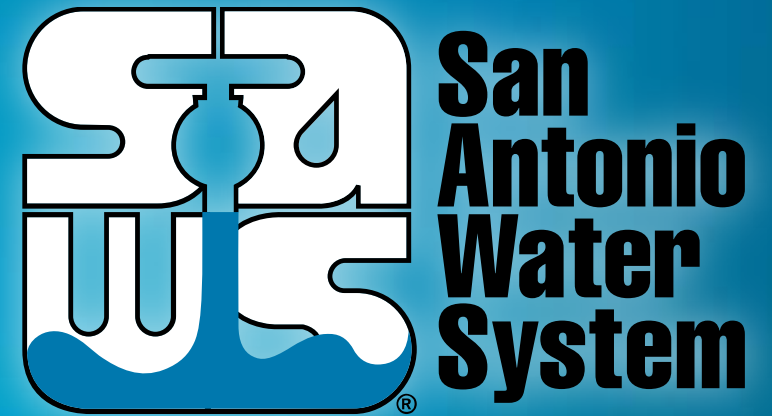


Locates Solution

Toni Jackson, GISP, PMP

SCAUG User Conference
April 11, 2018



MAKING SAN ANTONIO
WATERFUL



SAWS Infrastructure

7th largest utility in the country employing 1600 employees, City Owned

- 12,000 miles of water/sewer/recycle/chill mains
- January 2012, the system grew 1500 miles by state mandate
- Until 2015 ~5000 annually requests
- 2 departments, GIS in IT and Field Support in Distribution and Collection supported the locates effort .
- GIS and Field Support did manual service requests in the Infor work order system
- In late 2015, Google and AT&T announced fiber implementation

811 Adventure in 2016

Two 811 companies in Texas but water utilities not obligated to use the service

- Contract put in place with 811
- Subcontractor to filter locate requests as SAWWS doesn't locate on private property
- 6 month in-house implementation to use 811
- June 2016, go live.
- After 3 days, we had 1800 locate requests
- On the 4th day, SAWWS returned to manual process

GIS needed an App

Previous process- Two SAWS departments support Contractor requests



- **Issues**

- Translation from email to actual contractor need
- Difficult to track original emails

- **Issues**

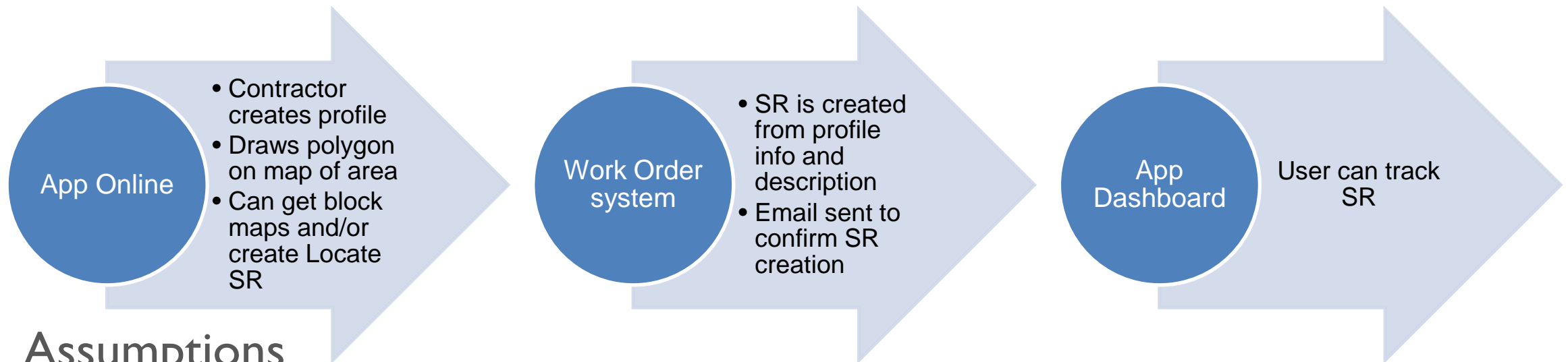
- Chain of events difficult for claims tracking
- Contractors need to track multiple service request numbers

- **Issues**

- SAWS staff located in multiple locations communicating to each other
- 3 Full Time Employees writing manual service requests

Self Service for Contractors

Application Goal- Contractor self serves by drawing his work area, application produces Service Request and Locator completes request



Assumptions

- Contractor familiar with location needing the locate
- One time registration
- Had to integrate with Infor Work Order System
- Database driven to track requests
- Use the current web mapping system—Geocortex (Latitudes Geographic product)
- No go between ---Contractor and Locator work together
- Contractor tracks their service requests

Three applications rolled into one

- Registration Process— IT built and used in multiple customer applications
- Spatial Component—Using Workflow ability of Geocortex
- Infor (Hansen) Work Order System Integration - - Geocortex writes to Infor which triggers generation of a service request for the locate.

