



***Volunteer Network of  
Professionals Working Together to  
Support, Promote, and Improve  
Best Practices in the Application  
of Traffic Simulation and  
Capacity Analysis***

# FHWA's AMS Research Program

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## AMS State-of-the-Practice

1. Develop and disseminate continual guidance on the application of AMS tools and methodologies. Promote correct usage and foster its growth among public agencies. Evaluate if the state of the practice is meeting agencies' needs and take corrective action if not.
2. Enhance and disseminate AMS tools and methodologies to incorporate day-to-day variability of travel conditions—including external factors (e.g., work zones, weather conditions, traffic incidents, the roadside environment, etc.). Develop and disseminate guidance on their application.
3. Enhance and disseminate AMS methodologies to incorporate new data sources. This includes trajectory, connected vehicle, and probe vehicle data. Develop and disseminate guidance on how these data sources can improve the application of AMS tools.
4. Enhance and disseminate AMS methodologies related to mesoscopic and multiresolution tools. Develop and disseminate guidance to encourage a more holistic analysis of network- and system-level benefits.

<https://highways.dot.gov/operations/analysis-modeling-and-simulation/analysis-modeling-and-simulation-overview>



# Presentation Outline

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SimCap International Users Group

SimCap Louisiana

Reflection

# SimCap International Users Group

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## ■ Mission Statement

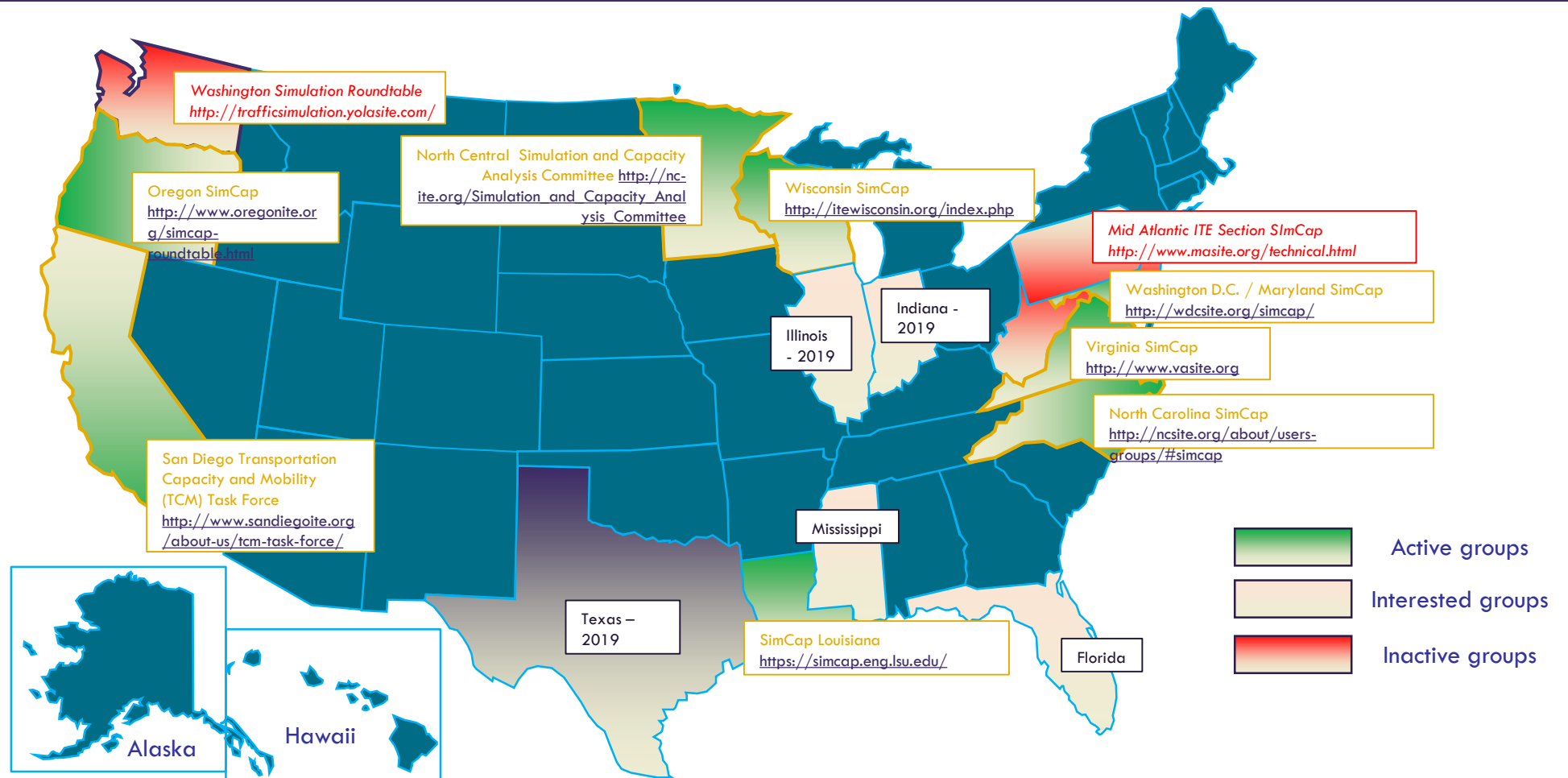
- A volunteer network of professionals working across geographic and organizational boundaries to share information, experiences, and to disseminate, promote, and develop guidance and best practices in the application of traffic simulation and capacity analysis tools, methods, and related practice areas.

