

# TELEVATE



## Minnesota Department of Public Safety Public Safety Wireless Data Network Requirements Project Minnesota Public Safety Broadband State and Local Grant Plan Phase 2-Task 8/Deliverable 6

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## 1 EXECUTIVE SUMMARY

With the passage of the Middle Class Tax Relief and Job Creation Act of 2012 (The Act), public safety is offered a tremendous opportunity to evolve and improve dramatically the capabilities of public safety communications. The Act creates a National Public Safety Broadband Network concept and calls for FirstNet, the board governing the network and its creation, to consult with state and local governments to ensure its success. The consultation with the states is to be conducted primarily through the State and Local Implementation Planning Grant Program (SLIGP). This document is the State of Minnesota's high-level plan for the implementation of its SLIGP grant.

The objectives for the implementation of the Minnesota portion of the NPSBN is that the NPSBN be a) highly adopted within the state, and therefore, meet the cost, functional, and performance needs of the state's public safety users, b) that the network be sustainable in that the revenues associated with the services provided by the network recover its costs, and c) that interoperability is enhanced in the state as a result of the network. The State's goal for this plan is to collect the required information that will ensure that the network will meet these objectives to the greatest extent possible. At the end of the State's SLIGP program, the State intends to deliver a report to FirstNet and NTIA that outlines a blueprint for a successful and sustainable NPSBN implementation within the state.

Through previous work performed by the State, it was clear that the capital and operating cost associated with a statewide network would be a challenge. Therefore, particular attention in the plan is given to identifying ways to tap in to greater sources of assets and financial resources of public safety agencies and private partners in addition to a careful collection of public safety's minimum requirements for adoption of the new service provided by the NPSBN. The goal of this document is to articulate a process by which the State of Minnesota can collect the data most pertinent to ensuring the objectives are met. The financial models are enhanced by including non-public safety users and their associated revenues, and therefore, the State envisions collecting adoption information from first responder agencies, second responders, and other government agencies. The process seeks to provide an effective basis for a viable business plan that could govern the implementation of the NPSBN within the State of Minnesota.

The tasks associated with the plan, a number of which may occur in parallel, include the following:

- Task 0 – Grant Preparation Activities: In order to secure funding for the program, the State will prepare some level of grant application materials. This task includes the development of those materials.
- Task 1: Initial Administrative Tasks: This step in the process includes activities required to ramp up the entire program including governance, updating state interoperability plans, and establish contracts to establish elements of the team.
- Task 2: Create Stakeholder List: This step will involve the identification of public safety and government stakeholders statewide that will be involved in the data collection effort. This step also includes outreach to the stakeholders.
- Task 3: Refine Stakeholder List: This step will ensure that the appropriate information will be collected by all required entities throughout the state. The stakeholder list will be refined to minimize gaps in the data collection process.

- Task 4: Agency Specific Needs and Assets Collection: This step will involve the collection of requirements and assets of public safety and government agencies throughout the state. Individual counties and cities will be queried during this process, largely via the Public Safety Answering Point contacts. The focus of this effort will be to establish the criteria for each agency to adopt the FirstNet service. This work will be conducted efficiently via online surveys and web-based online sessions.
- Task 5: Statewide Requirements Assessment: This task will involve the collection of requirements that will apply to the entire state. This work will be conducted under subcommittees under the SRB designated group managing the SLIGP program. The subcommittee work will be conducted largely via face-to-face meetings and conference calls. Seven or more subcommittees are contemplated to include:
  - Service Area Requirements: Identification of service levels
  - Device Requirements: Specific device attributes required
  - System Requirements: Functional or performance requirements of the System
  - Security Requirements: Specific security requirements of the system and applications
  - MOU Subcommittee: Construction of templates for sharing of assets and information.
  - Application Requirements: Identification of specific applications and their requirements for statewide information sharing
- Task 6: Partner Analysis: The identification of viable partners that can help the state fulfill its objectives bringing assets, resources, and other benefits to the state.
- Task 7: Implementation Modeling: The development of the required system designs and financial models to determine the viability of constructing a sustainable solution that meets the needs of the state.
- Task 8: Detailed Asset Information Collection: Collection of detailed information for individual assets such that FirstNet and other private partners can evaluate their fitness for use in the NPSBN.
- Task 9: Development of the Final Report: The blueprint of the State's proposed plan to FirstNet for a successful statewide broadband network implementation. Includes user needs and requirements for adoption, state and local assets and financial resources, partner information, subscriber information, and other information that may be required by NTIA.

Elements of this process were successfully piloted in two jurisdictions; Waseca County and Leech Lake Tribe. During the pilot, the process was further refined to adjust to the availability of certain data points and so to increase the participatory feedback from a wider group of stakeholders. NTIA has not provided detailed guidance on the SLIGP grant program, and therefore, these tasks as well as the timeframe in which they are to be performed are subject to change. NTIA has indicated that the grant program is likely to be broken up by phase. Initial indications from NTIA forecast that Phase 1 SLIGP

grant program will include Tasks 1 through 3. As a result, this may impact the timing of multiple grant applications and the timing of the tasks themselves.

The project is intended to take roughly one year to implement from grant award and the securing of the appropriate contract resources. However, this timeline is subject to change based on the phasing of the program by NTIA as well as the scope of work regarding some of the more time consuming elements of the program (such as detailed asset analysis). The resources required to implement the plan are as follows:

- State Manager: Oversight of the entire broadband program within the state. Reports directly to the Statewide Radio Board (SRB) or the Single Point of Contact (SPOC) and manages the project team and the overall effort. Serves as the State representative for the program and keeps executives within the State informed on the program. Estimated level of effort: 2,887 hours
- Project Team: Conducts the primary body of work identified in the tasks above. Collects stakeholder information, performs outreach on behalf of the state, organizes meetings, and reports on status and other factors to the State Manager. Estimated level of effort: 10,878 hours
- Stakeholders: Participate in the online and web-based surveys to provide agency data. Participate in subcommittees. Estimated level of effort: 15,147 hours.

## 2 INTRODUCTION

In February 2012, Congress enacted The Middle Class Tax Relief and Job Creation Act of 2012, containing landmark provisions to create a nationwide public safety broadband network (NPSBN) that will provide police, firefighters, emergency medical service professionals and other public safety officials wireless communication services on a nationwide network. The law's governing framework for the deployment and operation of this network is the new "First Responder Network Authority" (FirstNet), an independent authority within NTIA. FirstNet will hold the spectrum license for the network, and is charged with taking "all actions necessary" to build, deploy, and operate the network, in consultation with Federal, State, tribal and local public safety entities, and other key stakeholders.

The FirstNet Act refers to public safety services as:

*(27) PUBLIC SAFETY SERVICES.—The term “public safety services”—*

*(A) has the meaning given the term in section 337(f) of the Communications Act of 1934 (47 U.S.C. 337(f)); and*

*(B) includes services provided by emergency response providers, as that term is defined in section 2 of the Homeland Security Act of 2002 (6 U.S.C. 101).*

The Communications Act of 1934 47 U.S.C. 337(f) defines Bullet (A) as:

*(1) Public Safety Services: The term “public safety services” means services—*

*(A) the sole or principal purpose of which is to protect the safety of life, health, or property;*

*(B) that are provided—*

*(i) by State or local government entities; or*

*(ii) by nongovernmental organizations that are authorized by a governmental entity whose primary mission is the provision of such services; and*

*(C) that are not made commercially available to the public by the provider.*

And then further amended in the Homeland Security Act of 2002 which extended it to include:

*(6) The term “emergency response providers” includes Federal, State, and local emergency public safety, law enforcement, emergency response, emergency medical (including hospital emergency facilities), and related personnel, agencies, and authorities.*

The Act provides \$135 million for a new State and Local Implementation Grant Program (SLIGP) to support State, regional, tribal and local jurisdictions’ efforts to plan and work with FirstNet to ensure the network meets their wireless public safety communications needs. The Act specifies that NTIA must “make grants to States to assist State, regional, tribal, and local jurisdictions to identify, plan, and implement the most efficient and effective way for such jurisdictions to utilize and integrate the infrastructure, equipment, and other architecture associated with the nationwide public safety broadband network to satisfy the wireless communications and data services needs of that jurisdiction, including with regards to coverage, siting, and other needs.”

On August 21, 2012, NTIA released the “Development of Programmatic Requirements for the State and Local Implementation Grant Program to Assist in Planning for the Nationwide Public Safety Broadband Network.” The document provides a very high level view of the program and the allowable costs. The requirements are stated in a manner that suggests changes to the program are likely. For example, it states “eligible costs under the planning grant program will likely include the following categories of expense.” [Emphasis Added]. In addition, the document states “NTIA does not envision allowing funds awarded under the State and Local Implementation Grant Program to be used for activities related to site preparation...” In other words, the grant guidance, allowable costs, and program requirements are subject to change. Ultimately, it is likely FirstNet itself that will define what it requires out of the SLIGP program. These detailed requirements are expected in the first half of 2013.

The Act requires “[t]he First Responder Network Authority shall ensure the establishment of a nationwide, interoperable, public safety broadband network.” Interoperability of a data network should not end at connectivity. Instead, interoperability must be defined as sharing meaningful information between public safety organizations and users. The Act also requires that FirstNet establish user fees and that those user fees cover network operations costs. As a result, the user fees must be both sufficient for FirstNet to operate the network and must be sufficiently low to facilitate widespread adoption.

