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

March 10, 2022
GIS Forum

Agenda

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

Chapter 2 — Role of GIS in NG911

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

Chapter 3 — Next Steps

- Status of RPC NG9-1-1 Deployments

Questions & Answers

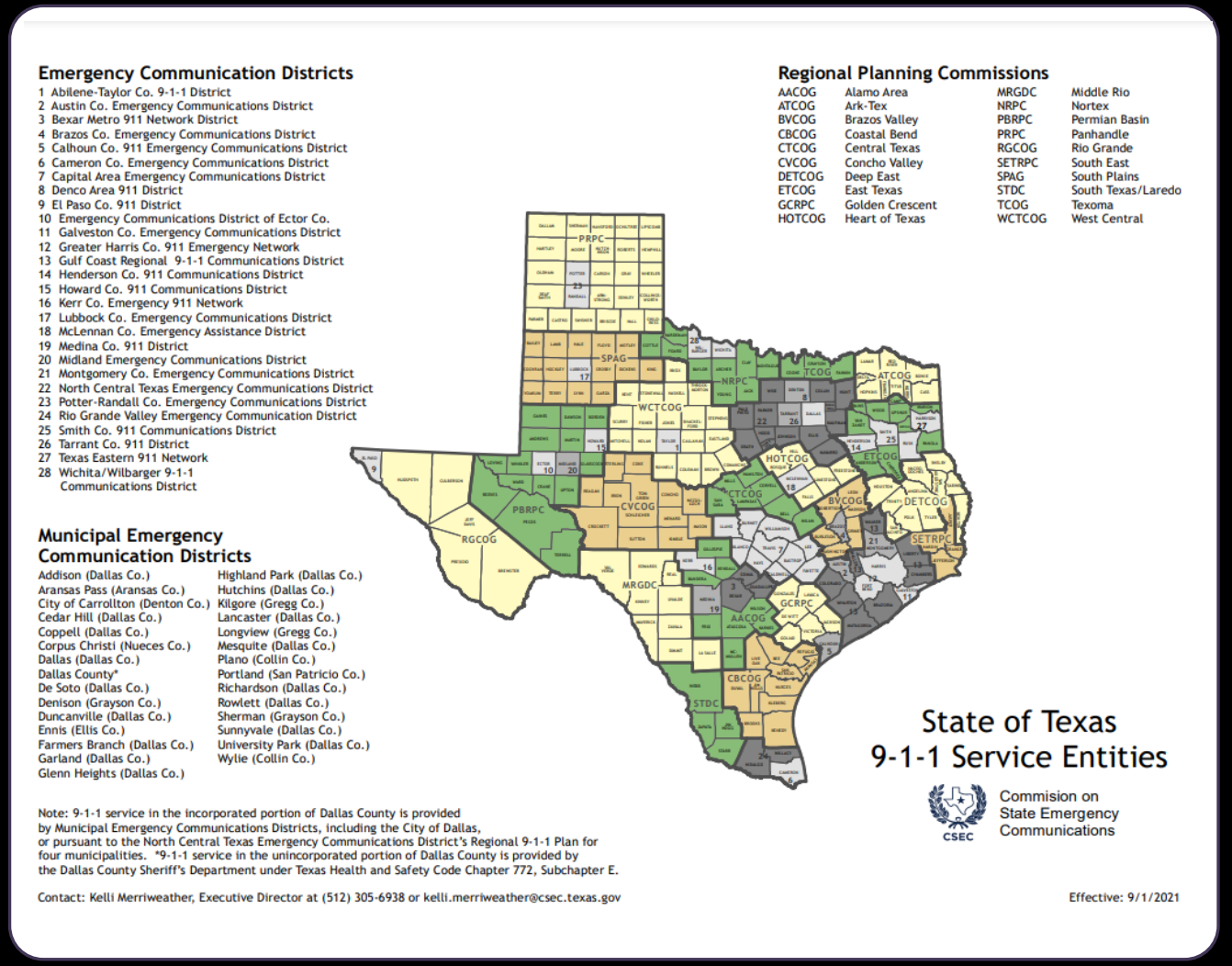
- Questions?