## ■ Goals

- Provide a forum for the meaningful exchange of ideas, research, questions, and trends;
- Serve as a resource for practitioners and organizations by sharing experiences and developing guidance and best practices; and
- Advocate for consistency, reliability, and advances to the current state of the practice

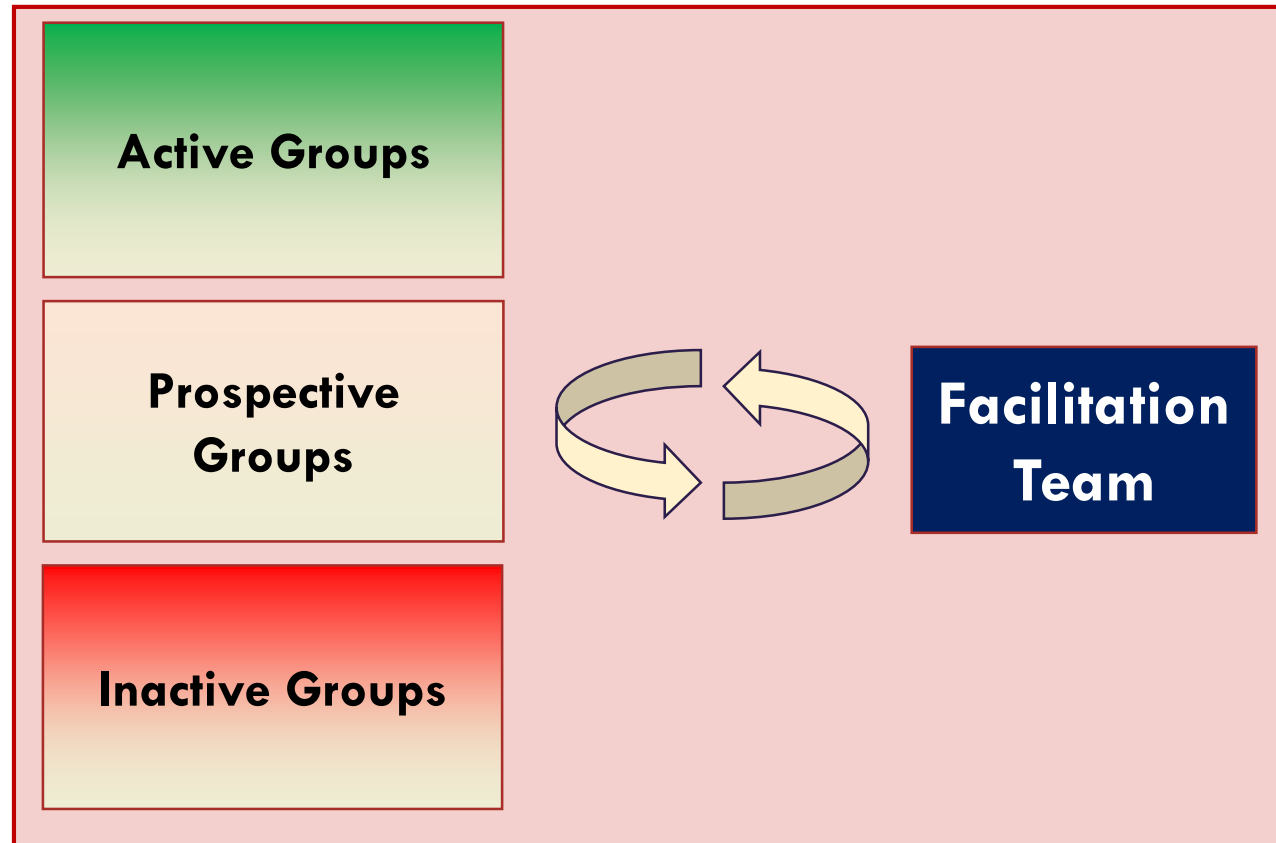
# Chapter Locations

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# Facilitation Team (and Activities)

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Analysis Modeling and Simulation (AMS)



Traffic Analysis and Simulation

TRB Highway Capacity and Quality of Service  
Committee



TRB AHB80T Task Force  
Transportation System Simulation Manual

Software and Technology Vendors

# SimCap Louisiana

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- Mission
  - Adopted from SimCap International
- Goals
  - Adopted from SimCap International
- Objectives
  1. Increase awareness of LaDOTD initiatives, national activities and guidance, and the latest SimCap tools;
  2. Increase communication of LaDOTD updates and activities;
  3. Provide a forum for sharing SimCap experiences (across organizations) and receiving feedback/answers to questions;
  4. Provide educational opportunities to learn of more appropriate and efficient ways of conducting SimCap analysis; and
  5. Become a mechanism to request education/training.



# “Members”

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- ~ 30 “members”
  - E-mail listserv
- Good representation of users
  - Local, state, federal government; main consulting firms; LSU



