GIS & Next Generation 9-1-1 What it all means

AMY ROSE – 9-1-1 GIS ANALYST II, NCTCOG

KASEY COX – 9-1-1 GIS TECHNICIAN II, NCTCOG

Acronyms & Definitions

- ALI
  - Automatic Location Identification
- ANI
  - Automatic Number Identification
- CPE
  - Customer Premises Equipment
- CSEC
  - Commission on State Emergency Communications
- ECRF
  - Emergency Call Routing Function

- EGDMS
  - Enterprise Geospatial Database Management System
- ESInet
  - Emergency Services IP Network
- ESN
  - Emergency Service Number
- ESRP
  - Emergency Services Routing Proxy
- MSAG
  - Master Street Address Guide
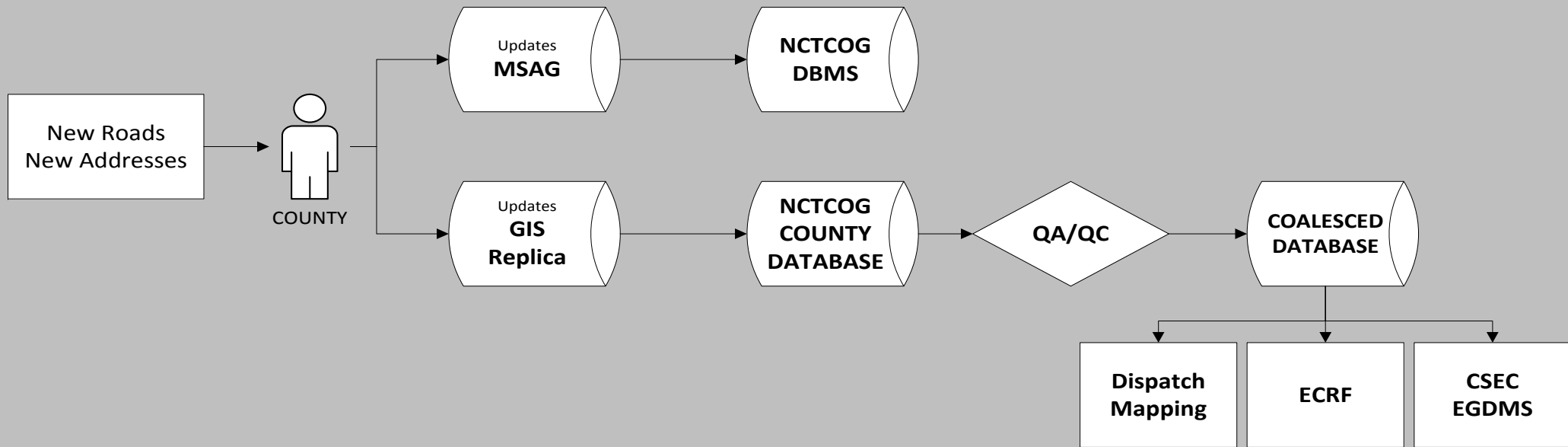- PSAP
  - Public Safety Answering Point

OUTLINE

- NCTCOG 9-1-1 Program

- E9-1-1 Call Flow

- NG9-1-1 Call Flow

- E9-1-1 & NG9-1-1 compared

- GIS in E9-1-1

- GIS in NG9-1-1

- What it means for GIS Professionals
  - Expectations
  - Getting started
  - Resources

