*Wisconsin Department of Transportation (WisDOT)*

# *Stand-alone Signals and ITS Program*
# *FY17 Project Application Form*
## *GENERAL INSTRUCTIONS*

APPLICATIONS DUE: **FEBRUARY 16, 2016**
Please upload applications to the SharePoint site under your Region
(https://wisdot.sharepoint.com/sites/dtsd/bto/its-sig/2017/SitePages/Home.aspx).

Each Region requesting funds from the Stand-alone Signals and ITS Program must submit the following information:

- ☐ Stand-alone Signals and ITS Program Region Ranking Spreadsheet (one per Region)
- ☐ Completed Stand-alone Signals and ITS Program FY17 Project Application Forms (one for each project request)
- ☐ Any supporting materials deemed necessary by the Region

***FY17 Project Application Form:*** Each FY17 Project Application Form shall be completed entirely to be considered:

**Box 1** Fill in those areas that are applicable to your project. Provide a project name to be used consistently when referring to the proposed project. For 'Name of Road/Intersection,' use From-To (South-North or West-East) format for a road segment such as "6th St.-9th St." A proposed project may involve multiple improvement locations; if this is the case, indicate the corridor or the general area of the proposed project. More specific information should be provided in the project description.

**Box 2** Identify and describe area of improvement needed.

**Box 3** Describe the project in as much detail as possible. A good, detailed, description explaining how the project will address the identified need(s) is essential for application review and evaluation.

**Box 4** If your project will be constructed in phases throughout multiple years, then provide the project costs in the appropriate year and describe each in your proposed improvement statement. List major construction items and associated estimates such as new traffic signal installation, intersection channelization. Project expense is considered during the evaluation of the projects. Therefore, **ALL COSTS** (including design, utilities and R/E) should be provided regardless of whether Program funds will be used for all elements of the project.

**Box 5** Complete the various questions as they relate to the proposed project. This information will help determine need and may help with ranking of projects among regions.

**Box 6** Provide contact information for application sponsor's primary contact person. Application must be signed by the regional operations chief to commit funds and certify as to the answers provided in the application.

***Supporting Materials:*** Each completed application shall include the following, *if applicable*:

- Map of location
- General Sketch of Project Proposal or site photo(s). *An adequate sketch is the minimum requirement. Preliminary plan layout sheets or study reports should be provided if available.*
- Warrant Documentation, required **only** for proposals to install new traffic signals (example worksheet available upon request. Ref: Manual on Uniform Traffic Control Devices [MUTCD], Part IV, Sec C).
- Completed Traffic Control Signal Approval Request form DT1199 (Required for all proposals to install new traffic signals on the State Trunk Highway System, including Connecting Highways and ramp terminals).
- Systems Engineering Analysis. *A SEA may need to be completed for certain types of projects funded by this Program.*

***Submittal Instructions & General Questions:***

| Questions on application process and Program contact: | Submit the application and materials to: |
|---|---|
| David Karnes<br>David.Karnes@dot.wi.gov<br>Bureau of Traffic Operations<br>433 W. St. Paul Ave, Suite 300, Milwaukee, WI 53203<br>(414) 220-6804 | Upload all application materials to the SharePoint site under your Region<br>(https://wisdot.sharepoint.com/sites/dtsd/bto/its-sig/2017/SitePages/Home.aspx). |

*Wisconsin Department of Transportation (WisDOT)*

***Stand-alone Signals and ITS Program***

***FY17 Project Application Form***

## 1. Project Description

| | | |
|---|---|---|
| PROJECT NAME<br>IH 90/94, Tomah to Wis. Dells, ITS Enhancement | | |
| FILE NAME (AA_BBBB_FY17 Standalone Program App_CCC.docx)*<br>02_IH9094_Tomah-WisDells_ITSEnhancement_FY17StandaloneProgramApp20151031.docx | | |
| *File should be named consistently with the following nomenclature: AA=Project Regional Rank; BBBB=Project Name; CCC=Date. | | |
| NAME OF ROAD/INTERSECTION<br>*IH-90/94 @ STH-80, STH-82, CTH-HH, CTH-A* | | HWY NO.<br>*IH-90, IH-94* |
| COUNTY<br>*Juneau, Sauk* | CITY/TOWN<br>*(C) New Lisbon, (C) Mauston, (V) Lyndon Station, (T) Delton* | REGION<br>*SW* |

