

Opportunities for Traffic Management Systems to Share Information on Incidents

Traffic Management Systems (TMSs) should have the ability to quickly share information on detected incidents, the response to incidents, and coordination with the appropriate agencies, emergency service providers, and stakeholders. Incident-related information may also need to be shared with various offices within an agency or the public. TMS staff typically disseminate incident information using email notifications, targeted telephone calls, or methods such as video feeds. Some agencies use software programs and services to share information within the agency or with others who may be involved in responding to or who require awareness of incidents and implications.

DESIRED OUTCOMES

- Share incident information while eliminating or minimizing the use of emails, phone calls, and other communication methods.
- Rapidly disseminate interagency notifications to staff who may need information based on the type, location (e.g., jurisdiction, State), or potential impacts resulting from an incident.
- Quickly notify and share incident-related information with other agencies, emergency service providers, and stakeholders who may respond to, support, or be impacted by incidents.

KEY ISSUES TO CONSIDER

- Agencies may need to integrate new technologies and software with TMSs to enable sharing incident-related information.
- Agencies may need new or revised policies, procedures, and controls to establish and maintain incident related information sharing.
- Agencies may need to share information within an agency, with emergency service providers, and other stakeholders based on the location and potential impacts of different types of incidents.
- Agencies may need new technologies and resources enable a TMS to share incident-related information and coordinate with different groups within an agency electronically.
- Agencies may need to consider new factors when procuring, developing, integrating, initiating, testing, or managing the use of software, application programming interfaces, and other technologies or resources to support sharing information.
- Technologies and resources may be needed to develop and maintain electronic information sharing with different agencies, emergency service providers, or other stakeholders.

CURRENT PRACTICES

Iowa Department of Transportation (DOT) Mobile Architecture for Communications Handling (MACH) (figure 1) (<https://iowadot.gov/tracs/about-mach>)

- MACH is a standalone system developed by Iowa DOT to share incident information.
- All stakeholders can access and use the same information and capabilities through a common graphical user interface (GUI).
- Users logged into MACH receive notifications within the user dashboard. Other users can receive email updates based on self-selected user settings.
- MACH has effectively eliminated the need for TMS staff to make separate phone calls to notify, verify, and coordinate responses to traffic incidents within the State.
- Iowa DOT now licenses MACH to other State DOTs, including Wisconsin, Illinois, and Florida.

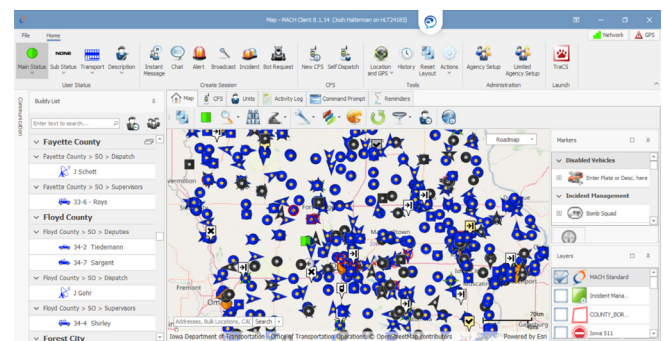


FIGURE 1. Illustration. MACH GUI.

Original map © Google® Maps™. MACH software © 2023 Iowa DOT.

Washington State DOT (WSDOT) Virtual Coordination Center (VCC)

(<https://depts.washington.edu/cossar/research/virtual-coordination-center-for-multimodal-integrated-corridor-management-vcc/>)

- WSDOT and other agencies in the Seattle, WA, area are currently implementing the VCC.
- The VCC system facilitates sharing information with law enforcement, incident responders, traffic and transit management centers, and public information staff.
- VCC development is complete, but the system is not live yet.
- The VCC system is hosted in the cloud and provides user access to information through secure connections while avoiding agency-specific network security and firewall concerns.
- Users are provided read-only access to information in the VCC. However, select users can receive specific permissions within the software to edit real-time information, post incident parameters, indicate road closures and detours, and upload visual information. Traffic management center (TMC) staff review all stakeholder contributions.

