



Traffic Management Center (TMC) Pooled Fund Study (PFS)

Quarterly Meeting September 1, 2021





Agenda

- 1:00 PM ET** **Introductions and Review of Agenda** (John Bassett)
- 1:05 PM ET** **Update on Current TMC PFS Projects** (Alex Wassman)
- 1:15 PM ET** **Update on Other TMC PFS Activities** (Jon Obenberger)
- 1:40 PM ET** **Review and Select New Emerging Topics (1 or 2) for 2021 Project - Sharing Information and Practices on Traffic Management Systems (TMSs) Emerging Topics** (Jon Obenberger)
- 2:05 PM ET** **Review and Discussion on Proposed Topics to Consider for New Projects in 2022** (Jon Obenberger)
- 2:30 PM ET** **TMC PFS Virtual Technical Exchange** (Jon Obenberger)
- 2:55 PM ET** **Review Agenda for Upcoming TMC PFS Meetings** (Jon Obenberger)
- 3:00 PM ET** **Adjourn** (Jon Obenberger)



Update on Current TMC PFS Projects





Update on Current TMC PFS Projects

1. Analysis of TMC Staffing and Contracts

- Draft technical report submitted 3/29/21, comments sent 6/16/21; revised report expected in August.

2. Application of Predictive Analytics Into Real Time TMS Operation

- Draft literature review submitted 2/8/21, comments sent March 2021 with final anticipated in August.
- Draft annotated outline for technical report submitted 2/8/21, with revised draft expected in August.

3. TMS Asset Management Planning and Lifecycle Cost Analysis

- Final letter report synthesizing practice submitted 1/30/21.
- Comments submitted on draft annotated outline in July. Revised outline anticipated in September.

4. Inventory, Document, and Configure TMS Assets (Federal Highway Administration (FHWA) Joint Funded)

- Comments submitted on revised report outline in July; final outline anticipated in September.
- Final synthesis submitted 4/26/21; updated version anticipated in September.





Status of New Projects Being Initiated in 2021

Project Number	Project Title	Develop Proposal	Develop Statement of Work	Release Request for Proposal	Select Contractor	Initiate Work
1	Sharing Information and Practices on TMS Emerging Topics	✓	✓	October	November	December
2 and 3	Integrating and Using New Data Sources in TMS and Options for TMSs to Receive and Share Data from Multiple Sources (Note: two projects combined into one procurement)	✓	✓	October	November	December
4	Developing Multiyear Plans to Guide TMS' Strategic Direction and Future Investments	✓	August	November	December	January
5	Using Data from Social Media to Improve the Management and Operation of TMSs	✓	August	November	December	January





Update on Other TMC PFS Activities





Submit 2021 Funding for TMC PFS

- Email request, fact sheet, Lead Agency Acceptance Memo, and “Match Waiver Request Memo” sent on April 8, 2021 – Email Jon Obenberger if:
 - Email not received or needs to be resent.
 - Additional information needed to support agency making contribution for 2021. Remind agency contacts TMC PFS will be extended from 2022 to 2027.
- Follow these payment options:
 - For Federal funds: Submit Form FHWA 1575-C to State’s FHWA division office.
 - For non-Federal funds: Use pay.gov website.
- **Reference in FHWA 1575-C form** where funds are being transferred: TMC PFS (TPF-5(319)), Office of Operations Research and Development, HRD0-030, and BPAC 040.
- Contact jon.obenberger@dot.gov with any questions.





TMC PFS 2022 Annual Meeting

Date:

May 3–5, 2022

Meeting Location:

Ohio Department of Transportation (ODOT) Headquarters
1980 West Broad Street
Columbus, Ohio 43223

Hotel Location:

To be determined

Tentative Agenda

Day 1: Tuesday, May 3, 2022

- 8:00 AM** Introductions, Welcome, and Opening Remarks
- 8:30 AM** Review Preliminary Results on TMS PFS Project
- 9:15 AM** Review Preliminary Results of the TMS Data Sources Project
- 10:00 AM** Break
- 10:15 AM** Status Report on Other Current Projects
- 10:30 AM** Update on TMC PFS Activities
- 11:15 AM** Update on TMS Portal on National Operations Center of Excellence (NoCoE) Website
- 11:30 AM** Member Roundtable Discussion
- 12:00 PM** Break for Lunch
- 12:45 PM** Member Roundtable Discussion
- 2:15 PM** Break
- 2:30 PM** Member Roundtable Discussion
- 4:00 PM** FHWA Update
- 4:30 PM** Review Day 2 Agenda and Logistics
- 4:45 PM** Adjourn