The Act allows for states to “opt-out” of the proposed FirstNet plan for their state. In the case of opting out, the state will have a limited period of time to determine if it wishes to pursue its own solution and initiate its own RFP process. After the state presents its own plan, it must satisfy the FCC, NTIA, and

FirstNet criteria for opting out. These criteria are expected to include the FCC's minimum technical requirements, demonstration of the state's ability to build, operate, and maintain the network, and sustainability of the state's network.

Finally, the Act provides FirstNet with a minimum of \$2 Billion in funding to build the network. Up to \$7 Billion will be available to FirstNet in the event of successful incentive auctions of television broadcast spectrum. Importantly, it is widely surmised that this amount of money is insufficient to build a nationwide, public safety grade, wireless network. Furthermore, the Act enables FirstNet to service only public safety entities defined as those "whose sole or principal purpose is to protect the safety of life, health, or property." This restriction curtails the number of users on the network fully controlled by FirstNet if supporting government agencies were excluded. Additional users can be served on the network under spectrum lease agreements. However, a third party must service those users via the lease agreements.

In July of 2012, Televate was engaged to create a plan to satisfy the state's objectives for the SLIGP program. This document represents the proposed plan.

Additionally, to assist in fine-tuning the planning process, Televate has tested the data collection process in two pilot jurisdictions. Where relevant, process improvements stemming from these pilots are incorporated into this document. The totality of the information collected will be provided to FirstNet for incorporation into their RFP(s).

### 3 OBJECTIVES OF THE PLAN

The State of Minnesota broadly interprets its role as assisting the plan for a successful broadband implementation in the State – essentially creating a roadmap for achieving the state's objectives. The state's primary objectives for the Nationwide Public Safety Broadband Network are that it is sustainable, highly adopted by public safety agencies, and provides enhancements to interoperability for public safety users in the state. This means that the network must meet coverage, cost and other public safety requirements under a sustainable model. For example, to the extent that private partners are needed for sustainability or provide some other benefit, the State must be involved in collecting information about such partners. As a result, the State of Minnesota sees that as part of "state and local planning" the development of an understanding of the types of information state public safety agencies need to share, and therefore, an assessment of the services they require to enhance interoperability. Furthermore, if impediments exist for any individual agency to achieve true interoperability, those impediments must also be understood during this planning process. For example, if a Public Safety Entity (as defined by the law) does not have the technical or operational means to operate the servers associated with interoperable applications, then this factor must be known.

The state's objectives for the program are to collect the required information to ensure that FirstNet and its vendor will be able to build, operate, and maintain a network in the State of Minnesota that:

- Is highly adopted by public safety, and therefore, substantially benefits public safety in the state. As a result, the service must broadly meet the needs of the state's public safety users including its coverage, reliability, cost, and other requirements.



- Is sustainable, and therefore, that the user fees and other sources of revenue for FirstNet are sufficient to sustain the network for the long term. This includes not only recovery of network user fees, but also “technology refresh”, system upgrades, and other requirements of the public safety community in perpetuity.
- Enhances interoperability. Simply providing a more reliable and robust network to carry state and local public safety is insufficient. The new network must enhance the sharing of information among the state’s public safety community.

The objective of the plan is then to collect the information that will assist FirstNet in achieving the state’s public safety broadband objectives within the State of Minnesota. The plan has been designed to be consistent with the preliminary guidelines set forth by NTIA on August 21, 2012. The plan is not an “opt-out” plan; it is a plan to prepare the state with the necessary information the State needs to assess its options and to interface with FirstNet. Minnesota SLIGP Plan

The State of Minnesota SLIGP plan consists of the following elements:

- Grant preparation: Initial activities related to securing the SLIGP grant
- Administrative Tasks: Establish governance, policy, grant application and other related activities
- Stakeholder Identification: Identify those entities, agencies, and individuals that will participate in the planning process. This includes tribal, county, city, and private entities.
- Stakeholder Outreach: Establish working relationships with stakeholders statewide to educate them in the program, the benefits of the LTE NPSBN, the objectives of the state, and to begin information flow.
- Needs Assessment: Collect end-user service and application needs, user fee constraints, interoperable application needs, and any other requirements in order for users to migrate to the NPSBN.
- Private Partner Analysis: Identify the full capabilities and interests of potential private partners in the state to play various roles in building and sustaining the network.
- Implementation Modeling: Identify potential sustainable models for a public safety broadband deployment in the state. The modeling incorporates private partner analysis, system design, capital and operations budgeting, as well as available funds, available assets, and other aspects to ensure the state will meet its objectives.
- Asset Analysis: Perform an inventory of usable assets for consideration of integration into the Minnesota portion of the NPSBN to lower the overall cost and timeframe for deployment.
- Final Report Development: Assemble the user needs, partner analysis, business model, asset analysis and other relevant information into a final report SLIGP Plan

## 3.1 Task 0 - Grant Application

Prior to conducting the planning work itself, the State must secure the grant funds according to NTIA rules and procedures. As indicated in the Act, the State must provide matching funds of 20 percent for the planning process. Therefore, a key initial activity is a full assessment of the NTIA grant guidelines regarding the matching funds. Televate anticipates a substantial amount of state and local efforts to complete the planning process, and therefore, “in-kind” funds may eliminate or reduce cash requirements from the State. The State will need to consider these factors in securing grant funds.

In addition, there are a variety of mechanisms that NTIA could employ to award the funds. NTIA could require the State submit an application along with a detailed plan and matching fund assessment as they have in the Broadband Technologies Opportunities Program (BTOP) accompanying a grant application to receive the funds. NTIA may also issue block grants to the State without having to file an application.

## 3.2 Task 1 - Initial Administrative Items

### 3.2.1 Program Ramp-Up

The initial phase of the program will entail the ramp-up activities. This will include the creation of project charters, project plans, communications plans, and other activities. The program will commence with a project kickoff in which the project team will establish the baseline for these activities.

### 3.2.2 Governance, Legal Activities

The State will leverage the existing statewide governance structure to govern the grant program. The SRB and regional boards will then have to make policy decisions regarding the implementation of the grant program. According to the Act, the State must establish a single point of contact. That single point of contact for the State is The Commissioner of Public Safety. Once NTIA publishes the guidelines for the grant program, the State will have a better understanding of its obligations, however, some decisions and activities are expected, and therefore, these steps must be completed before data collection may begin.

Prior to conducting the data collection activities, the State must establish additional administrative guidelines that may be necessary prior to implement the program. For example, if in-kind matching funds constitute some or all of the state’s match, the State may need to establish a tracking system to document labor hours or other contributions from state and local personnel.

Additionally, there may be other administrative elements that must occur prior to data collection. For example, there may be asset sharing issues that may prohibit or restrict commercial use of government assets. Examples of restricted assets could include fiber connectivity that was funded by the US Departments of Transportation or Education. In many cases, these assets have signification restrictions attached to their usage that would prohibit sharing with public safety or their partial commercialization. Hence, certain assets may be excluded from analysis.

Finally, the SRB will provide overall direction to the program after receiving the grant guidance. The SRB will determine the final scope of the program, budgets, integration of local personnel into the planning process, and perform other necessary oversight tasks.

### **3.2.3 MOUs, SLAs and the SCIP**

Should FirstNet choose to leverage the wealth of State and local assets for the rollout of the NPSBN, it is imperative that agreements within the State be updated to include the changes to the governance of the asset. Memorandums of Understanding (MOU) will need to reflect the issues of control, liability and cost sharing across all levels of government. Potentially, Service Level Agreements (SLA) governing the expectations of reliability and security may be required for critical infrastructure. Thus far, the State has articulated its goals of interoperability within the Statewide Communications Interoperability Plan (SCIP). Though regularly updated, the onset of the FirstNet efforts is likely to provoke changes to the plan.

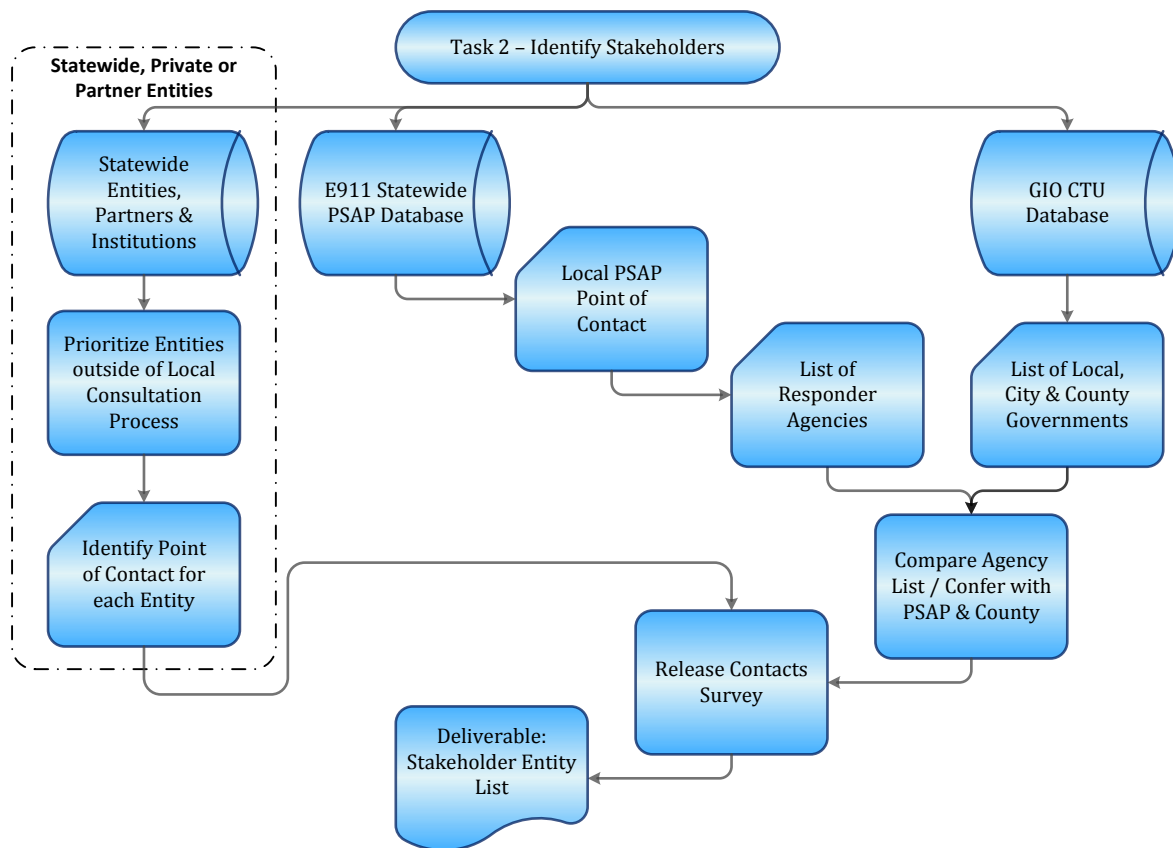
The project team will support the State in the creation or modification of existing MOUs and SLAs. This task shall be to create a framework by which the most pertinent issues can be addressed and negotiated with FirstNet. The project team shall provide regular impact assessments on the changes wrought by the implementation of NPSBN so that they can reflect these updates within the SCIP.