Oregon DOT (ODOT) Inview System

(<https://www.oregon.gov/odot/Maintenance/Pages/Traffic-Incident-Management.aspx>)

- Inview was developed in partnership with Oregon State University to provide ODOT staff with State highway system situational awareness.
- Inview users can select the type of alerts they wish to receive (weather, incident, or work zone-related), the timing and medium for receiving alerts (email, text, phone message), and specific locations (districts, highways, mileposts, etc.).
- Inview integrates with ODOT Transportation Operations Center messaging platforms, which can push Inview messages to outside agencies such as State police, local police, and 911 centers.

BENEFITS

- The ability of TMSs to electronically share incident-related information and coordinate incident management activities offers the potential to streamline the development, delivery, and access to incident notifications and situational updates. These capabilities minimize the time and effort that TMS staff need to prepare and share this information.
- Interactive tools (e.g., mapping and upload features) can be integrated into TMSs to facilitate the compilation and dissemination of incident-related information.
- TMS staff can set or select permission levels to ensure information is shared with the intended person or groups within or external to an agency based on the type, location, and implications of an incident.

LESSONS LEARNED

- Agencies have developed and integrated software, mobile device applications, and new technologies that allow TMSs to electronically share incident-related information within an agency and with emergency service providers, other agencies, or other stakeholders.
- Agencies have pursued system upgrades and integration of new technologies to supplement or enhance the capabilities of existing systems (e.g., computer-aided dispatching, operator interfaces) and technologies used by agencies, emergency service providers, or other stakeholders.
- Agencies have identified and included the resources, services, and staff needed to develop, integrate, test, manage, and support incident-related information sharing by TMSs.
- Individual users are responsible for selecting TMS settings to ensure critical alerts receive attention.

AVAILABLE RESOURCES

- Federal Highway Administration (FHWA). 2021. Integrating Computer-Aided Dispatch Data with Traffic Management Centers. Publication No. FHWA-HOP-20-064. Washington, DC: FHWA. <https://ops.fhwa.dot.gov/publications/fhwahop20064/index.htm>, last accessed July 7, 2023.
- FHWA. 2023. "Command and Management" (web page). <https://ops.fhwa.dot.gov/tim/command/index.htm>, last accessed July 7, 2023.
- FHWA. 2023. "Supporting Technologies" (web page). <https://ops.fhwa.dot.gov/tim/technologies/index.htm#inter>, last accessed July 7, 2023.
- FHWA. 2015. Traffic Incident Management Gap Analysis Primer. Publication No. FHWA-HOP-15-007. Washington, DC: FHWA. <https://ops.fhwa.dot.gov/publications/fhwahop15007/index.htm>, last accessed July 7, 2023.
- FHWA. 2023. "TMC Pooled-Fund Study" (web page). <https://tmc.pfs.ops.fhwa.dot.gov>, last accessed July 7, 2023.
- National Operations Center of Excellence. 2022. "Talking TIM Webinar Series" (web page). <https://transportationops.org/tim/talkingtim>, last accessed July 7, 2023.

Non-Binding Contents—Except for the statutes and regulations cited, the contents of this document do not have the force and effect of law and are not meant to bind the States or the public in any way. This document is intended only to provide information regarding existing requirements under the law or agency policies.

Disclaimer for Product Names and Manufacturers—The U.S. Government does not endorse products or manufacturers. Trademarks or manufacturers' names appear in this document only because they are considered essential to the objective of the document. They are included for informational purposes only and are not intended to reflect a preference, approval, or endorsement of any one product or entity.

FOR MORE INFORMATION on other practices or the TMC Pooled-Fund Study:

Traffic Management System Portal (NOCoE). <https://transportationops.org/traffic-management-systems-and-centers>.

TMC PFS website. <https://tmc.pfs.ops.fhwa.dot.gov>.