The Louisiana Address Maintenance Plan

A Business Plan for Statewide Address Management

April 2013

Developed by:
The *Louisiana Geographic Information Center (LAGIC)* in coordination with the *Louisiana GIS Council Addressing Subcommittee* and the *Orleans Parish Communication District*

Funded by Federal Geographic Data Committee

Table of Contents

1. Executive Summary 3
2. Program Goals for the Louisiana Address Maintenance Plan 5
3. Benefits and Justifications 7
4. Requirements and Costs 9
   a. Historical Perspective 9
   b. Digital Address Survey Sections 10
      Map 1- Parishes that participated in the 2011 LAGIC Address Maintenance Survey 11
      Map 2- Phase II Compliance Map, by Parish (2012) 15
      Map 3 – Membership in National Emergency Numbering Association in Louisiana, by Parish 17
   c. Data Requirements 20
   d. Technology Requirements 23
   e. Resource Requirements 24
   f. Standards 26
   g. Budget Requirements 27
   h. Assessing Risk (see Appendix B) 27
5. Implementation Plan 29
   a. Implementation Details 29
   b. Phasing and Milestones (see Appendix C) 31
   c. Budget Plan 32
   d. Marketing and Outreach 32
6. Measuring Success and Feedback for Recalibration 34
7. Appendices 36
   A. Policy Recommendations 36
   B. SWOT 37
   C. Timeline 38
   D. FCC Location Accuracy Requirements 39

The Lousia

Photo Credits: pg. 4- theadvocate.com, pg. 9, 20, 26, 29, 35- shutterstock.com, pg. 18- fema.gov, pg. 22- cityofboston.gov

1. Executive Summary

The Louisiana Geographic Information Center (LAGIC) and the Addressing Subcommittee of the Louisiana Geographic Information Systems Council (LGISC) identified the need for the collection, data normalization, maintenance and distribution of spatially correct address point data for a variety of public purposes. Among the critical local and state public needs that require accurate address points are:

- 911 emergency responses (fire, police, ambulance);
- Law enforcement;
- School bus routing;
- Municipal services;
- Homeland Security and Emergency Preparedness;
- Voting registration;
- Streamline sales tax, and
- Health Care and Human Services delivery.

Funded by a 2011 Federal Geographic Data Committee (FGDC) CAP Grant, LAGIC surveyed all 64 Parish Communication (9-1-1) Districts to determine the status of digital address data among Louisiana first responders. Digital address data is defined as containing a structure address number, street name, community, and coordinate pair, such as latitude/longitude, to describe a specific location. LAGIC found a wide variety of data storage formats, accuracy requirements and collection practices among Louisiana Communication Districts. More than half, 39 of the 58 parishes that responded to the survey, collect address points. The majority, 33 out of 58, use street address ranges as their primary tool for locating calls for service. A total of fourteen parishes have the capability to use both street address ranges and address points to locate calls for service.

New Federal Communication Commission (FCC) requirements for Communication Districts, called Next Generation 9-1-1, will require a higher level of spatial accuracy than is possible using address ranges. The use of cell phones versus landlines is another factor that is driving the need for better spatial accuracy. Communication Districts will need to

significantly improve their ability to accurately locate individuals in an emergency in order to comply with these new requirements.

Of the sixty-four Louisiana parishes, there are thirty parishes that are creating address databases in the state with funding from the Louisiana Broadband Initiative. There are another fourteen parishes, in metropolitan areas, with existing digital address databases. The remaining twenty parishes do not have digital addresses and many of these do not have the resources to create them. The Louisiana Address Maintenance Plan (LaAMP) would provide funding to finish those twenty parishes that are without digital addressing and set up the mechanisms to maintain address data statewide.

The Chair of the LGISC Addressing Subcommittee and LAGIC agree on the following set of policy recommendations:

1. Digital address points should be created for all parishes. The data should be maintained in the FGDC address standard and the parish's original data format.
2. The State should institutionalize the use and updating of high resolution state-wide ortho-imagery (6" to 1 foot resolution minimum) pursuant to available funding.
3. State agencies, under the supervision of the State CIO, should adopt the FGDC-approved address standard and implement it enterprise-wise.
4. Existing state and local address databases should be migrated to the FGDC standard within three years of the LaAMP adoption by the state.
5. An address data repository should be developed to serve up spatially enabled address data to local, regional, state and federal government.
6. The state should provide a geocoding service and technical support to state and local governments that need to use point address data.

2. Program Goals for the Louisiana Address Maintenance Plan

The primary goal of the Louisiana Address Maintenance Plan (LaAMP) is to develop a set of procedures and best practices for the collection, storage, maintenance and distribution of addresses and address points for residential and business addresses throughout the state.

The objectives of the LaAMP are to:

- Identify the current state of addressing practices.
    - Identify the obstacles to digital address data creation and maintenance.
    - Recommend a set of unique solutions based on the needs of each parish.
    - Develop browser-based solutions to address data collection and data maintenance issues.
    - Devise a procedure for cross walking data in different formats.

- Conduct a pilot project in a rural parish to estimate the amount of time and resources required to provide point addresses in a rural parish. A rural parish was selected because it provides a better view of all the possible address issues within a parish.

- Prepare a plan that details the costs and benefits of providing a statewide address maintenance system that is coordinated with local government.

- Develop web-based address maintenance tools that could be used by any parish that does not have the GIS capability to collect, edit, maintain, store and distribute address points for their jurisdiction.

- Create a database template that can be used as a model by any parish that would like to standardize their address data and employ the federal standard.

- Develop training programs that demonstrate web-based tools for address maintenance.

- Create a set of minimum specifications that could be used by the state for federally-funded projects that involve the creation or sharing of address data, including (but not limited to):
    - Minimum ortho-photography specs for use in creating address data from imagery.
    - Specify the database schema for the creation of uniform address data.
    - Specify the use of the Federal Address Standard to provide a common set of procedures.

3. Benefits and Justifications

The primary benefit of collecting, maintaining and distributing a common statewide address point data set is that 80% of all state data sets have an address component, yet less than half of all parishes have a point address database. Currently, address data cannot be shared easily at a state or regional level because it must be normalized. Spatial data, such as addresses, are collected in a variety of ways and for unique purposes. The process of data normalization, or making divergent databases compatible for analysis, can be difficult, tedious, and a major impediment to the use of the data. Unless the data are made compatible, the vast amount of spatial data in local and state databases remains unavailable for use at its fullest potential. If data are perceived as unavailable or unusable, scarce resources may be used to recreate the data, thus leading to costly data redundancy that neither solves the problem of incompatible databases nor plays a positive role in building future data compatibility. The database adage, "Build it once, uses it many times," is true if data standards are employed for the collection of all spatial data.

The need for standardized address data is especially important for locating citizens in an emergency. Communication Districts (9-1-1) are moving from street address ranges to address points to improve their ability to accurately locate callers and pinpoint calls from multi-unit dwellings. Geospatially accurate address points are also essential in telephone-based emergency notification (Reverse 9-1-1), evacuation planning, and to assist public safety personnel (Police, Fire, and EMS) response to calls for service.

The uses of standardized address data go beyond emergency response. It is critical for state government applications including economic development analysis, more efficient delivery of health and social services, and site location. The private sector benefits

from speedier service and repair calls, and improved commercial package delivery services such as FedEx, DHL, and UPS. Additionally, improved coordination between utility companies, local government, and the public would improve the ability to issue permits, identify current service availability, pinpoint outages, and speed service calls. More accurate addressing can aid in routing school buses and municipal vehicles, in-car navigation, and improve the spatial accuracy of internet map services like Google and MapQuest.

In addition to improving state services, more accurate address data is critical to a number of federal agencies, including the US Post Office (County Project), US Census Bureau (LUCA Program and GSS Partnership Initiatives), US Department of Homeland Security (FEMA), and the Federal Communications Commission (Broadband Initiative), among others. The need to exchange address data between all levels of government is apparent. Without data standardization, data exchange and spatial analysis between towns/cities and parishes, parishes and states, and states and federal government agencies will remain rare occurrences.

