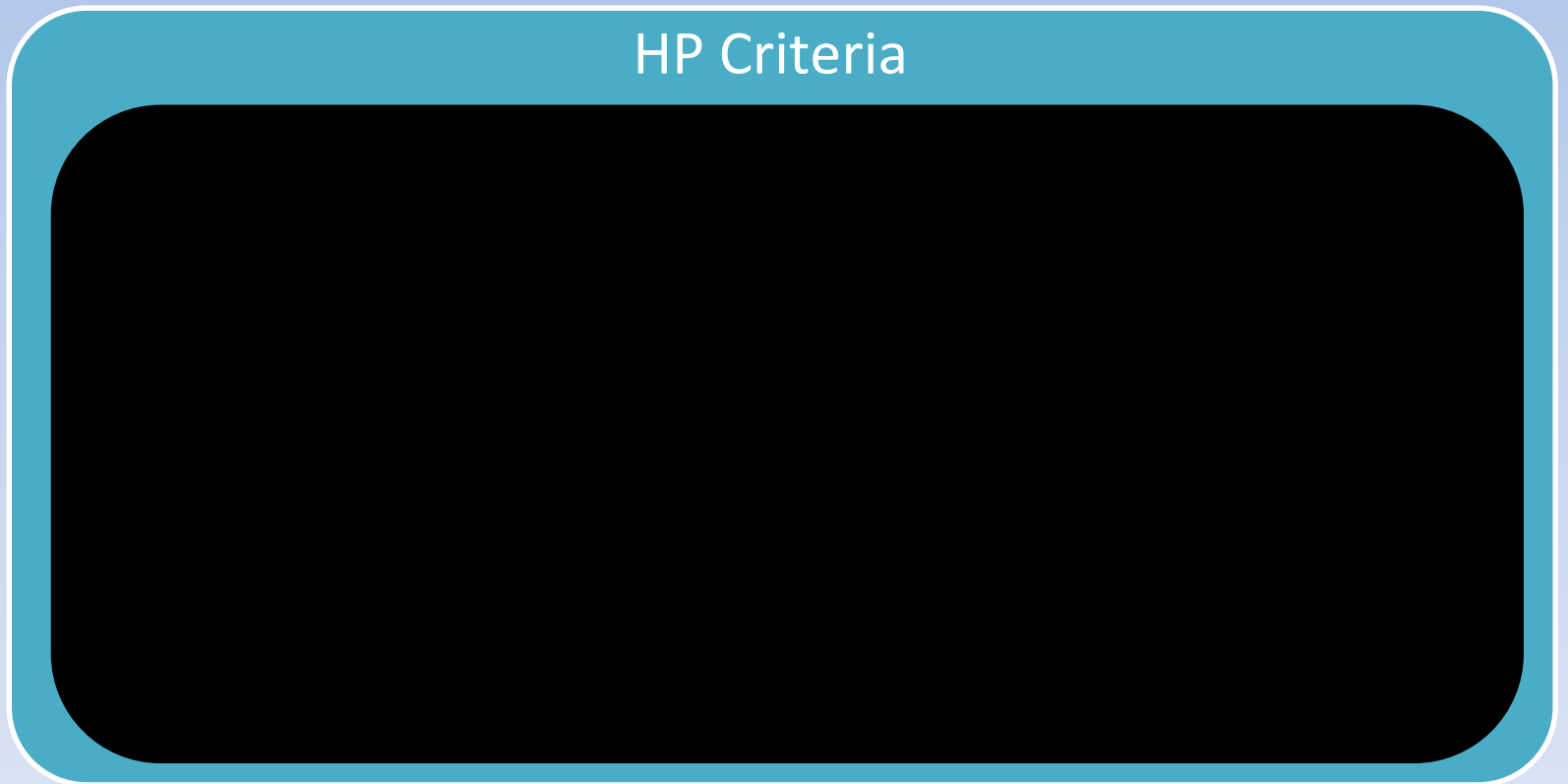
\* 49 CFR Part 192 went into effect in Nov. 1970

