



# **SANDY PUBLIC UTILITIES:**

## ***Water, Storm Water & Street Lighting***

## Drinking Water Utility Overview

Water Supply  
Water Enterprise Fund  
Water System Infrastructure

Future Topics:  
Facilities Tour, Fluoride Update,  
Street Light Program, Storm Water Comprehensive Master Plan,  
Water Conservation, Aquifer Storage & Recovery, Irrigation Companies,  
Metro Water District and Provo River System

## PUBLIC UTILITIES



### Sandy Water Supplies:

#### Direct Streamflow

- Little Cottonwood
- Bell Canyon
- Ontario Drain (Jordanelle)

#### Metro Storage

- Deer Creek Reservoir

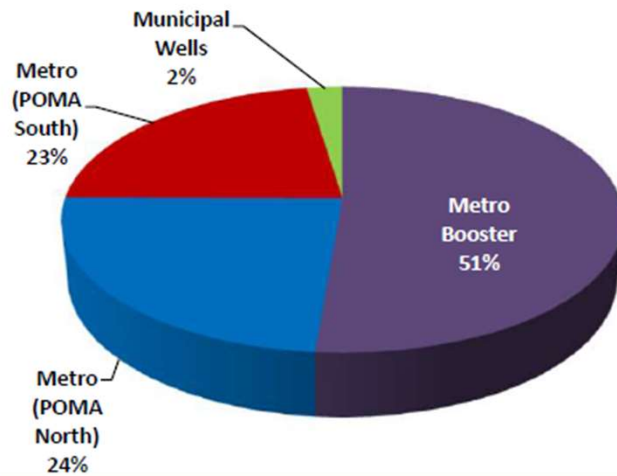
#### Groundwater

- Wells
- Aquifer Storage (future)

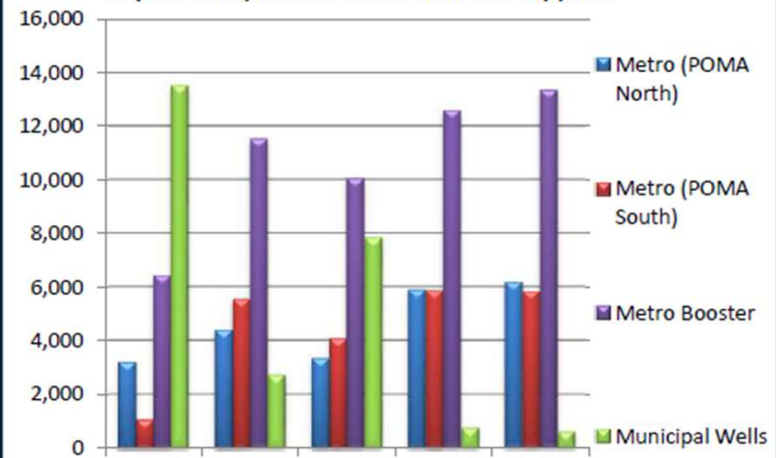


## PUBLIC UTILITIES

**Water Sources 2018**



**5 year Comparison Water Sources Supplies**



	Well Water (AF)	% Well Water	Surface Water (AF)	% Surface Water	Annual Total (AF)
2014	13,497	56%	10,683	44%	24,180
2015	2,724	11%	21,475	89%	24,199
2016	7,842	31%	17,468	69%	25,310
2017	749	3%	24,345	97%	25,094
2018	625	2%	25,368	98%	25,992



# **DRINKING WATER FUND: FINANCE SUMMARY**



## DRINKING WATER FUND: Enterprise Fund

### WATER OPERATIONS:

- Day-to-Day Expenses
- Water Sales Revenue
- MOST OF THE REVENUE
- ~HALF OF THE EXPENSES

### WATER EXPANSION:

- New Projects
- Capital Assessments & Bonds
- Fixing Broken Mainlines
- ~HALF OF THE EXPENSES



WATER FUND: FINANCIAL SUMMARY	FY 18-19 APPROVED	FY 18-19 ACTUAL
<i>Water Operations: Total Financing Sources</i>	\$22,795,374	\$22,782,372
<i>Water Operations: Total Financing Uses</i>	(\$13,009,355)	(\$12,557,186)
<i>Water Expansion: Total Financing Sources</i>	\$290,000	\$689,019
<i>Water Expansion: Total Financing Uses</i>	(\$10,076,019)	(\$11,899,138)
<b>TOTAL WATER FINANCING SOURCES</b> <i>[Water Ops + Water Expansion]:</i>	\$23,085,374	\$23,471,391
<b>TOTAL WATER FINANCING USES:</b>	(\$23,085,374)	(\$24,456,324)
<b>TOTAL WATER:</b>	\$0	(\$984,933)

