9-1-1 evolution

GIS and NG9-1-1 in Texas

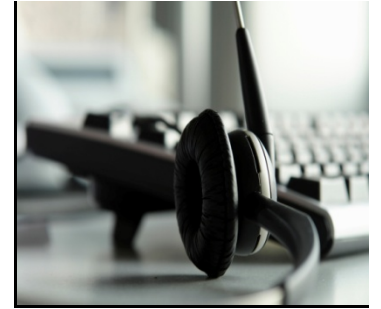# What we 9-1-1 Folks do...

MAPPING

PSAP INVOLVEMENT

ADDRESSING

PUBLIC EDUCATION

DATABASE

It's a Balancing Act
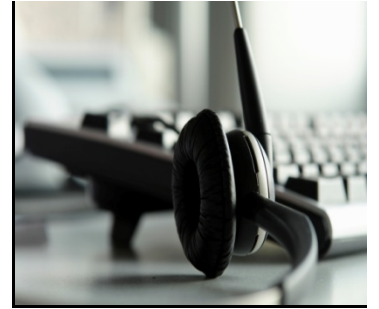
9-1-1's Funding and Governing Body in Texas
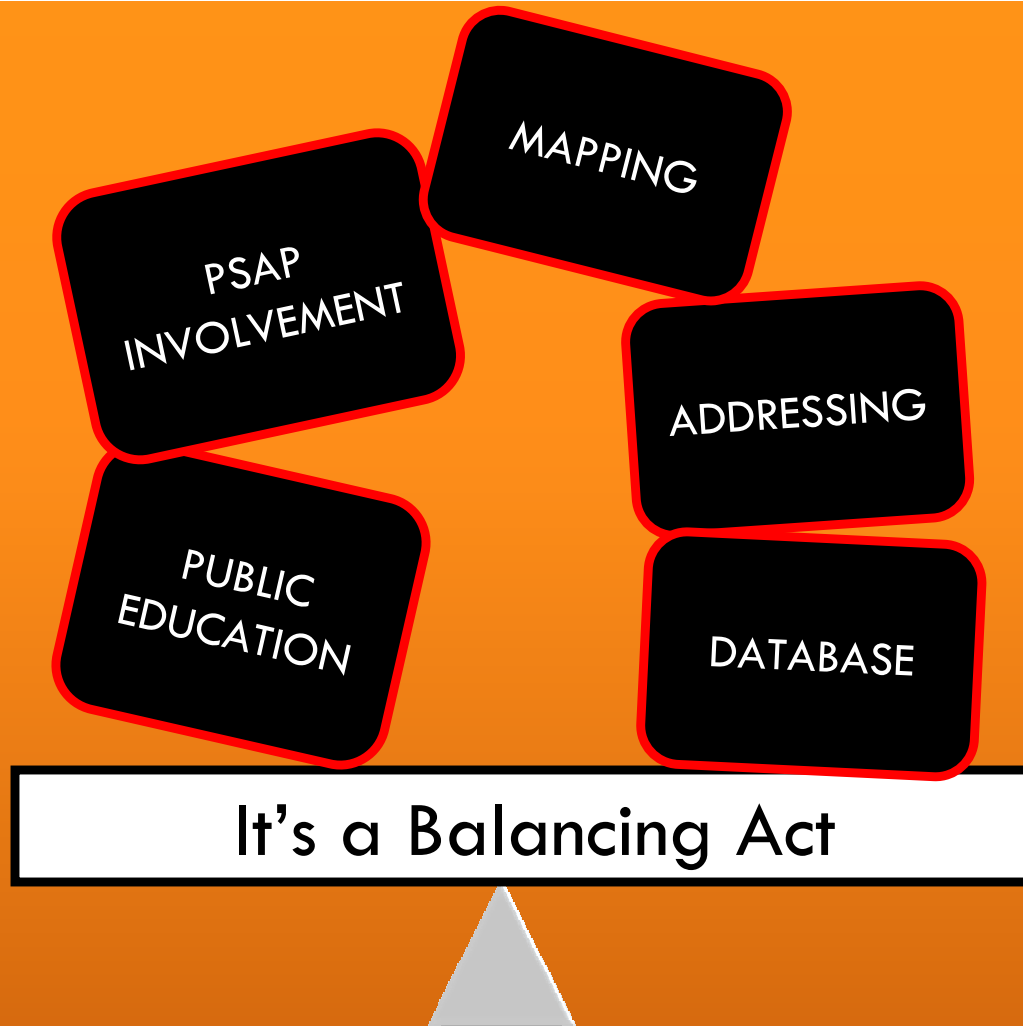
MAPPING

