

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

2022 SimSub Annual Meeting

January 11, 2022 | 6:00 – 7:30p ET

Room 204 | Convention Center



Agenda

- A. Welcome and Introductions – *Chris Melson*
- B. Overview of SimSub and Recent Activities – *Chris Melson, John Shaw*
- C. Task Group Updates – *Various*
- D. Liaison Committee Updates – *Lin Zhang, Jiaqi Ma, MD Sakoat Hossan, David Stanek, Others*
- E. Updates on TSSM Publication and Next Steps – *Sanhita Lahiri, Mohammed Hadi*
- F. Wrap Up – *Chris Melson*



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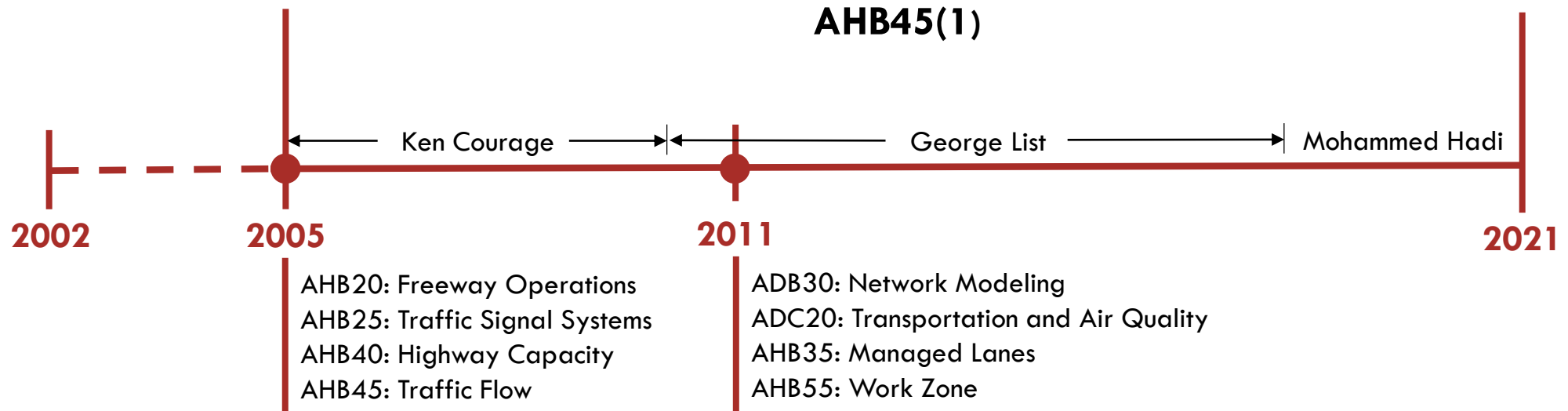
“Old” SimSub

Sponsor Committees:

ADB30: Network Modeling
ADC20: Transportation and Air Quality
AHB20: Freeway Operations
AHB25: Traffic Signal Systems
AHB35: Managed Lanes
AHB40: Highway Capacity
AHB45: Traffic Flow
AHB55: Work Zone

Task Groups:

Annual Workshop
Liaison and Outreach
Research Needs and Resources
Verification, Calibration, and Validation
Mesoscopic Models
Safety Modeling and Simulation
Agent-Based Modeling



Ken Courage

- Metropolitan Corporation of Greater Winnipeg
 - Traffic Signals Engineer (1962 – 1966)
- Kelly Scientific Corporation
 - Senior Transportation Engineer (1968 – 1971)
- University of Florida
 - Assistant Professor (1971 –1976)
 - Associate Professor (1976 – 1988)
 - Professor (1988+)
 - Emeritus Professor

**MOMENT OF
SILENCE**

Ken Courage

- National Leader
 - Traffic modeling software, transportation system modeling, highway capacity
- Professional Associations
 - ITE, IVHS (now ITS-America), TRB (Highway Capacity and Quality of Service, Traffic Signal Systems, Traffic Simulation, among others)



