



## Legislative Fiscal Bureau

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Joint Committee on Finance

Paper #626

### **State Patrol Microwave Radio Network Upgrade and Communication Tower Sites (Transportation -- State Patrol)**

[LFB 2021-23 Budget Summary: Pages 599 and 600, #4 and 5]

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#### **CURRENT LAW**

The Division of State Patrol's primary duty is the enforcement of traffic laws and commercial motor vehicle laws by conducting highway patrols and truck inspections, in addition to inspecting trucks, school buses, and ambulances, and aiding local law enforcement agencies with natural disasters or civil disturbances. To support this mission, the State Patrol operates a statewide digital microwave radio network to support officers' communications while on duty, including mobile radios in squad vehicles, and for dispatch and command operations.

#### **DISCUSSION POINTS**

##### **Microwave Radio Network**

1. The microwave radio network was established in the early 1950s and originally was used to connect nine radio frequency repeater stations throughout the state. As of 2020, the Department operates and maintains 67 communications towers and another 96 network locations that consist of radio transmission equipment or data networking appliances. This network is the primary backbone for the Wisconsin Interoperable System for Communications (WISCOM), a radio system that permits emergency responders to communicate across jurisdictions and serves over 850 agencies and nearly 40,000 subscribers including several state agencies and federal, county, and municipal law enforcement agencies. The reliability of this network is paramount to these agencies providing effective and efficient services, particularly during emergencies.

2. Under 2017 Act 59, the Department of Military Affairs (DMA) was required to upgrade or replace WISCOM. In May, 2020, DMA solicited a request for information to develop

specifications for the replacement system, including communication sites, backhaul sites used to bring the radio signal back to primary communication sites, and equipment for dispatch, transmission, and other miscellaneous equipment. The request specifies that proposals should maximize the use of the existing network and tower system. DMA intends to select a vendor and system design through a request for proposal process in 2022, begin a phased deployment in 2023, and sustain the system through 2038. Moreover, the Governor recommends providing DMA \$6,500,000 in 2022-23 on a one-time basis to build a statewide interoperable radio network to replace the existing WISCOM system, and requiring DMA to oversee the development and operation of any current or future statewide public safety interoperable communication systems. Given the impending overhaul of this statewide public safety communication system network, the future role that the State Patrol's microwave radio network will serve is unclear despite DMA's guidance that proposals utilize the existing network in the replacement system. Nonetheless, DMA signed a five-year contract in 2019 to continue providing maintenance on the existing WISCOM system until its replacement is in operation, meaning State Patrol's microwave radio network will likely remain a key component of the state's emergency communication system network through the 2021-23 biennium.

3. The Department's radio network requires routine maintenance and occasional upgrades to maintain operations and ensure proper service. Due to technological advancements, the Department indicates existing equipment is outdated and failing, requiring upgrades to expand network bandwidth capacity to improve voice, data, and radio quality as well as system reliability.

4. Since 2015, the Department has upgraded microwave radio hardware on towers and communication shelters at 37 links through a master lease program contract, while 59 links have yet to be upgraded. The Department indicates they have spent \$299,800 from its supplies and services budget between 2017-18 and 2019-20 towards funding repairs of the microwave radio network. Of this amount, \$139,900 was spent in 2019-20, including about \$100,000 to replace legacy equipment that is no longer in production. The Department also funded these microwave network upgrades with two existing seven-year master lease contracts at a cost of \$529,500 annually. DOT indicates that the cost to upgrade all 59 links outright would be approximately \$5,500,000, or about \$93,000 per site, and would take two to three years to complete if that funding was available.

5. Improvements to the network would benefit all 850 agencies and 40,000 subscribers across various branches of federal, state, and local government that utilize the network and provide increased capacity and reliability. The new equipment would integrate with older equipment, although to improve the continuity of service they intend to ensure all equipment is the same make and model. In addition, while State Patrol has a contract with a vendor for repairs as needed, DOT indicates that replacement components are scarce and the equipment is nearing the end of its useful life. Upgrades to the microwave radio communications network would not provide additional coverage in currently existing dead zones. However, it would provide the ability for future growth if opportunities would arise in the future to integrate the State Patrol's system with other public and private infrastructure.

6. The Governor recommends \$411,400 annually in ongoing funding to support the Department's ongoing efforts to upgrade the network system. The Department intends to combine the \$411,400 in annual funding with the \$529,500 in funding currently available associated with the Department's two existing master lease contracts, which would result in \$940,900 in total annual

funding being available to fund a new seven-year master lease contract. With this funding, a dedicated team could be put in place, and the Department could complete the \$5,500,000 in work needed to upgrade the remaining 59 links over a two- to three-year period. However, the upgrades would require \$940,900 in annual funding, or \$6,586,300 over the seven-year life of the new master lease. Of this amount, approximately \$1,086,300 would be interest costs. [Alternative A1]

7. Given that this network has broader statewide purposes than just State Patrol operations, as it serves as a statewide network for fire, emergency medical services, emergency management, and tribal communications, funding its upgrade entirely from the segregated transportation fund may not be appropriate. Providing the \$411,400 annually instead from GPR funding may be seen as more appropriate given the statewide benefit of the Department's network. Providing \$411,400 GPR annually to assist in the upgrade of the microwave network would mean that the existing \$529,500 SEG would fund 56.3% of the remaining network upgrades while this GPR funding would cover 43.7% of the remaining upgrade costs. State Patrol has an existing GPR appropriation to fund in-vehicle cameras and personal protective equipment purchases, funding the upgrade to the State Patrol's microwave network could be added as an allowable expenditure. [Alternative A2]

