

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Iowa Department of Transportation

INSTRUCTIONS:

Project Managers and/or research project investigators should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.

Transportation Pooled Fund Program Project # TPF-5 (435)	Transportation Pooled Fund Program - Report Period: Quarter 1 (January 1 – March 31, 2024) X Quarter 2 (April 1 – June 30, 2024) Quarter 3 (July 1 – September 30, 2024) Quarter 4 (October 4 – December 31, 2024)	
Project Title: Aurora Program		
Project Manager: Tina Greenfield	Phone: 515-233-7746	E-mail: tina.greenfield@dot.iowa.gov
Project Investigator: Zach Hans	Phone: 515-294-8103	E-mail: zhans@iastate.edu
Lead Agency Project ID:	Other Project ID (i.e., contract #): Addendum 731	Project Start Date: January 1, 2020
Original Project End Date: December 31, 2021	Current Project End Date: 12/31/2024	Number of Extensions:

Project schedule status:

On schedule
 On revised schedule
 Ahead of schedule
 Behind schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Total Percentage of Work Completed
\$2,240,056	\$1,529,776	

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
\$196,252	N/A	

Project Description:

The Aurora Program is a consortium of public agencies focused on collaborative research, evaluation, and deployment of technologies for detailed road weather monitoring and forecasting. Members seek to implement advanced road weather information systems (RWIS) that fully integrate state-of-the-art roadway and weather forecasting technologies with coordinated, multi-agency weather monitoring infrastructures; ultimately lessening adverse impacts of inclement weather.

Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.). These efforts are identified below.

Program Administrative Activities:

A primary administrative activity this quarter was the 2024 facilitating Board selection of ideas to move to proposal stage. The results of a Qualtrics idea interest survey were prepared and the Board selected eight ideas to move to the proposal stage. InTrans coordinated with the corresponding eight research teams regarding the proposal requirements and submission deadlines. Proposals were distributed to the Aurora Board for review prior to the Spring 2024 meeting. InTrans also coordinated with the eight research teams to make five-minute proposal presentations during the Spring 2024 meeting. After the presentations, the Board discussed the proposed projects, ranked them and selected one project for funding. InTrans later corresponded with all research teams.

Reviewed financial details particularly related to meeting costs, publication costs and available funding for research.

Managed the Aurora website, including updating news, events, current projects, completed projects, pictures and Friends of Aurora. An ongoing task is to finalize the RFP and specifications page.

Managed the Aurora email list. This included changing and updating representatives and alternates.

Addressed request for an in-person presentation to AASHTO Committee on Maintenance Meeting during a Maintenance Operations Technical Working Group Breakout session. The presentation would have to be made by someone already attending the meeting. None of the recently completed projects appeared to be a good fit for the group.

At the request of NCAR, distributed announcement for American Meteorological Society Automated Vehicles & Meteorology Summit to the Aurora Board.

At the request of MDSS Pooled fund, distributed MDSS liquid deicer survey to the Aurora Board.

Coordinated with the Iowa DOT regarding the next phase of the Aurora Pooled fund, addressed various member state questions regarding this (with assistance from Iowa DOT) and distributed announcement when it was made available (<https://www.pooledfund.org/Details/Solicitation/1617>).

Addressed questions from Climavision regarding attendance at various meetings.

Received email from FHWA regarding grant opportunities, which will be distributed to the Board.

Addressed Friends of Aurora question from WSP.

Added Moove AI as a Friend of Aurora.

Facilitated intra-Board communication regarding "RWIS Dashboard" look and content.

Facilitate Meetings and Conference Calls:

A primary meeting-related activity this quarter was organizing and holding the Spring 2024 Meeting in Boulder, Colorado. This included finalizing the agenda, running the meeting, coordinating group meals, providing transportation to meeting-related field trips and distributing minutes following the meeting. During this meeting, the Board also evaluated eight proposals for 2024 and selected one for funding.

Hosted Board member 60-Minute monthly conference calls on the following dates and requested topics from Board.

April 11, 2024. Topics included: Spring Meeting, Nira Workshop, Fall Meeting, Friends of Aurora Update and Idea Voting Discussion.

May 9, 2024. Topics included: Spring Meeting, Nira Workshop, 2024 Proposals, New Aurora Pooled Fund Phase, Fall Meeting, National Winter Maintenance Peer Exchange (Denver, Fall 2025), Other Items (MDSS Liquid Deicer Survey, Vue Robotics, Moove.ai)

June 13, 2024. Topics included: Spring Meeting, New Aurora Pooled Fund Solicitation, Project Updates, Fall Meeting, MooveAI Presentation.

Based on Board input during the Spring 2024 meeting, began investigating travel options, costs and possible venues for Fall 2024 meeting in Madison, Wisconsin and Spring 2025 meeting (tentatively, the week of May 12, 2025) in Anchorage, Alaska.

Secured venue for Fall 2024 meeting in Madison, Wisconsin for October 22 to 24, 2024. This will be a joint meeting with Friends of Aurora. Coordinated regarding the current number of FOA and meeting layout.

Attended National Winter Maintenance Peer Exchange planning meeting on May 13, 2024.

Shared monthly meeting invitation with alternate member state representatives.

Coordinated various project-related meetings.

Processing Travel Requests, Travel Reimbursements, and Meeting Expenses:

Processed travel expense reimbursement requests for Spring 2024 meeting. Paid expenses for Spring 2024 venue.

Began establishing contract with venue for Fall 2024 meeting.

Project-Specific Activities:

Addressed project invoices, coordinated project-related meetings.

Tracked project status and prepared a summary for recently completed and active projects.

Distributed quarterly reports to project teams and requested reports from researchers if/when not provided.

Reviewed and approved invoices and submitted to the Iowa DOT for payment.

