

NG9-1-1 GIS Data Gap Analysis & Remediation Project

*Region 5 Kickoff Meeting
Holton, KS
July 9th, 2014*

Housekeeping

Introductions

Purpose of this meeting

Agenda

- Overview of GIS Project – Ken Nelson
- Status Update of Gap Analysis and QA Audit Projects (A&C) – Jessica Frye
- Master Street Address Guides – Mark Whelan
- Kansas GIS Data Standard – Sherry Massey

Project Vision

- Develop a GIS database that meets the following criteria:
 - **Statewide**...covering every county & PSAP
 - **Consistent**...common set of data layers, data model, & implementation procedures (address points, road centerline, emergency service boundaries)
 - **Current**...regularly maintained
 - **Authoritative**...accurate & reliable
 - **Standardized**...Meets applicable Kansas & National Emergency Number Association (NENA) Next Generation 9-1-1 GIS Standards, Data Models, & Implementation Guidelines

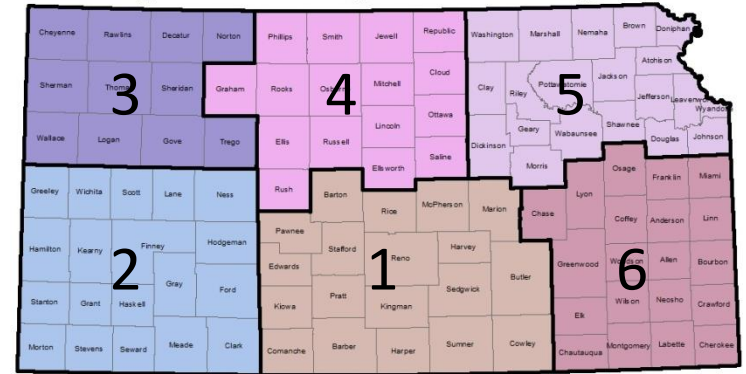
Statewide Gap Analysis & Remediation - RFP Process

- Purpose:
 - To provide a consistent and systematic review and remediation of GIS data used to support NG9-1-1 implementation. Establish and maintain *authoritative* data.
- Dates:
 - Posted - August 23, 2013
 - Closed - October 9, 2013
 - Awarded – December, 2013
 - Project Kick-off Meeting with Alexander Open Systems (AOS) on December 27, 2013
- Procurement Negotiation Committee (PNC) & RFP Advisory Committee established to review proposals

Statewide Gap Analysis & Remediation – RFP Details

- Project broken into three (3) phases:

- Gap Analysis (Project A)
- GIS Data Remediation (Project B)
- GIS Data QA Testing (Project C)



- Rules:

- Bidders could be awarded *Project's A & C* or *Project B*, but not both.
- Project A must include review of a minimum of 25% of the data. Project C must review 100% of the data.

Gap Analysis

Statewide GIS Data Gap Analysis (Project A) - evaluate existing local data to determine fitness for use and alignment with emerging NG-911 standards:

- State subdivided into 6 regions
- Gap analysis conducted by AOS, produce standardized “error” reports (XLS & GIS)
- Estimated completion timeline for all six (6) regions - July, 2014
- Jessica (AOS) will provide more detail later

Remediation

Statewide GIS Data Remediation (Project B) –
remediate all “errors” identified gap analysis:

- Approved remediation vendors include (alpha order):
 - ATCi
 - GDR
 - GeoComm
 - Kimble Mapping
 - R&S Digital
- Remediation vendors had to submit proposals under the original RFP process to be eligible for Project B contracts

Quality Assurance

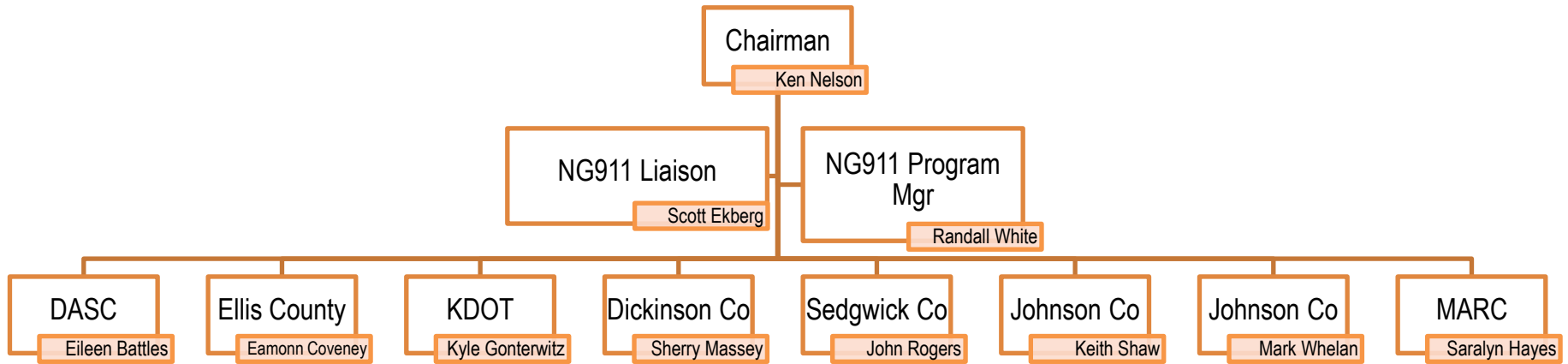
Statewide GIS Data Quality Assurance (Project C) - QA testing of remediated data:

- Ensure all items in gap analysis report were addressed & data meets applicable standard(s)
- Analysis conducted by AOS

GIS Subcommittee's Role

GIS Sub-Committee of Technical Committee: Comprised of Council members and external GIS subject matter experts; tasked with recommending GIS data standards and protocols for use by PSAPs, telecommunications carriers, and GIS service providers; oversees RFI and RFP's issued on behalf of the Council and recommends selection of vendors and services; provides oversight of GIS service contracts approved by the Council and coordinates work of GIS providers with PSAPs and other NG911 system stakeholders; coordinates state level NG911 database administration with database administrator and NG911 stakeholders.

NG9-1-1 GIS Sub-committee



GIS Subcommittee Activities

- Work with selected vendors on the GIS Data Gap Analysis & Remediation Project (Projects A, B, & C)
- Document business needs and RFP specifications for statewide imagery procurement
- Develop *Kansas NG9-1-1 GIS Data Model* to support Project B remediation activities and ongoing maintenance activities
- Develop and recommend aggregation & maintenance strategies for statewide master repository

GIS Subcommittee Activities - ctd

- Coordinate with technical committee and others to develop a training program to support the operation and maintenance of the NG9-1-1 GIS components
- Develop GIS-related portions of the 911 Council's *Governance Policy*



