Wisconsin NextGen9-1-1 GIS Implementation Plan

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Executive Overview

In a Next Generation 9-1-1 (NG9-1-1) environment GIS data is mission critical and utilized by the functional elements of a NG9-1-1 system to spatially route 9-1-1 calls to the appropriate Public Safety Answering Point (PSAP), validate the location of the caller, and accurately dispatch emergency services.

Prior to transitioning to a NG9-1-1 system local entities, regions and states must begin the preparation and remediation of the 9-1-1 GIS data to support NG9-1-1. This includes implementing GIS standards, determining and performing quality control to ensure all critical errors are resolved, and education of GIS data providers and 9-1-1 Authorities at all levels of government.

In preparation for the implementation of a NG9-1-1 system, the Wisconsin Department of Military Affairs contracted with GeoComm to:
- Develop Wisconsin NG9-1-1 GIS Data Standards and Best Practices[1];
- Complete a GIS Gap Analysis of NG9-1-1 required datasets for the State of Wisconsin;
- Provide a comprehensive report based on the assessments performed[2]; and
- Provide a NG9-1-1 GIS Implementation Plan.

Based on the local GIS data sets assessment completed, the statewide GIS accuracy was **85.55%** for all errors identified and **97.75%** for only critical errors that must be resolved prior to transitioning to NG9-1-1 call routing and location validation. The goal for NG9-1-1 is for each GIS dataset to be critical error free.

To help achieve that goal, numerous NG9-1-1 GIS related recommendations were identified within the Final Report delivered in June 2021. The most important recommendations are:

- **Continual Coordination between 9-1-1 and GIS Personnel** | Continue to provide education and outreach to the 9-1-1 Authorities, Addressing Authorities, and the GIS Data Providers throughout Wisconsin to ensure coordination continues between all entities to improve the NG9-1-1 GIS data sets.

- **Procure NG9-1-1 GIS Data Management Services** | Acquire NG9-1-1 GIS data management services to support DMA with the transition to, implementation and continued support of the Wisconsin NG9-1-1 system; Assess the impact an additional contract at DMA will have on existing staff and determine if additional staff or a partnership with another agency with GIS staff would be required to assist in the management of the NG9-1-1 GIS Data Management Services.

- **Provide Assistance in Populating the MSAG Community Attributes** | Provide assistance to populate the MSAG Community values and encourage counties to participate in the project. Currently in progress for 20 counties.

- **Secure NG9-1-1 Core Service Provider Specific Information and Distribute**:
    - Service URNs and URIs
    - Standardization of Non-Standard USPS Post Types & Street Names in the Legacy Databases
    - Coordinate on a dual street name convention
    - Feasibility of Implementing a GIS Derived MSAG
    - Determine Quality Control Exceptions

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[1] **2020 Wisconsin NG9-1-1 GIS Data Standard & Best Practices**: https://oec.wi.gov/wp-content/library/2020/WI_NG911_GIS_Data_Standard_and_Best_Practices_FINAL.pdf
[2] **2021 Wisconsin NG9-1-1 GIS Gap Analysis Final Report**: https://oec.wi.gov/wp-content/library/2021/WI-NG911-GIS-Data-Analysis-Project-Final-Report-6-2021_Public.pdf?_t=1624374685

- **Continue Work with the FGDC on Grid Address Parsing** | Continue working with FGDC to resolve the Wisconsin examples used for addressing prefixes and work with NENA to ensure that all NENA examples are updated to reflect what is officially utilized in Wisconsin.

- **Prepare the GIS data for NG9-1-1**:
    - Add and Populate NG9-1-1 Mandatory Fields & Attributes
    - Correct Attributes that are Outside Domains
    - Add and Populate the Civic Location Data Exchange Format Street Name Fields
    - Correct Gaps and Overlaps Identified in the Boundary Layers
    - Correct Road Centerline Specific Critical Errors
    - Align the Legacy Databases and GIS Data

- **Implement an Effective and Efficient State Extract – Transform – Load Process** | Next Generation 9-1-1 Unique ID Creation; Auto Population of Field Values within the System

Implementation of NG9-1-1 and preparing GIS data for NG9-1-1 is a lengthy process that will occur over a significant period of time. The suggested Implementation Plan within this document is based on the current accuracy of the GIS data, GeoComm's experience with implementing NG9-1-1 GIS data, and items discovered during the GIS Gap Analysis Project.