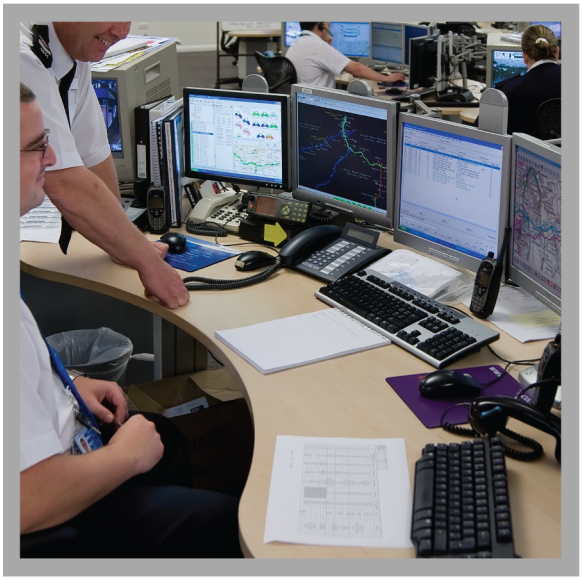
In summary, there is an increasing need for universally available, accurate and timely address point data. Accurate address point data is a requirement for the following public purposes:

- Disaster response and recovery.
- Next Generation 9-1-1 (NextGen 9-1-1).
- Identifying the location of broadband users in relation to broadband infrastructure.
- Routing emergency service vehicles and school buses.
- Updating census address data to ensure a complete population count.
- Accurate application of sales tax rates.
- Accurate voter precinct boundaries.

4. Requirements and Costs

a. Historical Perspective

In 1979, Lafayette Parish became the first parish to establish, through legislation, a communication district to provide emergency telephone service. Other parishes soon followed Lafayette's example, enacting legislation to create their own communication districts. By 1983, House Bill #1065 established generic procedures for any parish to create their own districts and assess fees. Furthermore, House Bill #1065 recognized the wide disparities in needs and resources among parishes by outlining four methods by which parishes could operate their emergency telephone systems. In 1983, Act 550 confirmed that implementation of 9-1-1 in Louisiana would take place on a parish-by-parish basis rather than a statewide or regional basis.



Communication Districts are funded through an emergency telephone service fee on each residential and commercial telephone subscriber and differ from parish to parish. The fees, which are itemized on the subscriber's phone bill, are collected by the service provider and remitted to the parish communication district. The number of different laws establishing parish communication districts as well as amendments to those laws, all but guaranteed that the fees charged customers would vary between parishes.

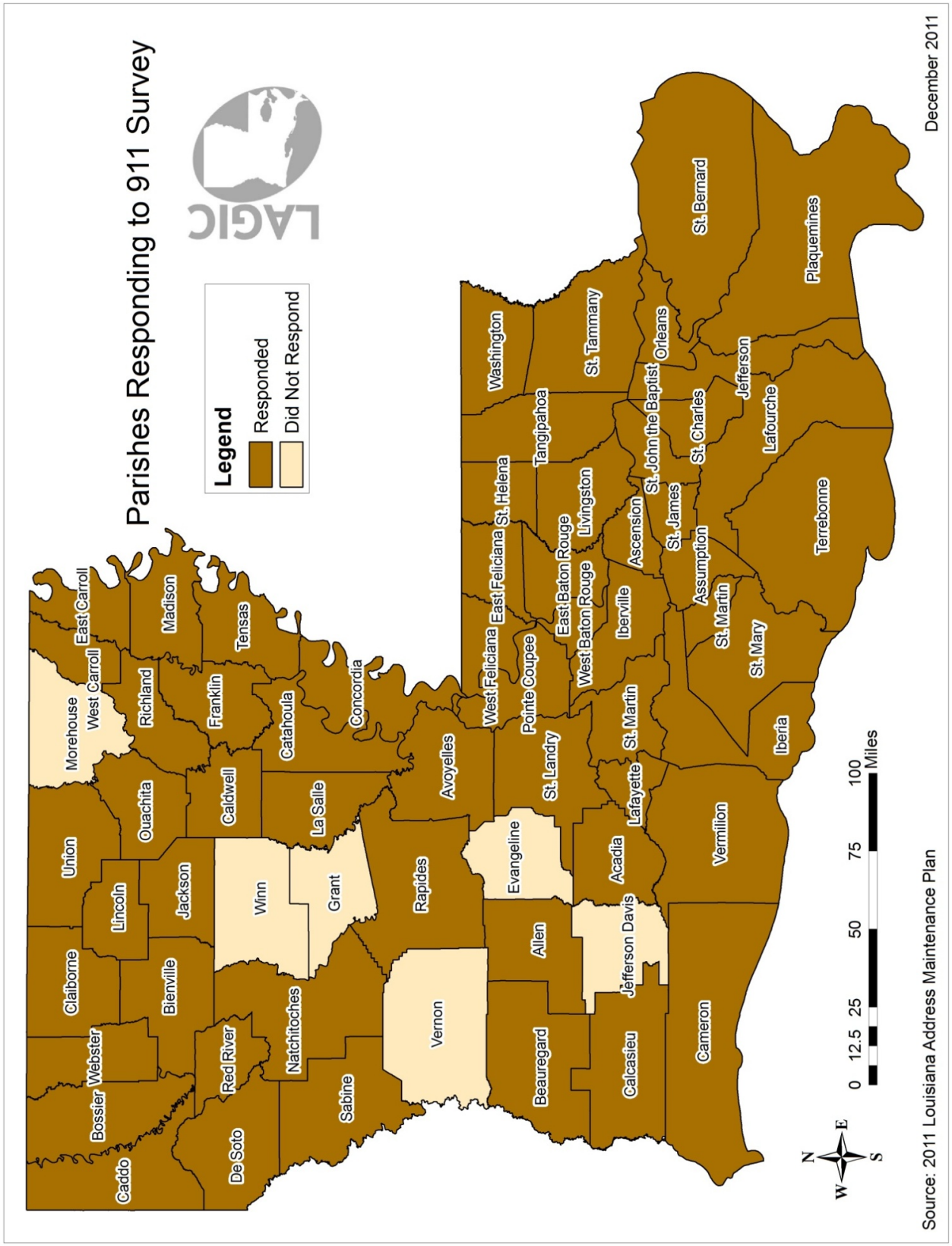
Technological advances have made it possible to deliver enhanced 9-1-1, or E9-1-1, services. E9-1-1 allows the call taker to see both the phone number of the caller and their physical address. These enhancements are known as Automatic Number Identification (ANI) and Automatic Location Identification (ALI). Knowing a caller's exact location (ALI)

is critical to public safety agencies that employ Computer Aided Dispatch (CAD) systems that ensure that the closest fire station or police substation responds to the call. The (FCC) has mandated that, over time, cellular and other wireless service providers provide ALI and ANI, for all devices capable of making a call to 9-1-1 (FCC 94-102). In order to locate cellular calls, the Communication Districts proposed state legislation that allowed them to recover some of the costs of equipment upgrades. Approximately one-third of Louisiana Communication Districts now assess a flat monthly fee for cellular and other wireless devices.

Louisiana House Bill #1969 of 1995 allowed for the creation of multi-parish Communication Districts and to allow one parish to contract with another for the provision of its 9-1-1 service. For example, St. Helena Parish currently contracts with Tangipahoa Parish to provide their call taking and dispatch services.

b. Digital Address Survey Sections

In 2011, LAGIC developed an online Digital Address Survey and distributed it to all sixty-four parishes to determine the current status of digital addressing data in the State of Louisiana. An introduction letter accompanied the survey from the President of the Louisiana Chapter of the National Emergency Numbering Association (LaNENA) requesting that LaNENA members participate in the survey. Fifty-eight of the sixty-four parishes, or 90%, responded to the survey (Map 1). The survey was divided into four sections. This survey was distributed to each of the sixty-four 9-1-1 Communication Districts.



