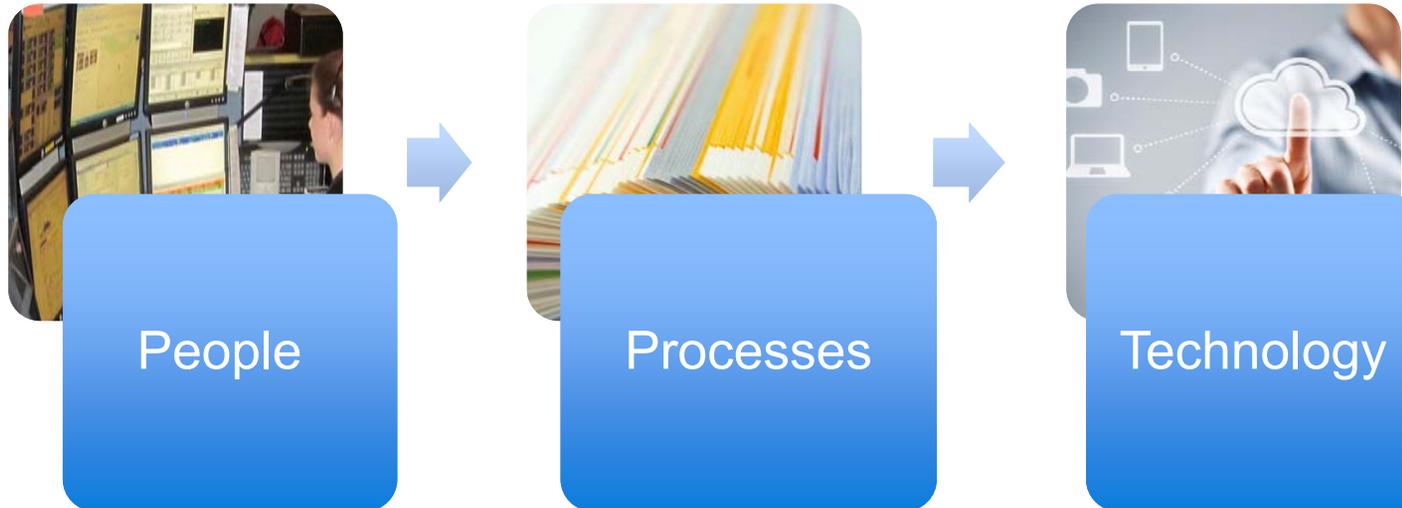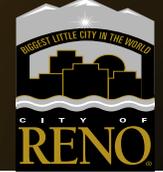# WASHOE COUNTY
9-1-1 ADVISORY BOARD
9-1-1 TECHNOLOGY OVERVIEW
MARCH 2019

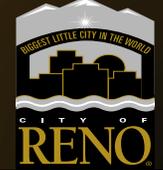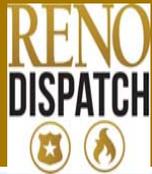# 9-1-1 OVERVIEW

People → Processes → Technology

*The function and performance of these entities
are key to a successful public safety communications program.*
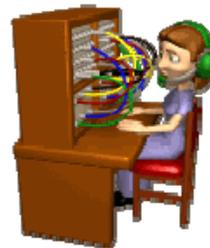
TODAY, A BIT OF TECHNOLOGY: 9-1-1 TELEPHONY OVERVIEW

…at a very high level

9-1-1 OVERVIEW

➤ **Basic 9-1-1**

All 9-1-1 calls must be relayed to a call center, regardless of whether or not the user is already a customer of the network being used. The emergency and its location are communicated by voice (or TTY) between the caller and the call-taker. A primary PSAP is defined as a PSAP to which 9-1-1 calls are routed directly from the 911 Control Office, such as, a selective router or 9-1-1 tandem. A secondary PSAP is defined as a PSAP to which 9-1-1 calls are transferred from a primary PSAP.

➤ **Enhanced 9-1-1**

In areas serviced by enhanced 9-1-1, the call is selectively routed to the proper PSAP for the caller's location, and the PSAP has equipment and database information that display the caller's phone number and address to the call-taker. 93% of counties with 9-1-1 coverage have enhanced 9-1-1 for callers. The term "enhanced 9-1-1" is not synonymous with wireless 9-1-1.