The implementation plan below is divided into two sections, state and local. The division is to provide guidance to local jurisdictions and PSAPs to begin the work necessary to transition to NG9-1-1 while allowing the state time to implement the supporting tasks which require a longer implementation period.

State Implementation Plan

The suggested state Implementation Plan is divided into four (4) tasks, each containing multiple steps to accomplish the tasks along with target dates of completion. The tasks are:

- Task 1: Implementation of a NG9-1-1 GIS Data Management System
- Task 2: Acquire and distribute the NG9-1-1 GIS Requirements from the NGCS Provider
- Task 3: Develop and provide continuous NG9-1-1 GIS data model training and guidance to GIS Data Providers
- Task 4: Implementation of a continuous NG9-1-1 GIS data quality control program

The timeline provided below is the average time it would take to complete each step identified.

Task 1: Implementation of a NG9-1-1 GIS Data Management System and Services

Step 1: Determine the scope of work requirements of the NG9-1-1 GIS Data Management System and Services (30 to 60 days)

Requirements to be considered are:
- NG9-1-1 GIS project management support
- Quality control tools and processes
- Extract, transform and load (ETL) processes
- Development of NG9-1-1 GIS data layers, as needed
- Auto population of attributes (e.g., NG Unique ID, Country, Service URI, etc.)
- Aggregated statewide NG9-1-1 geodatabase
- NG9-1-1 GIS training, at least yearly
- Yearly updates to the Wisconsin NG9-1-1 GIS Standards and Best Practices documentation
- Maintenance of a statewide Provisioning Boundary, dependent on the NGCS requirements

Step 2: Determine the contracting requirements (e.g., RFP) for the system (30 to 60 days)

Step 3: Select a partner or partners for the NG9-1-1 GIS Data management System and Services (60 to 90 days)

Step 4: Implement the NG9-1-1 GIS Data Management System and Services (30 to 45 days)

Step 5: Onboard PSAPs to the NG9-1-1 GIS Data Management System and Services as approved locally (ongoing)

Task 2: Acquire and distribute the NG9-1-1 GIS Requirements from the NGCS Provider

Step 1: Acquire the GIS requirements from the NGCS provider (30 to 60 days)

Requirements may include but are not limited to:
- GIS data model, if different than the NENA NG9-1-1 GIS data model
  - Addition of concatenated Range fields to the Road Centerline and concatenated Address Number field to the Site/Structure Address Points
- GIS data attributes such as:
  - MSAG Community
  - ESN
  - Service URIs
  - Service URNs, confirm which version of i3 is to be used and when any updates would take effect
- Process to update or automate conversion of non-standard post types (e.g., AV, LA)
- Process to update or automate conversion of abbreviated street names (e.g., WASH vs. WASHINGTON)
- Guidance on dual road names used within the street name field (e.g., 75TH AVE COUNTY RD M)
- GIS derived MSAG
- Determine, in conjunction with the NG9-1-1 GIS Data Management provider, the NG9-1-1 GIS critical errors that must be remediated prior to upload into the NGCS
- Quality Control exceptions codes
- Guidance on grid addressing (e.g., W123)
- Provisioning Boundary requirements (single state boundary or individual PSAP boundaries)
- Synchronization of ALI and MSAG

Step 2: Prioritize NGCS GIS requirements for distribution and training to local GIS Data Providers (15 to 30 days)

Step 3: Coordinate with the NG9-1-1 GIS Data Management System and Services partner on items identified in Step 1 to be addressed (30 to 60 days)

Items included but not limited to:
- GIS data model
- Auto population of attributes such as Service URN and Service URI
- Quality Control exception codes
- Synchronization of ALI and MSAG to Road Centerline and Site/Structure Address Points using grid addressing

Step 4: Update the WI NG9-1-1 GIS Data Standard and Best Practices document to include the items identified in Step 1.

