Joint Simulation Subcommittee ACP80(1)

Sponsor Committees:

ACP20: Freeway Operations

ACP25: Traffic Signal Systems

ACP40: Highway Capacity and Quality of Service

ACP50: Traffic Flow Theory and Characteristics

ACP55: Traffic Control Devices

ACP80: Traffic Simulation

AEP40: Transportation Network Modeling

AMS10: Air Quality and Greenhouse Gas Mitigation

March 5, 2021 | 9:30 – 11:00a CST Online | Zoom Platform



2021 Spring Liaison Meeting

- A. Welcome and Introductions Chris Melson
- B. Summary of SimSub Annual Meeting Chris Melson, John Shaw
- C. HCM User Feedback Process and Forum Bastian Schroeder, David Stanek
- D. NOCoE Resources: Case Studies, Forum,Research Idea Submission Patrick Son,Adam Hopps
- E. Research Needs Statements (RNS) Process and Timeline *George List*
- F. Ways to Provide Liaison Updates *Chris Melson, ALL*
- G. Update on TSSM Review Process Mohammed Hadi, Sanhita Lahiri
- H. Wrap Up Chris Melson

Name
Affiliation
Liaison
Interest in SimSub

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SimSub Goals

- Develop, maintain, or otherwise leverage existing, mechanism(s) to collect user needs and related input
- Recommend actions and venue to address user needs
- Develop, maintain, host, or otherwise contribute to existing, "living" library of reference material
- Provide forum for information exchange and foster joint efforts
- Maintain comprehensive liaison structure

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User Needs Task Group

Resources Task Group

> Liaison/Outreach Task Group

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DISCUSSION FORUM

This area is intended for interaction among HCM users to exchange information and ideas on applying HCM procedures. When issues rise to the level that requires formal response from the TRB Committee on Highway Capacity and Quality of Service, they should be submitted for Interpretation Request.

SUBFORUM	LATEST ACTIVITY
Technical Support Run into problems with the website? Have a suggestion? Let us know here!	RE: Streetval Expired June 30, 2017 by Tyrone Scorsone
General Discussion General questions, applications, and questions regarding the HCM 6th Edition	RE: Freeway Weaving Segments by Bill Sampson
Questions & Clarifications Having trouble with something in the HCM 6th Edition? Need further information to clarify a position? Conversations here will help create the ongoing errata for the manual found in the Interpretations page on this website.	RE: Gap Acceptance parameters (critical and follow- up headway) by Paul Ryus

Highway Capacity and Quality of Service Committee (ACP 40)
User Feedback

Dave Stanek, PE – Fehr & Peers

Bastian Schroeder, PhD – Kittelson & Associates

HCQS Committee

- The Highway Capacity and Quality of Service (HCQS) Committee (ACP40) is concerned with investigating the physical and non-physical factors which affect capacity, traffic flow, comfort, convenience, and safety; and is responsible for developing computational techniques for quantifying the effect of these factors on capacity, traffic flow; and quality of service.
- HCQS organizes new research for and prepares updates to the Highway Capacity Manual (HCM)
- HCM has 3 print volumes and a 4th online volume



