

Governor's Advisory Council on Connected and Automated Vehicles

Subcommittee on Insurance & Liability

Welcome and Introductions



Insurance & Liability Subcommittee

Subcommittee Goal

To ensure Minnesota insurance laws and regulations are **responsive** to connected and autonomous vehicle (CAV) technology to allow for innovation in the **development of products and services** while providing adequate **protection for Minnesota families and businesses**

Subcommittee Process

- Participation
 - Meeting materials available on **MnDOT website**
 - Meeting updates at www.dot.state.mn.us/automated/publicmeetings.html
 - Participate in a **meaningful way**
- Discussion
 - Consider the themes of **safety, risk, equity and environment**
 - Consider immediate, **short-term outcomes**
- Recommendation
 - Clear, **consensus-based** recommendations (or reasons for differences)
 - Present recommendations to Advisory Council **October 30th**

Subcommittee Charter

- Meetings **open to the public**
- **Respectful** discussion, opportunities to be heard and **listen**
- May submit written comments on **comment cards**
- Notes taken on **consensus** or **summary** of discussion
- Meeting **notes approved by liaisons** and sent to subcommittee members for additional comments
- Meeting evaluation emailed after meeting

Key Dates

Public Survey

Tribal Government-to-Government Relations

Stakeholder and Public Engagement

June

July

August

Sept

Oct

Nov

Dec

Aug. 27
Meeting

TBD
Meeting

**Oct. 30
Advisory
Council
Presentation**

Nov. 1
Draft
Report

**Dec. 1
Final
Report**



Review of Executive Order & Goals

Governor's Executive Order Establishing the Advisory Council

Consult with government, stakeholders, auto & tech industry, business, labor, advocacy groups, universities, communities experiencing transportation barriers



Prepare and submit a report to the Governor and Legislature by **December 1, 2018**



Advise and support government to support **testing and deployment** of CAV

Governor's Advisory Council on CAV

Advisory Council

Interagency CAV Team

Transportation
Infrastructure

Cyber Security
& Data Privacy

Vehicle
Registration,
Driving
Training,
Licensing

Insurance and
Liability

Traffic
Regulations &
Safety

Economic &
Workforce
Development,
Business
Opportunities

Accessibility
and Equity

Land Use &
Planning

Public
Feedback

Public
Feedback

Public
Feedback

Public
Feedback

Public
Feedback

Public
Feedback

Public
Feedback

Public
Feedback

Governor's Advisory Council on CAV



Advisory Council Goals

1. **Brand** Minnesota as a place to test and deploy CAV
2. **Engage the public**
3. **Educate** the general public
4. **Develop actionable recommendations** to facilitate the adoption of CAV in a manner that enhances our quality of life, while providing flexibility to account for evolving technology
5. **Recommend mobility strategies**

Public Feedback Opportunities



Connected + Automated Vehicles

Mn DEPARTMENT OF TRANSPORTATION

Automated Vehicle
Use sensors and cameras on vehicles to guide the operation of the vehicle without human intervention.



Connected Vehicle
Communicate with other vehicles and roadside infrastructure using wireless technology.

Available and Future Automation

Today



Future



Levels of Automation:
Adaptive Cruise Control, Auto Emergency Steering, Automatic Lane Keeping, "Pilot" mode, etc.

Levels of Automation:
Possible no steering wheel, no pedals, etc.

Types of Connected and Automated Vehicle Applications



Types of Automated Vehicles



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Mn DEPARTMENT OF TRANSPORTATION