### **3.2.4 Establish Support Contracts**

Based on the allowable scope of work from the grant program and the matching fund policy, the State may require contract support to execute the program. As a result, immediately following the grant guidance, the State may need to prepare one or more Requests for Proposals that secures the appropriate goods and services associated with the work. Presumably, the scope of work will be consistent with the plan outlined in this document, unless NTIA grant guidance or other policy requires a change.

## **3.3 Task 2 – Develop a Stakeholder Entity List**

Task 1 begins with the assessment of two data sources: the Department of Public Safety E911 Statewide PSAP (Public Safety Answering Point) database and the Minnesota Geospatial Information (MnGeo) Cities, Townships and Census defined Unorganized Territories (CTU) data.



The objective of this task is to create a list of stakeholder entities that would supply NPSBN users. The stakeholders are also possible contributors of network infrastructure for use by the NPSBN. In order to assess the many variables that affect the cost-effectiveness of the network, the list must be as comprehensive as possible. To create the list, the project team will be required to take a proactive approach to the data gathering so to foster good communications with the local entities and jurisdictions.

The primary resource for identifying the local government entities and agencies is the contact database kept by the local PSAP (Public Safety Answering Point). This data source will be used to establish the starting point of the stakeholder entities list. The process begins with the contact list that is kept by the Department of Public Safety; it is referred to as the E911 Statewide PSAP Database. This list contains the primary and secondary contacts for each PSAP in the State of Minnesota. There are over 100 PSAPs within the State of Minnesota for the 87 counties; averaging a little more than one PSAP per county. The primary responsibility of the PSAP is to forward emergency calls to the corresponding responder agency. The individual PSAP has direct knowledge of the individual public safety entities in their service area and they routinely engage the first responders and a variety of supporting agencies on a regular basis. Consequently, the PSAPs are excellent repositories for identifying those agencies that play an active role ensuring the health, safety and general welfare of society.

Thus, the data collection process will focus on the PSAPs as the starting point. As shown in this pilot, the PSAPs are able to provide the project team with key points of contact for each responding entity. The lists contain contact information for both public and private responding entities. In addition, the PSAPs

are a very good resource for identifying the jurisdictional responsibilities of the different public safety agencies over their region of responsibility.

Next, the project team compares the list of contacts received from the individual PSAP to the list jurisdictions held within the Minnesota Geospatial Information Office (MnGeo) database; a list of more than 2900 jurisdictions and named places. The MnGeo database identifies all individual jurisdictions and named places; it is regularly updated and represents the most accurate representation of local government entities within the State. The MnGeo database provides an excellent resource to assess the scale and the ultimate number of governmental entities in a given geographical area. The MnGeo list of jurisdictions is used as a cross-reference to ensure the completeness of the government entity list.

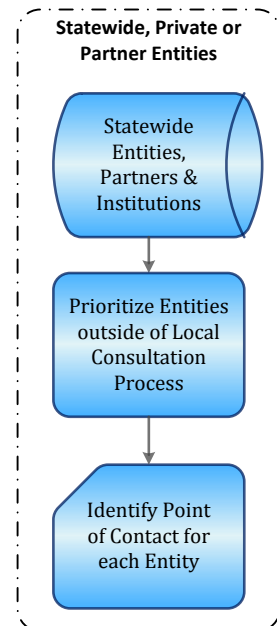
As an example, in Waseca County there are 18 legal jurisdictions identified in the MnGeo database. It was found, during the review with Waseca County stakeholders, that many of the smaller jurisdictions do not provide public services. In many cases, the public services are outsourced to the county and/or the larger nearby city governments; a situation that is actually quite common throughout the State. Likewise, very small jurisdictions often do not have staffed employees.

The outsourcing can take the form of full public safety services (e.g., the county sheriff provides law enforcement for a small town) or some subset of services (e.g., the county manages the wireless communications system for a small town's police department). In these cases, the larger entity that provides these services to the smaller entity can provide the state with some perspective on the whether there is a potential user community that could be service by the NBPSN.

The surveying of the PSAPs is designed to encapsulate the vast majority of agencies involved in public safety ether as a first responder or a supporting agency. However, it is clear that there is a minority of entities that fall outside the PSAP process who could both provide infrastructure and be potential users of NPSBN wireless data services. These entities typically support public safety however in a more indirect way; some examples include the following:

- State agencies, other than State Patrol
- Federal agencies
- Partner entities
- Investigators
- Public works
- Educational Institutions
- Hospitals

For these entities it is intended to have a centralized approach to the collection of data. In a parallel to the collection of contacts from the PSAPs the project team will consult with the State representative to tally a list of potential agencies and entities. For public agencies and certain private entities, such as hospitals and EMS the communications and consultation will be aggregated as much as possible to reduce redundant tasks. Partner entities will be investigated on a case-by-case basis as separate business cases would need to be considered for each.

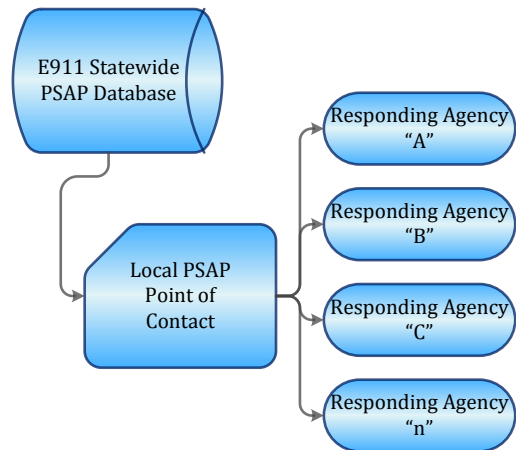


## 3.3.1 The E911 PSAP Database

The E911 PSAP database is maintained by the Minnesota Department of Public Safety (DPS). The database lists the point of contact, and an alternate contact, for each PSAP within the State of Minnesota. The database contains significant detail with regard to the points of contact as well as additional information relative to the location and connectivity at each PSAP. The database contains two key items of information that will be utilized by this process; they are as follows:

- **Physical Location of PSAP:** The PSAP locations will be integrated into the design of the Radio Access Network (RAN). In nearly all cases, the PSAPs serve as vital data centers where public safety applications will reside.
- **PSAP Primary Contact Info:** The PSAP contact will be the point of contact (POC) through whom the project team will request a complete list of responding agencies/entities both public and private. The responding agencies will be the primary users of the future NPSBN network. They will be given the highest priority on the network. They will also play a key role in defining the requirements of the network in terms of coverage and performance.

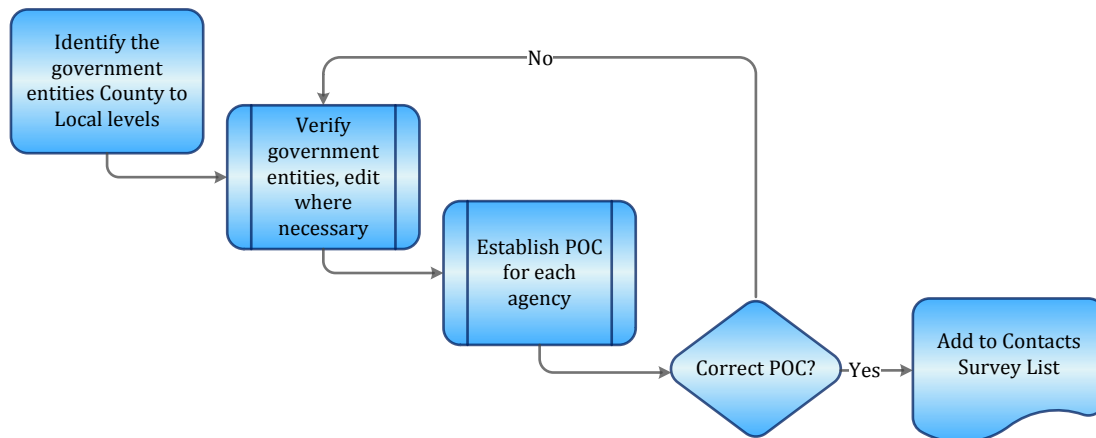
The project team will use the E911 database to identify the POC at each PSAP. They will then contact the PSAP POC with the purpose of acquiring a complete list of all responding agencies (first responders and supporting agencies) and private entities. The contact list will include agencies that provide mutual aid across county or jurisdictional boundaries. The specific steps are listed below:



