



The Michigan ENHANCE 9-1-1 Grant Project

GIS Technical Advisory Committee

Escanaba, MI

November 4, 2011



Today's Agenda

- What is NG9-1-1
- GIS and 9-1-1 Today
- GIS in NG9-1-1 Environment
- 9-1-1 GIS Grant Project
- 9-1-1 GIS Local Sub Grants
- Open Discussion

What is NG9-1-1?

Today's 9-1-1 System – Timeline

1968:

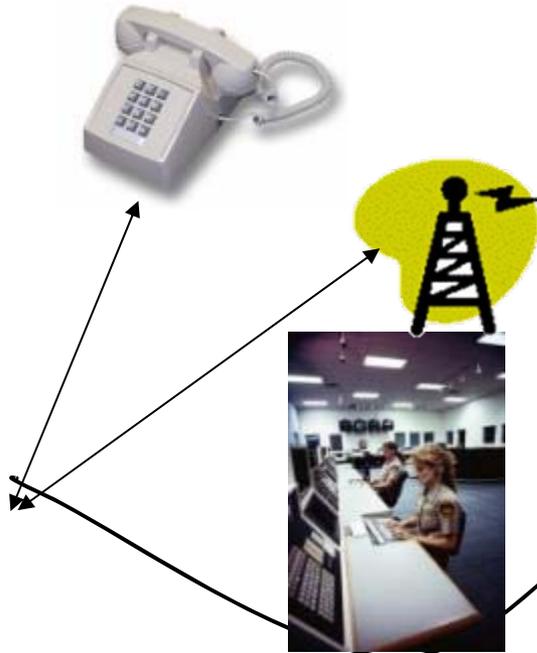


Basic 9-1-1:

- Copper Land Line
- Analog Technology

**1980s–90s:
Enhanced 9-1-1:**

- ANI / ALI



**1990s – 2000s:
Wireless E9-1-1:**

- Phase I
- Phase II

Today:

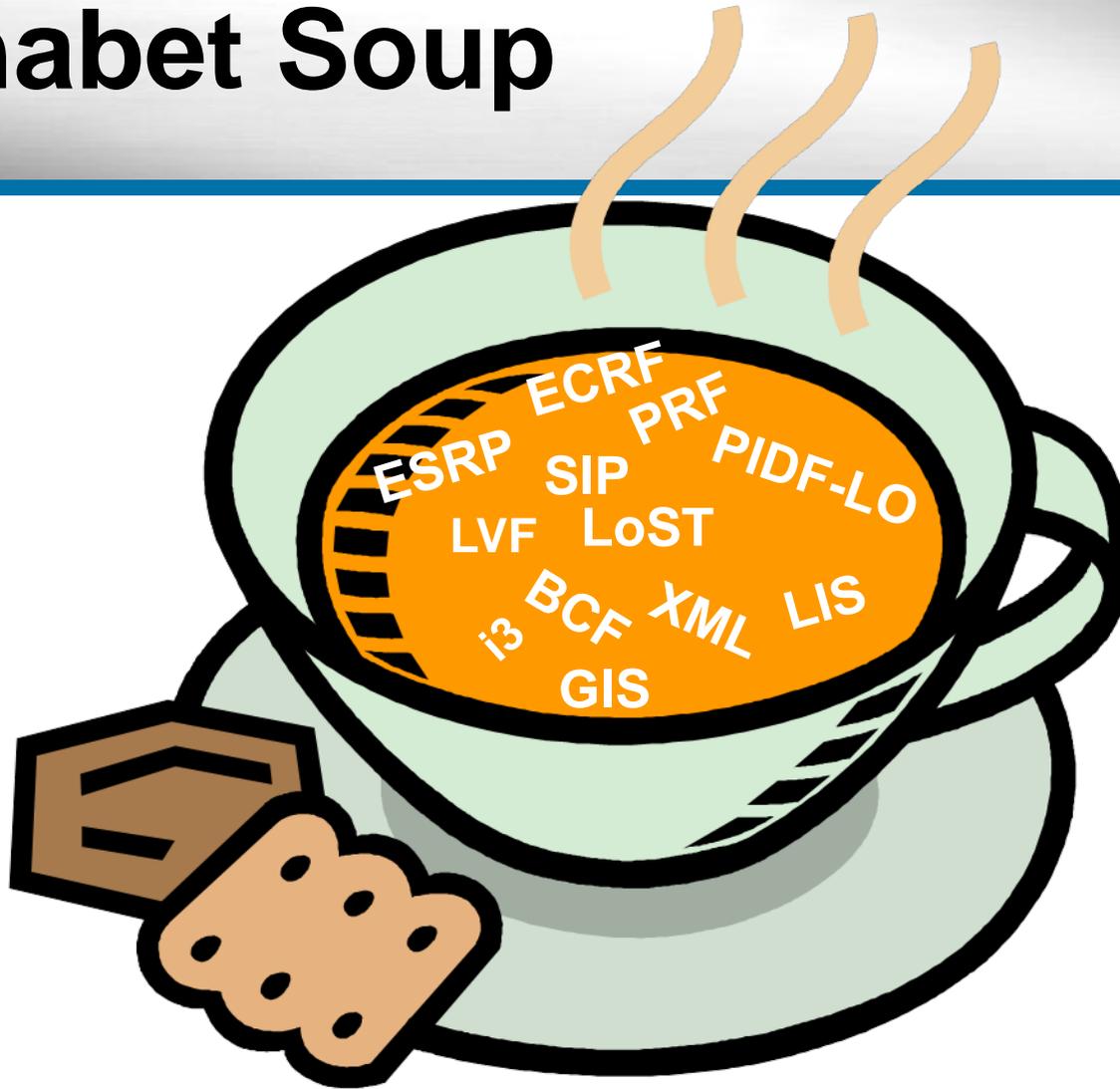


**Voice over IP, Images,
Video, Text, Telematics**

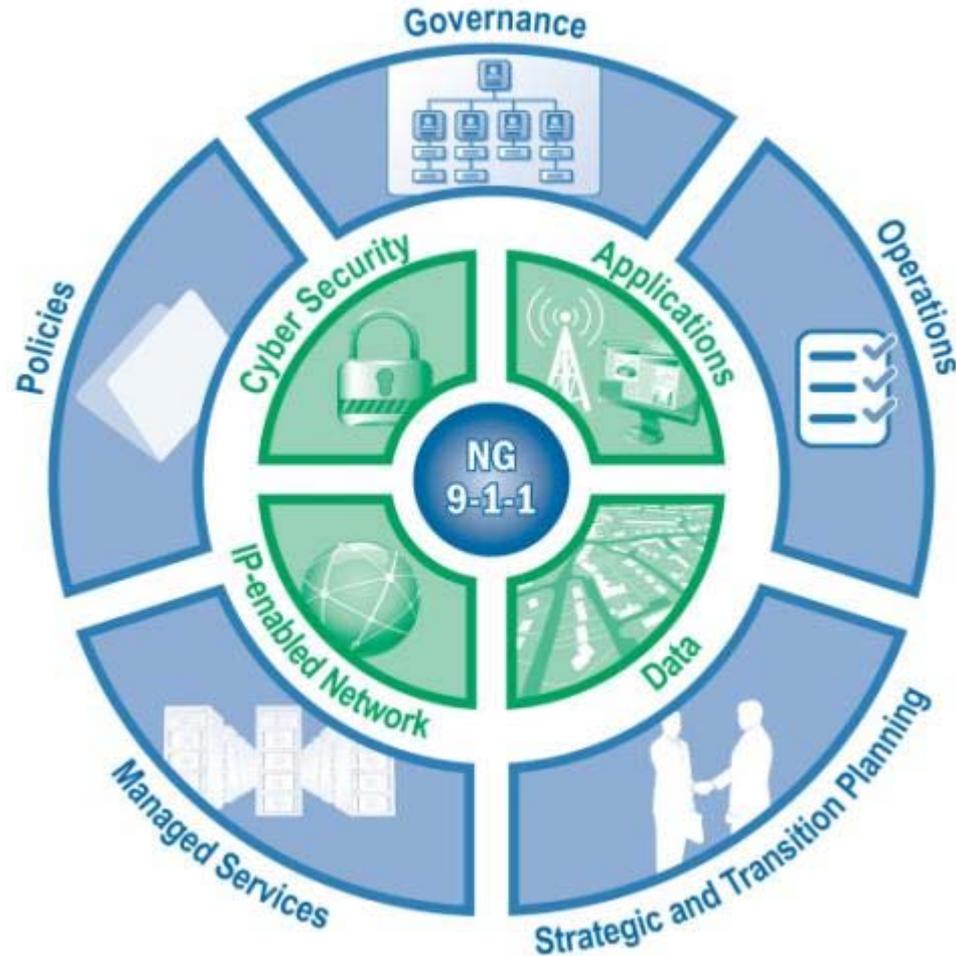
What is NG9-1-1?

- ◆ NG9-1-1 is best described as an open-standard-based, robust system of systems, that allows the public to use **any device** to request help or send information to the appropriate public safety agency
- ◆ NG9-1-1 is often considered a network, but it doesn't stop there – it is the culmination of converging many applications into a common platform.

Alphabet Soup



What is Next Generation 9-1-1



What is NG9-1-1?

The current 9-1-1 system is not broken

- Initially designed to do one thing – complete emergency **calls**
 - 3 digit dialing from fixed locations (landline) to reach emergency response

- CAMA trunks added ANI
- E9-1-1 adds in ALI w/ANI

New technologies caused a patchwork of modifications

- Wireless** added through considerable system modification and effort (patches)
- VoIP** added but still has limitations (more patches)
- Legacy 9-1-1 Platform is not extensible to support newer technologies

9-1-1 Today	NG9-1-1
Primarily voice calls via telephone handsets	Voice, text, or video information available from many different types of communication devices
Minimal data available	Advanced data sharing is available
Access to services are locally provided, backup is local, usually not enhanced	Enhanced capabilities; physical location of PSAP becomes less important
Routing based on phone number / MSAG	Ability to route “calls” more accurately

NG9-1-1: What it isn't

- ◆ NG 9-1-1 is not going to put local PSAPs out of business
- ◆ Is not going to work without local participation, collaboration and teamwork
- ◆ It is not going to use the public internet for emergency communications
- ◆ Going to keep patching the current system to accommodate new technology
- ◆ A fad, the public is demanding it by adopting new technologies, services and applications