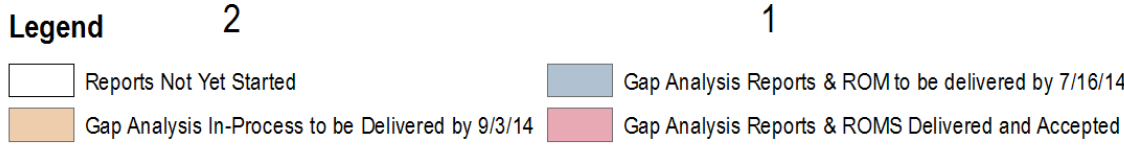
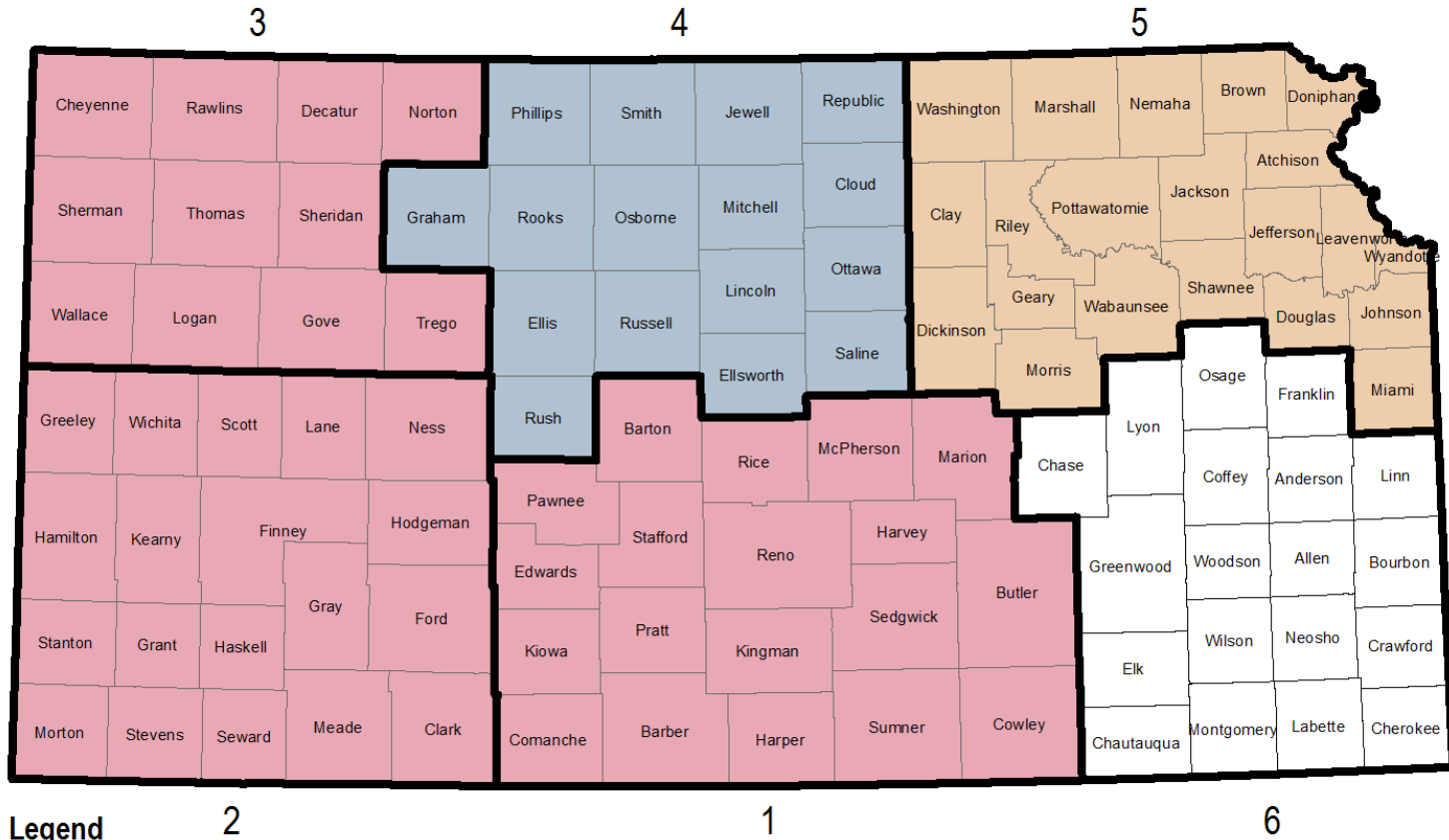
Kansas NG911 GIS Project

Regions 5 Gap Analysis Update

7/9/2014

Kansas NG9-1-1 GIS Project - GA Report Status

Date: 7/8/2014



Region 5

- Outstanding GIS Data – Pottawatomie Co
- Outstanding CAMA Data – Brown, Doniphan, Johnson, Miami
- Data Process Status
 - CAMA : 7 of 17 (41%)
 - MSAG: 10 of 21 (48%)
 - TN: 16 of 21 (76%)
 - GIS Data: 17 of 21 (81%)
- Reports – 10% complete
- Reports complete by and delivered to 911 Council by 9/3/14

Gap Analysis Report Explanation

Example County	County GIS Data Layer	NENA GIS Data Layer	Num of Errors
Duplicate Features	county	County Boundary	0
	cities	Municipal Boundary	0
	addresses	Site / Structure Layer	0
	roads	Street Centerline	2
Overlaps	county	County Boundary	0
	cities	Municipal Boundary	0
	roads	Street Centerline	25
Gaps	county	County Boundary	0
	cities	Municipal Boundary	0
	roads	Street Centerline	11
Overhangs	roads	Street Centerline	41
Road Directionality Inconsistency	roads	Street Centerline	54
Split at Intersection	roads	Street Centerline	10
	county	County Boundary	54
	cities	Municipal Boundary	110
Incorrect ESN			N/A
ESN Boundary Misalignment			N/A
Road Name Inconsistency	roads	Street Centerline	73

Gap Analysis Report Explanation

MSAG Errors	Roads No Matching MSAG	162
	MSAG Range	120
	MSAG No Matching Road	115
TNALI Synchronization Errors	Total Geocodable TNs	3944
	No Match (0%)	1693
	>= 90%	111
	90% - 99%	14
	100%	2126
Missing NENA GIS Data Layers	Authoritative (PSAP) Boundary	8
	Cell Site Coverage	
	Cell Site Location	
	Emergency Service Agency Boundary - EMS	
	Emergency Service Agency Boundary - Fire	
	Emergency Service Agency Boundary - Law	
	Emergency Service Agency Location	
	Emergency Service Zone Boundary	

Gap Analysis Report Explanation

Non-NENA Fields	county	Courty Boundary	2
	Extracted from roads	Road Name Alias	55
	rrs	Railroad Centerlines	18
	cities	Municipal Boundary	2
	addresses	Site / Structure Layer	44
	roads	Street Centerline	40
Missing NENA Fields	county	Courty Boundary	6
	Extracted from roads	Road Name Alias	10
	rrs	Railroad Centerlines	5
	cities	Municipal Boundary	9
	addresses	Site / Structure Layer	26
	roads	Street Centerline	28
Field Types	See tab "Jurisdiction vs Nena Fields" for details		
Field Lengths	See tab "Jurisdiction vs Nena Fields" for details		
Address Point Geocode	Total Address Points		5070
	0%		709
	≥ 90%		619
	90% - 99%		689
	100%		3053

Gap Analysis Report Explanation

CAMA Comparison	Total Geocodable CAMA Records		8026
	0%		3370
	>= 90%		4
	90% - 99%		28
	100%		4624
Multi-Address Structure Format	addresses	Site / Structure Layer	Single Point
USPS Abbreviation Standardization	addresses	Site / Structure Layer	0
	roads	Street Centerline	1
Pre-Directional Errors	addresses	Site / Structure Layer	0
	roads	Street Centerline	0
Post-Directional Errors	addresses	Site / Structure Layer	0
	roads	Street Centerline	0
Projection	All Layers: NAD_1983_UTM_Zone_14N		
Metadata	Stored in separate Metadata folder		

Gap Analysis Reports

Explanation - Tabs

- Data Crosswalk
- Notes
- CAMA
- Jurisdiction vs NENA Fields
- Duplicate Features
- Overlapping Features
- Gaps
- Overhangs
- Road Directionality Inconsistency
- Splits at Intersections
- Correct ESN
- ESN Boundary Misalignment
- Road Name Inconsistences
- MSAG Synchronization Errors
- Tele-ALI Synchronization Errors
- % Geocoded Features
- Multi-Address Structure Format
- UPSP Abbreviation
- Pre-Directional Errors
- Post-Directional Errors
- Projection Type Listing
- Metadata Requirements

QA Audit

- Slightly different than the Gap Analysis due to changes in the new Kansas standard.
- AOS will strive to return the QA Audit within five (5) business day, however this will be highly dependent on the number received at once. Priority will be given in regional order.

QA Audit – Audit Items

- Geodatabase Format
- Geometry
- Topology
- Duplicates
- Overlaps
- Overhangs
- Orphans
- Boundary Alignment
- Splits at Intersections
- Road Directionality
- Road Name Consistency
- Geocode of Address Points to Roads
- Multi-Structures
- Points on Structures
- New Road Segments
- Mandatory Fields (contain values)
- Domain Validation
- Unique ID Validation
- Road Alias ID to Road Centerline ID
- ESN Values
- Projection
- FGDC Mandatory Metadata Field

9-1-1 Database Work

MSAG and Map Clean-Up Projects

Master Street Address Guide (MSAG)

- The MSAG is a tabular listing of all streets with the low and high address ranges that fall within a specified community and a unique ESN (emergency service number)
- Used for 9-1-1 database verification

MSAG Responsibility

- Streets and addresses belong to each local government, it is the responsibility of that jurisdiction to ensure information is correct with phone companies that provide service in your area.
- Each jurisdiction should have a dedicated person to help with addressing/mapping questions. This person is referred to as the “MSAG Coordinator”.
- In some cases, authorization is given for an MSAG Coordinator to cover multiple jurisdictions.

Creation of the 9-1-1 Database

- All customer records are loaded to the master 9-1-1 database by each phone company
- Each telephone company still maintains own database for internal purposes (911, directory, billing, service, etc.)
- Records must “FIT” the MSAG
 - (point of validation)



National Standards for Addressing

Standards are in place for addressing. When using street directional and type (suffix) is important to follow standards.