Map 1- Parishes that participated in the 2011 LAGIC Address Maintenance Survey

Survey Questions

Section 1 - How does your organization collect, edit and maintain your address data?

This section was designed to document the current state of addressing at the parish level. Communication District Directors/Managers were asked who the "addressing authority" was in their parish, and, if not themselves, how did they obtain new and modified addresses from the "addressing authority." We also wanted to know if the addressing authority stored addresses as point data or as address ranges. If point data, did they maintain the corresponding coordinate point associated with that address?

Section 2 - How is your communication district organized?

This section of the survey was designed to better understand the process of acquiring address data. Do the parish ordinances specify how addresses are assigned? Who in your office has the authority to add, delete or modify an address? How often is the Master Street Address Guide (MSAG) updated?

Section 3 - How is your Automated Location Information (ALI) database maintained?

This section was designed to help LAGIC understand who else is involved in the address location process. Who is the Local Exchange Carrier (LEC) in each parish? The survey asked who maintained the ALI database for the parish, and the cost to keep that data current. We were interested in knowing if the parish had a GIS database with point addresses or a structure layer. If so, how often did the parish compare the GIS database with the ALI database to ensure that they are in sync? We also wanted to know if there was a charge associated with getting a current copy of the ALI database from their LEC.

Section 4 - How is your organization preparing for Next Generation 9-1-1?

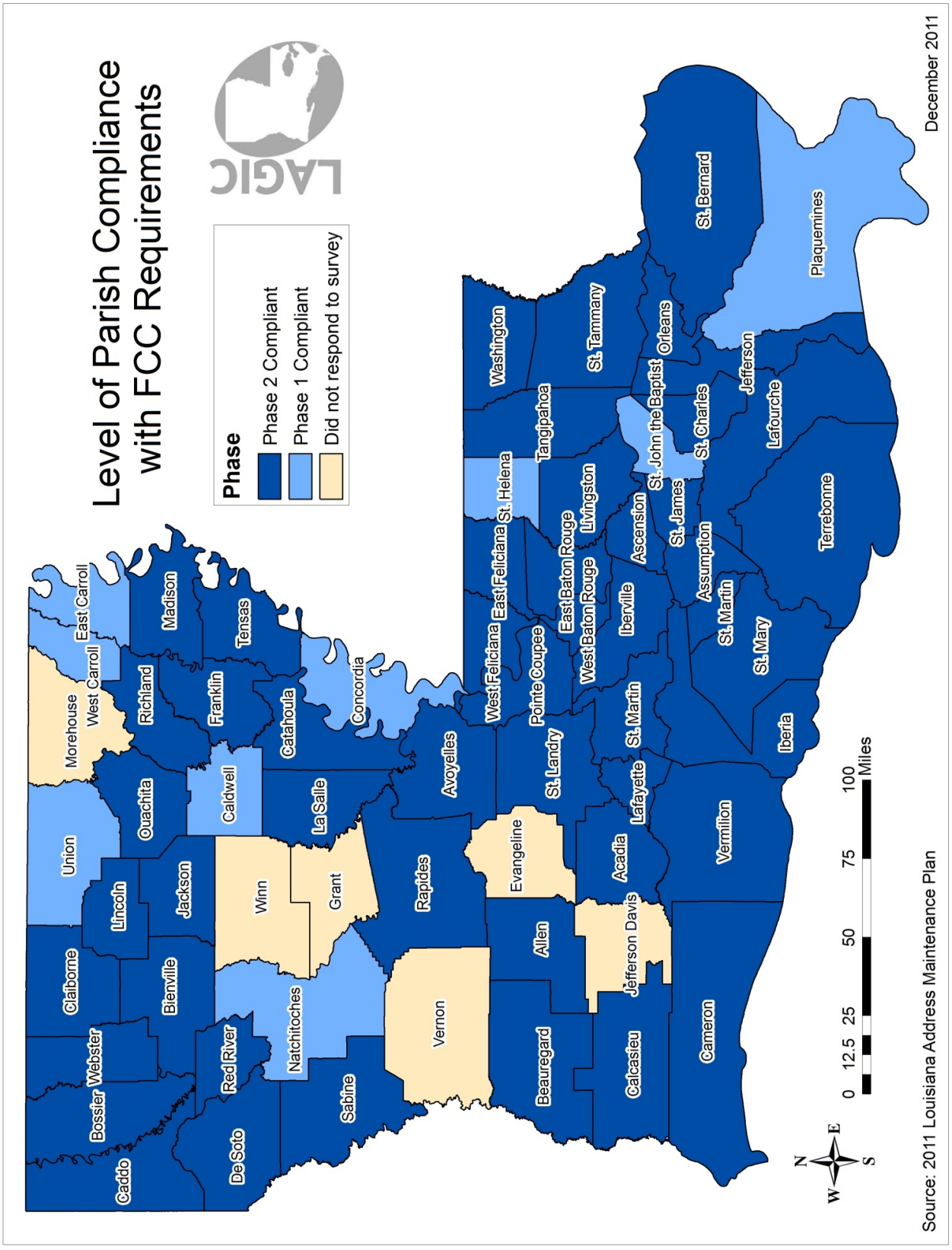
This section of the survey was designed to determine the needs and concerns of the Louisiana Communication Districts in readying themselves for Next Generation 9-1-1. The move to NextGen 9-1-1 will entail significant investments in communication infrastructure, staff training, and a transition from analog to digital equipment by the local Communication Districts. It will also require the collection of digital address points to provide greater locational accuracy for service delivery. The survey asked Communication Districts what they needed in order to implement NextGen 9-1-1. The primary concern of local governments was how to pay for the necessary technical upgrades, followed by concerns that the National Emergency Numbering Association (NENA) and the telecommunications industry had not yet come to agreement on common communication standards. That lack of agreement would slow the adoption of new technology and make interoperability among parishes more difficult to implement. One additional concern was the lack of broadband access and sufficient bandwidth in many rural areas of the state. Until a dedicated public safety network is developed, commercial Internet service providers (ISP's) will supply the broadband infrastructure necessary for NextGen 9-1-1.

Summary of Addressing Survey Results

The survey confirmed that there are a wide variety of addressing data capabilities and resources throughout the state. The varying resources available for addressing are related to the number of telecommunication users (whether landline, cell phone or go-phone) in a parish as phone owners pay a monthly 9-1-1- service charge on each telecommunication device. That monthly service charge varies from parish to parish, so some parishes are charging residents and businesses less for 9-1-1 services than others. However, the cost per user for the communication equipment needed to provide today's basic 9-1-1 service is very similar whether you are an urban area or a rural one. The transition to NextGen 9-1-1 will require substantially more resources than are currently collected.

The 2011 Digital Addressing Survey identified the following data or resource gaps among Louisiana Communication Districts:

a. Fourteen parishes do not meet FCC requirements for Phase II compliance (see Map 2). Examples of Phase II requirements can be found in Appendix E.
b. Thirteen parishes do not maintain addresses as either points or street ranges.
c. Twenty-four parishes have no members the Louisiana Chapter of NENA. This is significant because there are no other official communication channels among the 9-1-1 entities in the state (Map 3).
d. Many parishes do not have access to sufficient bandwidth to implement NextGen 9-1-1.