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)



COMMISSION ON STATE EMERGENCY COMMUNICATIONS

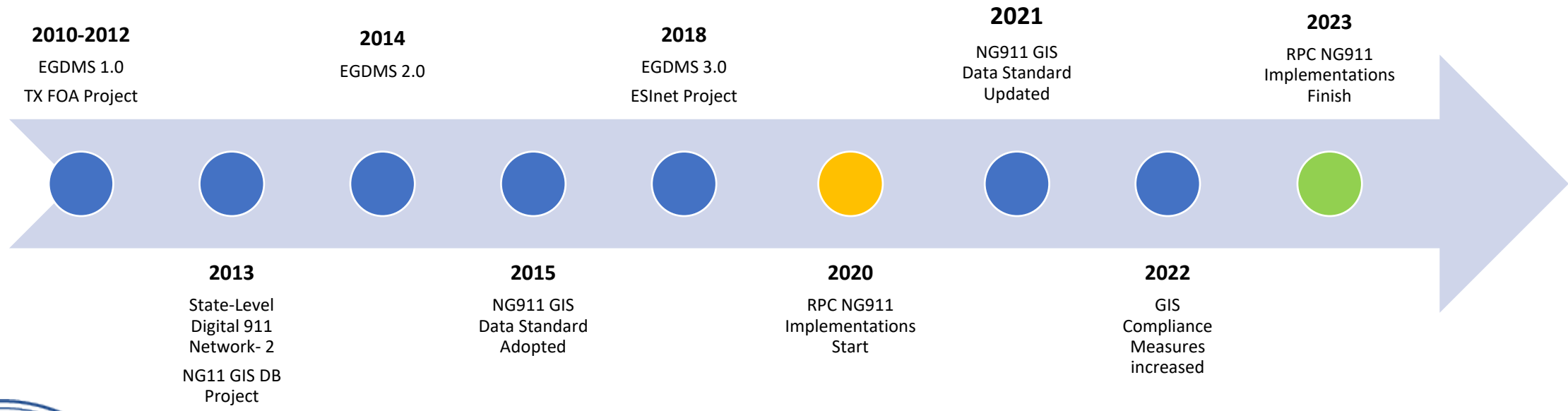
The legacy E9-1-1 system is no longer able to support modern communication technology needs and 9-1-1 Entities across the state are replacing the current 9-1-1 infrastructure with NG9-1-1 systems and services.

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.

Where We're Coming From



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)