Free MN Highway Maps



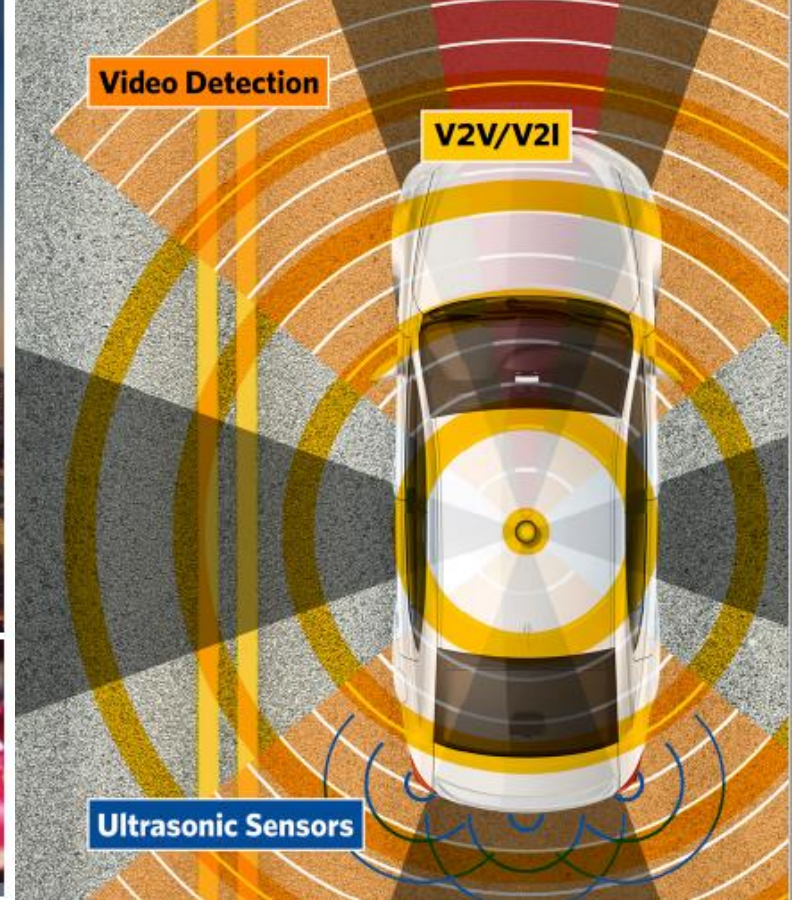
Mn DEPARTMENT OF TRANSPORTATION

GEM e4

Interagency Team

- Policy position papers
- Branding
- Testing & Deployment
- Partnerships



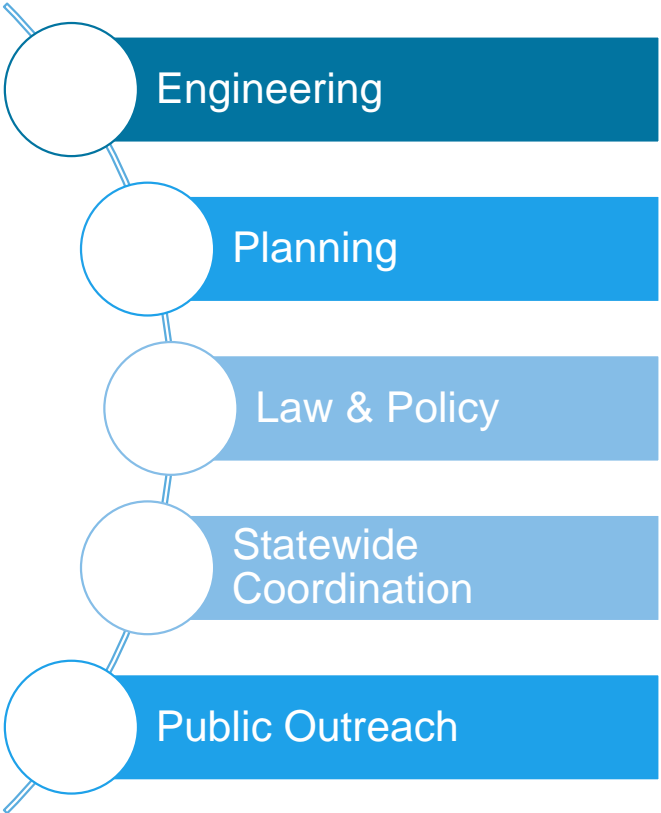
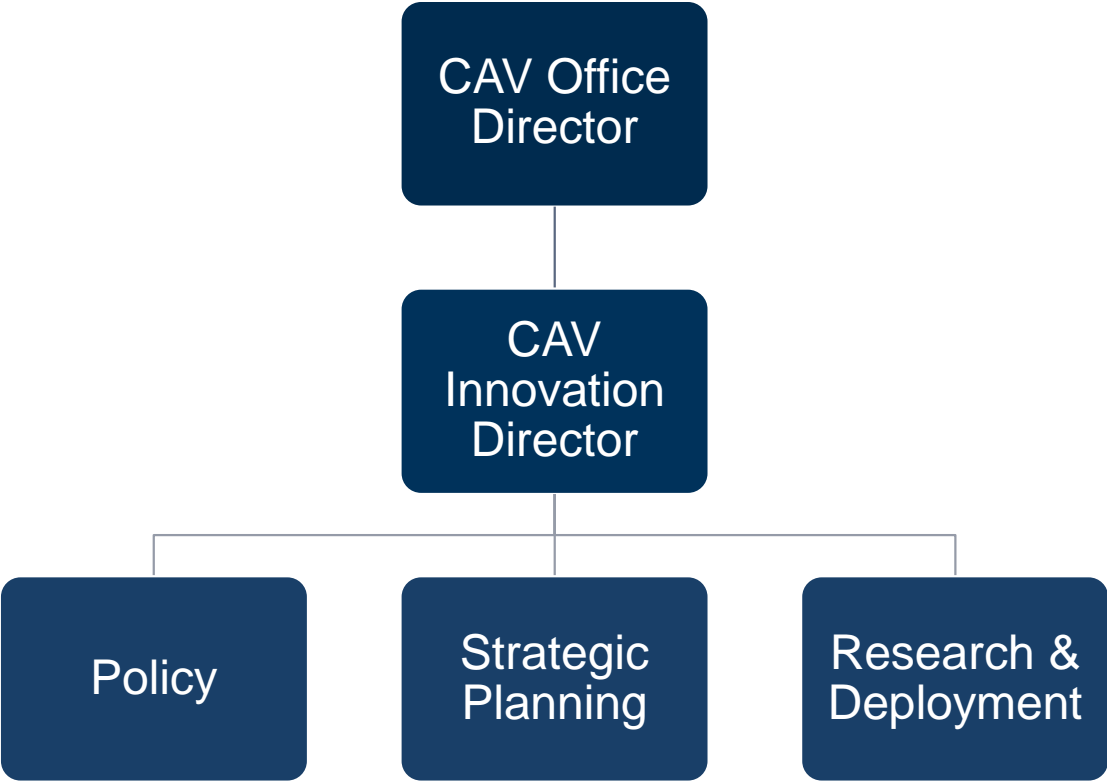


Overview of Connected & Automated Vehicles



Who We Are

MnDOT CAV-X Office





Why We're Here

Automated Vehicles



Automated vehicles can **take control** of some or all aspects of **driving tasks**.

Uses for Automation

Types of Automated Vehicles



Passenger



Commercial



Transit



Types of Automated Vehicles

Available and Future **Automation**

Today



Levels of Automation:

Adaptive Cruise Control, Auto Emergency Braking, Automatic Lane Keeping, Partial "hands off"

Future



Levels of Automation:

Possibly no steering wheel, hands off technology



0

No Automation

Zero autonomy; the driver performs all driving tasks.

1

Driver Assistance

Vehicle is controlled by the driver, but some driving assist features may be included in the vehicle design.

2

Partial Automation

Vehicle has combined automated functions, like acceleration and steering, but the driver must remain engaged with the driving task and monitor the environment at all times.

3

Conditional Automation

Driver is a necessity, but is not required to monitor the environment. The driver must be ready to take control of the vehicle at all times with notice.

4

High Automation

The vehicle is capable of performing all driving functions under certain conditions. The driver may have the option to control the vehicle.

5

Full Automation

The vehicle is capable of performing all driving functions under all conditions. The driver may have the option to control the vehicle.

