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**Our future.**

Paradise Irrigation District

**Camp Fire Update**

# Historical Facts



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- Established in 1916
- 10,500+ Active Meters
- 9.5 Million Gallons Storage
- 173 miles of mainline
- 90% Gravity 10% pumped
- Service area approximately 11,250 acres
- Paradise Lake – 11,500 acre feet of storage
- Magalia Reservoir – 2,560 acre feet storage (Restricted to 800 acre feet)

# Distribution System Facts

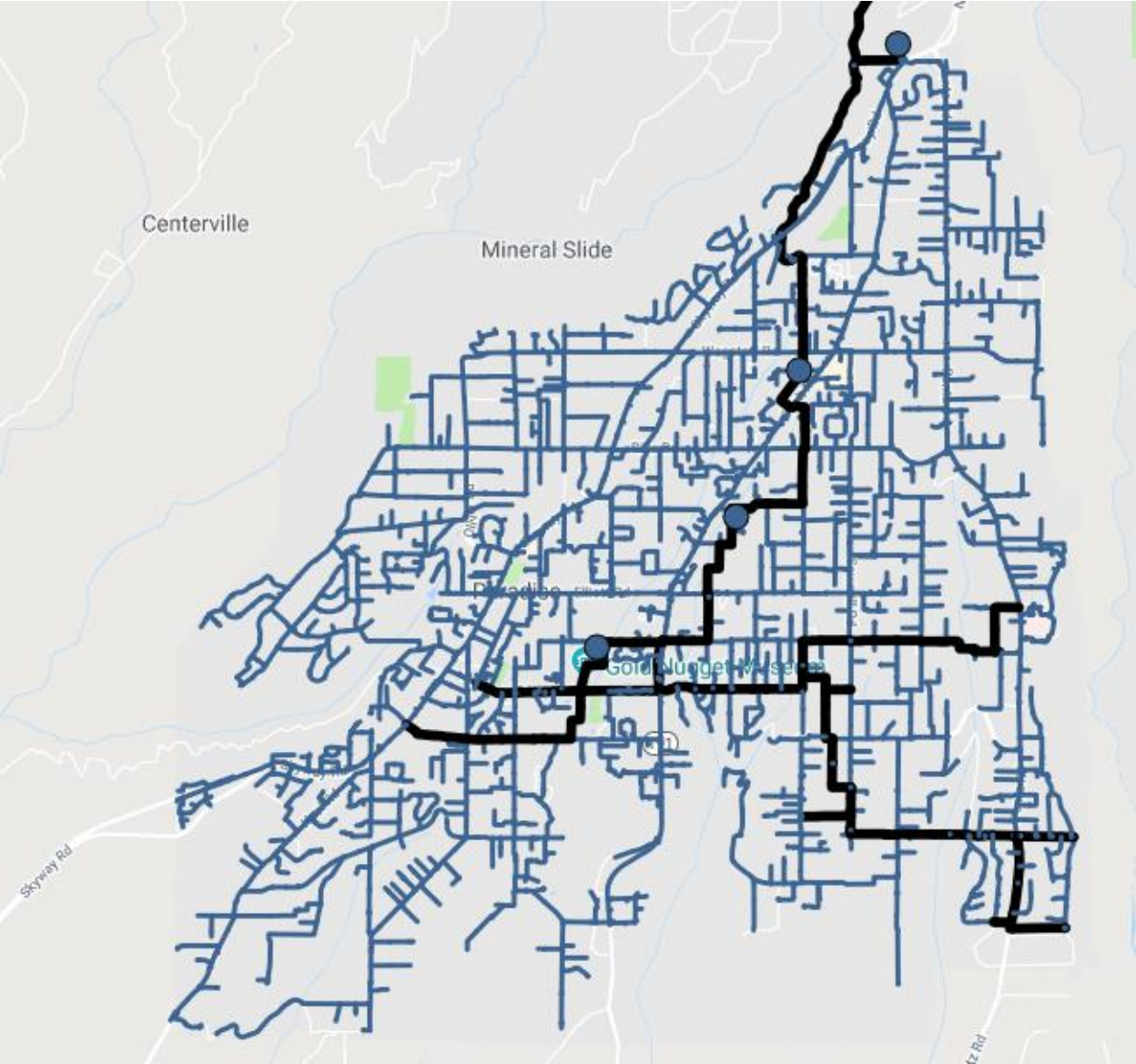
- 172 miles of water main
  - C-900 – 52 miles
  - C-905 – 1.25 miles
  - Steel – 58 miles
  - CML – 33 miles
  - ACP – 17.25 miles
  - Galv. – 2.5 miles
  - PVC – 7.3 miles (schedule 40 and 80)
  - Other – 1 mile
- 7 pressure zones A – G
- 5 storage tanks
  - 1 in ground bladder reservoir (B-Res) - **DESTROYED**
  - 4 aboveground steel storage tank (A, C, D, and E)



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# Distribution System



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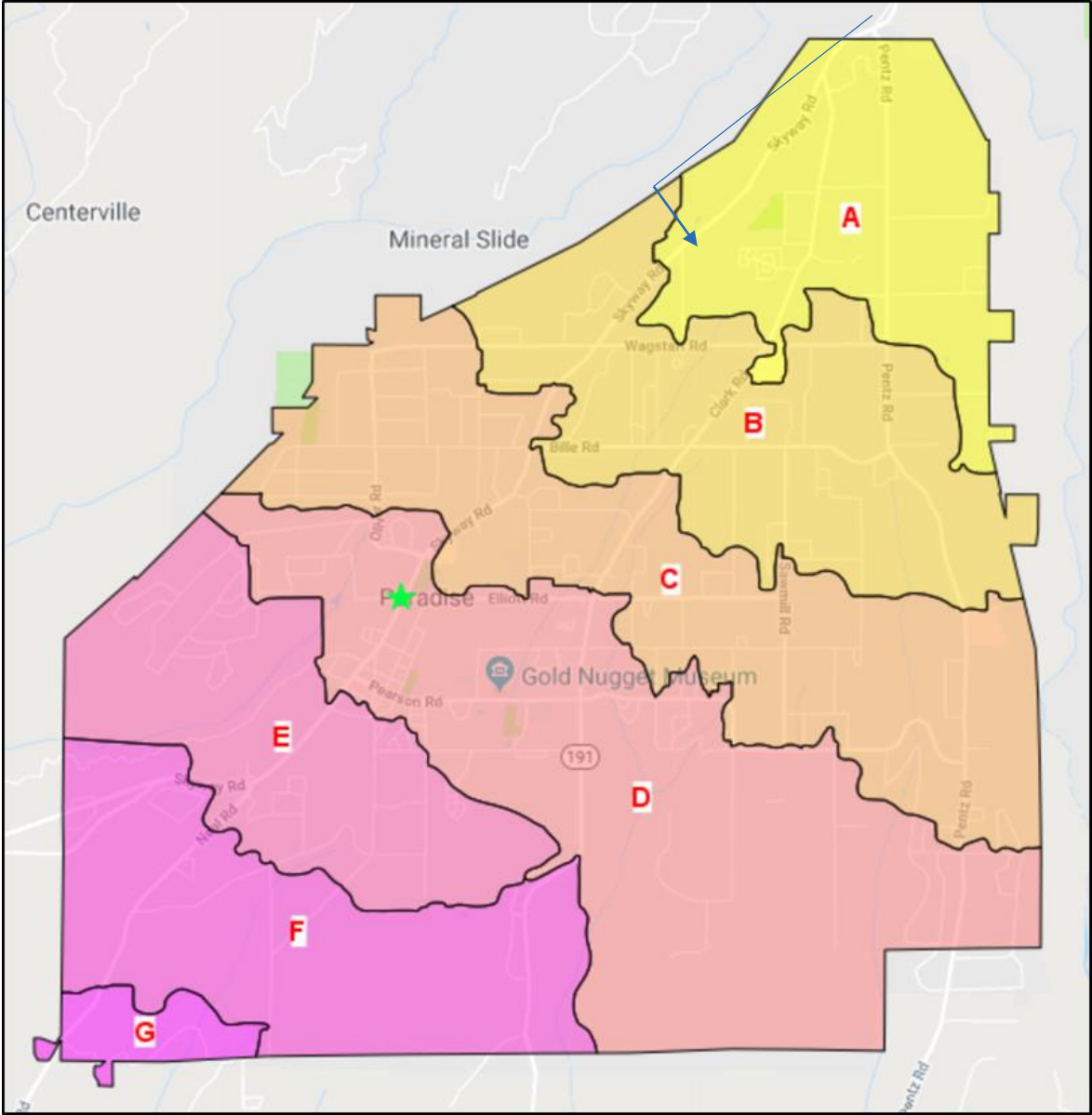
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# Pressure Zone Map



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# Camp Fire Statistics



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- Structures Destroyed: 13,972 residential structures, 528 commercial structures and 4,293 structures
- Acres Burned: 153,336
  - 10,000 acres in 90 minutes
  - 1 football field every second
- Deaths: 85 civilian fatalities
- Damage: 16.5 Billion