1. Identify PSAPs per county; [note that some entities share a PSAPs, in this case the process will be to group the entities together to match the PSAP]
2. Contact POC at each PSAP
3. Obtain list of all responding agencies and entities; public and/or private
4. Collate list of POCs for each responding agency and entity
5. Identify volunteer agencies or entities; due to the part-time nature of their service, participation from these entities may be lacking. The project team should be prepared to collect the requirement of volunteers either via the PSAP director or the senior public safety official within the county.
6. Confirm list of responding agencies with PSAP POC and modify as necessary
7. Release web-based survey to all agency POCs to capture their specific contact information

### Identification of POCs

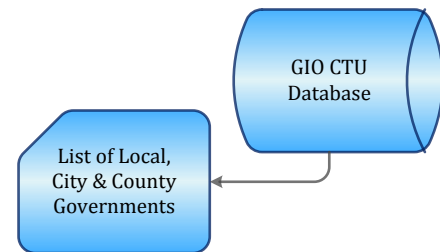
The points of contact (POC) will be identified from a variety of sources. The intent is to identify each local government entity within each county and establish a list of point of contacts for each. A simple diagram of the process is as follows:



The list will identify on a per county basis, the public and private public safety agencies and the supporting agencies or entities.

### 3.3.2 Minnesota GIO CTU Database

The Minnesota Geospatial Information Office provides a repository for the names and locations for all Cities, Townships and Census-defined Unorganized Territories (CTU) in Minnesota. It is a subset of the federal Geographical Names Information System (GNIS) database. It contains all Minnesota entries for cities, townships and Census-defined unorganized territories, both active and historical.



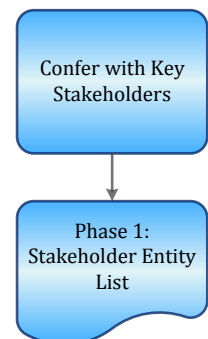
The MnGeo CTU database is integrated with the Office of Administrative Hearings Municipal Boundary Adjustment database. When a new city or township comes into existence, or when an existing city, township or unorganized territory becomes historical, that change is formally registered within the database and then reported to the U.S. Geological Survey for inclusion in the GNIS.

The MnGeo CTU database is regularly updated in a periodic manner; this provides credence toward its accuracy. From this list, all active government entities are compiled. The MnGeo CTU database provides the name of the government entity only; further research and direct communications with the government entities will be required by the project team to identify individual POCs at each government entity.

### 3.3.3 Confer with Key Stakeholders

The objective of Task 1 is to gather the POC information from the PSAPs before reaching out to the individual government entities. The feedback from the local PSAP will provide the project team with frame of reference with regard to the organizational structure within the county and surrounding jurisdictions. It will aid the data collection process.

After the two lists have been combined and the project team is confident that all stakeholder agencies and entities have been identified; the project team will then



organize a kick-off web-based video conference with the key stakeholders, county-by-county. The invitees to this meeting will be identified through a consultation process incorporating the guidance of the following entities:

- Statewide and Regional Radio Boards
- State Government
- PSAP Director
- IT or Radio managers

The regional conference with the key stakeholder is organized for the purpose of getting their buy-in and support and to provide a basic education for the data collection process. The meeting will cover the following objectives:

- Background and education
- Refine the list of potential user agencies; who will provide information on the:
  - Current spending levels on wireless data services and
  - Number of potential subscribers that would be migrated over to the NPSBN
- Identify the group of stakeholders who will provide input coverage and usage cases
- Identify the group of stakeholders who will provide support for the assessment of available infrastructure

### **Stakeholder Communication and Outreach**

An important part of the stakeholder assignment process will be the communication of expectations as they pertain to the objective of the program. It is vital to brief the stakeholders so that they have a proper understanding of the entire program, to set the expectations for their participation and to solicit buy-in from them as their participation will define the overall success of the program. Hence the project team shall prepare and deliver to each participating stakeholder briefing presentations, lists of pending tasks, explanations of each task and the estimated schedule for completion.

### **3.3.4 Tribal Entities**

There are 11 tribal nations in Minnesota. For the purposes of this program, each tribe shall be treated as a separate jurisdiction or government entity similar to County and State entities.

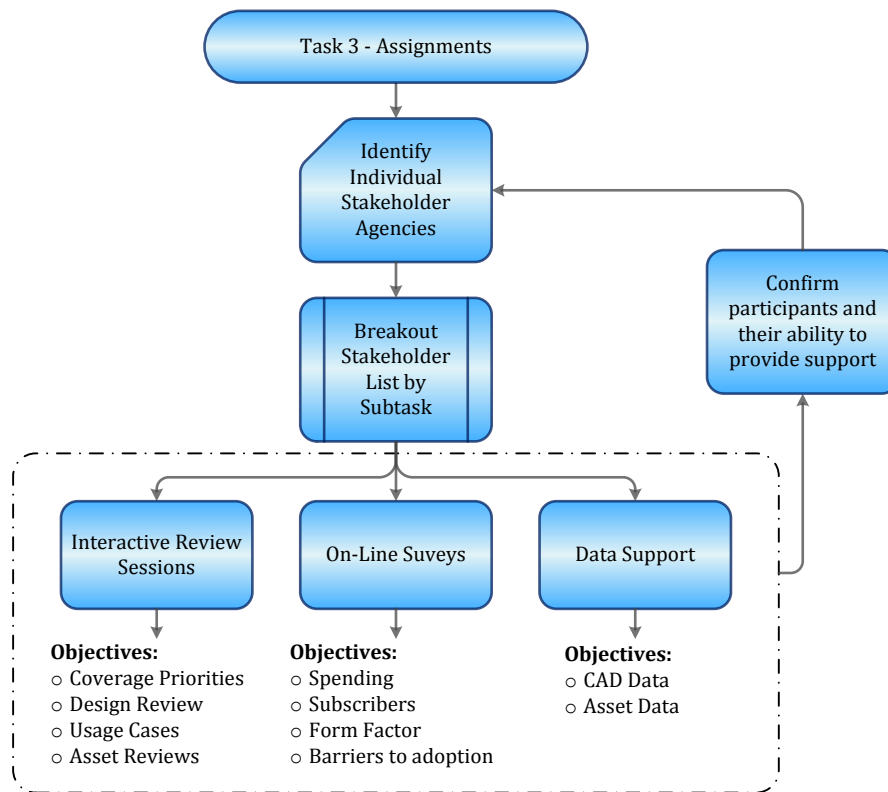
Outside of interfacing with tribal entities directly, The Minnesota GIO CTU database provides a good first source of information for identifying the tribal entities. A second source for the identification of the tribal entities is the Minnesota Indian Affairs Council. Each nation has varying degrees of organization and governmental responsibilities. These responsibilities extend to property rights and likewise have a direct impact on the development of the NPSBN on tribal lands. The consultation with tribal entities shall follow the following process:



- Identify a primary stakeholder within each tribe
- Document the areas of jurisdiction and level of services offered by the tribe
- Consult with the tribe jurisdictional agencies
- Coordinate and confer requirements with non-tribal local government agencies (county government(s), neighboring cities, etc.
- Document requirements and coordinate issues of governance

## 3.4 Task 3 – Stakeholder List Refinements

At the end of Task 2, the project team will have a list of most agencies and participants that will collaborate in the data collection and consultation effort. With the advice of the key stakeholders identified in the previous section, the next step of the process will be to ensure that each the project team has identified experts and responsible parties for the collection of all required information in the program. This step will organize and group each agency to ensure that the project team can collect user requirements and quantities, financial resources, and other asset data for the required entities throughout the state. The following diagram represents the fundamental process for stakeholder identification:



The stakeholders are to provide data that fit into three broad categories. While a single individual may be capable of providing multiple categories of information, the plan requires that experts in these areas are identified in order to capture the required information that achieves the State's objectives. The following categories of information are described in the following sections:

- Web-Based Interactive Sessions
- On-Line Surveys
- Data Support

These sections also highlight the type of data that will be collected during the needs assessment and data collection effort in Task 4.