Step 5: Develop guidance and other tools for local GIS Data Providers in conjunction with the NGCS provider and GIS Data Management provider (30 to 60 days)

Step 6: Communicate requirements to local GIS Data Providers (15 to 30 days)

Task 3: Develop and provide continuous NG9-1-1 GIS data model guidance, training, and technical assistance to local GIS Data Providers

Step 1: Determine ongoing topics needing to be covered in the NG9-1-1 GIS guidance, training, and technical assistance (30 to 60 days)

Topics may include, but not limited to:
- WI NG9-1-1 GIS Data Model and Best Practices Document
- NENA NG9-1-1 GIS Standards and Informational Documents
- NG9-1-1 GIS data critical error corrections
- GIS to ALI/MSAG synchronization
- Conversion of Legacy Street Name attributes to Fully Spelled Out attribution
- Conversion of single GIS fields (e.g., Address Number containing Prefix or Suffix values) to parsed GIS fields
- Other topics discovered during implementation

Step 2: Develop NG9-1-1 guidance in various formats including, but not limited to, documentation, step-by-step instructions and educational videos, based on topics identified in Step 1 (30 to 60 days)

Step 3: Develop NG9-1-1 training based on Steps 1 and 2 (30 to 60 days)

Step 4: Determine the number of training sessions and method of training, in-person and/or virtual (30 days)

Step 5: Deliver the NG9-1-1 GIS guidance and training to local GIS Data Providers and 9-1-1 Authorities, when appropriate (ongoing)

Step 6: Re-evaluate the training and guidance every six (6) months and make updates as needed (ongoing)

Task 4: Implementation of a continuous NG9-1-1 GIS data quality control program

Step 1: Implement quality control checks to identify critical errors in the NG9-1-1 GIS data as determined in Task 1 (15 to 30 days)

Step 2: Develop quality control guidance for local GIS Data Providers on the correction of quality control errors identified and applicable exception codes (15 to 30 days)

Step 3: Determine the frequency of local GIS data submissions for quality control (15 to 30 days)
- More frequent submissions are during critical error resolution; once critical errors are resolved, a set frequency will be dependent on the number of changes within each local authoritative area. Typical submissions are weekly, monthly, or quarterly.

Step 4: Determine a method of reporting local GIS data submissions quality control results statewide (15 to 30 days)

Step 5: Monitor quality control to ensure local GIS data submissions are meeting requirements (ongoing)

Local Implementation Plan

The local implementation plan timeline is dependent on the resources available at each local entity and the number of critical errors identified in the quality control process.

The timeline provided below is the average time it would take to complete each step identified. The amount of time necessary to accomplish the following steps is dependent on several factors, including:

- The number of local or contracted staff dedicated to completing the step.
- The actual number of attributes and mandatory fields that need to be populated.
- The number and type of errors that need to be corrected.

Task 1: Migrate to the Wisconsin version of the NENA NG9-1-1 GIS Data Model or add mandatory and appropriate conditional fields to the existing GIS data model

Mandatory and conditional fields are listed at a high level below and can be found in the WI NG9-1-1 GIS Data Standard and Best Practices Document.

Step 1: Migrate to or add fields as required for NG9-1-1 call routing (15 to 30 days)

Mandatory (M) and Conditional (C) fields are as follows for each GIS data layer. If a Conditional field is not utilized at the local level, it is not required to be added and maintained locally. Fields that are in **italic bold** may be auto populated through an ETL (extract transform load) process; other fields may be auto populated (e.g., State Left, Right on Road Centerline) on a case-by-case basis.

The ETL process can be initiated at the local level and/or the state level when submitting to the NGCS.

Road Centerline:
- Road Centerline NENA Globally Unique ID (M)
- Left Address Number Prefix (C – Mandatory where grid addressing exists)
- Right Address Number Prefix (C – Mandatory where grid addressing exists)
- Left FROM Address (M)
- Left TO Address (M)
- Right FROM Address (M)
- Right TO Address (M)
- Combined Left FROM Address (M – *required for the NG9-1-1 systems and the tie to the MSAG*)
- Combined Left TO Address (M – *required for the NG9-1-1 systems and the tie to the MSAG*)
- Combined Right FROM Address (M – *required for the NG9-1-1 systems and the tie to the MSAG*)
- Combined Right TO Address (M – *required for the NG9-1-1 systems and the tie to the MSAG*)
- Street Name Pre Modifier (C)
- Street Name Pre Directional (C)
- Street Name Pre Type (C)
- Street Name Pre Type Separator (C)
- Street Name (M)
- Street Name Post Type (C)
- Street Name Post Directional (C)
- Street Name Post Modifier (C)
- Full Street Name (M)
- Legacy Street Name Pre Directional (C – *Mandatory for transition*)
- Legacy Street Name (C – *Mandatory for transition*)
- Legacy Street Name Post Type (C – *Mandatory for transition*)