# Progress (and Timeline)

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## Inaugural Meeting

Feb. 2018

## Educational Meeting #1

Jul. 2018

## Educational Meeting #2

Oct. 2018

## Educational Meeting #3

Apr. 2019

## Educational Meeting #4

Sep. 2019

2018

## Draft Charter

Jul. 2018

## Survey

May 2018

2019

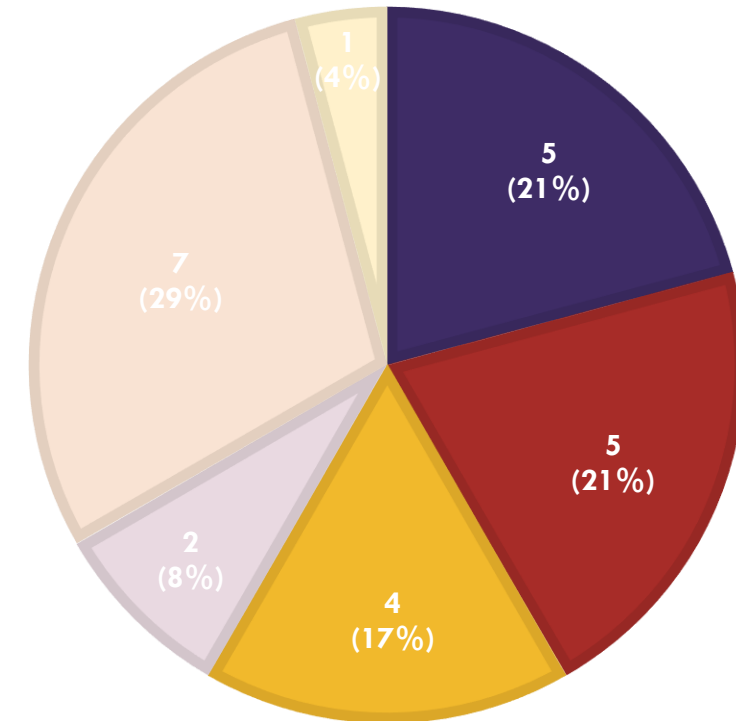
## Website

May 2019

# Survey Results (1/3)

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- **Purpose of Educational Meetings:**  
Please choose the two most beneficial activities you would like featured at the educational meetings
  - *Training:* internal or external speakers provide training on specific SimCap tools and software (64%)
  - *Peer experiences:* practitioners present on their experiences with a current SimCap analysis method or tool (46%)
  - *Federal initiatives:* external speakers present on current, SimCap-related FHWA projects, programs, initiatives, or guidance documents (46%)

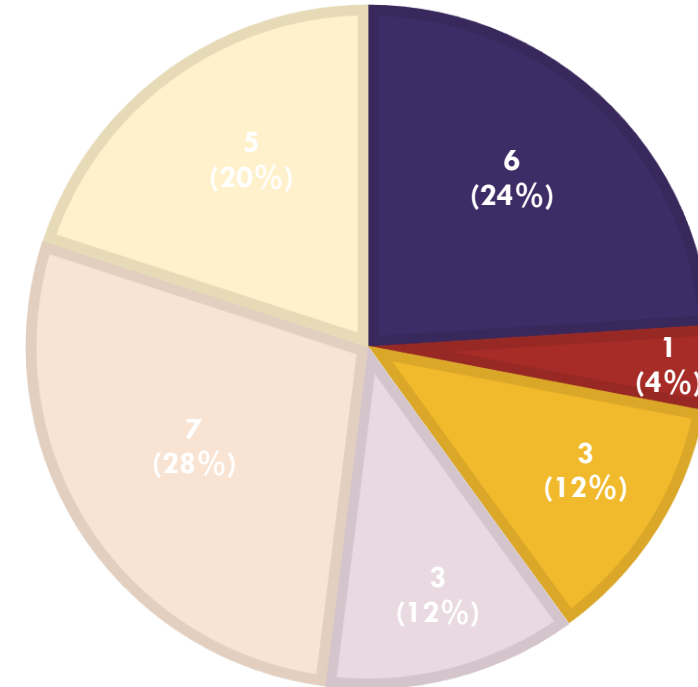


■ Peer experiences  
■ Federal Initiatives  
■ State initiatives  
■ Research  
■ Training  
■ Professional societies

# Survey Results (2/3)

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- **Topics at Educational Meetings:**  
Select the topic(s) you would like discussed at the educational meetings
  - *SimCap studies to evaluate mitigation/management strategies for recurring congestion* (64%)
  - *Guidance on the application of SimCap tools* (55%)
  - *SimCap studies to investigate the impact of emerging technology* (46%)