### **3.4.1 Interactive Review Sessions**

The primary purpose of this type of information is to provide the general network requirements for the agency and to suggest infrastructure that can be leverage for the implementation of the NPSBN. The actual participation of each working member will vary from step to step depending on the tasks and assessment at hand. The network and assets group shall address the following items:

- Coverage Priorities
- Usage Cases
- Asset & Infrastructure Review

The participants who provide this information must address the following items:

- Ancillary System e.g. generators, backhaul, etc.
- Typical usage characteristics and coverage requirements for their agency's wireless devices
- Availability of connectivity within their jurisdiction that may be leveraged by the NPSBN; to include available fiber, leased and microwave connections
- Locations of key data centers that require connectivity to the future NPSBN

### **3.4.2 On-Line Surveys**

The one item that will greatly impact the adoption of FirstNet services is the user fee<sup>1</sup>. The FirstNet NPSBN user fee is for the intended purpose of covering the operational expenses thus helping to ensure the sustainability of the network for the long term. Therefore, it is important to assess the potential number of subscribers, as the greater the number of subscribers brought on to the network, the lower the fees would be for all. Additionally, the program must capture the ability for users to pay for the

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<sup>1</sup> As per the legislation, FirstNet is authorized to charge a user fee for access to the NPSBN

service and understand how limited funds could curb adoption. The on-line survey information providers shall address the following items:

- Current and projected subscriber numbers
- Current spending on wireless communications
- Preferred form factors
- Barriers to wireless data adoption

### 3.4.3 Data Support

The Data Support stakeholders will be convened on an ad hoc basis, where necessary, to obtain specific data sets that will aid in the collection of user needs and agency assets. For example, CAD data may be used in the identification of coverage areas and capacity requirements. The historical CAD record can provide a geographical representation to the public safety stakeholders on likely critical service areas. Additionally, network diagrams may be used in the identification of usable assets in the design or for interface requirements. Examples of the expected participants for ad hoc Data Support are as follows:

- CAD Administrators and Vendors
- Database Administrators
- Network and IT Managers
- Radio Administrators and Managers
- Property Managers

## 3.5 Task 4 – Local Needs and Asset Assessment

The data collected as part of the process outlined in this document shall provide a basis for assessing requirements of the State. As there are various options available to the State with regard to the deployment of FirstNet, the data shall also provide the necessary supporting documentation upon which the State can base a sound and responsible judgment. The data must address fully the requirements of the individual stakeholders and provide the ability to estimate the cost of fulfilling the each requirement. The data sets consist of the following components:

- **Coverage Requirements:** Defined by stakeholders within each county
  - Identify the geographical coverage area on a county-by-county basis
  - Identify unique coverage requirements, such as indoor coverage, in-vehicle and handheld
  - Evaluate historical CAD data to map activity

- **Capacity, Throughput and Performance Factors:** predominantly determined by the technical subcommittees; however, there may be some local need collected via the surveys and interactive sessions
- **Devices Requirements:** partially collected from survey questionnaires; more technical aspects would be collected from regional radio board technical subcommittees
  - Form factors and estimated demand for each
  - Device functionality; examples smartphone, modem or specific buttons for whether the device require a button for emergency call ("man-down button")
- **Asset Assessment:** review of basic attributes such as location, ownership, lease cost, suitability, availability, access to backhaul and survivability factors (redundancy, emergency power, etc.) for available agency assets
  - Infrastructure Assessment and Cost Assumptions
  - Revenue Sources
  - Human Resources
- **Feasibility Assessment:** assessment of existing spending level and evaluation of the unmet demand or the community that is unserved
  - Barriers to adoption of the FirstNet service
  - Assessment of unserved community
  - Projected number of subscribers
  - Financial assessment and spending on commercial wireless services; a potential resource for NPSBN user fees

As discussed earlier, more than 100 PSAPs exist in the State. And each PSAP supports multiple agencies. As a result, this presents a substantial quantity of consultations statewide to collect the appropriate information. The proposed process for data collection is sufficiently efficient and flexible to collect information from the stakeholders. The goal is to collect relevant service adoption information for any "independent" entity; where an "independent" entity is one that makes its own purchasing decisions for wireless broadband services and would ultimately decide the adoption of the NPSBN service.

The agency data gathering task is broken into two separate collection processes: web-based interactive sessions and online web survey tools (however face-to-face interviews may be organized for unique cases). The review of coverage requirements and the assessment of available infrastructure are both geographically dependent and require a high degree of interaction to capture the precise requirements. Therefore, map based tools are heavily leveraged during these highly-interactive sessions. A web-based on-line meeting tool (WebEx or similar) will then be used to collect coverage and asset information to facilitate the discussion. Face-to-face meetings are anticipated to be too costly in terms of lost

productivity due to travel requirements for both the stakeholders and the project team. Financial, user quantity, and high-level requirements data can easily be conducted via web survey, and therefore, that tool presents the most economical method for collecting these data sets.

### **3.5.1 Data Collected via Web-Based Interactive Sessions**

The network and assets data includes those elements that will be collected via web-based interactive or similar method due to the nature of the required information. The overall objectives of the local consultation process must indicate the conditions that would allow the local entities to migrate their users over to FirstNet and why. The network and assets data elements are critical components of this information and include:

- Review coverage in terms of the operational needs of the jurisdiction
  - Document the usage cases and requirements
  - Review historical data (e.g., CAD) to assist in identifying critical areas
  - Identify priority coverage areas including, for example, indoor coverage areas
- Provide data on the infrastructure that would/could be leveraged by NPSBN
  - Receive feedback on the suitability and availability of local infrastructure
  - Identify backup or alternative locations for selected eNodeB based off the Minnesota preliminary LTE design and ARMER assets
- Review required connectivity
  - LMR interoperability and connectivity
  - Data center and PSAP connectivity

These activities are described in more detail in the following sections.

#### **3.5.1.1 Coverage Review**

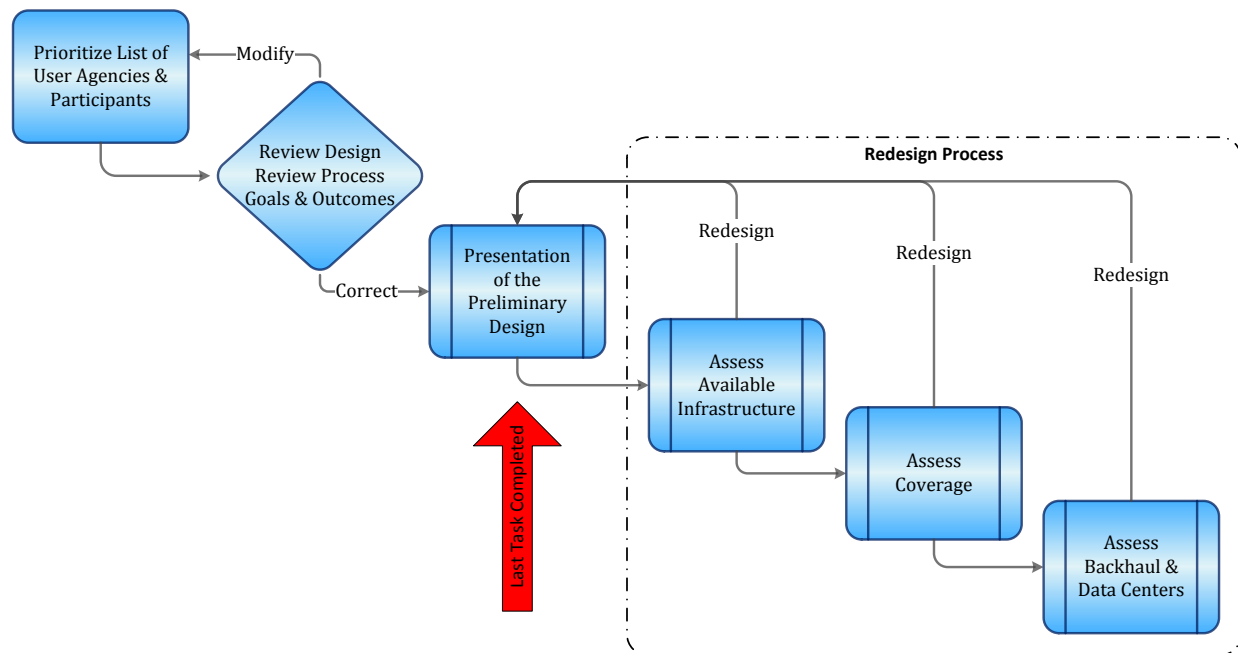
Coverage is the most critical element of the user needs for any wireless network. The radio or wireless elements of the network, requiring cell sites to provide the coverage, is the most expensive part of a nationwide network. And therefore, it is the most critical piece of information to get right. There are multiple tradeoffs that can be made in terms of coverage between cost, throughput, service area and usage requirements (environment). It is therefore critical to properly capture the user coverage requirements.

Fortunately, to assist with this process,, the State of Minnesota has a preliminary LTE design for the entire State upon which it can base the evaluation of infrastructure. The LTE design was a product of Phase I of the State's overall program. The preliminary design is based upon a statewide P25 system (ARMER) and uses standard FCC technical parameters for throughput and interference. This design is a working canvas where the local stakeholders can see the level of proposed coverage; in turn this

facilitates their feedback of their needs. However, the purpose of the design was to develop a baseline of coverage and to assess the approximate number of sites necessary to meet the coverage requirements on a county by county basis. As a result, the design should be revisited. For example, engineering assessments will be necessary to fully account for the cost of redevelopment and it may be necessary to propose additional sites to provide the indoor coverage or higher capacity required as articulated by the local jurisdictions.

## Typical Coverage Design Process

In a typical coverage design process, the preliminary design is merely a placeholder until feedback is received from the stakeholders. Oftentimes during the design process, a better site can be found when given the local knowledge of the stakeholder assets. Upon receipt of this information the engineer redesigns the system with the new site information incorporated. As shown in the figure below, there is a redesign loop during each step of the design process. As the State is not performing a detailed radio access network (RAN) design unless it has further guidance from FirstNet, this step was kept out of the data gathering process during the pilot review process for this study. The project team halted the design process at the presentation of the preliminary design step and collection of information on available infrastructure.



