



**TxDOT ROW**

**UTILITY WEEK**

*Partners in Coordination*

# Utilities in Maintenance

**Day 3 – December 4th  
Track Rm 1, Session 1  
1:30PM - 2:15PM**

## Presenter: Mark Johnson



Mark Johnson has worked for over 17 years with TxDOT, in a variety of roles from traffic engineering to rail safety to maintenance data analytics. In his current role, he is heavily focused on improving maintenance operations thru the use of data and innovation. Mark holds a bachelors degree in industrial engineering from Purdue University and a masters degree in mechanical engineering from the University of Michigan. In his free time, he enjoys dancing cumbia and tango.

## Mexico City: February 1978 Utility Work



**Coyolxauhqui  
Stone**



## Tenochtitlan 1519 (Later Renamed Mexico City)



## 500 Years Later...



Tenochtitlan 1519



Mexico City Today



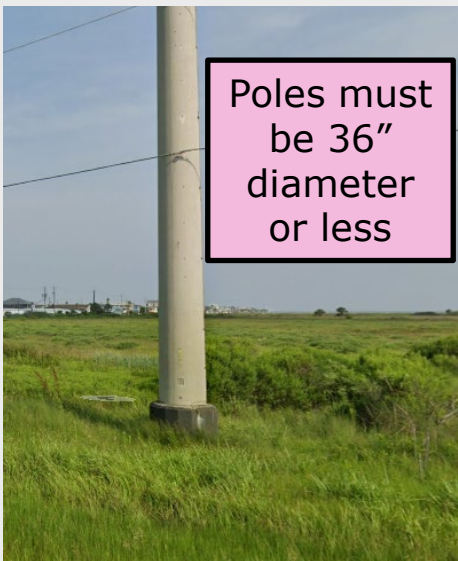
## Public Service Announcement!



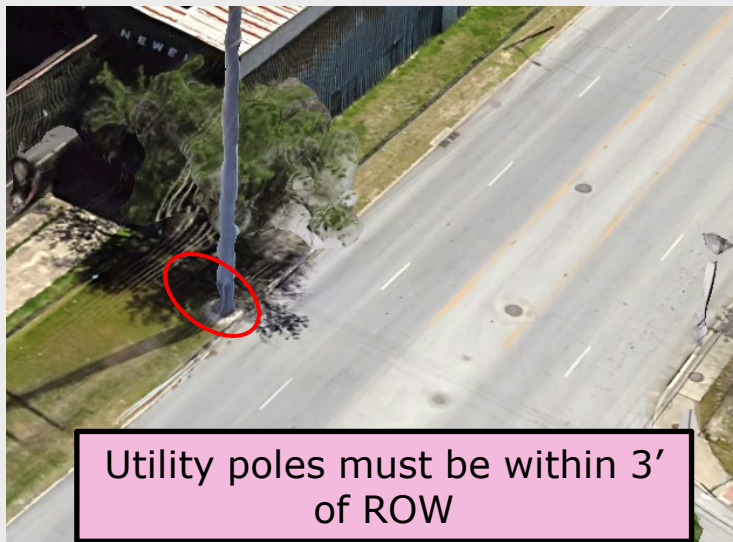
# Maintenance Division Role in Utilities

## Reviewing High Pressure Gas Lines and Exceptions to Policy:

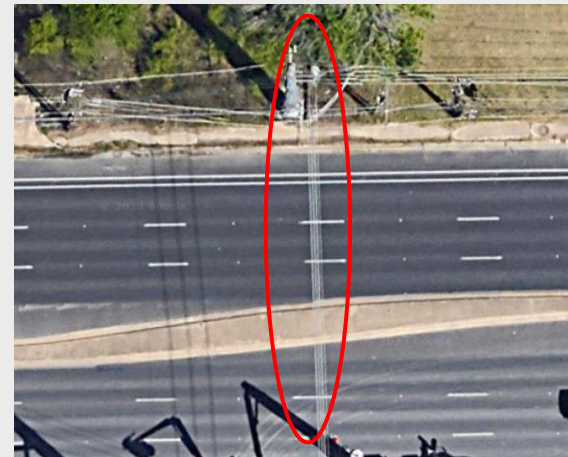
- MNT reviewed 698 high pressure gas lines and 306 exceptions to policy in last 2 years; MNT had plan comments on ~12% of these
- Typical comments: missing cable markers, vents, or cathodic protection



Poles must be 36" diameter or less



Utility poles must be within 3' of ROW



83% of Utility Exceptions are non-perpendicular highway crossings

# Understanding Clear Zone



For a certain edge from the white stripe, there should not be anything that hasn't been crash tested

...but a clear zone is theoretical and we should strive to go beyond the standard!