Current Relationship With GIS and 9-1-1

GIS data for 9-1-1



GIS data for 9-1-1

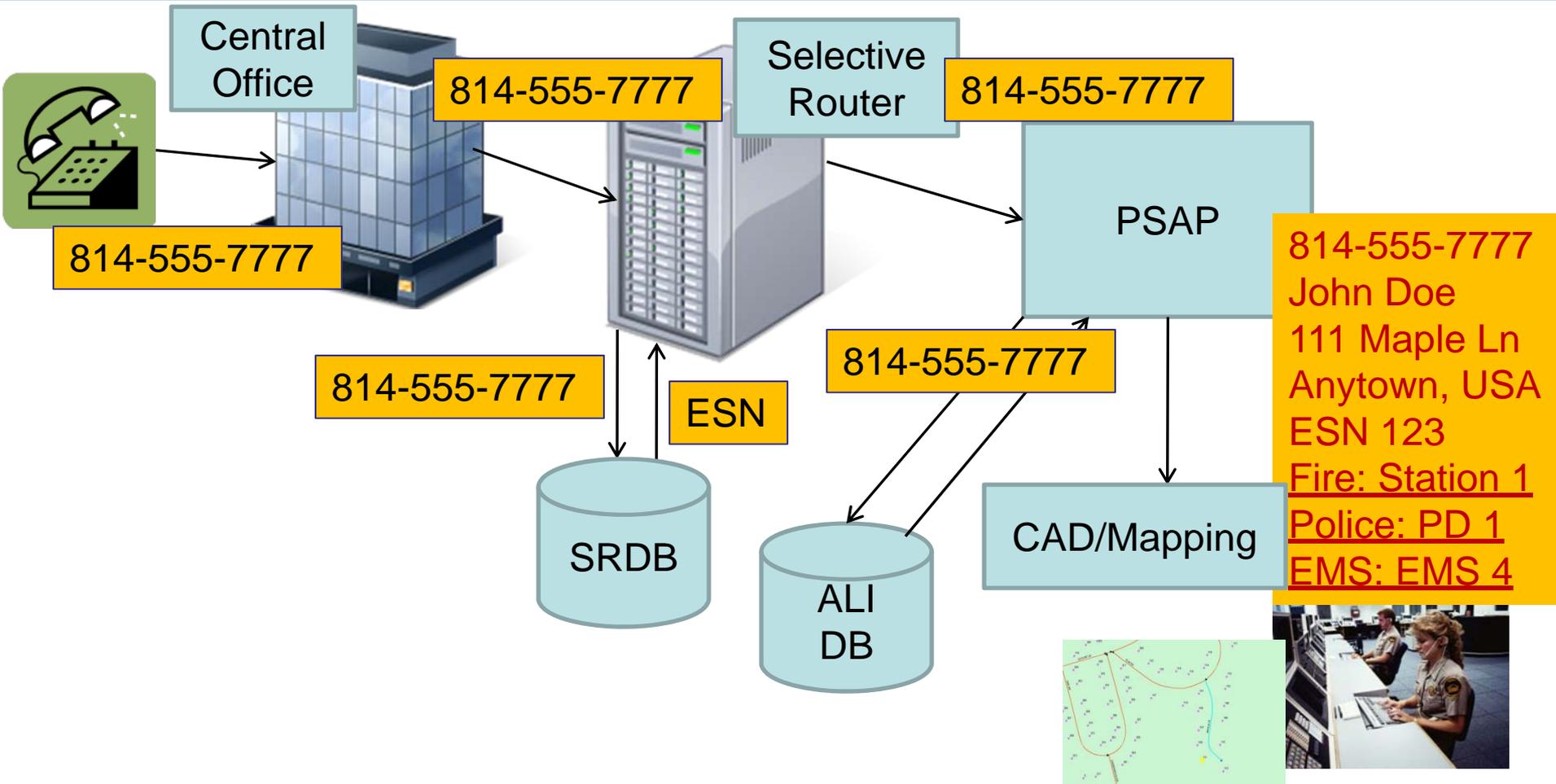


Overview of GIS and 9-1-1 Today

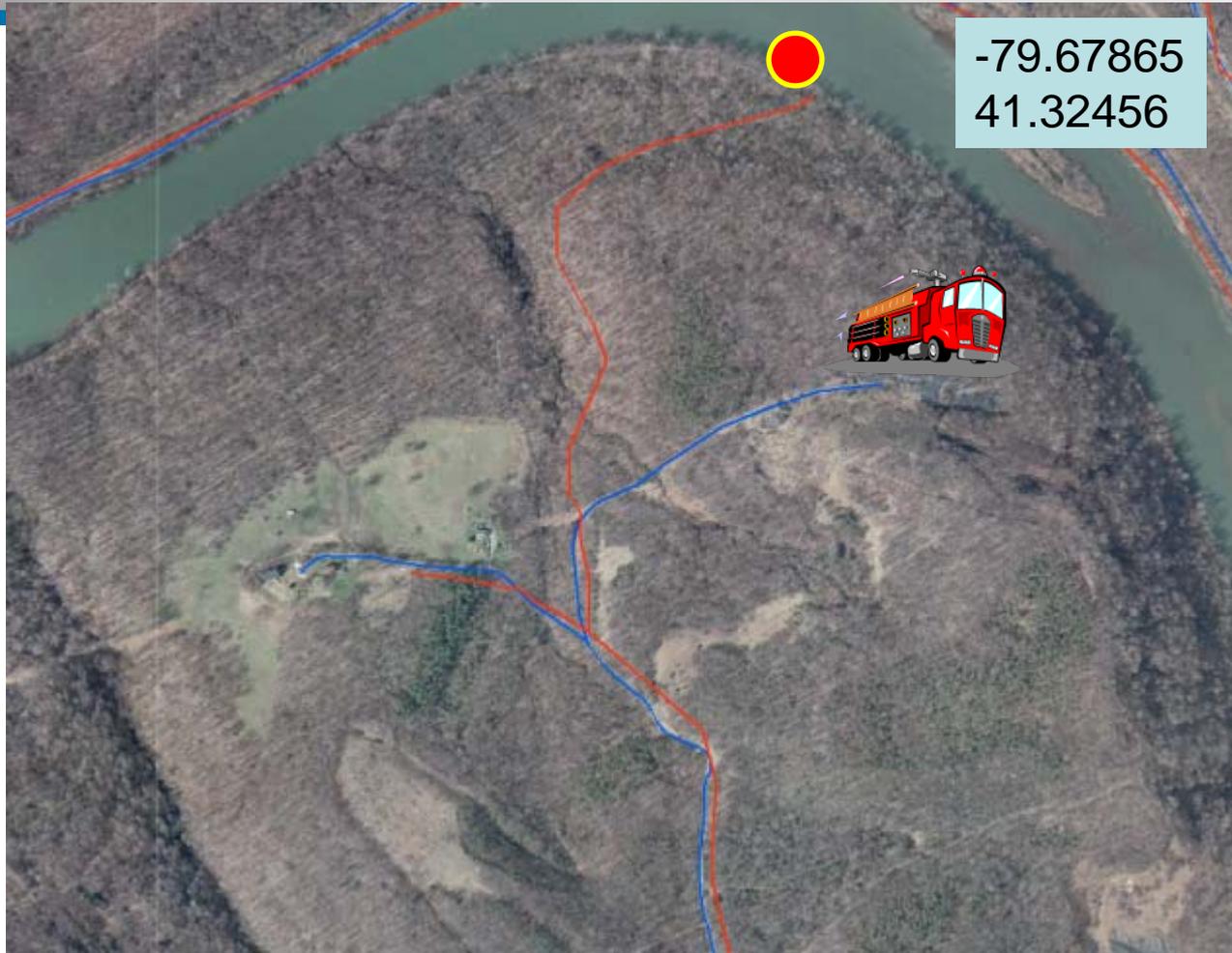
- ◆ Locate address, coordinates, physical location on earth's surface
- ◆ Plays an important role in providing location to 9-1-1 call takers on mapping displays in PSAP, especially during wireless calls
- ◆ Importance of accurate and complete GIS data effective decision-making by call takers – trust in the data
- ◆ What if GIS data is incorrect or incomplete?
 - Incorrect routing of emergency responders
 - Increases response time
 - Lives in jeopardy – every second counts

Overview of GIS and 9-1-1 Today

Routing of Wireline Call and Use of GIS During 9-1-1 Call



Issues Today – Accuracy



Issues Today – Current Data



Role of GIS in a Next Generation 9-1-1 (NG9-1-1) Environment

GIS in NG9-1-1

- ◆ GIS plays crucial role in NG9-1-1 call routing - ECRF
- ◆ Routing database is GIS data centric
- ◆ Accuracy of GIS data is paramount
- ◆ Shared data – coordination
- ◆ 9-1-1 authority is responsible for the data
- ◆ Location is delivered with call
- ◆ Location is pre-validated using GIS data - LVF