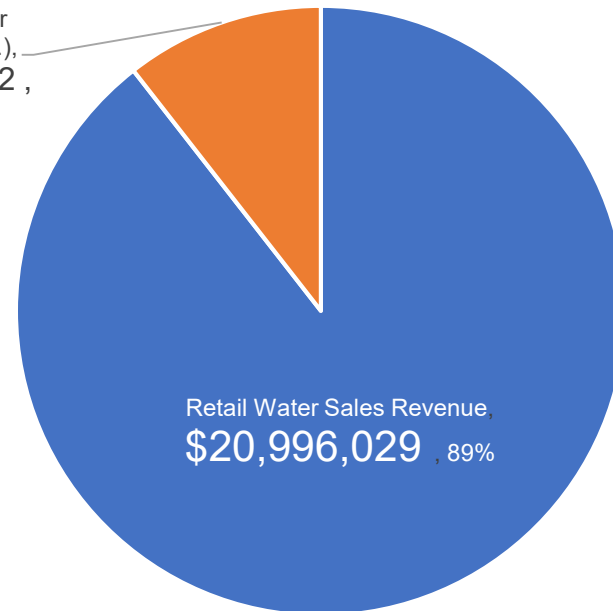
Variable #  
(Weather)  
+/- 10%

Balanced  
Budget

## Drinking Water Enterprise Fund: SOURCES

FINANCING SOURCES	FY 18-19 ACTUAL
TOTAL DRINKING WATER FINANCING SOURCES	\$23,471,391

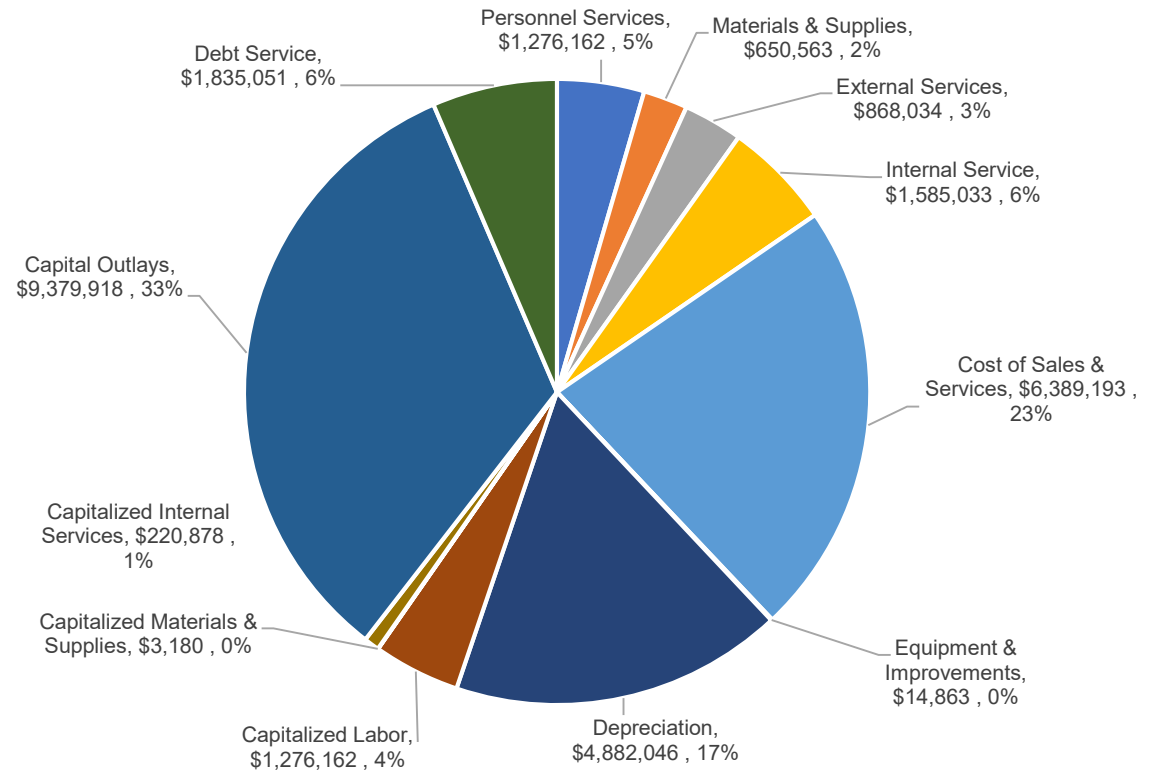
Other  
(Connection  
Fees, Meter  
Rentals, etc.),  
\$2,475,362 ,  
11%