Roadway  
Design  
Manual:

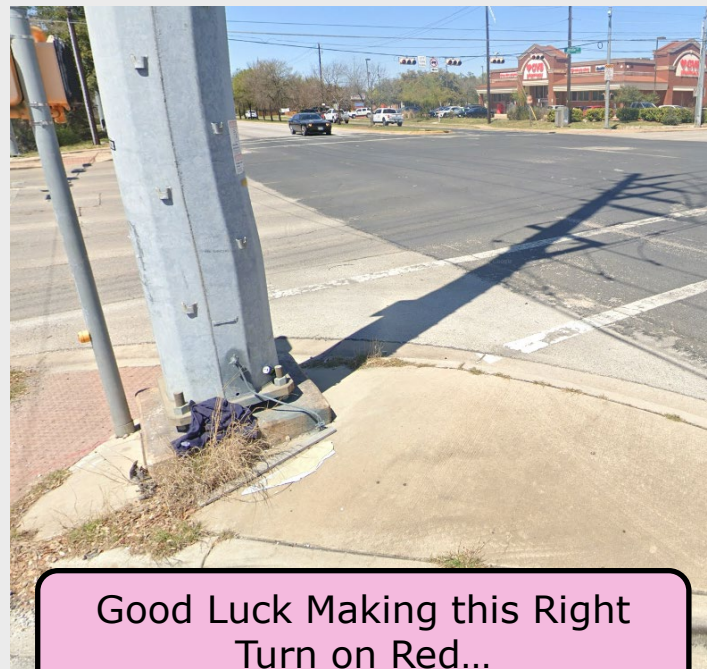
Location	Functional Classification	Design Speed (mph)	Avg. Daily Traffic <sup>2</sup>	Clear Zone Width (ft) <sup>1,3,4,5</sup>	
-	-	-	-	Minimum	Desirable
Rural	Arterial	All	≤ 750	16	30
			≥ 750	30	--



## Sight Distance Issues

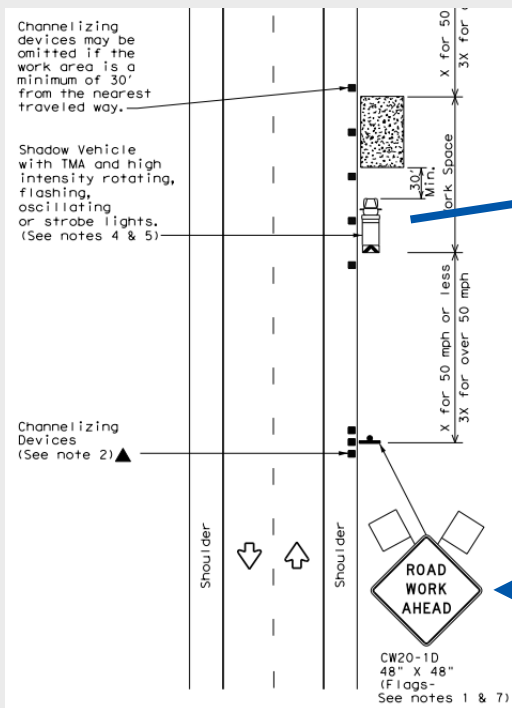


Transmission Pole on an Island!