- Cross verify that addressing and database teams have correct information
- Input address points, street names and ranges, city limit boundaries, Emergency Service Number (ESN), and telco boundaries
- Update Public Safety Answering Point (PSAP) maps
- Update EMS and Fire Boudaries
- Provide mapping solutions for outside agencies. i.e. FBI, US Marshalls, District Attorneys Office
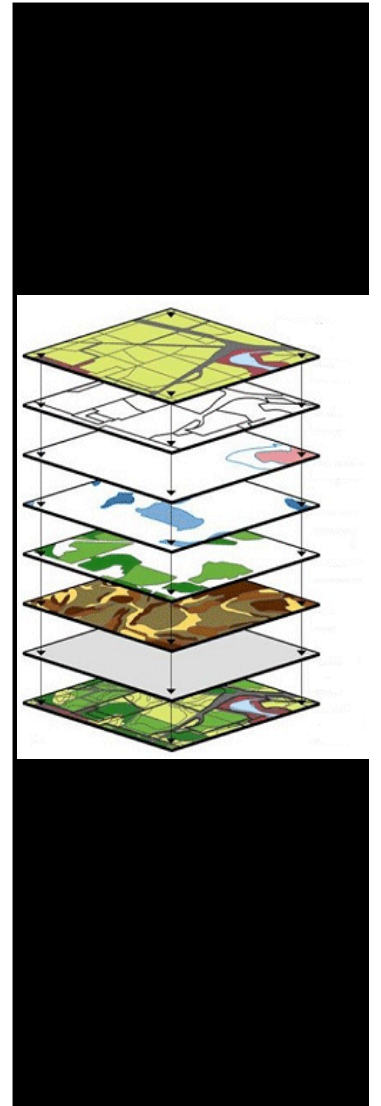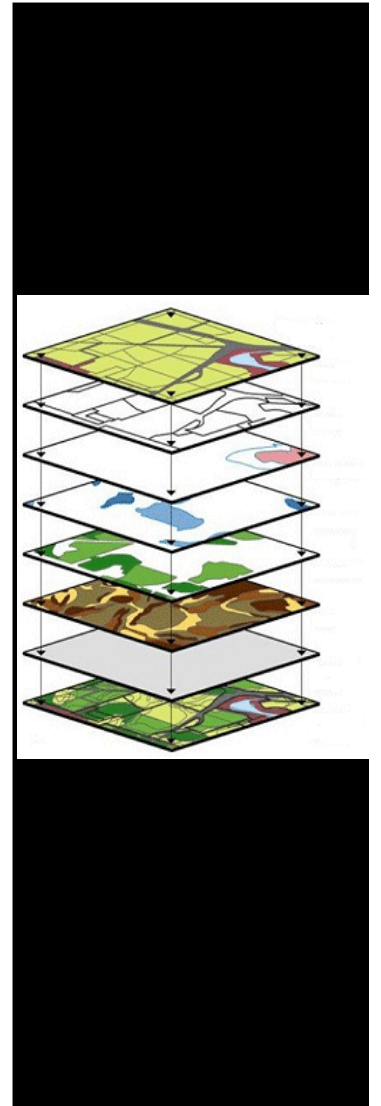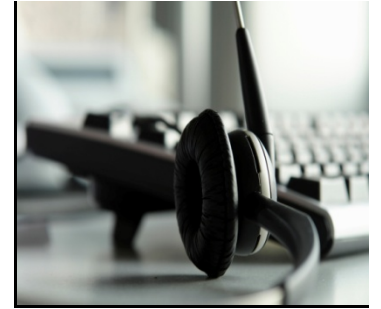
MAPPING