Day 2: Wednesday, May 4, 2022

- 8:00 AM** Review List of Proposed New Projects (Chair and Co-Chair)
- 10:00 AM** Break
- 10:15 AM** Discuss, Prioritize, and Select New Projects (Chair and Co-Chair)
- 11:15 AM** Develop Review and Develop Concepts for New Projects (Chair and Co-Chair)
- 12:00 PM** Break for Lunch
- 12:45 PM** Review Schedule for TMC PFS Activities for 2022–2023
- 1:00 PM** ODOT Technical Presentations and Tours
- 5:00 PM** Adjourn

Day 3: Thursday, May 5, 2022 (Optional)

- 8:00 AM** Next Generation of TMSs – Overview of FHWA Projects
- 8:15 AM** Feedback - Framing the Next Generation of TMSs and Transitioning Between Versions of Systems
- 9:45 AM** Break
- 10:00 AM** Feedback - Planning and Preparing Plans for Next Generation of TMSs
- 11:45 AM** Break for Lunch
- 12:30 PM** Feedback - Assessing the Performance and Capabilities of TMSs
- 3:00 PM** Adjourn





Planning and Coordinating Annual Meeting Logistics

- October–November: Obtain FHWA approval (draft agenda)
- December:
 - Review and establish agenda during quarterly meeting.
 - Invitations sent to TMC PFS members requesting RSVP and requirements for travel reimbursement.
- February–March:
 - January–February: Members RSVP.
 - February–March: Noblis coordinates reservations and payments for members requiring air travel.
- April:
 - Hotel: Noblis arranges and identifies hotel with block of rooms and pays for members' lodging (location: in/near downtown Columbus, OH, with dining options within walking distance).
 - Ground transportation:
 - Airport to hotel: Noblis will coordinate rental cars, rides, or shared rides based on arrivals.
 - Between hotel and ODOT: Noblis will coordinate rental cars and shared rides each day.





National Operations Center of Excellence (NOCoE) TMS Portal

<https://transportationops.org/traffic-management-systems-and-centers>



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Traffic Management Systems and Centers

The purpose of this portal is to facilitate the exchange of information, experience and resources to promote opportunities to enhance the management and operation of traffic management systems (TMSs) and centers (TMCs). TMSs and TMCs are critical resources available to public agencies have to promote the safe and efficient travel on the surface transportation system. You will find on this portal planned events, technical resources and training, find information on resources being developed, suggest new research of resources to develop, or find an expert or ask your peers a question.

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2021–2022 Action Plan for TMC Portal: NOCoE and TMC PFS

1. Increase technical content on TMS portal: ***(ongoing, latest update done July 27, 2021).***
 - Add technical resources identified during TMC PFS projects.
 - Add technical resources identified during FHWA next-generation TMS projects.
2. Include promotion into other NOCoE, American Association of State Highway and Transportation Officials (AASHTO), FHWA, and TMS PFS efforts ***(ongoing)***. Market and communicate the benefits of the portal through Smart Briefs.
3. Include use of TMS portal in TMC PFS performance reporting and tracking ***(prior to September 1, 2021 meeting)***.
4. Create outreach material to support engaging additional stakeholders, including:
 - Preparing a 2-page fact sheet on TMC PFS ***(December 2021)***.
 - Preparing a PowerPoint® presentation ***(December 2021)***.
 - Developing a 1-page summary to supplement the video tour of the website to help people using the portal ***(January 2022)***.
5. Look into linking NOCoE portal with other initiatives (such as Northwest Passage, I-95 Coalition, Enterprise Pooled Study) to have a “one-stop shop” for information ***(December 2021)***.
6. Add list of questions and answers and recordings to assist users of TMS portal ***(January 2022)***.
7. Establish a list of reoccurring TMS webinar series (e.g., every other month) ***(January 2022)***.
8. Create a common logo/branding ***(March 2022)***.



Performance Tracking: TMC PFS Dashboard

Concept:

- Summarize TMC PFS activities in dashboard format.
- Capture meetings, webinars, events, documents, TMC PFS web page, and TMS portal.
- Track reach and influence of resources developed or provided.

