

CAPITAL IMPROVEMENT PROGRAM

Use A New Form For Each Project:

DEPARTMENT: Emergency Management

PROJECT: (Briefly describe the project's nature, location, extent and purpose. For equipment or vehicles, also state the number of units.)

St. Helena Microwave Replacement. This essential point-to-point radio link is the main communication line from St. Helena to Juneau. Dodge County purchased the existing Harris Constellation microwave link in 2005. Harris stopped selling this product in December of 2010 and the existing microwave went out of support (end of life) in December 2020. Dodge County does NOT have a spare to support the microwave device. Loss of service from this link would be catastrophic to the essential, mission critical countywide radio communication. The current method of linking towers via microwave link could be replaced by a fiber connection, which provides a consistent, larger bandwidth link between the towers. Using newer technology (fiber optics) has a superior length of service life versus radio microwave (10 years for radio versus 30 for fiber). In addition to adding the fiber link, retaining the aging microwave unit on the tower would provide a contingent backup for immediate re-connection during an emergency.

PROJECT BUDGET DATE: (Check the year in which you expect the project to occur.)

☒ 2022 ☐ 2023 ☐ 2024 ☐ 2025 ☐ 2026

TOTAL COST: (State the total anticipated cost of the project and the amount to be requested in the relevant budget year.)

The cost of replacing the microwave at St. Helena with a similar product would be \$95,000. However, the current microwave could be kept as a backup and replaced as the primary method of communication by running a fiber optic connection to St. Helena for approximately \$386,000.

METHOD OF FUNDING: (Describe all project funding sources; identify any anticipated grants or outside funding.)

The cost of replacing the microwave at St. Helena Tower is approximately \$95,000, which is NOT eligible for any type of grant funding. However, the county could run fiber optic to the St. Helena tower for approximately \$386,000 and continue to use the microwave as a contingent backup link. The cost of running fiber to the St. Helena Tower maybe eligible under the America Rescue Plan Act (ARPA) as it could be considered part of the countywide broadband initiative by providing increased access to higher bandwidth options, not currently available at the rural location, to co-locate providers on the St. Helena Tower.

NEED / JUSTIFICATION: (Briefly state the need and/or justification for the project; i.e.; Is this a state or federally mandated project? Will other funds be lost if this project is not funded? Is there a study or plan which recommends or prioritizes this project?)

St Helena is the primary tower for all the public safety communications in Dodge County, thus, it is imperative for it to remain uninterrupted. The St. Helena tower site, including the building, was constructed in 1981, almost 40 years ago and main Harris Constellation microwave has also come to its end of life with support. It may be more cost effective to install a fiber connection between Juneau and St. Helena as the main link for communications and keep the current microwave for a contingency during an emergency.

PERSON COMPLETING THIS FORM:

Name

Phone Number

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Upgrades to address simulcast coverage concerns. While simulcasting the county radio channels significantly improved county-wide radio coverage for first response agencies (Fire, EMS, Law Enforcement, Highway), there are still some areas within the county with limited capabilities and coverage. This project would analyze data collected from all the channels to look at addressing coverage concerns, which may include adding radio tower sites to enhance in-coming and out-going communications in outlying areas in the North West and Central parts of Dodge County that have limited coverage and may also include simulcasting the final site (Mayville) for the Highway channel.

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TOTAL COST: (State the total anticipated cost of the project and the amount to be requested in the relevant budget year.)

Several areas in Dodge County, including Waupun, Town of Elba, and Town of Emmet, have been identified as areas with coverage gaps and concerns. The cost of adding additional radio sites, including building a tower and shelter is \$650,000 per site, which would be approximately \$1,950,000 for 3 sites. The cost of additional engineering to specify where the best coverage co-locations is approximately \$25,000. Depending on the coverage area, there may be a need to add simulcast capabilities at the final tower site in Mayville for the Highway Channel (DOHWY1), additional equipment for this would \$26,000. Total estimate project cost is \$2,010,000.

METHOD OF FUNDING: (Describe all project funding sources; identify any anticipated grants or outside funding.)

Radio communications projects are no longer eligible for grant funding through the Regional Assistance to Firefighter Grants. However the cost of adding towers sites, which would allow for colocations for companies that provide broadband to citizens maybe eligible under the American Rescue Plan Act (ARPA).

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Substantial improvements have been made to the county communications infrastructure with the upgrade to simulcast. Currently Dodge County has nine (9) tower sites (Ashippun, Beaver Dam, Fox Lake, Juneau, Knowles, Mayville, Reeseville, Rubicon, & St. Helena) on which six (6) of the seven (7) county channels simulcast (DOPAGE, DOLAW1, DOSO3, DOFIRE1, DOEM5, DOSO4), the final channel DOHWY1 (Highway) is simulcasting from eight (8) of the tower sites (not on Mayville). However, there are still some areas in the county with limited radio communication capabilities. To ensure the quality and reliability of Dodge County's communication system, we need to complete the final step of the simulcasting project, by adding additional upgrades to address concerns in areas with limited coverage.