# Planned Changes to how we Prioritize Pipelines for Replacement

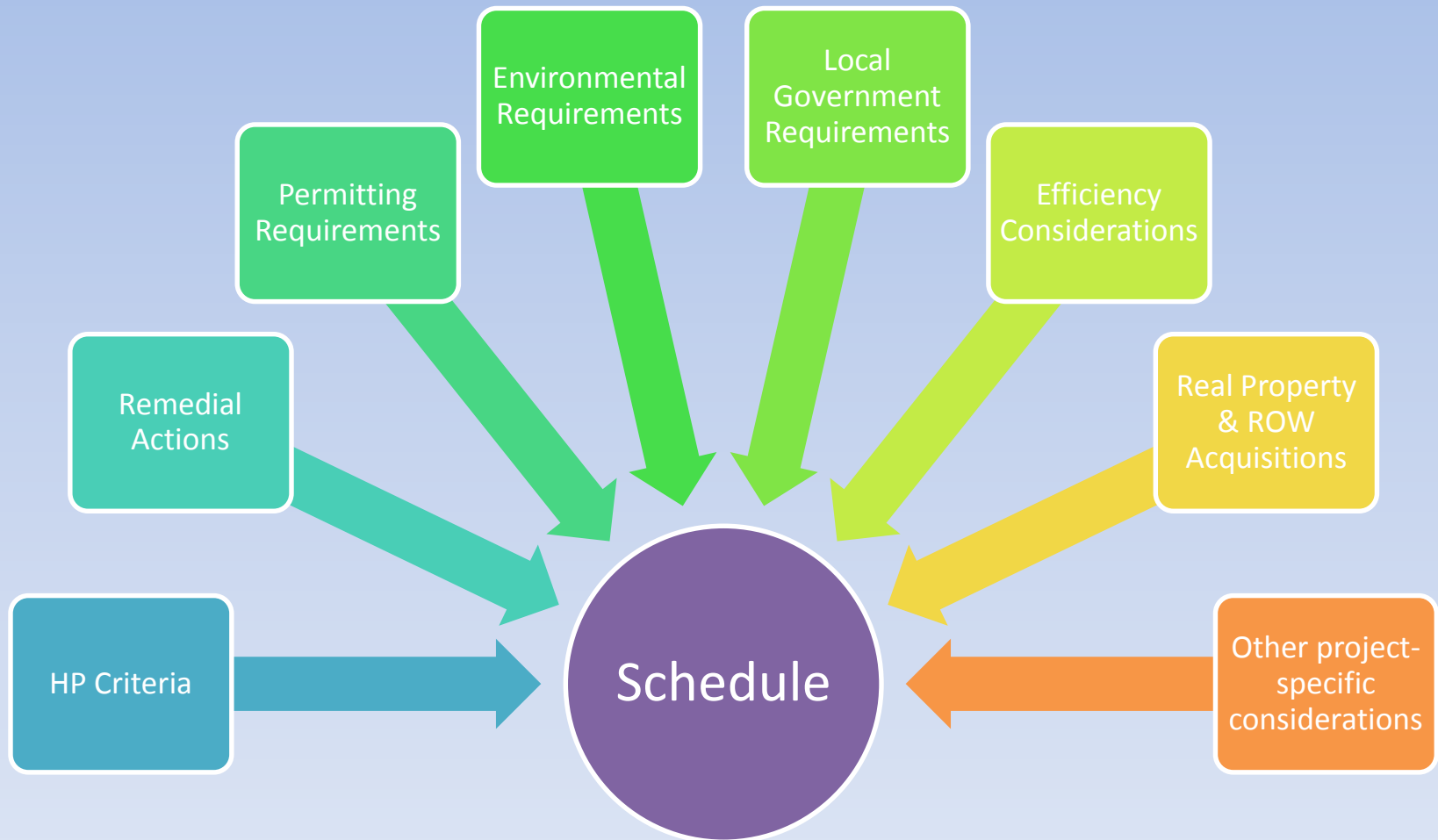
- Developing new state-of-the-art Geographical Information System (GIS) and Risk Software
- Developing algorithms utilizing industry experts and the most current industry data and research
- Plan to implement at the end of 2016

