



Minnesota Distance Based Fee Demonstration Technical Advisory Committee

June 10th, 2020

Scott Peterson, MnDOT Deputy Commissioner,
TAC Chair

Agenda

- Welcome – Scott Peterson
- Meeting Guidelines – Lee Munnich (5 min)
- Self Introductions – TAC Members and attendees (10 min)
- Charge to the Committee – Ken Buckeye (5 min)
- Background – Multiple presenters (20 min)
- Project Design and Update – Mike Warren (20 min)
- Issue Areas – Frank Douma (10 min)
- Questions and Open Discussion – TAC Members (20 min)
- Adjourn

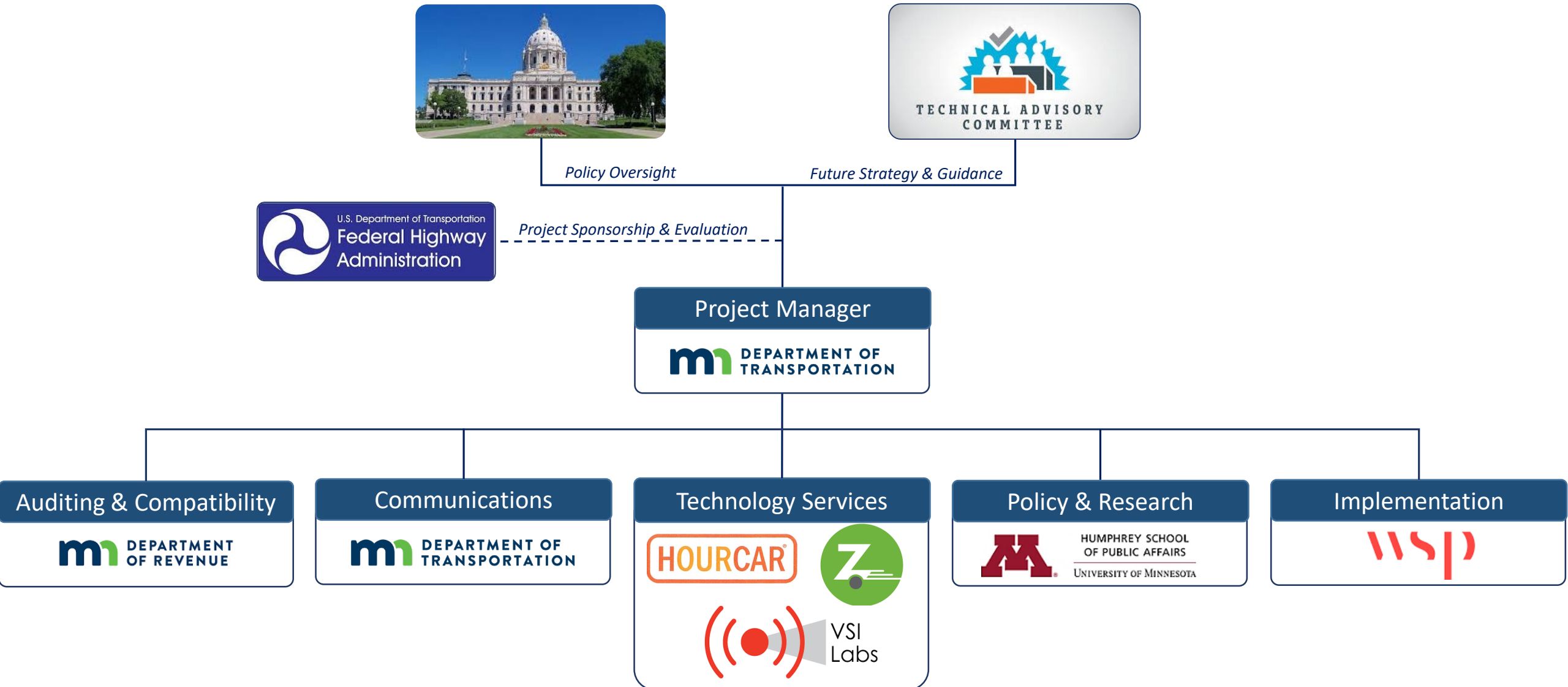
Meeting Guidelines

- Mute your audio when you are not speaking. Unmute your audio when you are called on to speak.
- TAC members turn on your video. Project team members should mute your video except when speaking.
- Open the participant box. Use the hand raising icon if you would like to ask a question.
- You may also open the chat box and type in questions or comments at any time during the meeting. If you have a technical issue or comment, you may send a message to the host only.
- The meeting is not being recorded but the chat box comments will be saved.

Self-Introductions

- Name
- Agency/Organization
- In one sentence, please tell us why you agreed to join this committee.

MN Distance Based Fee Demonstration Organization



Charge to the DBF Technical Advisory Committee

- Provide Advice and Guidance on Technical and Policy Issues to the Project Team and MnDOT
- Be an Informed Constituency in DBF Discussions with the Public and Policy Makers
- Help Ensure that the Project Contributes to the State and National Research Efforts