The process the State has chosen seeks to leverage the preliminary system design to fine tune the coverage expectations. This will allow real-world tradeoffs to be incorporated in the planning process to better assess needs and costs. The coverage reviews will be conducted county-by-county<sup>2</sup>; inclusive of

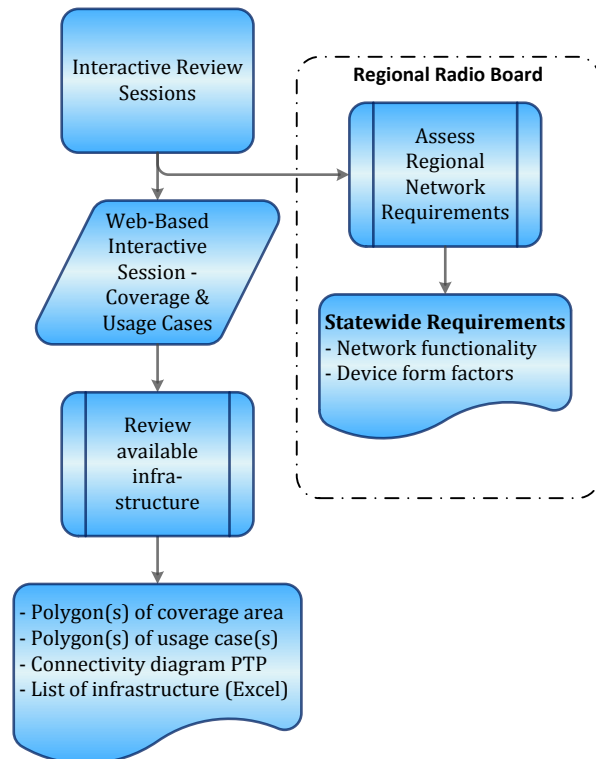
<sup>2</sup> With the exception of the Twin Cities, St Cloud and Tribes where the project team will incorporate additional interactive review sessions

all government entities (cities and townships) therein. The coverage review provides a framework whereby the local first responders can prioritize the coverage in their region.

The data assessment process will include key stakeholders for whom this network is intended to serve. The participants to the design review process will be taken from the first responder community and their delegates.

During the coverage review the project team will review with the stakeholders the following items:

- Preliminary eNodeB design sites: Specific locations are identified for assuring coverage in a given area; the team will also perform the following tasks
  - Identify alternative site locations
- Service Areas: The project team will identify – based upon the direct feedback of the first responder stakeholders – the specific areas of the county where coverage should be prioritized.
  - Prioritized Operational Area: The project team – with the stakeholders – will create a polygon around the area(s) where the operations and the corresponding wireless services should be made a specific priority. To aid in the creation of the prioritized operational areas the project team will overlay historical Computer Aided Dispatch (CAD) data over the digitized map. The CAD data will display the location of each recorded incident for the previous two years. The CAD data can be broken down by timeline or by responding agency.



The full definition of coverage for a broadband network is complex. A network designer requires information regarding the type of applications that will be used, the quantity of usage, the type of device, the location of the device when used (e.g., indoor versus outdoor), the amount of traffic on neighboring cells, the reliability of service, and more. Due to the complexity of these issues, the plan calls for a statewide subcommittee to assess the technical aspects of the coverage requirements and limitations. This group may provide a list of possible usage cases (service area types) for local agencies to choose from during this process. See Task 5 below for more details on this Subcommittee. To the extent that these users can articulate specific coverage requirements during the web-based interactive sessions, they will be collected.

### 3.5.1.2 Infrastructure Assessment

There are several levels of investigation that can be performed to assess the feasibility of the identified infrastructure. The assessment will cover the most significant components of the existing infrastructure

so to quantify what can be leveraged or interconnected with the FirstNet RAN. The project team will cover the following items during its assessment:

- **The Availability of the Infrastructure:** The team will generally assess the availability of the infrastructure. This is a judgment call by the local stakeholders as they have the knowledge as to whether there is space on the structure and it is suitable for deployment of LTE equipment. The project team will also ask as to whether there is a recent Architecture and Engineering assessment available. Lastly the team will enquire about any restrictions in place that may affect the development of the site.
- **Rent or lease cost:** The team will note all rent or lease costs that may be incurred. Often if the structure is owned by the public, there is no cost incurred.
- **Redevelopment Requirements:** The project team will identify the necessary redevelopment based upon templates for cost projection purposes
- **Power Availability:** Assess whether there is available backup power at the site
  - Access to a generator and the run-time duration is assessed
- **Physical Security:** Assess the physical security of the site
- **Network Connectivity:** Assess the connectivity of the site
  - Medium: Fiber, Microwave and leased lines; which can include spectrum & equipment specifications
  - Capacity
  - Upgrade or scalability costs

## **Data Centers & PSAPs**

Each county and first responder agency operates critical data centers to which network connectivity must be guaranteed in order to ensure continued operations of the agency. These locations must be connected to the NPSBN and its connectivity must be reliable with a very high level of availability. The project team will note these locations and will tally their details within a list of critical sites.

### **3.5.2 Data collected via Online Survey**

Many of individuals identified in Tasks 1 and 2 will receive an online survey request to collect any additional information (beyond the web-based interactive data collection method) from individual agencies. Unlike the web-based interactive session, these online surveys will not be interactive, and therefore, the questions must be clear and not require any interpretation by the user agencies. The two primary pieces of information during this phase are the subscriber quantities and barriers to adoption of the service.



The web surveys shall assess the size of the anticipated user groups that will be transitioned to the new network. The project team is interested in understanding the number of users who will migrate to the new NPSBN once it is built. They will also assess the pent-up demand for services and the ability of unserved agencies to pay for those services. Lastly, the team seeks to understand whether there are any barriers to their adoption of NPSBN for their wireless data needs.

### 3.5.2.1 Spending and Cost Assessment

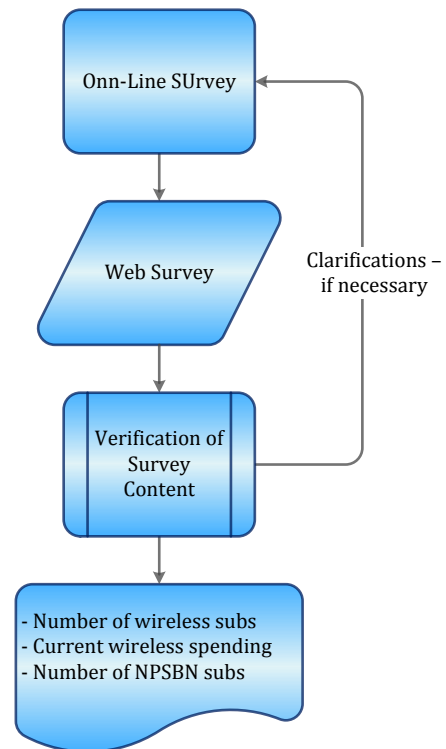
The sustainability of the network will be highly influenced by the number of subscribers that pay user fees. The higher the number of users, the lower the user fee can be to accommodate the fixed costs of operating the network. The intent of this investigation is to develop a process under which an accurate prediction of subscribers can be made. Second, as it is likely that the migration of commercial and private wireless service to FirstNet will be voluntary, it is therefore important to capture the willingness and ability of the first responder community to adopt the service. The current level of spending on commercial services will be obtained in this part of the survey. If in the event that user service charges were assessed for private data systems, it will be collected here on a per user basis. The use of a web survey tool allows for simple aggregation of data. The spending will differentiate the following attributes within its survey:

- Wireless service type and specific service traits (voice, data or voice plus data)
- Number of device types
- Existence of a private data system
- Subscriber spending per unit
- Barriers to access for wireless data services
  - Cost, maintenance, etc.
  - Cost models

### 3.5.2.2 Barriers to Adoption

The survey attempts to capture the basic barriers to the adoption of wireless data by first responders. Although cost is a major factor in the decision to subscribe to commercial wireless data services, there can be other operational issues at play that this survey attempts to collect. For examples potential barriers to adoption may be due to the following issues:

- Cost of maintaining the devices, peripherals and/or connectivity to the commercial network



- Inappropriate device form factors that do not correspond to the needs of public safety (ex. hardened device)
- Insufficient level of service; examples can include a lack of overall coverage or lack of necessary capacity to service public safety application or potentially a lack of prioritized access during emergencies
- Lack of compelling applications or services
- Level of interest in the user community

Some agencies, for reasons of financial or technical limitations, have been unable to leverage the benefit of wireless data services. Therefore, these agencies within the each government entity will be surveyed on the relevant price point upon which they would take up the FirstNet NPSBN service. For this group of respondents, the survey will capture the following attributes:

- Establish the size (of personnel, vehicles and devices) of each subgroup that is currently not using wireless data services
- Establish the maximum cost desired by each subgroup

### **3.5.2.3 Additional Subcommittee Survey Items**

In addition to the online survey elements described above, the process envisions the ability for subcommittees to identify any items for which they require local input. It is hoped that the collection method for these subcommittee elements can be captured via simple web survey methods and not via interactive and time consuming web-based interactive sessions. Some examples of data elements that may result from subcommittee efforts includes:

- Applications: The Applications Subcommittee may wish to understand the importance of various applications to the agencies such that it can prioritize its work and provide that input to FirstNet.
- Control Requirements: The System Requirements group may chose to ask questions of local agencies regarding the level of control that they require for network access, network management, and network information.

### **3.5.3 Statewide Entities Data and Requirements**

There are several state agencies and public safety agencies that would be primary users of the NPSBN. These entities will be surveyed on separate basis from the County-by-County review process. The reviews will be conducted in parallel with the counties, however, as the majority of the agencies are centrally administered in the Twin-Cities area, it may be cost effective to organize face-to-face interviews and if scheduling prohibits, to fall back to web-based interactive sessions.

In addition, there will statewide data sets available on the local infrastructure that may be leveraged by the NPSBN. There are two major components of the data that would be collected; the first is a list of structures upon which of LTE RAN equipment can be place. The second component is connectivity; i.e.

backhaul and connectivity that would be needed for the interconnection of the RAN to the EPC and the interconnection of the local data centers to the FirstNet network.