Helpful documents:

NENA- Synchronizing GIS with MSAG & ALI- 71-501 v1

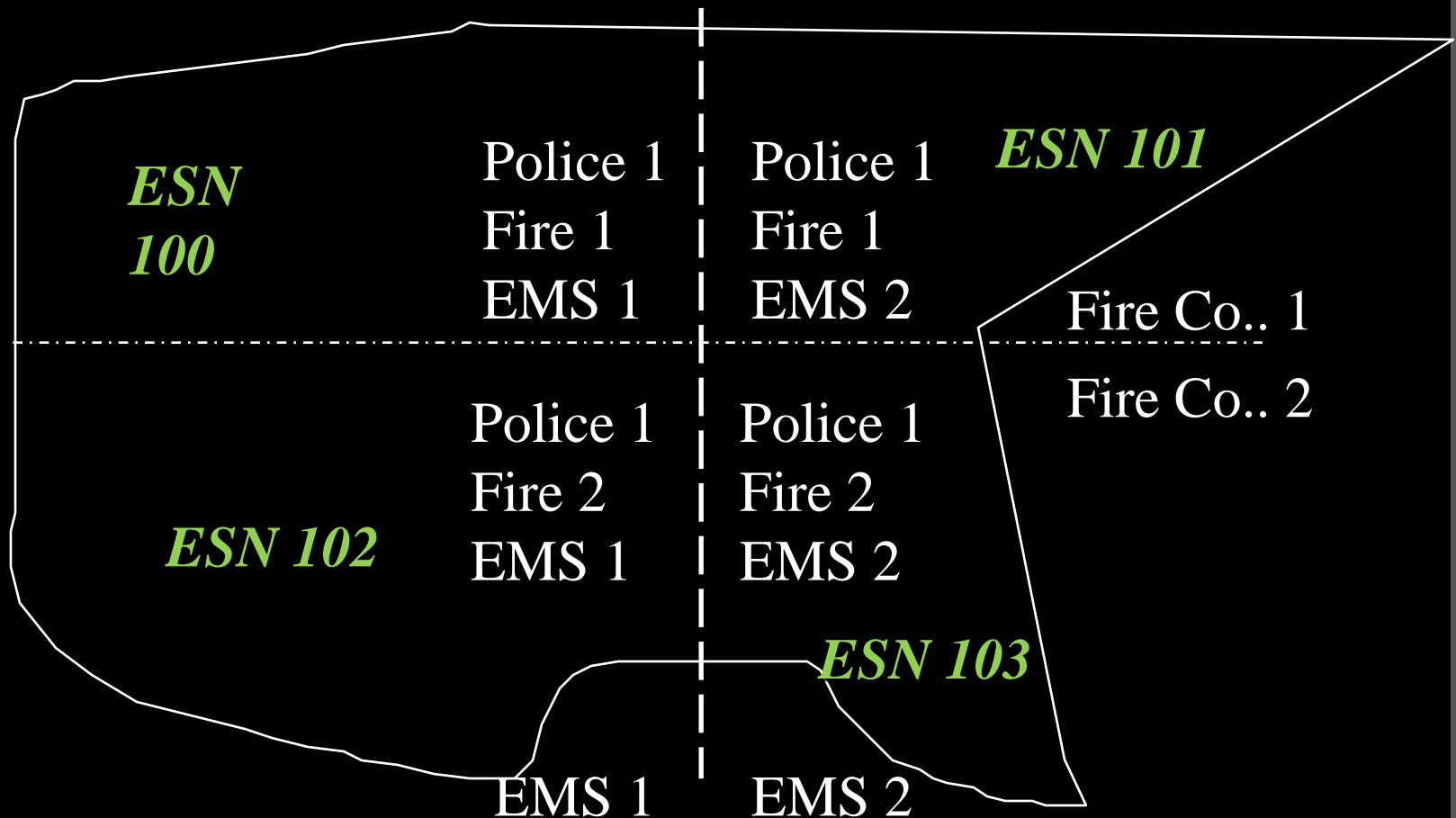
https://www.nena.org/?page=synch_gis_msag_ali

USPS- Addressing Guidelines

<http://pe.usps.gov/cpim/ftp/pubs/Pub28/pub28.pdf>

Creating the MSAG

City PD covers entire city



Sample MSAG

STREET	LOW RANGE	HIGH RANGE	ODD/EVEN	COMMUNITY	ESN	EXCHANGE
N 1ST STREET CT	1600	1873	B	BLUE SPRINGS	5	BLS
E 2TH ST	1705	3099	B	BLUE SPRINGS	5	BLS
E 4TH ST	100	199	B	BLUE SPRINGS	3	BLS
E 40 HWY	22600	23609	B	BLUE SPRINGS	5	BLS
E 40 HWY	23611	24399	B	BLUE SPRINGS	5	BLS
E 40 HWY	26000	29999	B	BLUE SPRINGS	5	BLS
E 40 HWY	29405	29405	O	BLUE SPRINGS	5	GRV
E AA HWY	100	1245	B	BLUE SPRINGS	5	BLS
E NEW 40 HWY	22401	25999	O	BLUE SPRINGS	5	BLS
E PINK HILL RD	104	649	B	BLUE SPRINGS	5	BLS
E SOUTH AVE	200	499	B	BLUE SPRINGS	5	BLS
E WALNUT ST	100	126	E	BLUE SPRINGS	5	BLS
RD MIZE RD	1100	1174	B	BLUE SPRINGS	5	BLS
MAIN ST	1744	1766	B	BLUE SPRINGS	5	BLS
NE ADAMS DAIRY PKWY	701	701	B	BLUE SPRINGS	5	BLS
N 1ST STREET CT	100	535	B	BLUE SPRINGS	3	BLS
NE BAY CT	206	376	B	BLUE SPRINGS	5	BLS
NE KNOX PL	1000	1099	B	BLUE SPRINGS	5	BLS



9-1-1 Community is the jurisdiction- within a city or unincorporated county

ALI Delivery

Deliver Customer Record Plus the Agency File:

Customer: 816-555-1234 (time) (date)

