PROJECT UPDATES:

FLAT IRON TANK & WELL

DRY CREEK FLOOD CONTROL & PARKWAY

PIPE STRAY CURRENT CORROSION & REPAIR

SANDY CITY PUBLIC UTILITIES

AUGUST 29, 2017

FLAT IRON TANK AND WELL PROJECT

LOW BID TANK $4,078,630

- BELOW ENGINEER ESTIMATE $4.3M

TANK CONSTRUCTION

- START FALL 2017
- COMPLETION FALL 2018

WELL CONSTRUCTION

SUMMER 2018 TO 2019

DRY CREEK FLOOD CONTROL & PARKWAY PROJECT

Section A

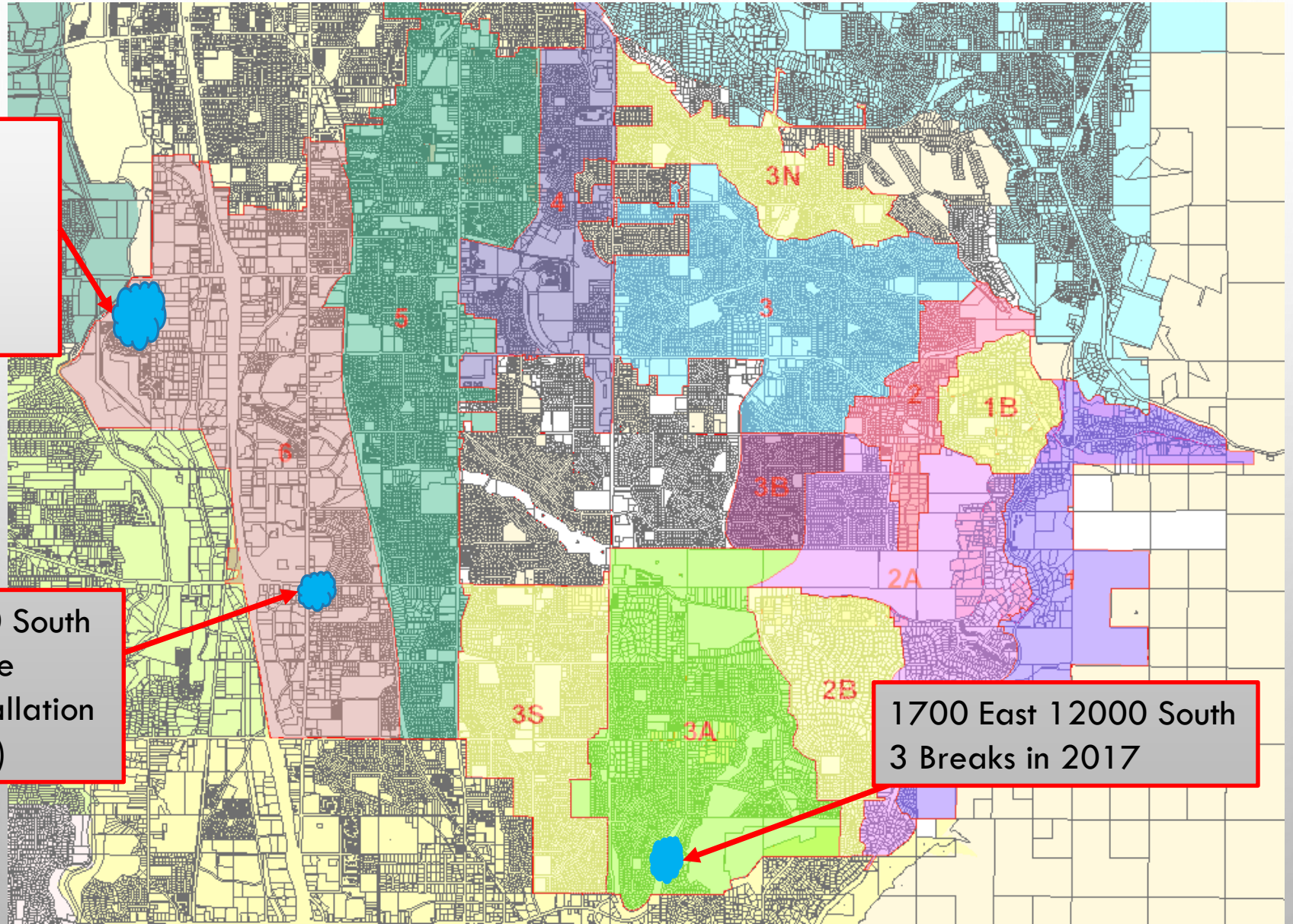
1. Landscape buffer - manicured landscape
2. Hardscape art walk - ranges in width from 10-30'
3. Alternate recreation use - turf grass or additional hardscape
4. Demonstration area - Cairns Art
5. Manicured landscape - buffer from road

STATUS UPDATE
Monroe to Centennial
30% design complete
Construction 2018

COORDINATION:
- Think Architects/RDA
- South Towne Mall
- County Flood Control to Neff's Grove ($200-600k)
- UTA Grant for TRAX crossing
- UDOT State Street bridge

Public Open House October 11th

STRAY CURRENT PIPE CORROSION HOT SPOTS



River Oaks
7 Breaks in 2017
13 Breaks since 2005 installation
(12 yr old pipe)