But the most important part of our mapping department is the driving force of it and that is:
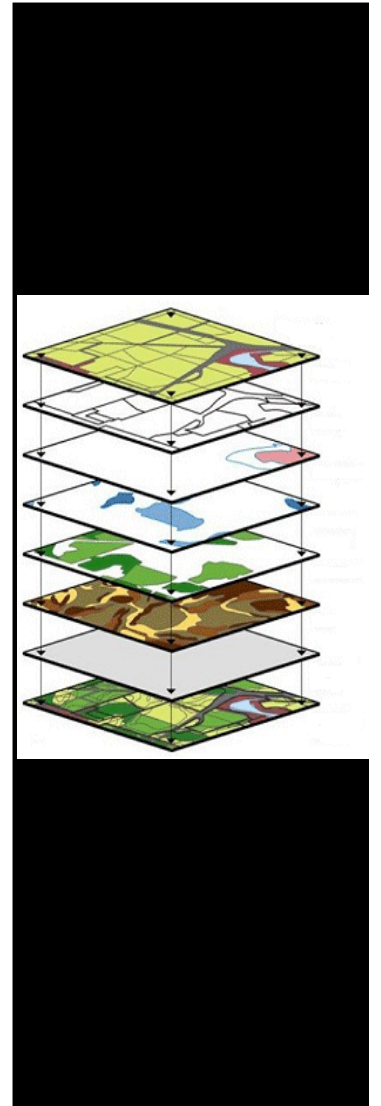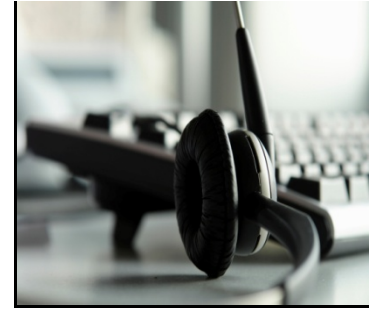
GIS

GIS

For the most part, 9-1-1 relies on GIS technology to locate individuals on an emergency call whether it be from:

- A house phone (wire line)

- A computer phone (VOIP)

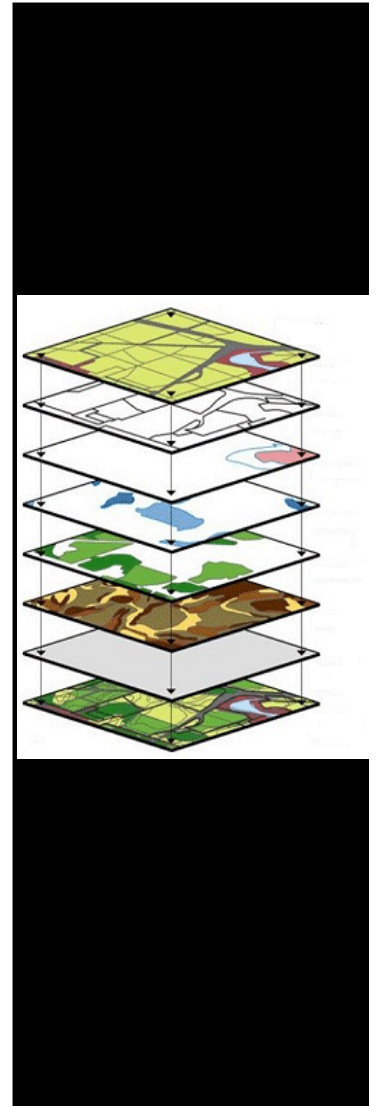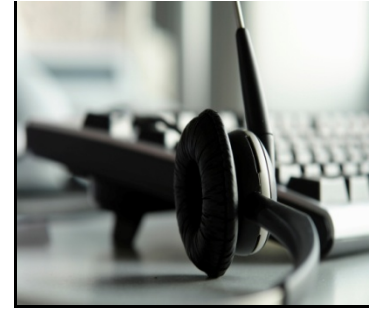- Or a cell phone

G I S

However, we are currently having to deal with an end of live, 40 year old system.

In which the big brother Database, is having to learn how to play with the younger brother and let him run the show in the near future NG9-1-1.
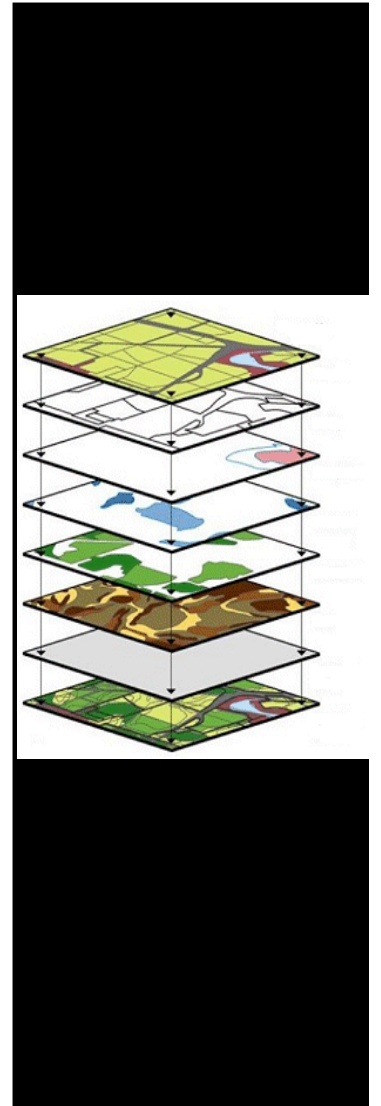
NG9-1-1