# Start of the Fire



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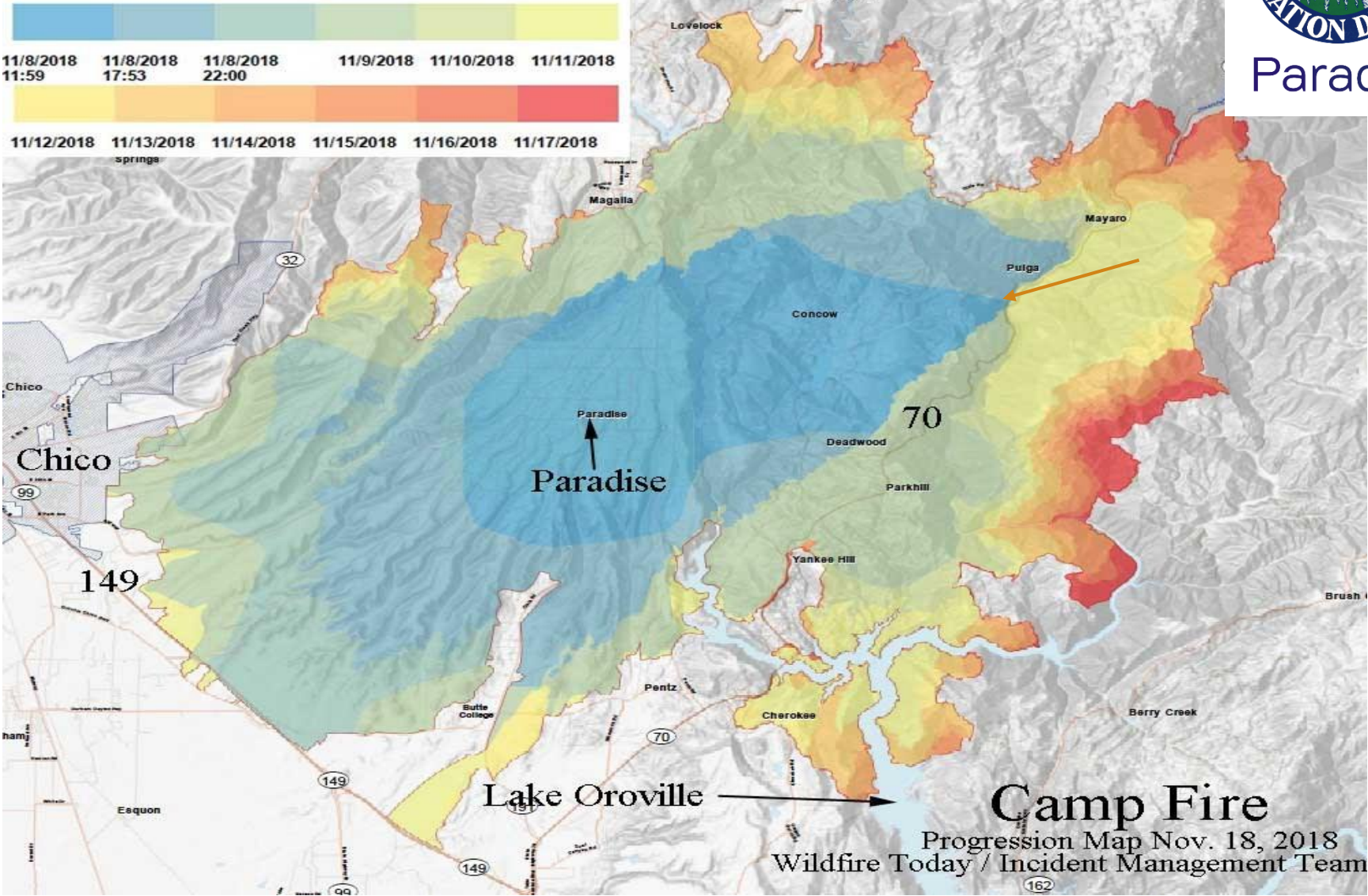


# Camp Fire



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# Structures Burning



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# Structures Burning



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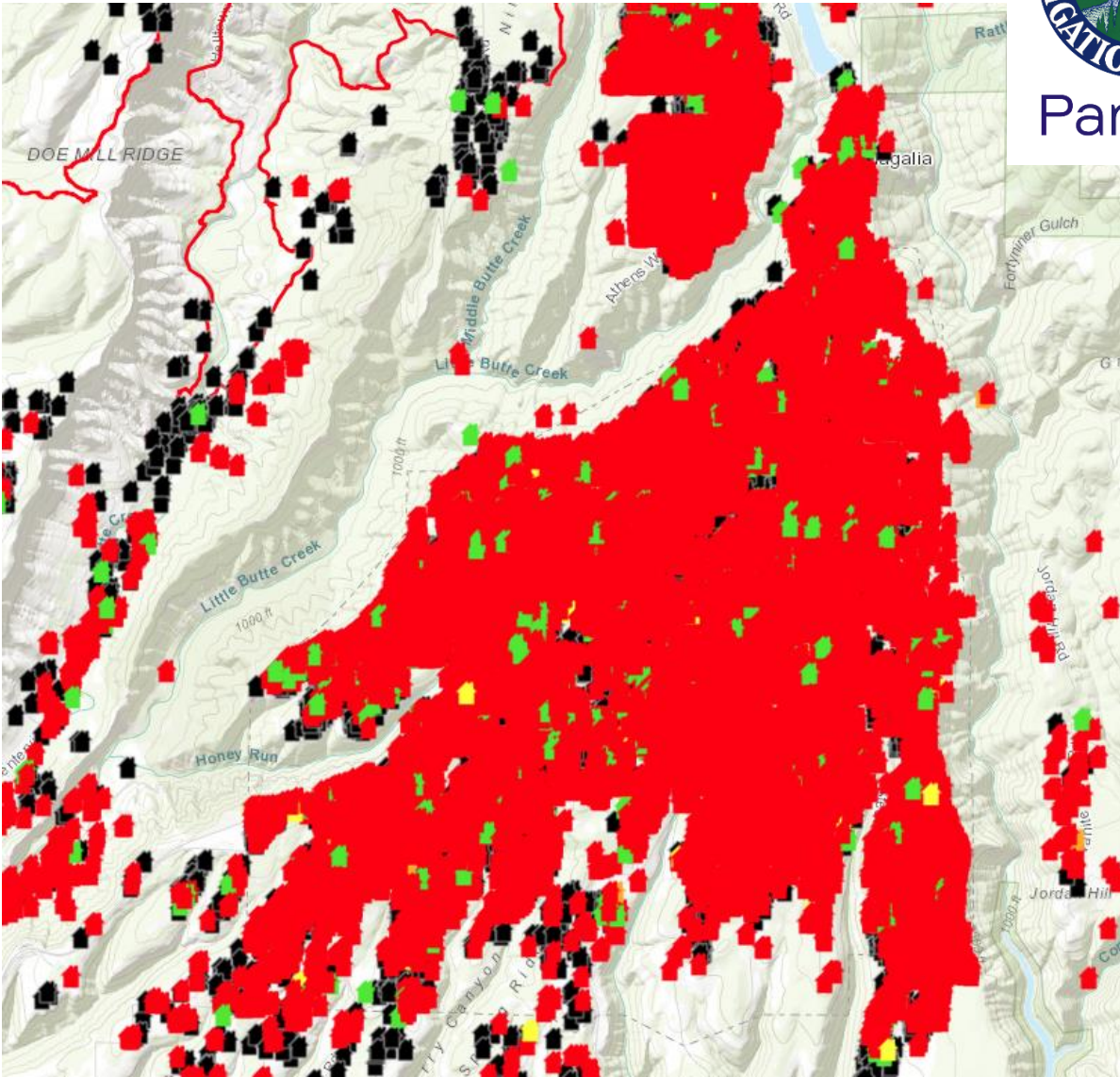