## Drinking Water Enterprise Fund: USES

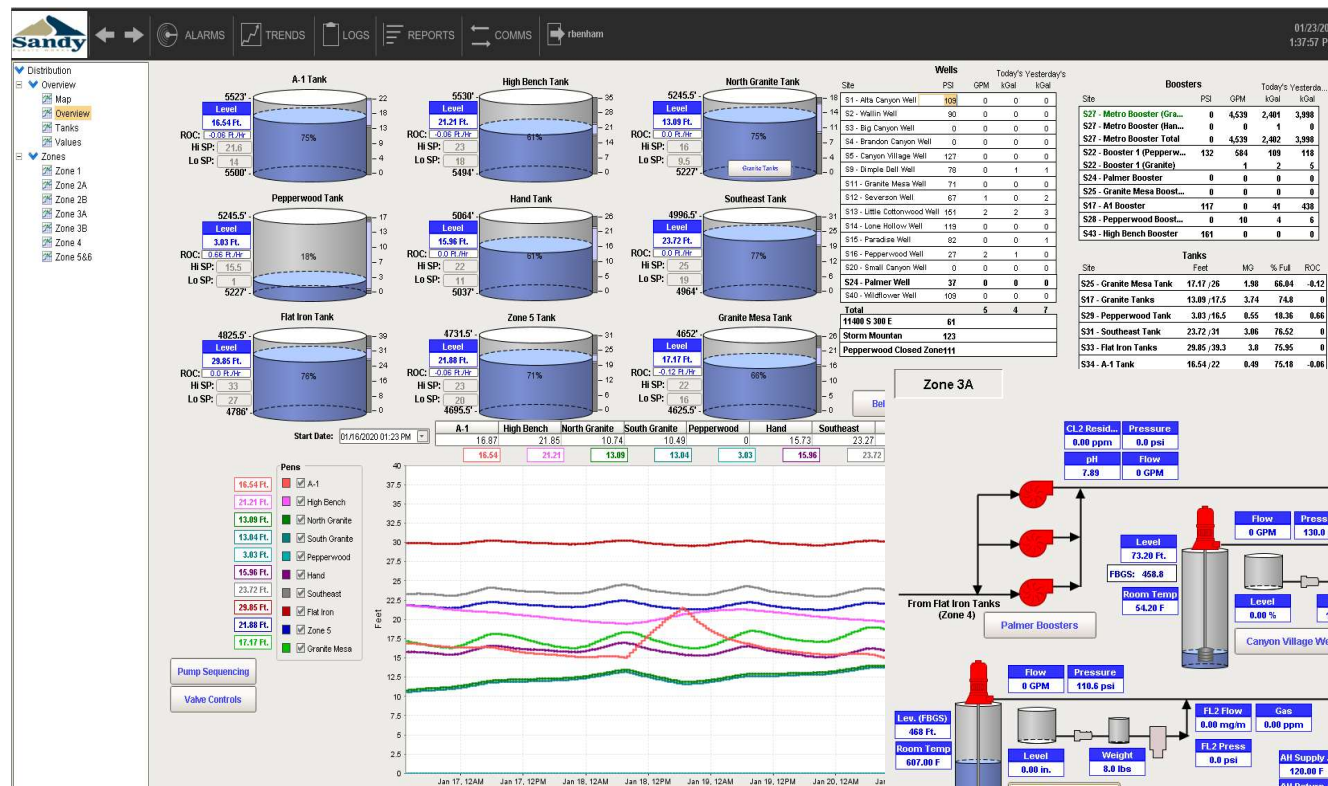
FINANCING USES	2019 ACTUAL
<b>TOTAL DRINKING WATER FINANCING USES:</b>	<b>\$23,471,391</b>