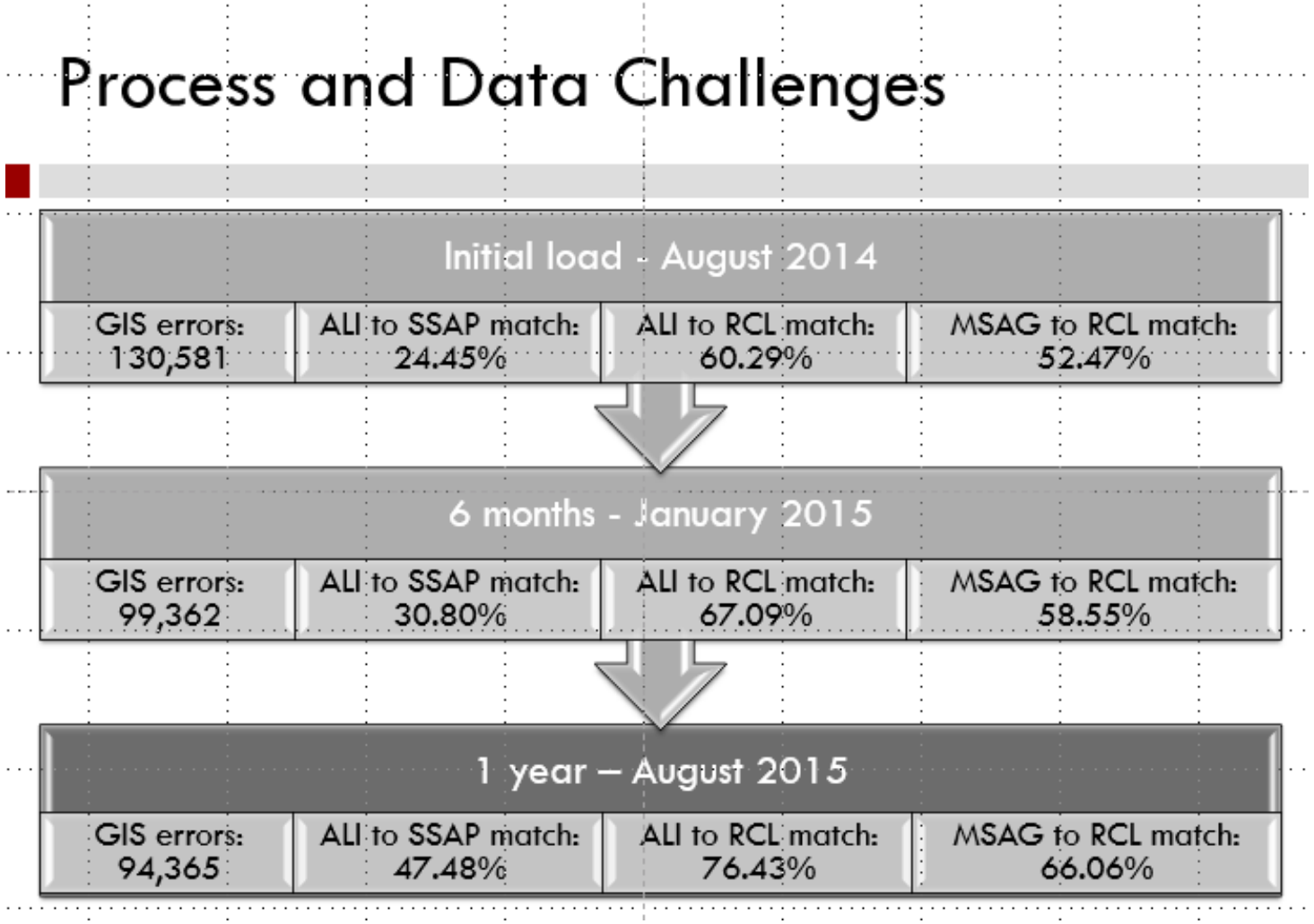
- RPC's 9-1-1 GIS data did not meet the NG911 GIS data quality criteria or standards.
- A Roadmap to improve the quality of RPC's 9-1-1 GIS data for NG9-1-1 was needed, including NG9-1-1 GIS Data Standards/Best Practices
- RPCs would require time to improve their 9-1-1 GIS data

2016 – 2020

(EGDMS 3.0 & ESInet Project)

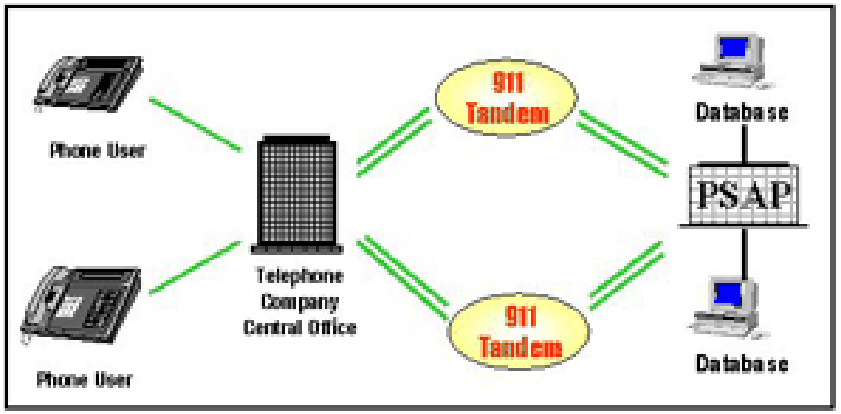
- Improvements to GIS data workflows were needed to achieve near real time updates to NG9-1-1 systems and enhanced metric reporting to measure GIS data quality.
- NG9-1-1 GIS data quality criteria established