JOHN Q. PUBLIC

600 BROADWAY

KANSAS CITY MO

TELCO ATT

Agency: KC MO PD ESN 015

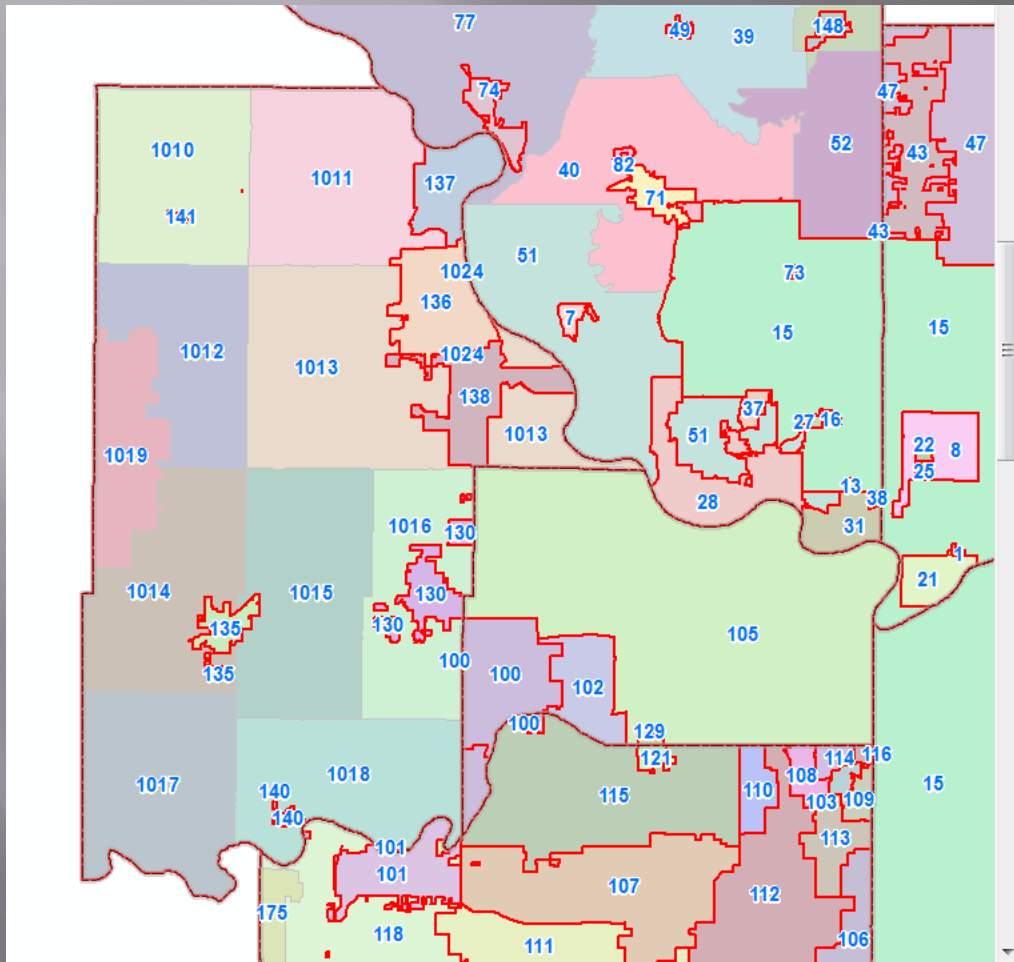
KC MO FD

KC MO EMS

ESN Breakdown

ESN	COMMUNITY	PSAP	LAW ENFORCEMENT	FIRE	EMS
1	AVONDALE	N KC PD	CLAY COUNTY SHERIFF	AVONDALE FD	KC MO EMS
2	BIRMINGHAM	CLAY COUNTY SHERIFF	BIRMINGHAM PD	CLAYCOMO FD	CLAYCOMO EMS
3	BLUE SPRINGS	BLUE SPRINGS PD	BLUE SPRINGS PD	PRAIRIE TOWNSHIP FIRE	PRAIRIE TOWNSHIP FIRE
4	BELTON	BELTON PD	BELTON PD	BELTON FD	BELTON FD
5	BLUE SPRINGS	BLUE SPRINGS PD	BLUE SPRINGS PD	CENTRAL JACKSON CO FD	CENTRAL JACKSON CO FD
6	CLAYCOMO	CLAY COUNTY SHERIFF	CLAYCOMO PD	CLAYCOMO FD	CLAYCOMO FD
7	FARLEY	PLATTE COUNTY SHERIFF	PLATTE COUNTY SHERIFF	SO PLATTE CO FD	MAST
8	GLADSTONE	GLADSTONE PD	GLADSTONE PD	GLADSTONE FD	GLADSTONE FD
9	GLENAIRE	CLAY COUNTY SHERIFF	CLAY COUNTY SHERIFF	PLEASANT VALLEY FD	LIBERTY EMS
10	GRANDVIEW	GRANDVIEW PD	GRANDVIEW PD	GRANDVIEW FD	GRANDVIEW FD

Emergency Service Number Map Layer



ESN is the unique set of law enforcement, fire and EMS response based on 911 community (city or unincorporated county) and PSAP.

When to submit MSAG/GIS changes

Examples of changes:

- New construction
- Changes to street names, directional, type
- Extending or reducing street ranges
- New political boundaries
- Adjustments to emergency services response areas

How to submit MSAG/GIS changes

MSAG changes may be made:

- Through a secure site online with your database provider
- Mass changes using a spreadsheet

Example of MSAG to GIS errors

Table

STREET	FROMLEFT	TOLEFT	FROMRIGHT	TORIGHT	CO_STREET	ESN_LT	ESN_RT	CITY_LT	CITY_RT
W 43 ST	0	0	0	0	W 43RD ST	115	115	64500	
W 43 ST	21101	23099	21100	23098	W 43RD ST	115	115	64500	
W 43 ST	23101	23799	23100	23798	W 43RD ST	115	115	64500	
W 43 ST	23801	24049	23800	24048	W 43RD ST	115	100	64500	
W 43 ST	24051	24699	24050	24698	W 43RD ST	115	115	64500	
W 43 ST	24701	25099	24700	25098	W 43RD ST	115	115	64500	
W 43 ST	25101	25355	25100	25240	W 43RD ST	115	115	64500	

MSAG Record

Pre-Dir Street: W 43RD ST St. Sfx. Post-Dir

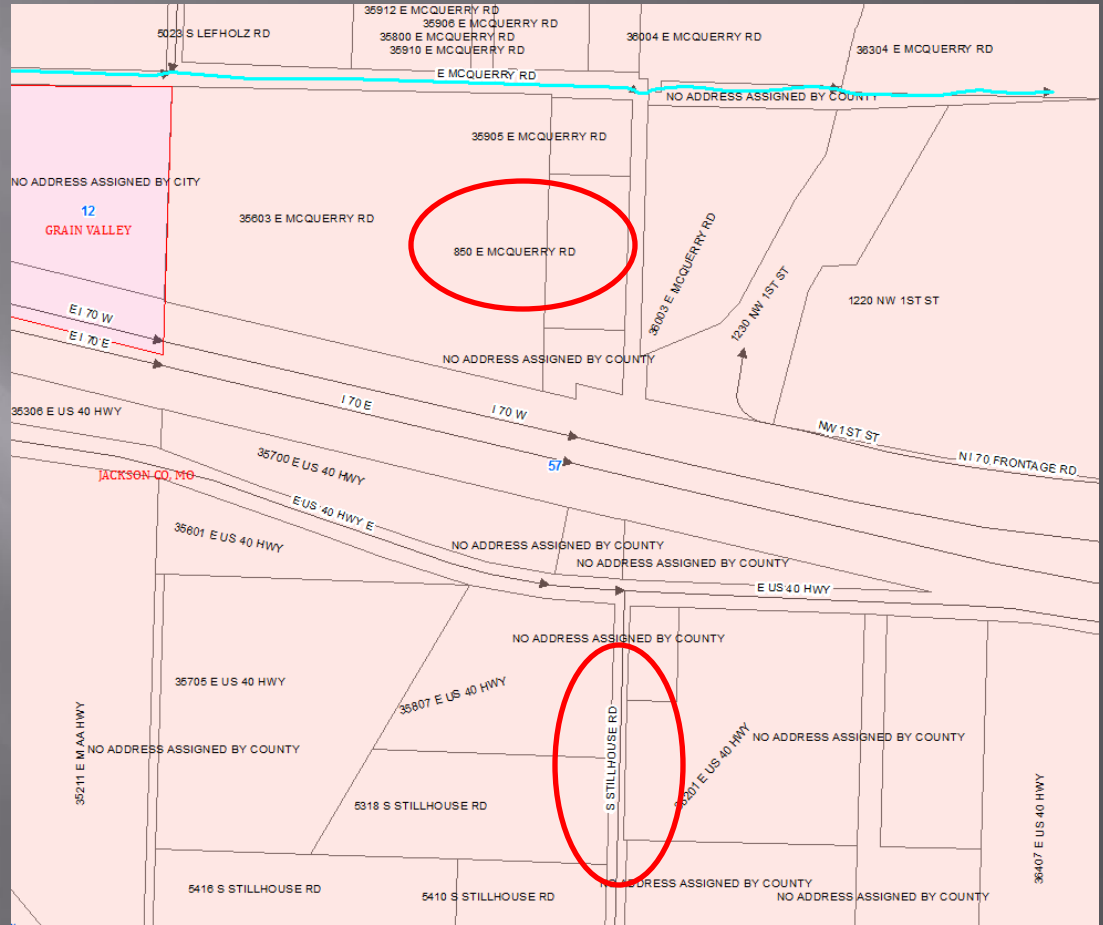
Community: BONNER SPRINGS County: 091 State: KS

TN Comment: MSAG Comment: CHG COUNTY CODE FROM 209 PER MARIA/EHL

O/E/B	Lo House #	Hi House #	ESN	Exchg.
B	21900	24000	100	BON

ESN does not match in MSAG and Map data

Example of MSAG to GIS errors



MSAG Record

Pre-Dir Street	St. Sfx.	Post-Dir		
N STILLHOUSE RD				
Community	County	State		
JACKSON COUNTY	095	MO		
TN Comment	MSAG Comment			
	ADD COUNTY CODE PER SARALYN/MARC			
O/E/B	Lo House #	Hi House #	ESN	Exchg.
B	850	850	57	OKGV

Addresses being used:
 850 N Stillhouse Rd
 850 S Stillhouse Rd
 850 E McQuerry Rd

Home is not assessable from Stillhouse Rd.

Example of MSAG to GIS errors

STREET	COMMUNITY	ESN
406 N CONCORD CIR	INDEPENDENCE	14
508 N CONCORD CIR	INDEPENDENCE	14
703 N CONCORD CIR	INDEPENDENCE	14
802 N CONCORD CIR	INDEPENDENCE	14
805 N CONCORD CIR	INDEPENDENCE	14
806 N CONCORD CIR	INDEPENDENCE	14
1108 N CONCORD CIR	INDEPENDENCE	14
1109 N CONCORD CIR	INDEPENDENCE	14
1501 N CONCORD CIR	INDEPENDENCE	14
1903 N CONCORD CIR	INDEPENDENCE	14
2204 N CONCORD CIR	INDEPENDENCE	14
2403 N CONCORD CIR	INDEPENDENCE	14
2502 N CONCORD CIR	INDEPENDENCE	14



All records in apartment complex errored because of duplicate line segments in map.