What is NG9-1-1?

Its a technological transition to a new 9-1-1 infrastructure, referred to as Next Generation 9-1-1 or NG9-1-1 as define by our state agency.
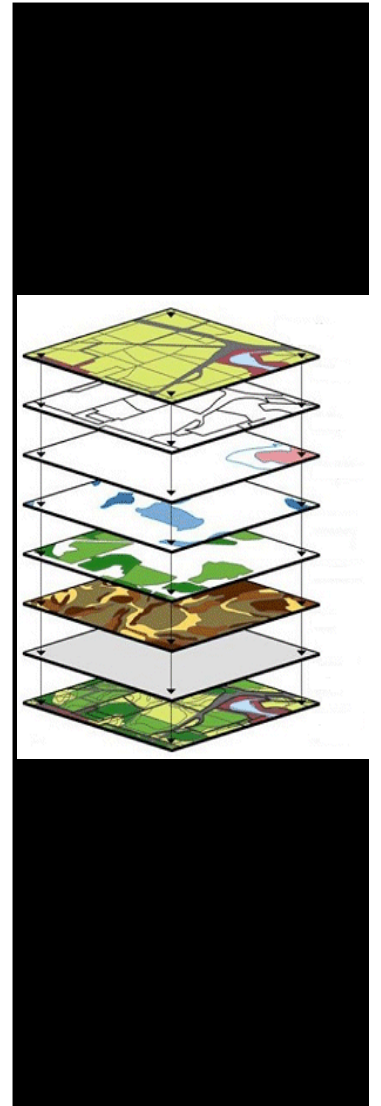
NG9-1-1
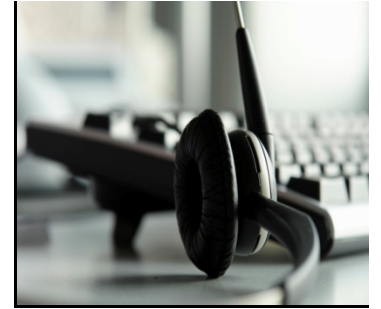
What it means to the public?

- It will meet the public's expectation of accessing 9-1-1 using a choice of communication technology.

- It will provide the emergency response community with quicker and more robust information.

- Create greater coordination capabilities.

GIS AND NG9-1-1

The integration of GIS into NG9-1-1 will be the heart and soul of this 9-1-1 evolution. This integration will allowed:

-Different Public Safety Agencies to work under the same network

- Most important centralize GIS data, hopefully geodatabase format, for emergency response at different strategic points.
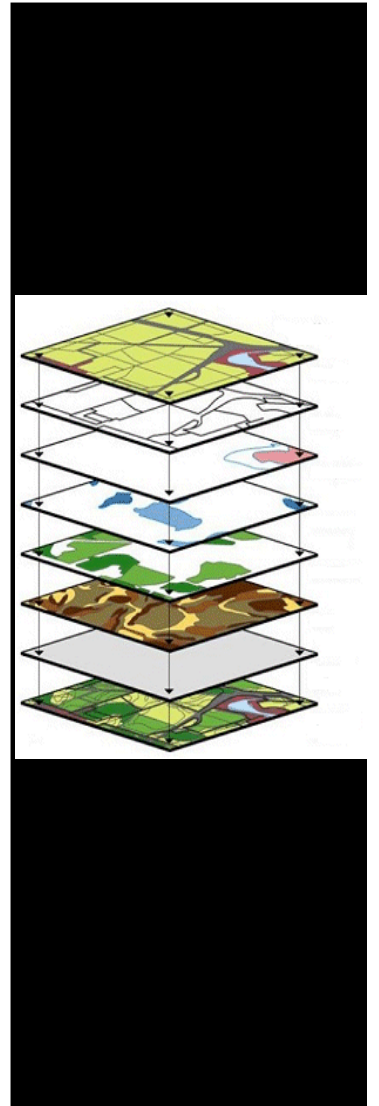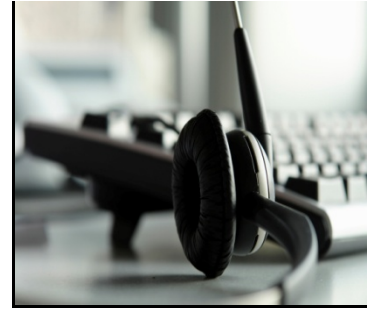
GIS AND NG9-1-1

