

# PRIORITIZING SAFE AND HEALTHY COMMUNITIES

## Strong and Vibrant Communities

### Critical Communication Infrastructure Program



- **WHAT:** The Critical Communications Infrastructure Program will fund the deployment of additional cell towers to expand mobile wireless voice and data coverage throughout Vermont. This program will promote the Governor’s priorities of growing the economy and protecting the vulnerable

The goals of the program are to:

- Deploy up to 100 new mobile wireless installations to improve mobile wireless voice coverage along state highways and population centers.
  - Ensure that there is uniform voice coverage along target corridors from one or more of the three nationwide carriers for public safety and commerce.
  - Improve mobile wireless data services for public safety, commerce, and internet of things applications, such as connected vehicles.
- **WHY:** Access to mobile wireless service is just as important as access to broadband service. Mobile voice service is quickly replacing landline services as the dominate form of voice communication. Furthermore, mobile voice service is critical for public safety, as it allows communication for residents, tourists, and first responders. Mobile data is also valuable for transportation sector, specifically with regard to Internet of Things (IoT) enabled technologies, such as connected vehicles. Nevertheless, states have even less ability to manage the deployment of wireless services than they do for wireline broadband. Therefore, an economic development program that includes active participation by the national mobile carriers serving Vermont customers is critical. National carriers almost exclusively own the spectrum and nationwide capability necessary to develop mobile coverage that is useable to the general public. This proposal aims to improve the availability of cell service coverage in Vermont using a framework that encourages national carrier participation, while avoiding the pitfalls of the state’s past attempts at improving wireless service.
  - **HOW:** This program will direct just over \$50M to fund the design and deployment of up to 100 mobile wireless installations throughout the state. This goal would be accomplished through an RFP where bidders would receive funds to deploy towers or other structures capable of supporting wireless infrastructure, which they would own and lease to providers at fixed rates.

The program has five stages:

1. Identify priority road corridors with drive testing and traffic and population analysis.  
(This stage is currently underway with the first round of drive testing)

2. Identify suitable tower site locations to serve these priority areas.
3. Conduct an RFP to confirm interest and identify colocation rates.
4. Offer funds to providers to deploy their network infrastructure at these tower locations.
5. Conduct an RFP process to deploy towers at these locations.

*Identify priority areas:* The State, in cooperation with Regional Planning Commissions (RPCs) and other local organizations, will conduct drive tests to determine baseline availability of voice and data service along all state highways. Using this data, the State will identify road segments that lack service. In cooperation with the Vermont Agency of Transportation (AOT) and the RPCs, the State will prioritize unserved road segments in most need of service improvement, based on traffic count and surrounding population. After development of the proposed priority areas, the State will seek feedback from all major wireless service providers.

*Identify suitable tower sites:* The State would contract with an engineering company to determine how best to serve these areas. This would result in identification of “search rings”, geographic areas which a tower could be deployed to reach an identified unserved area. The process must identify areas that would allow interconnection with an existing network to provide optimal integration with that network. It is not possible to provide optimal integration with all networks. As FirstNet is charged with providing service to Vermont first responders, the most suitable use of limited public funds would be to ensure that macro towers funded through this program are placed for optimal integration with the FirstNet network and other networks used by first responders. The site selection process should also include public safety LMR needs and space on some funded towers should be reserved for this use at no charge. These sites may, and likely will work to some extent for other providers as well. The contractor would also design the RFPs for the subsequent phases of the project. It is anticipated that this will cost approximately \$1M.

*Colocation RFP:* Towers will be designed to accommodate colocation for three (3) providers. The goal of the program is to achieve commitments from one or more of the major carriers to deploy service on all new towers. After identification of the search rings, the State will conduct an RFP to determine the interest in colocation on the proposed towers. The RFP will call for mobile wireless carriers to specify the monthly lease amount they would pay for location on all of the towers<sup>1</sup>. The eventual tower owner would be required to honor the two highest bids for two colocation slots on each tower. The grantee tower owner would be allowed to lease the other colocation slots at market rates. This RFP will serve two purposes: it will ensure that there is demonstrated interest in the towers before they are constructed, and it will identify through a market mechanism the amount of subsidy required for the project.

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<sup>1</sup> Colocation can cost \$2,000 per month; it is anticipated that the bid prices may be \$500 per month or less.

*Facilities deployment:* Construction of towers is not enough to improve cell service coverage. To get service up and running at a tower, each mobile wireless service provider must deploy network infrastructure at the tower site, such as antennas, radio systems, networking, HVAC, and power supply systems.<sup>2</sup> This program will offer funds to facilities-based providers to support deployment of their network infrastructure at each of the state funded towers. Specifically, each of the two awardees in the Colocation RFP would be allowed to seek reimbursement for an average of \$150,000 per tower to support a portion of these carrier's capital costs. In certain situations, the economics of a site may require higher capital support. The grant administrator would have the flexibility to assign grant amounts on a per site basis depending on demand and density of the site's coverage area.<sup>3</sup> It is anticipated that this phase will cost an average of \$300,000 for each of the 100 sites, for a budget of \$30M.

*Tower site RFP:* It is general industry practice for towers to be deployed and maintained by third parties, not the network operators themselves. This ensures that ongoing tower maintenance is the responsibility of the third party. Following this practice, the State would conduct an RFP process for deploying towers within each of the 100 search ring areas identified through the first RFP<sup>4</sup>. The RFP will call for all site work typically included in such projects, including: a.) specific tower site identification, b.) land acquisition, c.) permitting, d.) tower design, e.) construction, and f.) access to fiber backhaul connectivity.<sup>5</sup> Each tower should support mobile wireless deployment for up to four carriers. The RFP would seek the lowest cost for complete deployment of all sites. Upon deployment, the tower sites would remain the property of the bidding party. The grant award will include a requirement for low-cost tower colocation for providers for 20 years. The tower owners would be required to offer colocation to two highest bidders from the previous RFP. The tower owners would be allowed to lease the other two colocation slots at market rates. It is anticipated that tower construction will cost on average \$200,000 per site, for a budget of \$20M.

- **WHO:** The project would be completed by the Department of Public Service, in partnership with the Agency of Transportation, the Department of Public Safety, and regional planning commissions.
- **FUNDING:** \$51,500,000 is included in the Governor's FY23 ARPA Capital Fund Budget

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<sup>2</sup> One carrier reported that facilities deployment can cost \$450,000 for each carrier on each tower.

<sup>3</sup> Lower density sites would likely require an above average capital grant, while locations in higher density areas would require a lower amount.

<sup>4</sup> This proposal anticipates an RFP for 100 individual macro towers. The RFP may also allow bidders to submit proposals to deploy multiple small-cell sites or a collocated facility on an existing building structure to achieve similar coverage for any of these identified tower sites.

<sup>5</sup> Complete tower development can cost up to \$250,000 per site.