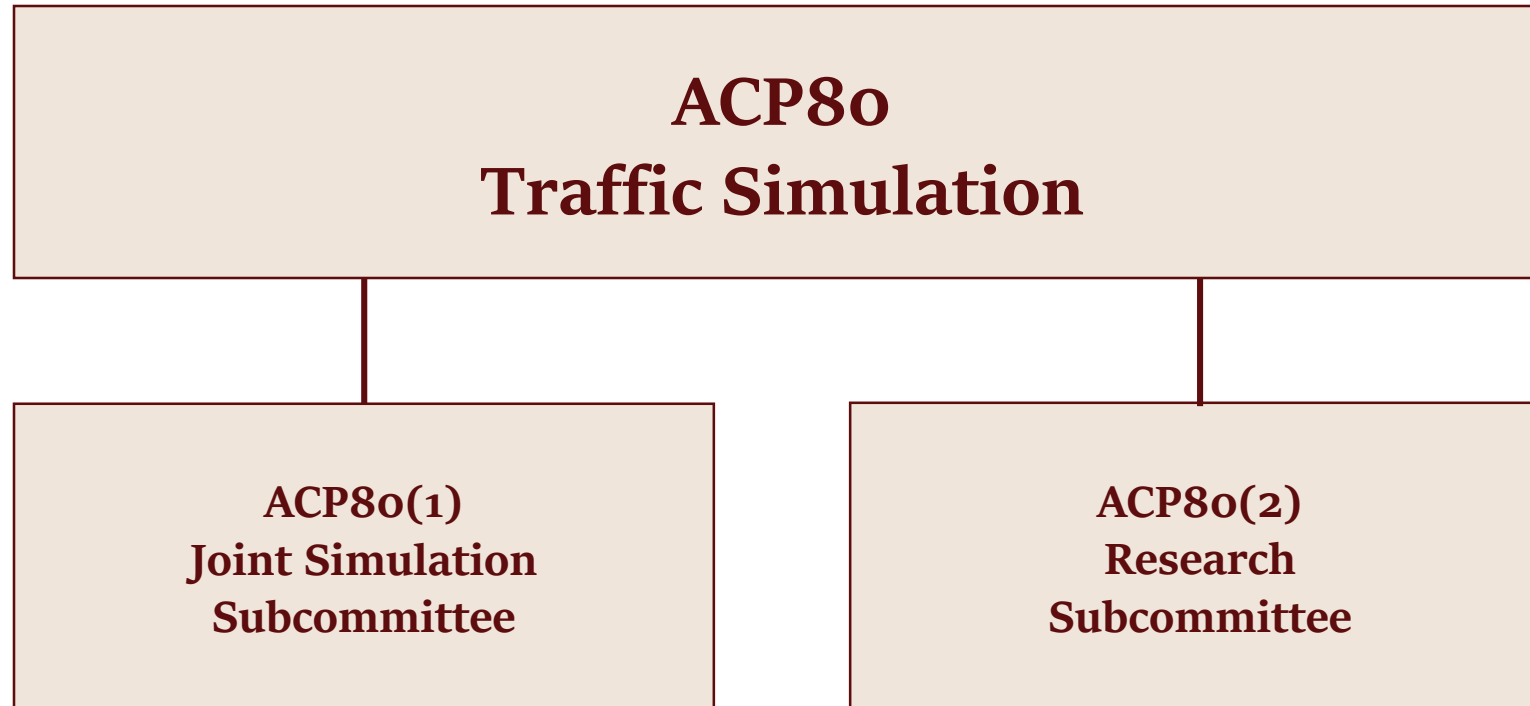
**MOMENT OF
SILENCE**

Ken Courage

- Kenneth G. Courage Scholarship
 - Accepting donations
 - https://www.uff.ufl.edu/give-now/?fund_id=003713