- Legacy Street Name Post Directional (C – *Mandatory for transition*)
- ***Country Left (M)***
- ***Country Right (M)***
- State Left (M)
- State Right (M)
- County Left (M)
- County Right (M)
- Incorporated Municipality Left (M)
- Incorporated Municipality Right (M)
- Date Updated (M)
- ***Discrepancy Agency ID (M)***
- Parity Left (M)
- Parity Right (M)
- ESN Left (C)
- ESN Right (C)
- MSAG Community Name Left (C – *Mandatory for transition*)
- MSAG Community Name Right (C – *Mandatory for transition*)

Site/Structure Address Point:
- Site NENA Globally Unique ID (M)
- Address Number Prefix (C – *Mandatory where grid addressing exists*)
- Address Number (C)
- Address Number Suffix (C)
- Combined Address Number (C – *Mandatory for the NG9-1-1 systems and the tie to the ALI*)
- Complete Landmark (C – *only Mandatory when no address number exists*)
- Mile Post (C)
- Street Name Pre Modifier (C)
- Street Name Pre Directional (C)
- Street Name Pre Type (C)
- Street Name Pre Type Separator (C)
- Street Name (C)
- Street Name Post Type (C)
- Street Name Post Directional (C)
- Street Name Post Modifier (C)
- Full Street Name (M)
- Legacy Street Name Pre Directional (C – *Mandatory for transition*)
- Legacy Street Name (C – *Mandatory for transition*)
- Legacy Street Name Post Type (C – *Mandatory for transition*)
- Legacy Street Name Post Directional (C – *Mandatory for transition*)
- ***Country (M)***
- ***State (M)***
- County (M)
- Incorporated Municipality Left (M)
- Date Updated (M)
- ***Discrepancy Agency ID (M)***
- ESN (C)
- MSAG Community (C – *Mandatory for transition*)

PSAP Boundary:
- Emergency Service Boundary NENA Globally Unique ID (M)
- Agency ID (M)

- ***Service URI (M – provided by NGCS provider)***
- ***Service URN (M)***
- Agency vCard URI (M – *but treated as Optional at the current time*)
- Display Name (M)
- Date Updated (M)
- ***Discrepancy Agency ID (M)***

Step 2: Create and/or update the other Required NENA GIS data layers, not required by the NGCS Provider for NG9-1-1 call routing.

In order to maintain interoperability with the existing E911 system the display name of these layers should be compared to the ESN ELT (English Language Translation) maintained by the existing E911 service provider. These are not required to match but may be useful in determining where the First Responder information should be placed (Fire or EMS display name).

In some jurisdictions a single layer can be used to satisfy two or more Emergency Service Boundaries. It is not mandatory to maintain separate Emergency Service Boundary layers for NG911 only as an ETL process can be used to translate to many layers.

Emergency Service Boundaries (EMS, Fire, Law):
- Emergency Service Boundary NENA Globally Unique ID (M)
- State (M)
- Agency ID (M)
- **Service URI (M – provided by NGCS provider)**
- **Service URN (M)**
- Agency vCard URI (M – *but treated as Optional at the current time*)
- Display Name (M)
- Date Updated (M)
- Discrepancy Agency ID (M)

Task 2: Coordinate GIS data schema updates with the CAD systems

The GIS data schema required for CAD systems may or may not align with the NG9-1-1 GIS data model. In cases where the systems do not align or a PSAP is not able to update the CAD system to utilize the NG9-1-1 GIS data model, additional fields needed to support the CAD system can and should be present. NG9-1-1 systems will disregard any fields that are present, but not needed.