Potential DBF Discussion Topics

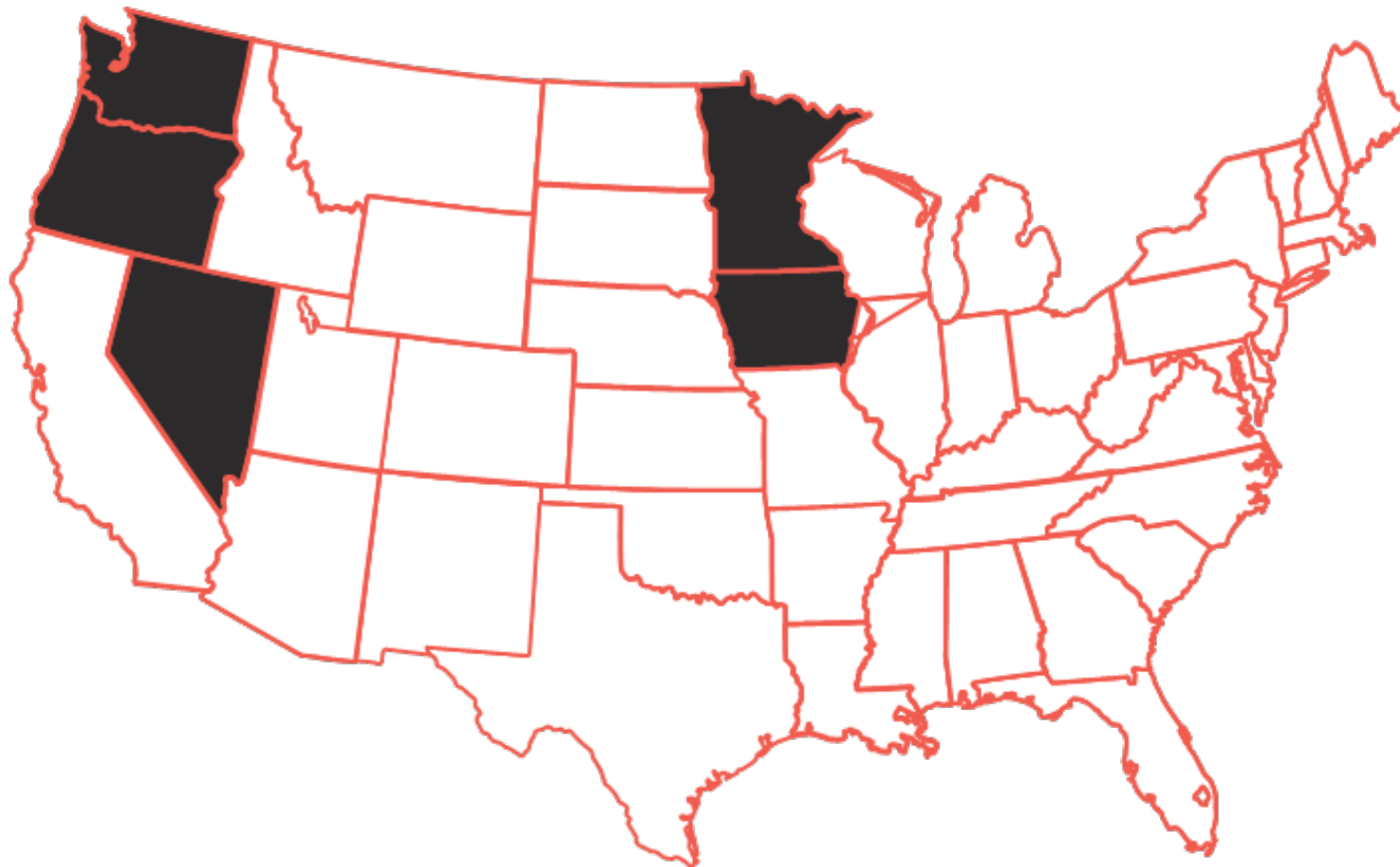
- Social and geographical equity
- Maintenance and protection of motorist and subscriber data and privacy
- Measures of feasibility including cost of collection, scalability, security, enforcement and compliance, public acceptance, etc.
- Communications to stakeholders and key messages
- Rate setting including variable rates or rate differentiation
- Connections to other existing and innovative initiatives
- Integration with MnDOT Sustainability and Connected and Automated Vehicle initiatives

TAC Membership Expectations

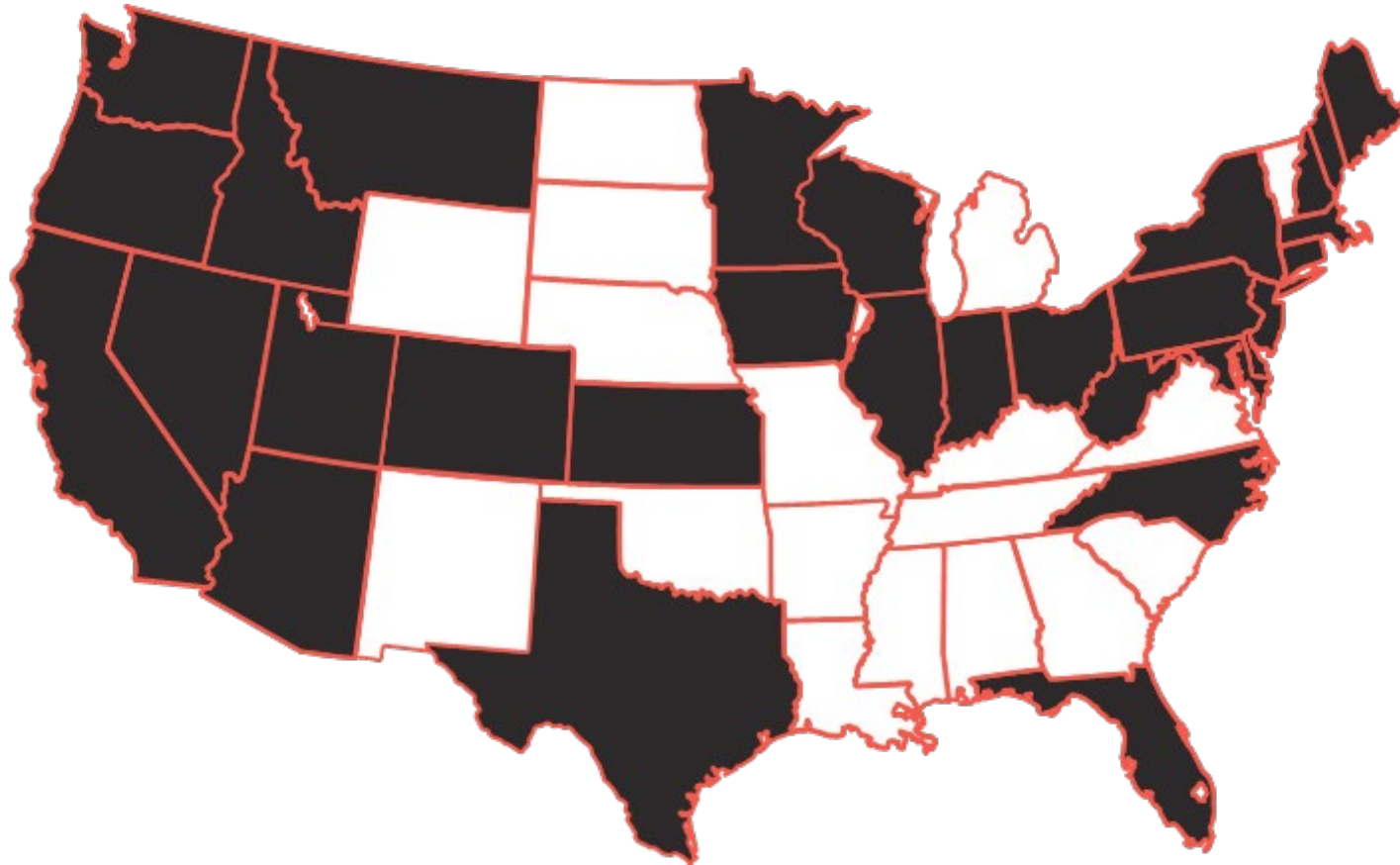
- Participate in 4-5 TAC meetings over the next 12 months
- Participate in Rethinking Transportation Finance Roundtable discussions if possible
- Review work products and white papers developed by the project team
- Provide guidance and advice on policy and technical issues surrounding distance-based fees
- Represent your agency/organization's perspective