- Q&A
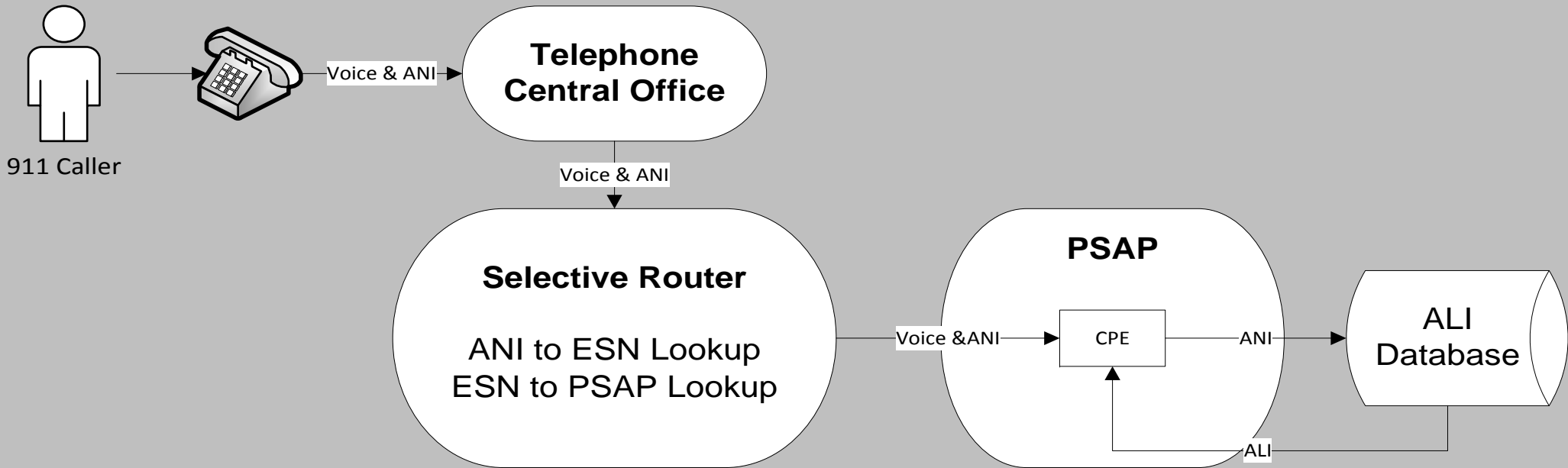 - *Please hold questions until the end. You might confuse us.* ☺
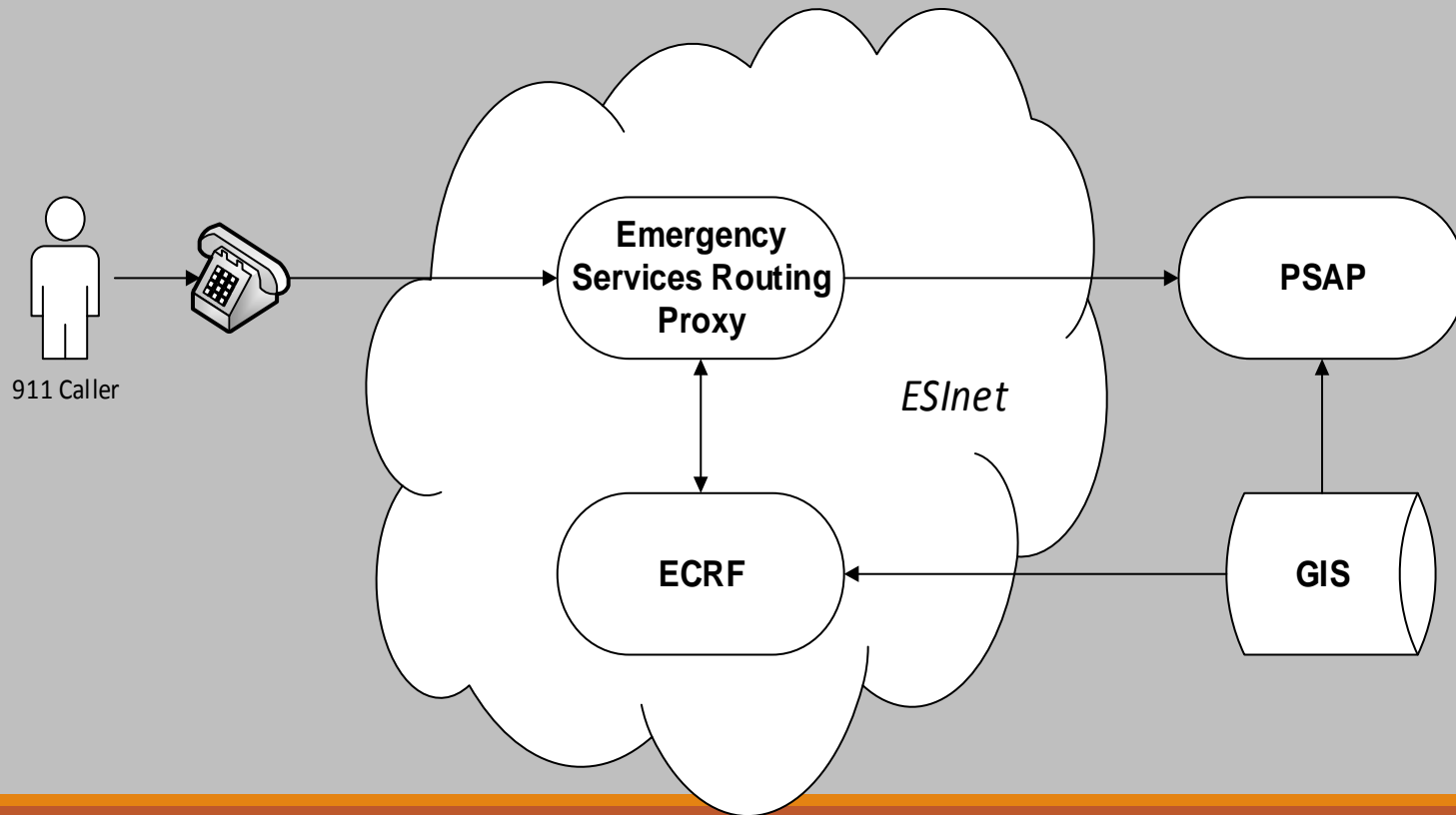
NCTCOG 9-1-1 Program