Step 1: Contact the CAD system provider to set-up a call to determine if the system can utilize the NG9-1-1 GIS data model or if the current data model is required. (1 day)
- In situations where the current CAD data model is required, steps 2 – 4 will not be applicable. This is not typical and additional fields should not cause issues.

Step 2: Coordinate with the CAD system provider on the steps needed to implement the NG9-1-1 GIS data model, where appropriate (1 week)

Step 3: Coordinate with the CAD system provider to implement the NG9-1-1 GIS data model, where appropriate (2 weeks)

Step 4: Test the CAD system with the newly implemented NG9-1-1 GIS data model, where appropriate (1 day)

Task 3: Populate the mandatory and conditional fields with the appropriate attributes.

Attribution of the fields is dependent on the number and complexity of the fields. Steps 1 – 3 should take less than a day each, whereas population of the MSAG Community values may take up to 45 days. The WI NG9-1-1 GIS Data Standard and Best Practices document should be referenced to determine which mandatory and conditional fields need to be added and populated and guidance on the values.

Step 1: Populate all fields containing single values such as Country, State, County, etc. (1 day)
NOTE: If an ETL (extract transform load) process is provided at a statewide level some of these values may be auto populated such as Country and State. Other attributes like County will have to be locally populated as the values may be different on borders.

Step 2: Populate the NG Unique IDs (1 day)

Step 3: If a single text Address Number was originally present in the Site/Structure Address Points, populate the added Address Number Prefix, Address Number and Address Number Suffix fields from Task 1 utilizing values present in the text Address Number field. (1 day)

Step 3a: Add, if not already present, a combined Address Number field and populate it with the combined values in the Address Number Prefix, Address Number and Address Number Suffix fields. The values in this field are necessary for the match between the ALI to the Site/Structure Address Points. IMPORTANT: The values in this field must be identical to the house number field in the ALI. (1 day)

Step 4: If only text range fields are present in the Road Centerline, then add and populate the following fields based on the existing range data (1 day):
- Left Address Number Prefix
- Right Address Number Prefix
- Left FROM Address
- Left TO Address
- Right FROM Address
- Right TO Address

Step4a: Add, if not present, combined range fields (prefix and range) in the Road Centerline. (1 day)

Suggested field names:
- ○ CFromAddrL
- ○ CToAddrL
- ○ CFromAddrR
- ○ CToAddrR

Step 5: Populate the fully spelled out (CLDXF) fields utilizing the legacy street name fields (10 to 15 days)

Step 6: Populate all other mandatory and conditional fields not already populated (15 to 45 days)

Task 4: Populate the MSAG Community

Task 4 is only required if the MSAG Community are not already present in the Road Centerline and Site/Structure Address Point layers.

The MSAG Community is the only value in the existing E911 databases (MSAG and ALI) to identify where the road or address is geographically located. While it would be ideal for these to match existing community values in the GIS data, this is not common. Due to the reliance on the E911 databases for transition and failover after transition to NG911, the MSAG Community values between the E911 databases and GIS databases is required.

Step 1: Review the MSAG to determine if a methodology can be identified for populating the MSAG Community values (postal communities during the time period of the original MSAG development is most common). (1 week)

Step 2: Once a methodology is identified, populate the MSAG Community values in the Road Centerline. (1 month)
- If no methodology can be identified, a road-by-road review of the MSAG records will need to be completed to determine the appropriate MSAG Community to be added. Be aware of the Odd, Even, Both (OEB) field present in the MSAG. MSAG table rows can be both (odds and evens), odd or even.

Step 3: Utilizing the Road Centerline MSAG Community values, calculate the Site/Structure Address Point MSAG Community values. (1 week)

Task 5: Quality control the GIS data to identify critical errors

Task 5 is only the process of quality control not the resolution. This task will be dependent on Task 1 under the State Implementation Plan. (1 to 5 days)