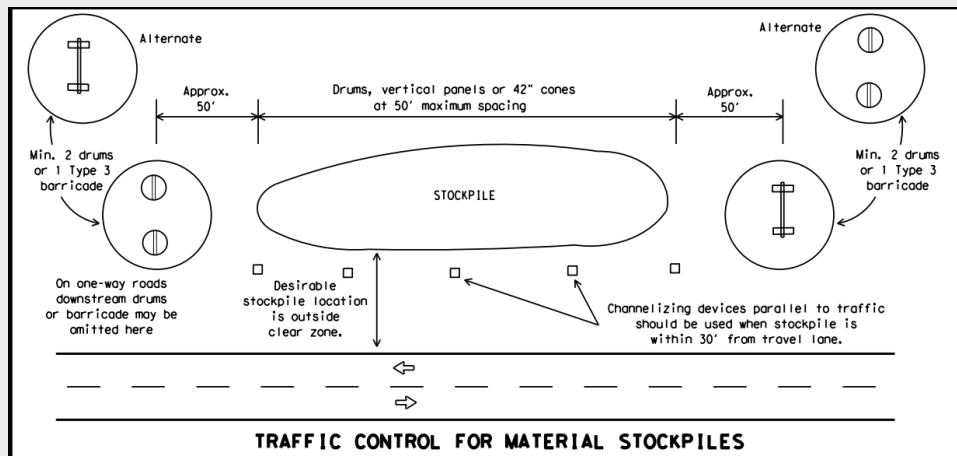
Good Luck Making this Right Turn on Red...

# Traffic Control & Safety Data



## Traffic Safety Concerns:

- 1/3 of fatal crashes involve driving under the influence
- Texting and driving is another huge causal factor of fatal crashes



**TCP (1-1a): For Short Term Stationary Work**

**BC (10)**



## Pits & Quarries

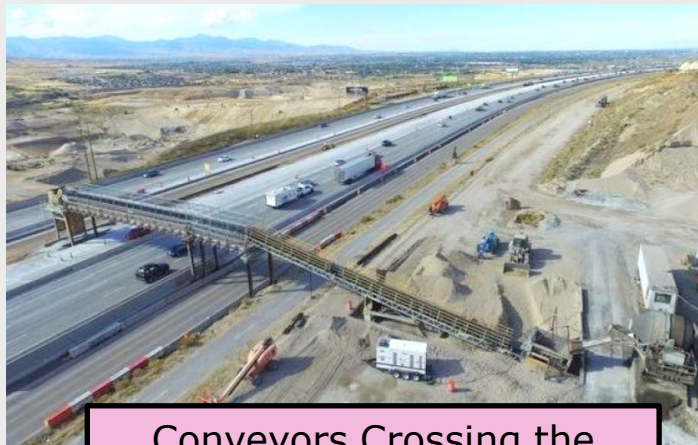
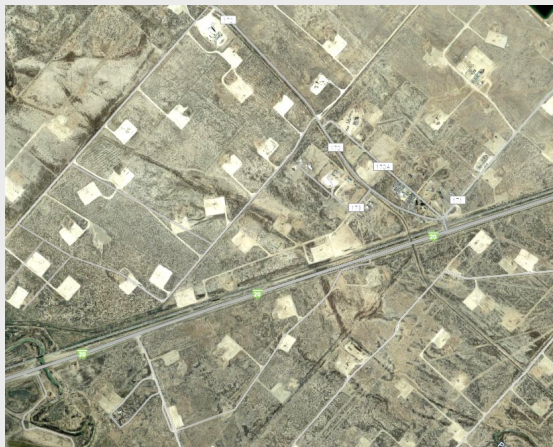
- Texas Aggregate Quarry and Pit Safety Act (Ch. 133 Texas Natural Resources Code)
  - Require barriers to protect road users
  - Protect landowners from eroding property
  - Pits must be 5' deep and within 200' of a public road

### MNT Quarry/Pit Safety Program Inspector:

Todd Huddleson  
[Todd.Huddleson@txdot.gov](mailto:Todd.Huddleson@txdot.gov)  
[ot.gov](http://ot.gov)  
(737) 465-2173



## Wild West Texas



Conveyors Crossing the Highway



Oil Permits



Pecos Shale

Maintenance Division can assist with highway crossing and highway use agreements. We have various diagnostic equipment to test the pavement.



## Manhole Issues



## Bridge Attachment Agreements

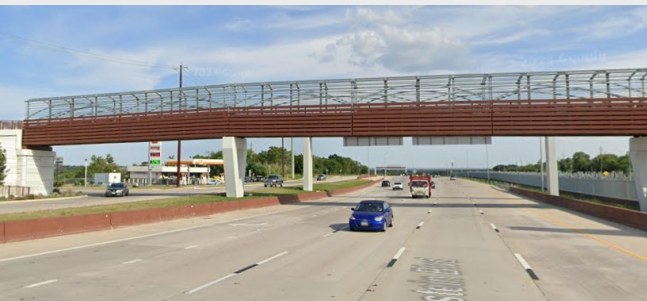
These types of agreements are not utility agreements and are usually handled thru the Bridge Division, unless the devices are not installed at bridges.