HCQS Committee hcqstrb.org

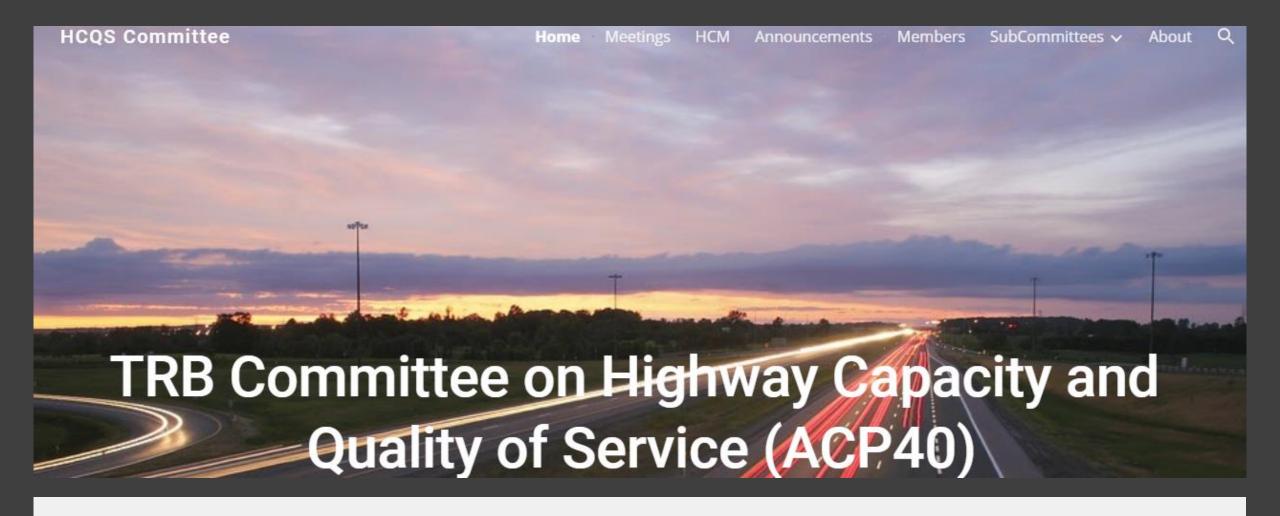
HCQS Websites



HCM Development hcm2010update.kaiproject.com



HCM Volume 4 hcmvolume 4.org



HCQS Committee

- Meetings and Announcements
- HCM information
- Members
- Subcommittees

Home

Welcome to the HCM 2010 Major Update Development Website.

The purpose of NCHRP Project 03-115: Major Update of the 2010 Highway Capacity Manual (HCM) is to support, to the extent practical, the performance measure requirements of MAP-21, travel time reliability analysis, and ATDM strategy evaluation, while maintaining the HCM's support of more traditional system planning, design, and operations activities. HCM chapters will need to be revised to incorporate the research related to these and be adopted by the Transportation Research Board's Committee on Highway Capacity and Quality of Service (HCQS).

This website is intended to serve as a means of communication between the production team, the oversight panel, and committee reviewers during the development of the HCM 2010 Major Update. Its principal purpose is to provide all interested parties a central source for up-to-date information about the project. A significant section of the site is devoted to posting draft HCM chapters and other research products for review.

Access to the site is restricted to members and friends of the HCQS Committee. If you already have a user account, please sign in below, or <u>Retrieve Your Password</u>. To request access to the site, please email <u>Matt Kittelson</u> with an explanation of why you would like access.

Email	
Password	
	Sign In

© 2021 Kittelson & Associates, Inc. Questions / Comments? Please contact us here.

HCM Development

- Post working papers, draft chapters, etc.
- Reviewers provide comments to authors
- Authors respond to comments
- Restricted to HCQS members and friends

HCM Development – Chapter Access

Documents

Mv Account | Reviewers |

Administration

Logged in as BSchroeder@Kittelson.com Log out?

Posted Documents

Click on a document title to download, view details, and provide comments.

New Document

Chapter 38 - System Analyses Commenting closed

NCHRP 15-57 draft final report Commenting disabled

Chapter 26 - Freeway and Highway Segments Supplemental v6.2 (CAV) Final Draft Commenting closed

TRB paper on freeway CAV modeling Commenting disabled

Chapter 38 - System Analysis vote draft Commenting closed

Chapter 1 - HCM User's Guide v6.1 Commenting closed

Chapter 9 - Glossary and Symbols v6.1 (September 2020) Commenting closed

Chapter 26 - Freeway and Highway Segments Supplemental v6.2 (CAV) vote draft Commenting closed

