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# COMMISSION ON STATE EMERGENCY COMMUNICATIONS

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## The Journey of GIS Data and NG9-1-1 in the CSEC Program

March 10, 2022  
GIS Forum





# COMMISSION ON STATE EMERGENCY COMMUNICATIONS

## Agenda



- Who We Are
- Where We're Coming From
- What We've Learned

- NG9-1-1 Call Routing and Location Validation
- Roadmap to Improve GIS Data for NG9-1-1

- Status of RPC NG9-1-1 Deployments

- Questions?



# Who We Are

The Commission on State Emergency Communications (CSEC) is an agency of the State of Texas and the state's authority on emergency communications. CSEC oversees and administers the RPC 9-1-1 Program and Statewide Poison Control Program.

9-1-1 services are provided by a mixture of 9-1-1 Entities consisting of:

- 20 Regional Planning Commissions (RPCs)
- 28 Emergency Communication Districts (ECDs)
- 29 Municipal Emergency Communication Districts (MECDs)

## Emergency Communication Districts

- 1 Abilene-Taylor Co. 9-1-1 District
- 2 Austin Co. Emergency Communications District
- 3 Bexar Metro 911 Network District
- 4 Brazos Co. Emergency Communications District
- 5 Calhoun Co. 911 Emergency Communications District
- 6 Cameron Co. Emergency Communications District
- 7 Capital Area Emergency Communications District
- 8 Denco Area 911 District
- 9 El Paso Co. 911 District
- 10 Emergency Communications District of Ector Co.
- 11 Galveston Co. Emergency Communications District
- 12 Greater Harris Co. 911 Emergency Network
- 13 Gulf Coast Regional 9-1-1 Communications District
- 14 Henderson Co. 911 Communications District
- 15 Howard Co. 911 Communications District
- 16 Kerr Co. Emergency 911 Network
- 17 Lubbock Co. Emergency Communications District
- 18 McLennan Co. Emergency Assistance District
- 19 Medina Co. 911 District
- 20 Midland Emergency Communications District
- 21 Montgomery Co. Emergency Communications District
- 22 North Central Texas Emergency Communications District
- 23 Potter-Randall Co. Emergency Communications District
- 24 Rio Grande Valley Emergency Communication District
- 25 Smith Co. 911 Communications District
- 26 Tarrant Co. 911 District
- 27 Texas Eastern 911 Network Communications District
- 28 Wichita/Wilbarger 9-1-1 Communications District

## Municipal Emergency Communication Districts

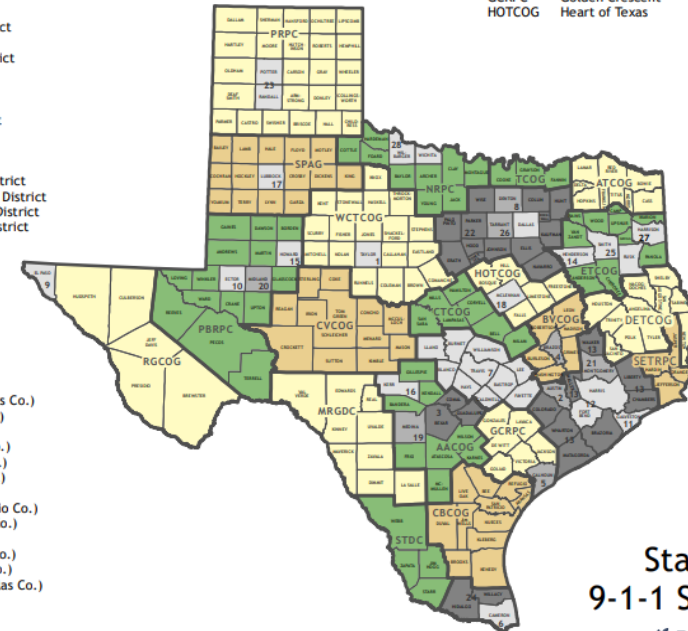
- |                                 |                              |
|---------------------------------|------------------------------|
| Addison (Dallas Co.)            | Highland Park (Dallas Co.)   |
| Aransas Pass (Aransas Co.)      | Hutchins (Dallas Co.)        |
| City of Carrollton (Denton Co.) | Kilgore (Gregg Co.)          |
| Cedar Hill (Dallas Co.)         | Lancaster (Dallas Co.)       |
| Coppell (Dallas Co.)            | Longview (Gregg Co.)         |
| Corpus Christi (Nueces Co.)     | Mesquite (Dallas Co.)        |
| Dallas (Dallas Co.)             | Piano (Collin Co.)           |
| Dallas County*                  | Portland (San Patricio Co.)  |
| De Soto (Dallas Co.)            | Richardson (Dallas Co.)      |
| Denison (Grayson Co.)           | Rowlett (Dallas Co.)         |
| Duncanville (Dallas Co.)        | Sherman (Grayson Co.)        |
| Ennis (Ellis Co.)               | Sunnyvale (Dallas Co.)       |
| Farmers Branch (Dallas Co.)     | University Park (Dallas Co.) |
| Garland (Dallas Co.)            | Wylie (Collin Co.)           |
| Glenn Heights (Dallas Co.)      |                              |