Recent Changes:

- Added TMC PFS background information (slides 2–4; e.g., what it is, who can join).
- Added value proposition information (slide 4).
- Added challenges TMC PFS is pursuing and list of proposed projects (slides 5 and 16).
- Added four member testimonials (slides 6 and 18).
- Revised different measures and information on various slides.





Review and Select New Emerging Topics (1 or 2) for 2021 Project – Sharing Information and Practices on TMS Emerging Topics



Selecting Topics to Share Information in 2022

Purpose: Expedite identifying and sharing information on key issues and challenges agencies face with planning, designing, managing, operating, and reporting on TMS.

Objectives:

- Identify specific issues and challenges that would benefit from immediate solutions.
- Summarize published information and lessons learned with practice or solution.
- Produce fact sheet, list of resources, and PowerPoint presentation.
- Expedite developing fact sheet and PowerPoint within a 3- to 4-mo time period.
- Conduct webinar and post resources on TMS portal on NOCoE website.
- Use results from topics selected as input into possible future TMC PFS projects.

Schedule: 36 months

Budget: \$400K (\$200,000 from TMC PFS in 2021 and 2022).





Selecting Topics to Share Information in 2022 *(Continued)*

- **Cost Estimate:** \$200,000 per year to be allocated to the four topics selected.
- **Timeline:**
 - Topic 1 was selected during June 2021 meeting.
 - Topics 2–4 will be selected during September and December quarterly meetings.
 - Noblis will collect and frame information on topics selected to allow contractor to begin working on topics when contract begins in the fall.



Selecting Topics to Share Information in 2022 *(Continued)*

For each topic selected, the following steps will take place:

- Identify available technical resources.
- Develop one 2-page fact sheet.
- Develop one 30-min PowerPoint presentation.
- Create content for a future web page on topic.
- Identify two to three agencies to share practices on webinar.

FHWA will:

- Facilitate webinar hosted by NOCoE on topic (e.g., obtain agency presentations).
- Create page for topic on TMS portal on NOCoE website.
- Post agency and technical resources on web page for topic.





Selecting Topics to Share Information in 2022 *(Continued)*

Information to support consideration and selection of new topics:

- List agency addressed or mitigated.
- Obtain practice, technology, or methodology to address or mitigate need.
- Provide brief description (e.g., lessons learned, information available).
- Share anticipated outcomes of practice, technology, or methodology.
- Identify agencies implementing or pursuing topic.



Topic(s) Selected by TMC PFS Members to Advance (June Meeting)

Technology to Locate Incidents Outside TMC Surveillance Coverage: Georgia DOT

- **Need:** Inability to locate incidents and stranded motorists where TMC has no surveillance or monitoring capabilities (e.g., closed-circuit television).
- **Technology or method implemented:** Exchange of texts with stranded motorist to locate vehicle.
- **Description:** When a stranded motorist contacts 511, operator sends a text to the motorist's phone, and with a one-touch return text, the TMC can determine the vehicle's location.
- **Improvement realized:** Proven to:
 - Reduce time to locate stranded motorists from more than 20 min to just 30 s, if stranded motorist has application on a connected device and location is in area with cellular coverage.
 - Enable quicker response from service providers responding to incident.





Review of New Topics Identified to Consider and Select

1. Establish geofence locations to actively monitor, collect, and share information (e.g., Pennsylvania DOT's (PennDOT) Interactive Voice Response (IVR) 511 feature).
2. Xx
3. Xx
4. Xx

Questions:

- Do you have any new topics to consider now or in December 2021?
- What topics do we want to select?





Proposed List of New Topics to Consider and Select

1. **Establish geofence locations to actively monitor, collect, and share information (e.g., PennDOT's IVR 511 feature)**
 - **Need:**
 - Provide travelers expecting travel condition information when TMSs may not have ability to collect information, monitor conditions, or verify conditions.
 - Adapt 511 system to identify where travelers are requesting information.
 - **Technology or method implemented:** IVR translates requests for information to geofenced locations on surveillance cameras to collect needed data:
 - System includes 511 phone system, website, social media, changeable message signs (CMS), and highway advisory radio signs.
 - Technology is incorporated to establish geofenced areas to collect data for a specific location or send messages to vehicles that may enter a defined area.
 - Messages are developed and sent to geofenced area specific to data to be collected (e.g., roadway travel speeds, traffic volumes, special events, incidents (e.g., stopped traffic), adverse weather).
 - Updated reports are generated based on information collected, and new voice messages are generated for calls received in vicinity of the geofenced area.
 - Users who have downloaded the mobile app and entered the geofence will receive a push notification alert related to situation identified in message to be received.