Chapter 38 - Network Analysis vote draft Commenting disabled

Chapter 31 - Signalized Intersections: Supplemental v6.1 (CAV) Commenting closed

Working paper on signalized intersection CAV modeling Commenting disabled

Chapter 33 - Roundabouts: Supplemental v6.1 (CAV) Commenting closed

Working paper on roundabout CAV modeling Commenting disabled

HCM Volume 1 v6.1 draft changes for consistency Commenting closed

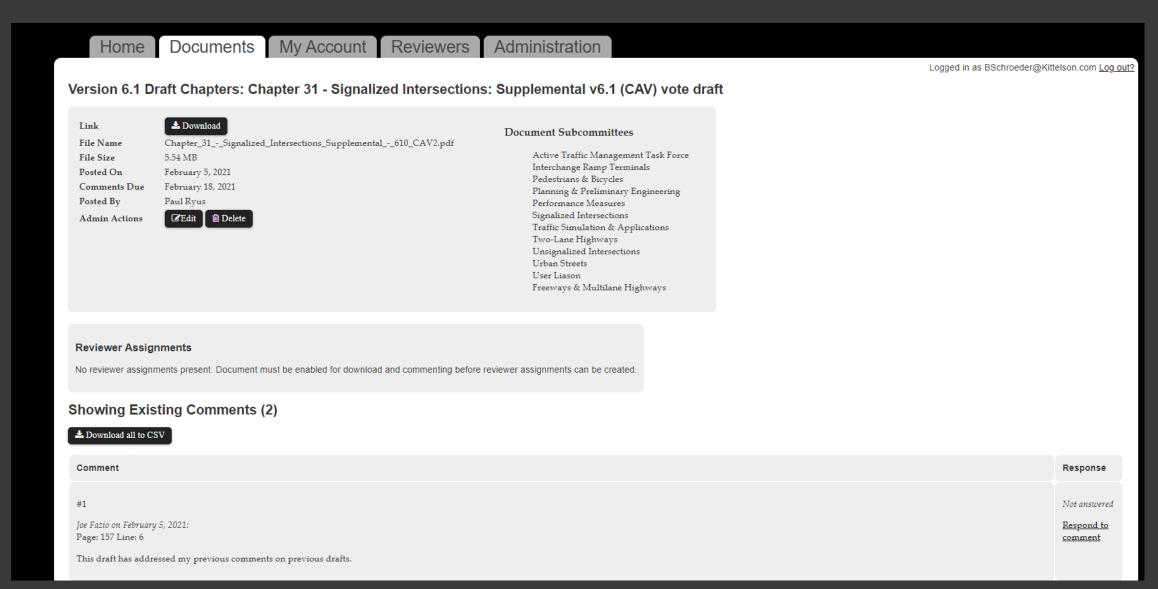
Chapter 1 - HCM User's Guide v6.1 vote draft Commenting closed

Chapter 9 - Glossary and Symbols v6.1 vote draft (January 2021) Commenting closed

Chapter 31 - Signalized Intersections: Supplemental v6.1 (CAV) vote draft Commenting closed

Chapter 33 - Roundabouts: Supplemental v6.1 (CAV) vote draft Commenting closed

HCM Development – Comment Tracking





HIGHWAY CAPACITY MANUAL

6TH EDITION | A GUIDE FOR MULTIMODAL MOBILITY ANALYSIS

VOLUME 4: APPLICATIONS GUIDE

Supplemental Chapters Errata & Updates Technical Reference Library Applications Guides FAQs Discussion Forum HCM 2010

This is Volume 4 for the HCM 6th Edition, first published in 2016. To access Volume 4 for the HCM 2010, please visit hcm2010.org.

WHAT IS HIGHWAY CAPACITY MANUAL VOLUME 4?

The HCM consists of three printed volumes (Volumes 1-3) that can be purchased from the Transportation Research Board. Volume 4 is a free online resource that supports the printed manual. It includes:

Supplemental chapters 25-37, providing details of the methodologies described in the Volume 1-3 chapters, example problems, and other

HCM Volume 4

- HCM Chapters 25-37 (supplemental chapters)
- Errata, Updates, Reference Library, and Application Guides
- FAQs
- Requires (free) registration

HIGHWAY CAPACITY MANUAL

6TH EDITION | A GUIDE FOR MULTIMODAL MOBILITY ANALYSIS

VOLUME 4: APPLICATIONS GUIDE

Supplemental Chapters

Errata & Updates

Technical Reference Library

Applications Guides

FAQs Discussion Forum

HCM 2010

Follow @highwaycapacity

DISCUSSION FORUM

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Technical Support

Re: Streetval Expired June 30, 2017

Run into problems with the website? Have a suggestion? Let us know here!

by Tyrone Scorsone

HCM Volume 4
Discussion Forum

- Link to submit an Interpretation Request
- Subforums: Technical Support, General Discussion, and Questions & Clarifications

Considerations for SimSub and TSSM

- Committee Business and Public-Facing Website should be different from TSSM working website
- Need mechanism for posting chapters, gathering review comments, and responding to comments
- Consider web presence of TSSM with login feature to get to comment tracking website
- Assure dedicated resources (or contractor) to maintain website and track comments