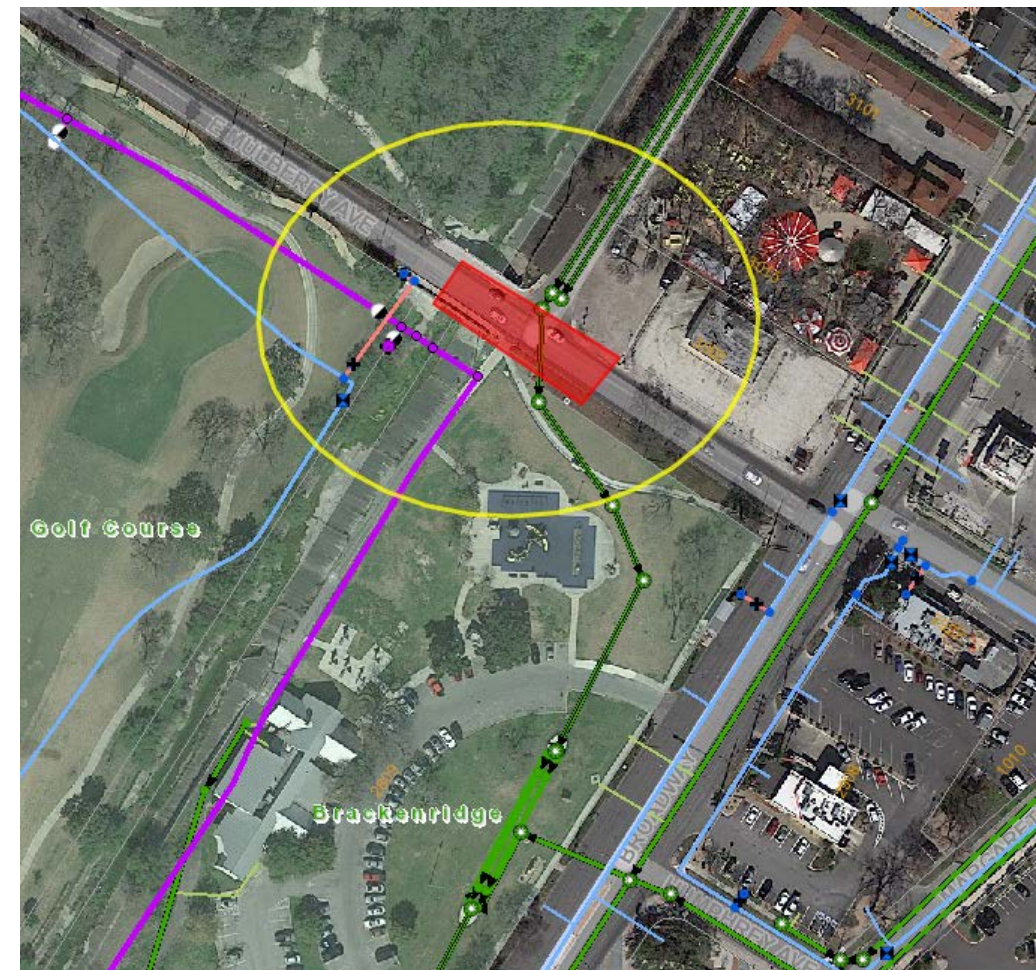
Spatial Component



- Current Geocortex used internally
- Protected data so we needed to move a Geocortex app into the DMZ.
- Contractor would draw over invisible pipes
- 100 Ft buffer around contractor polygon to catch close-by pipes.
- Ability to generate an “All Clear” document
- Database to capture contractor information and their polygon
- Ability to download lock maps



- Contractor drawn polygon--interested in sewer pipes in street



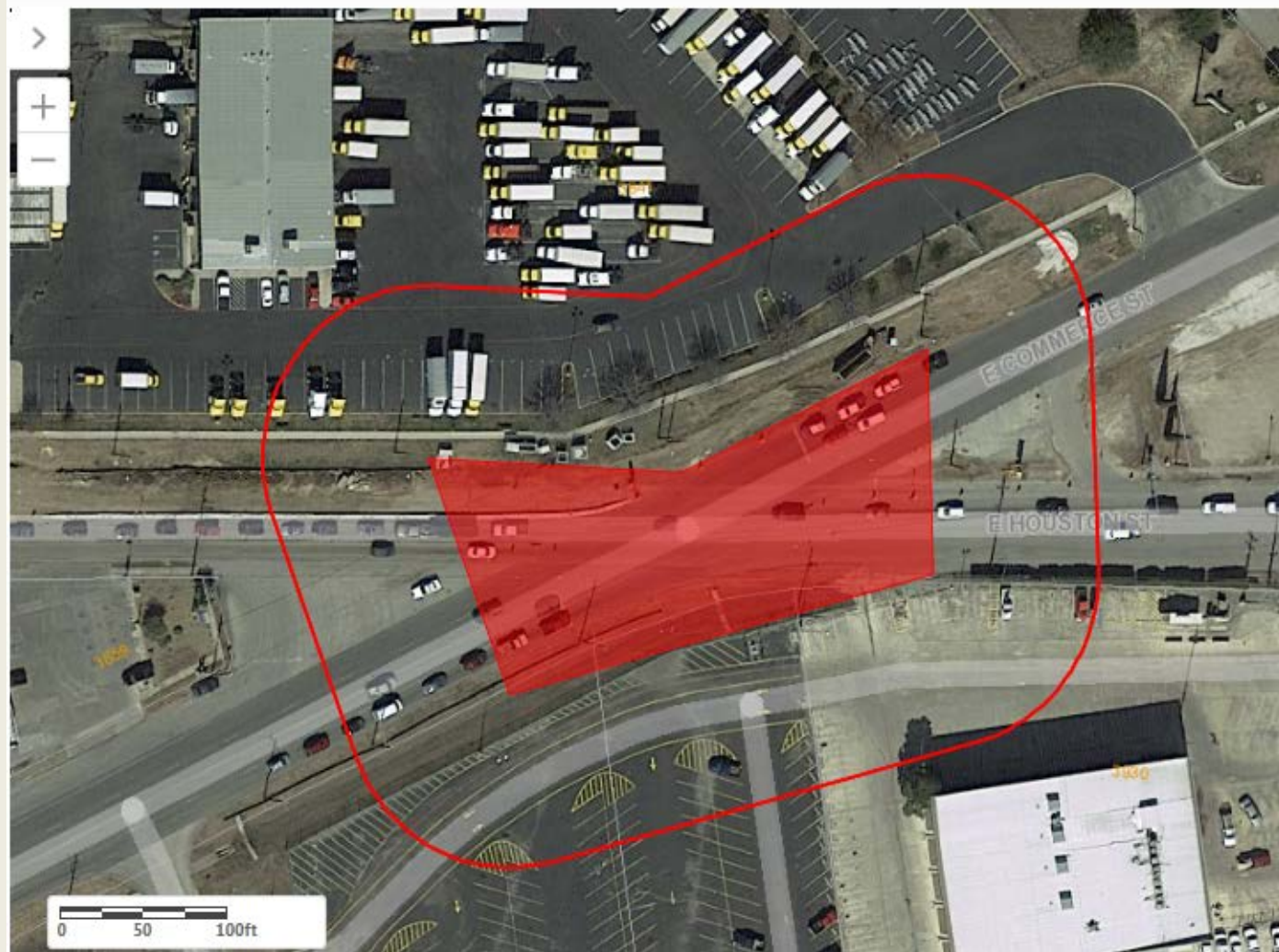
- With 100 ft buffer SAWS identifies special sewer pipes, water and recycle pipes that could be hit