Quality Control critical checks include but may not be limited to:
- Field format validation (Critical): Check to identify where fields are not formatted to meet the Wisconsin NG9-1-1 GIS Data Standard.
- Unique Identifier (Critical): Check to identify duplicate unique identifiers within individual or all source feature classes.
- Missing mandatory field values (Critical): Check to identify where mandatory field attribution, as defined in the Wisconsin NG9-1-1 GIS Data Standard, is missing.
- Field values outside of domain (Critical – only for mandatory fields): Check to identify where field values are outside of the acceptable domain values as defined by the Wisconsin NG9-1-1 GIS Data Standard.
- Boundary has overlaps (Critical only for PSAP and Provisioning Boundaries initially): Check to identify where overlaps exist between polygons in each boundary feature class.
- Boundary does not cover the Provisioning Boundary (Critical): Check to identify where Emergency Service Boundary do not cover the Provisioning Boundary in its entirety.
- Address found multiple times (Critical): Check to identify where site/structure addresses occur multiple times in a single Site/Structure Address Point dataset. This check analyzes all the street name elements, address elements and zone(s) to determine duplication of address points.
- Site/Structure Address Point outside Provisioning Boundary (Critical): Check to identify where site/structure address points exist outside of the Provisioning Boundary.
- Road centerline segment crosses a boundary layer (Critical only for PSAP and Provisioning Boundaries initially): Check to identify where road segments cross a boundary, and a split should occur. All boundaries where attribute values change should be included in the quality control.
- Road centerline segments have overlapping address range values (Critical): Check to identify where road segments have overlapping address ranges in a given zone. The zone must be defined by the governing entity.

- Road centerline outside Provisioning Boundary (Critical): Check to identify where road segments exist outside of the Provisioning Boundary.
- Road centerline multi part geometry (Critical): Check to identify where road segments contain multi part geometry.
- Road centerline complex geometry (Critical, may be non-critical in some systems): Check to identify where road segments contain multi part geometry.
- ALI to Road Centerline Synchronization (Critical):
  - Fail on full street name: Check to identify where the ALI street name elements and road segment's street name elements are not identical.
  - Fail on zone: Check to identify where the ALI address number and street name elements match the road segment but are not found in the same zone.
  - Fail on address range: Check to identify where the ALI street name elements and zone match the road segment, but the address number falls outside of the road segment's address ranges.
- ALI to Site/Structure Address Point Synchronization (Critical):
  - Fail on full street name: Check to identify where the ALI street name elements and site/structure address point's street name elements are not identical.
  - Fail on zone: Check to identify where the ALI address number and street name elements match the site/structure address point but are not found in the same zone.
  - Fail on address number: Check to identify where the ALI street name elements and zone match the site/structure address point, but no exact address number match can be made.
  - Fail on address number suffix: Check to identify where the ALI address number, street name elements and zone match the site/structure address point, but no exact address number suffix match can be made.

Task 6: Correct quality control critical errors

Step 1: Correct GIS data critical errors as identified in Task 5 (15 to 30 days)

Step 2: Correct MSAG where required to align to the GIS data. These corrections may include updating MSAG Communities, Street Names, High and Low. (30 to 90 days)

Task 7: Quality control the GIS data to validate corrections and correct any critical errors found

This task is the ongoing process of Tasks 5 and 6, which is a continual process until all critical errors are corrected or as GIS data updates occur. (ongoing)

Submission of GIS data for quality control will occur more frequently during the initial correction of critical errors. Once a jurisdiction is critical error free the frequency will be weekly, monthly, or quarterly depending on the number of changes occurring in a jurisdiction. Upon implementation of a GIS derived MSAG, the GIS data will need to be quality controlled each time Road Centerline segments and Site/Structure Address Points are modified or added.

Task 8: Edge Matching with Surrounding Provisioning Boundaries

This task should be completed after Task 7. Each GIS Data Provider should work with the surrounding Provisioning Boundary GIS Data Providers to align borders.