E9-1-1 call flow

NG9-1-1 call flow

911 Caller

Emergency Services Routing Proxy

ESInet

ECRF

PSAP

GIS

E9-1-1

- Built on legacy telephone technology

- Limited data sent to PSAP
  - Voice
  - TTY/TDD for hearing impaired

- Calls routed using "tables"
  - MSAG
  - ALI

NG9-1-1

- IP Network
  - Allows broader communication
    - Between PSAPs
    - Between emergency entities
  - Allows more data to be sent to PSAP from more devices
    - Images
    - Videos
    - Access to building floorplans
    - Medical Information
    - Telematics
  - GIS is the single point of data entry
    - Eliminates errors (no more MSAG)

GIS in E9-1-1

- A GIS is **<u>not</u>** used to route calls
- GIS is **<u>not</u>** used to validate new telephone customer service
- Limited data sent to Selective Routers

- GIS **<u>is</u>** used after the fact:
  - Call plotting (not routing)
  - Computer Aided Dispatch (CAD)
  - Automatic Vehicle Location (AVL)
  - Unit dispatch
  - Routing

- *The GIS does not need to be perfect or updated frequently, but it is preferred*

GIS in NG9-1-1

- A GIS **is** used in the actual 9-1-1 call routing process (ECRF)
  - Addresses
  - Roads *(become the MSAG)*
  - Polygons *(instead of ESN lookup)*
- GIS *derived* data **is** used to validate new telephone customer requests for service.

- *The GIS needs to be as close to perfect as possible and updated near real time.*

What it means for GIS Professionals

- More work = More jobs

- New applications

- More communication
  - Internal
  - External

- GIS professionals will need to be involved
  - NENA
    - Working groups on GIS standards
  - 9-1-1 authority of your area
    - Who routes your 9-1-1 calls to your call takers?
  - FCC regulations
    - Stay informed about upcoming requirements

- "GIS data of any worthwhile size contains errors. Eliminating all errors is an unrealistic expectation. The goal is to quickly correct any discrepancies found. What is expected is a consistently applied program to identify and correct errors." (NENA GIS Data Collection and Maintenance Standards NENA 02-014, Issue 1, July 17, 2007)
  http://c.ymcdn.com/sites/www.nena.org/resource/collection/C74A8084-E3BD-405D-93C2-48AFCFA5B490/NENA_02-014-v1_GIS_Data_Collection_and_Maintenance.pdf

- Baby steps! No one expects it to happen over night

- Schema issues will happen
  - Adopt requirements/schema from another organization
  - ETL process

Getting started

- GIS Data
  - Start with what is available!
  - Create data
    - Roads
    - Emergency Response Boundaries
    - Address Points
  - Evaluate
    - QA/QC
  - Editing
    - Fix errors from QA/QC and PSAP feedback

Getting started

- Build relationships
  - 9-1-1 provider
  - Emergency responders
  - Local PSAP
- Education
  - Learn about NG9-1-1 and emergency response
    - NENA documents
  - Inform leaders and stakeholders

Resources

- Texas Commission on State Emergency Communications (CSEC) http://www.csec.texas.gov/
- NG9-1-1 Institute http://www.ng911institute.org/
- National Emergency Number Association (NENA) http://www.nena.org/
  - Standards documents
  - Membership
    - Working Groups

QUESTIONS ?

AMY ROSE – AROSE@NCTCOG.ORG

KASEY COX – KCOX@NCTCOG.ORG