Note: 9-1-1 service in the incorporated portion of Dallas County is provided by Municipal Emergency Communications Districts, including the City of Dallas, or pursuant to the North Central Texas Emergency Communications District's Regional 9-1-1 Plan for four municipalities. \*9-1-1 service in the unincorporated portion of Dallas County is provided by the Dallas County Sheriff's Department under Texas Health and Safety Code Chapter 772, Subchapter E.

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## Regional Planning Commissions

- |        |                 |        |                    |
|--------|-----------------|--------|--------------------|
| AACOG  | Alamo Area      | MRGDC  | Middle Rio         |
| ATCOG  | Ark-Tex         | NRPC   | Nortex             |
| BVCOG  | Brazos Valley   | PBRPC  | Permian Basin      |
| CBCOG  | Coastal Bend    | PRPC   | Panhandle          |
| CTCOG  | Central Texas   | RGCOG  | Rio Grande         |
| CVCOG  | Concho Valley   | SETRPC | South East         |
| DETCOG | Deep East       | SPAG   | South Plains       |
| ETCOG  | East Texas      | STDC   | South Texas/Laredo |
| GCRPC  | Golden Crescent | TCOG   | Texoma             |
| HOTCOG | Heart of Texas  | WCTCOG | West Central       |



## State of Texas 9-1-1 Service Entities



Commission on  
State Emergency  
Communications

Effective: 9/1/2021



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## Where We're Coming From

The legacy E9-1-1 system is no longer able to support modern communication technology needs and 9-1-1 Entities across the state are replacing the current 9-1-1 infrastructure with NG9-1-1 systems and services.

NG9-1-1 transforms today's 9-1-1 by leveraging emerging technologies to have the ability to receive voice, text, and data sent over IP networks from various communication devices (wireline, wireless, VoIP, etc.).

NG9-1-1 implementation in the CSEC's 9-1-1 Program is an extensive, multi-year effort. State-level ESInet Project. – IN PROGRESS

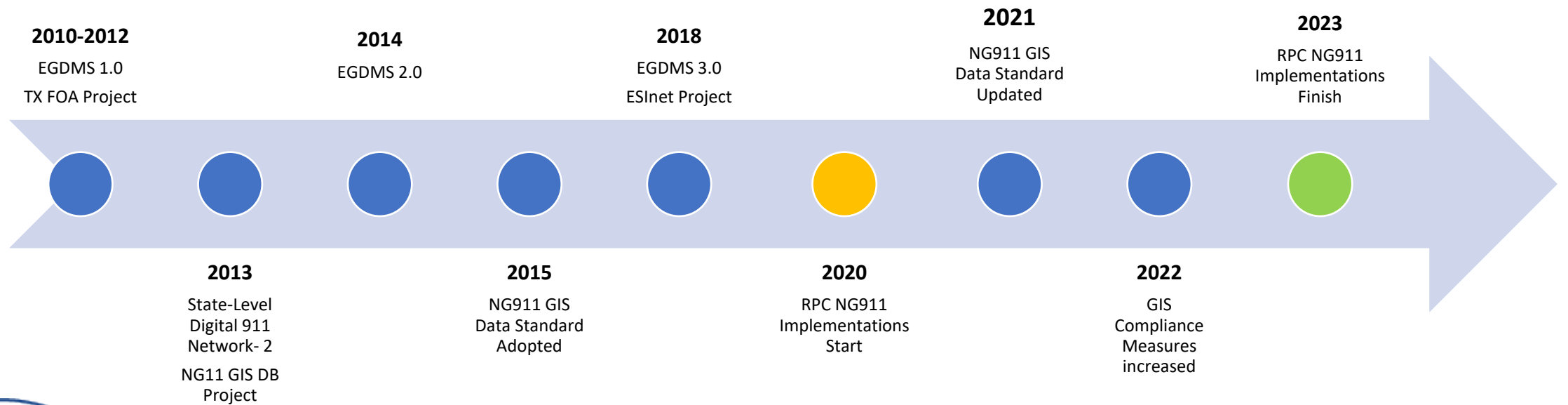
The CSEC ESInet Project will transition 100% of the participating RPC 9-1-1 Program Public Safety Answering Points (237 PSAPs) to NG9-1-1 systems and services by August 31, 2023.