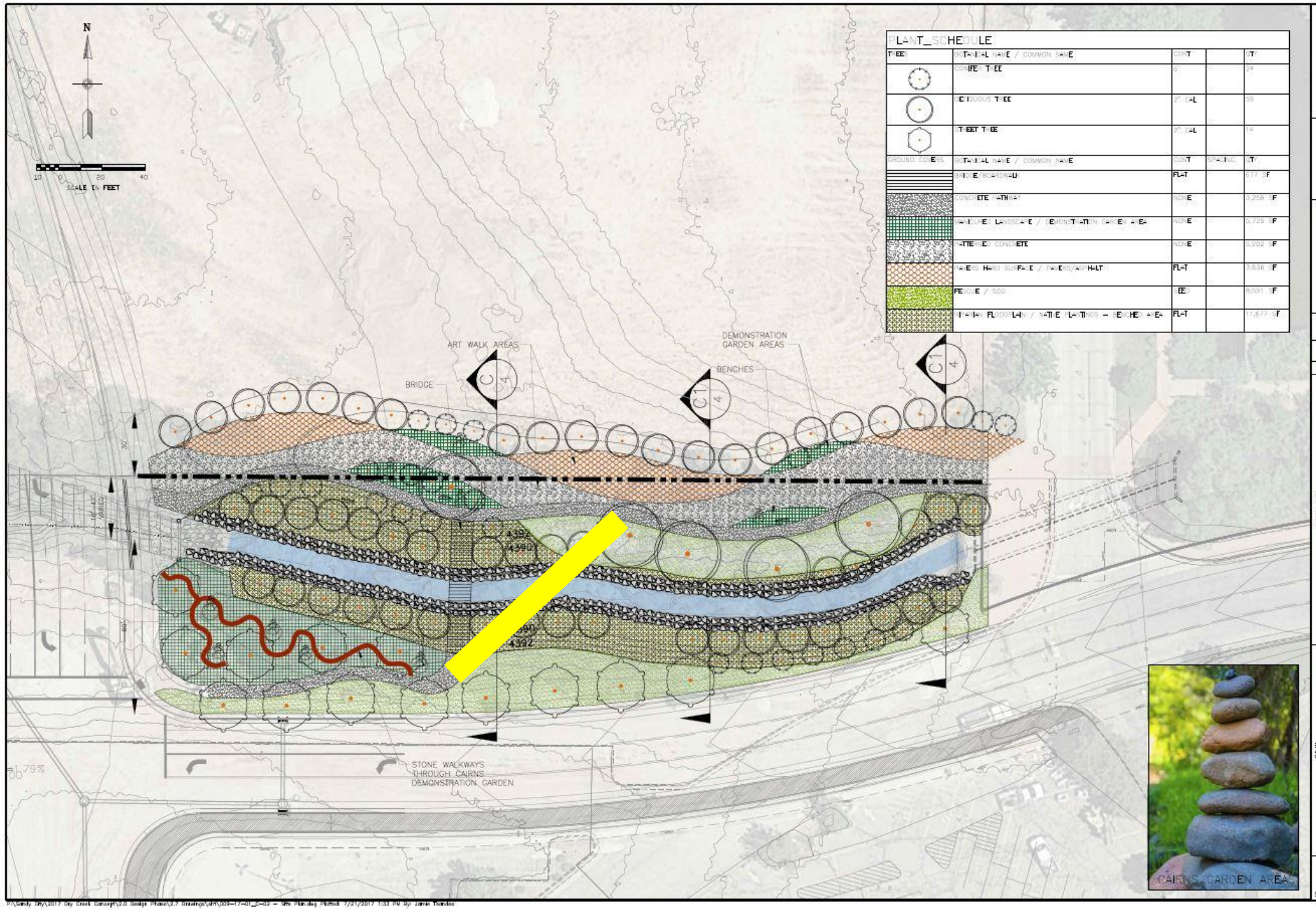
State St. & 10600 South
4 Breaks since June
7 Since 2007 installation
(10 year old pipe)