MSAG Record

Pre-Dir Street: N CONCORD CIR, St. Sfx., Post-Dir

Community: INDEPENDENCE, County: 095, State: MO

TN Comment: MSAG Comment: ADD COUNTY CODE PER SARALYN/MARC

O/E/B	Lo House #	Hi House #	ESN	Exchg.
B	101	2707	14	IND

Related TN(s)

[Related MSAG CR\(s\)](#)

Phone Company Contacts

AT&T:

Database Manager Jennifer Knight jv2339@att.com

For access to website, contact e911southwest@att.com

CenturyLink:

Database Manager Missy Greer, Missy.Greer@centurylink.com

For access to website, contact cs-centurylink-911@centurylink.com

NG911 contact Michelle Lewis, Michelle.A.Lewis@CenturyLink.com

AT&T secure site

This site works well for submitting a few changes or mass (common) changes

Change desired MSAG fields and click the Submit button.
(* Indicates a required field.)

Current MSAG Record

Pre-Dir	Street	St. Sfx.	Post-Dir
<input type="text"/>	ADAMS ST	<input type="text"/>	<input type="text"/>
Community	<input type="text"/>	County	State
KANSAS CITY	<input type="text"/>	209	KS
TN Comment	MSAG Comment		
<input type="text"/>	ADD COUNTY CODE PER SARALYN/MARC		

O/E/B	Lo House #	Hi House #	ESN	Exchg.
B	500	799	105	KCK

Related TN(s) records found.

[Related MSAG\(s\)](#)

[Related MSAG CR\(s\)](#)

MSAG Record Change

1 *Select the type of change you wish to make.

2

Pre-Dir	*Street	St. Sfx.	Post-Dir
<input type="text"/>	ADAMS ST	<input type="text"/>	<input type="text"/>
*Community	<input type="text"/>	County	*State
KANSAS CITY	<input type="text"/>	209	KS
TN Comment	MSAG Comment		
<input type="text"/>	ADD COUNTY CODE PER SARALYN/MARC		

*O/E/B	Lo House #	Hi House #	*ESN	Exchg.
B	500	799	105	KCK



A log-in and password must be obtained by your database provider to use the site

Mass changes using Excel

When numerous changes are needed, a spreadsheet may be more efficient.

DIR	STREET	LOW	HIGH	O/E/B	COMMUNITY	ESN	EXCH	COMMENTS
NE	BURGANDY CT	1200 1217	1499 1321	B	LEE'S SUMMIT	19	LSM	CHANGE LOW & HIGH
NE	IVORY LN	1600	1599 1649	B	LEE'S SUMMIT	19	LSM	INCREASE HIGH
NE	JADE CT DR	1525	1699 1627	B	LEE'S SUMMIT	19	LSM	CORRECT STREET TYPE & HIGH
NE	VALLEY FORGE DR	920	1499 1427	B	LEE'S SUMMIT	19	LSM	INCREASE HIGH
NE	WOODS CHAPEL RD	1500	1899 2099	B	LEE'S SUMMIT	19	IND	INCREASE HIGH
SW	REGENCY DR	2545 2543	2625	B	LEE'S SUMMIT	19	LSM	CHANGE LOW
SW	CLARK RD	1506	1608	E	BLUE SPRINGS JACKSON COUNTY	5 55	BLS	CHANGE COMMUNITY, AND ESN
SW	CLARK RD	1604 1609	1609	O	JACKSON COUNTY BLUE SPRINGS	55 5	BLS	CHANGE COMMUNITY, ESN, AND RANGE



When submitting changes, it's important to be consistent and clear. Be sure to verify any changes you request once the phone company advises the work is complete.

9-1-1 Error Reports

MSAG clean up is important but so are accurate customer records.

ANI/ALI errors should be reported to the 9-1-1 database provider any time there is a problem recognized by call takers.

Examples of problems:

- Record Not Found
- Incorrect address
- Incorrect ESN or community name
- Call misrouted to wrong agency
- Incorrect phone number

Changes with NG 9-1-1

- MSAG & Map data will merge into one file
- Will still need to maintain a list of valid addresses and streets for each jurisdiction
- Emergency response areas
- Your data must be in sync for the databases to merge

9-1-1 Data: we must all work together

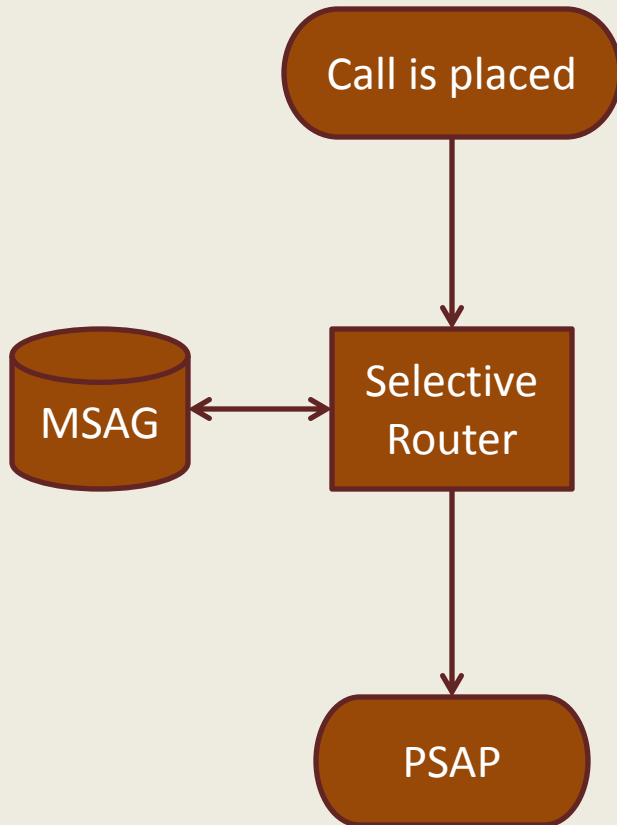


Kansas NG9-1-1 GIS Data Model

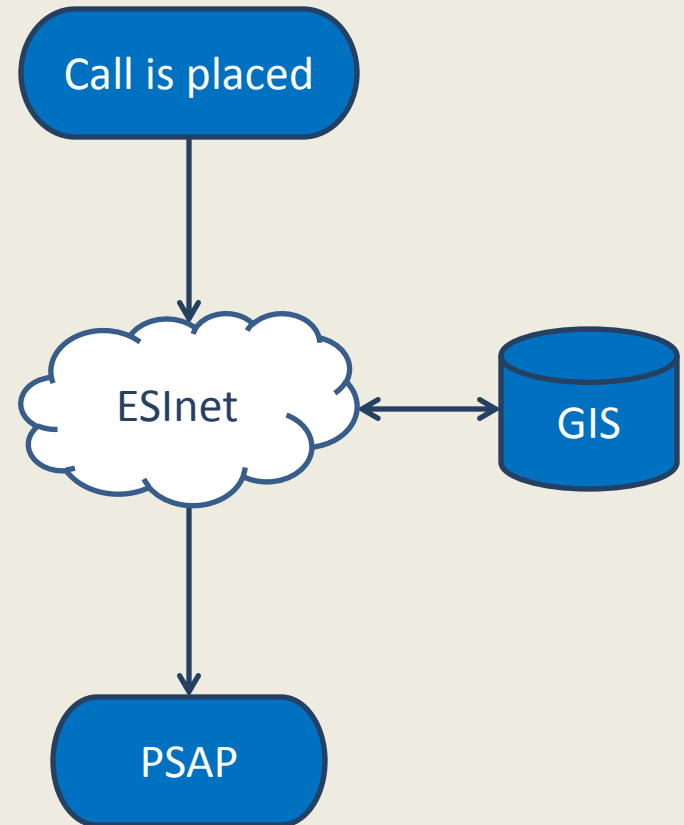
Model Standards and Data
Remediation Workshop