## 2. Identification of Needs

| Identify which area for improvement the need falls under: | |
|---|---|
| ☐ 1. New Signal Installation | Procurement and installation of controllers, bases and signals |
| ☐ 2. Signal Replacement | Replacement of signals including geometric improvements and upgrades for FY17 construction |
| ☐ 3. Signal Rehabilitation | Upgrade, install or replace detection, controllers, battery backup, etc. |
| ☐ 4. Signal Retrofit | Procure and install monotubes, procure and install flashing yellow arrows, safety improvements not requiring major construction and adaptive signal systems. |
| ☐ 5. Signal Retiming | Data collection, evaluation, prepare signal timing plan, develop and implement corridor coordination plan to support 3 and 5 year timing schedule |
| ☐ 6. LED Signal Replacement* | Procure and install all materials for annual LED signal 7 year replacement cycle |
| ☐ 7. Intersection Communication | Design-build and integrate fiber optic links between existing fiber infrastructure and signal systems, or procure and install cellular Ethernet modems |
| ☐ 8. ITS Device Lifecycle Replacement | Upgrade, install or replace detection, controllers, battery backup, etc. |
| ☐ 9. Software | Upgrade, install or replace software |
| ☒ 10. ITS Device Installation | Upgrade backbone fiber network equipment and switches, replace ramp meter LED's, update non standard CCTV's |
| ☐ Other | |

***A**nticipated improvements are understood for LED Signal Replacement projects. Therefore, it is only necessary to respond to the Project Description (3a) and Existing Conditions (3b) questions in section 3.

## 3. Proposed Improvements

### 3a. Project Description

In some detail, describe the proposed project and how it will address the identified need. If the project includes multiple proposed improvement locations, identify the locations.

The primary goal of this project is to enhance the Intelligent Transportation System (ITS) coverage along the Badger State Corridor (Interstate 90/94) in an efficient manner to fulfill the priority set within the Traffic Operations Infrastructure Plan, April 2008 (TOIP). The Badger State Corridor is a top priority corridor. This goal is proposed to be accomplished through the installation of closed caption television (CCTV) surveillance cameras and system detector station (SDS) microwaves:

- New Lisbon, STH-80 Interchange, Juneau County – 1 CCTV and 2 SDS
- Mauston, STH-82 Interchange, Juneau County – 1 CCTV and 2 SDS
- Lyndon Station, CTH-HH Interchange, Juneau County – 1 CCTV and 2 SDS
- Delton, CTH-A overpass, Sauk County – 1 CCTV and 2 SDS

**3b. Existing Conditions**

Describe the existing conditions of the existing infrastructure. For example, type and age of current infrastructure; what is its current condition?

Cameras and microwaves do not exist at these locations although conditions are ideal for installation: Excellent operational sight range along the interstate and arterial roadways, existing backbone fiber for reliable device communication, and accessible electrical power. Existing traffic conditions provide congestion and interstate slow-downs during holidays and summer weekends.

**3c. Project Performance Goals and Objectives**

Describe the proposed project performance goals and objectives. How will project success be determined?

The project is considered a success once the camera and detectors are operational, correctly configured, and reporting video and data via the established WisDOT network, including the control room of the Statewide Traffic Operations Center (STOC).

**3d. Mobility Improvements**

In some detail, describe the anticipated mobility improvements of the proposed project and how they will be measured (i.e. detection will be used to determine before and after peak hour delay).

This ITS enhancement project for the critical Badger State Corridor will effectively increase the traffic surveillance and detection from the existing low levels between Portage to Lake Delton, and Wisconsin Dells to Camp Douglas.

- IH-90/94 at CTH-A has heavy interstate traffic during peak periods
- STH-80, STH-82 and CTH-HH are established alternate routes for the interstate to USH-12
- STH-80 and STH-82 are a typical freight/truck routes
- Corridor-wide reoccurring congestion can be more precisely monitored, especially during holidays and seasonal peak periods
- Incident management coverage and critical traffic areas that not monitored can be incorporated
- Traveler information, including 511wi.gov congestions maps and video feeds can be provided for the entire corridor (gaps exist in surveillance and detection)
- Increase in traffic data quality and video resources will be beneficial to regional and statewide traffic analysis, corridor planning, and work-zone management, etc.