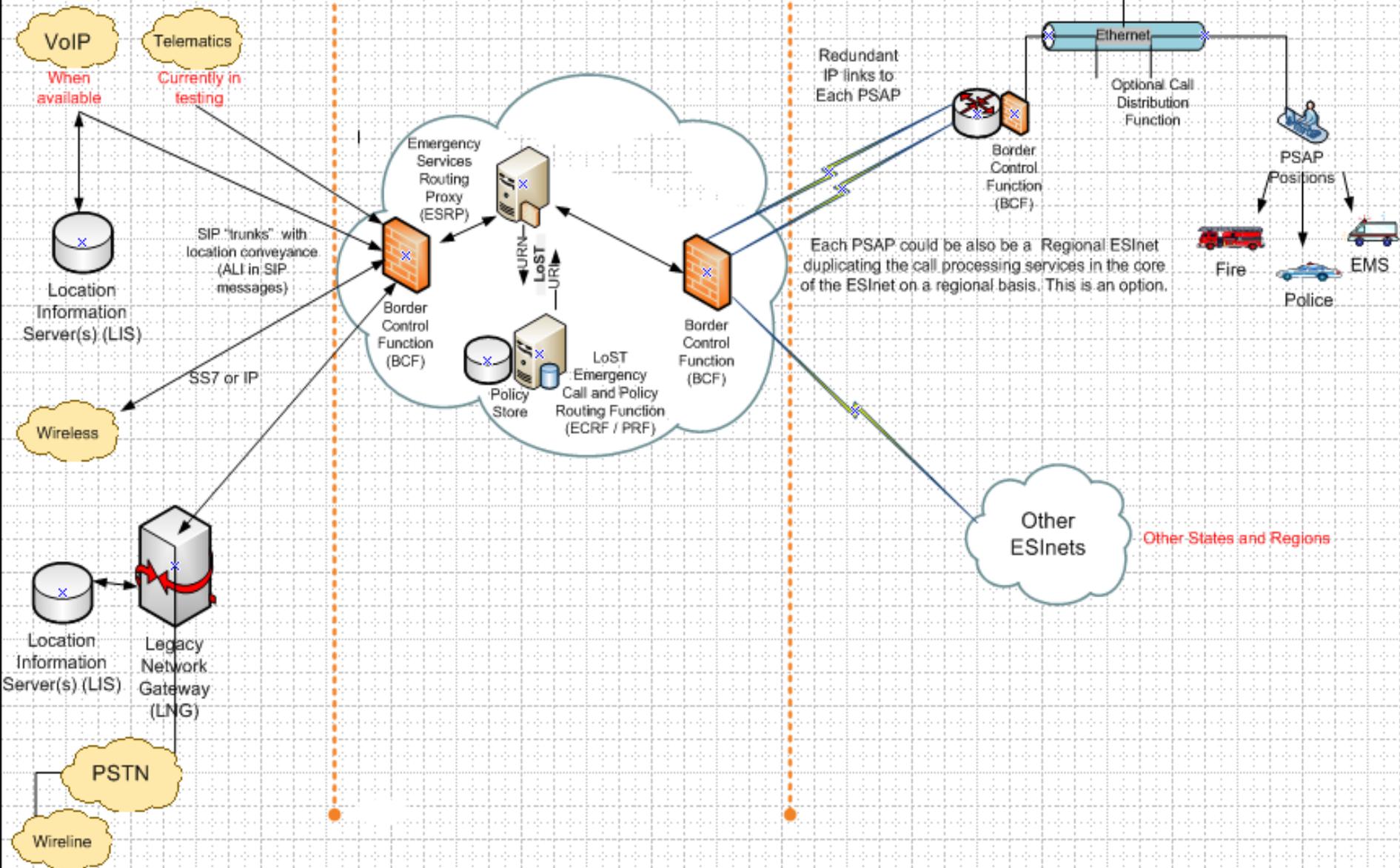
Full NG-9-1-1

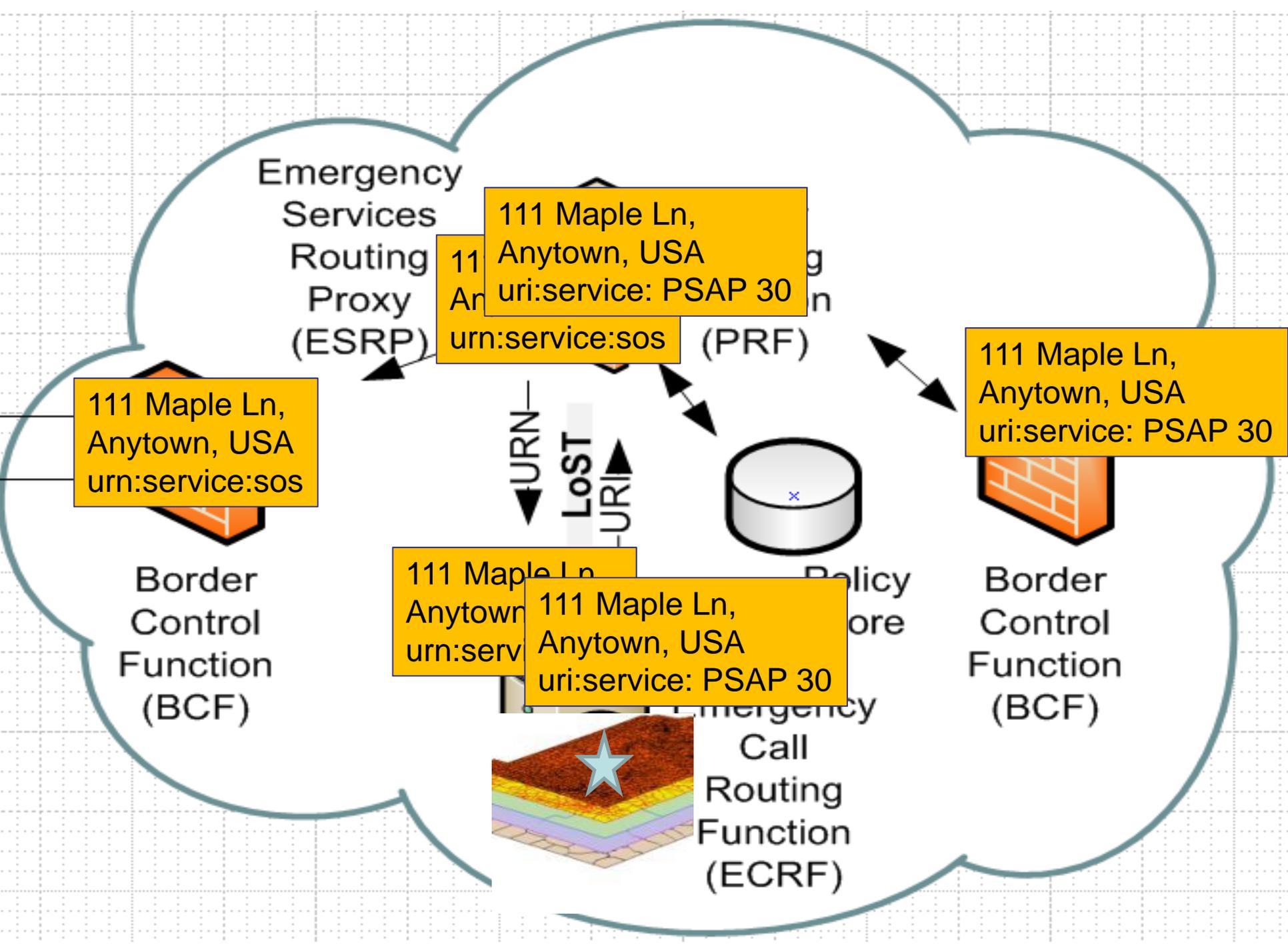
Conceptual Only

Originating Network

Emergency Services IP Networks

PSAPs and Other ESInets





9-1-1 GIS Data - Focus Themes

- ◆ Accuracy
- ◆ Maintenance
- ◆ Standards
- ◆ Policy and Governance

9-1-1 GIS Data - Focus Themes

◆ Accuracy

- GIS road centerlines, address points and jurisdictional boundaries all become focus of emergency routing databases
- What can you be doing to prepare GIS data?
 - Synchronize GIS with MSAG and ALI
 - NENA 71-501, Version 1.1, September 8, 2009
 - Completed address points layers
 - Edge-matching boundaries, centerlines