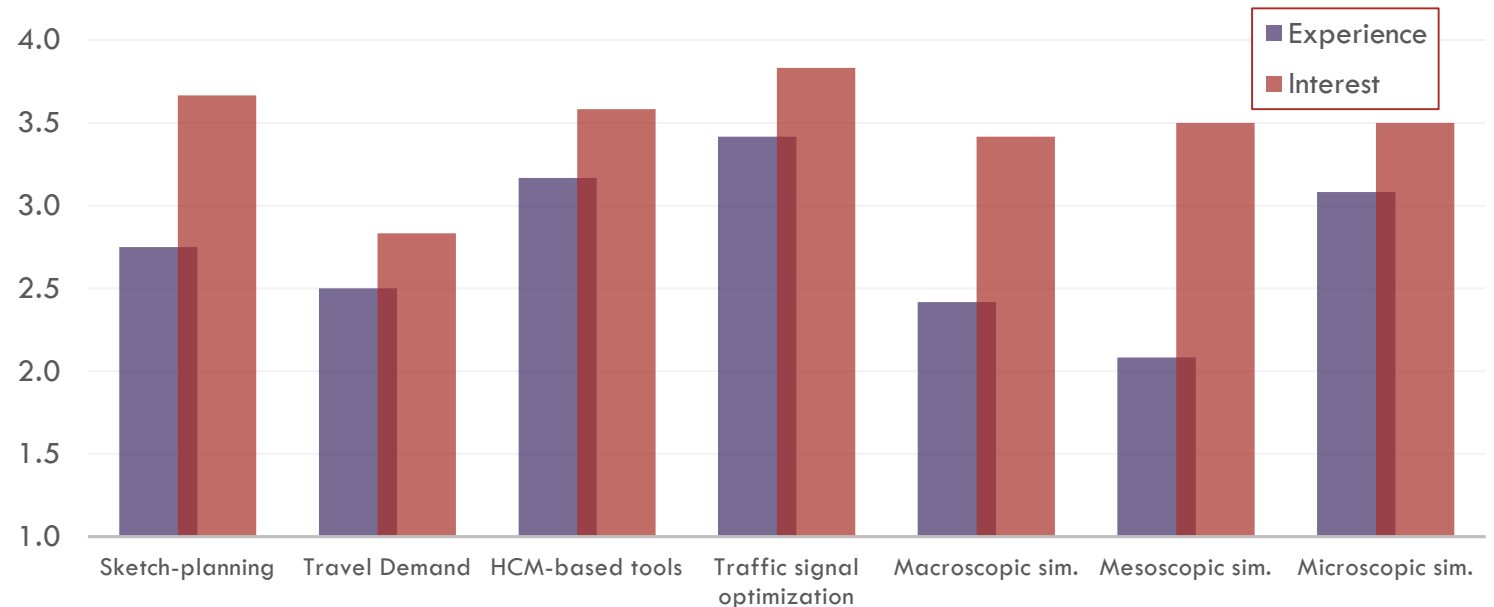
- Guidance on the application of tools
- SimCap studies to investigate non-recurring congestion
- SimCap studies to investigate recurring congestion
- SimCap studies to evaluate strategies for non-recurring congestion
- SimCap studies to evaluate strategies for recurring congestion
- SimCap studies to investigate emerging technology

# Survey Results (3/3)

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## ■ Tool-Specific Topics: Experience vs. interest level

- Experience mainly with: (1) traffic signal optimization, (2) HCM-based tools, and (3) microscopic sim.
- Variety of topics of interest
- Top-Ranked: Traffic signal optimization
- High Interest and greatest knowledge gap: (1) mesoscopic sim., (2) macroscopic sim., and (3) sketch-planning



# Charter (1 /3)

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## ARTICLE II – AREA, MISSION, AND GOALS

**Section 2.1** – The area designated as that of *SimCap Louisiana* shall be the state of Louisiana.

**Section 2.2** – The Mission of *SimCap Louisiana* shall be to share information and experiences as to disseminate, promote, and develop guidance and best practices in the application of traffic simulation and capacity analysis tools, methods, and related practice areas.

**Section 2.3** – The main Goals of *SimCap Louisiana* are to:

- (1) Provide a forum for the meaningful exchange of ideas, research, questions, and trends;
- (2) Serve as a resource for practitioners and organizations by sharing experiences and developing guidance and best practices; and
- (3) Advocate for consistency, reliability, and advances to the current state-of-the-practice.

**Section 2.4** – The main Objectives of *SimCap Louisiana* are to:

- (1) Increase awareness of LADOTD initiatives, national activities and guidance, and the latest *SimCap* tools;
- (2) Increase communication of LADOTD updates and activities to stakeholders;
- (3) Provide a forum for sharing *SimCap* experiences (across organizations) and receiving feedback/answers to questions;
- (4) Provide educational opportunities to learn of more appropriate and efficient ways of conducting *SimCap* analysis; and
- (5) Become a mechanism to request education/training.