Map 2- Phase II Compliance Map, by Parish (2012)

Additional Survey Analysis and Actionable Items

i. E9-1-1 Data Management Service Providers

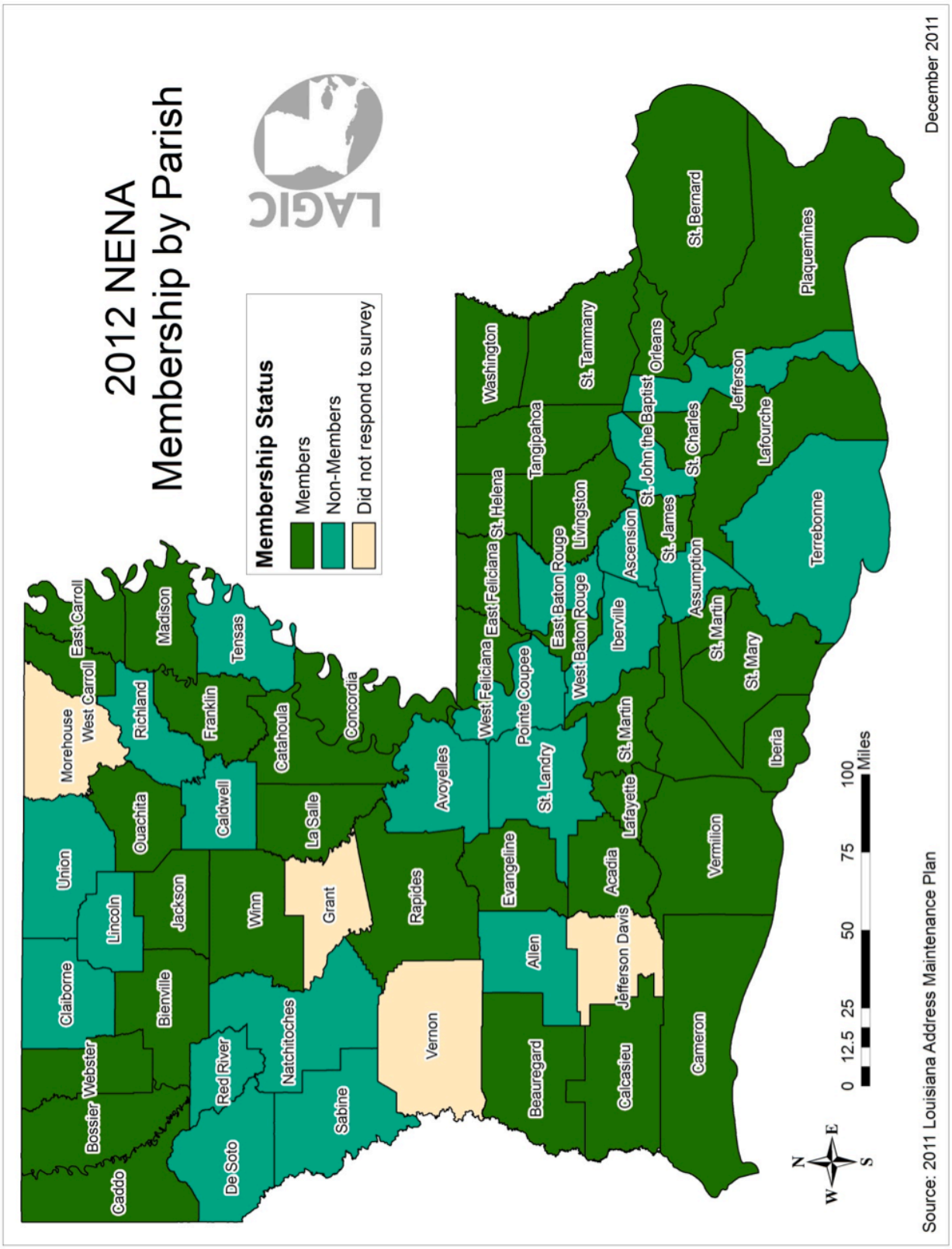
Over 90% of the Public Safety Addressing Points (PSAP's) in Louisiana currently receive their data management services through AT&T, via their subcontractor Intrado, a private company. Intrado provides PSAP's with E9-1-1 Data Management services, including Master Street Address Guide-based address (MSAG) validation, error correction, and ANI and ALI database updates. The remaining Louisiana PSAP's not using AT&T use their own GIS staff for E9-1-1 data management.

ii. E9-1-1 Data Owners and Stewards

Parish Government owns the raw data and provides it to Intrado at no cost. Intrado enhances the data for geospatial uses. Communication Districts pay for any copies of the enhanced database that they request, on a per record basis. Parishes remain the data stewards' providing updates and edits to the data that becomes the Master Street Address Guide.

iii. Data Content and Metadata

Responses received from the survey show that address data is currently stored in wide variety of formats. While no survey questions specifically referred to the existence of metadata on the address data, there were no comments or responses that would indicate that creating metadata was a high priority when the addresses were created. The LaAMP does provide for metadata to be created by each parish as their data is loaded into the data repository and stored in the Federal Address Standard format. Once the address data is in the repository, it can be stored in XML (Extensible Markup Language) format for ease of data sharing.



Map 3 – Membership in National Emergency Numbering Association in Louisiana, by Parish

iv. Appropriate National Standards

There are a number of governmental agencies and organizations developing addressing standards, but most are for internal business purposes. The United States Postal Service (USPS) is an example. The postal addressing standard is strictly for the purpose of mailing and the delivery of mail. The US Census Bureau is interested in addresses, but only for the purpose of ensuring an accurate census count. However, both agencies are prohibited by federal statute from sharing the address information that they collect or providing other federal, state, or local agencies with the address data they have collected. Census Bureau address data is protected from disclosure by Title 13 and USPS address data is protected by Title 39.

In 2005, the Federal Geographic Data Committee (FGDC), in coordination with the Urban Regional Information Systems Association (URISA), the National Emergency Numbering Association (NENA), the US Postal Service, the US Census Bureau and the National Association of Counties (NACO), began an effort to develop a national addressing standard. The United States Thoroughfare, Landmark, and Postal Address Data Standard (Federal Address Standard), approved by the FGDC in 2011, is the culmination of six years of effort. LAGIC hosted two Federal Address Data Standard Workshops in the spring of 2012 in Baton Rouge, LA. The workshops were taught by Martha Wells, President of Spatial Focus, Inc., who taught over 90 GIS and 9-1-1 professionals about the FGDC standard.

In addition to the Federal Address Standard workshops, LAGIC hosted two NextGen 9-1-1 Workshops in Pineville, LA., in July, 2012. The first workshop was an

Introduction to NextGen 9-1-1 and the second workshop was an Intermediate level NextGen 9-1-1 workshop. Both workshops were taught by a NENA Certified Instructor and each class had 32 registered participants. The instructor explained how the Next Generation of 9-1-1 technologies will involve a transition from analog systems to digital systems and how location information will employ GIS technologies rather than the database queries currently provided by Phase II technologies. NextGen 9-1-1 will rely on a robust network infrastructure that does not currently exist in many rural areas of Louisiana.

NENA members have very specific needs for accurate addresses and a topologically correct street map for the purpose of routing emergency vehicles. Therefore NENA has further defined some elements of the address standard, most notably sub-addresses (condos, multi-unit apartment buildings and trailer parks), to meet their unique needs.

The Louisiana GIS Council endorsed the use of the Federal Address Standard for the state at their August, 2012 meeting. At the Council's request, Marty Beasley, Chair of the Louisiana GIS Council, submitted a letter to the Chief Information Officer (CIO) of the State requesting that he make the Federal Address Standard the official state addressing standard. LAGIC will employ the Federal Address Standard to normalize different address data sets received from local government agencies to create regional master address files.

v. **Should Louisiana have a State Addressing Administrator?**

Louisiana is one of only a two states that do not have a state 9-1-1 Administrator or State Addressing Authority and no officially recognized state addressing or 9-1-1 communication equipment standards. In addition, the state provides no technical assistance, nor funding for equipment, staff or training. Furthermore, the lack of a statewide 9-1-1 coordination agency and the lack of a comprehensive State 9-1-1 Plan mean that Louisiana is ineligible for most federal grant funds for upgrading 9-1-1 equipment.