Additional Topics to Consider and Select (September Quarterly Meeting)

1. Establish Geofence Locations to Actively Monitor, Collect, and Share Information:

- **Improvements anticipated/outcomes desired:**
 - Improved access to information travelers may need based on changing weather, roadway conditions, and incidents.
 - Increased coverage (cellular reach is greater than AM radio reach in some States).
 - Improved messaging customized to location of the specific event and more reliable.
 - Decreased cost to detect, collect, and generate information for unplanned events.
 - Improved safety and mobility from drivers having access to updated information.

Agencies implementing or pursuing similar applications include PennDOT, Utah DOT, Virginia DOT, Arizona DOT, California DOT, and Florida Turnpike.





Review of New Topics Identified to Consider and Select

Proposed New Topics to Consider and Select:

1. Establish geofence locations to actively monitor, collect, and share information (e.g., PennDOT's IVR 511 feature).
2. Xx
3. Xx
4. Xx

Questions:

- Do you have any new topics to consider now or in December 2021?
- What topics do we want to select?

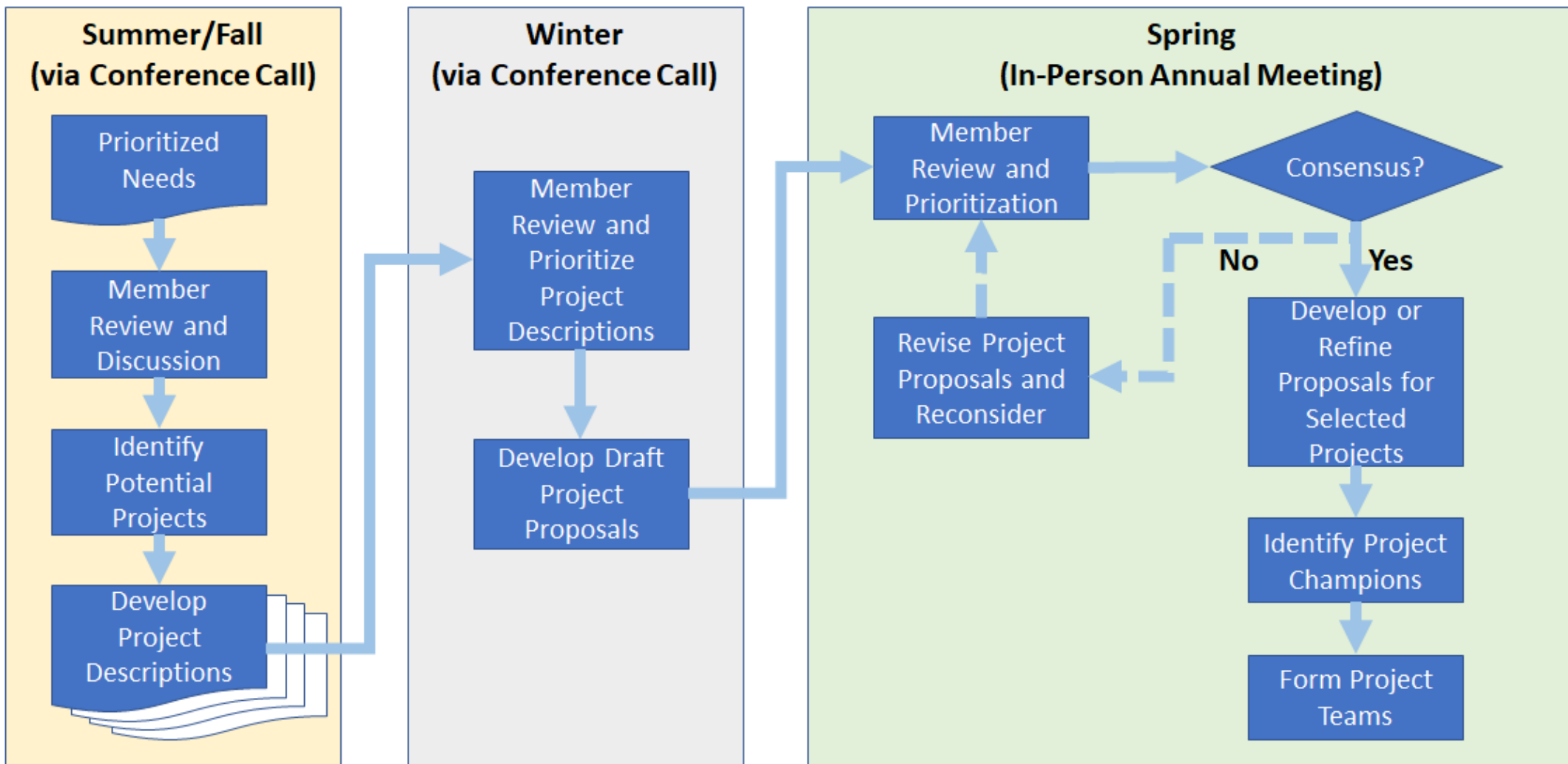




Review and Discussion on Proposed Topics to Consider for New Projects in 2022



Project Identification, Prioritization, and Selection





Schedule for Developing and Selecting New Projects for 2022

- **July 2021:** Request topics for possible new projects – **DONE**; email sent July 29, 2021.
- **August 2021:** Request topics for possible new projects and feedback on initial list of topics.
- **September 2021:** Request feedback on list of topics for possible new projects and what topics to develop for 1-page proposals.
- **October 2021:** Update list of possible new projects and develop 1-page proposals.
- **November 2021:** Request feedback on list of possible new projects and 1-page proposals.
- **December 2021:** Review 1-page proposals and identify projects to further develop concepts.
- **January–February 2022:** Update list of possible new projects and develop 2-page proposals.
- **March–April 2022:** Review list of possible new projects and initial 2-page proposals.
- **May 2022 Meeting:** Review and revise list of possible new projects, review and update 2-page proposals, and select new projects to advance in 2022.





Four Areas Identified for Possible Future TMC PFS Projects

- A. Assessing and Reporting on TMS Capabilities and Performance.
- B. Planning, Designing, Procuring, and Developing TMS.