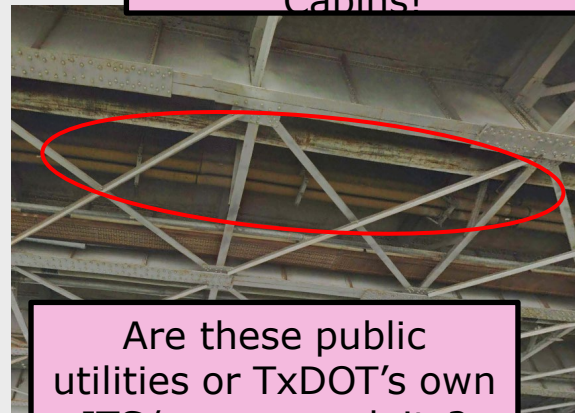
USGS and LCRA  
Stream Monitoring  
Devices



...but don't confuse  
these with TxDOT ITS  
Cabins!



What if the city wants to install  
an entire pedestrian bridge over  
the highway?!



Are these public  
utilities or TxDOT's own  
ITS/power conduits?



# Multiple Use Agmts

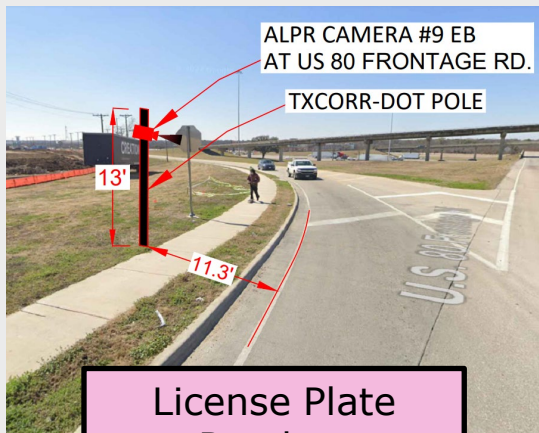
These are agreements with local governments to install and maintain various devices in TxDOT rights of way.



Bridge Murals



Parking Lots



License Plate Readers



Trails Under Bridges



Gateway Monument Agreements

## Lease Agreements

- Saltwater:
  - 42 Subsurface Long Term
  - 45 temporary surface leases/month
- Ground:
  - 174 Total
  - 86 are parking (49%)



### **ROW Land Real Estate Analyst:**

Naomi Young  
[Naomi.Young@txdot.gov](mailto:Naomi.Young@txdot.gov)  
(512) 560-9477



## Disaster Coordination

- Plan and coordinate with utilities prior to disaster events
- MNT coordinates with the PUC and RRC
- SB 3: TDEM, along with several state agencies, partners with utilities to ensure a reliable grid during disasters
  - SB 1093: Critical Infrastructure Group
- District utility coordinators: we may need you to identify the owner of a utility



### MNT Emergency Mgmt Coordinator:

Matthew Heinze

[Matthew.Heinze@txdot.gov](mailto:Matthew.Heinze@txdot.gov)