# Charter (2/3)

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## ARTICLE VII – ACTIVITIES

**Section 7.1** – At least four educational meetings shall be organized and held each year. Educational meetings shall include an invited speaker (internal or external) on a relevant *SimCap*-related topic and be webinar accessible.

**Section 7.2** – Each professional meeting shall have a planned agenda (with planned objectives and schedule) and disseminated to Members in adequate time to prepare and attend the meeting.

**Section 7.3** – At least two business meetings shall be held each year. These may coincide with the educational meetings.

**Section 7.4** – An electronic forum shall be established to share experiences, provide feedback, and solicit help in the practice and application of *SimCap* analysis and tools.

**Section 7.5** – A Member “expertise” list shall be created and maintained.

**Section 7.6** – *SimCap Louisiana* shall participate in a joint-sponsored event at least once per year with a related, transportation-affiliated organization (e.g., ITE, WTS, Tran-SET, etc.).

# Charter (3/3)

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## ARTICLE IV – DUES AND FEES

**Section 4.1** – *SimCap Louisiana* shall not collect dues from its Members.

**Section 4.2** – *SimCap Louisiana* shall not charge fees to its meetings or any other sponsored activities.

## ARTICLE V – COORDINATING COMMITTEE

**Section 5.1** – A Coordinating Committee shall manage the affairs of *SimCap Louisiana* in conformity with the provisions of this Charter and make decisions on behalf of its Members.

**Section 5.2** – The Coordinating Committee shall consist of the: Chair, Co-Chair, and Secretary.

**Section 5.3** – The responsibilities of the Coordinating Committee shall be as follows:

- (1) The Chair is responsible for overseeing all aspects of *SimCap Louisiana*, including: presiding, organizing, and running meetings and representing *SimCap Louisiana* to external organizations and partners.
- (2) The Co-Chair shall work with and support the Chair to manage *SimCap Louisiana* and oversee its operations.
- (3) The Secretary (which may comprise multiple Committee Positions) shall be responsible for keeping all records, including: meeting minutes, maintaining a membership list, and maintaining any forums, websites, or social media accounts. The Secretary will aid the Chair and Co-Chair in coordinating meetings, presenters, and planned professional events. The Secretary is also responsible for maintaining the Charter and updating the Charter when amendments are ratified.

**Section 5.3** – The terms of Committee Members shall be for two calendar years with no term limits.

# Website

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- <https://simcap.eng.lsu.edu/>
  - LSU COE
  - **Great Repository!**

## Educational Meeting #3 (April 4, 2019)

- "Microsimulation Study of Crescent City Connection Bridge"
  - Joey Lefante | Traffic Engineer | Stantec
- "Introduction to Dynamic Traffic Assignment"
  - Michael Mahut | Vice President, Traffic Simulation | INRO
- "Mini Roundtable"
  - Christopher Melson | Program Manager | Louisiana State University

