



# S00 Appendix C-1 Baseline Coverage Objective Maps

*Special Notice D15PS00295 – Nationwide Public  
Safety Broadband Network (NPSBN)*

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## 1 Baseline Coverage Requirements

FirstNet coverage objective baseline map was created as a starting point to identify potential public safety priority for permanent terrestrial coverage (red/blue/green areas). The non-color regions represent areas identified as needing on-demand temporary or extended range coverage and capacity solutions.

The baseline coverage objective map for each state and territory is included with this Appendix. These maps show color-coded one-square mile grid blocks for each state and territory. Coverage is defined as having a minimum of 768Kbps downlink and 256 Kbps uplink at the cell edge with 50% loading. Each individual grid will be assessed for meeting the definition of coverage in the color-coded areas. Only those grid blocks that have more than 50% coverage will be considered acceptable. Coverage requirements must meet or exceed the values below for each grid block (note these are average downlink values across the entire grid block).

**Table 1 Coverage Throughput Per Sq Mi Definition**

Grid Color	Coverage Defined at the following Average Downlink Throughput per Square Mile
<b>RED GRID</b>	3.0 Mbps
<b>BLUE GRID</b>	0.5 Mbps
<b>GREEN GRID</b>	0.1 Mbps

## 2 Map Creation Methodology

The FirstNet coverage objective baseline map was created from five datasets and identifies areas that are likely to require a public safety response. FirstNet understands that a public safety response could be required anywhere, however, areas with a lower probability for a response would be identified as needing on-demand, temporary or extended range coverage and capacity solutions.

## 3 Datasets

The five datasets used to create the FirstNet baseline map are shown in Figure 1 Objective Map Data Sets. Each of the five datasets was combined into a single map and then assessed in a 1x1 mile grid block.

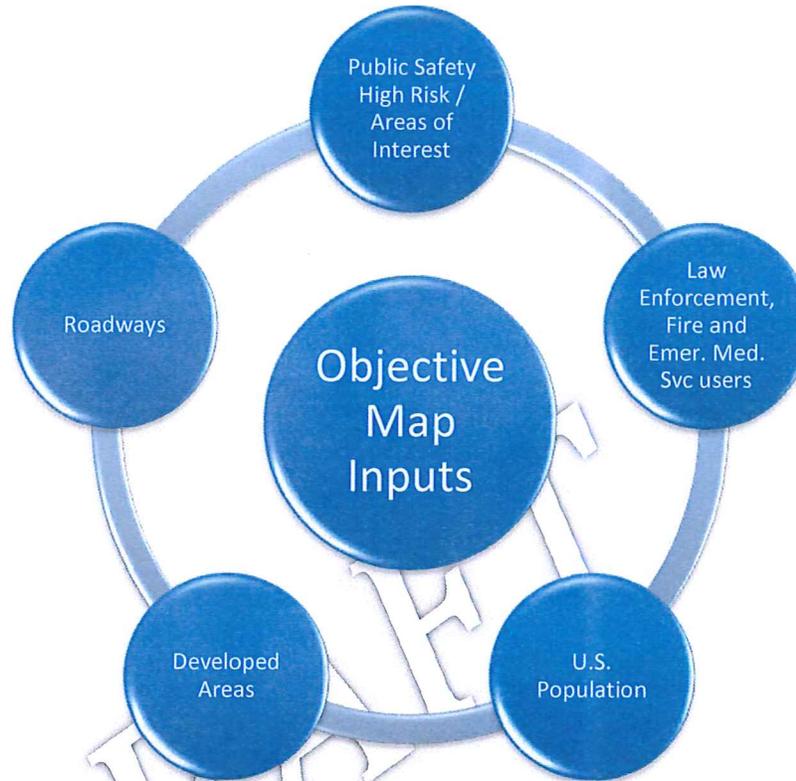


Figure 1 Objective Map Data Sets

### 3.1 Law Enforcement, Fire and Emergency Medical Service Users

This dataset identifies the foundational user base for the network, with users distributed over their jurisdictional areas (city users distributed throughout their respective cities, county users distributed throughout their respective counties and state users distributed throughout their respective states).

### 3.2 Public Safety High Risk / Areas of Interest

This dataset identifies key facilities, infrastructure and locations that may be of particular interest to public safety such as public safety agencies, correctional facilities, airports, Emergency Operations Centers, hospitals, schools, manufacturing facilities, energy plants and large public venues.