# Burnt Structures



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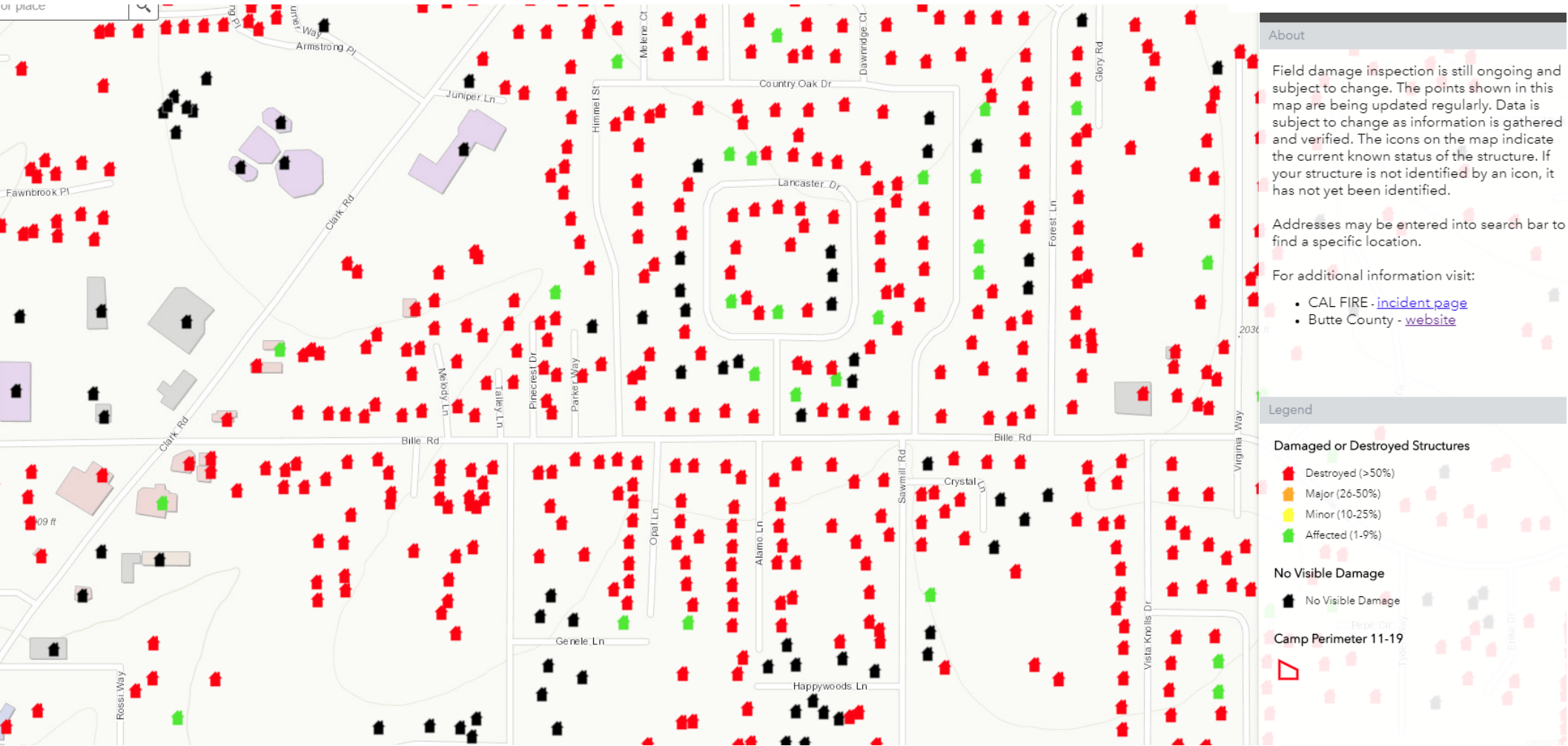


# Structure Map Close-up



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# Residential Structures



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# Commercial Structures



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# Surviving Structures



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# Burnt Meters And Contamination



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# Storage Tank



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# Emergency Response

- Turn off system
  - Shut all values to main arteries of the distribution system
  - Bypass the B-Reservoir (destroyed by fire)
  - Turn off all 10,500 services
- Turn system back on
  - Repressurization of distribution system
  - Inspect all components of distribution system for damage
  - Refill tanks and flush all mainlines
- Administration and customer service
  - Relocation of District office
  - Employee's
  - Billing and water quality advisory
  - Mutual aid
  - FEMA



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# Water System Damage

- Depressurization – Created a Vacuum
- Contamination
  - Burnt Plastics
  - Meters
  - Service Lines
  - Homes
  - Irrigation
- VOC's (Volatile Organic Compounds)
  - Benzene (DDW mcl 1 part per billion)
  - Other Contaminates
- Contamination is located in distribution infrastructure



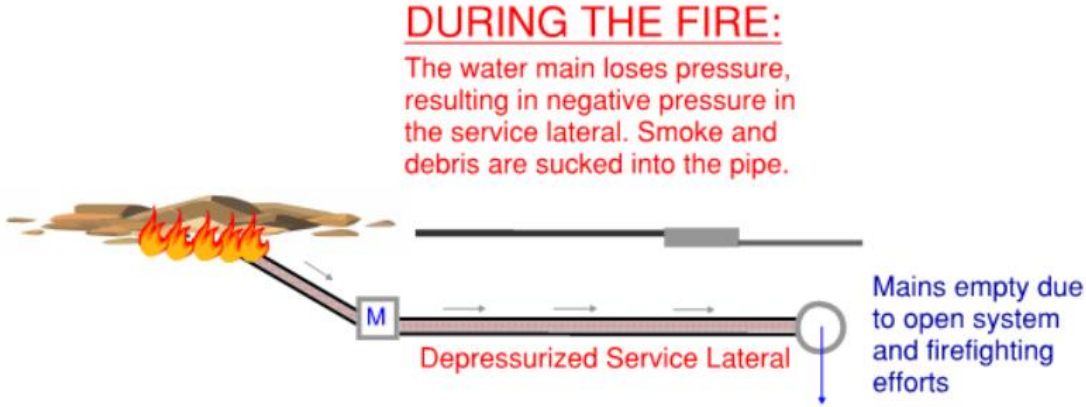
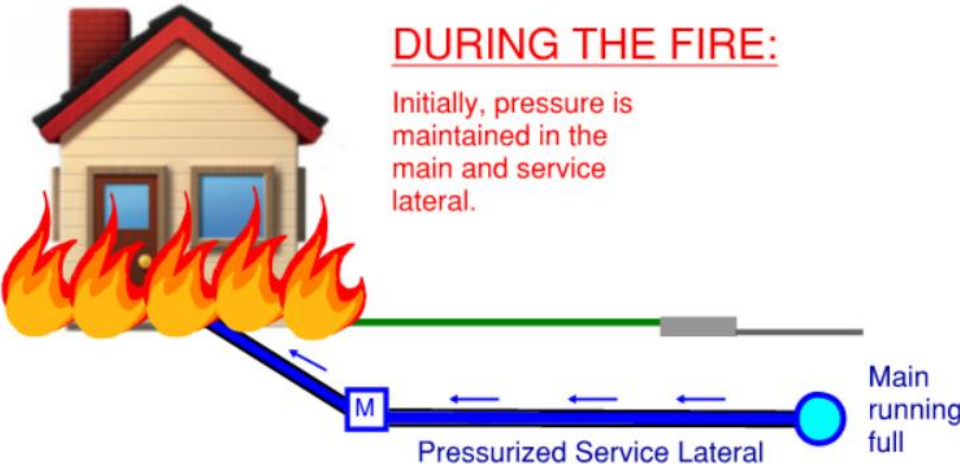
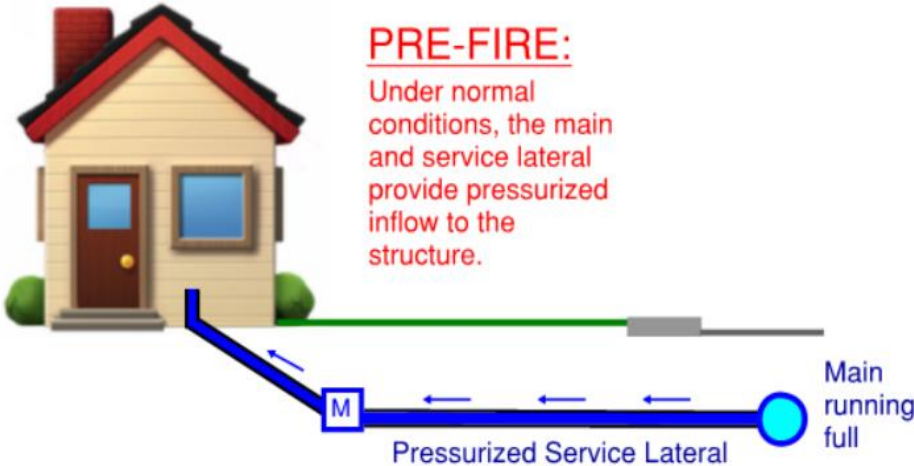
# Depressurization of the System



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1.