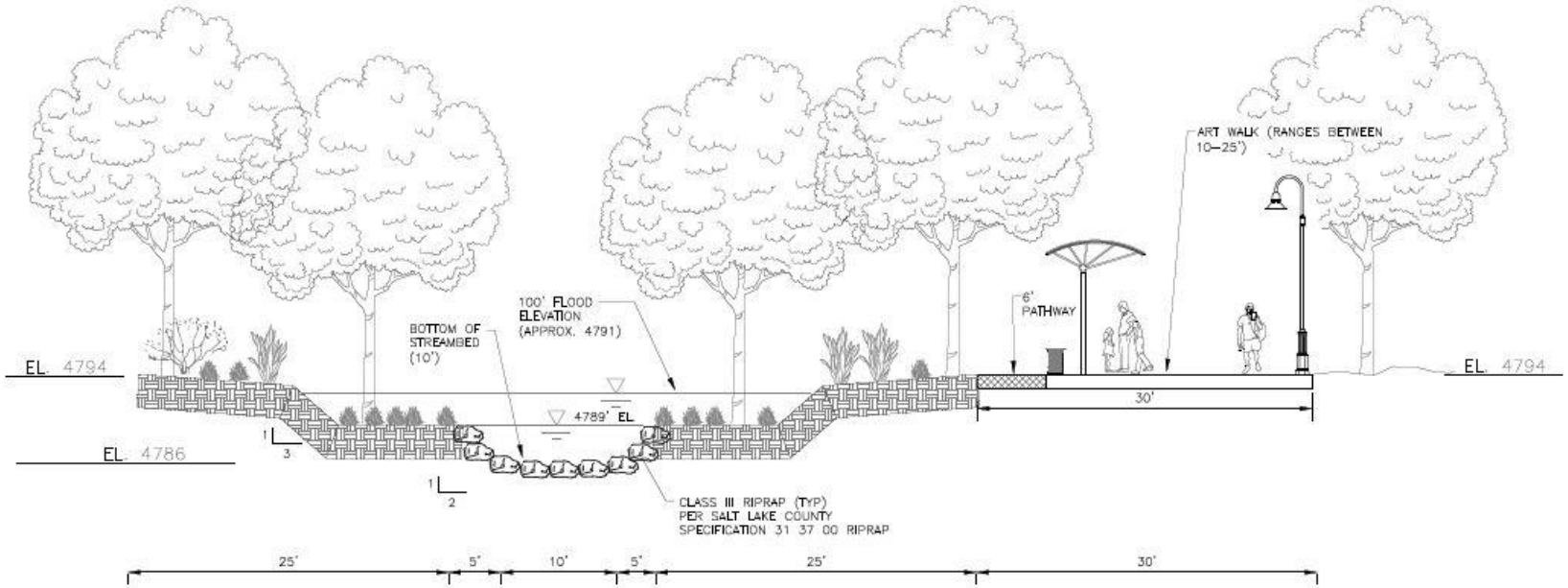
1700 East 12000 South
3 Breaks in 2017

POTENTIAL PIPE REPLACEMENT PROJECTS (PENDING FINAL CORROSION ENGINEERING STUDY RECOMMENDATIONS)

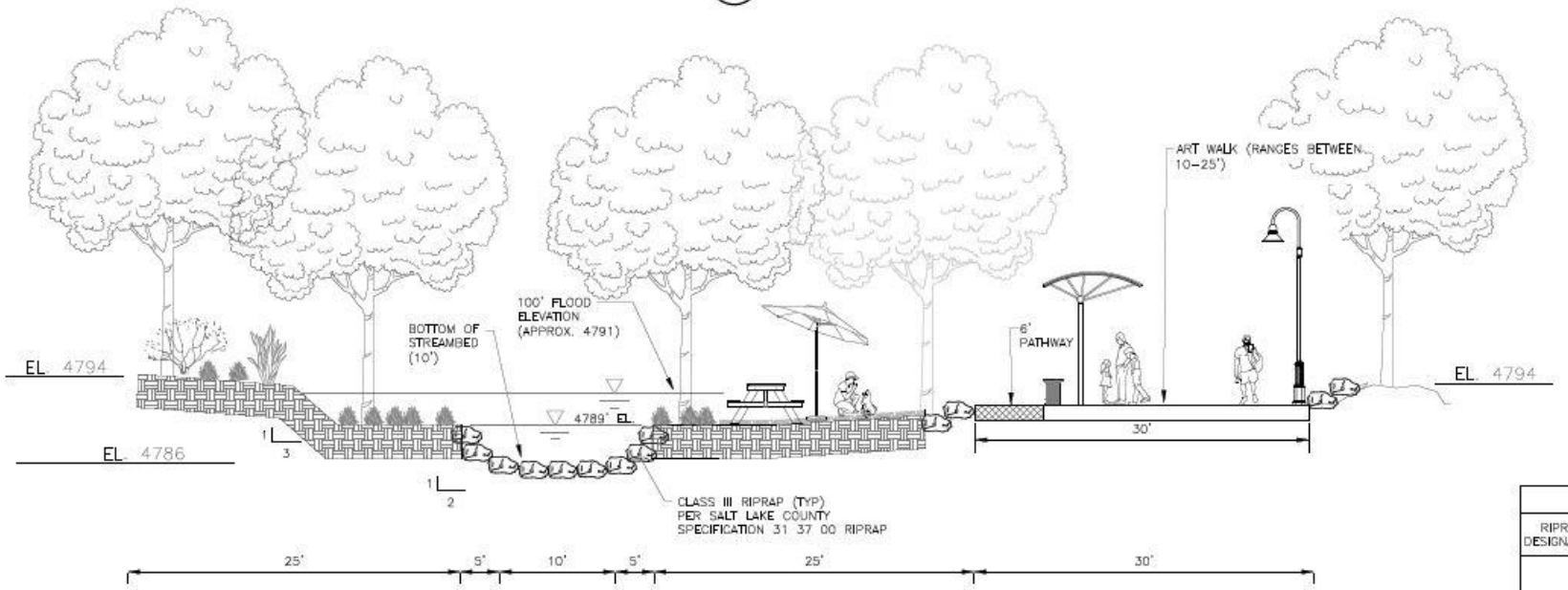
Location	Description	Linear Foot	Cost per foot	Total Cost Estimate
River Oaks Subdivision	Replacement of Corroded 8" Iron PIpe	2355	$130.00	$306,150.00
State Street & 106th South	10" Loop from Auto Mall to State	710	$150.00	$106,500.00
	Easement Cost (Estimate)	-	Lump Sum	$20,000.00
	Replacement of Corroded 10" Iron PIpe	590	$150.00	$88,500.00
			Sub Total	$215,000.00
1700 East 120th South	Replace waterline (possible trenchless rehab)	2000	$150.00	$300,000.00
			Total Estimate	$821,150.00