**MOMENT OF
SILENCE**

TRB Structure



Liaison Structure

Industry

- AASHTO
- ASCE
- FHWA
- IEEE
- ITE

User

- Administrator
- Data Provider
- Modeler
- Vendor

Research

- ACP10: Regional TSMO
- ACP20: Freeway Operations
- ACP25: Traffic Signal Systems
- ACP30: Vehicle-Highway Automation
- ACP35: Managed Lanes
- ACP40: Highway Capacity
- ACP50: Traffic Flow
- ACP55: Traffic Control Devices
- ACP70: Highway Traffic Monitoring
- AEP40: Network Modeling
- AKD10: Effects of Geometric Design
- AMR20: Disaster Response, Evacuations
- AMS10: Air Quality
- AT015: Freight Planning

2021 In Review

simcap.eng.lsu.edu/simsub



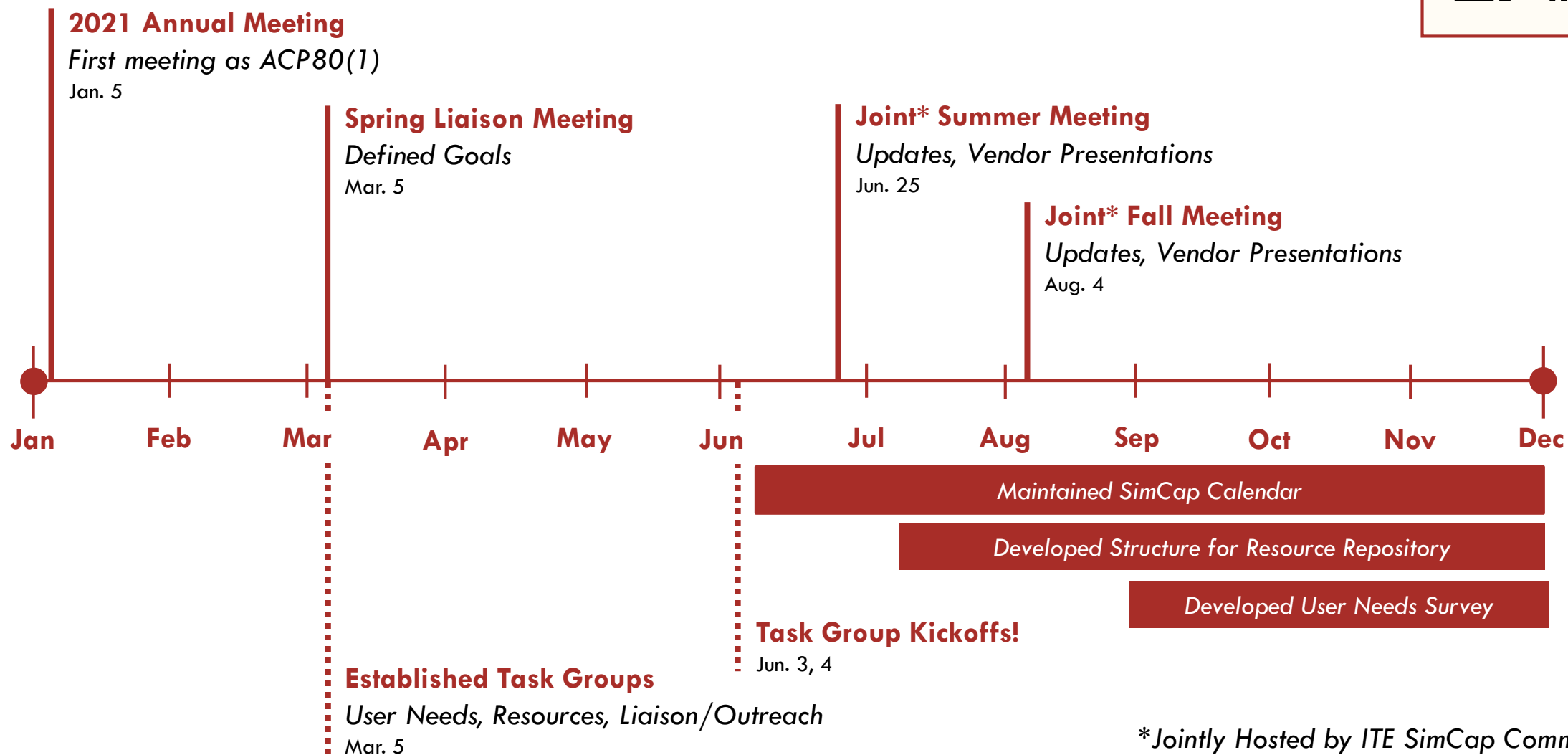
2021 In Review

simcap.eng.lsu.edu/simsub



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**Jointly Hosted by ITE SimCap Committee*

Focus of 2022

- Continue joint ITE SimCap meetings
- Continue to support Task Groups
 - Anticipate products by 2022
- Encourage involvement by ACP80/liaison committee members
 - Better support and serve ACP80/liaison committees
- Pursue joint activities with “industry” groups outside of TRB (e.g., AASHTO, ASCE, IEEE)
- Develop permanent SimSub website and repository of materials



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User Needs

Name	Affiliation
Sudheer Dhulipala	WSB
Shalini Ghosh	WSP
Vishal Mandal	WSP
Mike Reese	NC DOT
Mark Yedlin	GPI

Annual Survey

The survey will identify:

- The primary uses of traffic simulation
- Analyzed applications
- Corresponding user needs
- How these change overtime and recurring user needs