A statewide plan should be developed that does not impose restrictions on Communication Districts or first responders but rather provides assistance to local 9-1-1 entities. The goal of a statewide resource center for 9-1-1 would be to provide training, technical assistance, and act as a conduit for federal funding. The state has successfully provided locally controlled 9-1-1 services for many years and a statewide resource center should support that model.

c. Data Requirements

The geospatial data required by each parish for this project includes municipal style address points (house number, named street) tied to a service location (point coordinate such as latitude/longitude). For QA/QC purposes, additional spatial references such as digital imagery, MSAG street name and address ranges, property records, and local maps are useful. Generally these additional spatial references currently exist and are of low cost or no cost to the parish. Additionally, the Address Maintenance Plan (LaAMP) employs the FGDC Address Standard because it is required by federal agencies for storage and distribution of address data, it incorporates physical (thoroughfare and landmark) addresses and mailing (postal) addresses, it offers tests of both tabular and spatial address data quality, and it provides a protocol (XML) for exchanging address data.

The address point data for each parish initially needs to be in a digital format (Excel, Access, or database equivalent). Ideally, the data would be maintained by the local addressing authority and would be as complete and current as required for use by the public safety community. This level of address accuracy can be achieved using the source data described above and must be maintained consistently throughout the parish.

From the LAGIC Address Survey results, it is apparent that address data exists in both hard and soft copy. The currency of municipal address data is generally the responsibility of local addressing authorities and dependent on the local staffing and resources for maintenance Therefore LAGIC is prepared to assist those parishes where data either doesn't exist, or exists in a non-digital format. Once data is converted to digital format, LAGIC provides a web-based interface to simplify address collection and maintenance tasks. This interface is currently available at no charge to project participants for one year from the date the MOU is signed.

Additionally, the LAGIC Address Survey results revealed a lack of address standardization within and among parishes. The LaAMP recommends the adoption of the Federal Address Standard. Towards this end, addresses stored in a statewide address repository, hosted by LAGIC, will reside in the Federal Address Standard format. Using this standard in the repository will guarantee the ability to share address data across parish boundaries and throughout a region.

A statewide address repository, much like a data warehouse, would fulfill a variety of needs currently not available to consumers of address data. Parishes can choose to maintain their own address data in their native formats. When parishes update their address data in the address repository, LAGIC will re-format data sets using an ETL (Extract, Translate, Load) procedure. This procedure converts the address data into the Federal Address Standard and stores it in XML format for data backup. Data confidentiality shall not be an issue as property owner or resident information will not be collected or stored.

Address point data will be locally owned by the parish that creates and maintains it, password protected and only accessible to the appropriate address authority and those government agencies explicitly specified in a Memorandum of Understanding (MOU) between each parish and LAGIC.

Metadata records will be created for each parish addressing project that partners with LAGIC in the Address Maintenance Plan. These records will be available on the State Metadata Clearinghouse that LAGIC hosts for the Louisiana GIS Council. LAGIC will accept data from local governments in a variety of schemas, but the Federal Address Standard will be the common database schema and XML will be the accepted web distribution format. Data aggregation will occur on a continuous basis. Data will be collected from parishes and aggregated up to a region. Each parish participating in the LaAMP will sign an MOU with LAGIC to define the roles and responsibilities of each partner. The parish addressing authorities will remain the local data stewards, and they alone are LAGIC's partners in the address maintenance plan.

Over the years, Louisiana has benefited from the collection of a variety of raster data sets including: six inch resolution statewide orthos (2010), one meter resolution statewide orthos (1998, 2004, 2007, 2009, 2010), one meter resolution coastal Louisiana orthos (2005, 2008 and 2012), statewide LiDAR data coverage (at varying scales), and Pictometry oblique imagery (in 40 of 64 parishes). Since 2010, LAGIC has created various statewide vector data sets, including public health (hospitals), public safety (911 dispatch, Emergency Preparedness), educational institutions (K-12, college and trade schools), as well as government buildings, courthouses, and community centers. Many of these data sets are currently being used as ancillary data in the address capture process.

The current user community includes members of the Louisiana GIS Council (federal, regional, state and local government agencies), including but not limited to: property assessors, 911 districts, registrars of voters, economic development agencies, metropolitan planning agencies, and others. Current users would also benefit from a state funded

geocoding service to help identify the location of their clients and analyze geospatial patterns. The public safety sector is one of the main consumers of accurate address data. Providing better government services to citizens is another reason to insure accurate municipal-style address data for every business and residence.

d. Technology Requirements

LAGIC technology resources are currently capable of handling the server and staff resources required to maintain and support an address point repository. Anticipated resource requirements that can currently be handled by LAGIC include: high-speed internet with sufficient speed and capacity to share geospatial data; Esri ArcGIS Server capabilities; storage space suitable to serve orthoimagery as a backdrop to vector data; and 24/7/365 days a year data back up to Louisiana State University servers.
State IT Enterprise Architecture exists for the procurement of hardware and software, but not for data. The LGISC recommends using geospatial data standards to guide the creation of statewide geospatial data sets. Address points are an essential data layer in the Louisiana Spatial Data Infrastructure, or LSDI. It is anticipated that the NENA and FGDC standards will be addendums to the LSDI.

LaAMP has some unique technical requirements, including database management procedures; extract, transfer, and load (ETL) protocols for moving data from one database format to another; and web-based graphical interfaces to simplify address data maintenance tasks by local addressing authorities. Because parishes with existing address point data bases may already be using and sharing this data intra-parish, the LaAMP will provide the capability for the data to be maintained in the original format as well as the Federal Address Standard format. This will enable parishes to use the browser-based maintenance tools and preserve their data in their native format.

LaAMP architecture employs a traditional client/server design, meaning the data repository will be the server at LSU and the clients, or parishes, will access their data via a web browser. Maintenance applications were developed by LAGIC and have been

successfully demonstrated and are currently in use by four parishes. To facilitate web storage and data sharing, all address data will be stored in XML in the LAGIC data repository.

Specifically, the technological requirements for the client/parish include: a computer capable of accessing the Internet with enough memory to view aerial imagery and map graphics. On the server/LAGIC side, the server will have the capacity to handle multiple simultaneous requests for data resources from project participants. Data accessibility and distribution will be controlled by a password-protected function to insure data security and protection.

In summary, LAGIC will be receiving data in many formats. Local governments are heavily invested in their legacy data. LAGIC's job will be to transform the various legacy data sets into the Federal Address Standard and provide local governments with the tools and technical assistance needed to keep their data current in the system of their choice.

e. Resource Requirements

Local government entities such as Parish Communication Districts, Assessors, or Permit Departments, are all custodians of local address data. Any technical solution proposed in this plan must support the ability of local authorities to do their jobs as effectively as possible with the resources they have available. This plan recognizes the varying degrees of Information Technology (IT) experience and the resources available to Louisiana parishes.

The 2011 LAGIC Addressing Survey identified many of the issues that local governments face in adopting the latest technology for address maintenance and emergency dispatch. In addition, communication districts face huge challenges in preparing their organizations to meet the communication equipment requirements for Next Generation 9-1-1. NextGen 9-1-1 will require a transition from an analog system to a digital one. It will employ Geographic Information System technology to locate addresses and recommend which first

responders to dispatch to the scene of an incident. NextGen 9-1-1 will also require an entirely new communication system for routing emergency calls and providing automatic backup for PSAP's that are down in a natural disaster. These changes in technology will be expensive to implement and will have to operate in tandem with older systems during the transition between the two systems.

Of the sixty-four Louisiana Parishes, there are thirty parishes that are creating point address databases with existing funding through the Louisiana Broadband Initiative. Additionally, another fourteen parishes, all of which are in metropolitan areas, have existing digital address databases. The remaining twenty parishes do not have digital addresses, and many of these parishes do not have the resources to create this data. LaAMP would provide funding to finish those twenty parishes that are without digital addressing, and set up the mechanisms to maintain address data statewide.

The development of LaAMP requires the following technical skills: extensive database management experience, web design capabilities, and facilitating coordination between local and state government agencies. In addition, training local governments in the use of address maintenance software tools will be needed.