EXTRA SLIDES


N
SCALE IN FEET
PLANT SCHEDULE
TREES
BOTANICAL NAME / COMMON NAME
CONT
QTY
CONIFER TREE
DECIDUOUS TREE
STREET TREE
GROUND COVERS
BOTANICAL NAME / COMMON NAME
CONT
SPACING
QTY
BRIDGE/BOARDWALK
CONCRETE PATHWAY
NATIVE LANDSCAPE / REVEGETATION GARDEN AREA
STAINED CONCRETE
PAVERS HARD SURFACE / PAVERS/ASPHALT
FESCUE / SOD
RIPARIAN FLOODPLAIN / NATIVE PLANTINGS - BENCHED AREA
ART WALK AREAS
BRIDGE
DEMONSTRATION GARDEN AREAS
BENCHES
STONE WALKWAYS THROUGH CAIRNS DEMONSTRATION GARDEN
CAIRNS GARDEN AREA
Bowen Collins & Associates, Inc.
CONSULTING ENGINEERS
REVISIONS
SANDY CITY
DRY CREEK REACH 2 30% CONCEPT
SANDY, UT
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
DESIGN
DRAWN J TSANDES
CHECKED C BAGLEY
APPROVED C BAGLEY
REVIEW
CIVIL
DRY CREEK
30% SITE, GRADING
AND LANDSCAPE PLAN
DATE JULY 2017
PROJECT NUMBER 003-17-01
DRAWING NO.
C-1
SHEET 3 OF 4



TYPICAL SECTION C
NTS
4



TYPICAL SECTION C1
NTS
4

1. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PROVIDE ALL TEMPORARY EROSION CONTROL AND MAINTENANCE AND SHALL PROVIDE EROSION AND SEDIMENT CONTROL PLANS TO SANDY CITY FOR REVIEW.
2. NO CHANGE IN DESIGN LOCATION OR GRADE SHALL BE MADE BY THE CONTRACTOR WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER OR THEIR AUTHORIZED REPRESENTATIVE.
3. CONTRACTOR SHALL CONSTRUCT BERMS AND/OR DRAINAGE DITCHES AS NEEDED TO KEEP STORM RUNOFF AND IRRIGATION FLOWS FROM ENTERING CONSTRUCTION EXCAVATIONS OR INTERFERING WITH CONSTRUCTION EFFORTS.
4. EXISTING LARGE LIVING TREES SHALL BE PRESERVED ALONG THE PROJECT CORRIDOR WHERE FEASIBLE. NO LIVING TREE WITH A CALIPER GREATER THAN 8 INCHES SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
5. CONTRACTOR SHALL COORDINATE FINAL EXTENTS OF BANK STABILIZATION WITH ENGINEER PRIOR TO CONSTRUCTION.
6. THE APPROXIMATE HORIZONTAL LIMITS OF BANK RESTORATION WORK ARE SHOWN ON THE DRAWINGS. VERTICAL EXTENT OF RIPRAP IS SHOWN ON DRAWING GC-1. THE INTENT OF THE DESIGN IS TO BALANCE CUTS AND FILLS, PRESERVE PROPERTY, PRESERVE CHANNEL HYDRAULIC CAPACITY, AND MAINTAIN SMOOTH CHANNEL FLOW LINES AS MUCH AS REASONABLY POSSIBLE.
7. BANK STABILIZATION WORK MAY BE PERFORMED WHEN WATER IS IN THE CREEK. WATER DEPTH AND VELOCITY MAY VARY DURING THE CONTRACT PERIOD.
8. DESIGN OF THIS CHANNEL IS BASED ON A 550 CFS.

TABLE 1

RIPRAP GRADATION

RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	DIAMETER (INCHES)	D50** (INCHES)
CLASS III	70 – 100	20	12
	50 – 70	16	
	35 – 50	12	
	2 – 10	4	