Society of Automotive Engineers (SAE) Levels of Automation

Connected Vehicles



Connected vehicles **“talk”** to **infrastructure**, other vehicles, and potentially other modes (bikes, peds, transit)

CAV Benefits

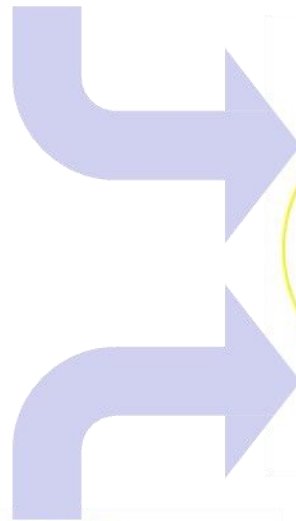
Types of Connected and Automated **Vehicle Applications**



Connected & Automated Vehicles

Autonomous Vehicle

Operates in isolation from other vehicles using internal sensors



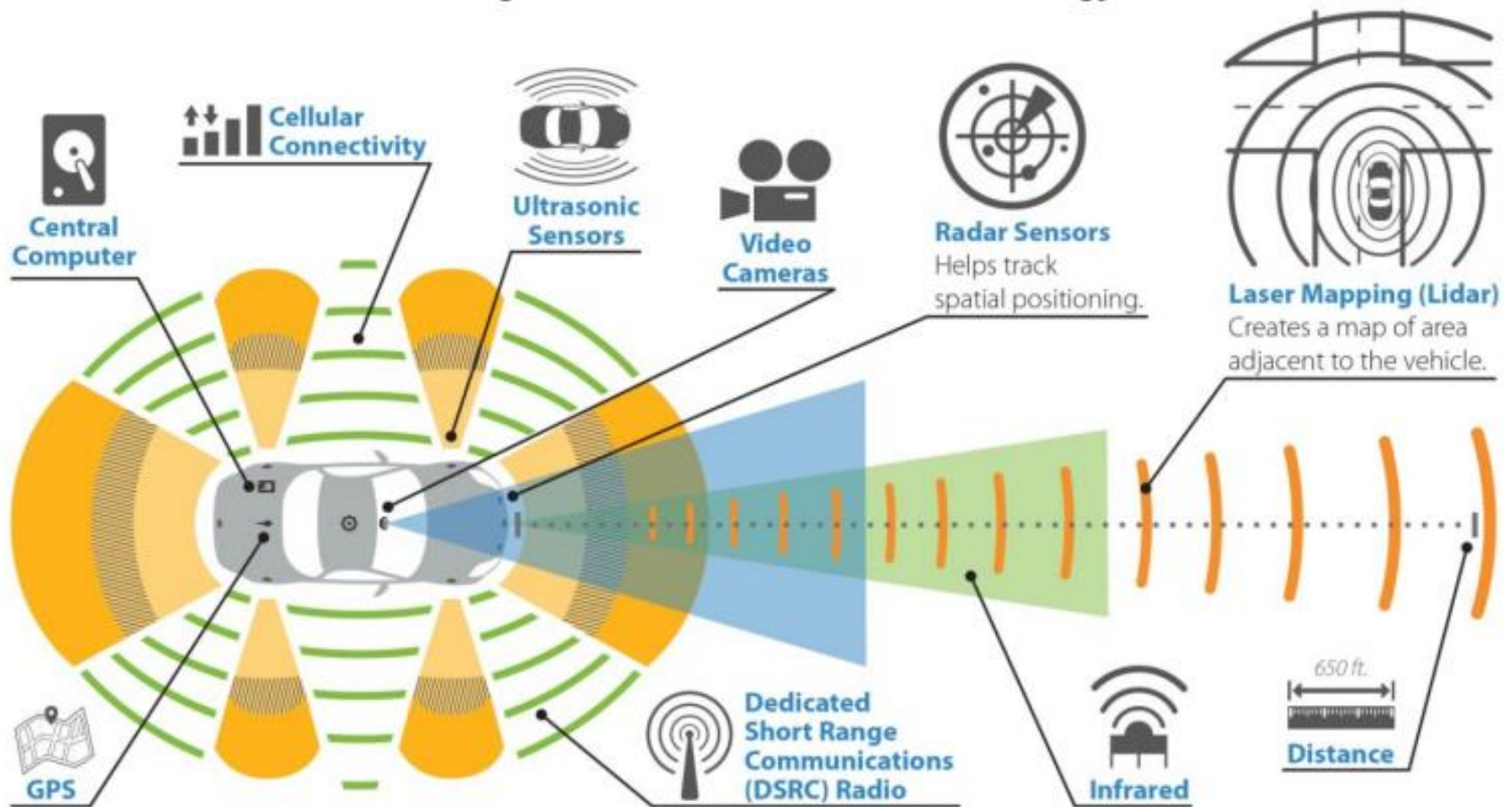
Connected Automated Vehicle
Leverages autonomous and connected vehicle capabilities