These skills are currently present among LAGIC staff. LAGIC has a database administrator who also designs and manages websites. LAGIC has a training instructor who works with local government agencies, and a director who negotiates the cooperative agreements between state, regional and local agencies. Some additional training will be required to expose LAGIC staff to new software capabilities. No LAGIC staff will need to be reassigned, however more staff may be needed.

If LAGIC is successful in applying for additional address development funding, we will need to hire more students and another database manager. Consultants would be hired to develop specialized software applications or develop tools for particular tasks, such as ETL or error checking. Some states have successfully used voluntary resources at the local level for tasks such as address validation or error checking. Those services could be provided by

a service organization like the Lions Club, Kiwanis, Volunteer Fire Departments, or other non-profit service organizations.

There are also relevant geospatial professionals in many of Louisiana's public universities that would be interested in participating in the addressing projects, if we could provide compensation for their students. In addition, there are data facilities at local universities and at regional planning commissions around the state that would benefit by supporting this program.

f. Standards

The relevant national standard that relates to this program is the United States Thoroughfare, Landmark, and Postal Address Data Standard, which covers thoroughfare, landmark, and postal addresses within the United States, including its outlying territories and possessions. The relevant LSDI Standard is also the United States Thoroughfare, Landmark, and Postal Address Data Standard. The appropriateness of address standards are determined by their interoperability and their ease of use.

The Louisiana Geographic Information Systems Council issued a resolution in 2000 recommending that state agencies create FGDC-compliant metadata records to document their data holdings. LAGIC has been the recipient of two FGDC CAP Grant Awards for Metadata Training including hosting a Metadata "Train the Trainer" Workshop in New Orleans in April of 2005. In 2012, LAGIC sponsored two workshops on the Federal Addressing Standard. Workshop attendees included nearly a hundred Louisiana GIS and 911 professionals from state and local government. Currently, LAGIC is training local governments in how to implement the standard. Providing local governments with the

tools to create Federal Address Standard-compliant data is the quickest method of insuring that future address data products comply. Not adopting the national address standard would not be an option as it would limit LAGIC's ability to partner with state and federal agencies and decrease LAGIC's ability to promote data sharing.

g. Budget Requirements

LAGIC's projected cost for all requirements, including data, data conversion, hardware, software, training, and staff is approximately $950,000. This amount covers the estimated cost to collect, reformat and host an additional twenty parishes that have not been slated for point address development through the Louisiana Broadband Initiative.

Data Collection – 475,000 addresses @$2.00 per address equals $950,000.00 (includes student compensation and the use of the LAGIC GIS Lab).

h. Assessing Risk (see Appendix B)

The major external challenges that could affect LAGIC's ability to successfully execute the LaAMP are:

1. Lack of funding to support these efforts. Currently there are funds remaining in the Louisiana Broadband Initiative that are dedicated to the development of digital addresses for Louisiana parishes. However, there remain significant funds that have yet to be allocated to address development at the parish level. The decision to assign these funds remains within the Governor's Office. The expenditure of these funds must be completed by September 30, 2014.
2. Concerns at the local government level about data centralization.
3. Lack of administrative support from state government for using the federal address data standard.

LAGIC's major operational challenges are equipment (sufficient workstations and storage capacity), annual software maintenance costs, and attracting and retaining an educated

and motivated workforce in difficult economic times for public universities. LAGIC recognizes and overcomes these obstacles by:

1. Aggressively pursuing funding opportunities.
2. Staying in touch with our local government partners through their professional organizations and other opportunities for dialog.
3. Staying aware of industry "best practices" and technical innovations.
4. Pursuing potential partnership opportunities.

If LAGIC doesn't appropriately anticipate obstacles, we might find that:

1. We cannot meet our contractual obligations.
2. Our customers look for better service elsewhere.
3. Our costs exceed our revenue.
4. We fall behind the technology curve.
5. It is more difficult to be successful in our grant efforts.

LAGIC assesses program vulnerabilities by:

1. A rigorous quality assistance/quality control culture.
2. Working in coordination with our University IT staff.
3. Develop methods for our program users to notify us if system is not working correctly (feedback loop).

LAGIC can reduce risk factors by:

1. Implementing industry accepted data security procedures.
2. Data backup protocols.
3. Multiple layers of protection against viruses and other forms of data corruption.

The severity and probability of risk factors occurring that LAGIC identifies are:

1. The probability of the identified risk factors occurring is high.
2. The severity will vary depending on our readiness.
3. We must be ready to deal with the worst-case scenarios.

5. Implementation Plan

a. Implementation Details

The Address Maintenance Plan recognizes that there are a number of potential options for implementing the objectives specified in the previous sections of the plan. LAGIC believes that a phased implementation is the one most likely to be successful in meeting the goals of the program.

A phased implementation would involve selecting an area of the state with four or more contiguous parishes and successfully implementing the LaAMP among those local governments. Initially, there will be large differences between the parishes in their ability to implement the LaAMP. Not all parishes will have point address data or one individual who is responsible for maintaining that data. It will be necessary to provide technical assistance to those parishes without the resources or staff to implement the LaAMP in their jurisdiction. Conversely, it may be necessary to build a comprehensive data model that preserves the more robust databases maintained by the more technically sophisticated jurisdictions.

Every successful project requires frequent assessments of progress. Milestones will need to be identified to measure that progress. A timeline will be essential to tie the milestones to measurable completion dates (Appendix C).

Quality assurance measures will also be needed to ensure confidence in the system. Field checks will need to be developed which test at least 10% of addresses randomly selected from different parts of the parish to provide assurance of correct address placement and completeness.

The primary implementation objective is to assist local governments to create address data in a standardized form that facilitates the sharing of data across jurisdictional boundaries. Special attention has been paid to making the process as user-friendly and low-cost as possible by using existing data sources and inexpensive, on-line data capture tools. However, it is incumbent on the local jurisdictions to verify the accuracy of the address data in their parish and to maintain their data.

Expectations of local addressing authorities are that LAGIC will provide the technical support, geospatial resources, and training on using the web-based addressing tools to create and maintain their local addressing data. Project areas will be divided into regions and implemented on a phased basis depending on local interest and LAGIC staffing resources. As a contingency, LAGIC's plan is continue with the implementation of the address collection and maintenance project, but on a revised schedule.

The address collection and maintenance program will be administered by LAGIC staff. The full-time staff includes a director, a database administrator, and a geospatial trainer. The performance of the staff will be measured by number of parishes participating, the total number of addresses contained in the database, frequency of data updates, and through monthly reports to the Governor's Office and quarterly reports to the participating parishes and funding agencies.

Proposed implementation steps are as follows:

1. Outreach to the local and regional governments to present the business case for address maintenance.
2. Acknowledge governance issues for each parish; sign MOU agreement.
3. Train local government users on the use of the data collection tools and on-line address maintenance procedures.
4. Training of local decision makers on the benefits of standardized address data.
5. Database administration shall be performed by LAGIC staff. Establishment of QA/QC methods to identify any issues with the data throughout the process.
6. Establish a feedback loop to incorporate any issues experienced by users.

The addressing authority for each parish, or their designee, shall receive training in the use of the data gathering tools and addressing resources provided by LAGIC. Instruction includes on-line and instructor-led training. Due to cost considerations, all the management, training, and technical support are handled by LAGIC staff. There are no foreseeable procurement considerations involved with this project.

Partial success of this project is considered acceptable and would be measured by the number of parishes that choose to participate in the project. The purpose of the project is to produce high quality, spatially accurate, standardized address data. By participating in this project, parishes have a means of improving their address data. As a foundation to many other geospatial applications, the value of accurate address data can be realized in a variety of local applications. Failure of the project would be indicated by no on-going parish participation in this project.

b. Phasing and Milestones (see Appendix C)

Due to existing funding and prior commitments, two Louisiana parishes, Union and Jackson, participated as pilot areas to test the LaAMP. Two additional parishes, Claiborne and Bienville would be eligible should they choose to use the LaAMP to maintain their address data. Participating parishes would sign an MOU committing them to support and employ the LaAMP. A phased implementation will be incorporated in order to understand any issues that may arise in the LaAMP process as stated here. Also phased implementation will facilitate a better workflow for the staff at LAGIC who will be managing the address data and providing the parish with computer resources.