Welcome to the 2021 Traffic Simulation Survey. The TRB Standing Committee on Traffic Simulation (ACP80) is conducting this survey to get a better understanding of current and emerging uses of traffic simulation and the challenges faced by traffic simulation software users.

Which best describes your organization?

☐ National transportation agency/ministry

☐ State, provincial, or prefectural transportation agency/ministry

☐ Municipal or local government agency

☐ Toll bridge or toll road operator

☐ Public transportation agency

☐ Planning agency such as an MPO or RPC

☐ Consulting firm

☐ Academic or research institution

☐ Simulation software developer or reseller

☐ Other (please describe)

Initial Draft

Initial draft includes:

- Type of simulation performed
- Size of model
- Features modeled
- Study objectives
- Difficulties encountered

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Resources

Name	Affiliation
Apoorba Bibeka	TTI
Joe Blasi	HNTB
Chris Day	Iowa State U
Vicki Haskell	WI DOT
Yingyan Lou	Arizona State U
Abhilasha Saroj	Georgia Tech
Maryam Shirinzad	TTI

SimCap Calendar

- Unifying calendar of SimCap-related events
 - Includes research webinars/workshops, software training, other practitioner-led initiatives
- Contact Abhilasha Saroj (asaroj3@gatech.edu) or Chris Melson (cmelson1@lsu.edu) to add event
- Currently on [ITE SimCap website](#), will also reside on [ACP80 website](#) (eventually)

January 2022						
SUN	MON	TUE	WED	THU	FRI	SAT
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10 New Horizons in Traff Traffic Simulation Re Traffic Simulation – T	11 Traffic Simulation Cor ITE SimCap Committe Traffic Simulation – T + 1 MORE	12 Traffic Simulation – T	13	14	15
16	17	18 PTV Vissim for Reviewers	19	20	21	22
23	24	25	26 OMUG: ActivitySim P	27	28	29