◆ Standards

- Having the correct information collected in the correct format
- To foster regionalization of data and interoperability

9-1-1 GIS Data - Focus Themes

- ◆ Maintenance
 - Data maintenance is ongoing process
 - Must have maintenance plan
 - Coordination with jurisdictions/departments
 - Road names, new addresses, boundaries
- ◆ Policy and Governance
 - Local agreements for data maintenance and data sharing for regionalization of data

9-1-1 GIS Grant Project

ENHANCE 911 Act Grant

- ◆ History
- ◆ Background
 - Act in place in 2004
 - Funds authorized, but not appropriated until 2009
- ◆ June 2009 announcement
- ◆ June 2009 SNC approval of application
- ◆ August 2009 application due
- ◆ Sept 2009 award announced of \$1,699,999
 - \$1,108,704 base
 - \$591,295 supplemental

What is the project NOT about?

- ◆ NOT replacing the local 9-1-1 GIS data systems and making the state responsible for all PSAP GIS data
- ◆ NOT for use to create a single statewide CAD or PSAP
- ◆ NOT creating a platform for non-public safety purposes

What Grant Project IS About

- ◆ Creating a central 9-1-1 GIS Repository
 - Enabling PSAPs to share GIS information
 - Establishing MOAs
 - Setting standards for GIS data entry
 - Future framework for NG9-1-1 database
- ◆ Statewide Public Safety Answering Point (PSAP) Boundary Layer
- ◆ Statewide Road Centerline Layer

Project Organization Overview

- ◆ Project Sponsor

Harriet Miller-Brown – Michigan 9-1-1 State Administrator

- ◆ DTMB Project Staff (CSSTP)

Eric Swanson - CSSTP, Project Sponsor, Director

Laura Blastic – CSSTP, Project Manager, Geo-Framework
Services Manager

Paul Harmon – CSSTP, Communications Liaison

Mathi Ramachandran – CSSTP, Data Architect

John Clark – CSSTP, GIS Solutions Architect

Mark Holmes - L.R. Kimball

Formation of the TAC:

- ◆ Established as a technical advisory committee to the Local and State Cross Boundary Technology Steering Committee
 - Local representation from the 9-1-1, IT, and GIS communities to provide first hand knowledge and experience to the 9-1-1 GIS Grant Project
 - Will make recommendations on project direction to the Local and State Cross Boundary Technology Steering Committee

Project Organization Overview

Technical Advisory Committee (TAC)

➤ 9-1-1

- Mike Muskovin, Ottawa County
- Mike Szor, Alpena County
- Phyllis Fuller, Barry County
- Harriet Miller-Brown, State 9-1-1 Office

➤ IT

- Ron Plamondon, Leelanau County
- Susan Moore, Oakland County
- Tom Shewchuk, Ingham County

➤ GIS

- Scott Ambs, Jackson County
- Chris Cantrell, Midland County
- Nathan Fazer, Eastern UP Planning Region
- Eric Swanson, CSSTP

Role of the TAC:

- ◆ Provide local insight and collaboration as project develops
 - Project documents (e.g. Charter, MOA's)
 - Develop technical standards
 - Develop communication and outreach plan
 - Initial data assessments
 - Determine sub-grant recipients
 - Serve as the voice of the local units of government who will be the end users of the system

Project Tasks Overview

- ◆ Initial Assessment and Data Development Plan
- ◆ Community Outreach
- ◆ Statewide 9-1-1 Database Design
- ◆ Develop and Implement Database and Application Architecture
- ◆ Develop Statewide PSAP Boundary Layer
- ◆ Develop Complete Statewide GIS Road Centerline and an Initial Point Address Layers
- ◆ Maintenance Plan and Workflows Implementation

9-1-1 GIS Survey

- ◆ Statewide survey that was sent in May of 2011 to PSAP Managers/Directors and County 9-1-1 Coordinators
- ◆ High level participation - 115 of the 168 PSAPs provided responses
- ◆ Get a current snapshot of GIS/9-1-1 systems today
- ◆ Collaborate with GIS resources to fill out survey
- ◆ Survey has guided the planning of the project