Questions and Discussion



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PRESENTATION OUTLINE

- 1. NOCoE Partners and Team
- 2. TSMO Awards
- 3. TSMO Resource Connect
- 4. Research in Operations Database
- 5. Workforce Development
- 6. Q&A



NOCoE Founding Partners









NOCoE Team

Patrick SonSarah AbelNiloo ParvinashtianiAdam HoppsThomas KernManaging DirectorTechnical Program
ManagerTechnical Services
AssociateCommunications and
Program ManagerSenior Consultant
Program Manager





2020 TSMO Awards







TSMO CHAMPION



ISMO CHAMPION



Tony Kratofil, P.E. Chief Operating Officer and Chief Engineer Michigan Department of Transportation

SIGGRAPHY FOR TONY KRATOFIL

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ROPEMBERS ONE



Faisal Saleem ITS Branch Manager & MCDOT SMARTDrive Program Manager

BIOGRAPHY FOR FAISAL SALEEN

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3rd Annual NOCoE TSMO Award Categories

1. Best TSMO Project

We want to hear about your newest project that demonstrates the value of TSMO

3. Work Zones Using TSMO

We want to hear about how TSMO enhanced your work zone management efforts to improve safety and mobility.

2. Agency Improvement:

How did you use Capability Maturity Model Elements to improve your agency's TSMO capabilities?

4. Project Selection and Prioritization for TSMO

How are you ensuring that TSMO is incorporated into your capital infrastructure/improvement projects process focusing on project selection and prioritization policies and business processes?







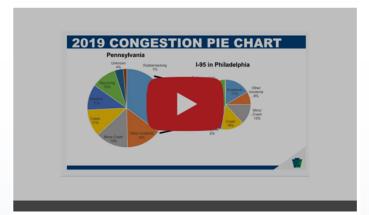


THE 2021 TSMO AWARD WINNERS HAVE BEEN ANNOUNCED!



Best TSMO Project: Pennsylvania DOT

PennDOT's real-time incident and congestion information allows for actionable decisions to keep their highways safer for the traveling public.



Case Study: TSMO Performance Program and **Traffic Operations Analytics Tool**

by Pennsylvania Department of Transportation

IN THIS CASE STUDY YOU WILL LEARN:

- · How PennDOT used PennDOT's Crash Reporting System (CRS) and Road Condition Reporting System (RCRS), with a traffic speed probe data from INRIX, and crowd sourced incident data from Waze to help make TSMO decisions.
- · How the data aggregation increased the accuracy of incident timeline milestones and allowed for adding a new measure to the traditional incident timeline, "incident influence time" which is a measure of the duration it takes for the road to get back to normal operating condition after an incident occurs.
- · How the application's design has allowed for





the creation of a "real time" incident timeline outlining incident congestion ebbs and flows.

Agency Improvement: North Carolina DOT

North Carolina DOT built a traffic incident management (TIM) training track to provide a lifelike classroom to increase incident response time, improve air quality, and help save the lives of responders.



Case Study: Traffic Incident Management (TIM) **Training Track**

by North Carolina Department of Transportation

IN THIS CASE STUDY YOU WILL LEARN:

- How traffic incident management (TIM) response training can be done safely in a test track facility
- . How a test track can provide training in a multitude of physical features encountered in all three regions of the North Carolina: coastal, piedmont, and mountain, as well as incorporate a broad range of physical characteristics that allow agencies to practice various incident work zone applications and vehicle maneuvers
- How the test track education and training can reduce incidence clearance times.









PennDOT's Regional Operations Plans initiated collaboration and long-term planning activities to improve the safety and mobility of their travelers.



Case Study: Regional Operations Plans

by Pennsylvania Department of Transportation

IN THIS CASE STUDY YOU WILL LEARN:

- · How Regional Operations Plans were developed with cooperation with stakeholders including MPOs and RPOs, FHWA, PennDOT Central Office & District Planning & Programming staff, PennDOT District Safety, Design, and Construction Engineers, PennDOT County Maintenance Departments, the Pennsylvania Turnpike Commission, as well as local emergency responders, transit agencies, universities, and the local National Weather Service office
- . How the Regional Operations Plans play an important role in regional Long- Range Transportation Plan (LRTP) and

Transportation Improvement Plan (TIP) processes by helping to secure future capital funding for projects incorporating TSMO solution

. How using a wide range of stakeholders for the Plans resulted in strong relationships with planning partners and buy- in and funding support.