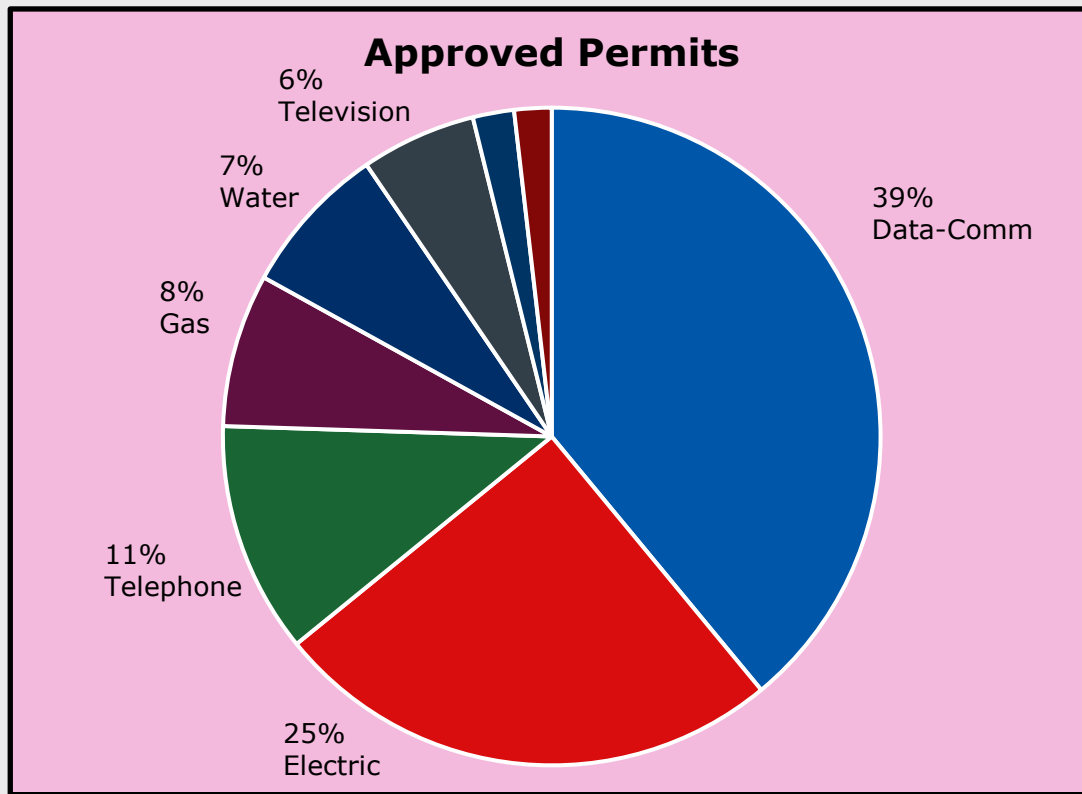
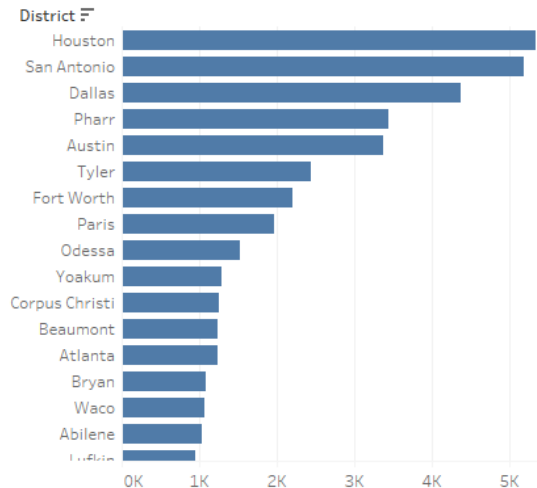
(512) 658-1220



# Statistics on 2022-23 Utility Installations

- Over 44,000 Permits Approved
- Avg approval time ~30 days
- Almost 1600 utility owners