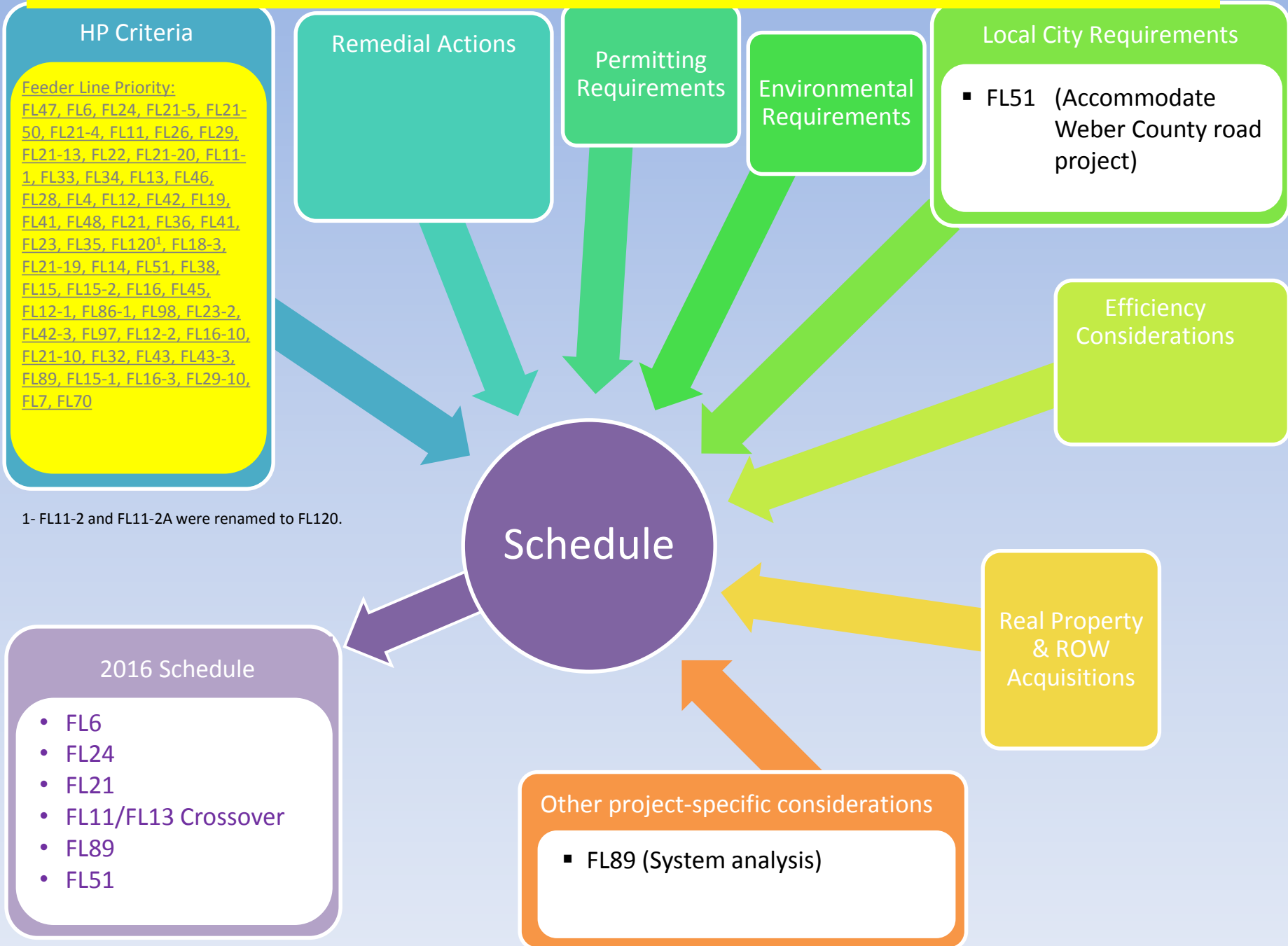
# Feeder Lines

- Prioritized by HP criteria



# Scheduling Feeder Line Replacements





# 2016 Schedule

Line	Location
FL6	Salt Lake County
FL24	Utah County
FL21	Davis County
FL11/FL13	Salt Lake County
FL89	Uinta County
FL51	Weber County