**3e. Operations and Maintenance Impacts**

In some detail, describe how this project will efficiently use or reduce operations and maintenance funds.

The addition of a cameras and microwaves will help maximize the capability of the STOC. O&M costs will be covered by the well-established statewide maintenance contract within existing resources and staff responsibilities (estimated):

- 1 CCTV @ $1,000 (annually)
- 2 SDS @ $400 (annually)

Approximately $1**,800** per year per site

**3f. Energy and Environmental Impacts**

In some detail, describe the anticipated energy and environmental impacts of the proposed project.

Energy use is roughly $100 per year per site. There are no environmental impacts associated with camera pole installations within the existing right-of-way and existing fill embankments within the interchange. Therefore, the benefits are well more advantageous than the cost impacts. This includes reducing crashes, congestion, and delays which produce savings of fuel, time, personnel and most importantly, injury.

**3g. Safety Improvements**

In some detail, describe the anticipated safety improvements of the proposed project.

Safety will be greatly improved at this location by enhancing incident response and management, quicker scene clearance with traffic mitigation and reliable traffic monitoring. These aspects help people receive timely care and injury treatment, reduce traveler delay and lower the exposure to safety risks.

**3h. Additional Justification**

Provide additional detail that should be considered during the evaluation of this project. This may include the consequences of what would happen should the project not be implemented.

The Badger State Corridor is currently below the recommended traffic surveillance and detection levels. This enhancement will increase camera coverage surveillance to a medium level (minimum recommended for this corridor) and increase detection to a low/minimum level

## 4. Project Cost

| Estimate project costs in today's dollars: | FY17 | FY18 | FY19 | FY20* |
|---|---|---|---|---|
| Design: | $10,000 | | | |
| Real Estate:<br>(Note: real estate acquisition funds are NOT included in this appropriation, other funding sources need to be identified in the space below) | *N/A* | | | |
| Construction Items (Include Construction Engineering and Contingencies):<br>(Note: up to 50% of the geometric improvements needed can be funded by this appropriation ) | | | | |
| Let construction | | | | |
| Installation via procurement contracts | $110,000 | | | |
| State furnished materials | $96,000 | | | |
| Other Costs: | | | | |
| ****TOTAL COST =** | $216,000 | | | |

* The program does not extend passed FY18, however for planning purposes please include potential projects for FY20 which could be funded through a reauthorization of this program or an alternate funding source.

** The project sponsors will be responsible for any project costs in excess of the approved appropriation funding amount. Appropriation funds must be encumbered during the FY identified.

## 5. Additional Project Information

| | |
|---|---|
| Is this specific project addressed through PDS within the next 6 years? | ☐ YES ☒ NO |
| Performance measures: does this project help with achieving WisDOT's performance goals? Refer to http://dotnet/mapss/index.htm<br>– *Mobility*: Delivering transportation choices that result in efficient trips and no unexpected delays.<br>– *Accountability*: The continuous effort to use public dollars in the most efficient and cost-effective way.<br>– *Preservation*: Protecting, maintaining and operating Wisconsin's transportation system efficiently by making sound investments that preserve and extend the life of our infrastructure, while protecting our natural environment.<br>– *Safety*: Moving toward minimizing the number of deaths, injuries and crashes on our roadways.<br>– *Service*: High quality and accurate products and services delivered in a timely fashion by a professional and proactive workforce. | Select all that apply:<br>☒ Mobility<br>☒ Accountability<br>☒ Preservation<br>☒ Safety<br>☒ Service |
| Is this project listed as a strategic objective in the State Traffic Operations Program Plan (STOPP)? Refer to \\Mad00fph\n4public\BHO\meeting-minutes\bto\stopp\ | ☒ YES ☐ NO<br>If yes, what section of the STOPP?<br>**Connections 2030 (P.5, P.22), MAPSS-Mobility (P.8), and SHSP (P.9, P.25)** |