- C. Managing and Operating TMS.
- D. TMS Staffing, Support Resources, and Capacity Building.





List of Possible New Projects

A. Assessing and Reporting on TMS Capabilities and Performance:

- A.1 Assessing the current capabilities and performance of TMSs: processes, issues to consider, potential resources to use, and practices.*
- A.2 Resources for agencies assessing current and identify future capabilities and performance.
- A.3 Process and information to benchmark current and desired future TMS capabilities and performance.
- A.4 Develop a concept, framework, process, identify needed resources, obtain industry feedback on concept, and prepare a proposal for what may be needed to develop and advance a national framework to assess and report on TMS capabilities and performance.

* Already have a 2-page proposal developed.





List of Possible New Projects *(Continued)*

B. Planning, Designing, Procuring, and Developing TMSs:

B.1 Designing, procuring, and managing a data subsystem to meet current and evolving future needs.

B.2 Developing, procuring, and managing the use of a software platform.

B.3 Creating opportunities, roles, and options for TMC PFS to enable the sharing and use of open-source or agency-owned and transferred software and application programming interfaces.

- Part 1 (concept development and proposal).
- Part 2 (implementation of concept, results assessments, and next steps recommendations).

B.4 Assessing the capabilities and identifying the needs for TMSs to share information in real time with satellite or temporary operations centers or other systems (e.g., special events, remote work zones).

B.5 Assessing the capabilities, needs, and requirements to virtually manage, operate, and share information with satellite or temporary operations centers or other systems into the planning and design of TMSs.*

* Already have a 2-page proposal developed.





List of Possible New Projects *(Continued)*

C. Managing and Operating TMS:

C.1 TMS data management plans and practices: collecting, compiling, using, and archiving data.

C.2 Resources to plan, assess, evaluate, and prepare for potential changes in TMS day-to-day management and operation (e.g., 24-7, peak period, expand service area, expanded services, staffing changes (e.g., contracted services)).

C.3 Plans, policies, procedures, issues to consider to prepare for and enable remote operation of TMSs during planned or unplanned special events.*

* Already have a 2-page proposal developed.