San Antonio Water System

SAWS LOCATES

LOCATE REQUEST HOME

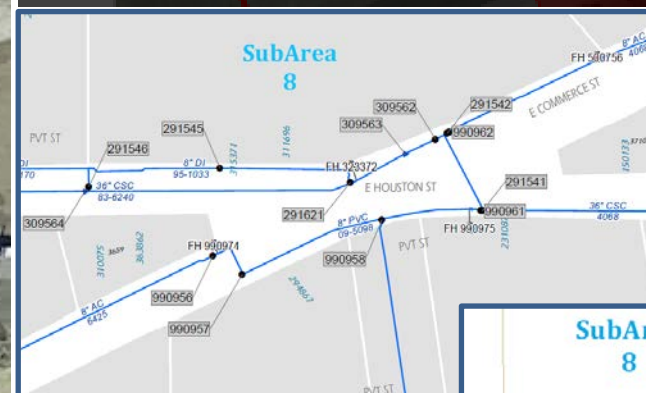


Mains within 100 feet

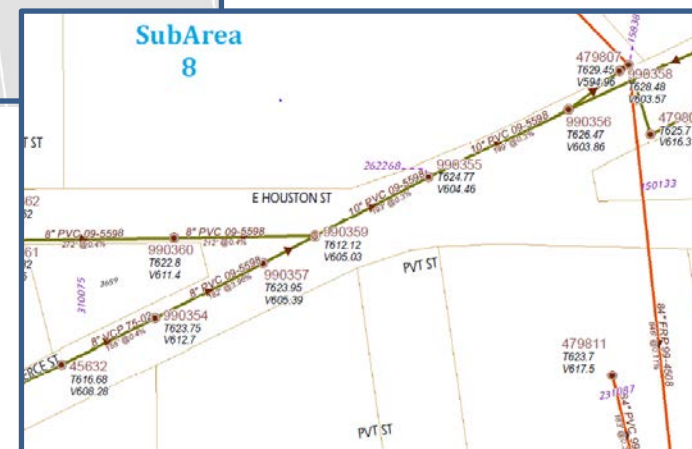


Warning: There are 6 large diameter mains within 100 feet of the selected area. Please refer to the blockmaps for the location of these mains.

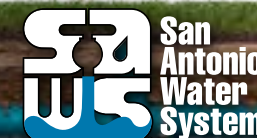
OK



Water/Sewer Block maps generated twice monthly



SAWS Utility Locate Requests

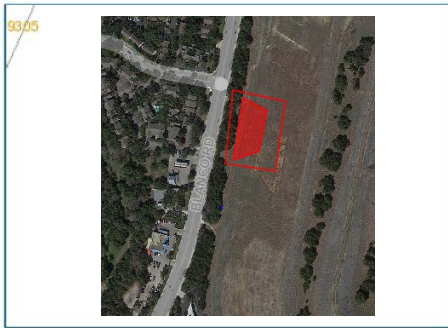


All Clear Report

If area is clear to excavate, an 'All Clear' report is generated and no service request



SAWS Locate Request



The locate request for the area in red above is all clear of SAWS mains. Please refer to the blockmaps provided for nearest SAWS assets.

This map is for reference only. The information may not represent what actually has been constructed. SAWS explicitly disclaims any representation for the accuracy of the information and assumes no liability for any errors, omissions, or inaccuracies in the map regardless of how caused. Field verification should be done as necessary. SAWS prohibits the reproduction or sale of this document. This map may not under any circumstances, be copied, reproduced or published in any form or media, or transferred to another without written permission of the San Antonio Water System.