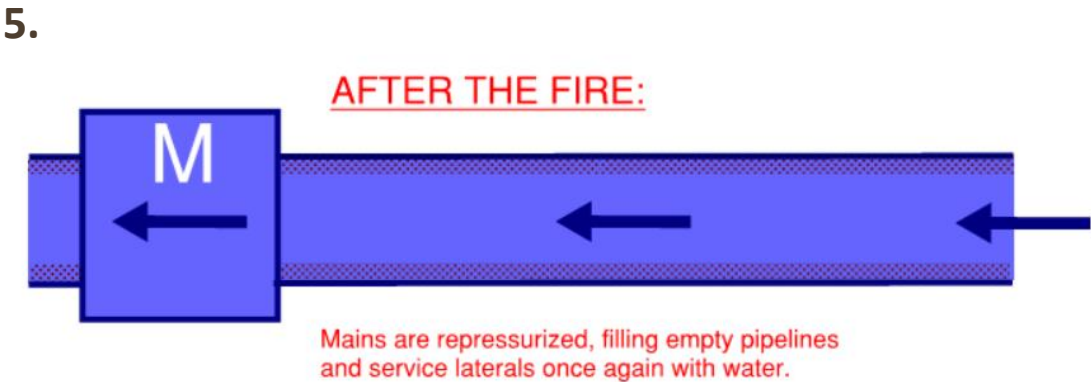
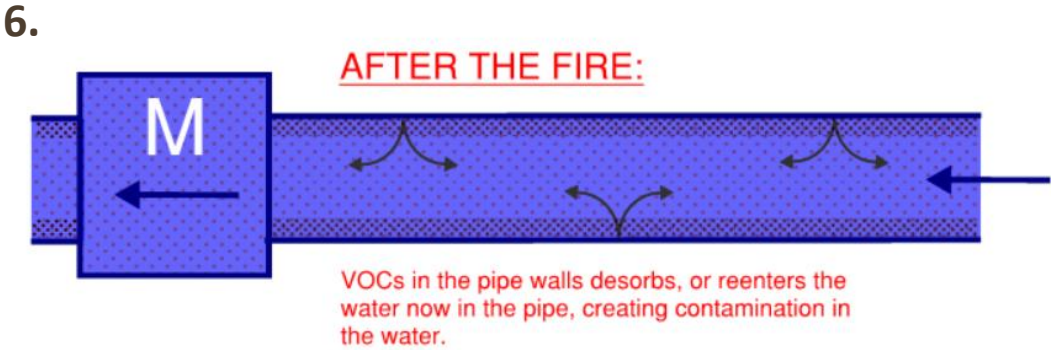
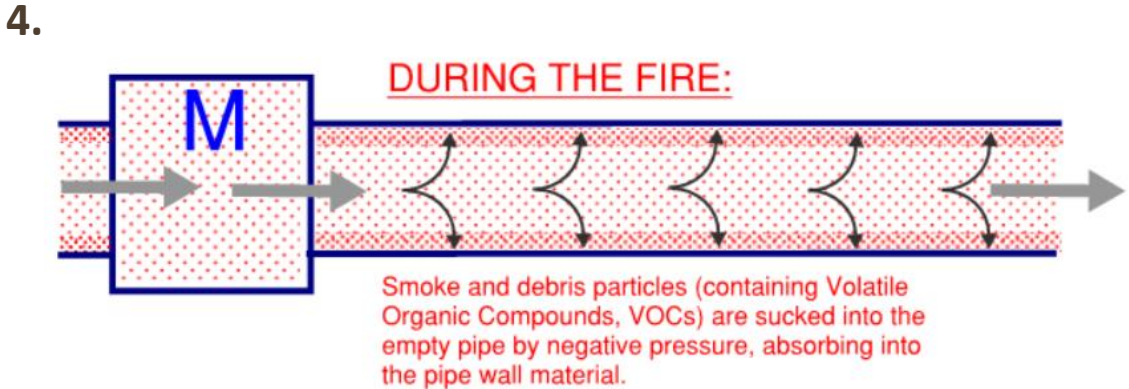


# Depressurization of the System



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# Water Quality

- Contamination in the distribution system
  - Service lines
  - Main Lines
- Testing
  - Flushing
  - Stagnation of Water to create the proper environment for leaching of contaminate (72 hrs)
  - Taking a sample
  - Getting sample results from certified lab (5 days)
- Water Sample Video <https://www.youtube.com/watch?v=osFWj9wczys>



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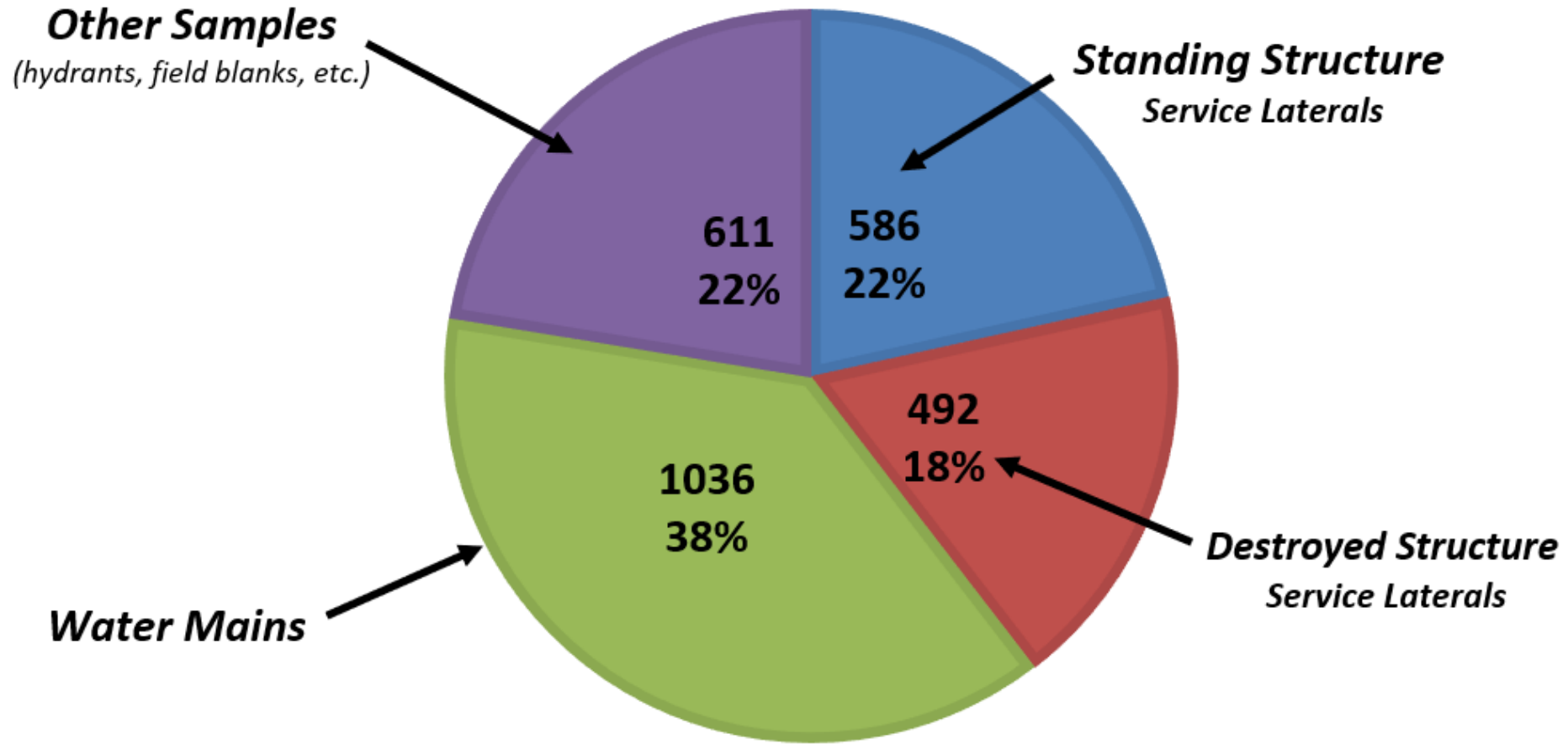
# Water Sampling

- Approx. 2725 samples to date
- Mainline samples show some signs of contamination
- 46% of tested service lines of burnt lots have a detection of a fire related VOC
- 30% of the burnt lots have contamination over the state MCL
- Benzene & Other VOC's
  - Benzene Average: 31 ppb
  - Benzene Low 0.5 ppb – high 923 ppb
  - Other fire related VOC's have been detected in the water system without the presence of benzene



# SAMPLE LOCATION BREAKDOWN

AS OF 9/9/19



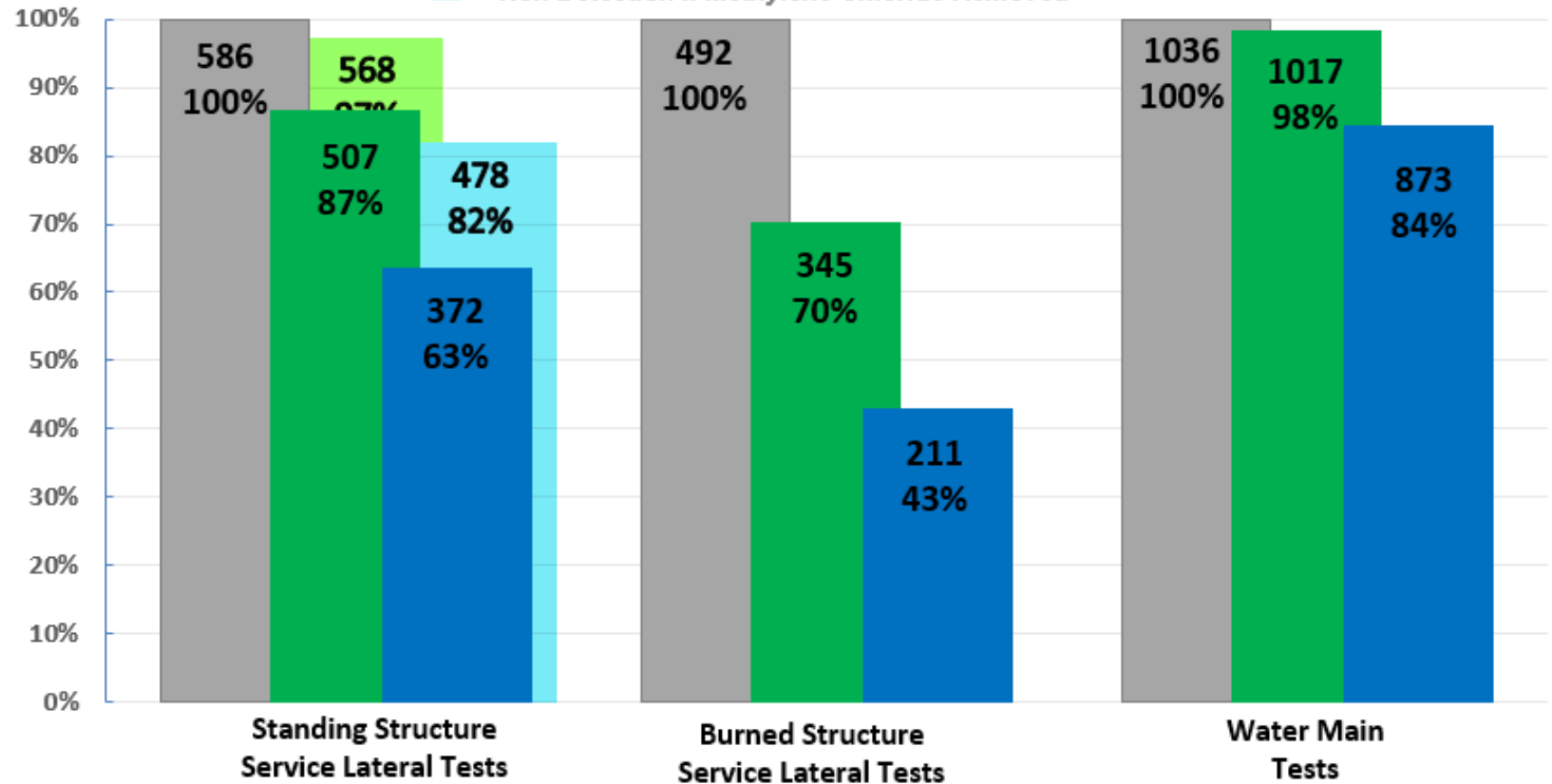
2,725 sites  
sampled

Over 200,000  
tests performed

What does the current data show?