Bowen Collins & Associates, Inc.
CONSULTING ENGINEERS

REVISIONS

NO.	DATE	BY	DESCRIPTION

SANDY CITY
DRY CREEK REACH 2 30% CONCEPT
SANDY, UT

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN J. TSIANIDES
REVIEW C. BAGLEY
APPROVED C. BAGLEY

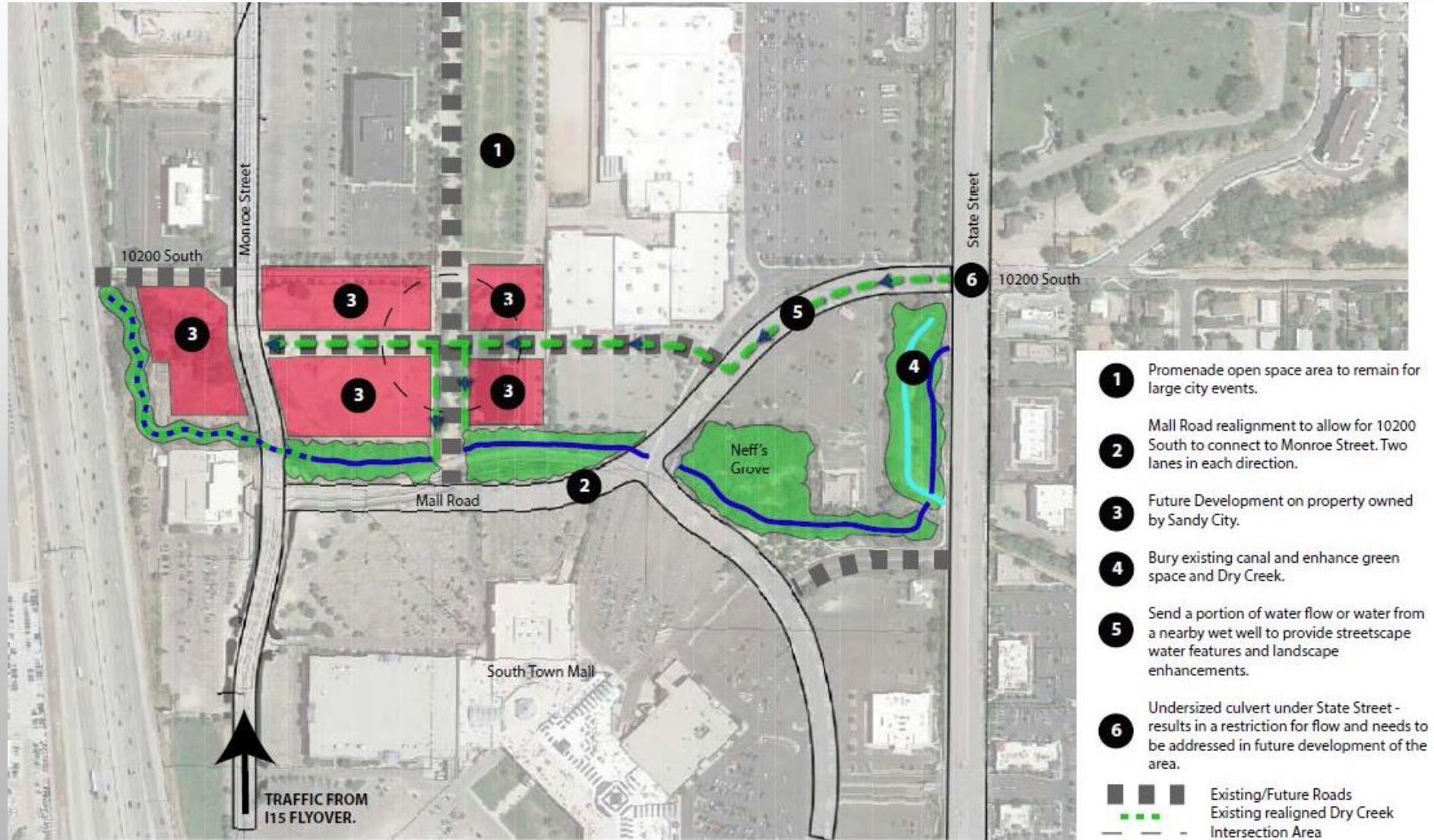
CIVIL
DRY CREEK DETAILS

PROJECT NUMBER 009-17-01
DATE JULY 2017

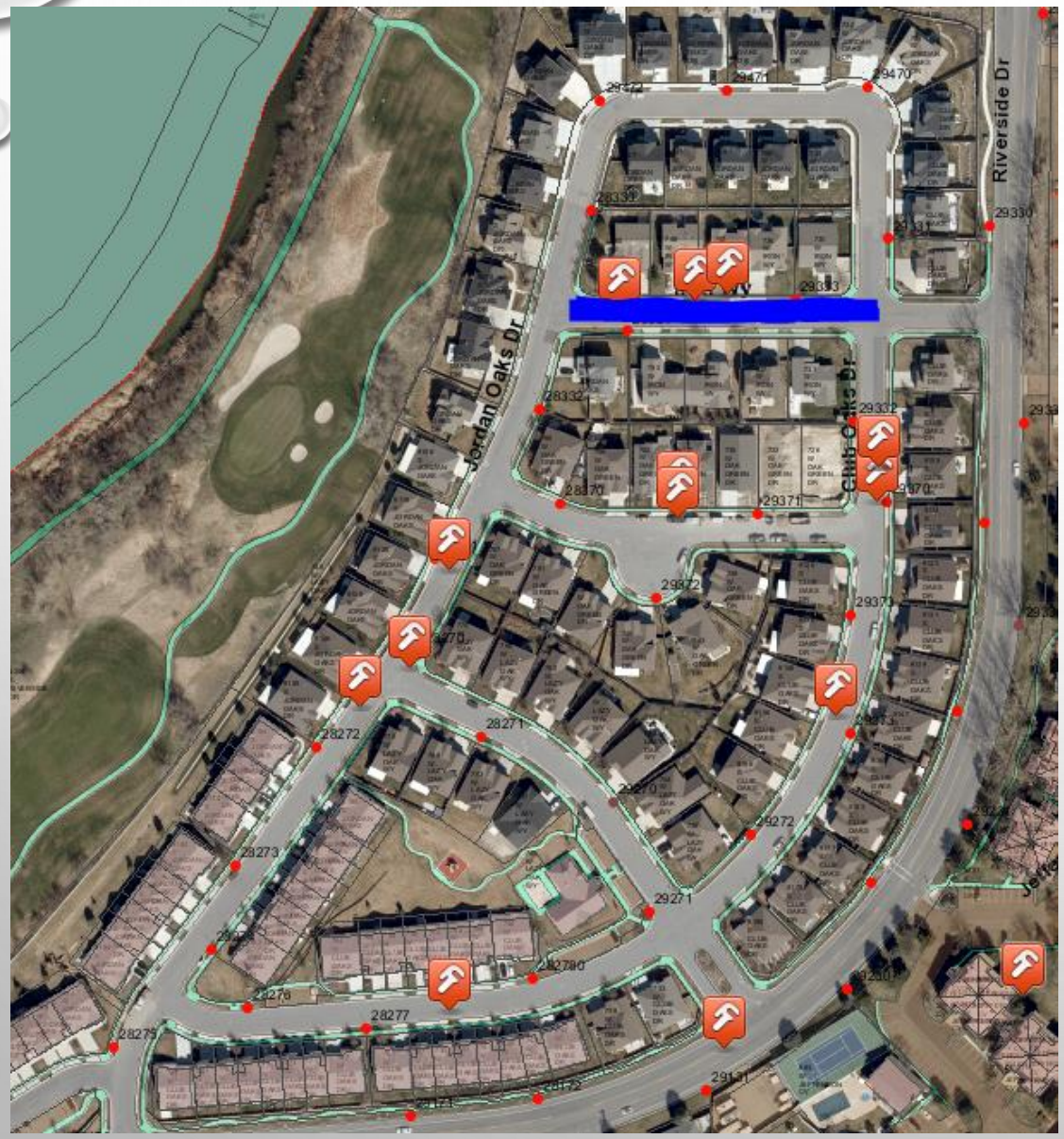
DRAWING NO. C-4
SHEET 4 OF 4

P:\Sandy City\2017 Dry Creek Concept\2.0 Design Phase\2.7 Drawings\dwg\009-17-01_C-03 - Details.dwg Plotted: 7/20/2017 6:51 PM By: Jamie Teanidis