NG9-1-1 Primer

E9-1-1



NG9-1-1



What's Driving NG9-1-1

- **Newer Technologies/Services**

- Text, Image, Video, Telematics, Sensors, Subscriber Info

- **Improve Survivability**

- Network Resilience, Virtual PSAPs

- **Improve Interoperability and Information Sharing**

- **Need to “Mainstream” 9-1-1 Technology**

How NG9-1-1 is Different

- **Technology:**

- Packet Based vs Circuit Switched

- **Functions:**

- Replicates E9-1-1 capabilities

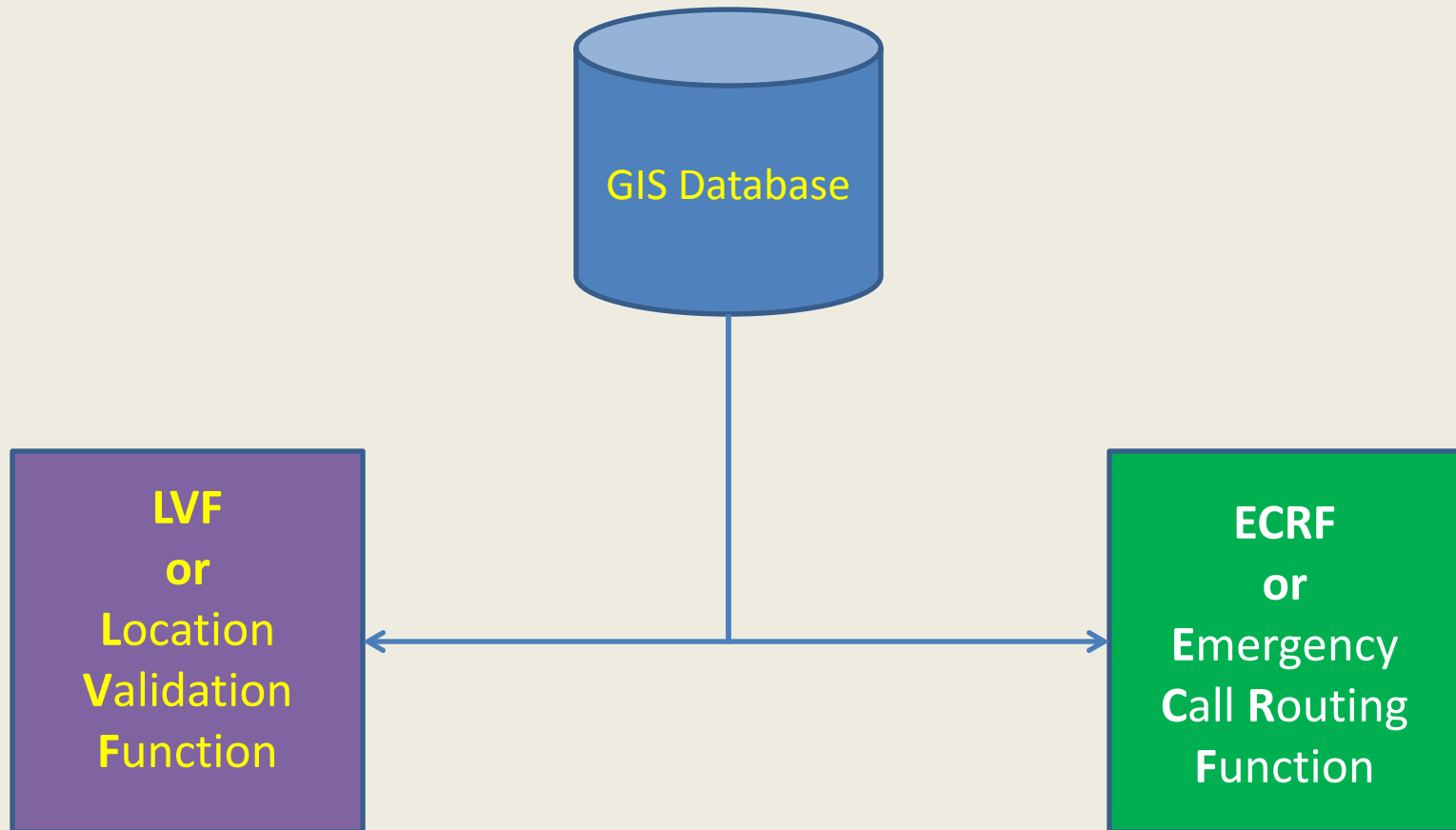
- Adds new capabilities

- GIS vs Tabular MSAG

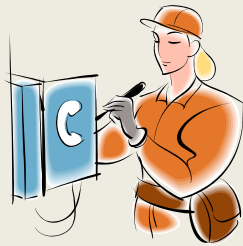
- **No longer a 'local' service:**

- Interoperability at county, region, state and national levels

The Role of GIS in NG9-1-1



GIS and the LVF

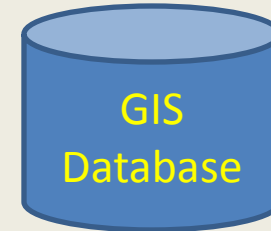


The Service Provider has an address to check...

...before installing a land line

...before accepting a VOIP location

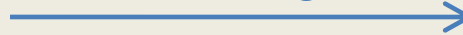
...while testing existing records to be sure they are still good



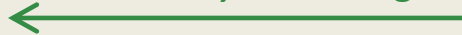
Constantly updating the LVF*



Is this address good?



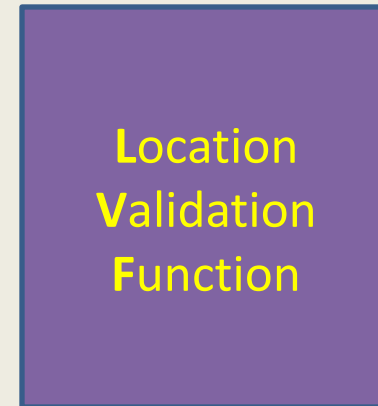
Yes. Do your thing.



Or



No! Stop! Fix it!

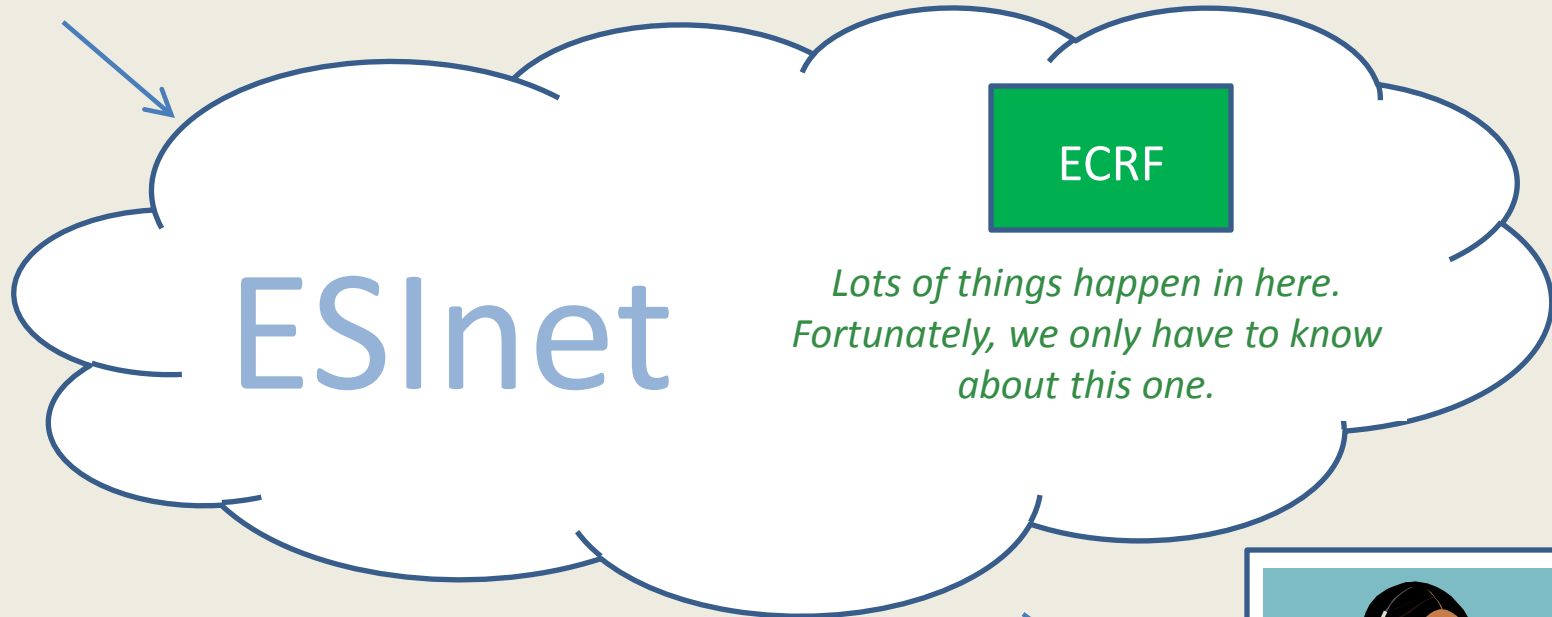


** This is also called "provisioning through the SIF"*

A Next-Gen 9-1-1 Call



Someone dials 911



*Lots of things happen in here.
Fortunately, we only have to know
about this one.*