- National Overview – Lee Munnich
- MN History and Lessons – Ken Buckeye
- Convergence of Trends – Chris Berrens

States Exploring a Road Charge in 2010



States Exploring a Road Charge in 2019



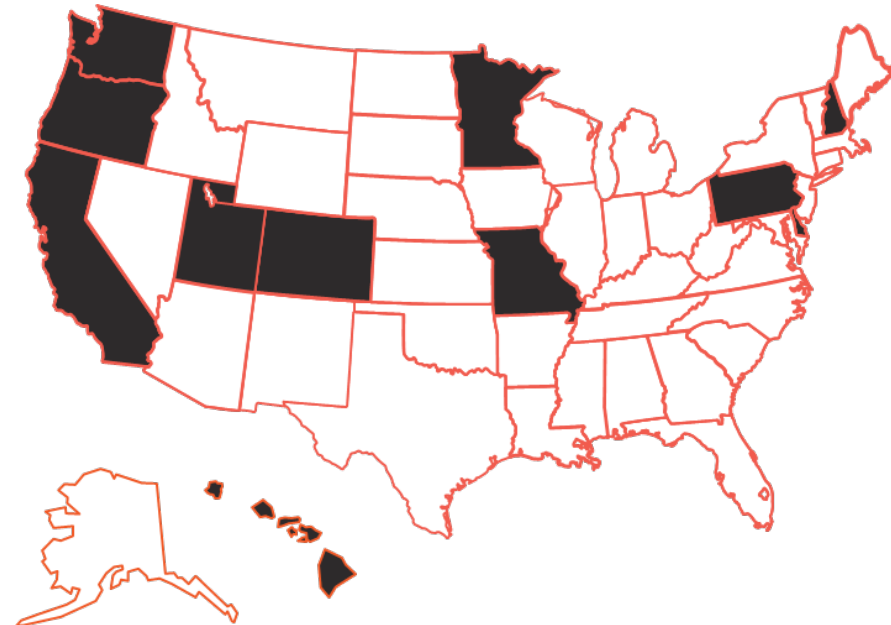
FAST Act and STSFA Grants

- \$95 million Surface Transportation System Funding Alternatives (STSFA) grant program established under the FAST Act
- **STSFA program purpose:**

“to provide grants to States to demonstrate user-based alternative revenue mechanisms that utilize a user fee structure to maintain the long-term solvency of the Highway Trust Fund”

FAST Act Winners

- I-95 Corridor Coalition
- RUC West
- Oregon Department of Transportation
- California Department of Transportation
- Minnesota Department of Transportation
- Missouri Department of Transportation
- Washington Department of Transportation
- Hawaii Department of Transportation
- Colorado Department of Transportation
- New Hampshire Department of Transportation
- Utah Department of Transportation