The project team shall review the following databases:

- CASM [it is the preference of OEC to heavily leverage this database; the project team will need to assess its suitability]
- ARMER/MNDOT
- Local data resources

Given the ad hoc nature of the data collection, the project team will work with MnDPS to identify key stakeholders at the state level who are capable of providing the necessary assistance for data retrieval. Local data collection will be driven by the contacts made during the Task 1 stage.

## 3.6 Task 5 - Statewide Requirements Assessment

For some of the highly technical aspects of the needs and asset assessment it is not possible or practical to include all government entities in the requirements gathering process. It is important to develop working groups of a manageable size. Second, not all responding entities have at hand the technical expertise required to comment on the highly technical nature of the LTE standards. Therefore it is necessary to outsource the assessment of these requirements to the appropriate State and Regional Radio Board technical subcommittee and identify those entities that are best suited for participation in the technical requirements gathering. To facilitate the selection of technical committee members, the project team intends to leverage advice of state and regional radio boards. Subcommittees will be created to develop specific recommendations on the different components of the network or the various functional requirements necessitated by the operational needs as defined by the first responders. These subcommittees will be made up of representatives from all Minnesota regional radio boards; from which the likely participants are to be selected.

It should be noted that the National Public Safety Telecommunications Council (NPSTC) has developed a very comprehensive Statement of Requirements (SOR) that covers many of the technical requirements envisioned for consideration by these subcommittees. FirstNet may adopt all or in part the technical requirements outlined within the NPSTC SOR or it may develop its own requirements for the broadband service or network. As a result, the subcommittees may be limited to providing differentiation between the national and Minnesota requirements.

All recommendations made by the subcommittees will be distributed statewide to stakeholders for comment. The Regional Radio Boards, Counties and PSAPs will all serve as the conduit for the distribution of information to all affected user groups. The following subsections outline the proposed statewide subcommittees.

### 3.6.1 Service Area Requirements

There are many service area attributes that must be identified to describe the service requirements for a broadband system. These attributes define the performance criteria by which the network shall be built by. Each attribute would have an effect on the cost of the network; hence would need to be weighed

carefully and prioritized so to ensure the deployment of the most effective solution for the budget available. For example, the usage scenario for a user or group of users may require in-building coverage over a large urban or densely suburban area. Providing in-building coverage over a given area would require more sites, thus increasing the cost in comparison with an area where this was not a criteria. Additionally, it is easier for a broadband system to accommodate low bandwidth applications, and therefore, it is important to understand the set of applications that will be used. The usage scenarios, applications, and quantity of users describe how the network must be sized to accommodate the demand in each area. This plan intends to capture the geographies of the areas on a local basis, but describe the system requirements of each type of service area via a Subcommittee. Collectively, the Service Area Requirements Subcommittee is responsible for identifying the following:

- Throughput required for each different service area type. Different throughput may be defined for outdoor and indoor service for the same area. These throughput requirements must consider the types of applications required by individual users or groups of users and how those applications are used.
- Usage scenario (type of device, where it's located when used)
- Service reliability for each service area type (e.g., 95 or 97 percent service reliability)
- Resource utilization for each service area type (e.g., throughput required can only occupy 50 percent of total resources of a sector)
- Interference load for surrounding cells (e.g., assume surrounding cells are loaded to 50% resource utilization)

### 3.6.2 Device Requirements

This section further refines the assessment of devices that are needed by the public safety community as well as the expected demand and timeline. The local needs assessment shall as a priority determine the quantities of different types of devices; however, the statewide Subcommittee will identify which specific device types should be available to local entities and their specific requirements. The following area a sampling of requirements that will be investigated by the Device Subcommittee

- Hardening
- Buttons; ex. PTT, emergency
- Dual mode LMR/P25
- Handheld Device Requirements: Supported Operating System (OS), screen size, keyboard type, security requirements, etc.
- Geolocation Requirements: GPS, GLONAS, dead reckoning, altimeter, and others

### 3.6.3 System Requirements

The NPSTC Statement of Requirements provides detailed network requirements regarding user priority, network evolution, maintenance, billing, network monitoring, network services, user services, system design, and transport services. The System Requirements Subcommittee is broadly tasked with identifying the Minnesota requirements associated with these elements of the NPSBN. Due to the amount of material this Subcommittee would deal with, it may be necessary to split the requirements by their technical categories and to convene separate stakeholder groups by their specialty. In addition to a full assessment and modification of the NPSTC SoR requirements, the group may also provide more detailed requirements and analysis for unique Minnesota needs or requirements. For example:

- Specific Real-Time Priority and Preemption modification requirements initiated by Incident Command
- Roaming implications and mutual aid issues due to the Canadian border – specific roaming requirements for FirstNet.
- Specific interconnection and interoperability requirements with incumbent land mobile radio systems.
- Unique supplemental coverage solutions for highly remote areas.

### 3.6.4 Security Requirements

The Security Subcommittee will be engaged in determining the detailed security requirements for Minnesota and the public safety community. NPSTC has also performed a substantial amount of work in this area that will provide an excellent starting point for the group. FirstNet may adopt these requirements or provide its own. The group should identify any disagreement with these national security requirements and add any Minnesota specific requirements to its documents. Some of the unique requirements may include:

- Specific security requirements with regard to public safety provided infrastructure in the state
- Security requirements of specific state or local applications that will be shared

### 3.6.5 MOU Subcommittee

The MOU subcommittee will be tasked with the creation or modification of existing MOU (Memorandum of Understanding) templates for the purposes of sharing infrastructure facilitating interoperability and sharing of operations costs. The templates shall govern the control, responsibilities and recompense of all parties. If necessary, Service Level Agreements (SLA) will be included with the MOUs so to define an expected level of performance of the shared asset. The MOU templates may also include NG911 information sharing.

### 3.6.6 Applications Subcommittee

With the advent of wireless broadband comes with it a capability of sending, receiving and/or forwarding NG911 multimedia messages and many other applications. In addition, there are

tremendous opportunities for this network and its governance to bring with it national interoperability on important public safety applications. Furthermore, nationwide economies of scale can help lower the price of applications to public safety entities state and nationwide. Finally, because of the logical interaction with existing and external systems, the Applications Subcommittee is responsible for identifying all interfaces between the NPSBN and State and Local systems. The Applications Subcommittee will be charged with the following tasks:

- Assess the NG911 application requirements
- Assess the NG911 interface requirements (including locations for interfaces)
- Assess the Push-to-Talk application requirements and the interface requirements
- Assess other applications that will add value to public safety operations throughout the State including:
  - Applications for which there is value for FirstNet to host or otherwise offer as a service
  - Applications for which there is a nationwide interoperability benefit
  - Applications for which there is value for the State of Minnesota to host (i.e., only statewide interoperability is required)

## 3.7 Task 6 - Partnership Evaluation

The “Act” requires FirstNet or the State to release competitive, transparent procurements for the network [to “spend funds under paragraph (3) in a manner authorized by the Board, but only for purposes that will advance or enhance public safety communications consistent with this title”].

Therefore, it is critical that the State understand the offerings and capabilities of private entities that have interest in the Minnesota portion of the NPSBN. The partnership evaluation must ensure that sufficient capital has been allocated for a successful deployment of the network as well as ensure that the sustainability costs do not overly burden State and local governments. In addition, there may be partners that only have an interest Minnesota; not nationwide/regionally and hence may be inadvertently excluded from participating in a nationwide procurement.

### 3.7.1 Partner Assessment

There are two main benefits of a potential public/private partnership: a lower cost of deployment and/or operations and an increased subscriber base that would lower user fees. The lower costs can be gained by sharing infrastructure or labor. The ideal partner would bring a significant subscriber base to the network and either pay for the access on a secondary access or provide commiserate amount of infrastructure for use by the network. The right partnership would need to be mutually beneficial to both parties.

The partner assessment will include the potential business case(s) that would be envisioned with each entity. It would specifically address the following items:

- The assets that the partner brings; these would be evaluated, “valued” and cataloged
- Other benefits that the partner can offer the state (e.g., if a commercial carrier will offer service to all commercial cellular users and enhance broadband wireless access throughout the state)
- The business case and financial mechanism under which the assets can be shared (barter, swap, lease, etc.)
- The legal basis to execute the partnership
- Terms and SLA related to the partnership

### 3.7.2 Objectives

Evaluate the private partners to ensure that the overall objectives (sustainability, high adoption, adds value) of the State are met and that there is a successful implementation of the NPSBN within the State of Minnesota.

The private partners that the state will evaluate will include an assessment of the three main components of the business case:

- User Providers: entities that can deliver non-public safety usage on the network
- Asset Providers: entities that can offer assets that can be integrated into the network
- Solution Providers: entities that can build, operate and maintain the network

Any single entity can provide multiple components. For example, a utility may offer both users and assets whereas a commercial cellular carrier or new entrant to the market may offer all three.

### 3.7.3 Process

The general process for the evaluation of private partners is as follows:

- Creation and release of a RFI or NOI to all interested parties
- Follow-on interviews/meetings with private entities
- Consolidate findings into reports to SRB and FirstNet

#### RFI

The RFI will explore the viability of the various partnership offerings and invite the private parties to propose solutions to meet the three prime objectives of the State. The RFI will ask questions that will provide the state an ability to evaluate the value and risks associated with their business proposal. The RFI will focus on the primary objectives of the state and allow entities to reply on their unique methods to achieve the State’s objectives. The RFI process will assure the vendor community that they can segregate information between confidential and non-confidential elements. This should enable the State to capture more impactful information as the vendors are generally concerned with losing control of proprietary information otherwise. In addition, Non-Disclosure Agreements may also be required to

secure the appropriate information from various vendors. The entities that are expected to engage the state through this process include:

- Utilities
- Cellular Carriers (national and regional)
- Integrators
- Service Providers

## **Interviews & Meetings**

Interviews and meetings shall be with select private entities who present a compelling proposal. The purpose of the meetings will be to delve into greater detail the business case proposed. The interviews will allow the State to assess the viability of each partner's offering to the State. This may include a greater assessment of their assets, their business model, and other factors to fully assess the opportunity with the entity.