DRY CREEK CONCEPT DEVELOPMENT CHARETTE WHERE MOUNTAIN MEETS URBAN



River Oaks Subdivision Water Pipe Break History

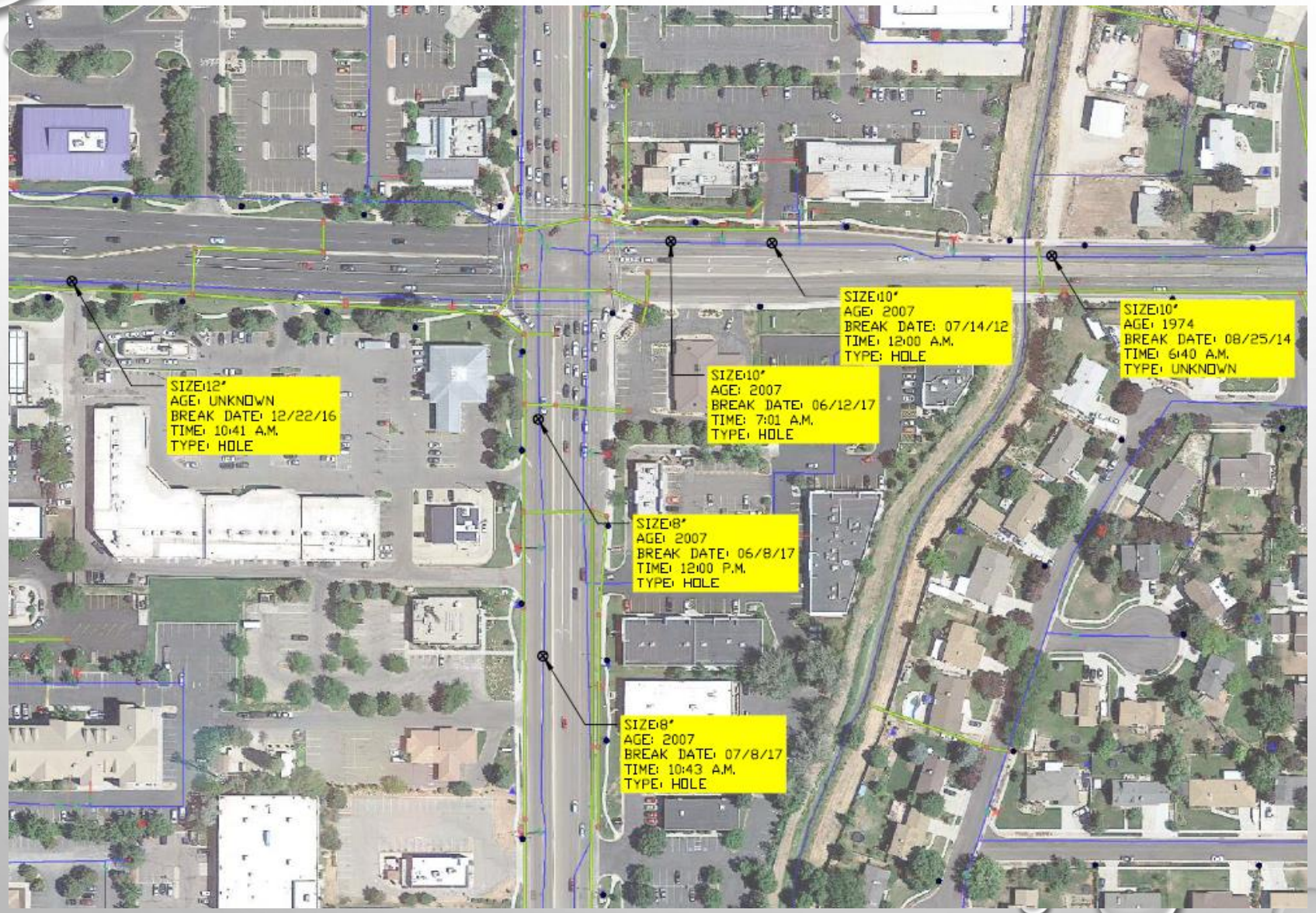


Date	Address	Notes
3/26/2007	760 W Iron Way	Waterline Replaced
6/28/2010	760 W Iron Way	Waterline Replaced
5/2/2012	736 W Iron Way	Waterline Replaced
5/20/2013	766 W Oak Green	Hole
8/6/2014	9126 S JORDAN OAKS DR	Resection
10/22/2014	751 W Club Oaks Drive	Full/Half Circle
6/5/2015	9150 S JORDAN OAKS DR	Hole
11/19/2015	9105 S Club Oaks Drive	Hole
4/5/2017	9913 S Club Oaks Dr.	Hole
5/8/2017	9150 S JORDAN OAKS DR	Hole
6/8/2017	9139 S. Club Oaks Dr.	Hole
6/30/2017	738 W. Green Oaks Dr.	Hole
6/30/2017	738 W Oak Green	Hole
7/9/2017	9095 S Club Oaks Dr.	Hole