# **WATER SYSTEM INFRASTRUCTURE OVERVIEW**

## WATER SYSTEM OVERVIEW

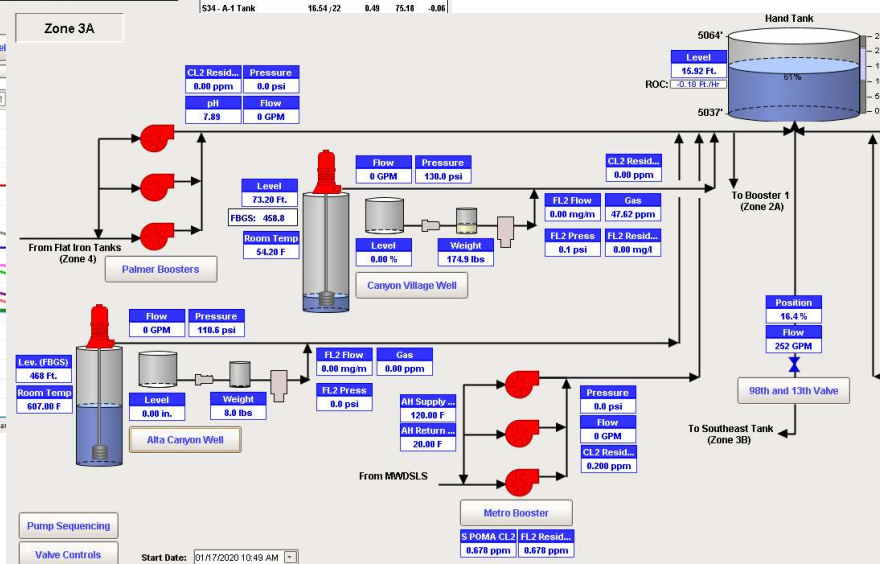


### Water System Components:

- Water Storage Tanks (9)
- Wells (15)
- Pump Stations (10)
- Water Main Pipe (427 mi.)

Average Water Use:

- Annual: 23,000 ac-ft.
- Winter Day: 7 MGD
- Summer Day: 55 MGD



## CAPITAL PROJECTS

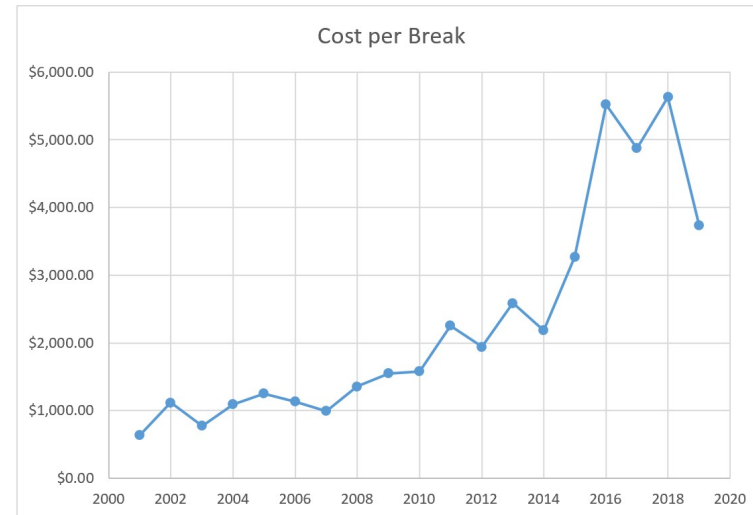
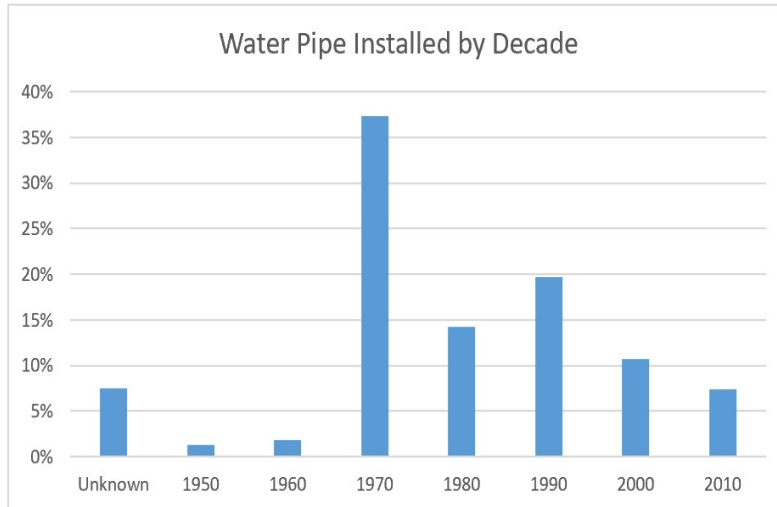