Step 1: Request GIS data from surrounding Provisioning Boundary GIS Data Providers. (5 days)

Step 2: Compare provisioning area with each surrounding provisional area. In areas of overlaps and gaps, work with each provisioning GIS Data Provider to match as close as possible. There will be a tolerance within the NG9-1-1 system, so the boundaries do not need to be identical. The typical tolerance is 1 square meter. (10 – 14 days per provisioning area)

Step 3: Perform quality control between the data sets to ensure the boundaries are matched as closely as possible. (1 day)

Step 4: Align Road Centerlines, if necessary, to the aligned boundaries. (5 – 10 days per provisioning area)

Step 5: Create stitch points, if desired. (5 – 10 days per provisioning area)

Task 9: Provisioning GIS data to the NGCS

This task is ongoing and dependent on all tasks listed under the State Implementation Plan. (ongoing)

The diagram below shows a simplified workflow between the Local GIS Data Provider, the State GIS Managed Services Provider and the NG9-1-1 Core Service Provider for provisioning GIS data to the NGCS.
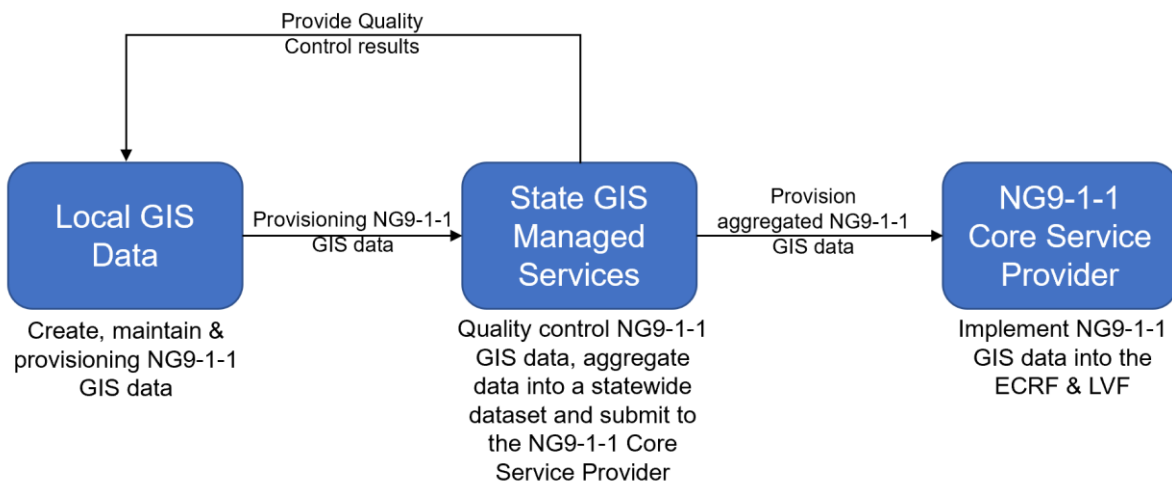
Implementation Summary and Timeline

Each task identified helps to achieve the goal of GIS data preparedness for NG9-1-1. Some tasks will overlap in implementation and others must be completed before moving forward. The following chart provides the chronological order, by month, for all tasks outlined for the State Implementation Plan.

State Estimated Timeline

Entity	Task	Step	Description
December 2021			
Entity	Task	Step	Description
State	1	1	Determine the requirements of the NG9-1-1 GIS Data Management System and Services
State	2	1	Acquire the GIS requirements from the NGCS provider
January 2022			
Entity	Task	Step	Description
State	1	2	Determine the contracting requirements (e.g., RFP) for the system
September 2022 – PENDING FINAL PROCUREMENT PROCESS & TIMELINES			
Entity	Task	Step	Description
State	2	3	Coordinate with the NG9-1-1 GIS Data Management System and Services partner on items to be addressed in Task 2, Step 1
State	2	4	Update the WI NG9-1-1 GIS Data Standard and Best Practices document to include the items identified in Task 2, Step 1
October 2022			
Entity	Task	Step	Description
State	2	5	Develop guidance for local GIS Data Providers in conjunction with the NGCS provider and GIS Data Management provider
November 2022			
Entity	Task	Step	Description
State	2	6	Communicate requirements to local GIS Data Providers
January 2023			
Entity	Task	Step	Description
State	1	4	Implement the NG9-1-1 GIS Data Management System and Services
March 2023			
Entity	Task	Step	Description
State	3	1	Determine ongoing topics needing to be covered in the training and guidance
April 2023			
Entity	Task	Step	Description
State	3	2	Develop NG9-1-1 guidance in various formats including, but not limited to, documentation, step-by-step instructions and videos, based on Task 3, Step 1
State	4	1	Implement quality control checks to identify critical errors in the NG9-1-1 GIS data as defined in Task 2
State	4	2	Develop quality control guidance for local GIS Data Providers on the correction of quality control errors identified and applicable exception codes
State	4	3	Determine the frequency of local GIS data submissions for quality control
May 2023			
Entity	Task	Step	Description
State	3	3	Develop NG9-1-1 training based on Task 3, Steps 1 and 2
State	3	4	Determine the number of training sessions and method of training, in-person and/or virtual
State	3	5	Deliver guidance to local GIS Data Providers
State	4	4	Determine a method of reporting local GIS data submissions quality control results statewide
June 2023			
Entity	Task	Step	Description
State	3	5	Deliver additional training to local GIS Data Providers
Ongoing			
Entity	Task	Step	Description
State	3	6	Re-evaluate the training and guidance every 6 months.
State	4	5	Monitor quality control to ensure local GIS data submissions are meeting requirements