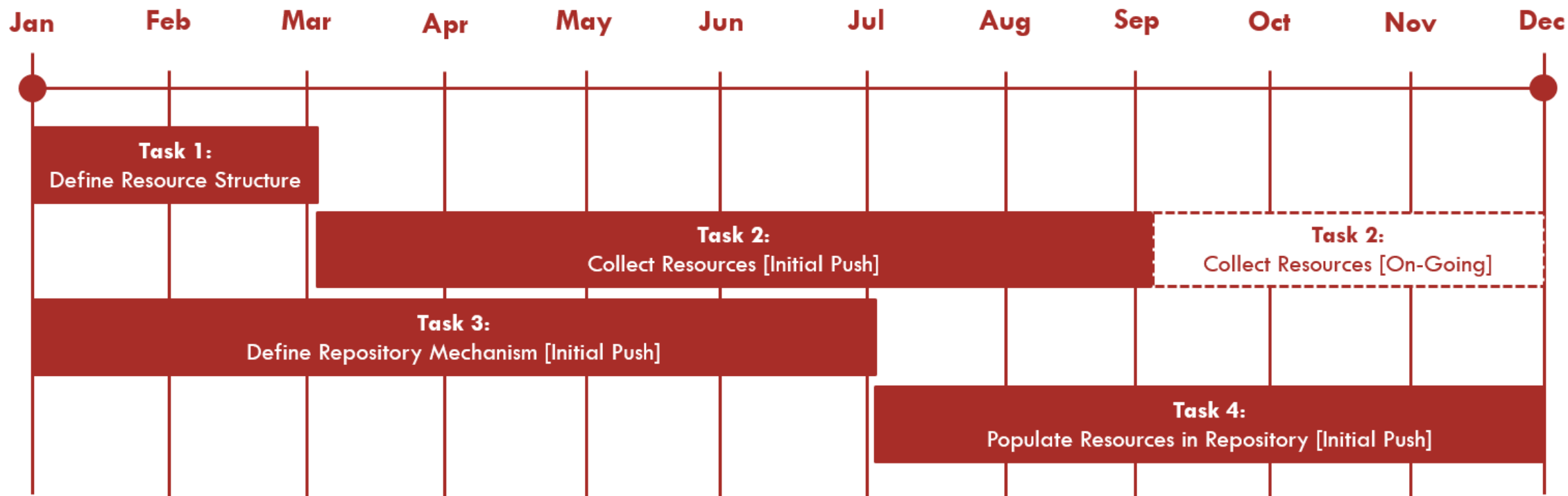
Resource Repository

- Developed draft organizational structure
- Mimics TSSM chapters

Resource Structure:

1. Simulation Basics
 - a. What is it
2. When do agencies use it
3. Available simulation options---resolution
 - a. Microscopic
 - i. VISSIM
 - ii. AIMSUM
 - iii. SimTraffic
 - iv. CORSIM
 - v. TransModeler
 - vi. https://ops.fhwa.dot.gov/trafficanalysistools/tat_vol2/sectapp_e.htm#top
 - b. Mesoscopic
 - i. DynusT
 - ii. AIMSUM
 - iii. Dynameq
 - iv. TransModeler
 - v. https://ops.fhwa.dot.gov/trafficanalysistools/tat_vol2/sectapp_e.htm#top
 - c. Macroscopic
 - i. Freeval
 - ii. HCS
 - iii. https://ops.fhwa.dot.gov/trafficanalysistools/tat_vol2/sectapp_e.htm#top
 - d. Multi-resolution
 - e. Resolution choice
4. Choosing Scope
 - a. Temporal
 - b. Spatial
 - c. Modeling resolution
 - d. Dynamic traffic assignment
5. Experiment Design
 - a. No of runs
 - b. No of scenarios
 - c. Data sources
 - d. Performance Measures
 - i. Selection
 - ii. Measurement locations
 - iii. Presentation format
6. Verification, Calibration, and Validation
 - a. Procedures
 - i. Calibration parameters
 - b. Statistics
 - i. Performance Measures
 - ii. Targets
7. Application

Resource Repository



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Liaison/Outreach

Name	Affiliation
MD Jahedul Alam	Dalhousie University
Georges Bou-Saab	Arcadis
Lin Zhang	Elite Transportation Group

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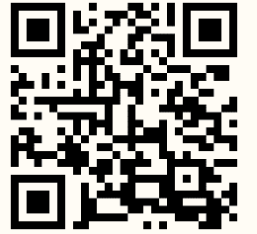
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