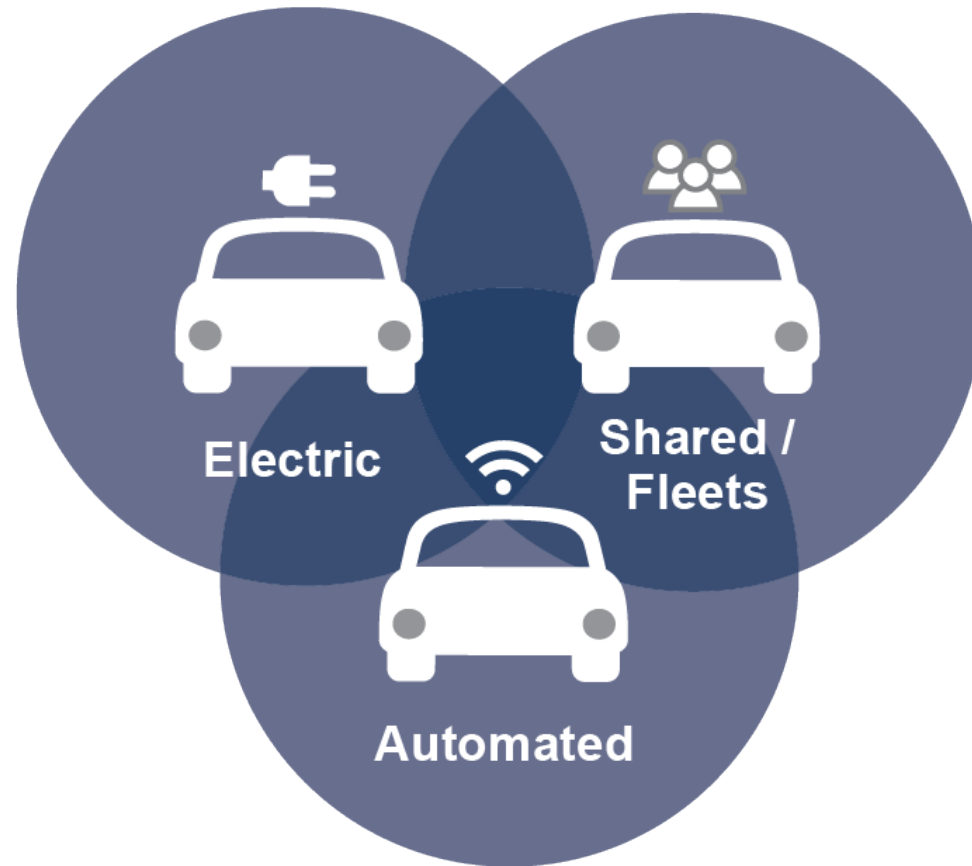
Minnesota's Road User Fee Experience

- A New Approach to Assessing Road User Charges
 - Multi-State Pooled Fund Project, 2003
- Pay-As-You Drive Demonstration, 2006
- Public Acceptance of Road User Charges
 - Customer Outreach 2010
- Minnesota Road Fee Test
 - Mileage-Based User Fee Policy Task Force, 2011
 - Demonstration, 2013
- Distance Based Fee Demonstration, 2019

What have we learned from our research?

- Data privacy and security..., big brother
- Collection costs
- Rate setting..., what is the framework?
- Transition and scalability
- Complexity
- Evasion
- Equity
- Motor Fuel Tax