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In order to support the Dodge County Continuity of Operations Plan (COOP) there needs to be a backup source for data between the county Highway facilities (Mayville, Juneau & Trenton). To ensure there is a redundant, secondary source for data there is a need to install a communication bridge between Juneau, Trenton and Mayville locations, which will reside at the Highway Shops (Juneau, Trenton, Mayville). In order to ensure a reliable data connection between the three sites, all options for data communications will be considered in this project, including traditional Radio Frequency (RF) and more advanced technology of fiber optics.

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TOTAL COST: (State the total anticipated cost of the project and the amount to be requested in the relevant budget year.)

The cost breakdown of a traditional RF communication link is: Communication bridge between Highway Shops - Engineering, design, shipping, bonding and insurance is approximately \$34,050; Equipment, Install and optimization of the Juneau to Trenton Link is approximately \$50,500 (plus contingency of \$12,625 or 25%), and Equipment, Install and optimization of the Juneau to Mayville Link is approximately \$50,500 (plus contingency of \$12,625 or 25%). Cost estimate for communications bridge - \$160,300. Erect an 80 foot self-supporting tower \$70,000 at Mayville facility (towers already exist at Juneau and Trenton). Total Cost Estimate for traditional RF tower and communications link - \$230,300. More advanced technology of fiber would cost approximately 2,177,000 to connect all 3 shops.

METHOD OF FUNDING: (Describe all project funding sources; identify any anticipated grants or outside funding.)

The cost of running fiber between the Highway Shops would be approximately 10 times the cost of RF but maybe eligible for American Rescue Plan Act (ARPA) funds as it would allow for the buildout of broadband options in Dodge County. Using RF technology to create a redundant communications link between the three (3) facilities (Mayville, Juneau, Trenton) would require county funds of approximately \$230,300, as there are no other grants dollars available for this type of project.

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Dodge County has a Continuity of Operations Plan (COOP) that is reliant upon maintaining a secondary facility to relocate staff, in the event of a county facility (except for Clearview or the Jail) being left un-operational due to an emergency or disaster. Due to the number of people and services that would need to be relocated, the Mayville Highway building has been identified as the COOP facility for the Administration and Henry Dodge Buildings, while the main Highway operations would be conducted at the Trenton Highway building. In order to ensure a reliable, virtual data connection between Mayville, Juneau, and Trenton there is a need to create a communication data link between the three primary sites: Juneau, Trenton, and Mayville. In order to ensure a reliable data connection between the three sites, all options for data communications will be considered in this project, including traditional Radio Frequency (RF) and more advanced technology of fiber optics.

PERSON COMPLETING THIS FORM: Amy B. Nehls
Name

920-386-3999
Phone Number

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PROJECT: (Briefly describe the project's nature, location, extent and purpose. For equipment or vehicles, also state the number of units.)

Replace the Mobile Command Unit/Emergency Mobile Unit. The current MCC/EMU is a 42-foot trailer purchased in 2003 with Homeland Security grant dollars. A 2004 F450 truck purchased and owned by the Sheriff's Office currently tows the trailer. The current unit and truck are 20 years old and in need of updating to make use of current technology and fulfill the needs emergency response, which has changed and evolved in the last 20 years.

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The estimated cost of a new 36-foot mobile vehicle with two slid outs is approximately \$630,000. The cost of radio equipment for the new MCC is approximately \$102,384. Trade-in value is \$12,780. Total Cost for new MCC and equipment \$719,604.

METHOD OF FUNDING: (Describe all project funding sources; identify any anticipated grants or outside funding.)

The purchase of a new mobile command vehicle and communication equipment should be eligible for American Rescue Plan Act (ARPA) funding, as it has been used to respond to many emergencies, throughout Dodge County, including COVID-19. The trade in value quoted is \$12,780.

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The original trailer and truck were purchased twenty years ago. The equipment is aging and in need of an upgrade to new technology and design. The current method of towing a large trailer with a truck requires someone with experience in hooking up and towing large vehicles, whereas a new vehicle (26 foot body/36 foot overall length) would be able to be driven by anyone **without a CDL** (anything over this size is over 30,000 GVWR and requires a CDL). New technology and innovation would allow for a smaller, more manageable unit that would encompass everything the current MCC includes and some addition needs that have been identified over the years.

PERSON COMPLETING THIS FORM: Amy B. Nehls 920-386-3999
Name Phone Number