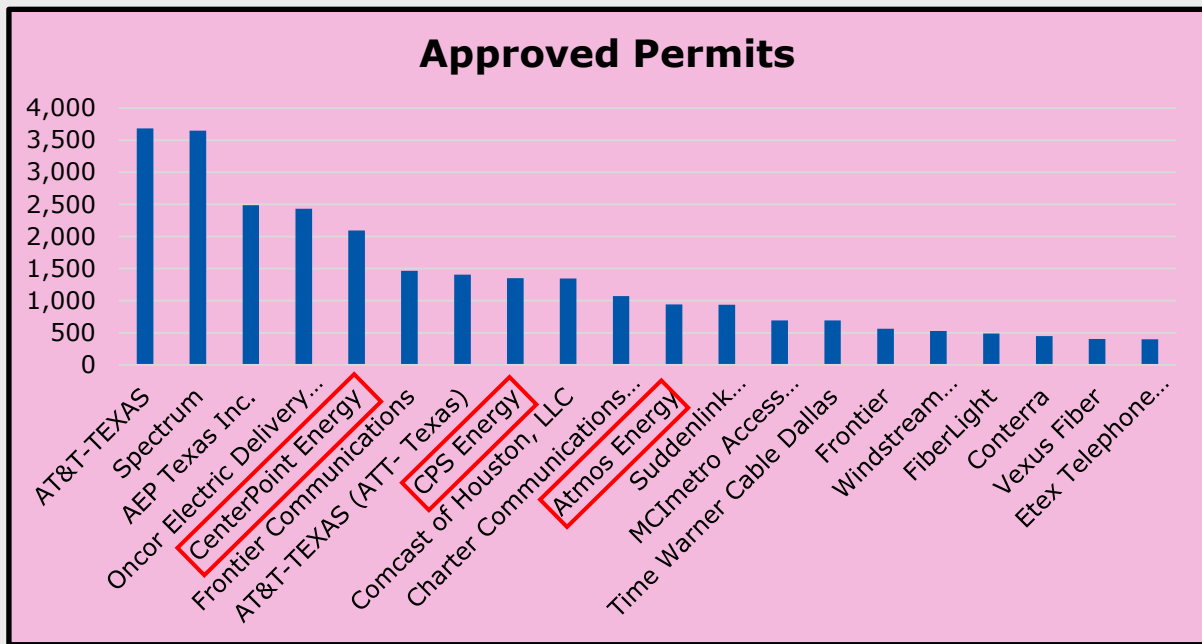
Approved Permits by District



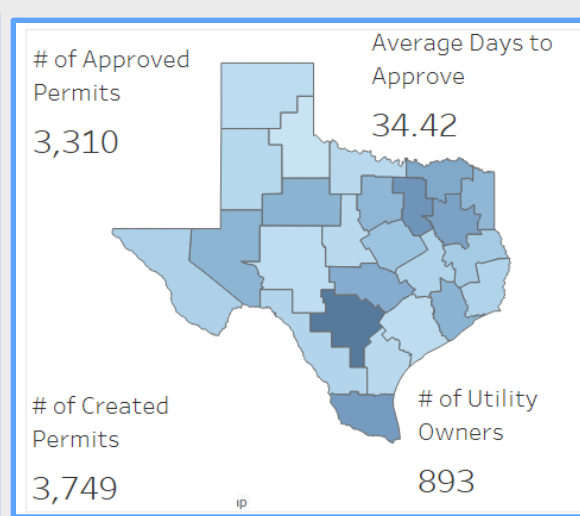
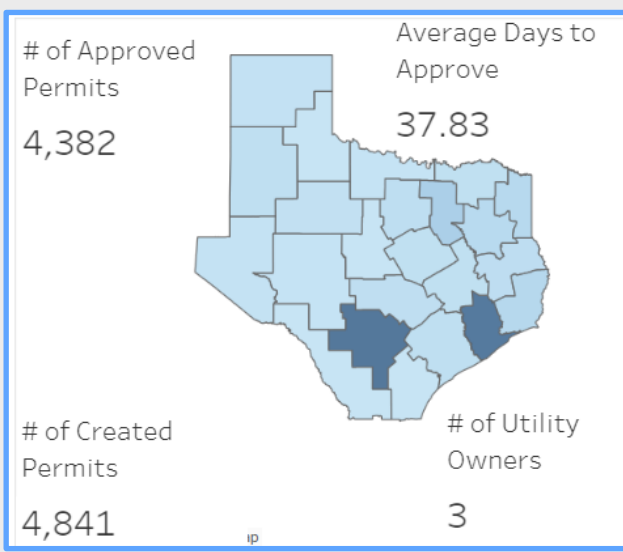
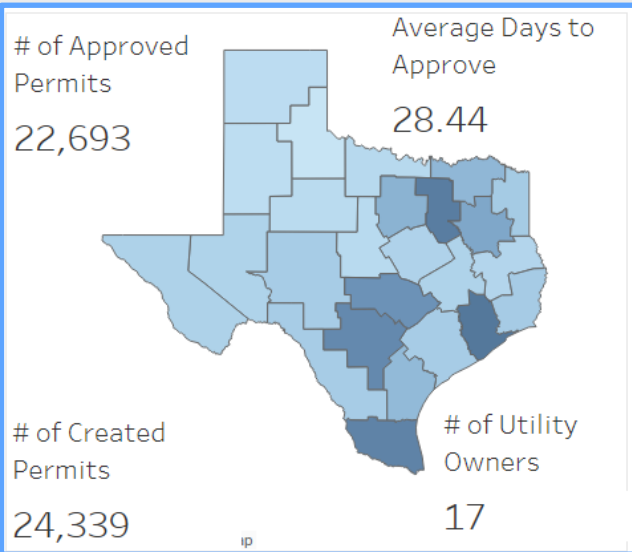