### Major Water System Structures Last 10 Years

Structure	Year	Cost (Million \$)
Severson Well Rehab & Rebuild	2013	\$1.1M
High Bench Pump Station Rebuild	2014	\$1.5M
Pepperwood Tank Rebuild	2015	\$4.3M
Flat Iron Tank Rebuild	2018	\$4.6M
Flat Iron Well Redrill & Rebuild	2020	\$2.5M

**Total Cost: \$14 Million**

## WATER MAIN FACTS



- Total pipe length: 2,246,272 feet or 427 miles
- 98% of water pipe in system is ductile iron (DI) material
- New, properly installed DI pipe: estimated life of 110 years
- DI pipe installed in 1970s in poor soils: estimated life of less than 50 years
- Poorly installed DI pipe: life is 10 to 20 years
- 5 Year annual average: \$350,000/year cost of break repair
- Increased cost of each break is because of increased breaks in major roadways

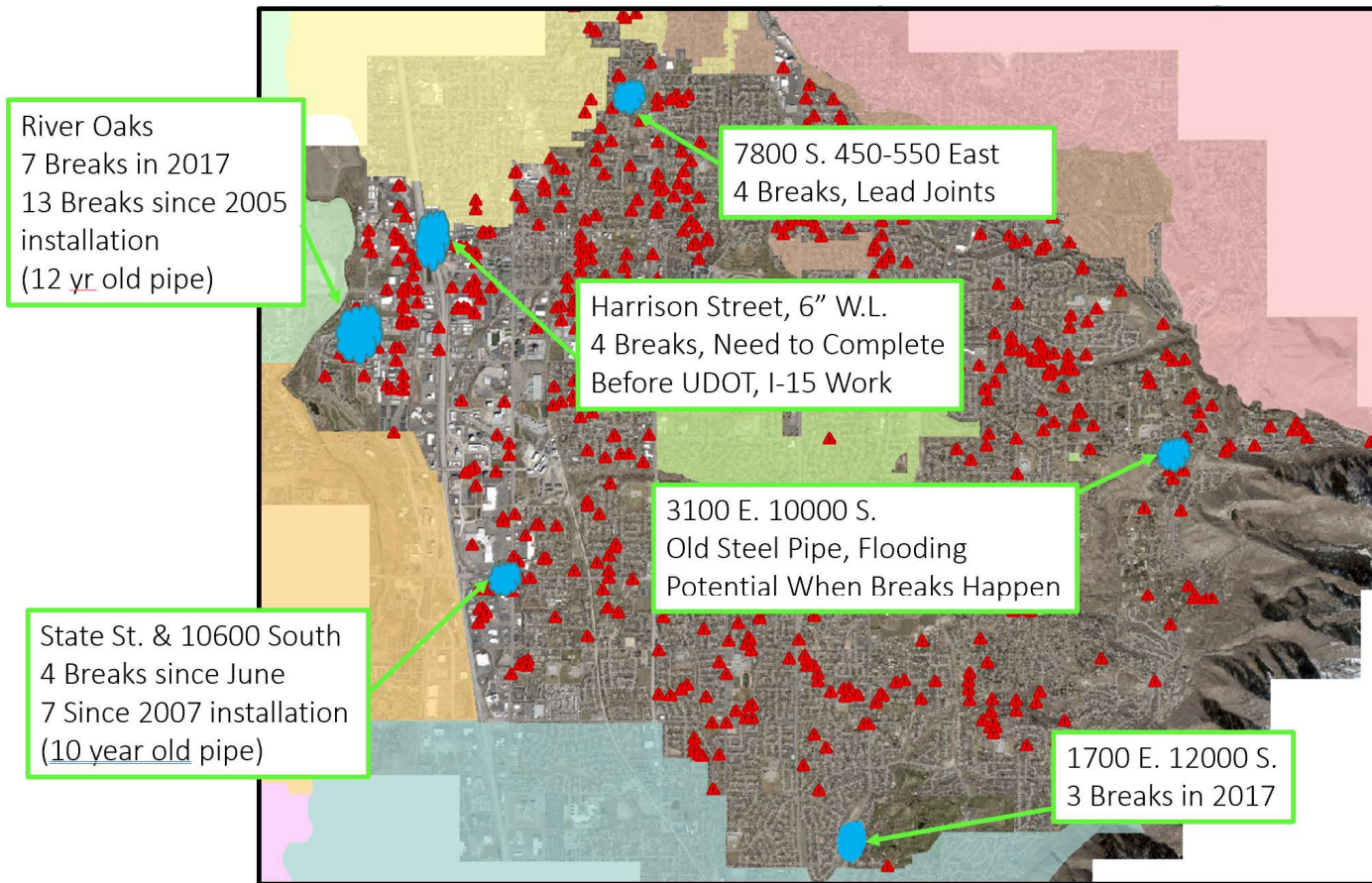


Cima Dr. (near Flat Iron Park)  
 6/18: \$19,228  
 1/19: \$6,236  
 400' of Pipe replaced  
 summer 2019





## WATER MAIN PROJECTS (COMPLETED LAST 2 YEARS)



### Break Analysis

- Frequency
- Cost of break
- Pipe condition
- Corrosive Soils
- Age of pipe
- Groundwater
- Stray currents
- Bad installation
- Defective pipe?

### Solutions

- Pipe Replacement
- Slip-lining existing pipe
- Abandoning unneeded pipe

### Timing of

### Replacement:

- Other work in roadway
- Property damage

## WATER MAIN INSTALLATION PLAN



### Cost Saving Strategies:

- Bundle small projects
- Flexible completion schedule
- Trenchless rehab (slip-line)

### Pipe Replacement Goal:

- Master Plan Recommendations
- \$1.5 to 2 million per year (increased funding needed)