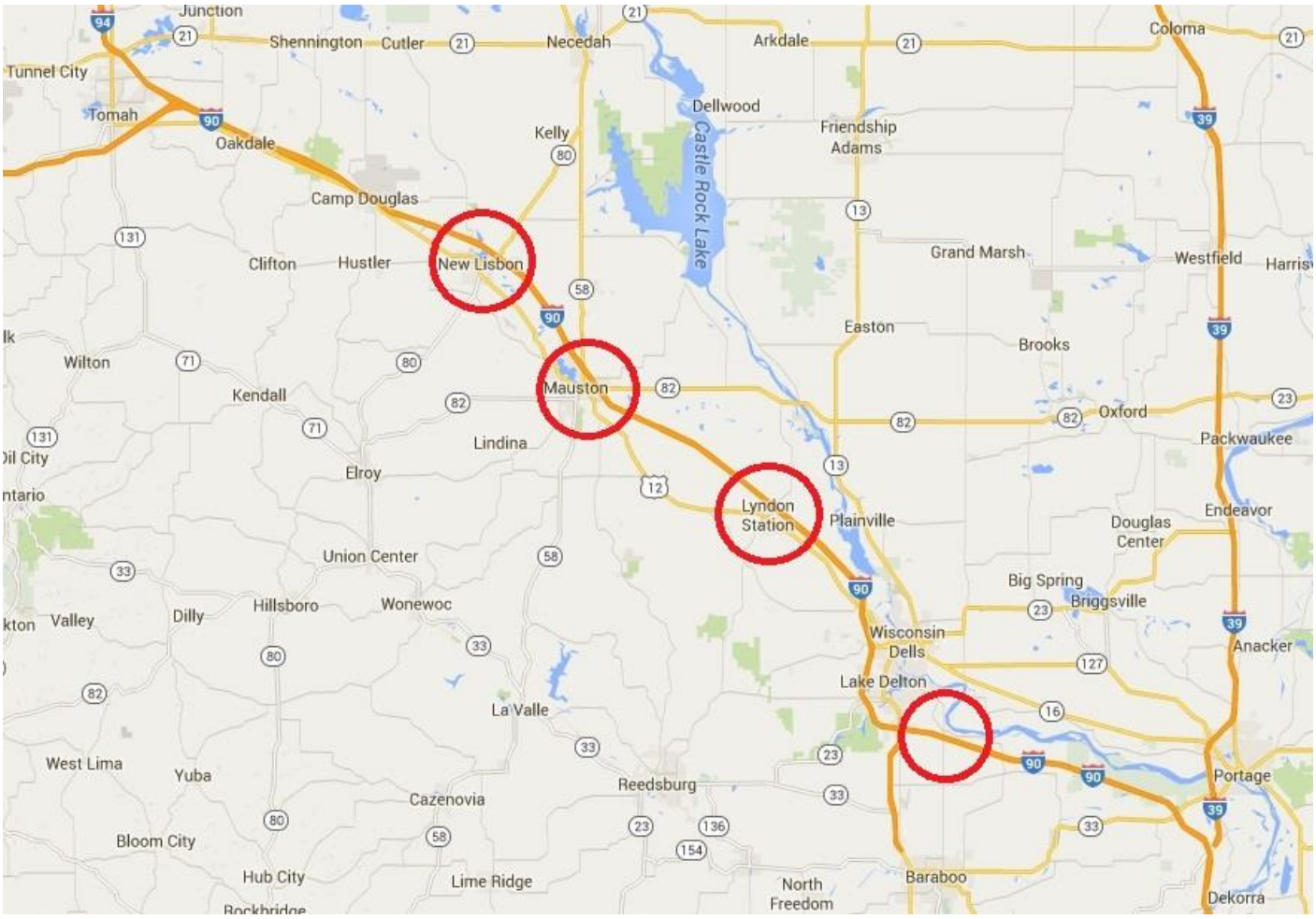
***Timeline***

| Steps in process | Months (MM/YY – MM/YY) | Anticipated Quarter of Encumbrance | Anticipated Required Resources (Reg PDS, Reg OPS (eng, electricians), consultant contract, electrical contractors, etc.) |
|---|---|---|---|
| 1. Design | *07/16 – 12/16* | 1 | BTO Traffic master contract |
| 2. Real Estate Acquisition | *N/A* | | |
| 3. Procurement | *10/16 – 02/17* | 3 | BTO Statewide procurement process |
| 4. Construction | *02/17 – 06/17* | 4 | BTO Statewide ITS master contract |
| 5. Other | | | |