# Feeder Line Update

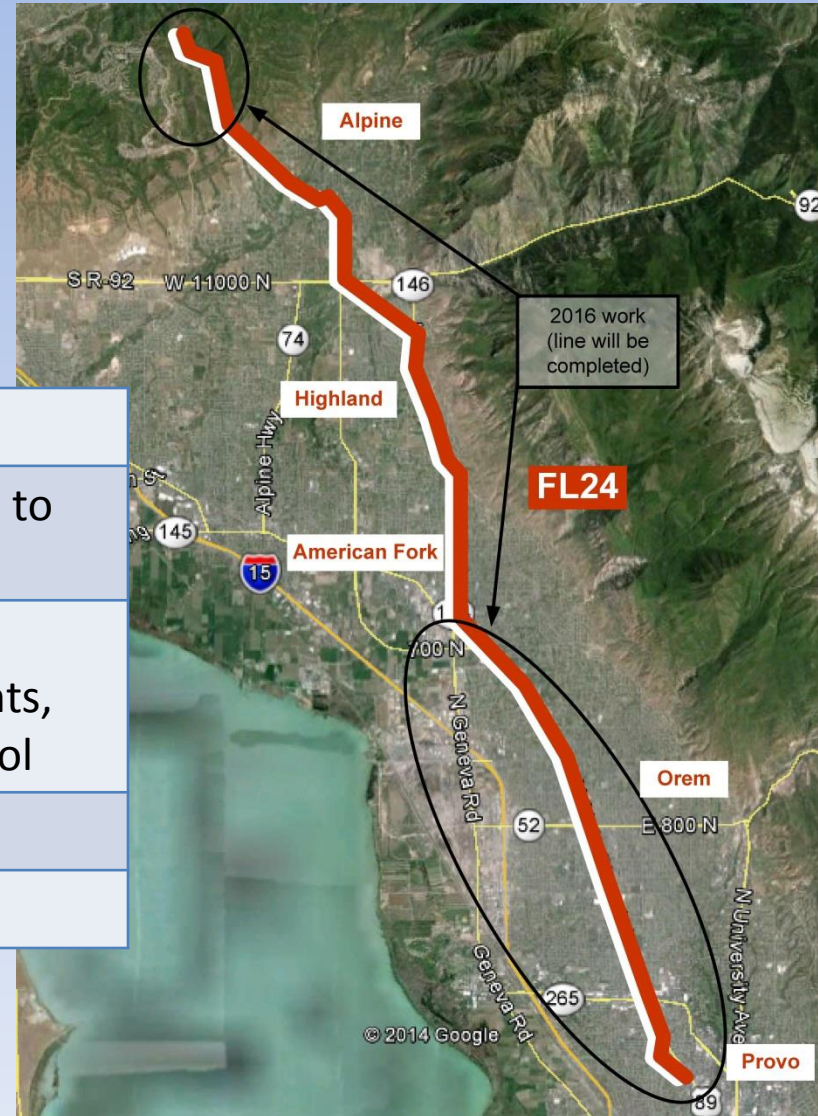
Line:	FL6
Schedule:	Begun in 2014 and scheduled to finish Sept. 2016
Challenges Include:	permitting and easement, soil conditions, fire control , multi-use
2016 Budget	\$8,500,000
2016 Footage:	12,300 ft.