Phase 1, which includes the four above mentioned parishes, will be completed by February 29, 2014. This includes a complete set of addresses and businesses in rural areas of the state, and a process for the parishes to maintain that address data in a standardized, easy-to-use interface for data storage and maintenance. Incremental deliveries are desirable and feasible, and are reflected in the Milestones portion of the chart. For the pilot parishes, the only dependency is the ability of local resources to assist in gathering data (local knowledge for field truth, QA/QC). Knowledge gathered in

the pilot project phase may reveal dependencies that could affect the succeeding phases.

c. Budget Plan

The budgetary needs include the costs for data collection, processing, storage and distribution of the data as well as the costs for hardware, software, in-state travel, GIS Lab space, as well as student and staff salaries and benefits.

Data Collection –$950,000, or $2.00 per address for 475,000 addresses includes the following costs:

- Data Reformatting –development of reformatting scripts to convert twenty different parish address file formats to the Federal Address Standard.
- GIS Lab – Use of the GIS lab at LSU.
- Hardware– Server, storage and networking expenses to contract with LSU Computing Center to host address data and provide data management and 24/7 access to the data.
- Software - software licensing and yearly maintenance fees.
- Travel - instate travel to meet with local 9-1-1 Coordinators in twenty parishes.
- Staff - staff salaries and benefits, as well as student compensation.

LAGIC projects the total cost for all requirements including data, data conversion, hardware, software, training and staff to be approximately $950,000 to collect, reformat and host an additional twenty parishes that have not been slated for point address development through the Louisiana Broadband Initiative.

d. Marketing and Outreach

The primary target audience for outreach efforts is the addressing authority at the parish level. LAGIC will also seek support for the LaAMP from a wide variety of users: 911, GIS, local and state authorities, economic development, assessors, and school boards. On the private industry side, the target audience is package delivery services, ambulance companies, and utility companies. Outreach to the communities of LaNENA and the LAGIS Council via announcements is planned by soliciting these groups'

feedback on the LaAMP; providing training via workshops on the value of addresses; making presentations at local, state, and national conferences on GIS, 911, and property records (Assessors); and through outreach to Regional Planning Commissions and Metropolitan Planning Organizations throughout the state.

The target audience is the same audience that will benefit from using the LaAMP. However, address data that is fit for use and shared could benefit many outside of the target audience.

State and local conferences of the addressing and 911 communities are where the local target audiences can be found. Examples include the Louisiana RS/GIS Annual Conference; the LaNENA/APCO Annual Symposium and quarterly chapter meetings; the LA Chapter of URISA; monthly GIS Council meetings; parish and regional GIS User group meetings; the Louisiana Assessor's Association; and the Louisiana Police Jury Association,

The logistics of maintaining a sufficient level of communication about the LaAMP between the strategic and stakeholder communities involves an enhanced level of outreach including a web presence, serving as liaison between the various communities, regular attendance at strategic community meetings, and regular presentations to, and requests for, plan feedback from both groups. Additionally, both the Louisiana GIS Council, through its members, and GIS User groups, through LaURISA and LaNENA, are involved in the information dissemination about the Address Maintenance Plan. Also, the North Louisiana GIS Users Group and the Louisiana RS/GIS Annual Conference list serve members have been informed about the progress of the LaAMP.

6. Measuring Success and Feedback for Recalibration

The leading indicator that the Address Maintenance Plan is successfully implemented would be the total number of parishes that choose to participate, sign an MOU, and actively embrace the technology to maintain their master address file. The improved willingness of local governments to share their data is the most desired result. Criteria for performance evaluation of the LaAMP include the number of parishes that choose to participate in the plan; the extent to which parishes and/or regions incorporate standardized addresses into their workflow, i.e. delivery of services, local broadband access, voter registration and re-districting; and ability of the state to incorporate standardized addresses into their workflow, i.e. abilities of agencies to perform interagency analysis of data for economic development, public safety, social programs, etc.

LAGIC proposes several methods of capturing user feedback including: an annual survey of the stakeholders; a comment area on the website for feedback from users; and including a condition in the MOU that stakeholders provide reports on data requests, data users, and user comments from within their parish. LaAMP performance metrics will include: number of participating parishes; number of users; number of filled data requests and requester's information; percentage of increase in number of data records; number of new records; monthly changes to data (add, delete, modify); and more to be developed as project matures. A timeline will be used to define the goals, benchmarks, and deliverables for project participants.

Additional metrics measuring the LaAMP's progress are expected to grow and evolve as the project matures. LAGIC plans to create surveys and analyze user responses about data use, tracking user agencies, reports of data requests and use by parish agencies, intended use of dataset, and the potential benefit of using the address data. Progress and recalibration of the LaAMP will be tweaked until the pilot project area is working to everyone's satisfaction. Thereafter, the LaAMP will be reviewed and revised on a semi-annual/annual basis, barring the receipt of any major issues with the process. These major issues will be handled immediately on an as-needed basis. Success will be reported to

local, regional, and state agencies, boards and potential and current users. Successes will be tracked via the address maintenance website (access restricted to users only), publication of a digital quarterly newsletter to all stakeholders and users on project information and advancements, monthly reports at State GIS Council meetings, local, state and international annual conferences, and other affiliated gatherings where stakeholders and potential new users are located.

As use of LaAMP grows, LAGIC anticipates seeking additional funding at the federal level via the National Broadband Initiative, First Net Initiative (public safety), homeland security funds, and through state and regional funding opportunities.

Through the pilot project timeframe, LAGIC (with feedback from the LaAMP reviewers) would be primarily involved with defining the programmatic goals, programmatic tasks, and defining the metrics for the scorecard. Following the successful implementation of the pilot, a governance structure will be developed to manage the LaAMP along the lines of the Colorado 9-1-1 Resource Center.