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## Where We're Coming From





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## What We've Learned

**2010 – 2012**  
(EGDMS 1.0 & FOA  
Project)

- NG9-1-1 systems rely on GIS data for 9-1-1 call routing & location validation.
- GIS data sourced by 9-1-1 Entities maintained in silos and came in different schemas and projections.
- An Enterprise Geospatial Database System (EGDMS) needed to coalesce 9-1-1 GIS data into a seamless state-level GIS dataset to collectively achieve NG911 objectives.

**2013 – 2015**  
(EGDMS 2.0 & NG9-1-1 GIS  
DB Project)

- RPC's 9-1-1 GIS data did not meet the NG911 GIS data quality criteria or standards.
- A Roadmap to improve the quality of RPC's 9-1-1 GIS data for NG9-1-1 was needed, including NG9-1-1 GIS Data Standards/Best Practices
- RPCs would require time to improve their 9-1-1 GIS data

**2016 – 2020**  
(EGDMS 3.0 & ESInet  
Project)

- Improvements to GIS data workflows were needed to achieve near real time updates to NG9-1-1 systems and enhanced metric reporting to measure GIS data quality.
- NG9-1-1 GIS data quality criteria established

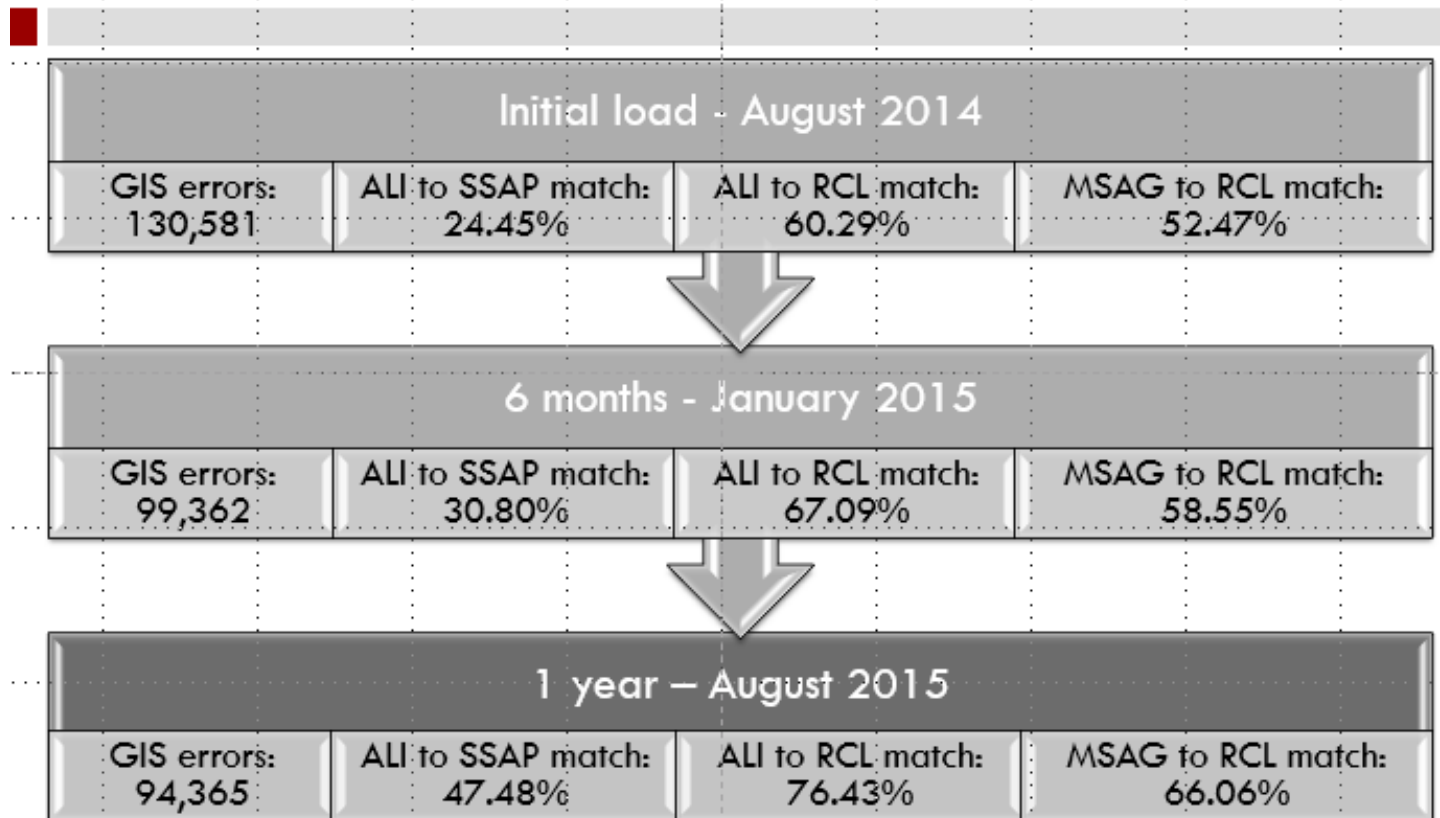




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## What We've Learned

### Process and Data Challenges

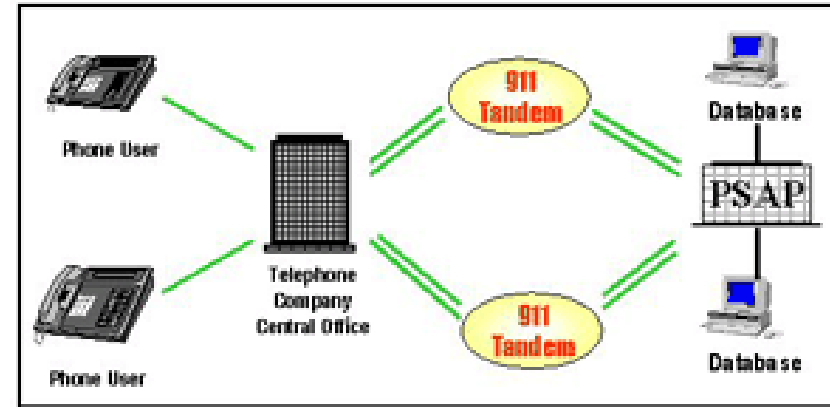




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## E9-1-1/NG9-1-1 Data & Call Routing

Telephone Company  
Service Orders



MSAG					
PD	STREET	ST_TYPE	LOW	HIGH	COMMUNITY
	SPINNING WHEEL	CT	10100	10199	LEE
	FARM HOUSE	LN	4300	4399	GLASS
	STILL	MDW	4300	4399	LEE
	FARM HOUSE	LN	4400	4499	LEE