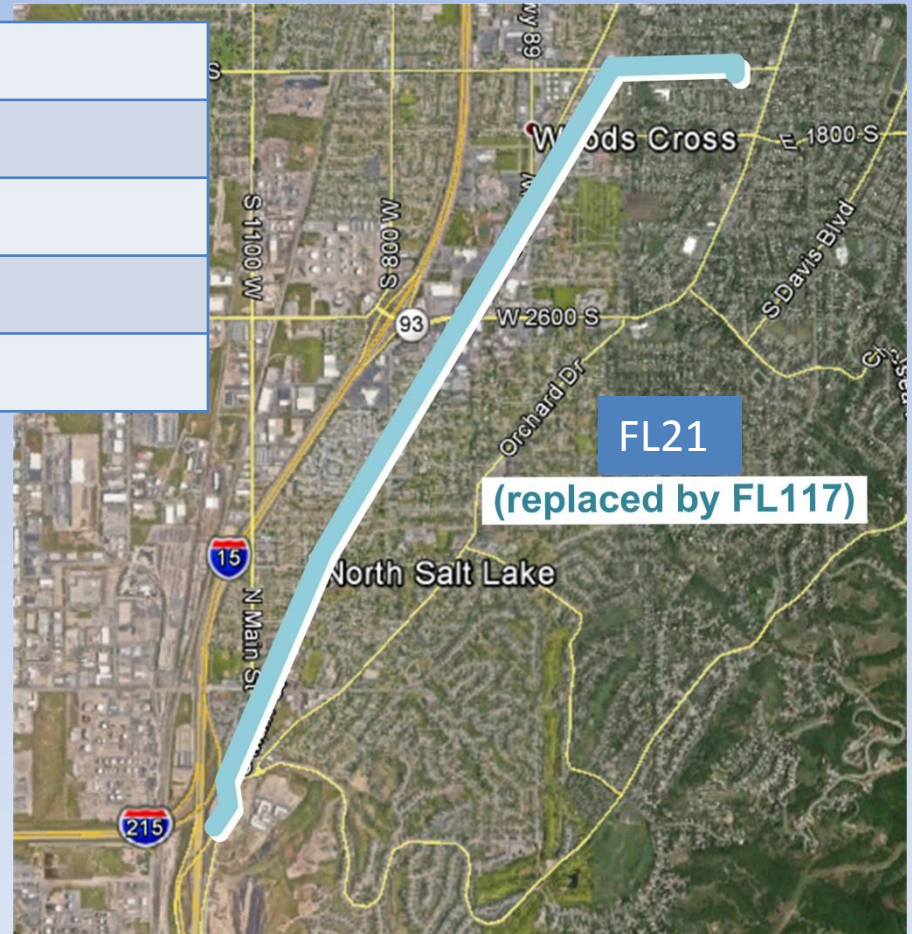
# Feeder Line Update

Line:	FL24
Schedule:	Begun in 2014 and scheduled to finish Sept. 2016
Challenges Include:	negotiations for complicated utility crossings, property rights, UDOT negotiations, fire control
2016 Budget	\$27,300,000
2016 Footage:	52,000 ft.



# Feeder Line Update

Line:	FL21
Schedule:	May—Sept. 2016
Challenges include:	UDOT permitting
2016 Budget	\$17,000,000
2016 Footage:	22,000 ft.