### Water Main Replacement Priority List

Master Plan Project	DESCRIPTION	Quantity	Unit (Size)
N/A	WILDCREEK DRIVE WATER LINE LOOP	2,440	8
N/A	OVERLAND ROAD CONNECTION LOOP & EXTENSION	250	8
N/A	RIVER OAKS CLUB DRIVE LAZY OAKS TO JORDAN OAKS	850	8
LR-62	LOUIE CIRCLE @ 1185 E TO 1205 E (8640 S)	700	8
LR-65	HICKORY HOLLOW LANE @ OAK HOLLOW TO 10747 S	150	8
LR-5	9400 S @ HIGHLAND DRIVE TO 2200 EAST (WOODCHUCK WY)	1,700	10
LR-5	9400 S @ 1200 EAST TO 1000 EAST	1,100	10
LR-5	9400 S @ 1300 E TO HIGHLAND DRIVE	6,350	20
LR-60	GREENWOOD @ 8400 TO 90TH S	2,900	8
LR-31	8400 S @ STAFF TO BURNAGE	2,375	10
PF-4	SANDY CIRCLE	259	8
PF-32	STON BASH DRIVE AND VALDE NEGRO CIRCLE	804	8
PF-18	SUBLETTE PLACE & RIDGEPOINT ROAD	1,290	8
PF-3	TEAL CIRCLE	221	8
LR-52	JANELLA WY @ 1720 TO 1800 E	1,150	8
LR-19	KSEL @ 8450 S 3100 E @ LCR TO 2482 E (AND KSEL CIRCLE)	1,850	8
LR-69	PORTAL WY @ VISCOUNTY TO 368 S	310	8
LR-60	WYANDOTTE AVE @ DAVID STREET TO 700 E	1,900	8
LR-38	HIGHLAND DRIVE @ 8800 S TO 10050 S	1,700	16
LR-27	RD WY @ 1800 E TO 2005 EAST	1,700	8
LR-44	GLACIER LANE @ 9550 S TO 9520 S	1,200	8
LR-74	WATERS LANE @ 1300 E TO 824 S	2,500	8
LR-57	MESA DRIVE @ 838 S TO JULIO STREET	1,100	8
LR-78	400 E @ LOCUST TO 8800 S (OLD 4" LINE)	430	8
LR-77	8800 S @ 220 TO 280 E (OLD 4" LINE)	525	8
LR-81	LAUREL DRIVE @ LOCUST TO 400 E (OLD 4" LINE)	840	8
LR-82	WINGO PARK CIRCLE @ LOCUST TO 80TH S (OLD 4" LINE)	1,500	8
LR-65	540 E @ LOCUST TO 8800 S (OLD 4" LINE)	980	8
LR-87	PARDONK WAY @ PIONEER TO PIONEER (OLD 4" LINE)	1,140	8
LR-89	CLIMBOUT CIRCLE (OLD 4" LINE)	525	8
LR-76	8820 S @ 220 TO 280 E (OLD 4" LINE)	525	8
LR-79	8820 S @ 280 E TO HYDRANT (OLD 4" LINE)	150	8
LR-80	400 E @ LOCUST TO 90TH S (OLD 4" LINE)	950	8
LR-83	WINGO VIEW AVE @ 500 E TO WINGO PARK DR (OLD 4" LINE)	500	8