Connected Vehicle

Communicates with nearby vehicles and infrastructure



How does it work?



Electric Vehicles



Majority of CAV being developed on **battery, solar, or electric-generator** platforms.

Alternative Automation

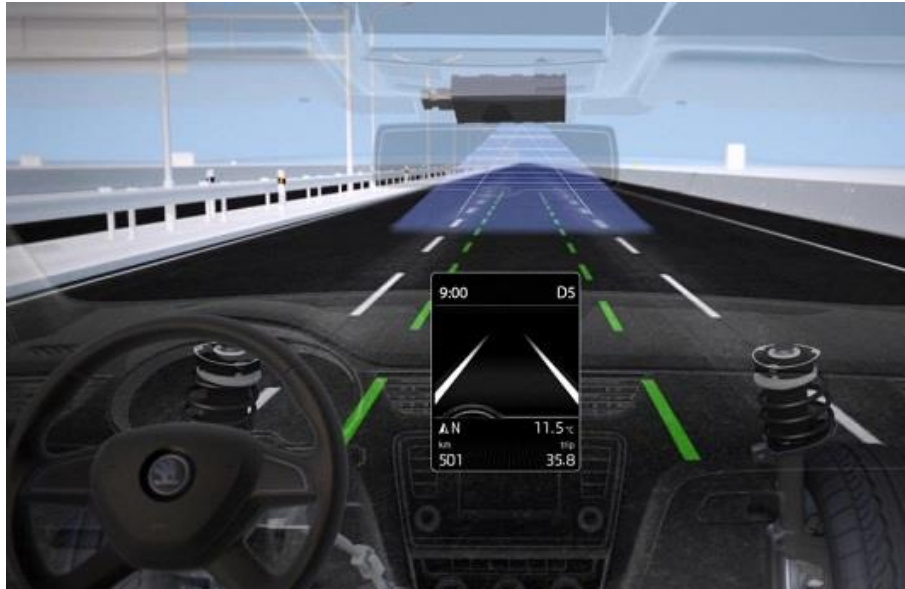


Truck Platooning



Dockless scooters & bikes

CAV Technology Already Available



Self-Parking



Signal
Countdowns



Thank you



Kristin White, J.D.
CAV Innovation Director
kristin.white@state.mn.us

Key CAV Issues for Insurance & Liability

Alison Groebner,
Department of Commerce

Survey of U.S. States

- 29 States: Enacted autonomous vehicle legislation
- 10 States: Enacted executive orders
- National State Conference of State Legislators
 - www.ncsl.org/research/transportation/autonomous-vehicles

Insurance and Liability

- Texas
 - Bill: SB2205
 - Enacted in 2017
- Tennessee
 - Bill : SB0151
 - Enacted in 2017
- Nebraska
 - Bill : LB989
 - Enacted in 2018

Insurance and Liability

- Michigan
 - Bill: SB998
 - Enacted in 2016
 - Bill: SB663
 - Enacted in 2013
- Oregon
 - Task Force Recommendations