Iowa DOT's proactive work zone management strategies improve the safety of the traveler and reduce the effects of delays from work zones.



Case Study: Comprehensive Work Zone Program

by Iowa Department of Transportation

IN THIS CASE STUDY YOU WILL LEARN:

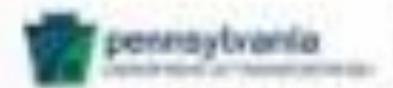
- · How lowa DOT developed a detailed, fiveyear Work Zone Management Service Layer Plan to clarify the tactical areas in which the Department should apply its limited time and resources.
- · How the plan incorporates resources for determining Traffic Critical Projects (TCP) and provide resources for mitigation countermeasures that integrated into the project Design Manual
- · How lowa DOT successfully monitors and provides feedback using Real-time Performance Monitoring, Flex- Enforcement, Smart Arrow Boards, and Iowa Work Zone



Data Hub, a Work Zone Council, Annual Work Zone Safety Awards and Improved Data Driven Work Zone Process Review Procedures



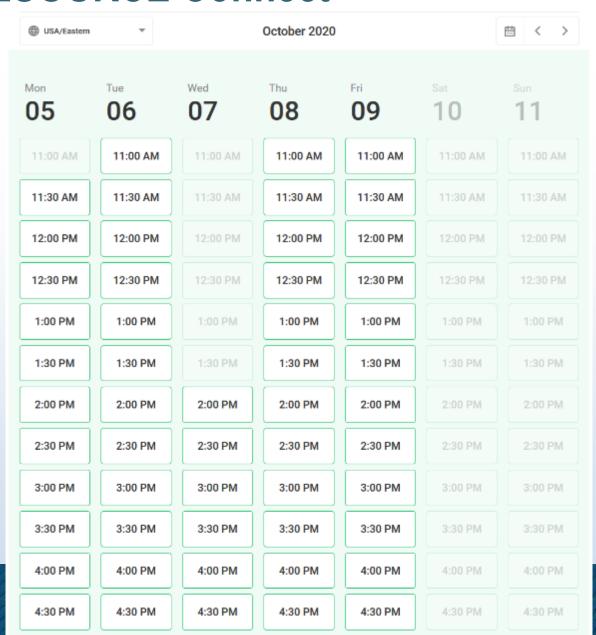
THE WINNER OF THE 2021 TSMO AWARD FOR BEST TSMO PROJECT IS





NEW WAY TO Connect – TSMO RESOURCE Connect

- Looking for resources on any topic of TSMO
- Looking for an expert on a particular TSMO topic
- Researching new technologies or initiatives
- Learning more about an existing initiative that NOCoE is involved in
- Anything TSMO
- https://transportationops.org/tsmo-resource-connect



Research in Operations Database https://research.transportationops.org/

ᆙ Created	Focus Area	Idea	Rating	Status
08/06/2020	ITS Technologies	Machine Vision Interface with Light Emitting Diode (LED) Traffic Control Device Displays	****	Not Funded
08/04/2020	Transportation Systems Management & Operations	Use of Cloud and Software as a Service for Traffic Management Systems	****	Not Funded
08/04/2020	Transportation Systems Management & Operations	Applying Artificial Intelligence and Machine Learning Advances for Freeway Operations	****	Not Funded
07/31/2020	Freight/Commercial Vehicle Management and Operations	Permit Violations -Hauling permits	****	Not Funded
07/31/2020	Freight/Commercial Vehicle Management and Operations	Interstate Information Sharing of State Truck Regulatory Requirements	****	Not Funded
07/31/2020	ITS Technologies	Personal Protective Equipment for Individuals Working with Automated Vehicle Systems	****	Not Funded
07/31/2020	Emergency Management/Transportation Security	COMMUNICATING POLICE DIRECTIVES TO AUTONOMOUS VEHICLES: PROOF-OF-CONCEPT AND FULL- DEMONSTRATION	****	Not Funded
07/30/2020	Traffic Analysis and Management Tools	Quantifying the Safety Effects of Driver Assistive Systems	****	Not Funded
07/29/2020	ITS Technologies	Traffic Sensor Testing Methodology and Evaluation Program	*****	Not Funded
07/24/2020	Transportation Systems Management & Operations	Evaluating the Impacts of Real-Time Warnings and Variable Speed Limits on Safety and Travel Reliability during Weather Events	****	Not Funded
07/22/2020	Freight/Commercial Vehicle Management and Operations	State Harmonization of Trucking Requirements	****	Not Funded



The TSMO Workforce Development Guidebook

(What it is and what it is not)



GOAL
Assist you in creating meaningful TSMO-related positions that will help advance your organization's maturity



So where do I find?