As noted previously, facilitated Aurora Board review and selection of ideas for proposals, presentations by research teams and final project selection (during Spring 2024 meeting).

Addressed question from FHWA regarding one of the eight research proposals.

Coordinated with Iowa DOT regarding ideal final end date for all research projects within this current pooled fund cycle (December 31, 2026).

Coordinated with Iowa DOT regarding research project indirect cost rates.

2021-05 Optimal RWIS Sensor Density and Location Ph IV [University of Alberta]

2022-08 Integration of Connected Vehicle and RWIS Technologies [InTrans]

- Received final whitepaper.
- Submitted final whitepaper to publications for review, editing and tech transfer creation.
- Published final whitepaper and tech transfer.
 - Project page: <https://aurora-program.org/research/completed/integration-of-connected-vehicle-and-rwis-technologies/>
 - White Paper: https://intrans.iastate.edu/uploads/2024/06/integration_of_CV_and_RWIS_technology_w_cvr.pdf
 - T2: https://intrans.iastate.edu/uploads/2024/06/integration_of_CV_and_RWIS_technology_t2.pdf

2022-10 Automating Variable Speed Limits Using Weather, Traffic, and Friction Data [NCAR, WTI, Rutgers]

- Held project update (from NCAR) during the Spring 2024 meeting.
- Requested update from Rutgers regarding project progress.
- Held project update meeting with Rutgers on June 10, 2024.

2023-01 Real User Friction for Winter Maintenance Operation and Evaluation [Nira Dynamics]

- Coordinated with the research team regarding report submission.
- Held final project update during the Spring 2024 meeting.
- Distributed draft project report to the project team for review and feedback.
- Submitted project report to publication for review, editing and tech transfer creation. Formal publication is anticipated next quarter.

2023-03 Road Weather Management using Connected Vehicle technology [WSP]

- Project update was provided during Spring 2024 meeting.
- Held final meeting with WSP and project team on June 17, 2024.
- Received and distributed Task 3 Concept of Operations draft to the project team.
- Received "Task 5 Concept of Operations Final Document", which will be submitted to publications next quarter.

2023-02 An Intelligent Human-Centric Communication System for Adverse Weather and Road Conditions [University of Iowa]

- Requested update regarding project progress.
- Held project update meeting with research team on June 4, 2024.

2023-04 Standardized Framework for Winter Weather Road Condition Indices

- Received Task 1 literature review and distributed it to the project team.
- Received Task 2 survey results and will distribute to the project team early next quarter.

Anticipated work next quarter:

Program Administrative Activities:

Continue Aurora website updates.

Manage budget.

Update the Aurora Charter, Work Plan and Associate Members, as needed.

TPF Program Standard Quarterly Reporting Format

Address requests, as needed.

Coordinate with Clear Roads regarding 2025 Peer Exchange.

Manage Friends of Aurora.

Distribute grant opportunities.

Finalize RFP and specifications webpage.

Facilitate Meetings and Conference Calls:

Continue monthly Board meeting calls to generate research ideas, discuss important issues and have vendor presentations.

Continue preparing for Fall 2024 meeting and Spring 2025 meeting, including contracting with venues.

Schedule and host project meetings for existing and new projects.

Invite Friends of Aurora presentations during monthly meetings.

Reach out to Friends of Aurora for participation in Fall 2024 meeting.

Coordinate with Clear Roads and AASHTO regarding 2025 Peer Exchange.

Processing Travel Requests, Travel Reimbursements, and Meeting Expenses:

Book flights for Fall 2024 meeting.

Process outstanding travel reimbursement requests, if needed.

Estimate anticipated Fall 2024 onsite meeting costs and summarize Spring 2024 meeting costs.

Project-Specific Activities:

Schedule and host project meetings for existing and new projects.

Track project status and timelines.

Request quarterly reports from research teams.

Distribute project materials/updates to project teams.

Maintain list of project champions and team members.

For all current projects:

- Facilitate project activities as needed.
- Continue to receive and distribute project updates.
- Coordinate updates, if necessary.
- Review invoices.
- Edit and publish pertinent final reports and t2.

2021-05 Optimal RWIS Sensor Density and Location Ph IV

- Hold final project meeting.
- Obtain draft final report and distribute it to project team for review.
- Have publications group edit draft project report and t2 and share with research team for feedback.

2022-10 Automating Variable Speed Limits Using Weather, Traffic, and Friction Data

- Track project progress.
- Hold project update meeting as necessary.

2023-01 Real User Friction for Winter Maintenance Operation and Evaluation [Nira Dynamics]

- Publish final report and tech transfer.

2023-03 Road Weather Management using Connected Vehicle technology [WSP]

- Publish final report and tech transfer.

2023-02 An Intelligent Human-Centric Communication System for Adverse Weather and Road Conditions [University of Iowa]

- Hold project update meeting as necessary.

2023-04 Standardized Framework for Winter Weather Road Condition Indices [Iowa State University]

- Hold project update meeting as necessary.

2024-01 Roadway Friction Forecasting using Stationary and Mobile Friction Data [NCAR]

- Hold project kick off meeting.

Significant Results:

2024 idea solicitation, including development, distribution, addressing questions from researchers, organizing and archiving the submitted ideas (29 were submitted), preparing and distributing a Qualtrics idea interest survey form Aurora members.

Held Spring 2024 meeting.

Secured venue for Fall 2024 meeting and possible date for Spring 2025 meeting.

Investigated meeting expenses, publication costs and available budget for research.

Continued monthly Board meeting calls.

Added to Friends of Aurora membership.

Had one project report published and two additional projects completed, currently under publication review and editing.

Distributed several interim project documents.

Circumstance affecting project or budget:

Recent meeting and publication expenses.