The essential core functions for NG9-1-1.

De-reference LbyR (as applicable)
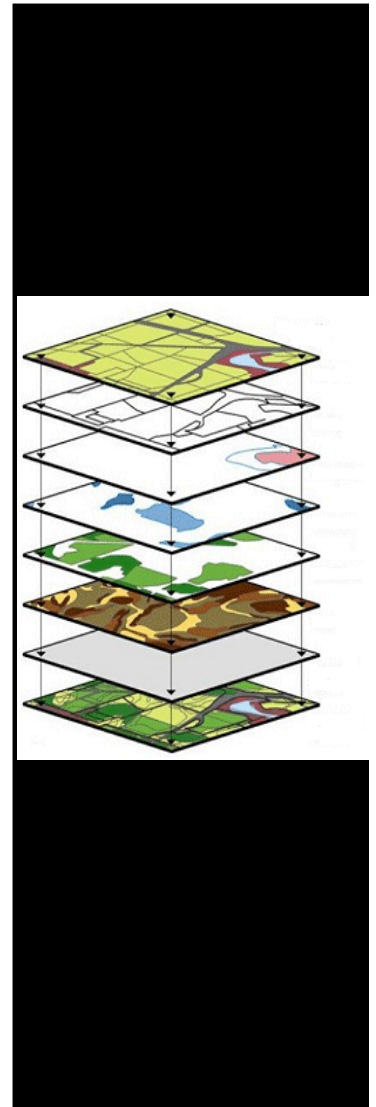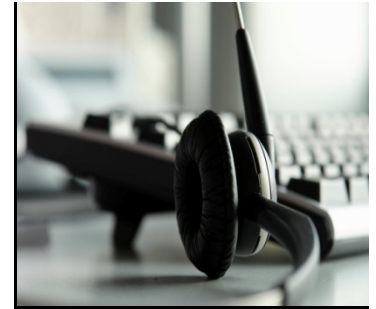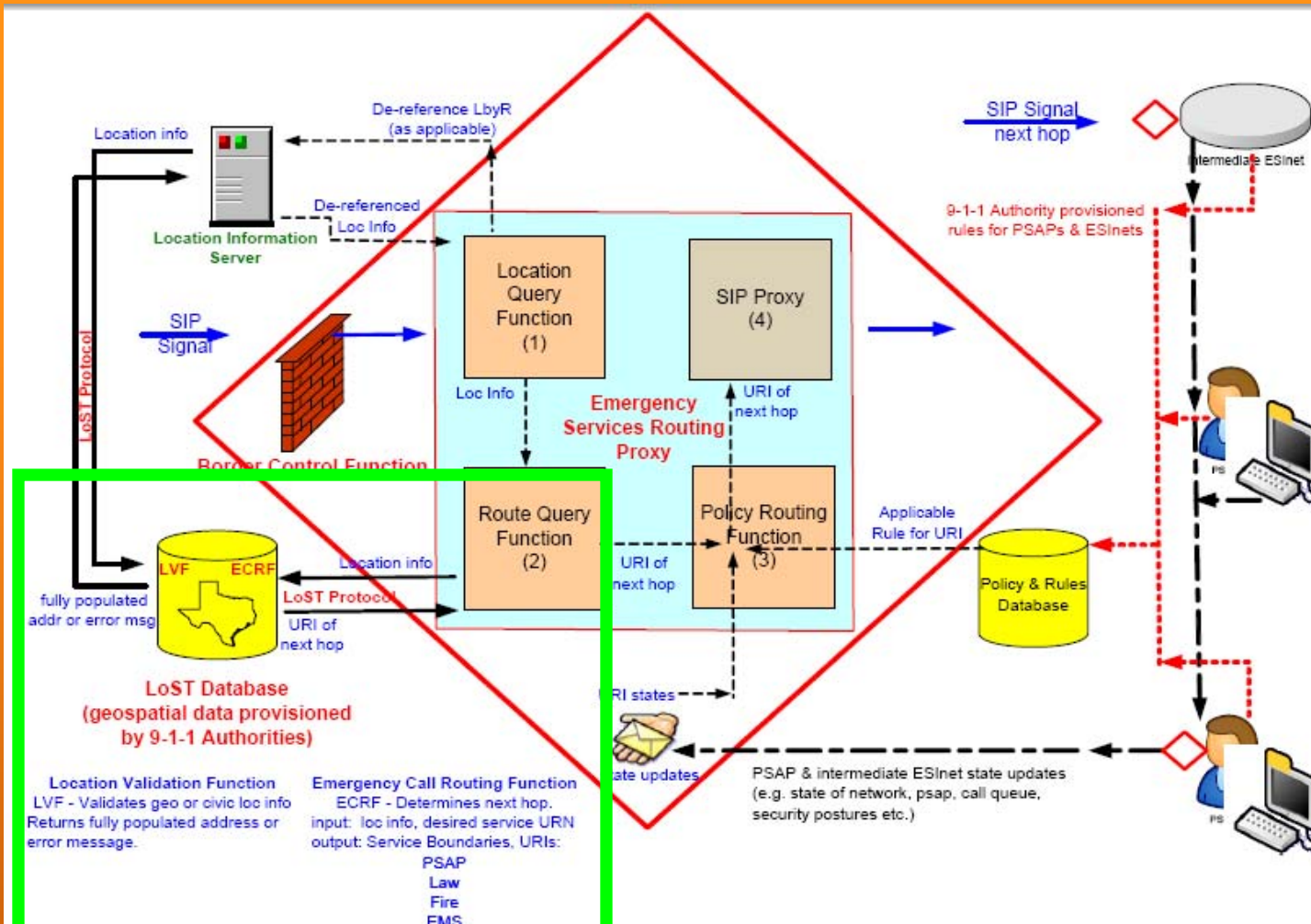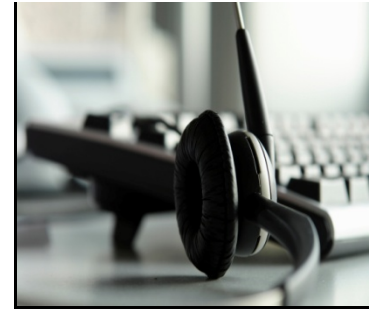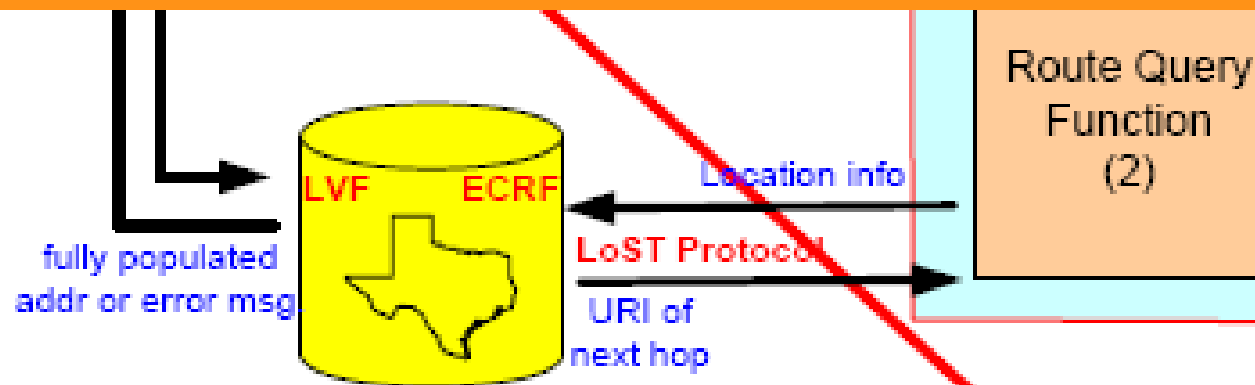
Location info

Location Information Server

De-referenced Loc Info

SIP Signal

Border Control Function

LoST Protocol

Location Query Function (1)

SIP Proxy (4)

Emergency Services Routing Proxy

Loc Info

URI of next hop

Route Query Function (2)

Policy Routing Function (3)

URI of next hop

Location info

LoST Protocol

URI of next hop

LVF   ECRF

fully populated addr or error msg

LoST Database (geospatial data provisioned by 9-1-1 Authorities)

Location Validation Function
LVF - Validates geo or civic loc info
Returns fully populated address or
error message.