PSAP

GIS and the ECRF



Constantly updating the ECRF*

Emergency Call Routing Function has two jobs

Call comes in



Job 1

Route the call to the right PSAP

Job 2

Determine additional call information

NENA has lots of cool ideas for what this information will be, but all of it depends the call location successfully resolving against the GIS data

* This is also called "provisioning through the SIF"

The ability to route emergency calls will depend on standardized GIS data that is both current and accurate

Kansas NG9-1-1 GIS Data Model

Document Conventions

- Requirements vs. Recommendations
 - “Shall” and “Must”
 - “Recommended” and “Preferred”
- Data stewards = Whomever is responsible for maintaining the data
- Data aggregation and the data aggregator

Authoritative Data Only

All features submitted by the data steward must be inside their authoritative boundary polygon(s)

General Attribute Standards

- The attribute type must match with the type in the standard
 - A = Alphanumeric = Text field
 - D = Date and time = Date field
 - N = Numeric = Integer field
 - ND = Numeric, Decimal = Decimal field
- Every attribute is listed as Mandatory, Conditional or Optional

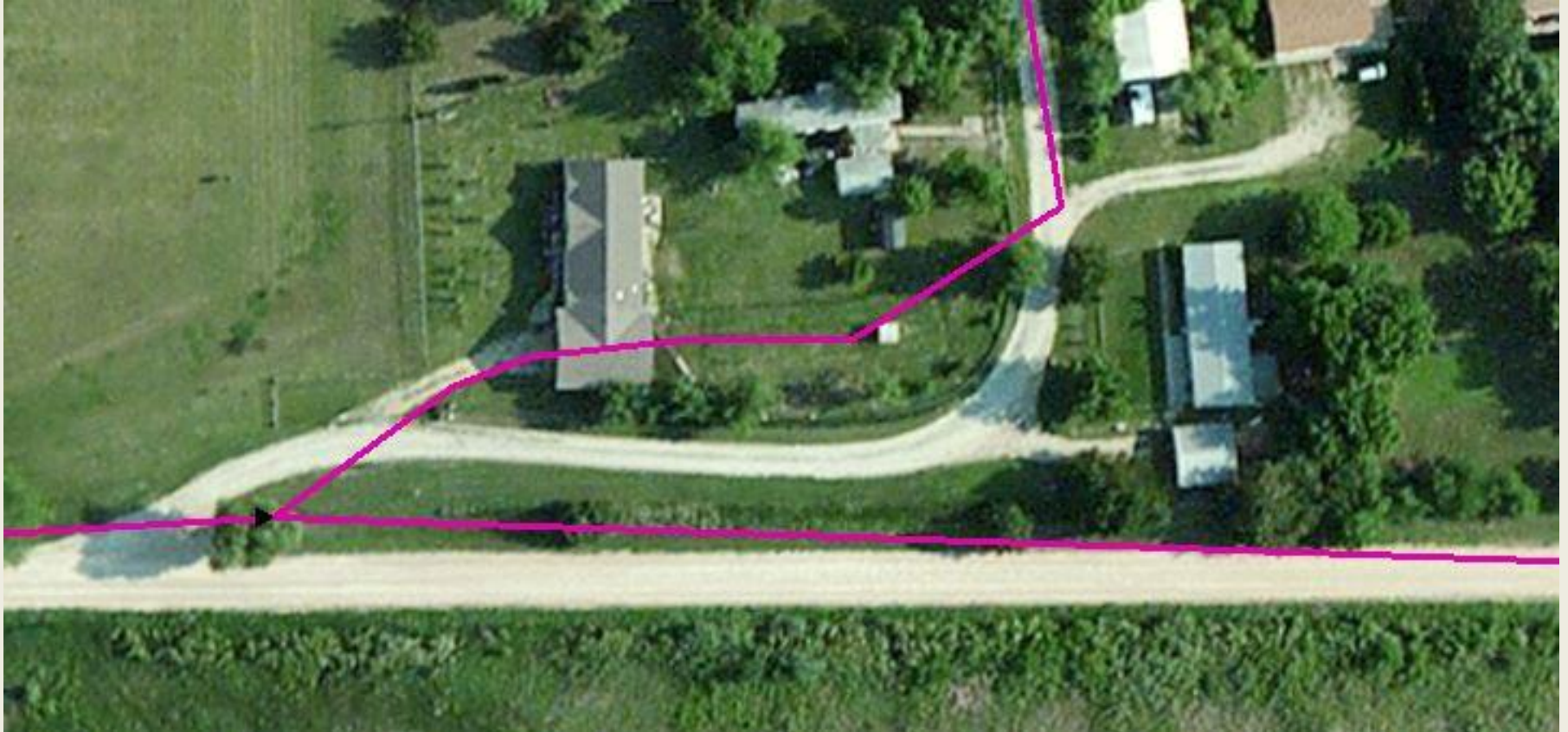
General Attribute Standards, cont.

- Everything in the table must be there, and the fields should be in the same order
- If field names are different than in the standard, metadata must show how the fields map to the standard
- Every record must have a persistent unique identifier within the local data (not the ObjectID)
- If there is a domain, it represents the only valid values for the attribute

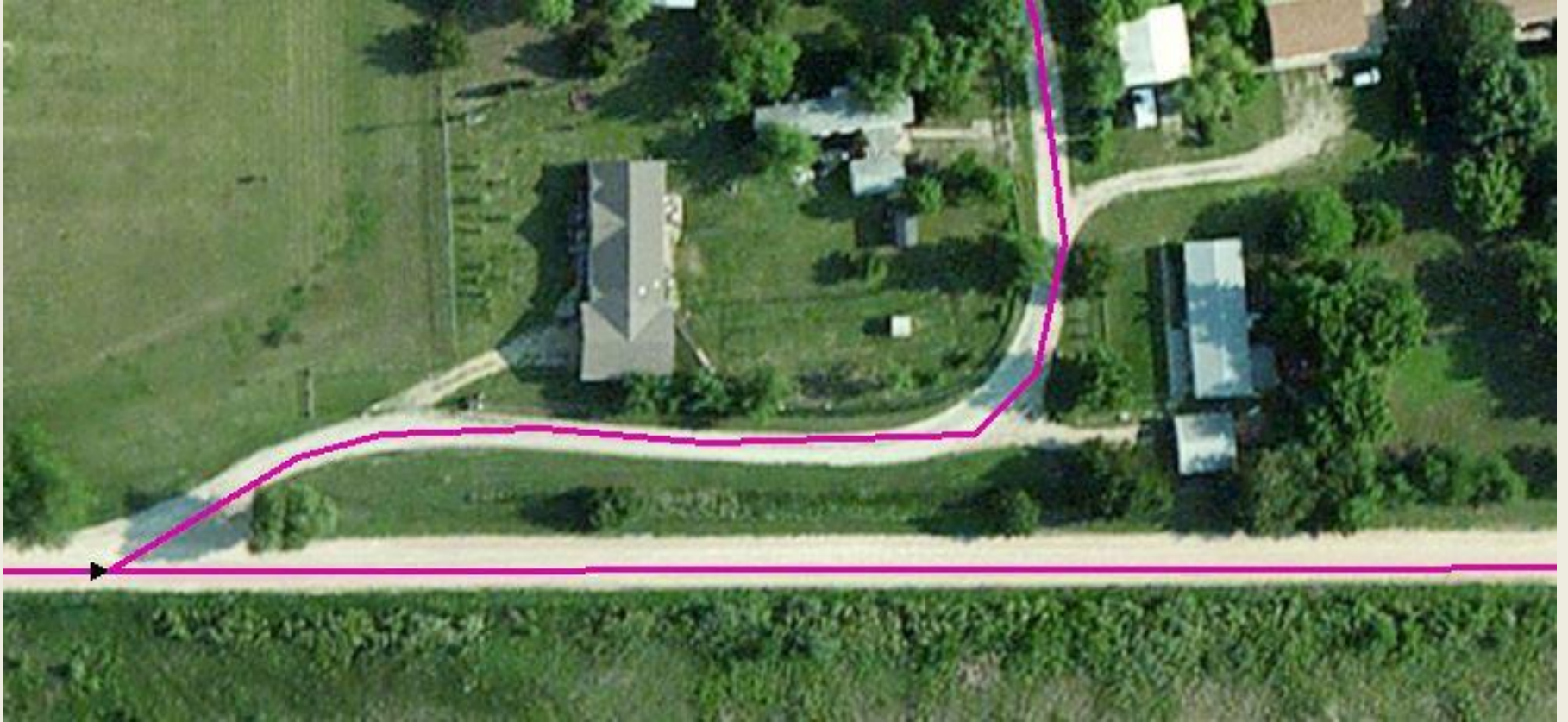
Road Centerlines - Geometry

- All public and addressed private roads
- Segments must be broken at:
 - Every intersection with another segment
 - Every State, County, Municipal, ESB and ESZ boundary
 - Any change in road name
 - Any change in surface type, if used
- Required to be on the road surface in aerial photography. Recommended within 10' of the center.
- Line direction moves from low to high address

Fails to Meet Standard



Meets Minimum Standard



Meets Recommended Standard



Road segments created during grant-funded remediation must meet this standard.