## 6. Contact Information and Signature

| | |
|---|---|
| PRIMARY CONTACT NAME<br>*Kyle Hemp* | TITLE<br>*Traffic Engineer* |
| REGION<br>*Southwest* | |
| EMAIL ADDRESS<br>*Kyle.Hemp@dot.wi.gov* | TELEPHONE<br>608-246-5367 |
| SIGNATURE OF OPERATIONS SUPERVISOR<br>*Dan Pruess* | DATE<br>*02/10/2016* |
| SIGNATURE OF OPERATIONS CHIEF<br>*John Steiner* | DATE<br>*02/10/2016* |

REVISED DRAFT 10/31/2015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Wisconsin
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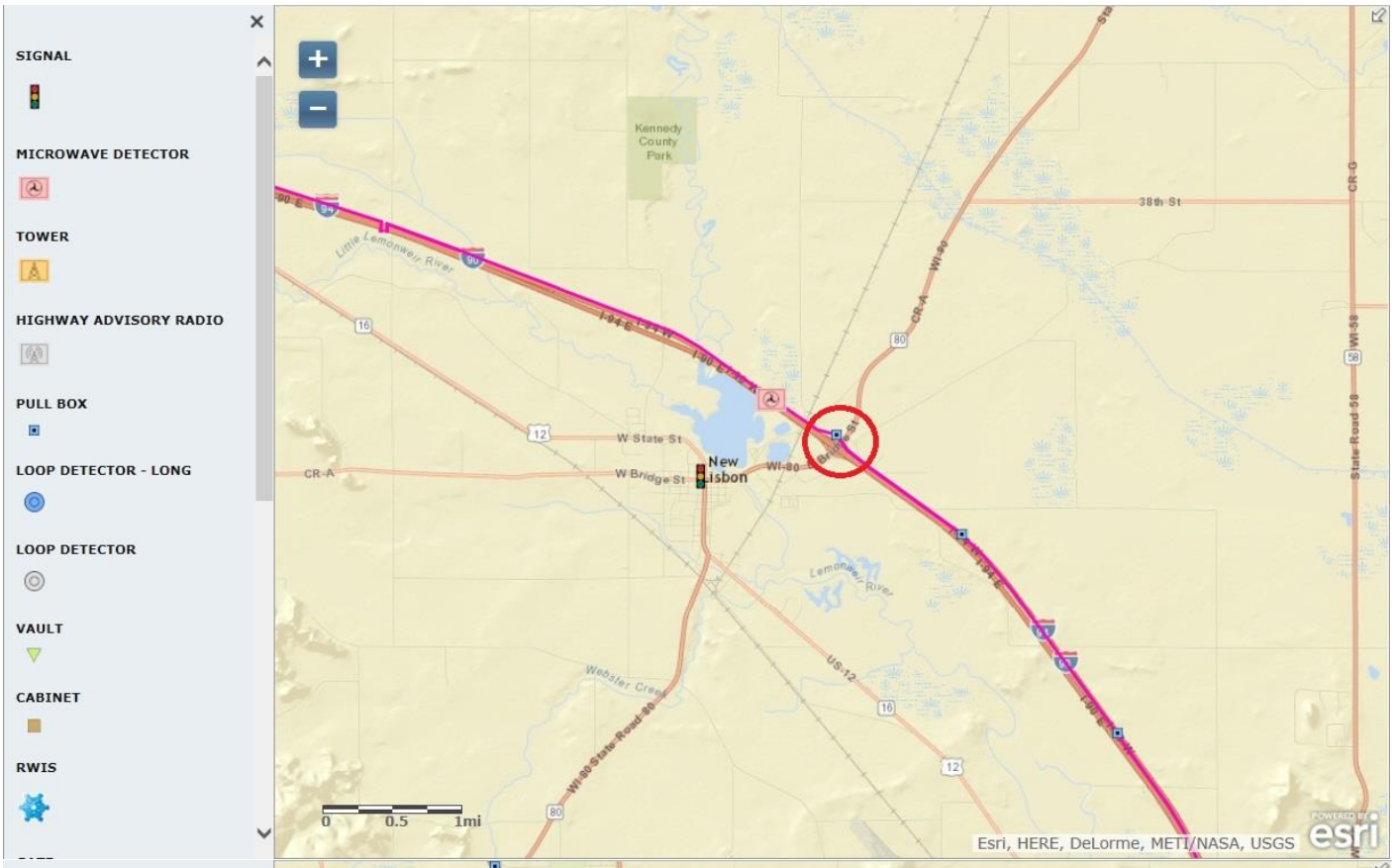
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MICROWAVE DETECTOR
TOWER
HIGHWAY ADVISORY RADIO
PULL BOX
LOOP DETECTOR - LONG
LOOP DETECTOR
VAULT
CABINET
RWIS
Kennedy County Park
38th St
CR-G
CR-A
WI-80