## Educational Meeting #2 (October 31, 2018)

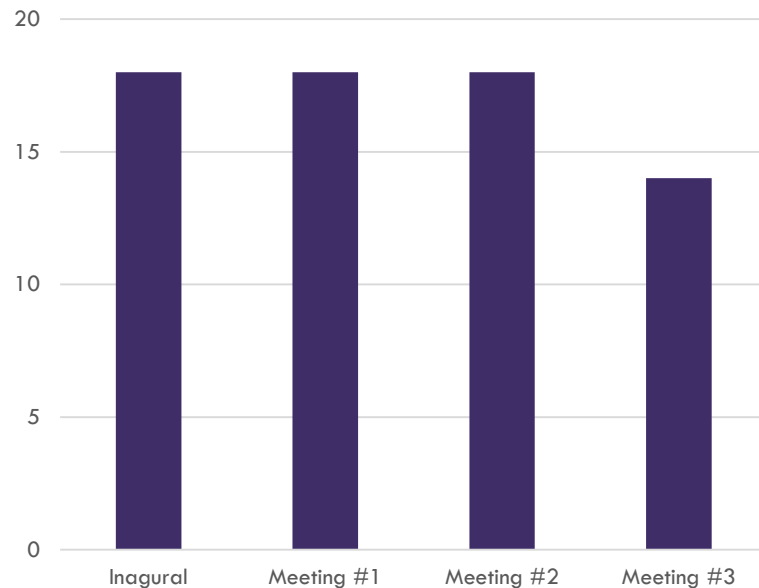
- "Overview and Updates from FHWA's Traffic Analysis Tools (TAT) Program"
  - Jim Sturrock | ITS Operations Engineer | FHWA
- "Microsimulation and LaDOTD"
  - Jody Colvin | Traffic Engineering Division Administrator | LaDOTD
- "Overview of Toronto SimCap"
  - Matthew Davis | Program Manager | City of Toronto
- "Business Discussion"
  - Christopher Melson | Program Manager | Louisiana State University



# Educational Meetings

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- Typical agenda:
  - Local presenter
  - External presenter
  - Mini roundtable



# Upcoming Meeting (9/12)

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## ■ Agenda:

### ■ **Identifying Travel Conditions using Cluster Analysis: Illustrative Investigations**

■ *Christopher Melson (Louisiana State University)*

### ■ **Utilizing the NPRDS for Model Calibration/Validation**

■ *Pong Wu (Capital Region Planning Commission)*

### ■ **Mini Roundtable**

■ Time: 11:00 – 12:30 pm

■ Location: TTEC Rm 175; Webinar



# Reflection

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## Strengths

- Good representation of users
- Good attendance (generally)
- Extremely flexible structure
- Capable and active leadership
- Have appropriate state-wide and national connections

## Weaknesses

- Bottom-to-top organization (need member engagement for continuation)
- Lack of member engagement, feedback, and ownership

## Opportunities

- Many! (can be used as a conduit for nearly anything!)