Convergence



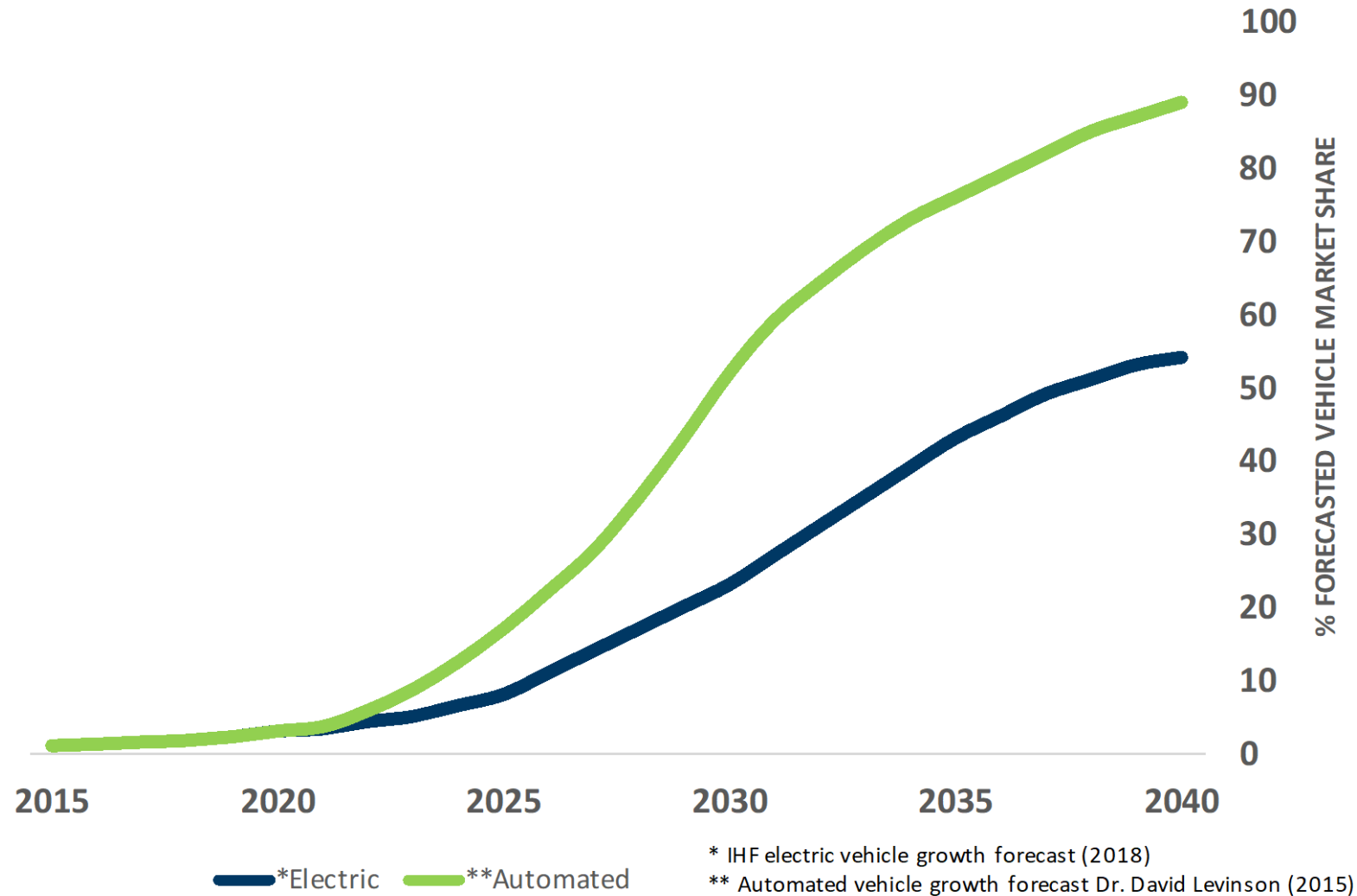
Convergence

Leveraging Shared Fleet Models



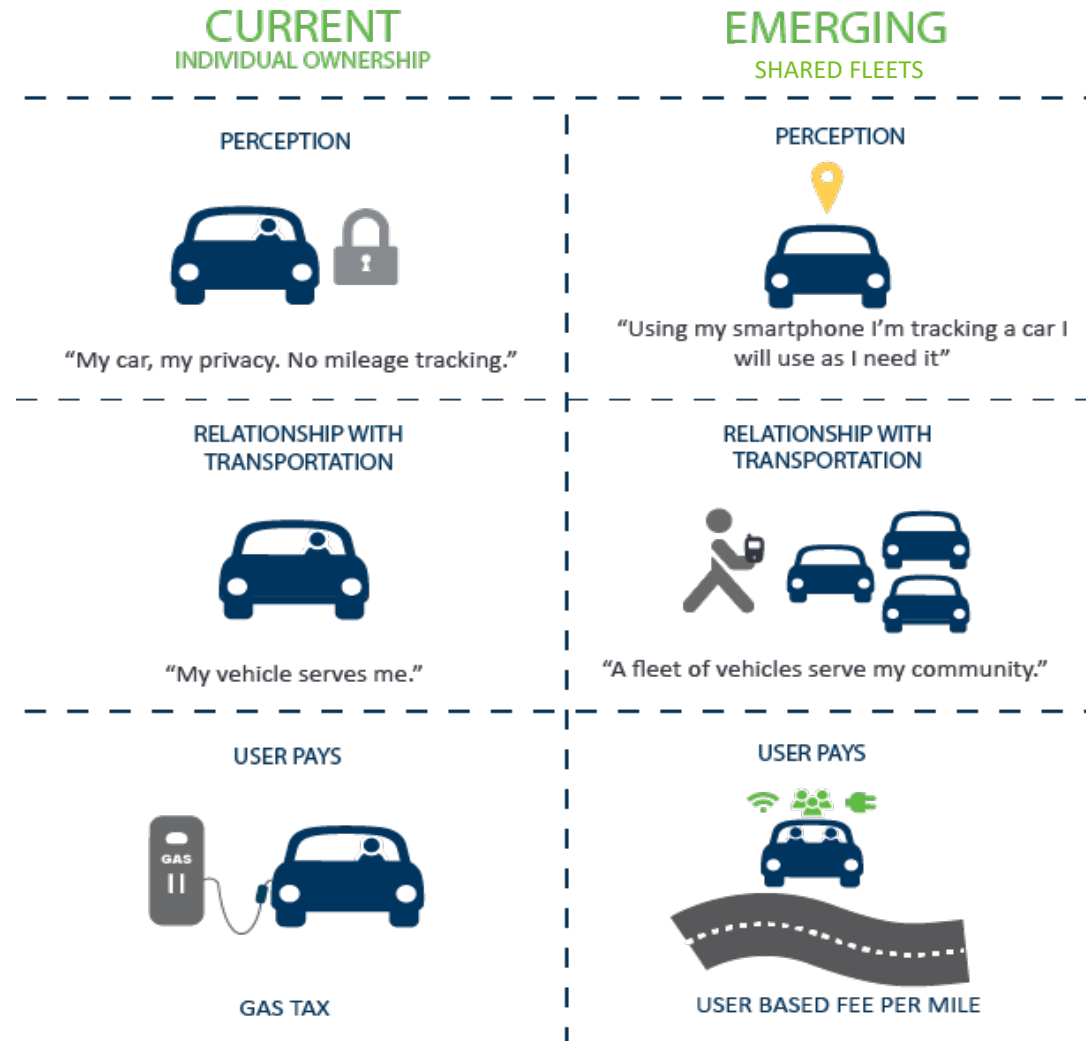
Convergence

Leveraging Automation & Electrification



Convergence

Leveraging Changes in Perception





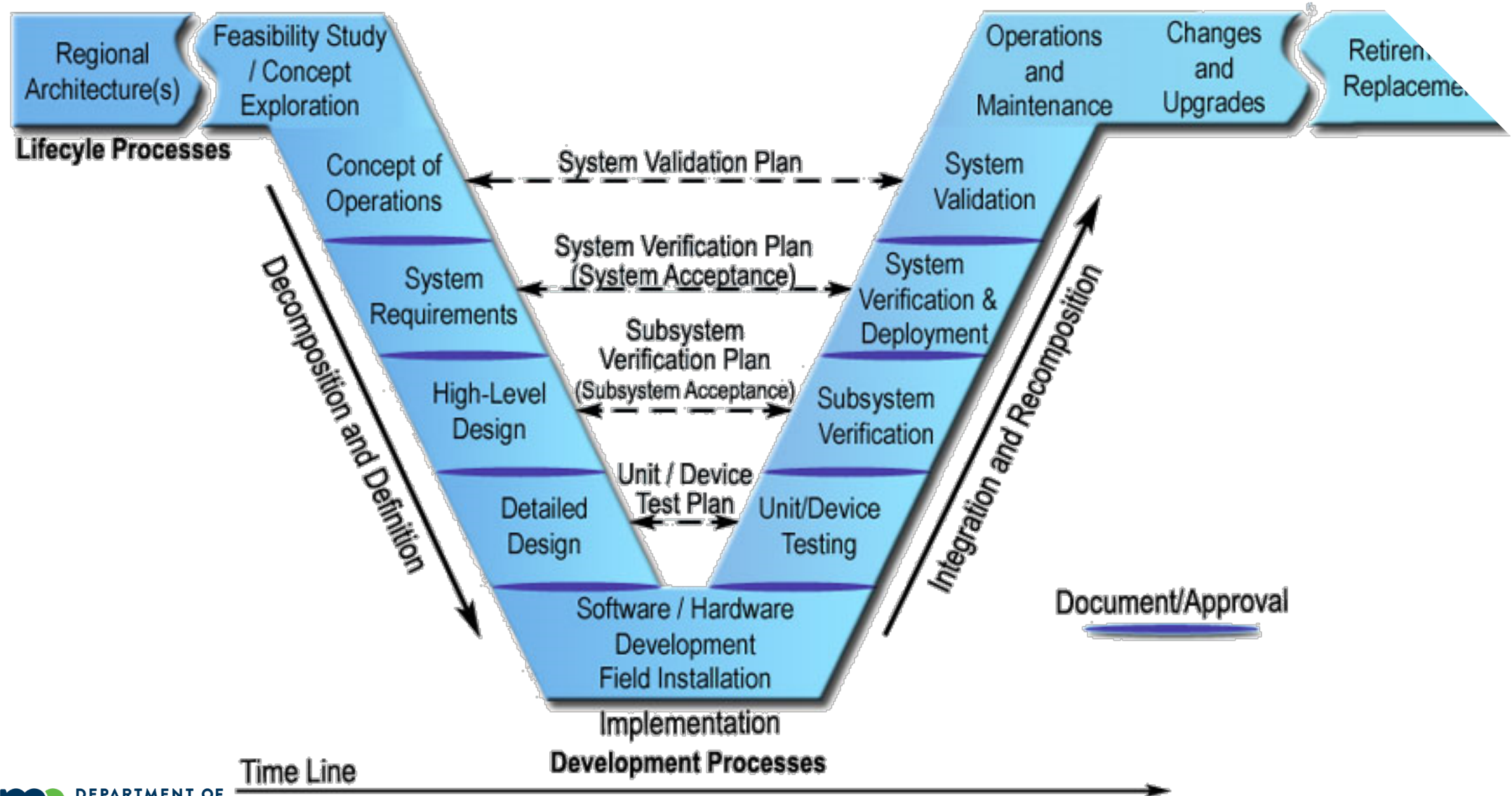
Minnesota Distance Based Fee Demonstration Technical Design

June 10th, 2020

Mike Warren

WSP USA

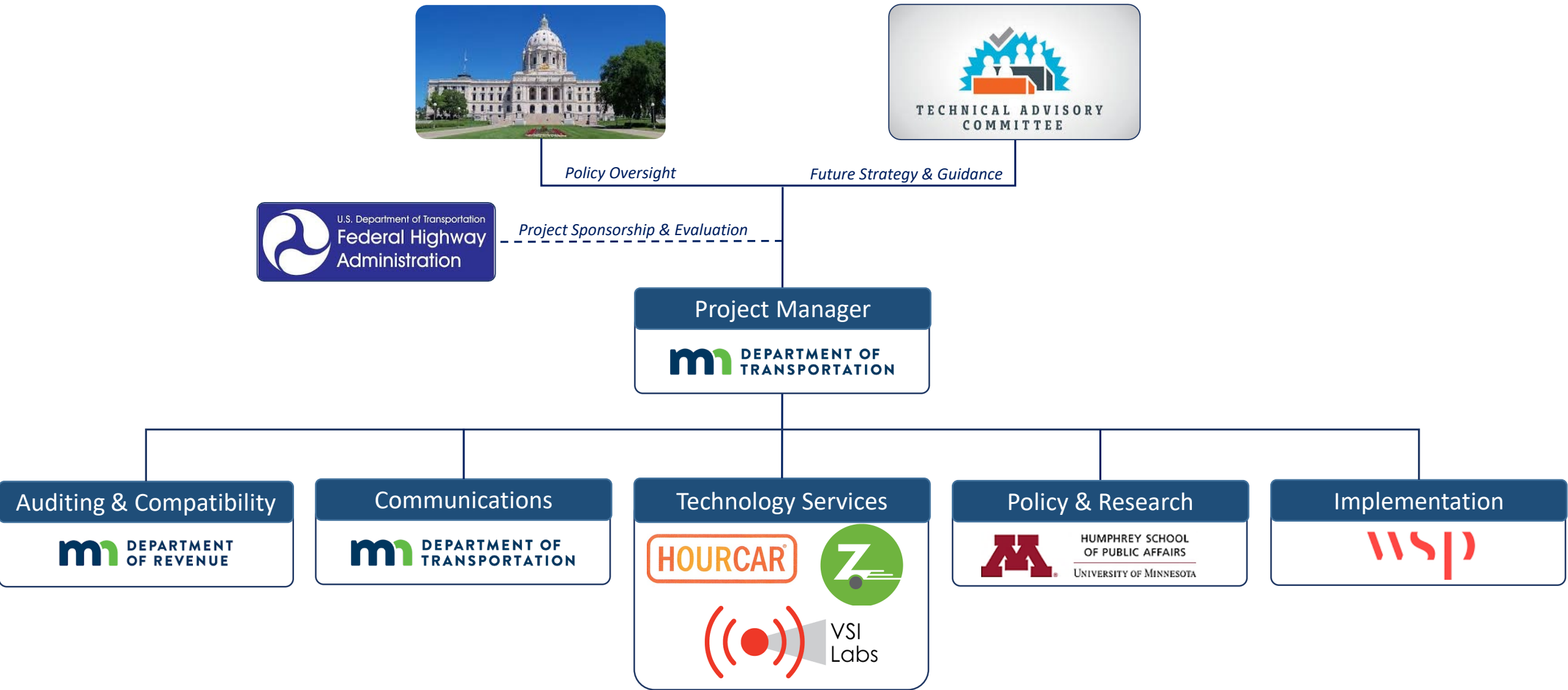
THE SYSTEMS ENGINEERING “V” Diagram



Design Activities

- **Concept of Operations** – Describes the functional, administrative, and operational scenarios for the demonstration
- **Systems Architecture Diagram** – Major systems and subsystems and data flows
- **Business Requirements** – Operational specifications
- **Technical Requirements** – Specific technical specifications
- **Interface Control Document** – System to System and Subsystem Interface Specifications
- **Test Plans and Procedures**
 - Unit Testing – Component Level Testing
 - Integration Testing – Testing of major units and vendors
 - Acceptance Testing – Demonstration system functional testing
 - Proof of Concept – Fully functional demonstration