Local Estimated Timeline

For the Local Implementation Plan timeline, general months have been utilized instead of actual months due to the uncertainty of when a PSAP will sign onto the NG9-1-1 system. The first month a jurisdiction is able to start the local tasks should be Month 1 in the chart below.

Entity	Task	Step	Description
Month 1			
Entity	Task	Step	Description
Local	1	1	Migrate to the Wisconsin version of the NENA NG9-1-1 GIS Data Model or add mandatory and appropriate conditional fields to the existing GIS data model
Local	2	1	Contact the CAD system provider to set-up a call to determine if the system can utilize the NG9-1-1 GIS data model or if the current data model is required
Local	2	2	Coordinate with the CAD system provider to implement the NG9-1-1 GIS data model, where appropriate (may not be required)
Local	2	3	Coordinate with the CAD system provider to implement the NG9-1-1 GIS data model, where appropriate (may not be required)
Month 2			
Entity	Task	Step	Description
Local	2	4	Test the CAD system with the newly implemented NG9-1-1 GIS data model, where appropriate (may not be required)
Local	3	1	Populate all fields containing single values such as Country, State, County, etc.
Local	3	2	Populate the NG Unique IDs
Local	3	3	If a single text Address Number was originally present in the Site/Structure Address Points, populate the added Address Number Prefix, Address Number and Address Number Suffix fields from Task 1 utilizing values present in the text Address Number field.
Local	3	4	If only text range fields are present in the Road Centerline, add and populate the following fields based on the existing range data
Month 3			
Entity	Task	Step	Description
Local	3	5	Populate the fully spelled out (CLDXF) fields utilizing the legacy street name fields
Local	3	6	Populate all other fields not already populated
Local	4	1	Review the MSAG to determine if a methodology can be identified for the MSAG Community values (postal communities during the time period is most common)
Month 4			
Entity	Task	Step	Description
Local	5	--	Quality control the GIS data to identify critical errors
Local	6	1	Correct GIS data critical errors as identified in Task 5
Local	4	2	Once a methodology is identified, populate the MSAG Community values in the Road Centerline.
Local	4	3	Utilizing the Road Centerline MSAG Community values, calculate the Site/Structure Address Point MSAG Community values
Month 5			
Entity	Task	Step	Description
Local	6	2	Correct MSAG where required to align to the GIS data
Local	7	--	Quality control the GIS data to validate corrections and correct any additional errors found
Month 6			
Entity	Task	Step	Description
Local	1	2	Create and/or update the Required NENA GIS data layers, are not required by the NGCS Provider for NG9-1-1 call routing.
Month 7 & 8			
Entity	Task	Step	Description
Local	8	1	Request GIS data from surrounding Provisioning Boundary GIS Data Providers.
Local	8	2	Compare provisioning area with each surrounding provisional area. (10 – 14 days per provisioning area)
Local	8	3	Perform quality control between the data sets to ensure the boundaries are matched as closely as possible. (1 day)
Local	8	4	Align Road Centerlines, if necessary, to the aligned boundaries. (5 – 10 days per provisioning area)
Local	8	5	Create stitch points, if desired. (5 – 10 days per provisioning area)
Ongoing			
Entity	Task	Step	Description
Local	9	--	Provisioning GIS data to the NGCS