➤ **Next Generation 9-1-1 (NG9-1-1)**

Supports seamless, end-to-end IP-based communication of emergency-related voice, text, data, photos, and video between the public and PSAPs. Benefits:

- ✓ Increased public access (multi-media capabilities expand accessibility)
- ✓ Enhanced information for first responders
- ✓ Increased reliability of NG9-1-1 networks. IP-based architecture provides more flexibility and resiliency than the legacy circuit-switched 9-1-1 system.

9-1-1 OVERVIEW

➢ **Wireline 9-1-1 (landline phones)**
   Plain old telephone service (POTS) is voice-grade telephone service employing analog signal transmission over copper loops. POTS was the standard service offering from telephone companies from 1876 to current day where we are challenged with a widened and varied set of service approaches and technologies. when the now-obsolete Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) was introduced, followed by cellular telephone systems, and Voice over IP (VoIP). Wireline 9-1-1 services provides the call-taker with the caller's phone number (subscriber information) and physical address.

➢ **Wireless 9-1-1 Phase 1 (Wireless Phase 1)**
   The call-taker receives the wireless phone number. And location of the cell tower handling the call. The call is routed to a PSAP based on cell site / sector information.

➢ **Wireless 9-1-1 Phase 2 (Wireless Phase 2)**
   The call-taker receives the wireless phone number and caller's ("approximate physical") location to within 50 – 300 meters of accuracy (depending on the type of location technology used).

9-1-1 OVERVIEW
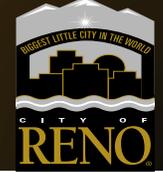
➤ **Voice over Internet Protocol (VoIP)**

Portable interconnected VoIP services can be used from virtually any Internet connection anywhere, which raises challenges for the emergency services community in determining the location from which a 9-1-1 call has originated.

Concerns / Considerations:

✓ Connectivity
✓ Delivery of caller's information (phone number and / or location)
✓ Updating the VoIP phone's physical location is required
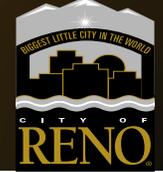✓ Power outages or overloaded Internet connections.

➤ **Text-to-9-1-1**

In limited areas of the U.S. it is possible to use certain wireless telephone services to send a text message to 9-1-1. But even where text-to-9-1-1 is available, if you are able to make a voice call to 9-1-1, and if it is safe to do so, you should ALWAYS make a voice call to 9-1-1 instead.

THE FCC AND 9-1-1 (911)

➤ 9-1-1 PSAP Registry

In December 2003, the FCC began collecting data to build a registry of public safety answering points (PSAPs). The Registry lists PSAPs by an FCC assigned identification number, PSAP Name, State, County, City, and provides information on any type of record change and the reason for updating the record. The PSAP database serves as a tool to aid the Commission in evaluating the state of PSAP readiness and E911 deployment.

The New and Emerging Technologies 911 Improvement Act of 2008 (NET 911 Act) requires the Commission to submit an annual report to Congress on the collection and distribution of 911 and Enhanced 911 fees and charges by the states, the District of Columbia, U.S. territories, and Tribal Nations (states and other reporting entities). As part of its annual review, the NET 911 Act requires the Commission to report whether 911 fees and charges collected by states and other reporting entities are being used for any purpose other than to support 911 and Enhanced 911 (E911) services.