- Contractor downloads the report and blockmaps and is free to begin excavation. Saves contractor and SAWS time

Database View captures data about contractor & polygon

SAWS Locates													
SUBAREA	MAPNO	LOC	COMMENTS	COMPANY_NAME	COMPANY_ADDRESS	CONTACT_NAME	CONTACT_PHONE						
1	174862	All Clear		Texstar Enterprises	17090 Jordan rd	JP Burchett	512-395-4111						
1	174862	Locate from address 23132 US-281 going north along 281 towards marshall rd		Texstar Enterprises	17090 Jordan rd	JP Burchett	512-395-4111						
4	204638	Locate 24 Inch SAWS waterline on the South side of Nacogdoches road and 1604		Yantis Company	5423 N Loop 1604 E	Clint Gaenzle	210-655-3780						
19	100582	Locate from the SAWS water station going west on the north side of Potranco Rd to 9811 Potranco Rd	Please send a copy to locates702@futuretelco.com	Future Telcom	1800 Burton Rd	tom Lewis	214-918-2127						
19	102582	Locate from the intersection of Potranco Rd and Dugas Rd going west to the SDAWS water station on t	Please send a copy to locates702@futuretelco.com	Future Telcom	1800 Burton Rd	tom Lewis	214-918-2127						
8	170580	LOCATE EXISTING UTILITIES ON ENTIRE ROW ON LAMAR FROM ST CHARLES TO ST JAMES INCLUDING	CONTACT STEVE ROE @ 210-243-8634	CMARRON UNDERGROUND	9795 KREWALD	CINDY MEDELLIN	210-492-5545						
19	102582	Locate to the west of Potranco Rd and Sundance Pass on the north side to Dugas Dr.	Please send a copy to locates702@futuretelco.com	Future Telcom	1800 Burton Rd	tom Lewis	214-918-2127						
19	102584	Locate north side of Potranco Rd and Emerald Glade to Sundance Pass	Please send a email a copy to locates702@futuretelco.com	Future Telcom	1800 Burton Rd	tom Lewis	214-918-2127						
4	204638	Please mark SAWS utilities within this area. It will be along Nacogdoches between Jims and Advance A		Yantis Company	5423 N Loop 1604 E	Elroy Ramirez	210-655-3780						
14	148542	PLEASE LOCATE THE FRONT EASEMENT OF ADDRESS 1931 AND HEAD SOUTH WEST ALONG CASSA		Utilikon	700 Lavaca Suite 1400	Ashley Hand	9082162607						
19	104584	Locate south side and north side intersection of Potranco Rd and Tisbury Pkwy. Continue west on the n	Please send a copy to locates702@futuretelco.com	Future Telcom	1800 Burton Rd	tom Lewis	214-918-2127						
14	146542	PLEASE LOCATE THE FRONT EASEMENT OF ADDRESSES 2006 AND 2002		Utilikon	700 Lavaca Suite 1400	Ashley Hand	9082162607						
14	146542	PLEASE LOCATE THE FRONT EASEMENT OF ADDRESSES 1934-1918 CONTINUE EAST CROSSING OVE		Utilikon	700 Lavaca Suite 1400	Ashley Hand	9082162607						
14	146542	PLEASE LOCATE THE FRONT EASEMENT OF ADDRESSES 1931-1919		Utilikon	700 Lavaca Suite 1400	Ashley Hand	9082162607						
8	170580	LOCATE EXISTING UTILITIES ON ENTIRE ROW OF LAMAR FROM NORTH PALMETTO TO ST CHARLES T	CONTACT STEVE ROE @ 210-243-8634	CMARRON UNDERGROUND	9795 KREWALD	CINDY MEDELLIN	210-492-5545						
14	148542	PLEASE LOCATE THE FRONT EASEMENT OF ADDRESSES 1915-1903 CROSSING OVER RHONDA AVE		Utilikon	700 Lavaca Suite 1400	Ashley Hand	9082162607						
14	146542	PLEASE LOCATE THE FRONT EASEMENT OF ADDRESSES 1838-1818.		Utilikon	700 Lavaca Suite 1400	Ashley Hand	9082162607						
14	146542	PLEASE LOCATE THE FRONT EASEMENT OF ADDRESSES 1843-1819.		Utilikon	700 Lavaca Suite 1400	Ashley Hand	9082162607						
14	146542	PLEASE LOCATE THE FRONT EASEMENT OF ADDRESSES 1819-1807.		Utilikon	700 Lavaca Suite 1400	Ashley Hand	9082162607						
24	148640	Removal and replacement of existing power pole. Located UG SAWS lines within a 10foot radius of the		Merrick & Company - CPS Energy S	401 E. Sonterra Suite 250	Sergio Guerrero	210-446-4321						
14	148542	PLEASE LOCATE THE FRONT EASEMENT OF ADDRESSES 1814-1802. CONTINUE EAST FOR APPROX 2		Utilikon	700 Lavaca Suite 1400	Ashley Hand	9082162607						
14	148542	PLEASE LOCATE THE FRONT EASEMENT OF ADDRESSES 1703-1803.		Utilikon	700 Lavaca Suite 1400	Ashley Hand	9082162607						
8	168580	LOCATE EXISTING UTILITIES ON ENTIRE ROW ON LAMAR FROM WILLOW TO NORTH PINE	CONTACT STEVE ROE @ 210-243-8634	CMARRON UNDERGROUND	9795 KREWALD	CINDY MEDELLIN	210-492-5545						