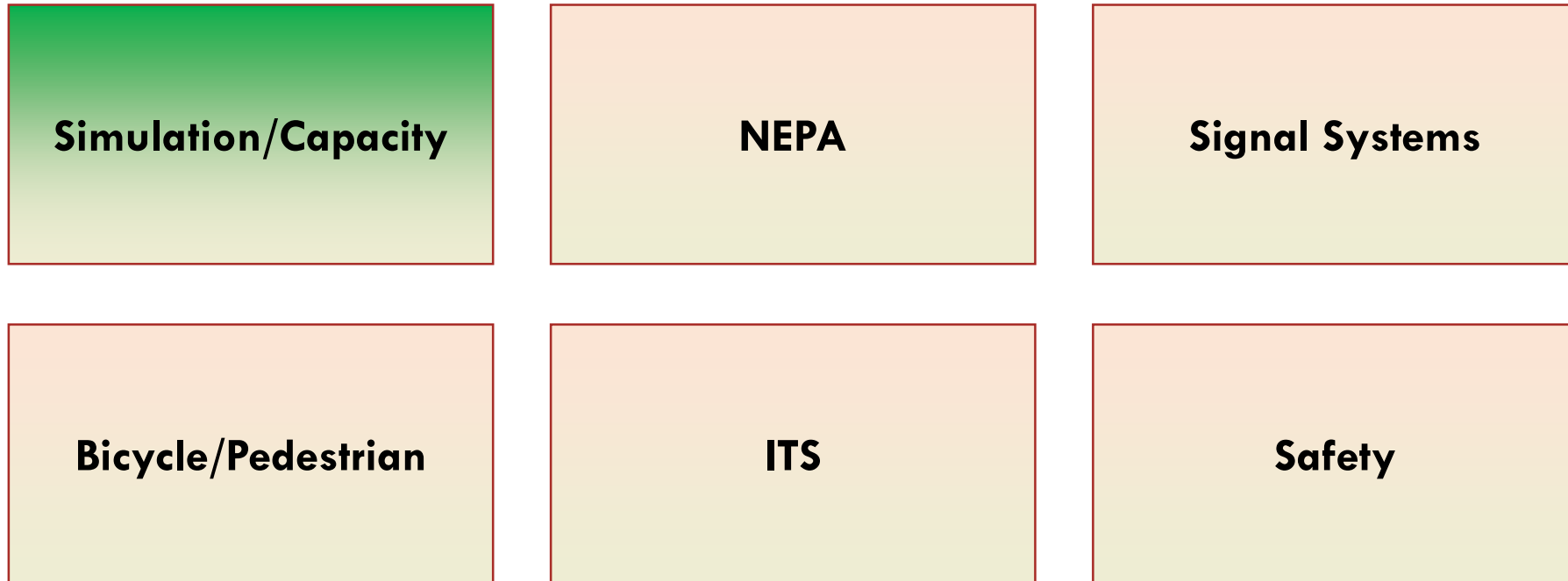
## Threats

- Dependent on leadership (leadership changes)
- Small technical area (esp. within LA)
- Lack of member engagement, feedback, and ownership

# Structural Option (NCITE)

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- SimCap a NCSITE supported “user group”



# Structural Option (ODOT)

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- Oregon Modeling Users Group (OMUG)
  - “An information-sharing forum for Oregon’s transportation modeling practitioners”
  - Input to Oregon Modeling Steering Committee (OMSC)
- OMSC guides Oregon Modeling Improvement Program (OMIP), informs TPAU

**Transportation  
Planning and Analysis  
Unit (TPAU)**

OMSC EXECUTIVE COMMITTEE	
Members	Roles and Responsibilities
ODOT (2) Metro (2) Oregon DEQ (1) Mid-Size MPO Representative (1) Small MPO representative (1)	<ul style="list-style-type: none"><li>• Set OMSC meeting agendas</li><li>• Develop the OMSC work plan</li><li>• Identify and commit resources for accomplishing the OMSC work plan</li><li>• Commission and decommission subcommittees</li><li>• Appoint subcommittee leaders</li><li>• Approve subcommittee charters</li><li>• Oversee and approve subcommittee work products</li><li>• Add or remove general members</li></ul>

MODELING PROGRAM COORDINATION SUBCOMMITTEE (MPC)	
Members are technical staff from:	Roles and Responsibilities
ODOT Metro MWVCOG CWCOG Bend MPO	<ul style="list-style-type: none"><li>• Identify, track and coordinate model development needs</li><li>• Provide interactive forum for discussion of model development and implementation issues</li><li>• Coordinate research projects and proposals.</li><li>• Review and recommend Technical Tools committee work products</li></ul>

TECHNICAL TOOLS SUBCOMMITTEE	
Chair remains constant; however, subcommittee members may change according to assignments	Roles and Responsibilities
	<ul style="list-style-type: none"><li>• Perform model peer reviews</li><li>• Link regional and statewide tools</li><li>• Coordinate technical aspects of tool refinement and development</li><li>• Track emerging technologies and related modeling needs</li></ul>

OMSC GENERAL MEMBERS	
Members	Roles and Responsibilities
ODOT ODOE ODEQ OHA OHCS DLCD DAS OEA FHWA	<ul style="list-style-type: none"><li>• Serve as a policy-level sounding board</li><li>• Review and provide feedback on OMSC work plan and work products</li><li>• Share information affecting current and future modeling needs</li></ul>

OREGON MODELING USERS GROUP	
Managed by an organizing committee that includes ODOT, Metro and an Oregon University	Roles and Responsibilities
Participation by any interested agencies and consultants	<ul style="list-style-type: none"><li>• Coordinate an annual in-person statewide model users meeting</li><li>• Host periodic webinars</li><li>• Monitor training opportunities</li><li>• Provide informal opportunities for customers and users of modeling tools to discuss model application topics</li></ul>

# Questions?

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<https://simcap.eng.lsu.edu/>

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