System Architecture

- ◆ GIS Repository

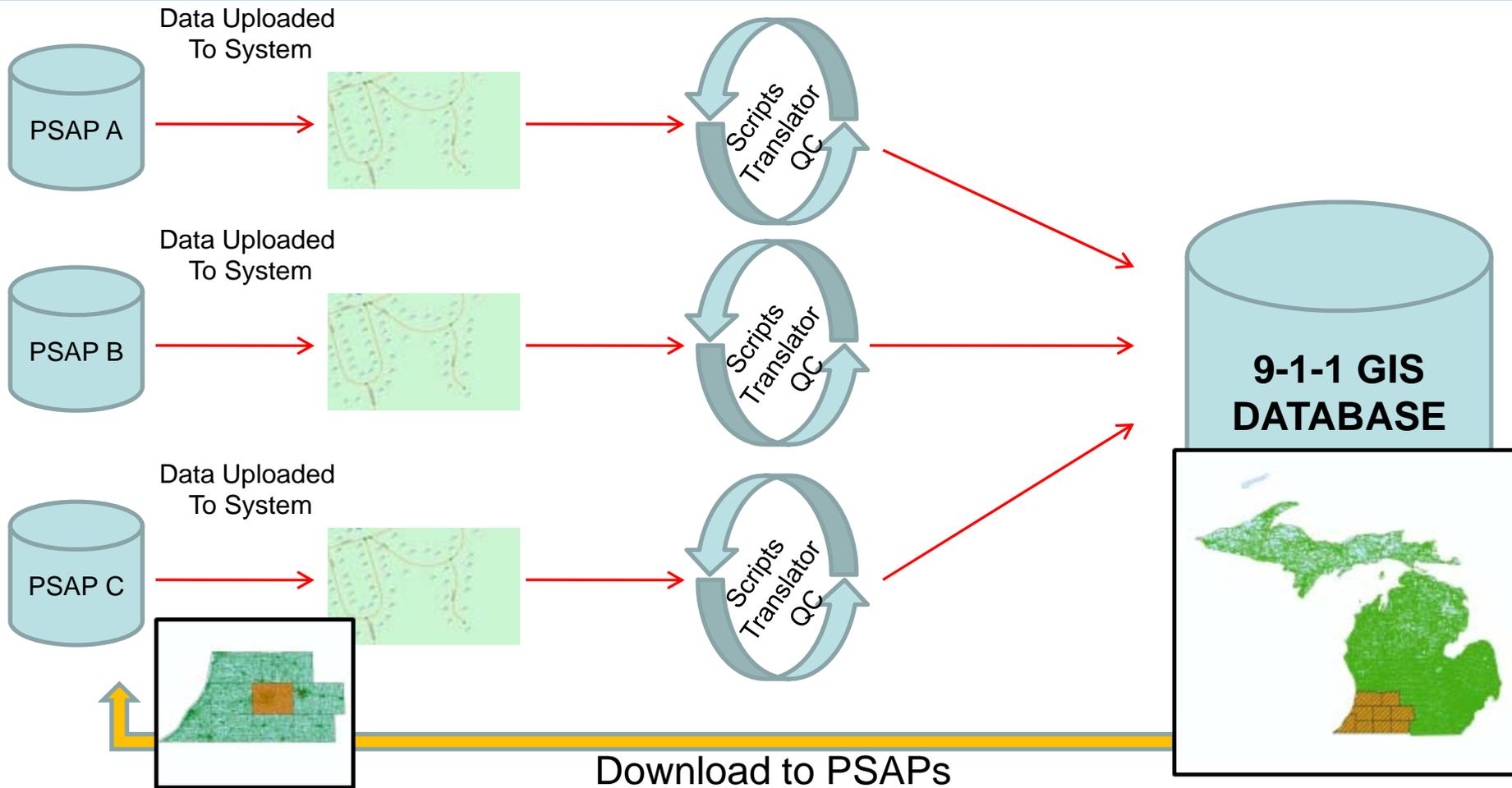
- Data Standards

- Road Centerlines and PSAP Boundaries – Mandatory
 - Address Points and Emergency Service Zones
 - 9-1-1 GIS Data Standards for GIS Repository
 - Incorporates current 9-1-1 standards
 - Includes NG9-1-1 data standards for future implementation
 - Public Comment Period
 - Began September 30, 2011 Ended October 14, 2011
 - Document available at:
 - www.michigan.gov/911gisgrant
 - www.michigan.gov/snc
 - Final Standards to be Posted November 8, 2011

System Architecture

- ◆ User Interfaces Into System
 - ETL Processes
 - Translation scripts
 - Projections
 - Field mapping
 - Interactive Map
 - Red lining of edits to road, PSAP boundaries
 - Data update approval processes
 - Quality Control Tools and Reports
 - Import and Export Utilities

Data Interoperability



Data Sharing and Agreements

- ◆ Enhanced Access to Public Records Act
 - DTMB Policy Developed Specific to Project
 - Local Participant Will Need a Local Enhance Access to Public Records Act Policy
 - Project Will Provide Examples of Enhance Access to Public Records Act Policies – If Local Participant Does Not Have One in Place
 - Memorandum of Agreement Between CSSTP and Each Participating Entity
 - Outlines Roles and Responsibilities of CSSTP and Participants
 - Established Disclaimers for Data Sharing
 - Signed Agreement

Current Activity

- ◆ Participating Counties/PSAPs for Pilot
 - Alpena, Jackson, Leelanau, Barry, Midland, and Allegan Counties
- ◆ Steps to Participation
 - Sign Memorandum of Agreements Between Participant and CSSTP
 - Implement Local Enhance Access to Public Records Act Policy
 - Provide Data to CSSTP for Data Assessment
- ◆ Talk to your GIS department
 - Discuss Participation
 - Make inquiries to the TAC members if you have questions
- ◆ Groups supporting the project: Michigan APCO, MCDA, MiCAMP, IMAGIN

Local Sub-grant Program

Sub-grant program timeline

Grant Application Period Opens	November 1, 2011
Grant Informational Webinar	November 8, 2011 – 10:00AM
Letter of Interest Submission Deadline	November 18, 2011
Memorandum of Agreement Submission Deadline	December 1, 2011
GIS Data Submission Deadline for Assessment	December 1, 2011
Grant Application Period Closes	January 3, 2012
Grant Award Notices	February 1, 2012
Mid-term datasets and financial reports submission	April 1, 2012*
Final Datasets and financial reports submission	June 30, 2012 **
Grant Project Completion	June 30, 2012