COMPANY_ADDRESS	CONTACT_NAME	CONTACT_PHONE	CONTACT_EMAIL	ALL_CLEAR	SHAPE *	RECORD_DATE	RECORD_STATUS	UID	WORKDONEFOR	SERVNO	SHAPE.STArea()	SHAPE.STLength()
17090 Jordan rd	JP Burchett	512-395-4111	jp.burchett@textstarenterprises.com	Y	Polygon	1/12/2018 3:52:16 PM	PENDING	1455		<Null>	36232.55323	1122.714004
17090 Jordan rd	JP Burchett	512-395-4111	jp.burchett@textstarenterprises.com	N	Polygon	1/12/2018 3:50:32 PM	PENDING	1455		2106965	35189.139477	1105.075016
5423 N Loop 1604 E	Clint Gaenzle	210-655-3780	cgaenzle@yantiscompany.com	N	Polygon	1/12/2018 3:28:33 PM	PENDING	1757		2106917	39490.900846	1249.809891
1800 Burton Rd	tom Lewis	214-918-2127	tom.lewis@futuretelco.com	N	Polygon	1/12/2018 3:24:09 PM	PENDING	1156	MCI	2106884	22006.919612	1248.023222
1800 Burton Rd	tom Lewis	214-918-2127	tom.lewis@futuretelco.com	N	Polygon	1/12/2018 3:19:23 PM	PENDING	1156	MCI	2106877	32590.680869	1553.359667
9795 KREWALD	CINDY MEDELLIN	210-492-5545	cindym@cmarronug.com	N	Polygon	1/12/2018 3:02:23 PM	PENDING	1217	SAC	2106846	21352.119533	1123.310701
1800 Burton Rd	tom Lewis	214-918-2127	tom.lewis@futuretelco.com	N	Polygon	1/12/2018 2:47:41 PM	PENDING	1156	MCI	2106785	57943.4746	1871.247332
1800 Burton Rd	tom Lewis	214-918-2127	tom.lewis@futuretelco.com	N	Polygon	1/12/2018 2:40:55 PM	PENDING	1156	MCI	2106764	48090.322527	1594.966724
5423 N Loop 1604 E	Elroy Ramirez	210-655-3780	eramirez@yantiscompany.com	N	Polygon	1/12/2018 2:36:01 PM	PENDING	1463	Yantis Company	2106735	31244.69285	1266.240081
700 Lavaca Suite 1400	Ashley Hand	9082162607	ashleyhand@utilikon.com	N	Polygon	1/12/2018 2:29:01 PM	PENDING	1755	ATT Lightgig	2106704	8891.147004	720.343881
1800 Burton Rd	tom Lewis	214-918-2127	tom.lewis@futuretelco.com	N	Polygon	1/12/2018 2:28:22 PM	PENDING	1156	MCI	2106703	46089.268259	1432.092078
700 Lavaca Suite 1400	Ashley Hand	9082162607	ashleyhand@utilikon.com	N	Polygon	1/12/2018 2:27:01 PM	PENDING	1755	ATT Lightgig	2106702	2566.198799	318.157756
700 Lavaca Suite 1400	Ashley Hand	9082162607	ashleyhand@utilikon.com	N	Polygon	1/12/2018 2:24:57 PM	PENDING	1755	ATT Lightgig	2106701	13850.386414	1490.844519
700 Lavaca Suite 1400	Ashley Hand	9082162607	ashleyhand@utilikon.com	N	Polygon	1/12/2018 2:22:19 PM	PENDING	1755	ATT Lightgig	2106706	3873.395459	444.762944
9795 KREWALD	CINDY MEDELLIN	210-492-5545	cindym@cmarronug.com	N	Polygon	1/12/2018 2:20:49 PM	PENDING	1217	SAC	2106705	22078.162721	1208.716258

Database tracks work requests, progress and final status of the request. It allows our claims to be accurate and timely

SAWS Utility Locate Requests




Contractor Dashboard View

- Contractor sees his submittals and progress through the system
- Contractor can reference service request # with SAWS staff

Secure | <https://locates.saws.org/locate/index.cfm>

SAWS File Transfer Google Locates Trello San Antonio Water Syst locates

 **LOCATES REQUEST**
[Locates Request Home](#)
[Create Request](#)
[Update SR](#)
[Update Profile](#)

[LOGOUT](#)

WELCOME

[CREATE REQUEST](#)