WI-58
State Road 58
W State St
W Bridge St
New Lisbon
Bridge St
Lemonweir River
Webster Creek
WI-80 State Road 80
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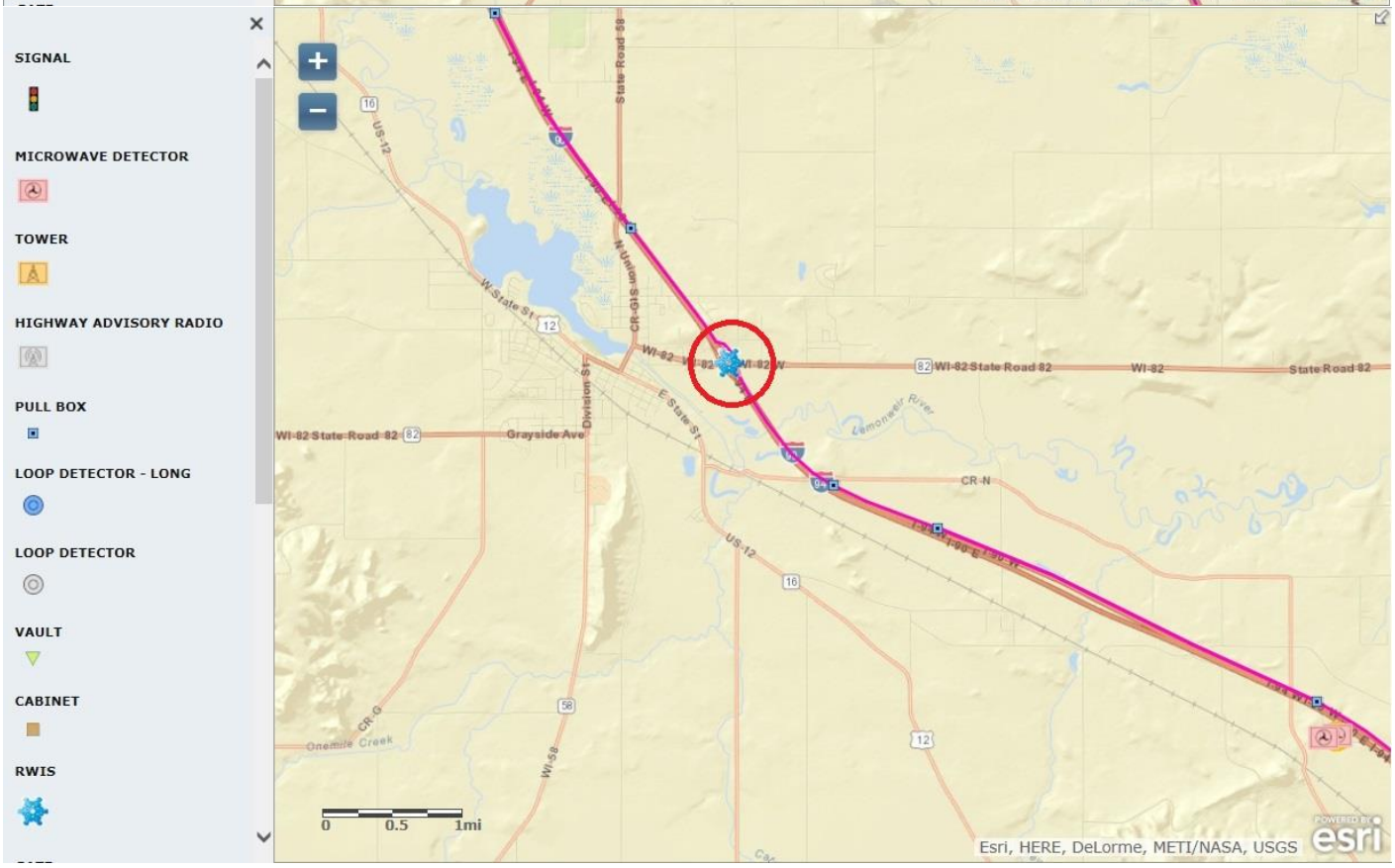
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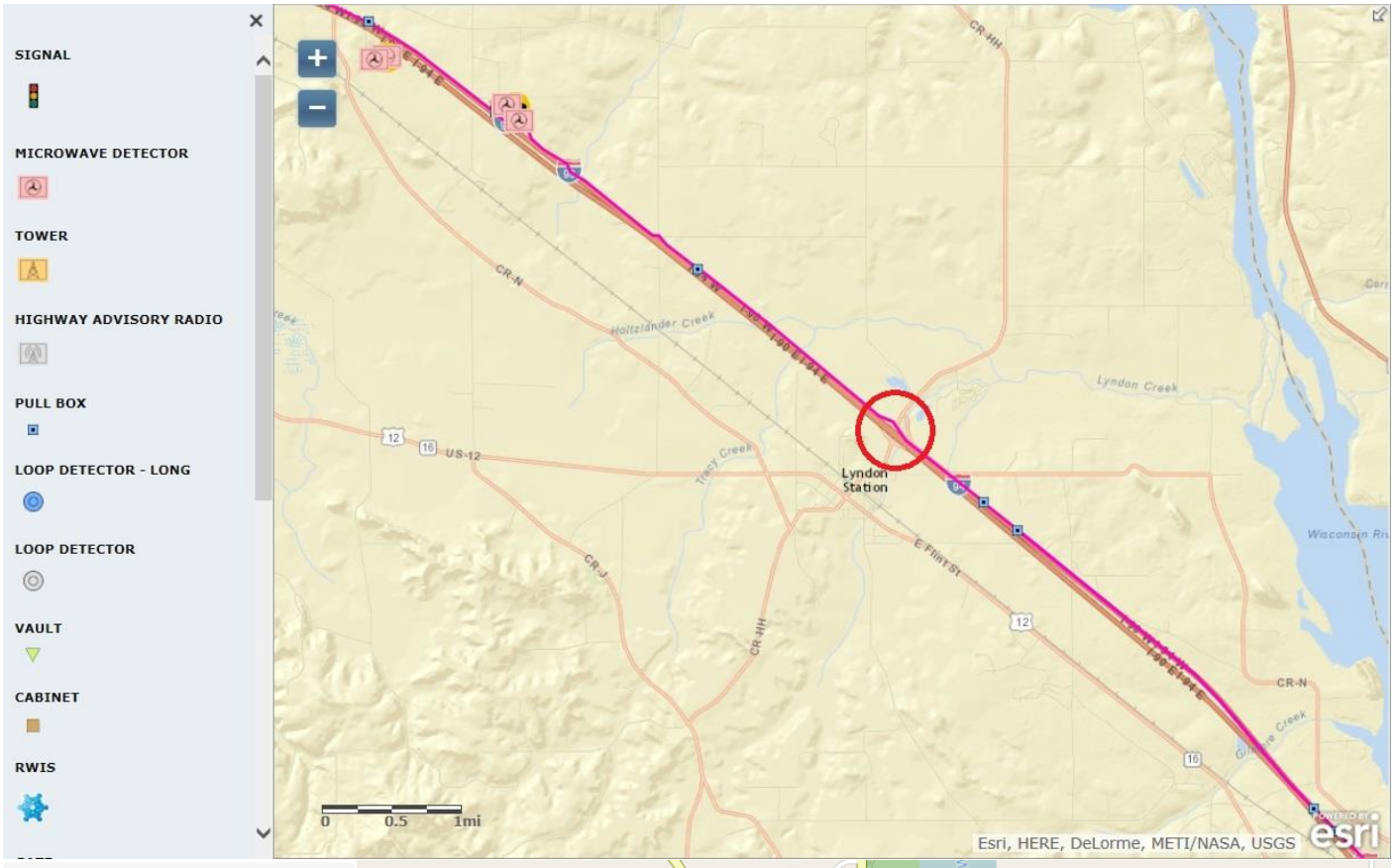
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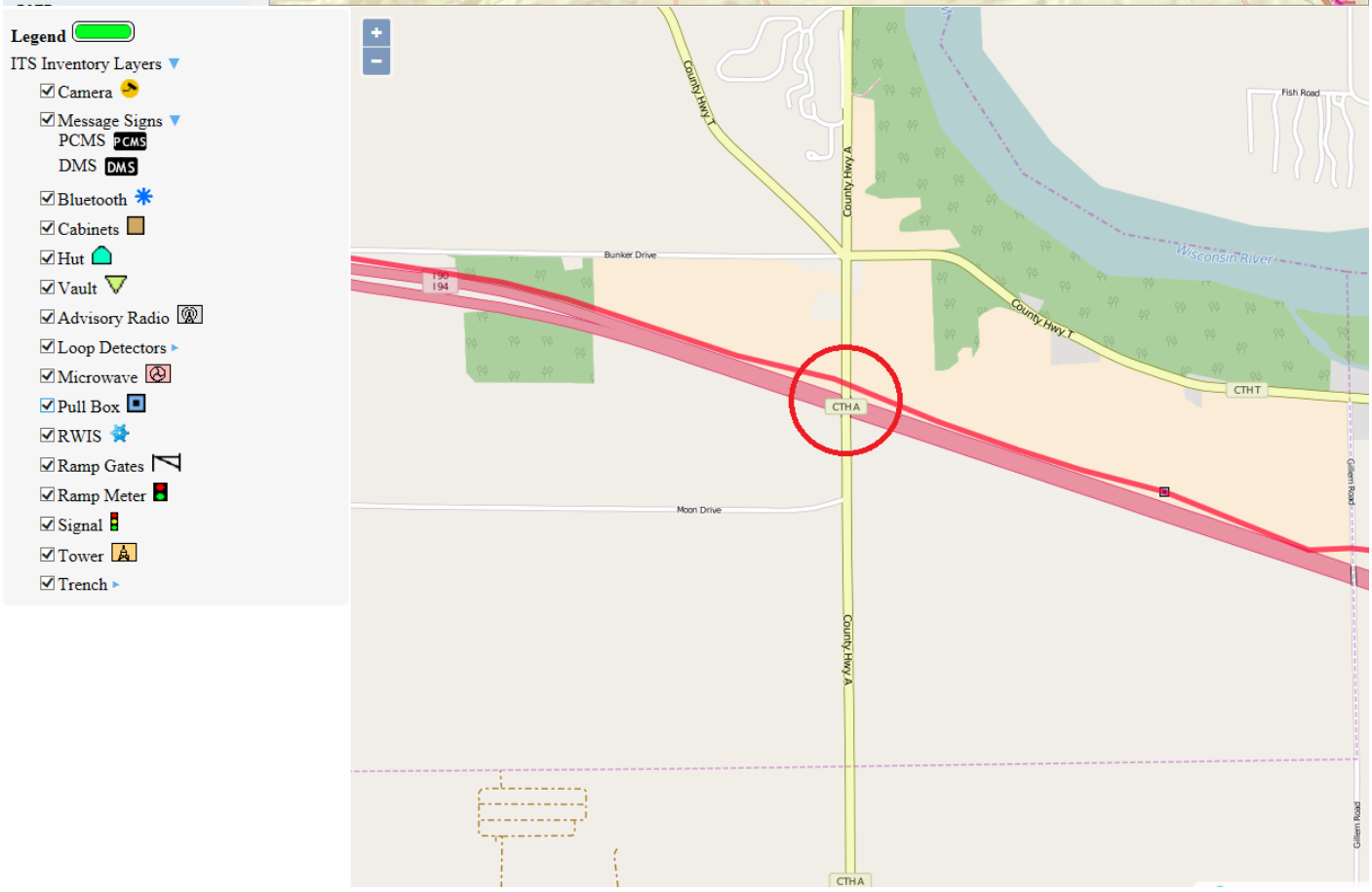
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DMS
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Cabinets
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Advisory Radio
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Ramp Gates
Ramp Meter
Signal
Tower
Trench
County Hwy T
County Hwy A
Fish Road
Bunker Drive
Wisconsin River
CTHA
CTHT
Moon Drive
Gillem Road