## **Report**

The report will summarize the key partnership opportunities to State; with the purpose of forwarding these findings to FirstNet. It is hoped that the State's findings would be considered and/or included within FirstNet proposals. Additionally, there is an expectation that the private entities will share information sufficient to validate the implementation model inputs discussed in Task 7 below.

## **3.8 Task 7 – Implementation Modeling**

The implementation modeling shall present the financial impacts of the various deployment scenarios in terms of their capital and operational cost. The implementation models will seek to highlight the risks associated with each scenario and estimate the feasibility of each option. Key to the accuracy of the financial predictions will be obtainment of agreements in principal to the mechanisms for cost sharing the continued operations and maintenance of the asset. Without such an agreement in principal, the risks to the implementation modeling budget would be significant.

The project team will leverage the work completed during the Phase 1 Minnesota study and should seek greater accuracy in their predictions. Each implementation scenario shall be accompanied by a full explanation of the advantages and disadvantages of each scenario.

A last input to each implementation scenario is an estimate of the potential revenue that may be had by leasing on a secondary basis the extra capacity of the network. In this instance, the State may be able to choose from a variety of commercial operators or resellers. As this revenue cannot be guaranteed without contract negotiations, this estimate of revenue may not be available during implementation of this process. In total the implementation models will incorporate the following attributes:

- Service Scenarios: coverage predictions based upon various deployment scenario
- Financial Modeling: Cost projections for the utilization of different assets, both in terms of capital and operational expenditures



- Revenue: Estimated revenue projections based upon various partnership scenarios if possible

### 3.9 Task 8 – Detailed Asset Information Collection

At this point in time, NTIA has provided little indication of what the scope of work will be regarding the detailed information that must be collected on the assets that can be used in the NPSBN. As a result, the plan does not include the details associated with collecting this information. FirstNet may want very detailed and specific information for inclusion in its RFPs, or it may want very high level information. Ultimately, NTIA and FirstNet will likely ask for different types of information for the variety of assets leveraged by the network. For example, for tower sites, NTIA could ask for structural analysis to handle a particular load, available pad space, access to power, landlord details, and rent requirements. NTIA might also restrict the quantity of sites included in the detailed asset collection. For example, NTIA might exclude regions where commercial service already exists. NTIA might also limit data collection to assets that only meet certain requirements (e.g., public safety grade wind loading for towers).

### 3.10 Task 9 – Develop Final Report

The Final Report Development task entails the consolidation of each of the previous task outputs into a final report. The project team and State Manager will create a draft of the report which will be presented to SRB or its delegates for approval for release. Then, the report will be available broadly to allow any state entity or private partner feedback on the plan and to ensure it represents the full picture of the State's requirements, its assets, and its resources. After a sufficient review period, the Final Report (or some portion of the final report) will be provided to FirstNet representing the State's "Blueprint For Success" within the State of Minnesota.

## 4 SCHEDULE AND ESTIMATED HOURS

Upon award of the contracts for all of the project team elements of the program, the plan is expected to require one full year to implement (12 months). This requires that any funding sources to be continuous. If, for example, NTIA releases funds in phases, any pause in the program will have a day-for-day slip in schedule. The following represents a high level schedule for the program:

Task	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
1 – Ramp-up												
1 – Other Tasks												
2 – Stakeholder List / Outreach												
3 – Stakeholder Refinement												
4 – Survey Development												
4 – Conduct Web and Online Surveys												
5 – Statewide Subcommittee Survey Requirements												
5 – Statewide Subcommittee Requirements Development												
6 – Partnership Evaluation RFI												
6 – Partnership Meetings												
7 – Implementation Modeling (preliminary coverage design)												
7 – Detailed Implementation Modeling												
8 – Detailed Asset Assessments <sup>3</sup>												
9 – Draft Report Consolidation												
9 – Draft Report SRB Approval												
9 – Public Review / Revision												

The following table provides the estimated number of hours for the different groups involved in the program. The table envisions a single State Manager managing a project team. That project team will

<sup>3</sup> Assumes FirstNet/NTIA provide guidance for asset assessments prior to starting work on this task.

consist entirely of or will be some combination of contracted and government resources. The stakeholders' estimated effort is also included to demonstrate the significant amount of time required by the public safety agencies statewide. These figures should provide useful inputs to the State's in-kind matching requirements for the SLIGP grant.

Description	Project Team Hrs	State Manager Hrs	Stakeholder Hrs	Total Hours
Task 0 - Grant Application	384	320	-	704
Task 1 - Initial Administrative Items	1,043	751	456	2,250
Task 2 – Develop a Stakeholder Entity List	353	42	1,178	1,574
Task 3 – Stakeholder List Refinements	205	12	-	217
Task 4 – Agency Specific Needs and Asset Assessment	3,187	1,056	10,467	14,710
Task 5 - Statewide Requirements Assessment	842	218	1,944	3,004
Task 6 - Partnership Evaluation	461	200	-	661
Task 7 – Implementation Modeling	618	24	-	642
Task 8 – Detailed Asset Information Collection <sup>4</sup>	346	72	60	478
Task 9 – Develop Final Report	3,126	192	1,042	4,360
Total	10,878	2,887	15,147	28,912

<sup>4</sup> Assumes site visits and documentation of asset information; does not include structural engineering studies and drawings. FirstNet/NTIA guidance likely to define whether these latter items will be required.

## 5 APPENDIX A – ACT TEXT

### (2) STATE AND LOCAL PLANNING.—

(A) REQUIRED CONSULTATION.—In developing requests for proposals and otherwise carrying out its responsibilities under this Act, the First Responder Network Authority shall consult with regional, State, tribal, and local jurisdictions regarding the distribution and expenditure of any amounts required to carry out the policies established under paragraph (1), including with regard to the—

- (i) construction of a core network and any radio access network build out;
- (ii) placement of towers;
- (iii) coverage areas of the network, whether at the regional, State, tribal, or local level;
- (iv) adequacy of hardening, security, reliability, and resiliency requirements;
- (v) assignment of priority to local users;
- (vi) assignment of priority and selection of entities seeking access to or use of the nationwide public safety interoperable broadband network established under subsection (b); and
- (vii) training needs of local users.

(B) METHOD OF CONSULTATION.—The consultation required under subparagraph (A) shall occur between the First Responder Network Authority and the single officer or governmental body designated under section 6302(d).

(3) LEVERAGING EXISTING INFRASTRUCTURE.—In carrying out the requirement under subsection (b), the First Responder Network Authority shall enter into agreements to utilize, to the maximum extent economically desirable, existing—

- (A) commercial or other communications infrastructure; and
- (B) Federal, State, tribal, or local infrastructure.

### SEC. 6302. STATE AND LOCAL IMPLEMENTATION.

(a) ESTABLISHMENT OF STATE AND LOCAL IMPLEMENTATION GRANT PROGRAM.—The Assistant Secretary, in consultation with the First Responder Network Authority, shall take such action as is necessary to establish a grant program to make grants to States to assist State, regional, tribal, and local jurisdictions to identify, plan, and implement the most efficient and effective way for such jurisdictions to utilize and integrate the infrastructure, equipment, and other architecture associated with the nationwide public safety broadband network to satisfy the wireless communications and data services needs of that jurisdiction, including with regards to coverage, siting, and other needs.

### (b) MATCHING REQUIREMENTS; FEDERAL SHARE.—

(1) IN GENERAL.—The Federal share of the cost of any activity carried out using a grant under this section may not exceed 80 percent of the eligible costs of carrying out that activity, as determined by the Assistant Secretary, in consultation with the First Responder Network Authority.

(2) WAIVER.—The Assistant Secretary may waive, in whole or in part, the requirements of paragraph (1) for good cause shown if the Assistant Secretary determines that such a waiver is in the public interest.

(c) PROGRAMMATIC REQUIREMENTS.—Not later than 6 months after the date of enactment of this Act, the Assistant Secretary, in consultation with the First Responder Network Authority, shall establish requirements relating to the grant program to be carried out under this section, including the following:

- (1) Defining eligible costs for purposes of subsection (b)(1).

(2) Determining the scope of eligible activities for grant funding under this section.

(3) Prioritizing grants for activities that ensure coverage in rural as well as urban areas.

(d) CERTIFICATION AND DESIGNATION OF OFFICER OR GOVERNMENTAL BODY.—In carrying out the grant program established under this section, the Assistant Secretary shall require each State to certify in its application for grant funds that the State has designated a single officer or governmental body to serve as the coordinator of implementation of the grant funds.

(e) STATE NETWORK.—

(1) NOTICE.—Upon the completion of the request for proposal process conducted by the First Responder Network Authority for the construction, operation, maintenance, and improvement of the nationwide public safety broadband network, the First Responder Network Authority shall provide to the Governor of each State, or his designee—

(A) notice of the completion of the request for proposal process;

(B) details of the proposed plan for build out of the nationwide, interoperable broadband network in such State; and

(C) the funding level for the State as determined by the NTIA.

(2) STATE DECISION.—Not later than 90 days after the date on which the Governor of a State receives notice under