Sub-grant program information

- ◆ www.michigan.gov/911gisgrant
- ◆ Grant application packet
 - Introductory Letter
 - Letter of Interest form
 - Grant Guidelines
 - Grant Application Form
 - Memorandum of Agreement (MOA) Template
- ◆ Webinar for interested applicants
 - November 8, 2011 10 a.m. (Dial-in Info to Follow)

Sub-grant program information

- ◆ Frequently Asked Questions (FAQ) document
- ◆ Additional contact information listed on grant guidelines document
- ◆ TAC members are available for questions
- ◆ Database standards
 - Final standards document
 - Geodatabase model templates
 - Both files to be available Nov. 8th, 2011 on project web site

Sub-grant payment schedule

April 15, 2012	50% of Grant Total Awarded to Grantee *
July 15, 2012	50% of Grant Total Awarded to Grantee **

- ◆ *The mid-term grant payment will be dependent on showing progress of grant objectives. Mid-term datasets submitted by the April 1, 2012 due date will be reviewed for increased accuracy levels toward the baseline.
- ◆ **The final grant payment will be dependent on final assessment of the datasets to determine if grantee met the objectives described in the grant application and have met the necessary accuracy levels.

Requirements for eligibility

- ◆ To be eligible for any available grants, the applicants will be required to have:
 - submitted a letter of interest to participate in the Michigan ENHANCE 911 Act GIS grant project
 - executed data sharing Memorandum of Agreement
 - provided a copy of the required datasets for initial baseline review
 - GIS road centerlines and MSAG table (minimum requirement)
 - Provided a copy of datasets, if available
 - GIS address points
 - GIS Emergency Services Zone boundaries

Eligible Uses of Sub-grant funds

- ◆ Improvement of road centerline completeness and accuracy tied to the requirements of the ENHANCE 911 Act grant.
- ◆ Sub-grants will be prioritized based on the ENHANCE 911 Act grant project requirements for road centerlines
- ◆ Eligible uses of funds include:
 - Improving spatial accuracy of roads
 - adhering to standards of +/- 10 feet from center of roadway
 - Topology – roads that are not connected or intersected

Eligible Uses of Sub-grant funds

- ◆ Eligible uses of funds include (continued):
 - Improving attribute completeness and accuracy of required fields

Field Description	Example
Prefix Street Direction	N, E, S, W, NE, NW, SE, SW
Street Name	MAIN, CENTER, ELMWOOD, THIRD
Street Type	ST, AVE, RD
Suffix Street Direction	N, E, S, W, NE, NW, SE, SW
Left From Address	101
Left To Address	149
Right From Address	100
Right To Address	148
MSAG Community Left	GREEN TWP
MSAG Community Right	GREEN TWP
ESN Left	103
ESN Right	103

Eligible Uses of Sub-grant funds

- ◆ Eligible uses of funds include (continued):
 - Field verification of addressing information
 - Staffing costs to perform the road centerline improvements. Staffing costs will only be funded for work specific to the grant project and outlined in the grantee's application.
 - Vendor costs to improve the data accuracy requirements of the road centerlines
 - All expenses must be reasonable and necessary and comply with the allowable uses criteria as established by the State 9-1-1 Committee's Allowable and Disallowable Expenses list.

http://www.michigan.gov/documents/ListingofAllowable_14259_7.pdf

Data Assessment Process

- ◆ Requirement of the ENHANCE 911 Act grant project and participating in the sub-grant program is for participants to provide initial datasets for baseline review
- ◆ Basic assessment of the data is performed
 - Not a detailed record by record visual review
 - Check standardization of databases
 - Automated attribute checks
 - Visual spatial accuracy review
 - Topology sampling
 - Geocoding check of address points (if available)

Data Assessment Scorecard

- ◆ Template scorecard will be available on project web page by Nov. 8th.
- ◆ Applicants that wish to review assessment results will receive the baseline assessment report within 2 weeks of submitting data
- ◆ Requirement is to submit by Dec. 1, 2011 along with signed MOA
- ◆ Submit sooner if you can, then you will receive the results sooner to potentially incorporate into your grant application

Data Assessment Scorecard

Demonstration of Sample Document

Initial FAQ

- ◆ Do I have to participate in the 9-1-1 GIS grant project if I receive a sub-grant?
 - YES
- ◆ Can I still participate in the 9-1-1 GIS grant project if I do not apply for a sub-grant?
 - YES

Initial FAQ

- ◆ What format do the deliverables need to be in to upload to GIS repository?
 - Minimum requirement will be shapefile
 - Personal or file geodatabase also accepted
- ◆ Does a participant need to give up data developed from sub-grant funds?
 - The participant will still retain ownership of the data at the local level but will need to provide an initial copy and regular updates of the data to the GIS repository

Initial FAQ

- ◆ If I do not have GIS resources who can I ask about available GIS resources to assist?
 - GIS Associations (MiCAMP, IMAGIN) could be of assistance

More Information

- ◆ www.michigan.gov/911GISGrant
- ◆ www.michigan.gov/snc
- ◆ Harriet Miller-Brown
 - MillerHR@michigan.gov
 - 517-241-0080
- ◆ Laura Blastic
 - blasticl@michigan.gov
 - 517-373-7910

Questions

Open Discussion