LR-84	500 E @ WINGO PARK DRIVE TO 90TH S (OLD 4" LINE)	560	8
LR-85	LYNWOOD STREET @ PIONEER TO 870 S (OLD 4" LINE)	320	8
LR-88	PARDONK CIRCLE (OLD 4" LINE)	220	8
LR-75	90 E @ 8860 TO 90TH S (OLD 4" LINE)	300	8
LR-81	360 E @ 8750 S TO 8800 S	240	8
LR-41	8800 S @ 1510 TO 280 E (BORING UNDER TRAX)	560	8
LR-58	TERRACE DRIVE @ VISCOUNTY TO RD WY	3,400	8
LR-43	PEACH GLOSSOM @ 8600 TO 9387 S	2,000	8
LR-39	8280 S @ 1185 E TO 1280 E	950	8
LR-61	FOXHUNT DRIVE @ 2553 TO 2630 E	650	8
LR-45	GRANACH @ 1305 TO 1700 E	2,800	8
LR-49	BORDELAIX WAY @ ALTA AVE @ BONNET DR	950	8
LR-40	8120 S @ 1185 E TO 1280 E	950	8
LR-40	170 E @ 1600 TO SPARTAN	1,500	8
LR-63	GAYLENE CIRCLE @ 1185 E TO 1230 E (8640 S)	320	8
LR-18	BELL CANYON CIRCLE (3350 E 10000 S)	175	8
LR-24	GRANDVIEW WAY	710	8
LR-47	8080 S @ 700 E TO 8350 E	1,850	8
LR-48	VISTA WY @ 110TH TO 11125 S	850	8
LR-53	16140 S @ 2050 E TO 2110 E	510	8
LR-55	CANDLEWOOD DRIVE @ BARTREE TO 9750 S	1,100	8
LR-64	1205 E @ 8810 TO 8858 S	880	8
LR-80	10500 S @ 85 E TO CLEARVIEW (OLD 6" LINE)	250	8
LR-93	FLOYD @ DAVID STREET TO 700 E	1,980	8
LR-84	HOWARD @ DAVID STREET TO 700 E	1,980	8
LR-10	FIELD POINT CIRCLE (CASSOWARY)	380	8
LR-14	CASSOWARY @ 1185 S TO 2889 E	880	8
LR-17	HILL CLIMB CIRCLE (CASSOWARY)	210	8
LR-71	BENDON WAY @ 5070 S TO SEMINARY ROAD	1,400	8
LR-15	HIGHLAND OAKS CIRCLE (CASSOWARY)	190	8
LR-51	HILL HAVEN @ 1300 E & 8350 S	1,100	8
LR-54	8865 S @ 1520 E TO 1700 E	500	8
LR-73	AGAR ROAD @ 14TH TO 1725 S	1,100	8
LR-8	AUTO MALL DRIVE @ 10000 S TO 110TH S	2,900	10
LR-10	10850 S AUTO MALL DRIVE (PARKING LOT)	680	8
LR-21	1074 E @ 1510 S TO 1215 S	8,250	10
LR-50	BEALMONT DRIVE @ 8150 S TO 8081 S	950	8
LR-9	10775 S AUTO MALL DRIVE (PARKING LOT)	8,250	10
LR-35	114TH S EAST OF 1300 E (LAY 300- FEET OF PIPE)	300	10
LR-29	#84 & #85 LONE HOLLOW (MOVE LINE INTO STREET)	280	16