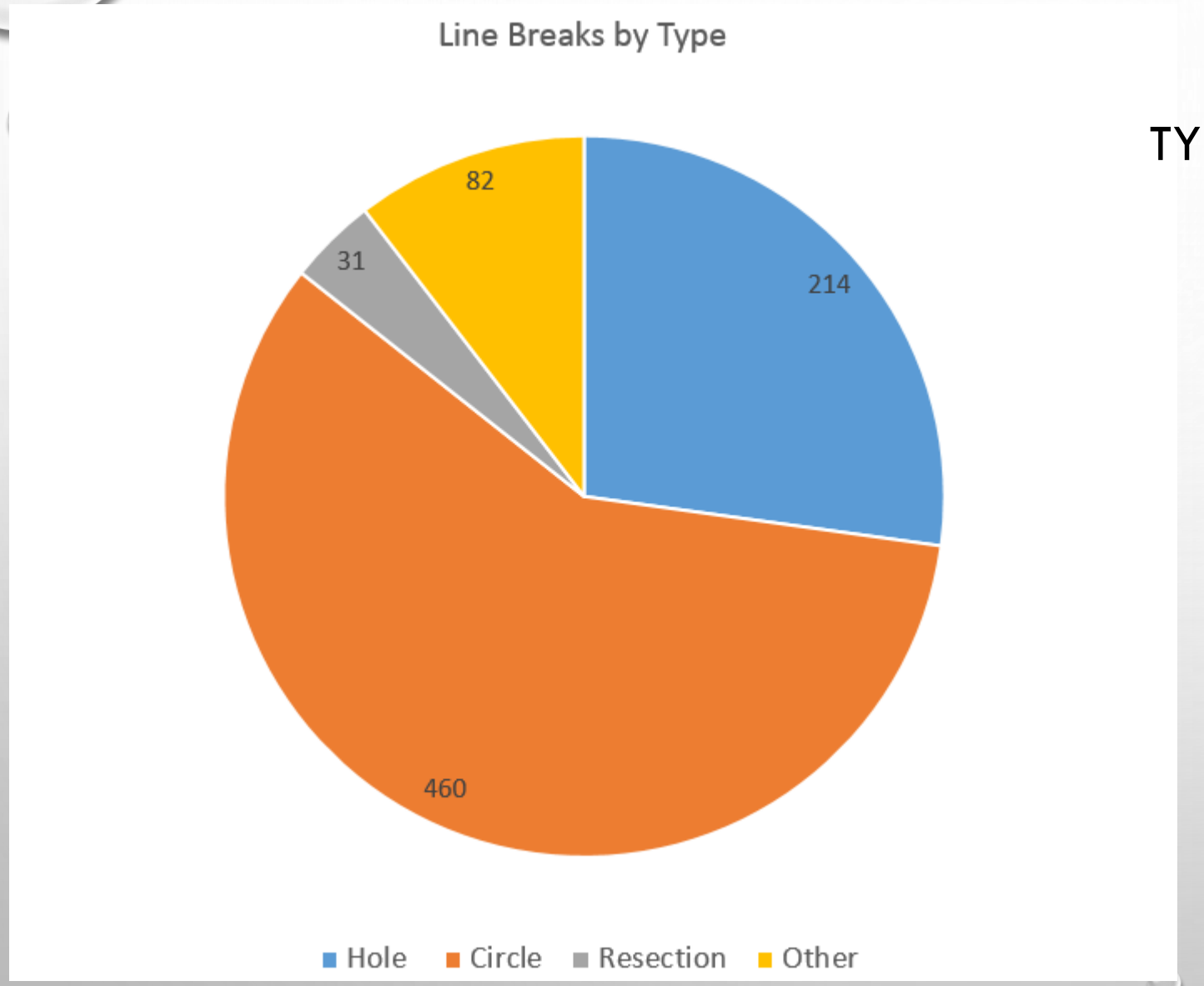
Waterline Break Location

Waterline Replaced

10600 SOUTH STATE STREET



PIPE BREAK RECORD (2005 – 2017)



TYPICAL BREAK CAUSES

HOLE = TYPICAL OF STRAY CURRENT CORROSION, OR FROM PIPE DAMAGED BY CONSTRUCTION CREATING WEAK/CORROSION POINT

CIRCLE = PIPE SHEARED OFF DUE TO DIFFERENTIAL GROUND SETTLEMENT, COMMONLY FROM WINTER FROST HEAVE

RESECTION = SECTION OF PIPE REPLACED. MAY BE REQUIRED DUE TO SPLITTING (POSSIBLE "WATER HAMMER") OR SEVERE SOIL CORROSION ALONG ENTIRE LENGTH OF PIPE.