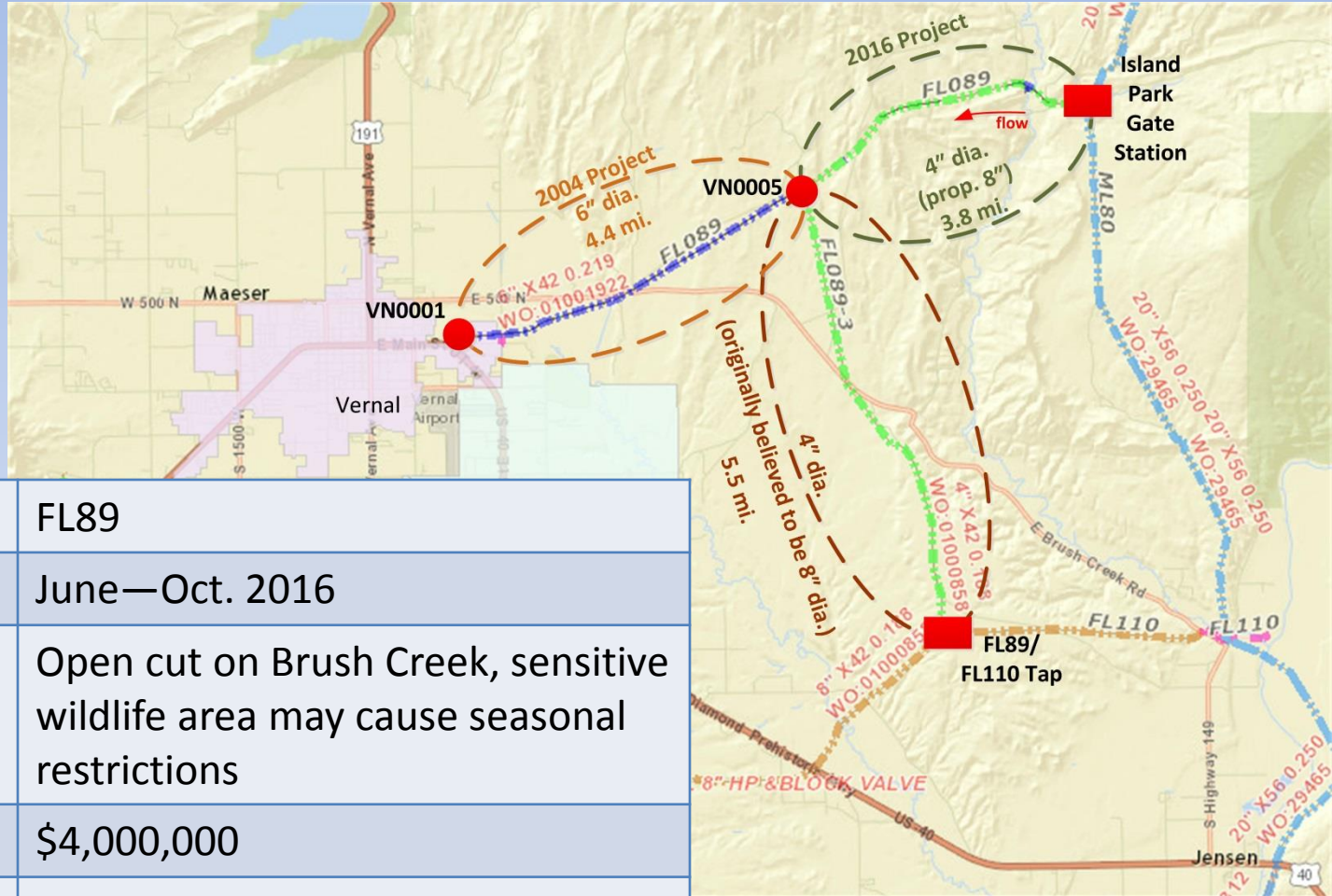
\*New installation will be named FL117

# Feeder Line Update



Line:	FL11/FL13 Crossover
Schedule:	July—Sept. 2016
Challenges Include:	Contaminated soils, high water table, high traffic on Hwy 201
2016 Budget	\$1,250,000
2016 Footage:	300

# Feeder Line Update



Line:	FL89
Schedule:	June—Oct. 2016
Challenges Include:	Open cut on Brush Creek, sensitive wildlife area may cause seasonal restrictions
2016 Budget	\$4,000,000
2016 Footage:	20,135 ft.

# Feeder Line Update

Line:	FL51
Schedule:	Complete
Challenges Include:	Coordinating construction schedules
2016 Budget	\$4,000,000
2016 Footage:	6,964 ft.



# 2015 Cost Variance

Project	Budget	Actual	Variance	Explanation
FL6	\$13,000,000	\$15,262,346	\$(2,262,346)	Unanticipated costs related to property condemnation, a route through a neighborhood that differed from design and complications with Draper City
FL24	\$32,466,656	\$31,805,125	\$661,532	Orem City requirements delayed work on State Street
FL34	\$3,000,000	\$339,779	\$2,660,221	Change in scope
FL26	\$3,300,000	\$6,433,745	\$(3,133,745)	Unanticipated increases in project length; condemnation of water utility increased costs, including delays (demobilization and mobilization costs) and an exceptionally deep bore under Hwy 92.
Pre-engineering	\$1,490,000	\$952,707	\$537,293	
<b>Total</b>	<b>\$53,256,656</b>	<b>\$54,793,702</b>	<b>\$(1,537,046)</b>	

**QUESTIONS?**