## Sampling Summary Results (as of 9/9/19)

■ Total Tests ■ Meets Regulations ■ Non Detection  
■ Meets Regulations Excluding Methylene Chloride  
■ Non Detection if Methylene Chloride Removed



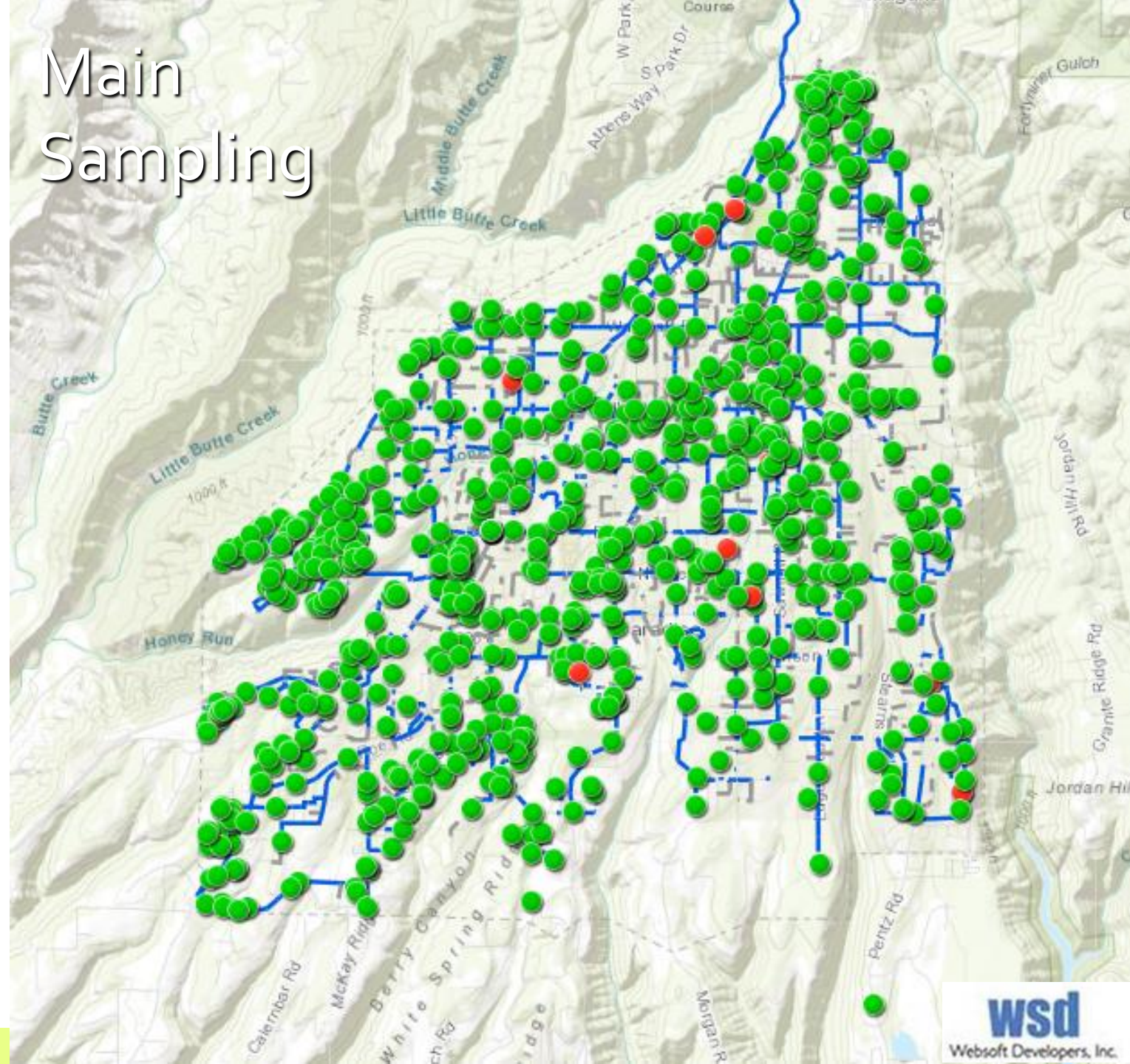
Note: These results does not include Total Trihalomethanes, which are common disinfection byproducts

# Main Clearing

- 122 of 172 miles of main have been cleared (70%)
- The remaining uncleared mains are almost entirely dead-end, smaller diameter mains which serve few or no standing structures
- These mains will be tested in conjunction with a need to clear a service lateral on them