Locates Requests Status

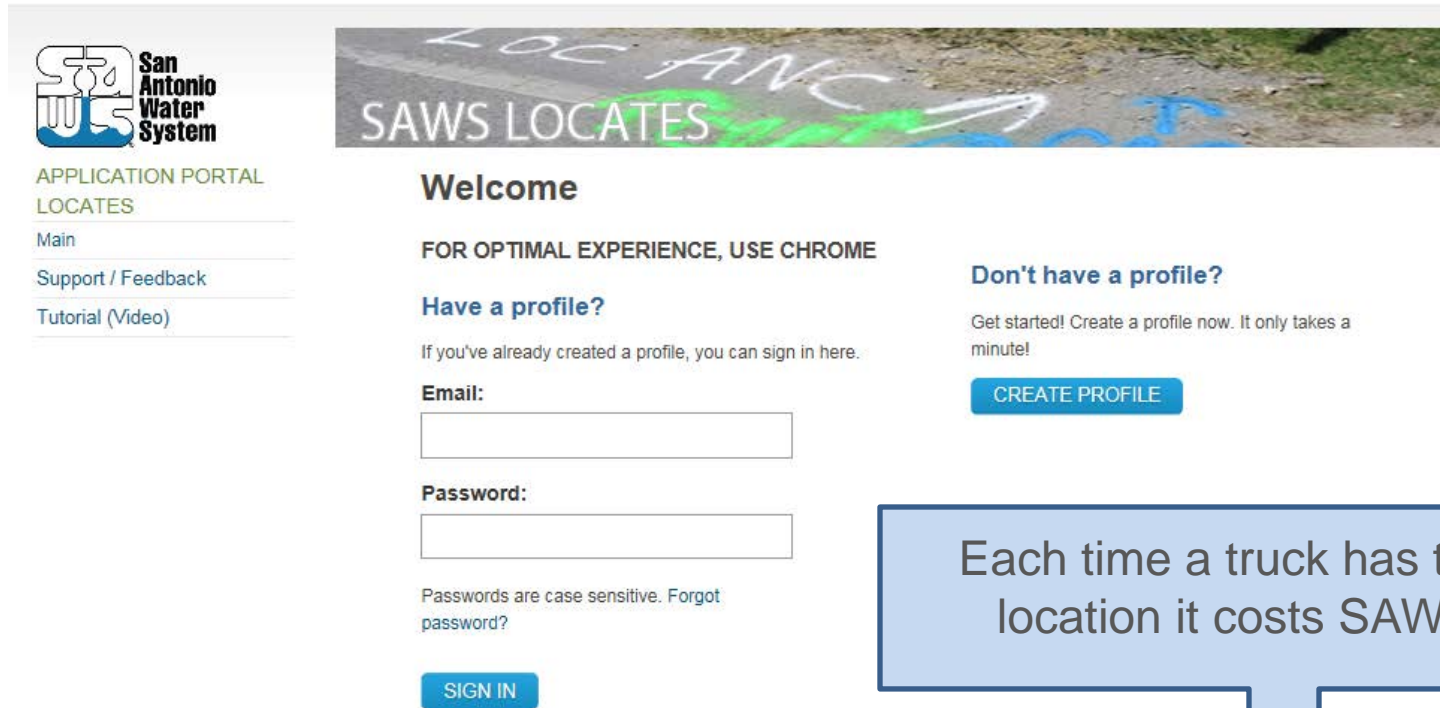
Service Request No.	Status	Submitted	Address	Location
1828252	Assigned	13-Jun-17	00928 COMMERCE	kill an existing ¾" water service (tap #028154) at the main on Buena Vista St. Locates are requested for the length of the tap to the main water line crossing the east bound lanes and bridge on Buena Vista St.
1827357	Assigned	13-Jun-17	14707 TULOROSA	FROM INTERSECTION OF SONOMA PKWY AND RIO RANCHO WAY, LOCATE 500 FT EAST ON THE NORTH AND SOUTH SIDE OF SONOMA PKWY.
1827355	Assigned	13-Jun-17	05252 RUBIDOUX	Please locate front easements of 5315, 5311, 5307, 5303 & 5255 Rubidoux Dr. Please include 25' easement off curb. Area marked in white paint.
1826057	Assigned	12-Jun-17	00615 BANDERA	617 Bandera Rd – replacing 1 pole in the alley in rear of address pole is marked and numbered #12 in white paint.
1826056	Resolved	12-Jun-17	00508 SAN EDUARDO	508 N San Eduardo – replacing 1 pole on east side of Rd north of Rivas, pole is marked and numbered #9 in white paint.
1826055	Assigned	12-Jun-17	00540 SAN DARIO	540 N San Dario – replacing 1 pole on the east side of Rd at address, pole is marked and numbered #8 in white paint.
1826054	Assigned	12-Jun-17	00564 SAN DARIO	564 N San Dario – replacing 1 pole at address on east side of Rd, pole is marked and numbered #7 in white paint.
1826028	Assigned	12-Jun-17	00602 SAN MANUEL	602 N San Manuel – replacing 1 pole on the north east corner of N San Manuel and Blue Ridge, pole is marked and numbered #6 in white paint.
1826027	Assigned	12-Jun-17	00622 SAN DARIO	622 N San Dario – replacing 1 pole on the east side of Rd at address pole is marked and numbered #5 in white paint.
1826026	Assigned	12-Jun-17	02150 CINCINNATI	2148 Cincinnati Ave – replacing 2 poles on the east side of Epworth between Cincinnati Ave and Bandera Rd. poles are marked and numbered #2, and 3 in white paint.
1825999	Resolved	12-Jun-17	00315 GERMANIA	315 Germania – replacing 1 pole on the west side of Germania south of W Ashby Pl. pole location is marked and numbered #1 in white paint.
1825231	Resolved	12-Jun-17	11506 WHISPER BREEZE	Please have water locates completed for the front of 11506 and 11507 Whisper Breeze for directional bore drilling. Please include the driveways, sidewalks and street between the properties.
1824027	Resolved	09-Jun-17	03243 HIGHLINE	Mark the east ROW of Bulverde Rd starting at backyard abutting ROW address 3227 Highline Trail and continue north approx. 500ft to backyard abutting ROW address 3307 Highline Trail. Locate area marked in white paint. Please paint & flag