8. Under the base level funding currently included in the substitute amendment to Assembly Bill 68/Senate Bill 111, expenditures from the transportation fund are significantly higher than under the Governor's recommendations. The Governor's recommendations reduced SEG funding to the state highway improvement program and replaced that funding with bonding. Further, while the 2019-21 budget increased revenues to the transportation fund, the coronavirus pandemic has dampened the impact of those revenue increases to the fund, as well as to ongoing base level revenues. The Committee already took action to reduce transportation fund appropriations, including adopting standard budget adjustments and reestimates of sum sufficient debt service appropriations that reduced appropriations by \$46.5 million in 2021-22 and \$31.4 million in 2022-23. Despite these actions and slightly higher estimated revenues, prior to Committee actions on the remainder of the transportation budget the estimated 2022-23 ending balance is -\$32.3 million. Again, this is largely due to higher base level transportation fund appropriations (\$162.1 million over the biennium). Additional reductions to base level funding, and/or the authorization of bonding in lieu of SEG funding for the state highway improvement program may be needed to balance the fund in the 2021-23 biennium under the substitute amendment, especially considering revenues to the transportation fund will likely remain somewhat dampened when compared to pre-pandemic levels.

9. DOT did not include funding for the upgrade of its microwave network as part of its 2021-23 budget request. Further, given that under 2017 Act 59 DMA is required to upgrade or replace WISCOM and that DMA is in the process of requesting information to build a request for proposals to replace the system, there may be hesitation to provide upgrades and repairs to State Patrol's network at this time. With the WISCOM transition moving forward and the uncertainty regarding how State Patrol's microwave radio network will be utilized in the future, there may be concerns about committing funding to a seven-year master lease to cover the cost of upfront investment of upgrading of State Patrol's microwave radio network until a final determination is made on the WISCOM transition. However, not funding the upgrades at this time could increase ongoing maintenance costs and the cost of similar upgrades in the future. [Alternative A3]

## **Communications Tower**

10. Maintenance, repairs, and upgrades to the communication towers themselves are also needed on a routine basis to maintain proper service. Examples include addressing corrosion, site accessibility, preventative maintenance, replacing backup generators or aging HVAC systems, and safety and security improvements. State Patrol has incurred costs associated with maintenance and repairs on communication towers in recent years. DOT indicates that industry standards recommend two inspections each year for each tower site. In 2019-20, these inspections resulted in identifying some generators in need of replacement, with a minimum cost of \$110,000 each. In addition, about half of the backup generators were in need of replacement. Towers also require cooling to properly maintain equipment. In 2019-20, DOT replaced the air conditioning equipment at three towers for a total cost of about \$45,000. Several sites are in remote locations that require annual maintenance to provide accessibility, such as repairing driveways and culverts or trimming trees.

11. The Department indicates that \$500,000 in 2022-23 would provide the necessary funding for maintenance on its public safety communication towers. The Governor's original recommendation provided the additional funding to State Patrol's general operations appropriation. Subsequently, the Department of Administration submitted a technical errata to provide the funding to DOT's management and operations appropriation, which funds the administration and management of departmental programs. Providing this funding in 2022-23 would establish a \$500,000 base level SEG increase to the appropriation [Alternative B1]. Alternatively, the Committee could choose to provide this funding on a one-time basis in 2021-22 to allow for immediate upgrades without providing an increase to the base [Alternative B2]. This would allow for some work to be completed prior to any final decision or work on an upgrade or replacement to the statewide emergency communication system.

12. While DOT indicates that \$500,000 in 2022-23 is needed to address immediate needs in advance of any eventual upgrade to the statewide public safety communication system, the Department did not include funding maintenance of its communication towers as part of its 2021-23 budget request. Again, the eventual upgrade or replacement of WISCOM, as required under 2017 Act 59, is currently being undertaken by DMA, who is in the process of requesting information to build a request for proposals to upgrade its statewide system. As a result, some hesitation to provide upgrades and repairs to any part of State Patrol's communication network may be warranted until more is known on the WISCOM system replacement. [Alternative B3]

## **ALTERNATIVES**

### **A. Microwave Radio Network**

1. Provide \$411,400 annually to fund improvements to the statewide microwave radio emergency network. This would establish an ongoing \$411,400 increase in base level SEG funding in State Patrol's operations appropriation.

ALT A1	Change to Base
SEG	\$822,800

2. Provide \$411,400 GPR annually to fund improvements to the statewide microwave radio emergency network. This would require modifying an existing State Patrol GPR appropriation for equipment upgrades to include upgrades to the microwave radio network as an allowable expenditure. This would provide an ongoing \$411,400 increase in base level GPR funding in that appropriation.

ALT A2	Change to Base
GPR	\$822,800

3. Take no action.

**B. Communication Towers**

1. Provide \$500,000 in 2022-23 to increase funding for maintenance of communication towers owned by the Department. This would establish an ongoing \$500,000 increase in base level SEG funding in the Department's management and operations appropriation.

ALT B1	Change to Base
SEG	\$500,000

2. Provide \$500,000 in 2021-22 to provide one-time funding for maintenance of communication towers owned by the Department (no ongoing base level SEG funding would be provided).

ALT B2	Change to Base
SEG	\$500,000

3. Take no action.

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