Recruiting a TSMO Workforce

Model TSMO Position Descriptions

NOCoE Website

Developing a TSMO Workforce

TSMO Workforce Retention

https://transportationops.org/workforce



If we don't think about transferring knowledge everyday, we are losing.



Knowledge Transfer is Everyday...



Engage Us: Online or Social

Adam Hopps
Communications Director

ahopps@transportationops.org



www.transportationops.org
TSMO Resource Connect



@NOCoEOps



Linkedin.com/company/nocoe



Facebook.com/NOCoEOps



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Funding TSSM Enhancements

SimSub Meeting March 5, 2021

George List, NC State

Overview

- Objective: Identify funding sources to further the quality of the TSSM (and other simulation-related topics)
- Funding sources: NCHRP, pooled-fund studies, FHWA, DOE, USDOT research centers program, state research programs, voluntary efforts, other
- This focus: the NCHRP funding process
 - Direct TRB involvement
 - Committee research needs statements
 - Interactions with AASHTO/SCOR and other federal organizations

AASHTO SCOR

AASHO

Transportation News ~

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Special Committee on Research and Innovation

AASHTO Liaison

Glenn Page, Associate Program Director, Project Delivery gpage@aashto.org

RESEARCH AND INNOVATION

Home - Research and Innovation Special Committee

AASHTO Committee Resources

About R&I and RAC

Regional RAC Page

R&I Membership Roster

RAC Membership Roster

RAC New Member Guide

State DOT Research

Meetings

Meeting Notes

Peer Exchange Program

Peer Exchange Reports

Peer Exchange Reports Topics

Programs

RAC Task Forces

Administration

Coordination and Collaboration (CCTF)

Program Management and Quality (PM&Q)

Value of Research (VOR)

RAC Surveys

Resources for Research Managers

FAQ

Contacts

AASHTO Standing Committee on Research (SCOR) Strategic Plan 2015-2020

(PDF Download)

Prepared for: AASHTO Standing Committee on Research

July 1, 2015

Acknowledgments

This document was prepared for the AASHTO Standing Committee on Research by the SCOR Strategic Plan Update Task Force, with support from the National Cooperative Highway Research Program (NCHRP).

Members:

John Halikowski (co-Chair), Arizona Department of Transportation

Skip Paul (co-Chair), Louisiana Department of Transportation and Development

Darryll Dockstader, Florida Department of Transportation

Jim McDonnell, AASHTO

Anne Ellis, Arizona Department of Transportation

Jack Jernigan, FHWA

Calvin Leggett, North Carolina Department of Transportation

Tommy Nantung, Indiana Department of Transportation

Leni Oman, Washington State Department of Transportation

Bob Sack, New York Department of Transportation Steve Takigawa, California Department of Transportation

Michael Trentacoste, FHWA

With support from Christopher Hedges and Christopher Jenks, NCHRP/TRB staff.

AASHTO Special Committee on R&I

AASHO

Transportation News 🗸

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Meetings ~

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Welcome to the R&I/RAC Website

This website is a resource for the American Association of State Highway and Transportation Officials (AASHTO) Special Committee on Research and Innovation (R&I) and its Research Advisory Committee (RAC). It acts as a reference tool for members and documents operational procedures, membership rosters, coming events, links to other sites, and current committee activities. The site serves as an orientation tool for new RAC and R&I members, providing background information and quickly showing new members how to become full participants in committee activities.







Yearly Cycle

Problem Statements Due Nov. 1

Every July, AASHTO R&I invites the submission of research problem statements from state DOTs, AASHTO committee and council chairs, and FHWA. Due November 1 each year, problem statements should explain why the research represents an immediate need. The proposed research should have a high probability of success and should not duplicate other research.