The State legislature added an allowance to increase the E911 fee to help pay for body cameras for officers. See NRS 289.830 Specifically, the 2017 Nevada State Legislature enacted SB176 increasing the maximum surcharge from $0.25 per line/$2.50 per trunk to $1.00 per line/$10.00 per trunk. The permissible uses for the surcharge was expanded to include the purchase and maintenance of portable event recording devices and vehicular recording devices. Within the reporting period, the Washoe County Commission adopted Ordinance 1601 (effective October 20, 2017) reflecting SB176's changes. Carson City, Lyon County, and Washoe County enacted local ordinances. Washoe County reports that "[i]n the 2018 reporting period, the County Commission increased the surcharge from $0.25 per line/$2.50 per trunk to $0.85 per line/$8.50 per trunk." (Source: 10th Annual 911 Fee Report to Congress)
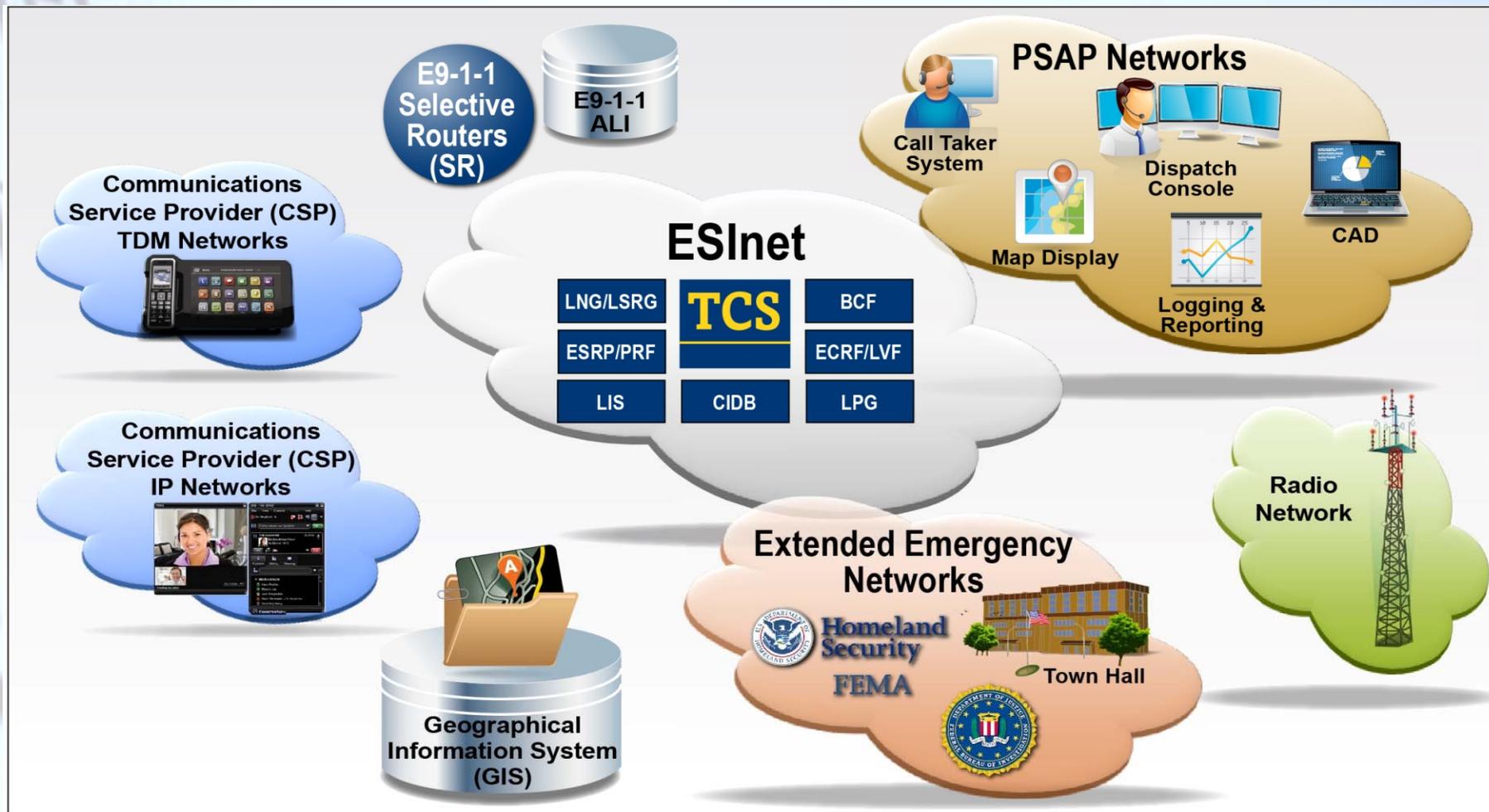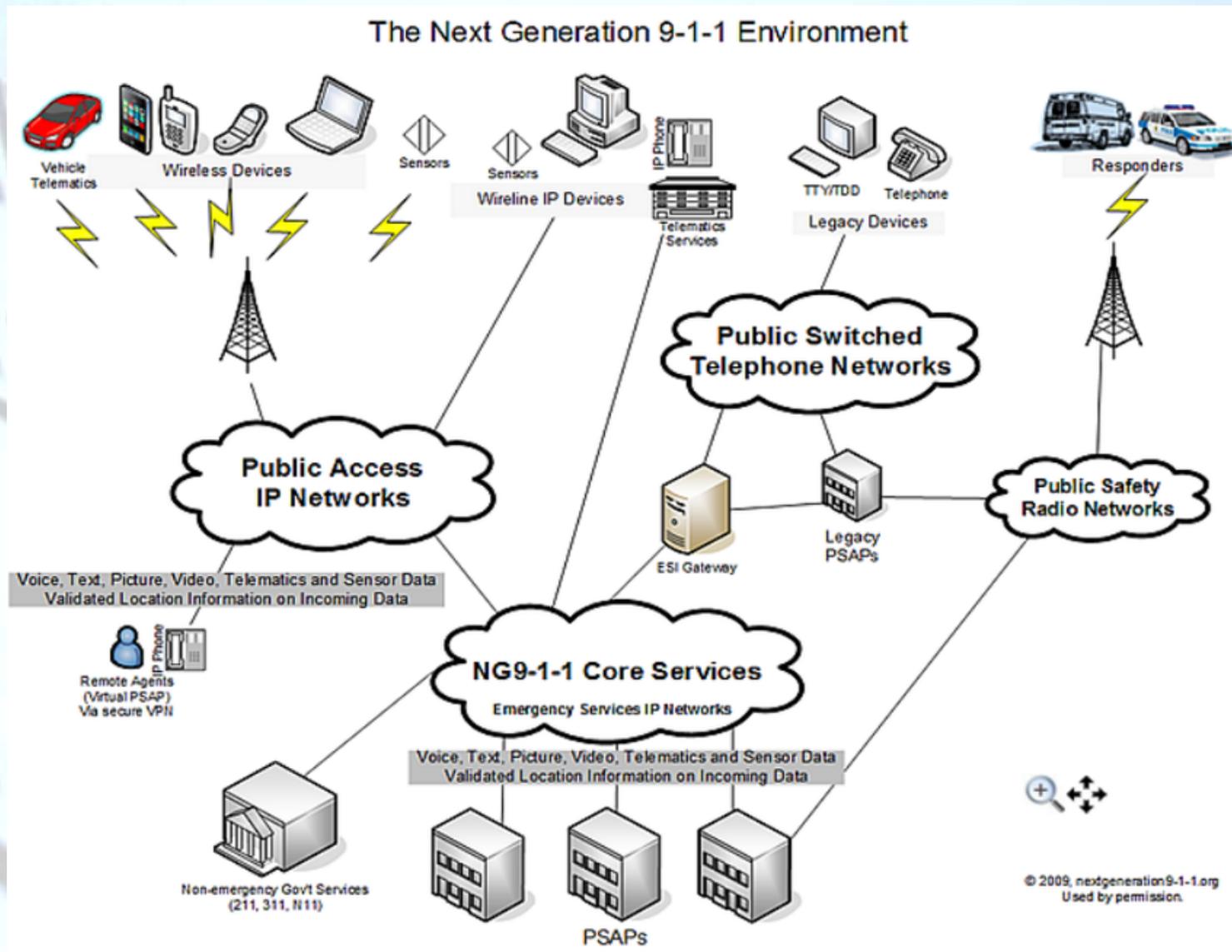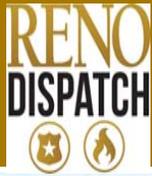
CALLING 9-1-1: CALL FLOW / WORKFLOW
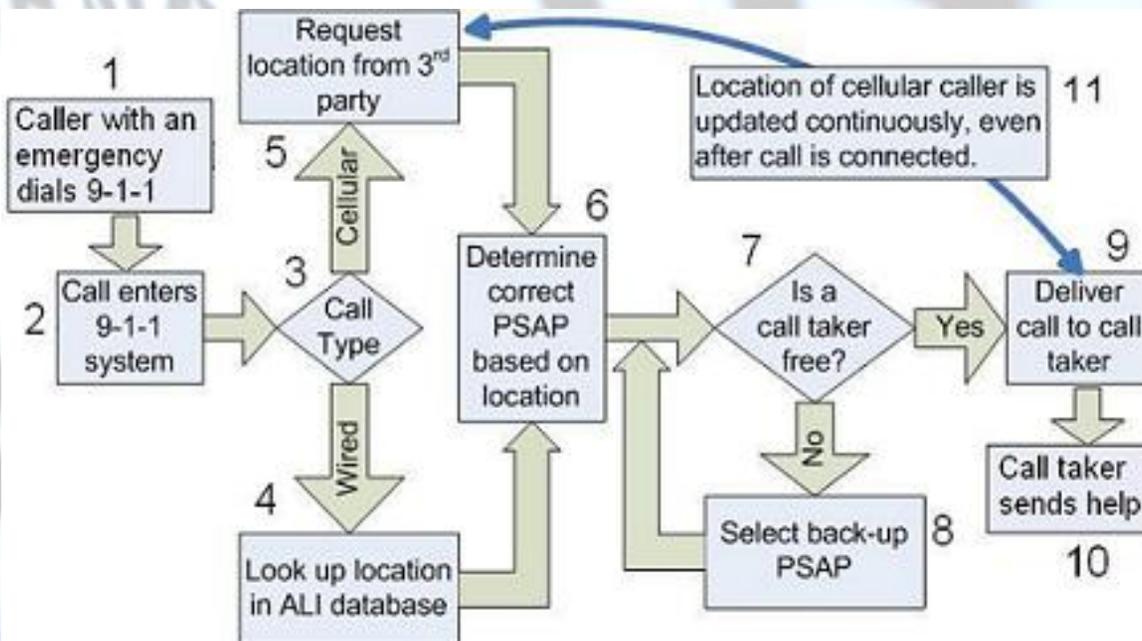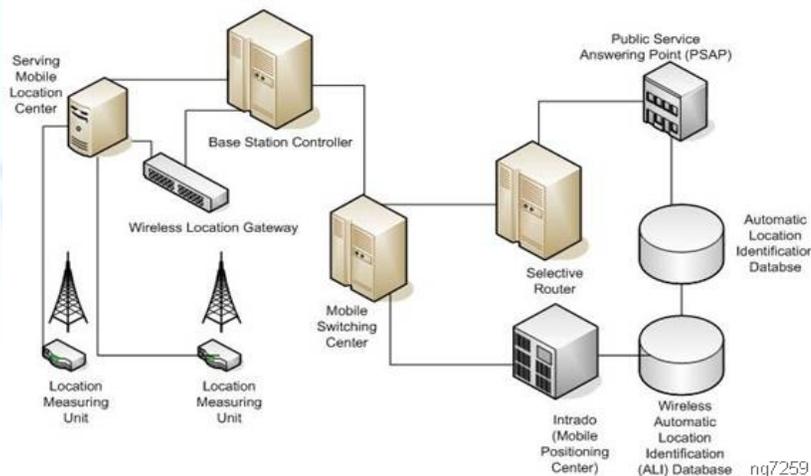
NG9-1-1 ECOSYSTEM