Insurance Requirements in Other States

States with AV Testing Permitting Programs						
	AAMVA	California	Nevada	New York	Massachusetts	Connecticut
Evidence of manufacturer's ability to respond to judgements for damages for personal injury, death, or property damage caused by a vehicle during testing. Evidence may be in the form of an instrument of insurance, a surety bond, or proof of self-insurance.	✓	\$5,000,000 Minimum	\$5,000,000 Minimum ¹ (\$1,500,000 minimum for TNCs)	\$5,000,000 Minimum	\$5,000,000 Minimum	\$5,000,000 Minimum

1. Nevada requires certification of understanding that each autonomous testing vehicle listed is covered by an insurance company licensed to do business in the state and certification of understanding that a testing entity must maintain coverage that meets or exceeds Nevada's minimum liability requirements.

Insurance Requirements in Other States

Self-Certification/Notification Required States					
	Arizona	Michigan	Tennessee	Washington	Nebraska
Evidence of manufacturer's ability to respond to judgements for damages for personal injury, death, or property damage caused by a vehicle during testing. Evidence may be in the form of an instrument of insurance, a surety bond, or proof of self-insurance.	Nothing mentioned	\$10,000,000 Minimum	\$5,000,000 Minimum (for a vehicle without a human driver physically present)	Does not differ from a conventional vehicle	Does not differ from a conventional vehicle

2. Arizona requires notification for testing AVs without a driver present. It does not for testing with a driver. Insurance requirements are not specified for either case.

3. Michigan requires a minimum of \$10 million in coverage for an entity to be considered a "motor vehicle manufacturer." Michigan's AV laws mandate that only motor vehicle manufacturers can operate autonomous vehicles.

Insurance Requirements in Other States

States with No AV Testing Permit Program or Notification Requirement					
	Colorado	Texas	Florida	Georgia	North Carolina
Evidence of manufacturer's ability to respond to judgements for damages for personal injury, death, or property damage caused by a vehicle during testing. Evidence may be in the form of an instrument of insurance, a surety bond, or proof of self-insurance.	\$ 5,000,000 minimum ⁴	Does not differ from a conventional vehicle	Nothing specifically mentioned	250 percent what is required for limousines or self-insurance until 2020. Starting in 2020, equivalent to what is required for limousines or self-insurance. ⁵	Does not differ from a conventional vehicle

4. No less than \$5 million umbrella insurance, commercial general liability insurance of no less than \$1 million, and vehicle insurance of no less than \$1 million. And / or a surety bond of no less than \$5 million if they have no umbrella insurance or their limits are less than what was outlined above.

5. Only applies to vehicles without human drivers.

Source: <https://www.oregon.gov/ODOT/Get-Involved/Documents/AVTF-ODOT-research-insurance-sub-0620.pdf>.

CAV Data & Safety Issues for Insurance & Liability

Vicky Rizzolo,
American Family Insurance

Discussion

Key Questions

1. What insurance or liability statutory changes, if any, should be considered or recommended in Minnesota's auto insurance laws to address the new mobility eco-system and automated vehicles?
2. Assuming Minnesota allows testing of automated vehicles on public roadways, should the state require specific insurance and liability protections during testing phases? If so, what standards should be adopted? How should insurance differ between automated vehicle on-road public testing and full-scale deployment?
3. What is the role of insurance companies in the new mobility ecosystem? What are the responsibilities of insurance companies, government and others to educate consumers on changes in vehicle technology (its potential and limitations) and also on safety issues posed by technological advances?

Key Questions

4. What are some of the challenges insurers face in the evolution of insurance products to cover risks in the new mobility ecosystem?
5. Do you have specific recommendations relating to potential new insurance products and services that may develop in response to advancing technology changes?
6. What accident data will insurers need to provide necessary coverage and properly rate new insurance new products? How does this differ from the accident data insurers have access to today?
7. Should we treat people injured in accidents involving automated vehicles differently than those injured in accidents involving non-automated automobiles (or partially automated vehicles)? What factors should we consider?