## Utility Owner Data 2022-23

- 20 Owners had at least 400 approved permits (about 61% of permits)
- 17 of these are communications or electric utilities
- CenterPoint Energy, CPS Energy, and Atmos Energy have significant gas permits (in **red** boxes)



# Heat Maps of Utility Installations



**The top 17 data/electric utility owners**

**Centerpoint, CPS, and Atmos permits**

- Atmos in west Texas, Centerpoint east Texas
- CPS Energy in San Antonio
- includes electric and gas permits

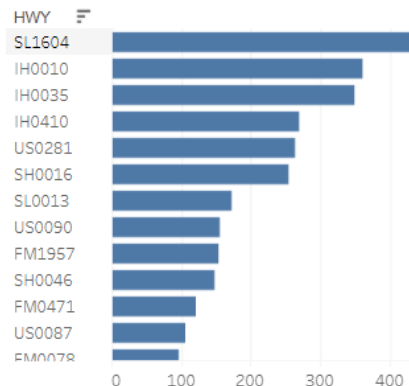
**Water Permits**

- Not one owner had 200 approved permits

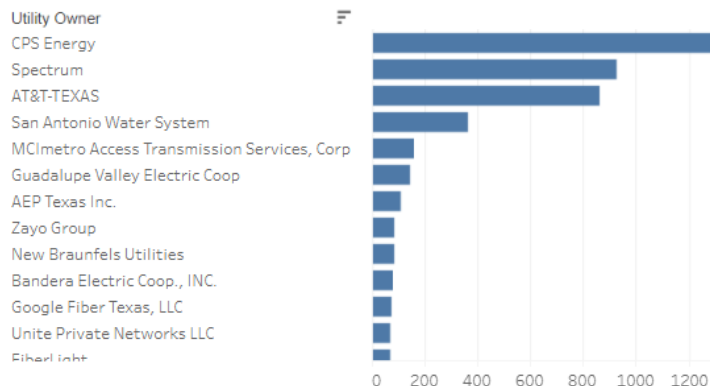


## San Antonio District Utilities FY 22-23

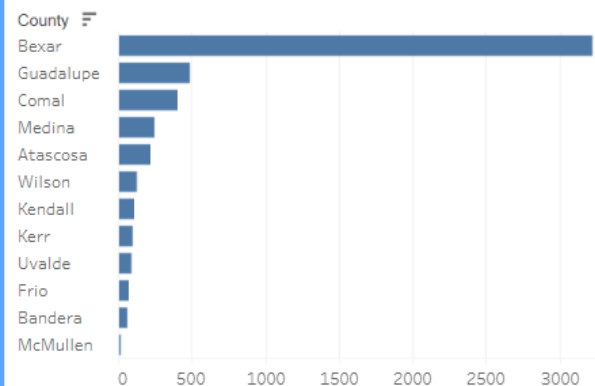
Approved Permits by HWY



Approved Permits by Utility Owner



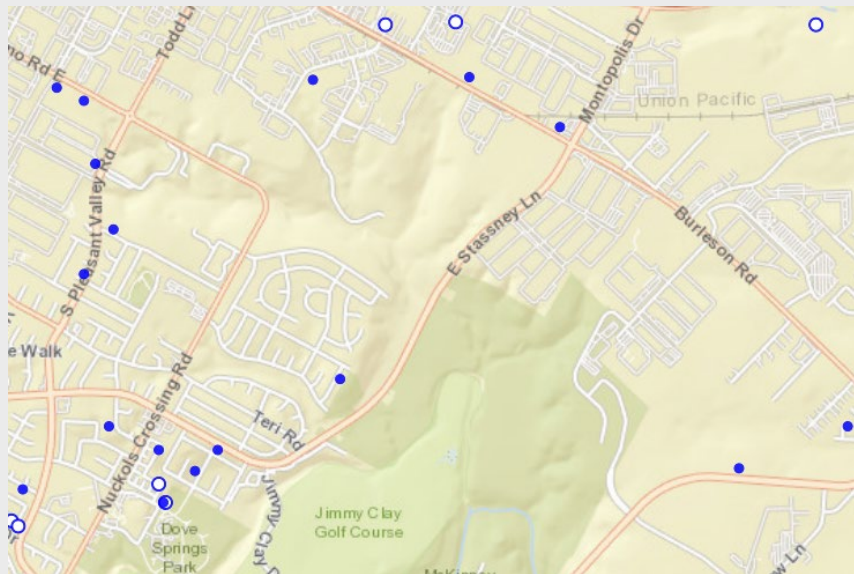
Approved Permits by County



### What does the data tell us?

*Clearly there is a ton of utility work happening around the San Antonio metro area, largely focused on LP 1604 and various interstates. 68% of the permits are from CPS Energy, Spectrum, AT&T Texas, and San Antonio Water System (SAWS).*