GIS maintains the application

Distribution and Collection utilizes the application

- 9 months after conception, GIS began using Jira (Atlassian Suite) software with 2x week meetings and brought to in-house use in 2 months on June 2, 2017
- Built video tutorial for contractors
- Met multiple times with area utility coordination consortium
- Deployed Atlassian Service Desk which allows GIS to monitor issues
- Database archive of requested locates available for legal issues

It Goes Live



The screenshot shows the SAWS Locates Application interface. At the top left is the San Antonio Water System logo. Below it is a navigation menu with links for 'APPLICATION PORTAL', 'LOCATES', 'Main', 'Support / Feedback', and 'Tutorial (Video)'. The main header area features a banner image of a road with 'LOCATES' painted on it. Below the banner is a 'Welcome' message and a recommendation to use Chrome. There are two main sections: 'Have a profile?' with a sign-in form (Email, Password, and a 'SIGN IN' button) and a link to 'Forgot password?'; and 'Don't have a profile?' with a 'CREATE PROFILE' button. A blue box with a downward arrow points from the 'CREATE PROFILE' button to the cost information below.

Welcome

FOR OPTIMAL EXPERIENCE, USE CHROME

Have a profile?

If you've already created a profile, you can sign in here.

Email:

Password:

Passwords are case sensitive. [Forgot password?](#)

SIGN IN

Don't have a profile?

Get started! Create a profile now. It only takes a minute!

CREATE PROFILE

SAWS Locates Application

Live on 10/31/17

678 Registered Users

7,328 Locate Requests

555 All Clears

* As of 4/9/18

Each time a truck has to visit a location it costs SAWS \$35

\$19,425 since 10/31/2017

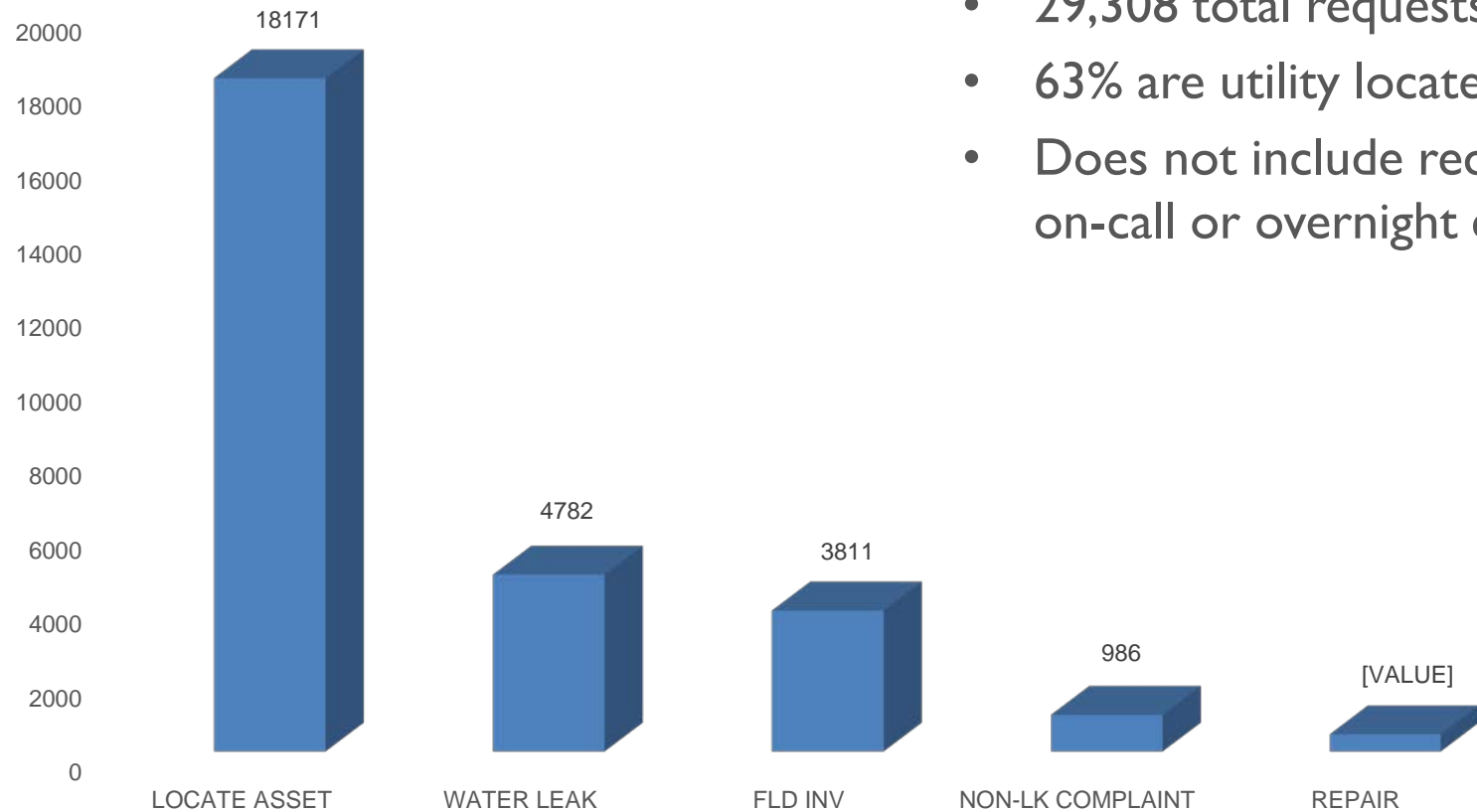
<https://locates.saws.org/>

SAWS Utility Locate Requests

D&C Utility Locate Request

- Total 2017 D&C Ops Support service requests
- Significant increase in utility locate request
- Decreased and maintained response times
- Continued innovations to improve efficiencies and protect infrastructure