7. Appendices

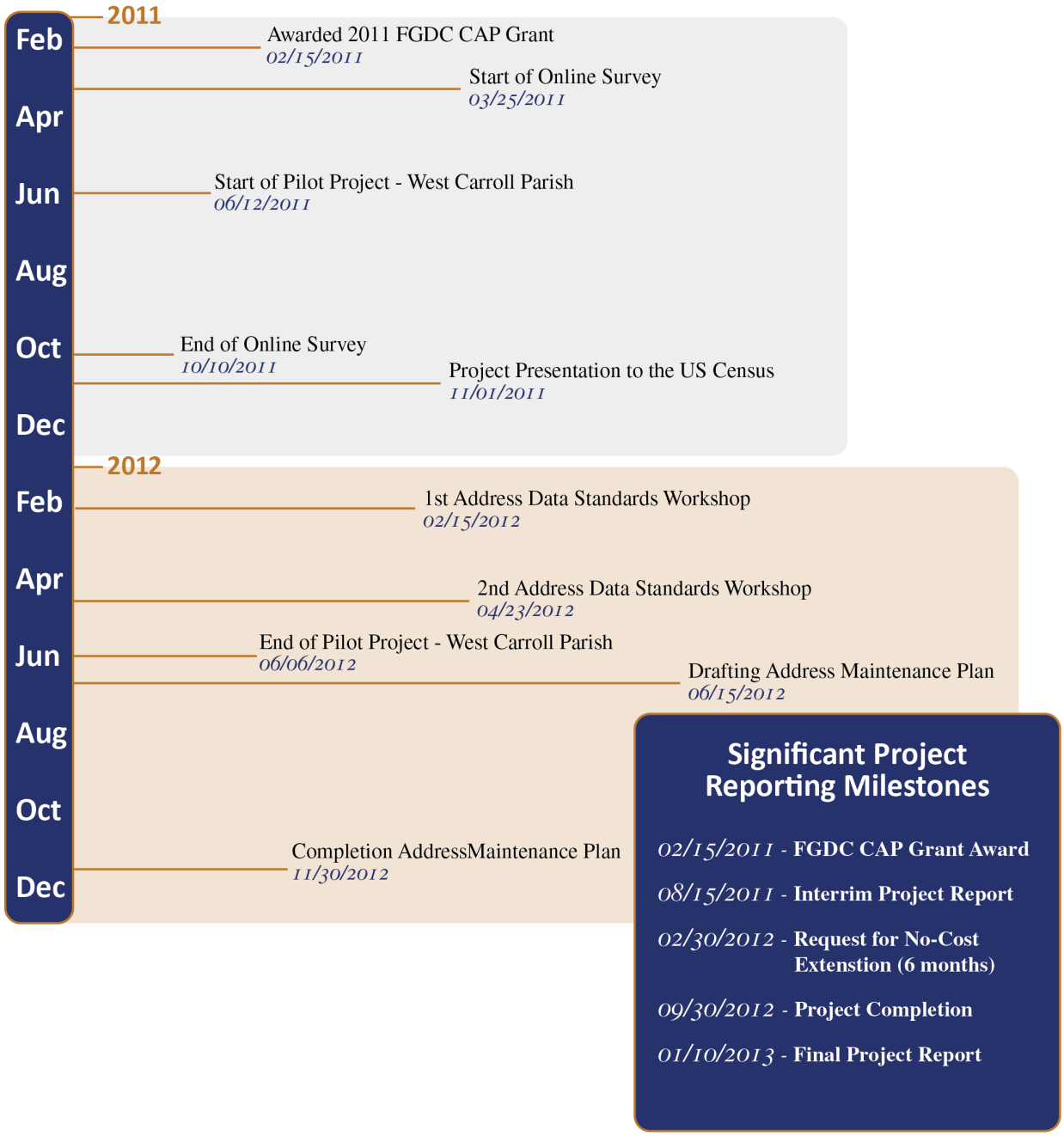
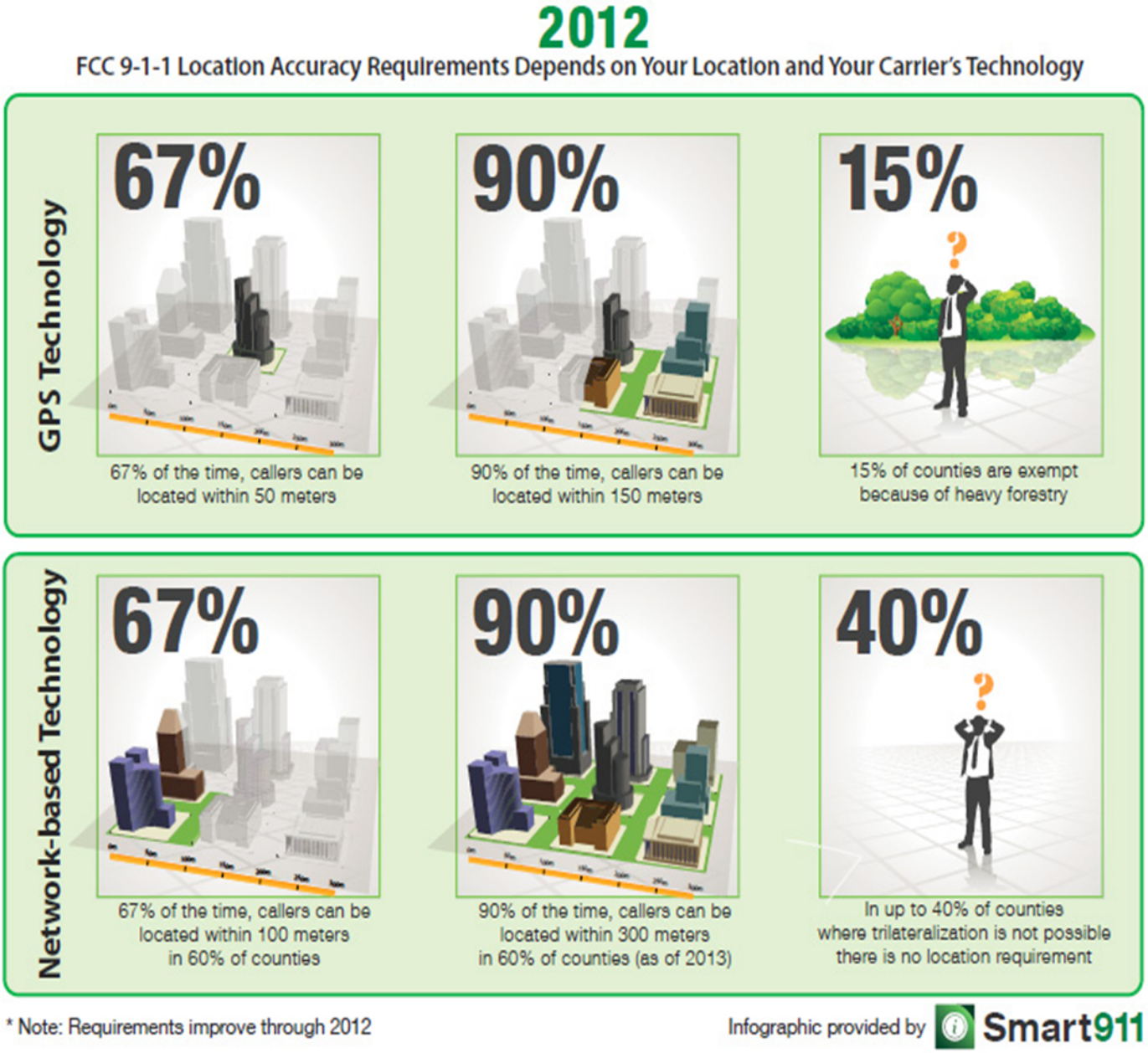
A. Address Maintenance Policy Recommendations

1. Digital address points should be created for all parishes. The data should be maintained in the FGDC address standard and the parish's original data format.
2. The State should institutionalize the use and updating of high resolution state-wide orthoimagery (6" to 1 foot resolution minimum) pursuant to available funding.
3. State agencies, under the supervision of the State CIO, should adopt the FGDC-approved address standard and implement it enterprise-wise.
4. Existing state and local address databases should be migrated to the FGDC standard within three years of the LaAMP adoption by the state.
5. An address data repository should be developed to serve up spatially enabled address data to local, regional, state and federal government.
6. The state should provide a geocoding service and technical support to state and local governments that need to use point address data.

B. SWOT Table – Strengths, Weaknesses, Opportunities, Threats of LaAMP

Strengths	Weaknesses	Opportunities	Threats
Address points maintained	Limited funding for adoption of plan's steps	Ability to provide navigation companies with updated addressing increasing safety on Louisiana roads	Commercial companies may see this as publically subsidized work for which they cannot compete
Standard format	Federal Standard may seem intimidating	Improve the spatial/locational accuracy of addresses in parishes for emergency response and spatial analysis	911 Districts' autonomy could be threatened
Sharable data	Plan must make the case for change in address maintenance practices	Ability to locate landmarks by address	Voluntary participation of Parishes by sharing address point data could end
Benefits NG911	Parishes may not want to share address data	Improve the ability to provide timely data in emergencies	Feds could change the Address standard
Standard compliance with federal rules	Resistance to change	To collect local address data in a place that would share the data with other agencies	Changes in technology could make plan less relevant
Transferrable to XML		Improved ability to improve local address point data	Homeland security conditions would restrict access to public data
Awareness of importance of standardized addresses		Introduces QA/QC procedures to address maintenance of local government data	LAGIC faces funding issues
Encourages regular data maintenance	Change in administration at Federal level could restrict current funding	Change in administration at Federal level could restrict current funding	Change in administration at Federal level could restrict current funding

C. Project Timeline – Address Maintenance Plan



D. FCC Cell Phone Location Accuracy Requirements for 2012-2013