What We've Learned



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

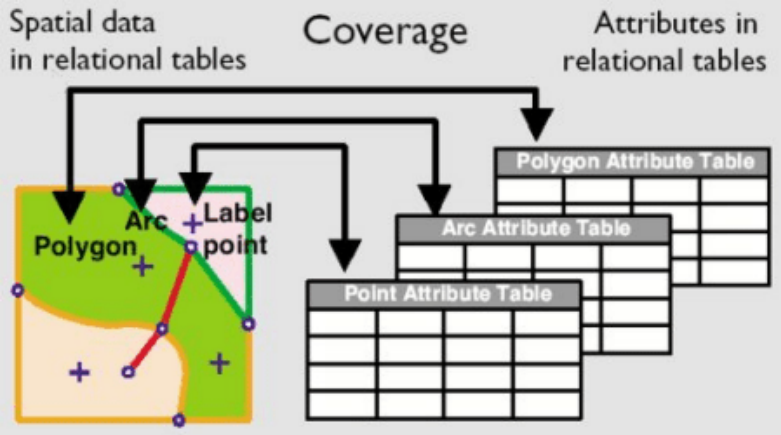
Telephone Company
Service Orders



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

NG9-1-1 Data & Call Routing

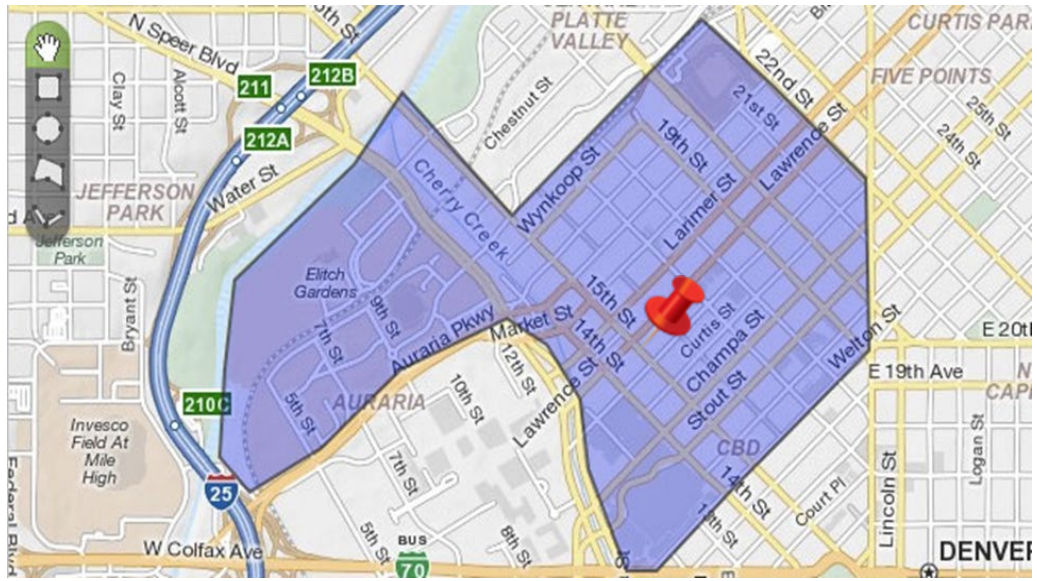


NG9-1-1 Geospatial Data

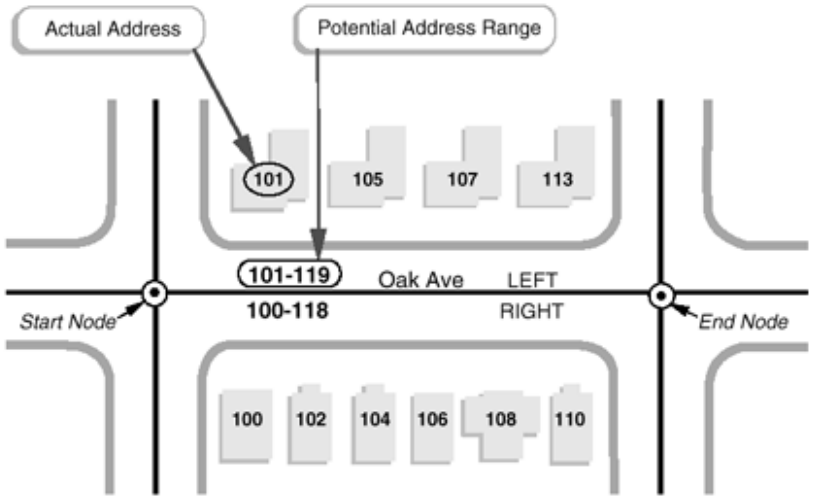
- Road centerlines
- Site structure address points
- PSAP service polygon
- Fire response agency polygon
- Law response agency polygon
- EMS response agency polygon

Location to Service Translation (LoST) Protocol determines route

Concept: point in polygon



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