D&C Ops Support 2017 Service Requests



- 29,308 total requests
- 63% are utility locate requests
- Does not include request done by on-call or overnight crews

D&C Locate Requests

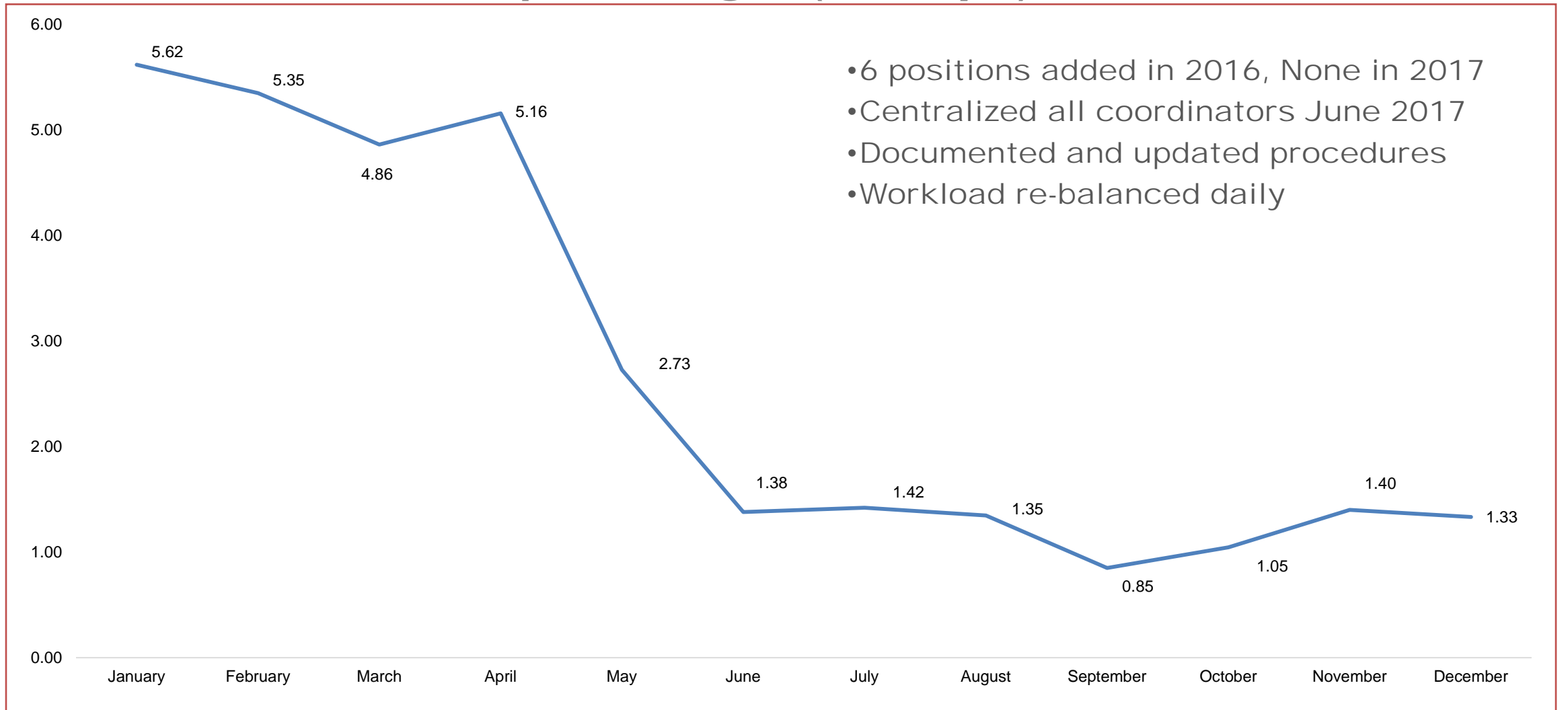
2015: 6,091

2016: 12,047 ↑ 97.8%

2017: 19,463 ↑ 61.6% & 219.5%

Increased fiber presence with AT&T and Google, Verizon coming 2018

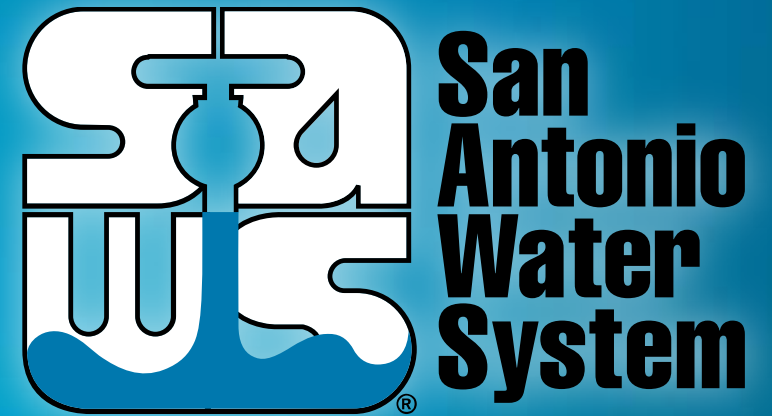
D&C Service Request Age (in days)



Locates Solution

Toni Jackson, GISP, PMP

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