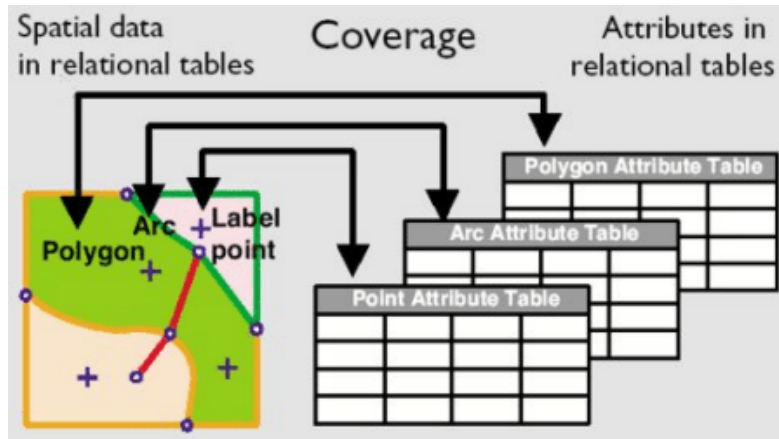






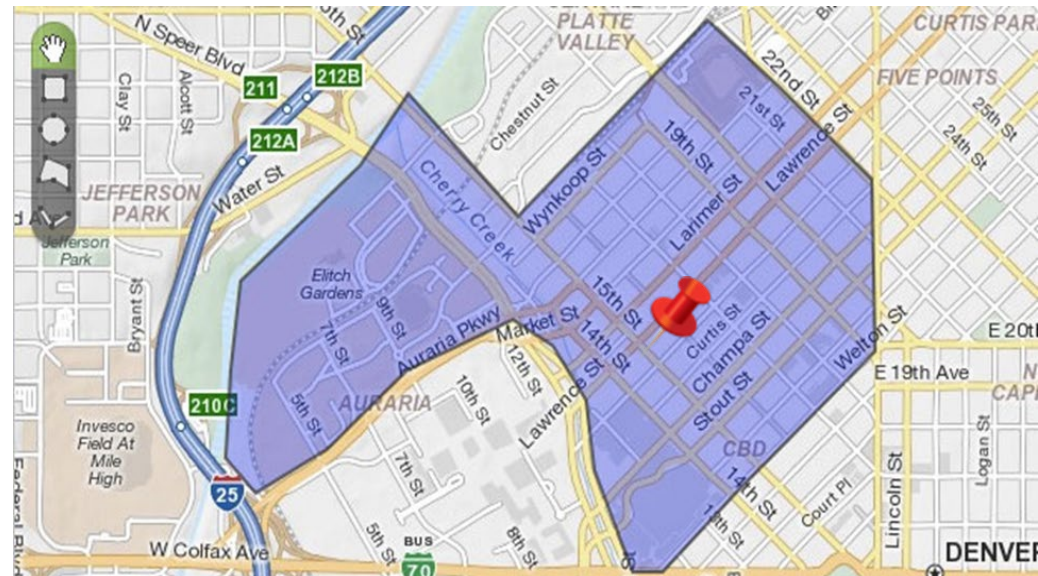
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## NG9-1-1 Data & Call Routing



Location to Service Translation (LoST) Protocol determines route

**Concept: point in polygon**



### NG9-1-1 Geospatial Data

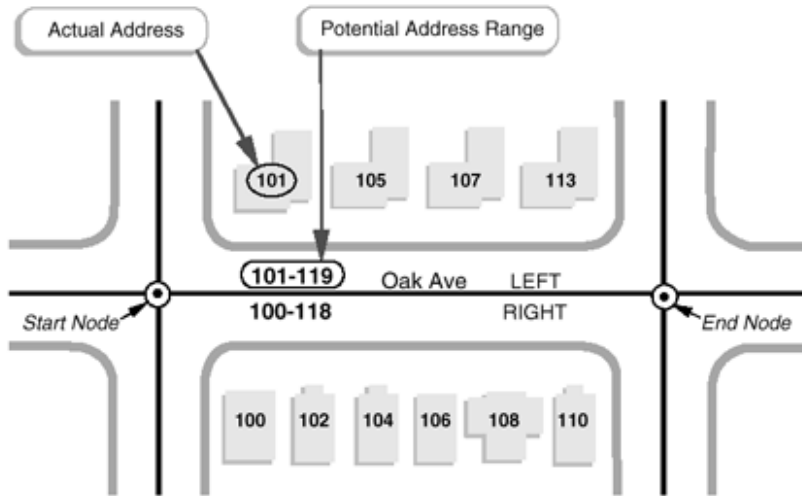
- Road centerlines
- Site structure address points
- PSAP service polygon
- Fire response agency polygon
- Law response agency polygon
- EMS response agency polygon





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## E9-1-1/NG9-1-1 Location Validation



Legacy E9-1-1 Address Validation using MSAG	
101 Oak Ave	Valid
103 Oak Ave	Valid
120 Oak Ave	Invalid

MSAG						
O/E	Street Name	Street Suffix	Low	High	Community	ESN
O	Oak	Ave	101	119	AnyPlace	123
E	Oak	Ave	100	118	AnyPlace	123
O	Pine	Ct	1	9999	ThisPlace	234
E	Pine	Ct	2	9998	ThisPlace	234
O	North West		201	299	NoPlace	356
E	North West		200	298	NoPlace	356

Validation using LVF & NG9-1-1 Geospatial Data	
101 Oak Ave	Valid
103 Oak Ave	Invalid
120 Oak Ave	Invalid