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

Standards and Best Practices

- GIS data standard
- GIS data collection & maintenance

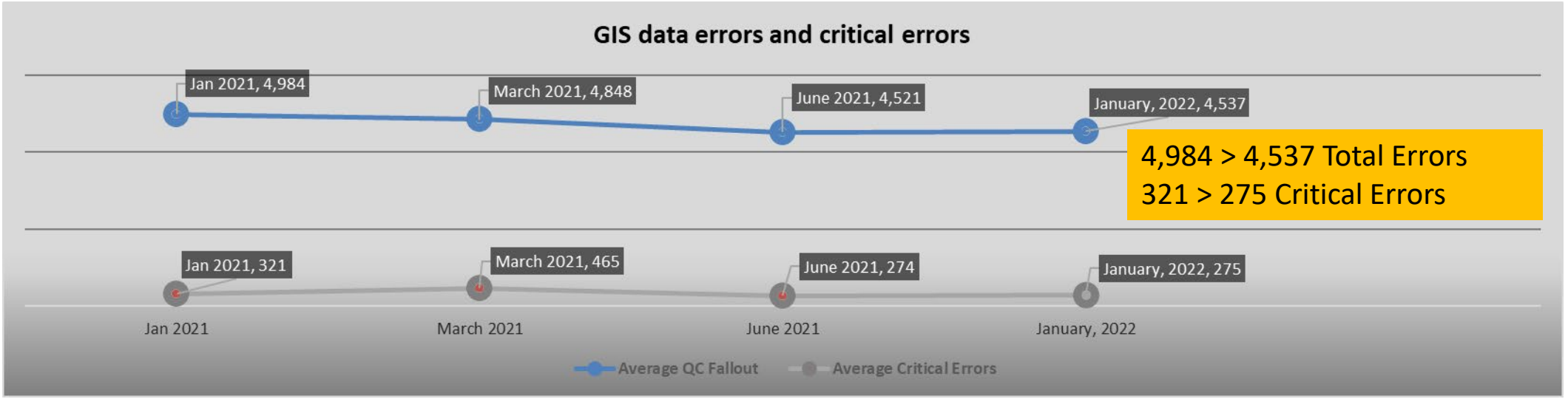
State-level GIS Data Management Processes

- 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

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 ESInet
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
Stage 4: Production & Deployment	Alamo Area Council of Governments	AT&T	182
	Ark-Tex Council of Governments	AT&T	
	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

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