Pipe Corrosion Break Types

Typical Corrosive Soil Pipe Break

Break Date: 7/13/2017

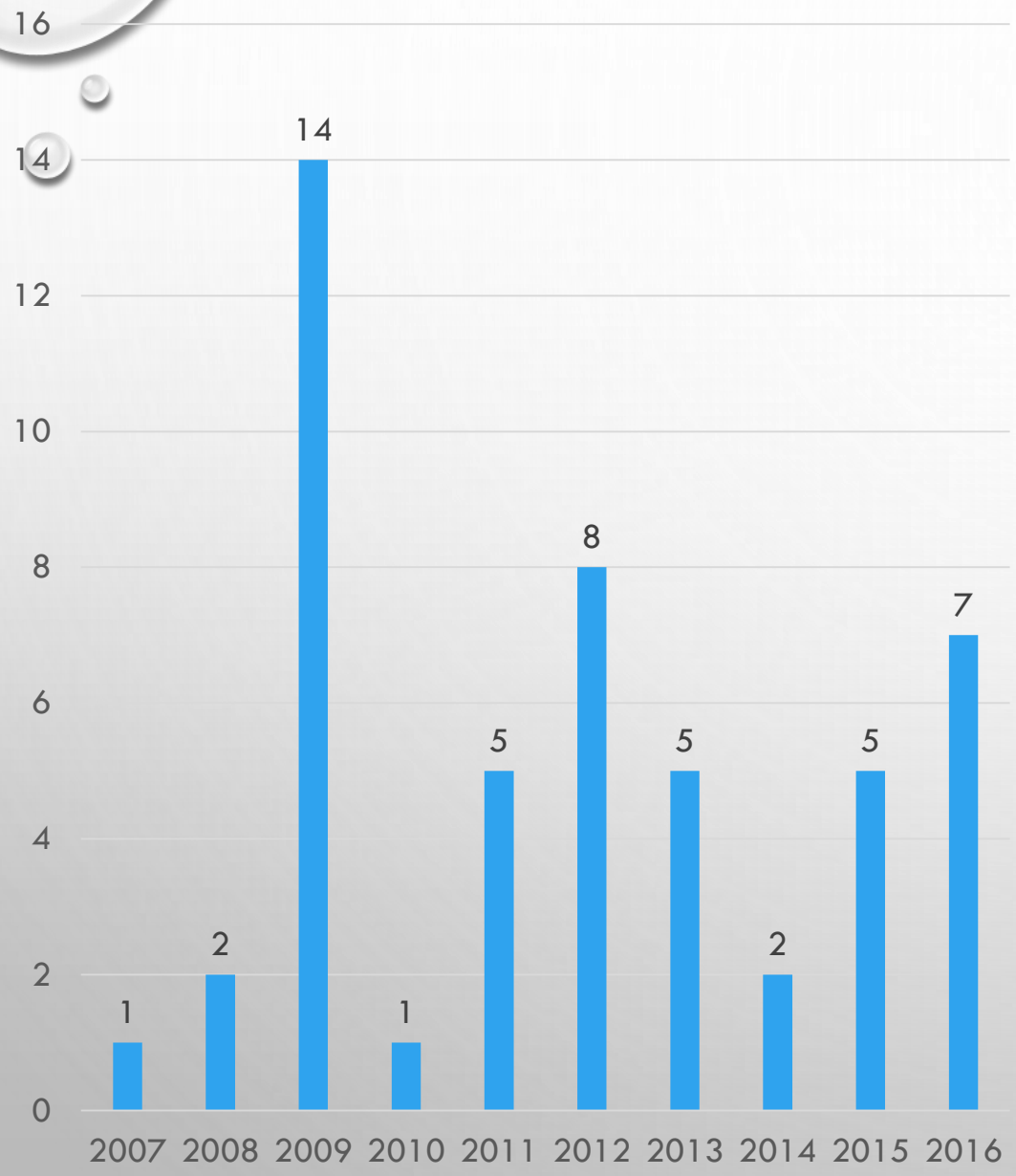
Location: 8645 South Harrison Street

Stray Current Pipe Break

Break Date: 7/8/2017

Location: 10660 S. State Street

Number of Waterline Break Flood Claims



Total Incurred Cost of Waterline Break Claims

CURRENT MAINLINE REPLACEMENT FUNDING

Budget Information (cont.) — **Fund 511 - Water Expansion & Replacement**

Capital Budget	2017 Budgeted	2018 Tentative	2019 Planned	2020 Planned	2021 Planned	2022 Planned
REPLACEMENT PROJECTS						
51811 - Replace Mainlines - This is for the replacement of mainlines identified by our master plan that have become old and susceptible to breakage.						
Water Revenue	$ 606,044	$ 757,417	$ 1,545,000	$ 1,591,350	$ 1,639,091	$ 1,688,263

PIPE CORROSION ACTION PLAN (PARTIAL)

- ENGAGED A SPECIALIZED EXPERT CORROSION ENGINEER
  - TESTING HOT SPOTS AND OTHER AREAS FOR STRAY CURRENTS
  - DEVELOPING STANDARDS FOR PROTECTING VULNERABLE PIPE
  - WORKING WITH OTHER UTILITIES TO IDENTIFY AND REDUCE STRAY CURRENT SOURCES
- COORDINATING WITH CITY ENGINEERING AND UDOT
  - LEVERAGE PROJECT COST/EFFICIENCY, MINIMIZE PUBLIC IMPACT WITH EXISTING ROAD PROJECTS
- EVALUATING TRENCHLESS PIPE REHABILITATION TECHNOLOGIES
  - PIPE BURSTING OR SLIPLINING IF FEASIBLE TO REDUCE COST/IMPACTS TO PUBLIC (REDUCED TRAFFIC DISRUPTION AND PAVEMENT REPAIR, ETC.)
- UPDATING WATER SYSTEM ASSET MANAGEMENT PLAN AND MASTER PLAN WITH CORROSION ANALYSIS FOR FUTURE CAPITAL PLANNING AND BUDGET CONSIDERATION
  - IDENTIFYING CRITICAL AREAS AT RISK, TESTING AND MONITORING SOIL/PIPE CORROSION, PREVENTATIVE MAINTENANCE UPDATES, AND TIMELY PIPE REPLACEMENT OF CORRODED METAL PIPE WITH PLASTIC PIPE.

SANDY WATER SYSTEM

MAXIMUM SYSTEM PRESSURES