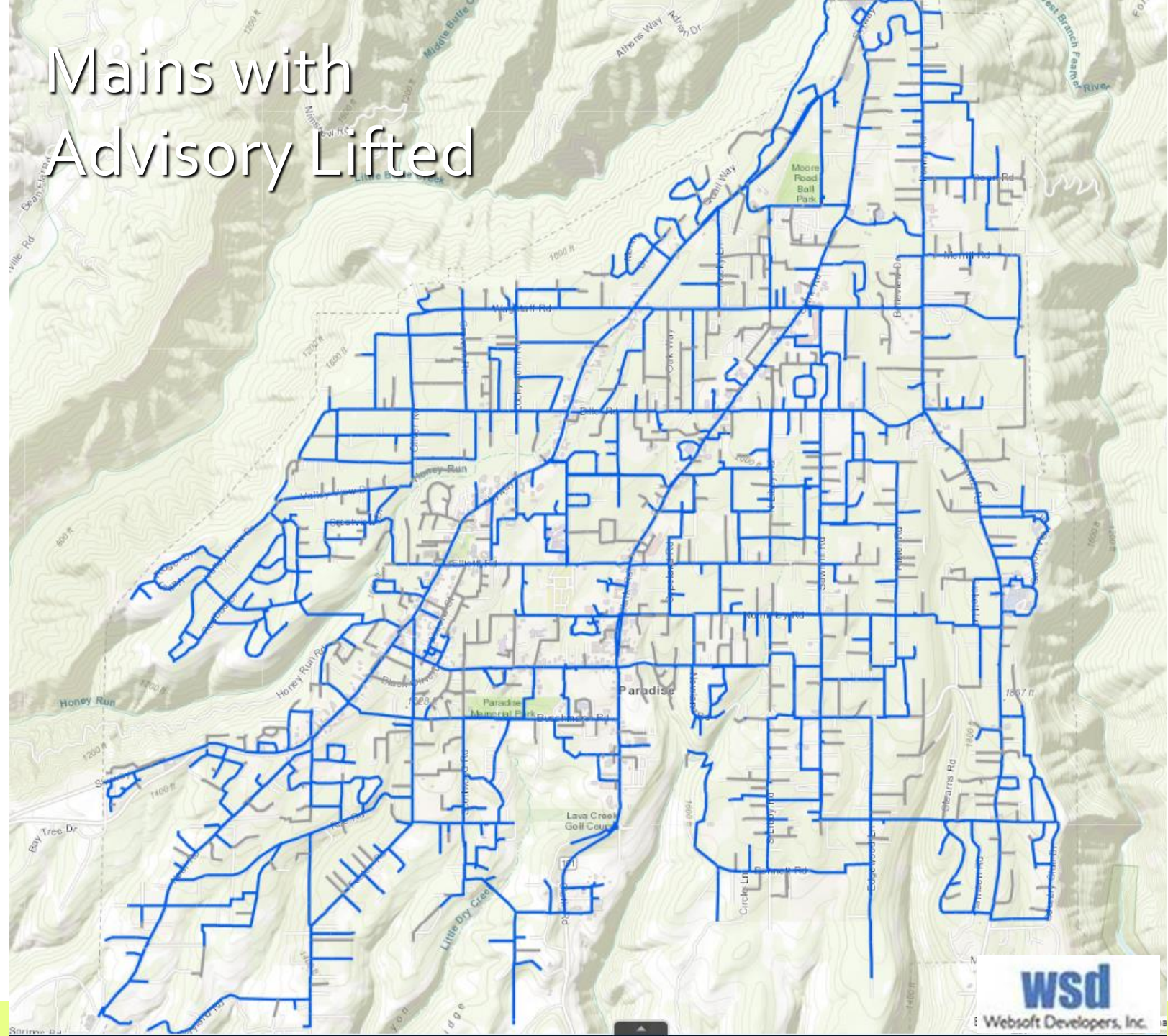


# Main Sampling



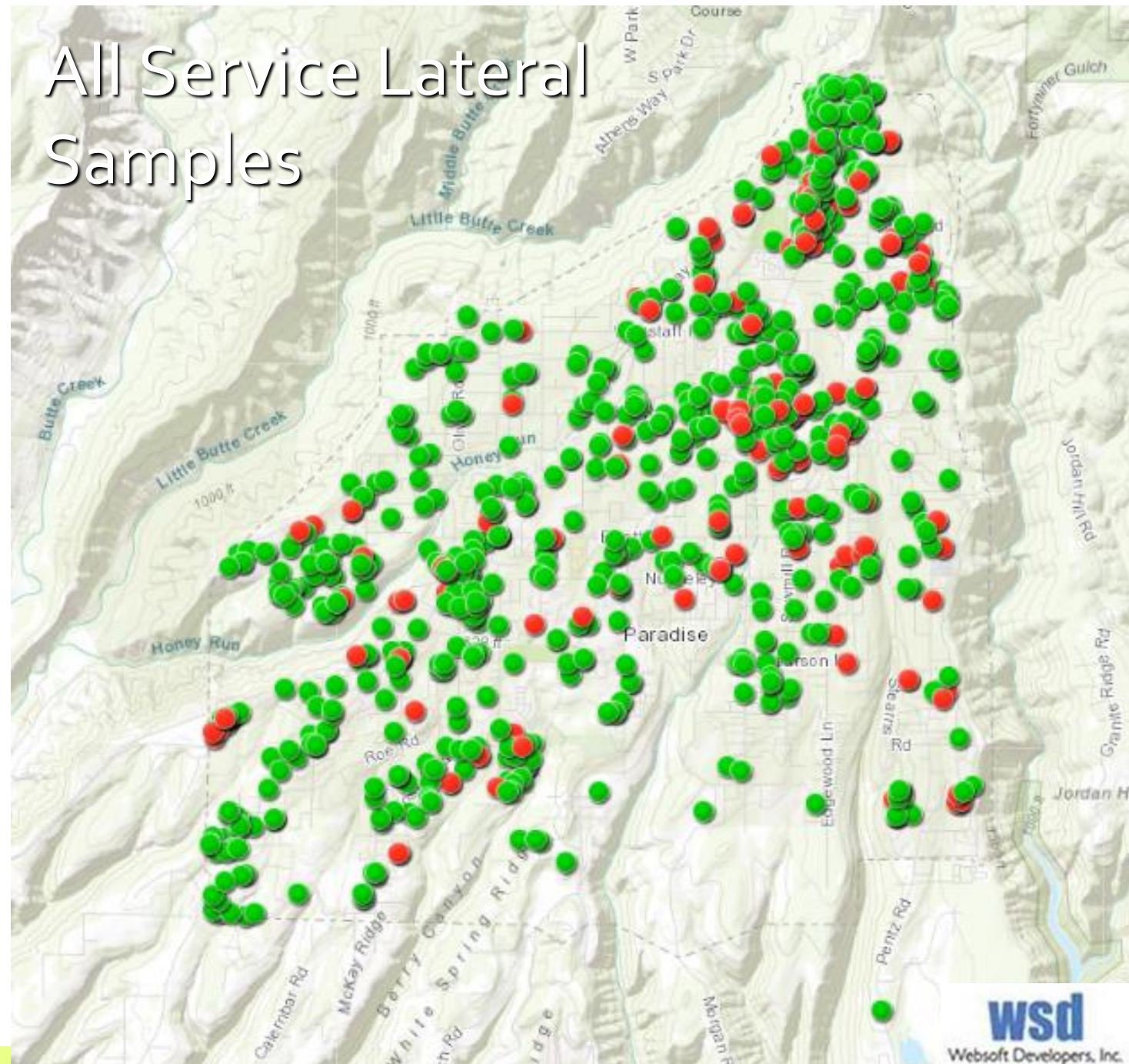


# Mains with Advisory Lifted



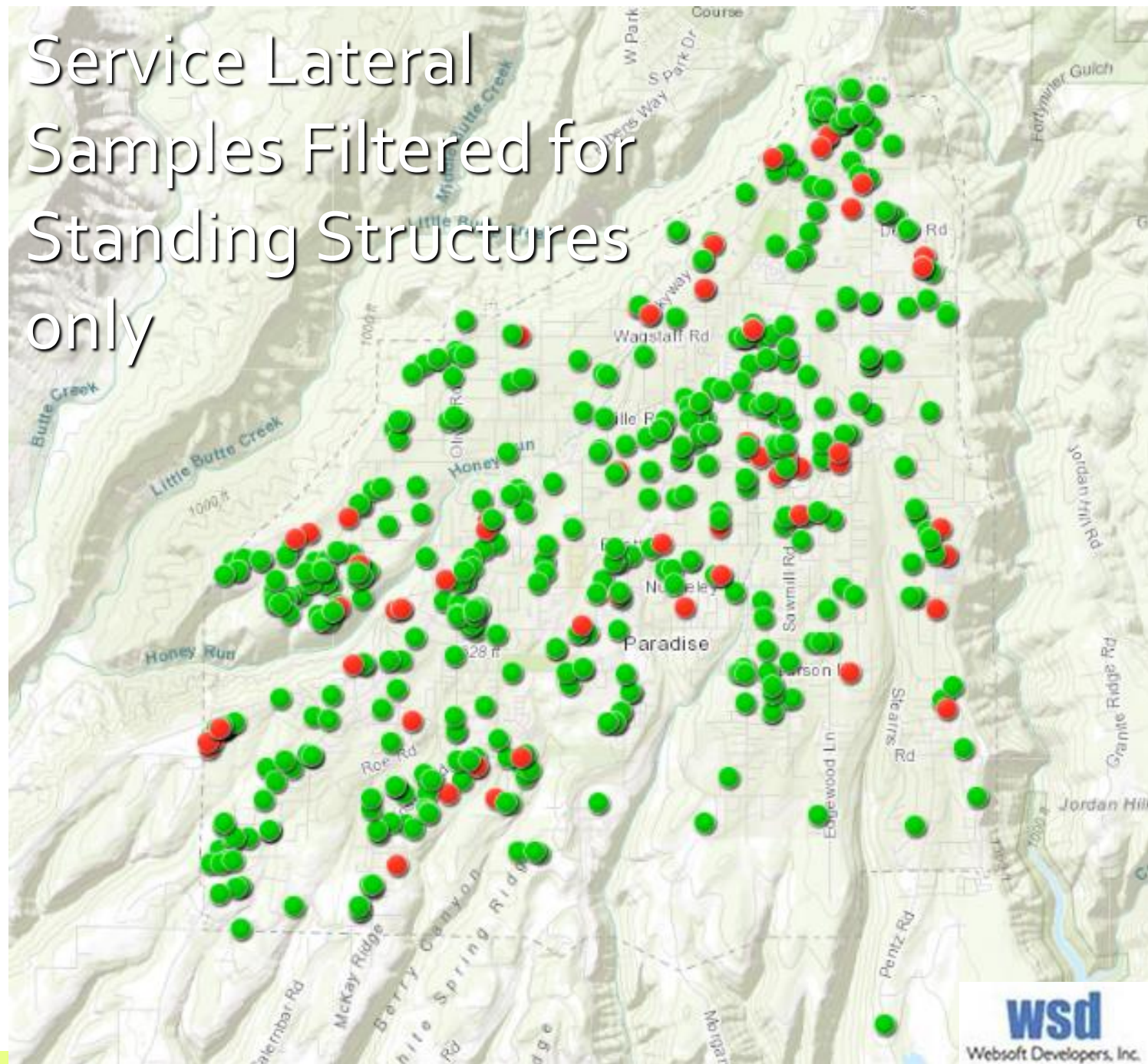


# All Service Lateral Samples



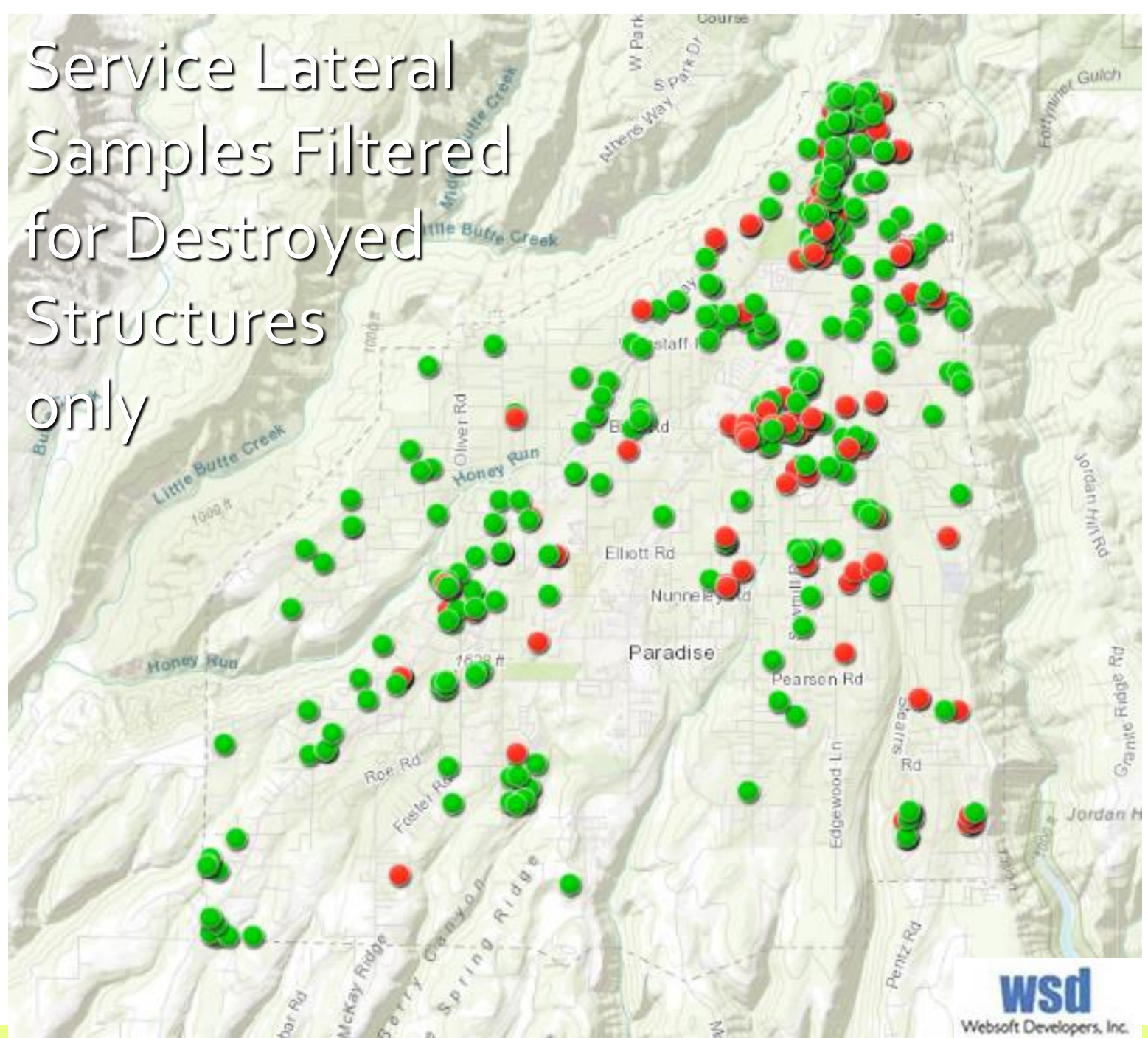


# Service Lateral Samples Filtered for Standing Structures only

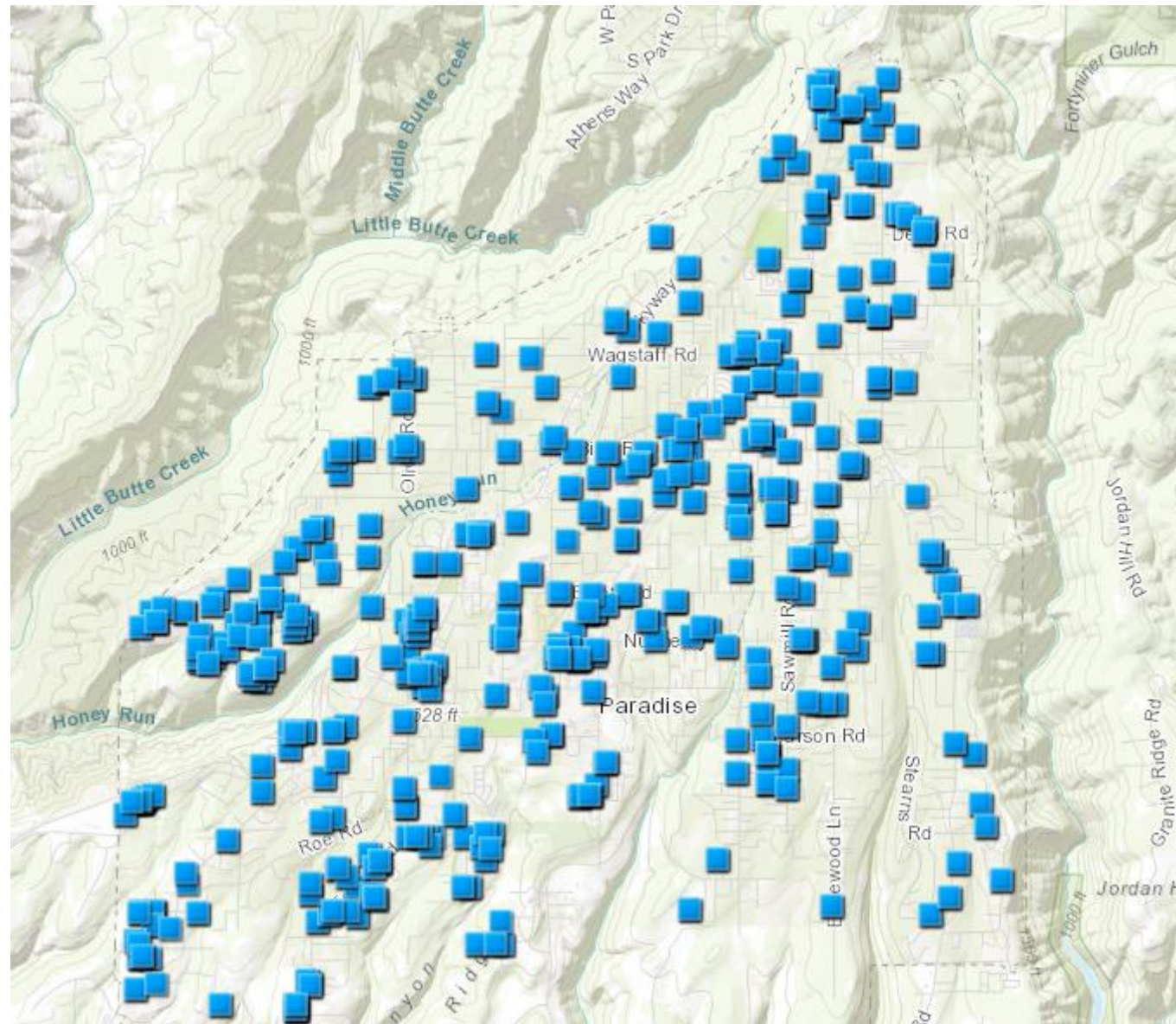




# Service Lateral Samples Filtered for Destroyed Structures only



# 500+ Services with Advisory Lifted





# Water System Recovery Status for Paradise

## PID's System Recover Maps (Updated Weekly)



### Water Advisory Lifted Map

PID service connections where the water quality advisory has been lifted.

Customers using water at these properties should be aware that while PID is delivering potable water to these locations, we can not attest to the quality of piping or water on the customer's side of the meter. Customer side plumbing is all the piping from the service connection point (usually near the street) to the home, including outside piping and irrigation, and is the responsibility of the property owner.

Paradise Irrigation District – Service Connections with Water Quality Advisory Lifted (Updated Weekly)

STREET_NAME	STREET_NUM	MTR_SIZE	Notes
BILLE RD	670	3/4	Water quality advisory lifted based on results of testing.
BLACK OLIVE DR	5595	1	Water quality advisory lifted based on results of testing.

View Lifted Advisory Map

### Investigation Maps

The following water system information is prepared and updated by PID and is subject to revision. PID does not guarantee the accuracy of this information nor its fitness for a particular use.

### Service Lateral Sampling Map

Test results from water samples taken at the service lateral.

The service lateral is the small pipe that connects your property's water meter to the main pipeline that delivers water to your neighborhood.



### Mainline Sampling Map

Test results from samples taken from the main pipeline that delivers water to your neighborhood.