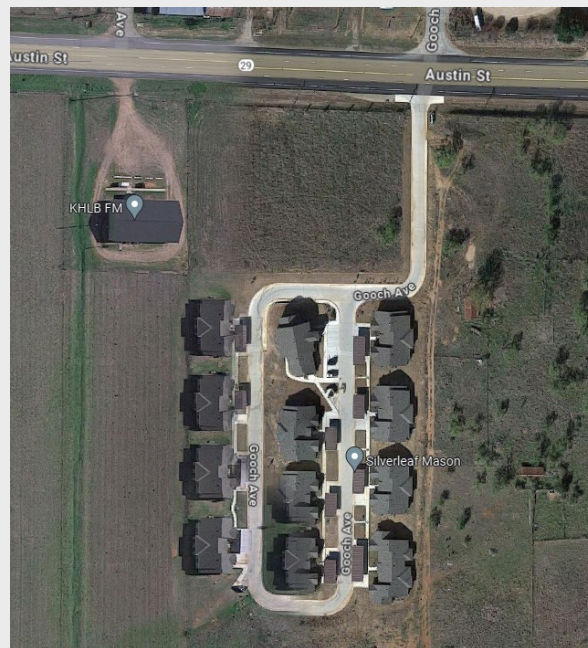
## Tying Permits Together



**City of Austin Open Data Portal:**  
Construction Permits in Last 30 Days

### New Housing Development:

We should be seeing utility, driveway, and mailbox permit requests

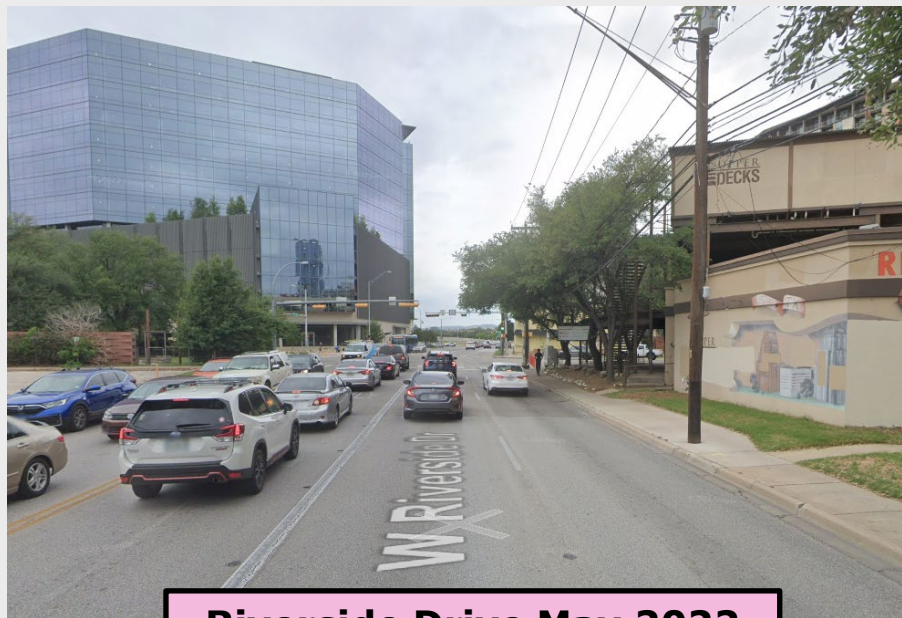




## Economic Development

### Private Sector Development:

*Do we need turn lanes, medians, new signs, traffic signal timing adjustments, curbed sidewalks, etc?*



**Riverside Drive May 2022**



**Riverside Drive May 2009**

## Watch for Levitating Power Poles...



**Please contact me!**

Mark Johnson, MNT

[Mark.J.Johnson@txdot.gov](mailto:Mark.J.Johnson@txdot.gov)  
(512) 221-8993

# Questions







*Thank You!*