CALLING 9-1-1: CALL FLOW / WORKFLOW


The Next Generation 9-1-1 Environment

CALLING 9-1-1
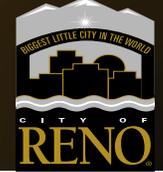
Typical Questions (now and *next*)

➢ *WHERE* is your emergency?

➢ *WHAT* happened?

➢ *WHEN* did this happen?

➢ *WHO* is involved (descriptions / where are they now)?

➢ Any *WEAPONS* involved?

➢ Any *VEHICLES* involved (descriptions / direction of travel)?

*Operational Requirements represent some of the primary elements
that we must support in order to advance the level of efficiency, collaboration,
and coordination among the stakeholder agencies to the
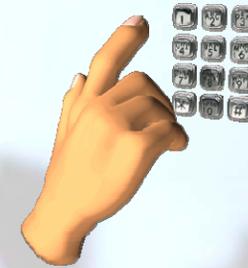next generation of public safety communications in the region.*
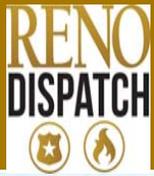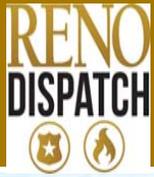
STATISTICS & FUN FACTS
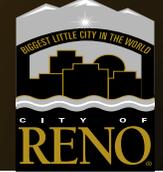
2018 Calls for Service (CFS)

➢ **240,000,000 9-1-1 calls / year in the U.S. (80% wireless)**

➢ **@ 500,000 calls processed**

➢ **More than 1500 9-1-1 hang-ups**

➢ **Average 4.2% increase in overall CFS volume each year**

9-1-1…Call if you can, Text if you can't

RENO DISPATCH: CALLING 9-1-1

What are YOUR Questions?