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## CSEC's Roadmap to Quality NG9-1-1 Geospatial Data

### Standards and Best Practices

- GIS data standard
- GIS data collection & maintenance

### State-level GIS Data Management Processes

- Aggregates/coalesces federated data sets from regional 9-1-1 entities
- Flags errors for resolution & aids in resolution
- Provides for MSAG to GIS & ALI to GIS synchronization
- Allows for hierarchical geospatial data management processes

### Resources

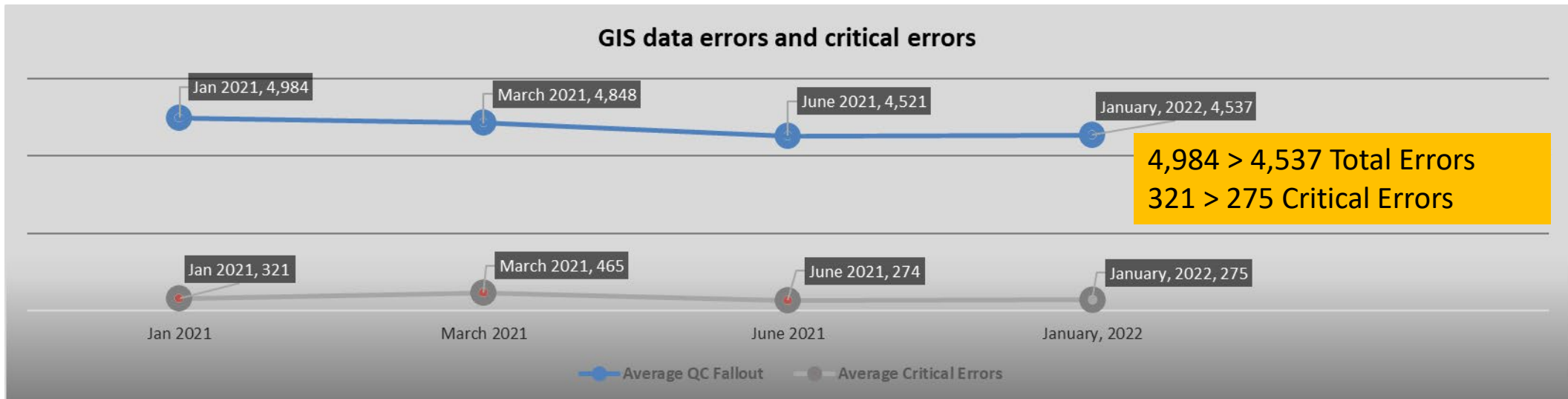
- Shared resources
- Procurement vehicles for services
- GIS expertise





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## GIS Data Errors and Critical Errors (Jan 2021 – Jan 2022)





# Status of RPC NG9-1-1 Deployments

March 2022

Stage	RPC	Provider	# PSAPs transitioned to <u>ESInet</u>
Stage 1: Initiation			
Stage 2: Planning & Design	South Texas Development Council/City of Laredo	AT&T	50
	Texoma Council of Governments	AT&T	
	East Texas Council of Governments	AT&T	
	Coastal Bend Council of Governments	AT&T	
Stage 3: Testing/Go-Live (30 Day Soak)	Rio Grande Council of Governments	AT&T	5
	Alamo Area Council of Governments	AT&T	
Stage 4: Production & Deployment	Ark-Tex Council of Governments	AT&T	182
	Brazos Valley Council of Governments	Motorola	
	Central Texas Council of Governments	Motorola	
	Concho Valley Council of Governments	AT&T	
	Deep East Texas Council of Governments	AT&T	
	Golden Crescent Regional Planning Commission	Motorola	
	Heart of Texas Council of Governments	Motorola	
	Middle Rio Grande Development Council	AT&T	
	Nortex Regional Planning Commission	AT&T	
	Panhandle Regional Planning Commission	AT&T	
	Permian Basin Regional Planning Commission	AT&T	
	South East Texas Regional Planning Commission	AT&T	
	South Plains Association of Governments	AT&T	
West Central Texas Council of Governments	AT&T		
Stage 5: OSP Traffic Migration	AT&T Project	FY2023	
	Motorola Project	April 2022	

# Questions and Answers?

Thank You

FOR MORE INFORMATION CONTACT:

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