### 3.3 U.S. Population

This dataset includes 2012 U.S. Census data based on census blocks to identify where people live.

### 3.4 Developed Areas

This dataset includes areas throughout the country classified as dense, medium, light or open developed areas to identify where people work and other businesses and structures that may determine response areas.

### 3.5 Roadways

This dataset includes the National Highway system as well as significant secondary roadways based on annual average daily traffic (AADT) counts to identify commonly navigated roadways.

## 4 Grid Characterization

To characterize the capacity requirements for a given grid block, each individual dataset was normalized across the country and given a normalized value for each grid. Those five values for each grid were then summed up to give a final grid block score, providing an indicator for the potential interest to public safety for coverage based on all of the evaluated datasets. Because the datasets were weighted equally, for example, a grid block with a highway running through it would be evaluated as comparable to a grid with developed areas or public safety users.

To create the final map with associated colors, each grid block was binned into areas based on the concentration of the 5 datasets considered in Table 2 Grid Assessment Legend.

Table 2 Grid Assessment Legend

Color	Title	Description
RED	High concentration	This would indicate an amount of users, areas of interest, U.S. population, developed areas and roadways which translate to a high likelihood for public safety responses.
BLUE	Moderate concentration	This would indicate an amount of users, areas of interest, U.S. population, developed areas and roadways which translate to a moderate likelihood for public safety responses.
GREEN	Low concentration	This would indicate an amount of users, areas of interest, U.S. population, developed areas and roadways which translate to a low likelihood for public safety responses.

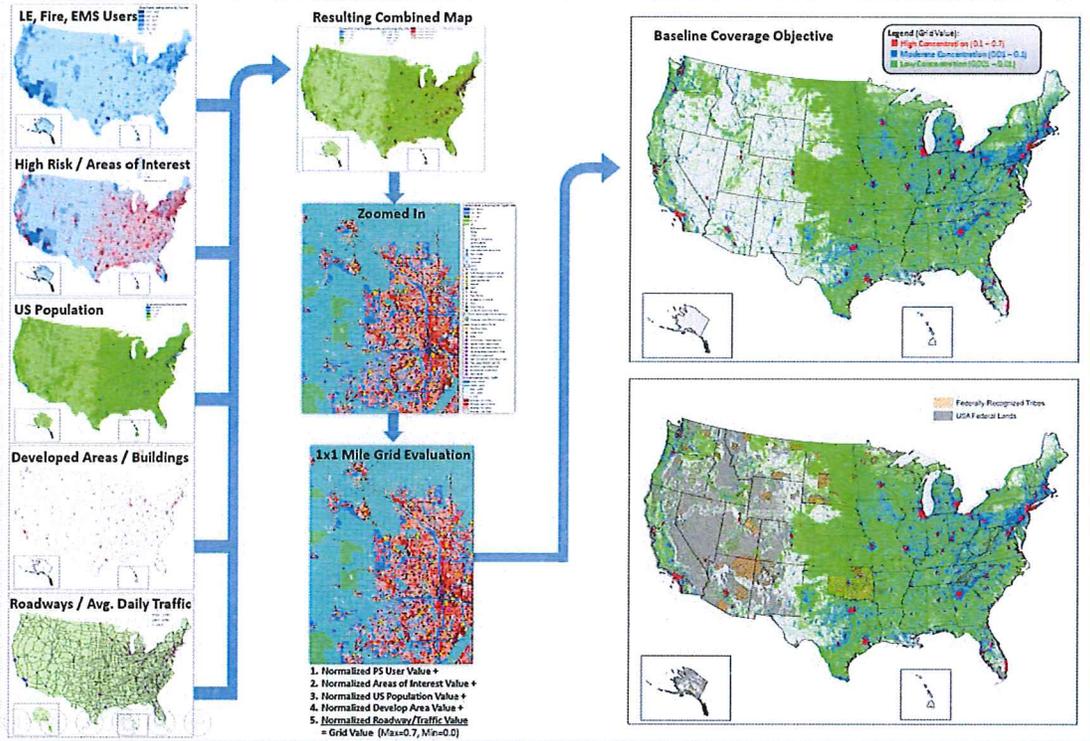


Figure 2 Development of Objective Grids