List of Possible New Projects *(Continued)*

D. TMS Staffing, Support Resources, and Capacity Building:

- D.1 Developing or updating multiyear plans (e.g., staffing, resource) to support managing and operating TMSs.*
- D.2 Planning, analyzing, and taking action to prepare for and enable changing the operation (e.g., part-time operation to 24/7) of the center for a TMS.
- D.3 Developing and sustaining training programs, initiatives, and activities to support the needs of staff supporting the operations center for the TMS.
- D.4 Developing concept, components, requirements, and proposal to develop a curriculum for a traffic operations technicians for a 2-yr junior or technical college.*

* Already have a 2-page proposal developed.





What Additional Potential Projects Should Be Considered?

- Based on potential project list sent prior to meeting:
 - Are there any new projects to add to the list?
 - Are there any projects that we should remove from the list?
 - Is there a need to modify any existing project titles or concept (if a description exists)?
 - Are there any other questions?
- Instructions/options for providing feedback:
 - Select Raise Hand if you would like to speak.
 - Use Chat to include comments and feedback; add your name in the Chat.





TMC PFS Virtual Technical Exchanges





Virtual Technical Exchange: Proposed Concept

Purpose: To provide a forum for members to freely exchange information on a topic of interest, without the presence of consultants or vendors.

Administration:

- Calls would occur quarterly.
- Topics would be selected in advance (during quarterly TMC PFS meetings).
- Only one topic will be discussed each meeting.
- TMC PFS member will champion each topic selected and prepare required presentation to facilitate the exchange during the meeting.
- FHWA will schedule meetings, coordinate with PFS member agency point of contact preparing presentation for topic selected, facilitate the meetings, and provide virtual meeting capabilities.





Virtual Technical Exchange *(Continued)*

Proposed Agenda: (60-min meeting)

- Introductions and agenda review (5 min).
- Feedback on technical topic:
 - Presentation framing topic (about 8 slides, member point of contact) (10 min).
 - Questions to obtain feedback and engage attendees (about 1–3 slides) (2 min).
 - Round-robin questions/feedback (28 min).
- Questions and dialog on topics members identify (15 min).





Virtual Technical Exchange *(Continued)*

Proposed Topics to Consider:

1. Traffic cameras and data requests (i.e., Freedom of Information Act (FOIA)).
2. Protocol for displaying messages during inclement weather and risks with not displaying messages.
3. Peak hour traffic pattern changes post-COVID.
4. Decision support for TMS.
5. TMC maintenance responsibilities (e.g., dispatching, data logging).
6. TMS future needs.
7. Partnerships with emergency management stakeholders (EMS) and use of wireless emergency alert (WEA) systems.
8. Display of travel times on CMS.





Virtual Technical Exchange *(Continued)*

- Is there support to conduct virtual technical exchanges?
- Should these exchanges be conducted quarterly?
- If yes, when should the first one occur (e.g., first Wednesday at noon on second or third month)?
 - November 3, 2021, at 1 PM ET.
 - February 2, 2021, at 1 PM ET.
- Are there any suggested changes to the proposed agenda?
- What topics should be selected for the first or second virtual technical exchange?





Virtual Technical Exchange *(Continued)*

Select one or two topics for first or second virtual exchange:

1. Traffic cameras and data requests (i.e., FOIA).
2. Protocol for displaying messages during inclement weather and risks with not displaying messages.
3. Peak hour traffic pattern changes post-COVID.
4. Decision support tools for TMSs.
5. TMC maintenance responsibilities (e.g., dispatching, data logging).
6. TMS future needs.
7. Partnerships with EMS and use of WEA systems.
8. Display of travel times on CMS.





Review Agenda for Upcoming TMC PFS Meetings





Next Quarterly Meeting

- **Date/Time:** December 1, 2021, at 1:00–3:30 PM ET
- **Agenda:**
 - Provide Introductions and Review of Agenda
 - Update on Current TMC PFS Projects
 - Update on Current TMC PFS Activities
 - Review TMC PFS Dashboard
 - Provide Feedback and Prioritize Topics for Further Concept Development—New 2022 Projects
 - Finalize Agenda for May Annual In-person Meeting
 - Select Topics for Upcoming Virtual Technical Exchanges
 - Select Topics for *Emerging Topics* Project
 - Review Agendas for Upcoming TMC PFS Meetings (March 2022 and May 2022)





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