Key Questions

8. Did we address safety, risk, equity and environment?
9. Other questions and topics?

Small Group Breakouts

Breakout Session Directions

- Designate 1 recorder
- Designate 1 person to report-out
- Engage with participants in your group & ask questions
- Write thoughts on large poster or individual comments on post-it notes & add to poster

Breakout Session Questions

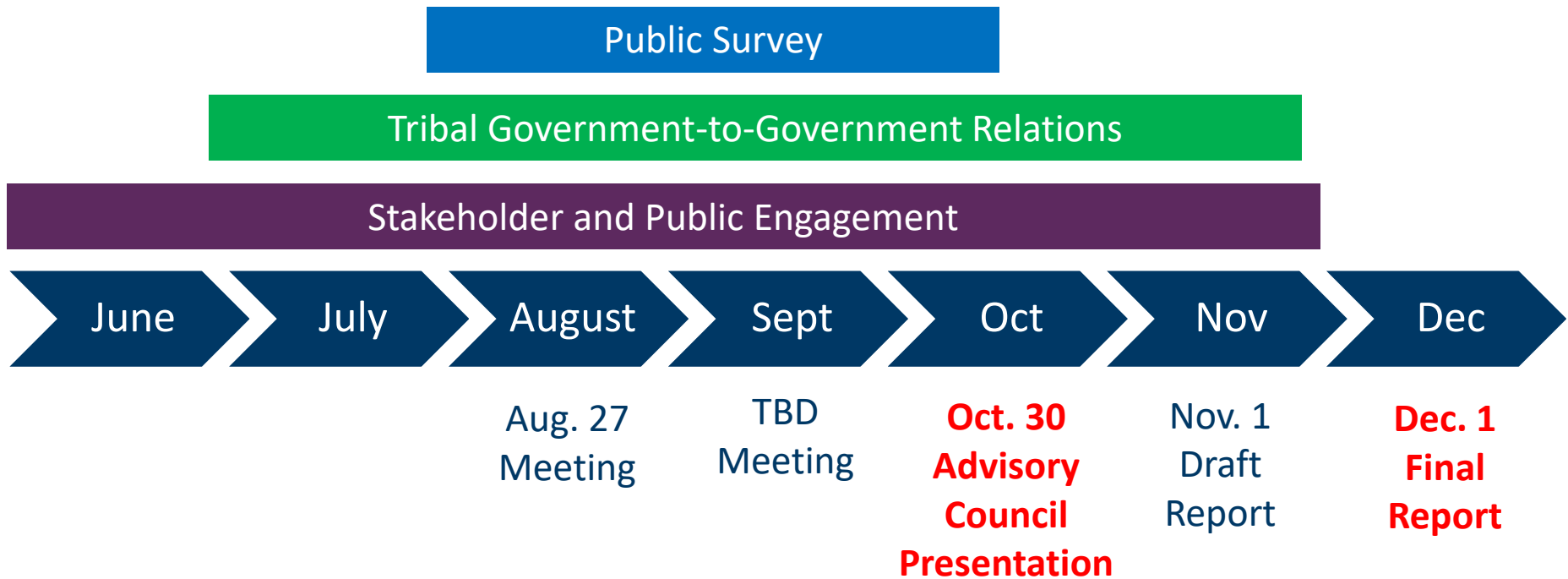
- What themes and recommendations do you want the Council to share with the Governor & Legislature?
- What policy areas or themes do you want addressed in the 2019 Legislative session?

Next Steps & Closing

Next Steps

- Comment Cards & Suggestions for next meeting
- All participants may review meeting minutes
- Additional comments can be made at CAVfacilitators@mediationcentermn.org
- Post-meeting online survey
- Public survey on www.state.mn.us/automated/
- October 30th: Present to Advisory Council

Key Dates



Thank you

**Vicky Rizzolo,
American Family Insurance
Subcommittee Liaison**

**Alison Groebner, Department of
Commerce
Subcommittee Liaisons**