RESOURCES:

Problem Statement Template Resources on Writing Problem Statements

Evaluation and **Program Formulation**

From November through February, NCHRP receives comments on the problem statements from AASHTO. FHWA, and NCHRP staff. In February, NCHRP sends these comments and the problem statements to AASHTO R&I and RAC for review. Those committees rate each of the candidates according to need, value, and appropriateness. The results help establish a preliminary ranking to

A YEAR OF **NCHRP**

Program Approval

At its April meeting, R&I allocates funds for new and continuation projects. Once the program is developed, NCHRP sends the selected program to AASHTO; AASHTO prepares a ballot and asks the AASHTO Board of Directors for approval. Each project must receive a yes vote from at least two-thirds of the members of the Board of Directors and must be approved by FHWA and accepted by the National Academies.

Panel Formulation

structure the discussion of

meeting.

RESOURCES:

Panel Nominations

candidates by R&I at its April

Each research project is assigned to a volunteer panel of experts who provide technical guidance and counsel throughout the research and reporting phases. Panel members do not act as consultants or advisors to project investigators, may not submit proposals for research, and serve without compensation. Panel members are drawn from many disciplines, with dependence on practitioners from state DOTs.

Proposal Process

Information for Proposers

Requests for Proposals

RESOURCES:

Project panels analyze the problem statement, develop the final project scope and objectives, and prepare a request for proposals from qualified research agencies. Requests for proposals are posted on TRB's website, TRB E-Newsletter, and a self-subscription listsery. Proposals must comply with the format outlined in the publication "Information and Instructions for Preparing Proposals."

Information and Instructions for Preparing Proposals

NOV

APR

Research Contractor Selection

information for Panel Members

The Roles of NCHRP Panel Members and Liaisons

Project panels select research contractors after evaluation of all proposals and discussion of proposers' past performance on other research projects administered by NCHRP or others.

Selection of a contractor is made by the responsible project panel considering the following factors:

- . The proposer's demonstrated understanding of the problem:
- . The merit of the proposed research approach and
- · Experience, qualifications, and objectivity of the research team in the same or closely related problem area:
- . The plan for ensuring application of results;
- The proposer's Diversity and Inclusion Plan; and
- · The adequacy of facilities and equipment.

Research Phase Begins

Once research starts, NCHRP oversees progress, which includes reviewing monthly progress schedules and quarterly progress reports and maintaining frequent contact with the research contractors. NCHRP also monitors the conduct of the research to ensure consistency with the approved research plan and consults with project panels for technical feedback on the contractor's work.

RESOURCES:

Information for Contractors

Procedural Manual for Contractors Conducting

MAR

APR

SimSub Role / Activities

- January Annual meeting (good starting point)
 - Identify research needs statements
 - Develop very rough drafts, including funding
 - Identify sponsors/submitters (state DOTs, FHWA)
- January-October
 - Refine research needs statements / funding estimate
 - Identify sponsors/submitters
 - Ensure submitted by Nov 1
- October-January
 - Monitor AASHTO R&I deliberations
 - Prepare new research need statements
- January Annual meeting (2nd year)
 - Identify research needs statements
 - Develop very rough drafts
 - Identify sponsors (state DOTs, FHWA)
- SimSub cannot submit statements
- Nor can TRB committees
- Only states and FHWA
- You need to find state sponsors!!

AASHTO Special Committee on Research and Innovation (R&I) and its Research Advisory Committee (RAC)

November-April (spans the next TRB meeting)
Be prepared to answer questions (if asked)
April – AASHTO R&I Meeting
June-July

Selected projects passed to NCHRP NCHRP seeks volunteers for project panels October-November

Proposal submissions / contractor selection Beyond November until project conclusion Monitor contractor activity

SimSub Role (continued)

- Act as a forum for eliciting ideas, needs
- Act as a conduit to share those ideas between and among the sponsoring committees
- Form a network of members and friends of those committees that work for state DOTs
- Enlist their support in formulating and submitting research needs statements (MORE is BETTER)
- Everyone carry the message back to state DOTs about the value in and importance of simulation-based analyses
- Use SimCap as an additional way to reach state DOT supporters

Questions / Thanks

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- G. Update on TSSM Review Process Mohammed Hadi, Sanhita Lahiri
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