Road Centerlines – Document Review

Attributes

Special cases in geometry

Summary of standards

Road Alias Table

- The Name field [RD] in the Road Centerline data must be the name used by the local addressing authority, even if that is not the most common name for a segment
- All State and Federal Highway designations must be in the table
- Any other common or uncommon name for the road segment may be in the table

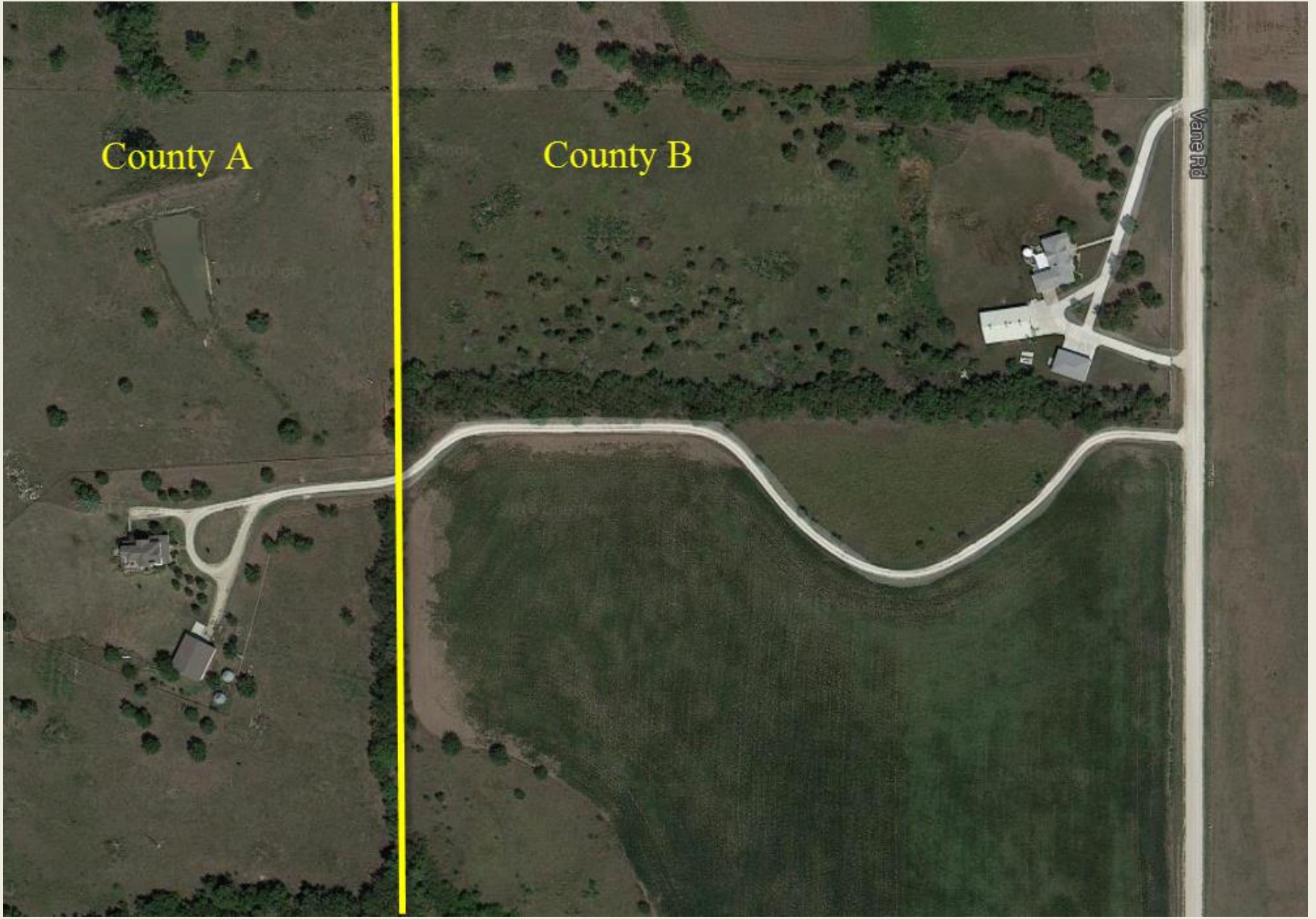
Address Points

- All structures and sites with an assigned street address
- One point per occupancy (apartment, lot, store, camp site, etc)
- Points must be on the structure or site they represent , but remember to keep call routing in mind

County A

County B

Vane Rd



Authoritative Boundaries

- Polygons that represent the geographic area for which the data is authoritative
- Usually a county boundary or a city limit boundary

ESBs and ESZs

- Emergency Service Boundary
 - Polygon representing service areas for emergency service agencies.
 - PSAP, Law enforcement, Fire and EMS at a minimum, but could also include others like First Responders, Rescue, Special Tactical Units
- Emergency Service Zone
 - The area related to a particular ESN or Emergency Service Number
 - Should be the geometric union of law enforcement, fire and EMS service polygons

ESBs and ESZs: Why we need both

- The ESN and ESZ will eventually be obsolete, but they are very important today
- ESBs can represent more emergency service agencies and NG9-1-1 will be able to relay that information to call-takers

Topology for ESBs and ESZs

- Each Emergency Service Boundary layer must fill the Authoritative Boundary polygons completely with no gaps and no overlaps
- If a combined ESB layer is used, the PSAP, LAW, FIRE and EMS fields must be complete for every feature
- The Emergency Service Zone layer must fill the Authoritative Boundary polygons completely with no gaps and no overlaps

MSAG Remediation

- The Gap Analysis includes a comparison between the road centerline file and the MSAG for the jurisdiction
- Remediation vendors will produce a specially formatted spreadsheet with the changes that need to be made in the MSAG
- It will be the responsibility of the local MSAG Coordinator to get the changes into the MSAG*

Working with the Telephone Co's

- AT&T
 - MSAG Edits
 - AT&T will directly enter complex edits, but Counties will need to enter the simple edits via the web interface
 - Providing Customized Training
 - TN Corrections can be submitted via email
- CenturyLink
 - If a county has 25 or fewer edits, they'll need to use the web interface to submit them
 - Counties with more than 25 edits will be able to submit changes via the spreadsheet.

Grant-funded Remediation

- Phase 1: Road Centerlines, Road Alias Table, Address Points, Authoritative Boundaries, Emergency Service Boundaries, Emergency Service Zones
- Phase 2: Cell Sites and Sectors, Emergency Service Agency Locations, Municipality Boundaries, Municipality Divisions, Neighborhoods, Counties and States

What will grant money pay for in Phase 1?

- Correcting all Phase 1 data layers for proper placement, topology and attribution
- Creating the features needed to complete the Phase 1 data layers
- MSAG Change Reports

What can get created with funding?

- Road Centerlines
 - Public Roads
 - Addressed Private Roads
- Road Alias Table
 - Highways
 - Anything provided by the PSAP
- Address Points
 - The “primary” point for any addressed structure or site
- ABs, ESBs, ESNs
 - Any needed feature

What will not be funded?

- CAMA correction
- Centerlines for driveways and other private roads that are not addressed
- Features outside the Authoritative Boundary polygons
- Travel or research time for populating attributes or records considered optional
- Entry of the MSAG changes into the telephone company system

Important Websites

DASC NG9-1-1 Page

<http://www.kansasgis.org/initiatives/NG911/index.cfm>

Kansas 911 Coordinating Council GIS Page

<http://www.kansas911.org/108/Geographic-Information-Services>

Thank you

GIS Subcommittee

Kansas 911 Coordinating Council