Emergency Call Routing Function
ECRF - Determines next hop.
input: loc info, desired service URN
output: Service Boundaries, URIs:
PSAP
Law
Fire
EMS

SIP Signal next hop

Intermediate ESInet

9-1-1 Authority provisioned rules for PSAPs & ESInets

Applicable Rule for URI

Policy & Rules Database

URI states

PSAP & intermediate ESInet state updates (e.g. state of network, psap, call queue, security postures etc.)

state updates

GIS AND NG9-1-1

The LoST Database Server.

Route Query Function (2)

LVF   ECRF

Location info

LoST Protocol

fully populated addr or error msg

URI of next hop

LoST Database
(geospatial data provisioned
by 9-1-1 Authorities)

Location Validation Function
LVF - Validates geo or civic loc info
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Emergency Call Routing Function
ECRF - Determines next hop.
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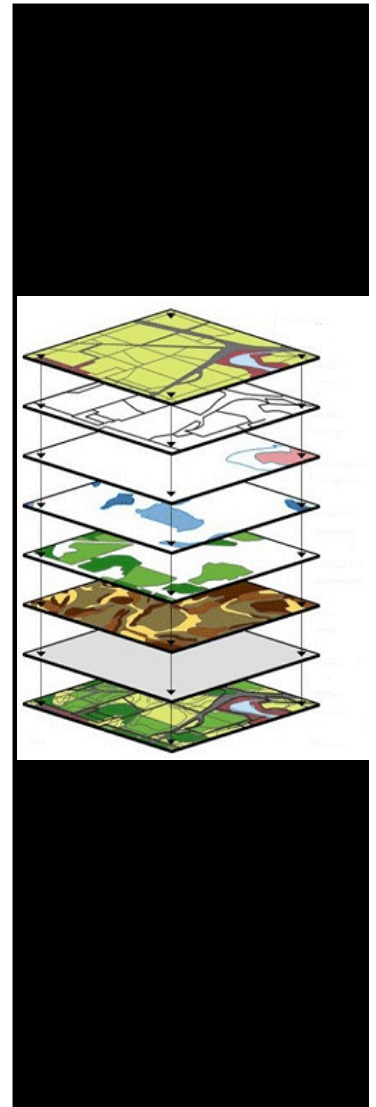
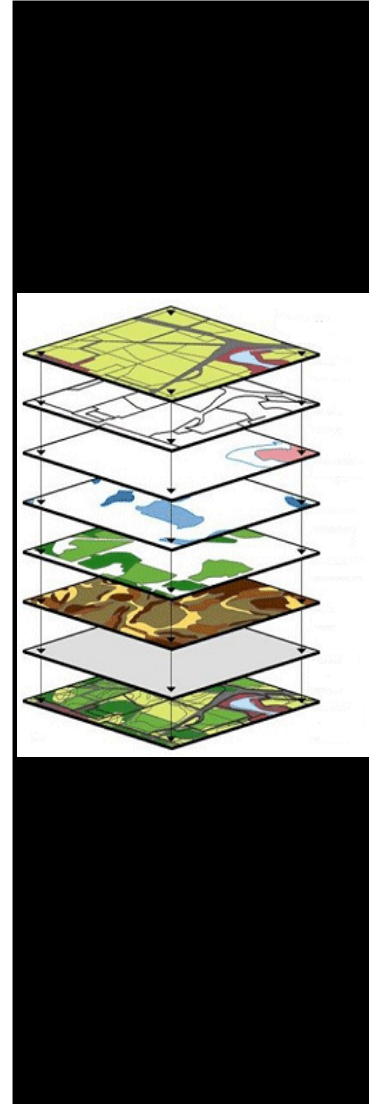# GIS AND NG9-1-1
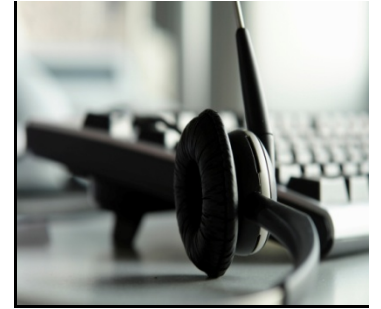
In GIS terms:

POLICE DEPARTMENT

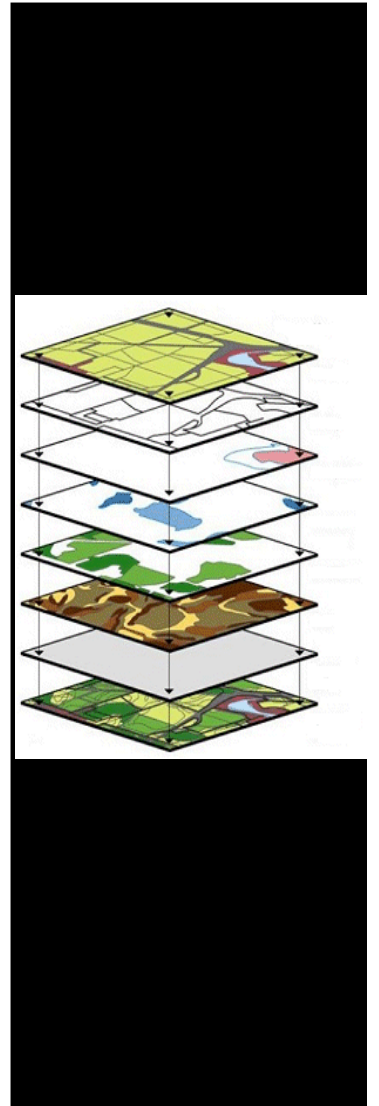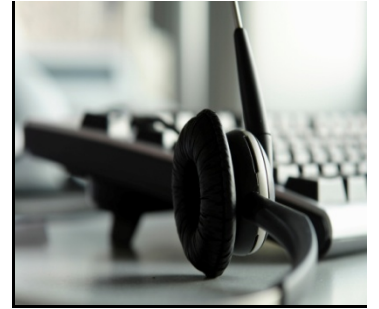**123 Hurricane Dr, McAllen, TX**
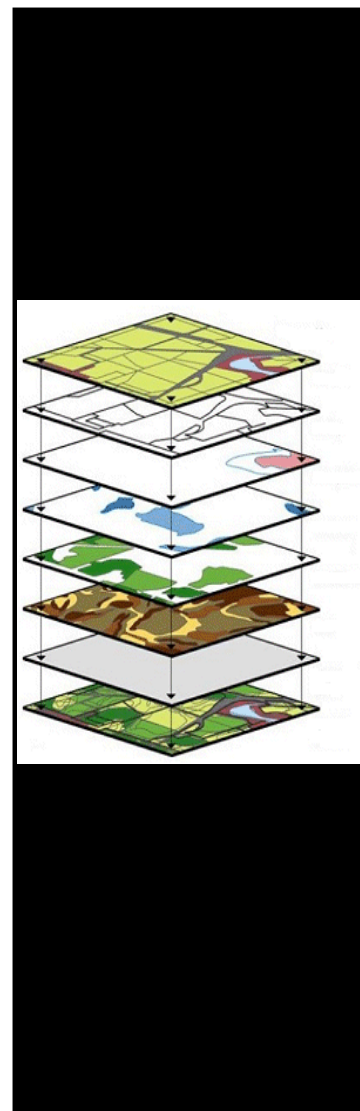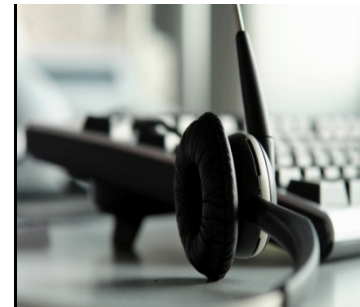
-97.123456, 26.987654

GIS AND NG9-1-1

In conclusion, the vision of the Texas NG9-1-1 System is aligned with:

- The National Emergency Number Association's (NENA) Functional and Interface Standards for Next Generation 9-1-1 Version 1.0 (i3) NENA 08-002

- The U.S. Department of Transportation (USDOT) NG9-1-1 System Initiative's Concept of Operation.

GIS AND NG9-1-1

GIS AND NG9-1-1

My contact information:

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