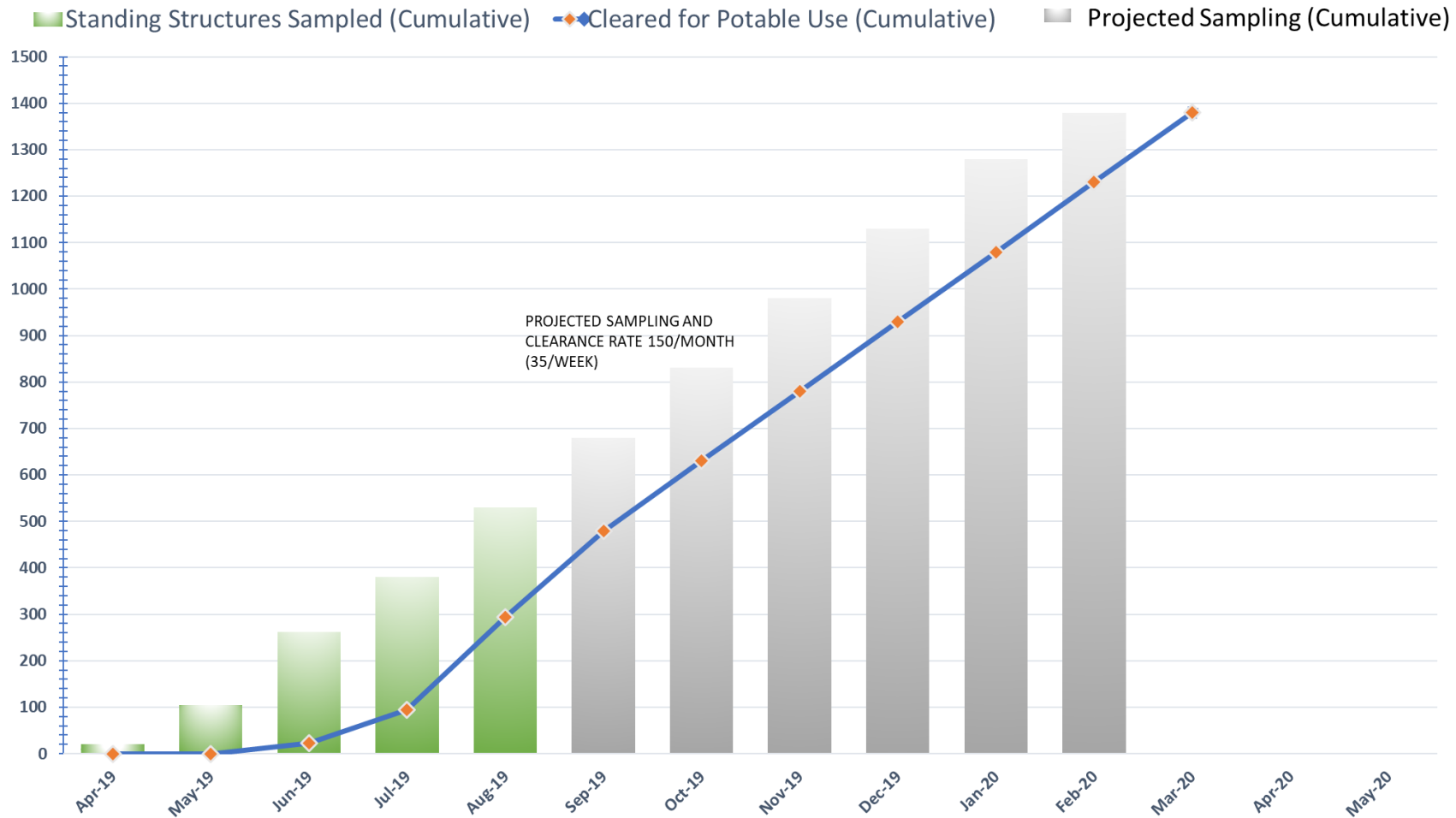
### Meetings

Community Update Meeting

Top

# How long will it take to clear all of the standing structures?

## Standing Structure Testing and Clearing Projections



# Burned Lot Service Lateral Replacement Program

- Long-term plan is to eventually replace all service laterals in the system. Working with FEMA to get this funded.
- Short-term plan is to replace all service laterals which serve burned lots where people are rebuilding or living in temporary housing



# Financial Challenges

- Financial Statistics
  - 95% Rate Revenue
  - 95% Fixed Cost
- Camp Fire Damage
  - 90% loss of Customer Base



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# Financial Challenges



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Pre-Fire					
Description	Customers	2018/19 Budget	2019/20 Budget	2020/21 Budget	Total Revenue
Service Charge	10,500	5,148,252	5,646,258	5,646,258	16,440,768
Quantity Charge	10,500	2,833,600	2,833,600	2,833,600	8,500,800
Penalty Charges	10,500	65,000	65,000	65,000	195,000
<b>Total Annual Water Rate Revenue</b>		<b>8,046,852</b>	<b>8,544,858</b>	<b>8,544,858</b>	<b>25,136,568</b>

# Financial Challenges



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Post-Fire					
Description	Customers	2018/19 Budget	2019/20 Budget	2020/21 Budget	Total Revenue
Service Charge	1,500	705,240	773,460	773,460	2,252,160
Quantity Charge	1,500	388,164	388,164	388,164	1,164,493
Penalty Charges	1,500	8,904	8,904	8,904	26,712
<b>Total Annual Water Rate Revenue</b>		<b>1,102,308</b>	<b>1,170,528</b>	<b>1,170,528</b>	<b>3,443,365</b>



# Financial Challenges



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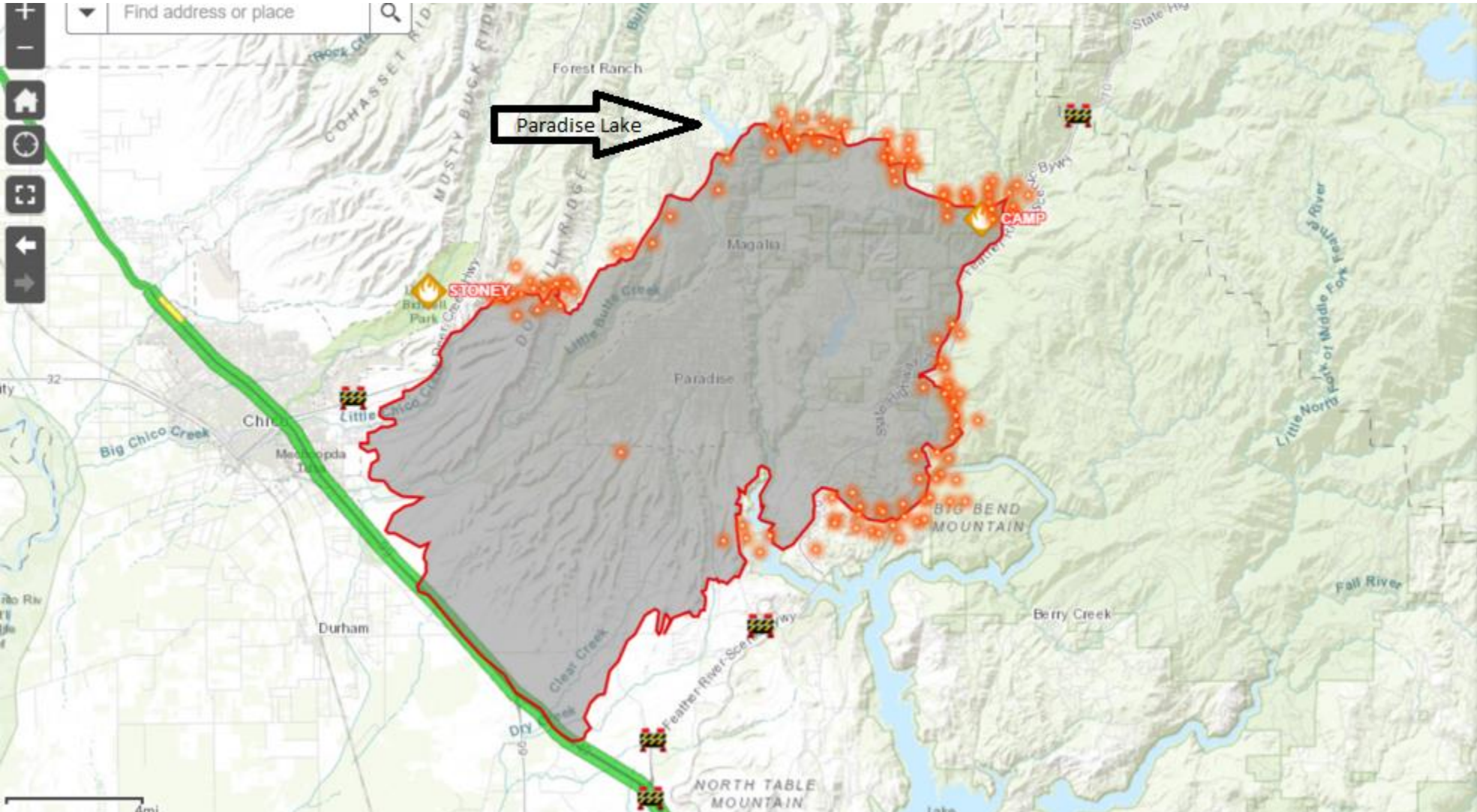
Annual Loss due to CAMP fire					
Description	Customers	2018/19 Budget	2019/20 Budget	2020/21 Budget	Total Revenue
Service Charge	1,500	4,443,012	4,872,798	4,872,798	14,188,608
Quantity Charge	1,500	2,445,436	2,445,436	2,445,436	7,336,307
Penalty Charges	1,500	56,096	56,096	56,096	168,288
<b>Total Annual Water Rate Revenue Loss</b>		<b>6,944,544</b>	<b>7,374,330</b>	<b>7,374,330</b>	<b>21,693,203</b>

# Stranded Assets



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# Stranded Assets

- Paradise Lake Watershed
- Treatment Plant
- Main Distribution System
- 5 Steel Storage Tanks
- Water Rights



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# Stranded Assets

- Paradise Lake Watershed
- Treatment Plant
- Main Distribution System
- 5 Steel Storage Tanks
- Water Rights
  
- PROBLEM:
  - No Customers



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# New Business Model



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- Regional Intertie Concept
  - Transferring Treated Water to assist with implementation of the Sustainable Groundwater Management Act in Butte County
- Transferring Untreated Water
  - Transferring untreated water to agricultural water users in Butte County or other areas.

# Regional Intertie Concept



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# Recovery Plan

- Support the rebuild of Paradise
- Potable water to standing structures
- Sustainable business model
- Mitigate against future disasters
- Customer service





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**Comments & Questions**