Organizational Construct



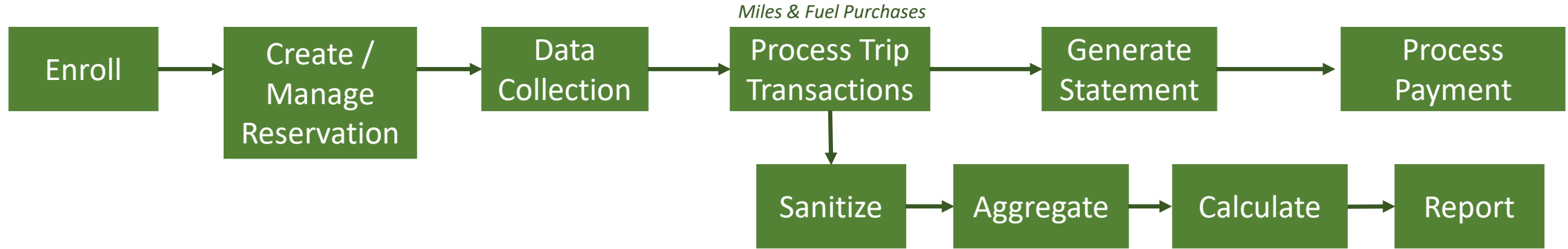
Partners

	Project Sponsor
	Systems Integrator and Lead Designer
	Local, Non-profit Carshare Provider
	National, Carshare Provider with small Twin Cities presence
	Connected/Automated Vehicle Research Partner. Data Repository host
	Mock audit support. Financial report evaluator

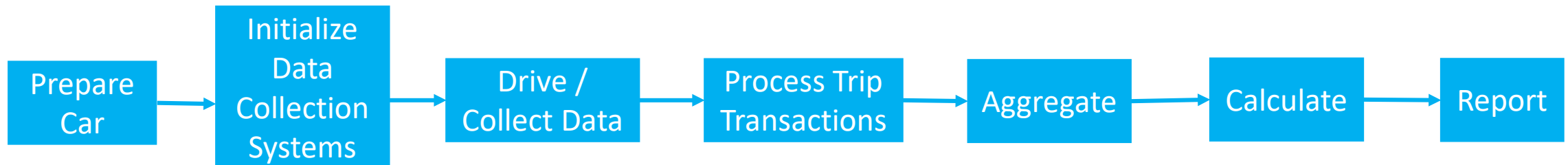
CUSTOMERS



SM PROVIDERS



C/AV RESEARCHER



Demonstration Stage 1

Static Data Collection and Reporting:

- Supports multiple Shared Mobility Providers
- Static DBUF Rate – State and Federal



Shared Mobility Vehicle

Shared Mobility Telematics Data

Shared Mobility Provider Data Repositories

Data

Shared Demonstration Data Repository

Data

Research Partners

Report

Audit

Minnesota Department of Revenue

- Simulated Revenue Reports
- Simulated Audit Reconciliation
- Fee collection system integration analysis



Automated Vehicle

C/AV Telematics Data

C/AV Data Repository

Data Analysis and Pricing Schemes

Minnesota Department of Transportation

- Research data and analytics
- Transportation management info
- Capital planning
- Policy recommendations
- Evaluation/performance criteria
- Communications

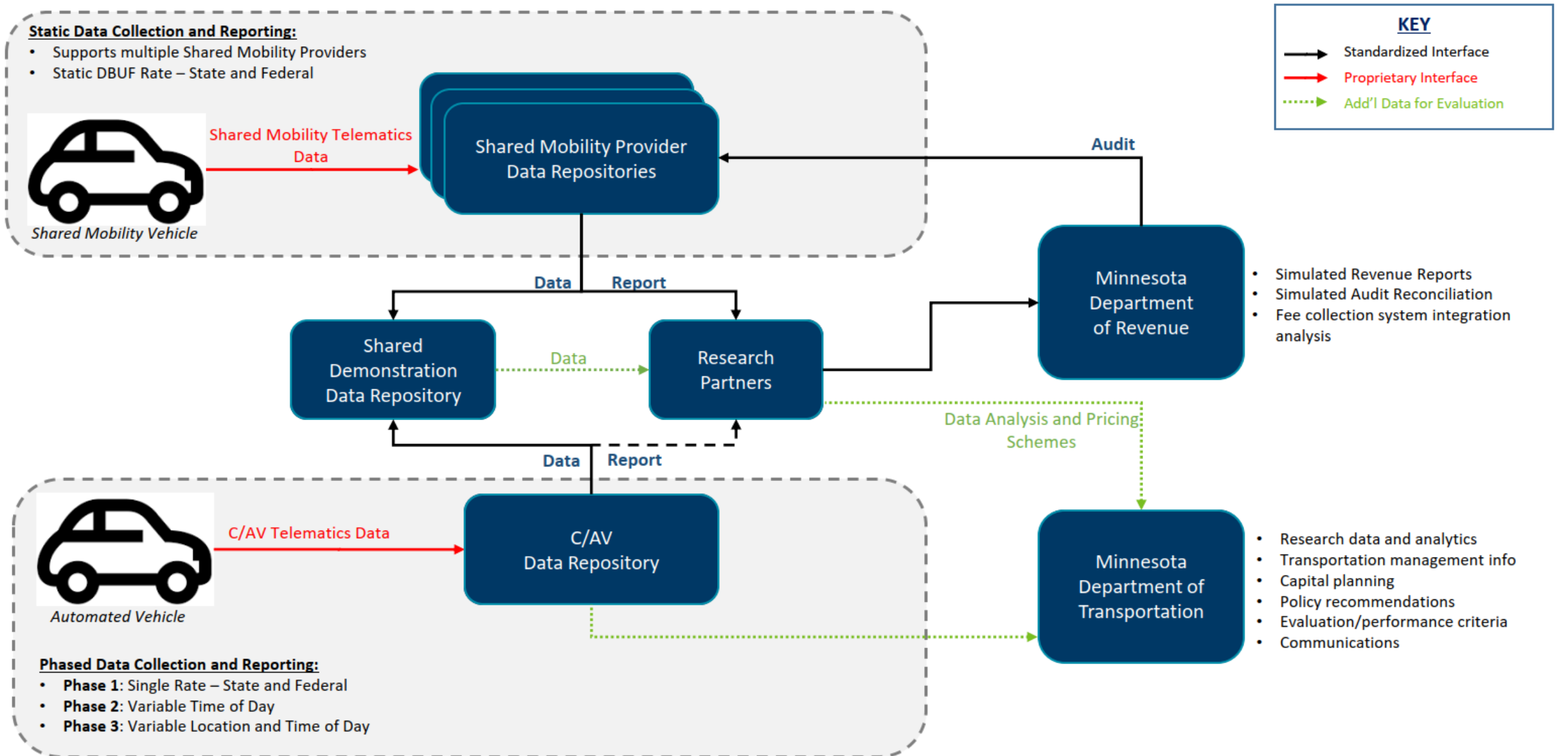
Phased Data Collection and Reporting:

- **Phase 1:** Single Rate – State and Federal
- **Phase 2:** Variable Time of Day
- **Phase 3:** Variable Location and Time of Day

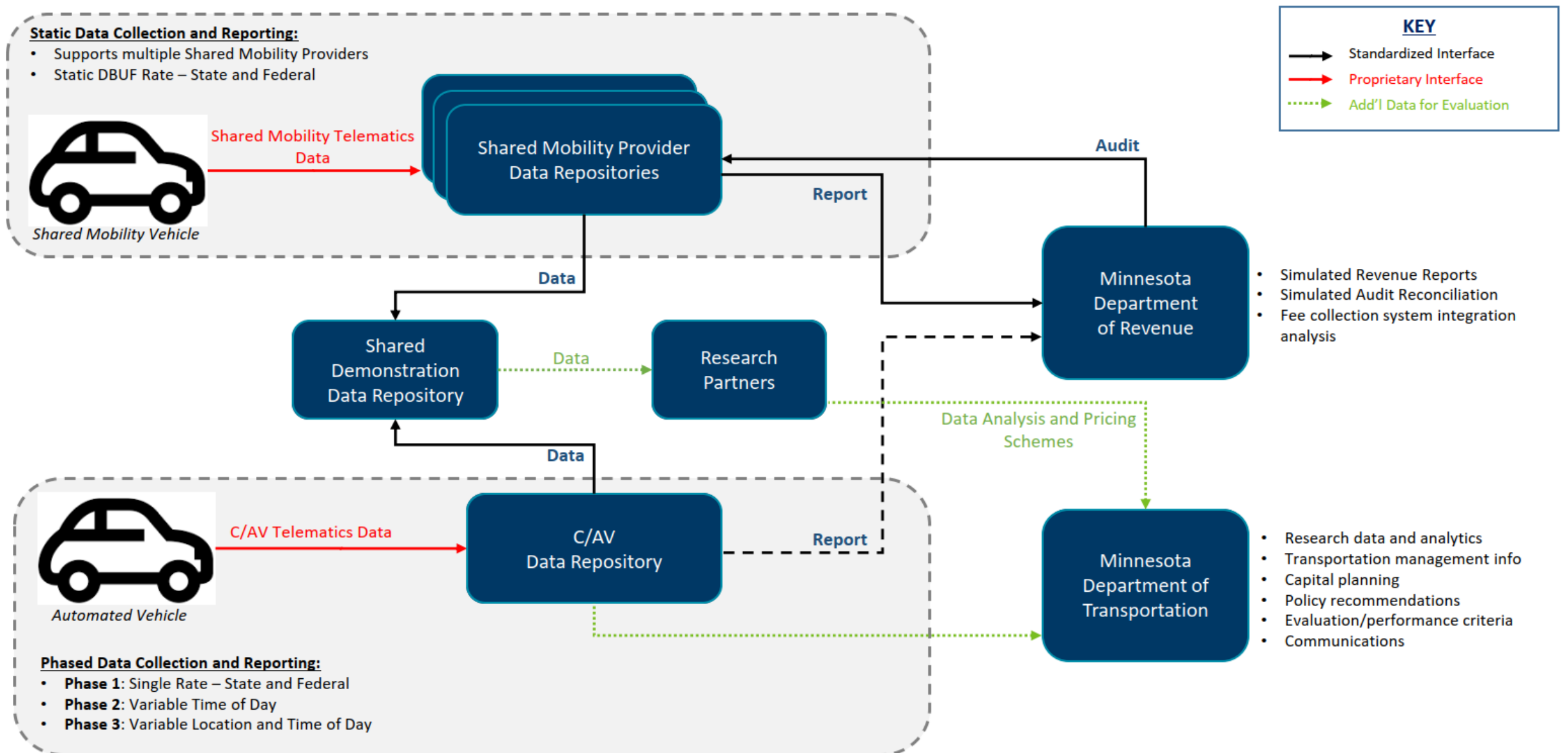
KEY

- Standardized Interface
- Proprietary Interface
- Add'l Data for Evaluation

Demonstration Stage 2

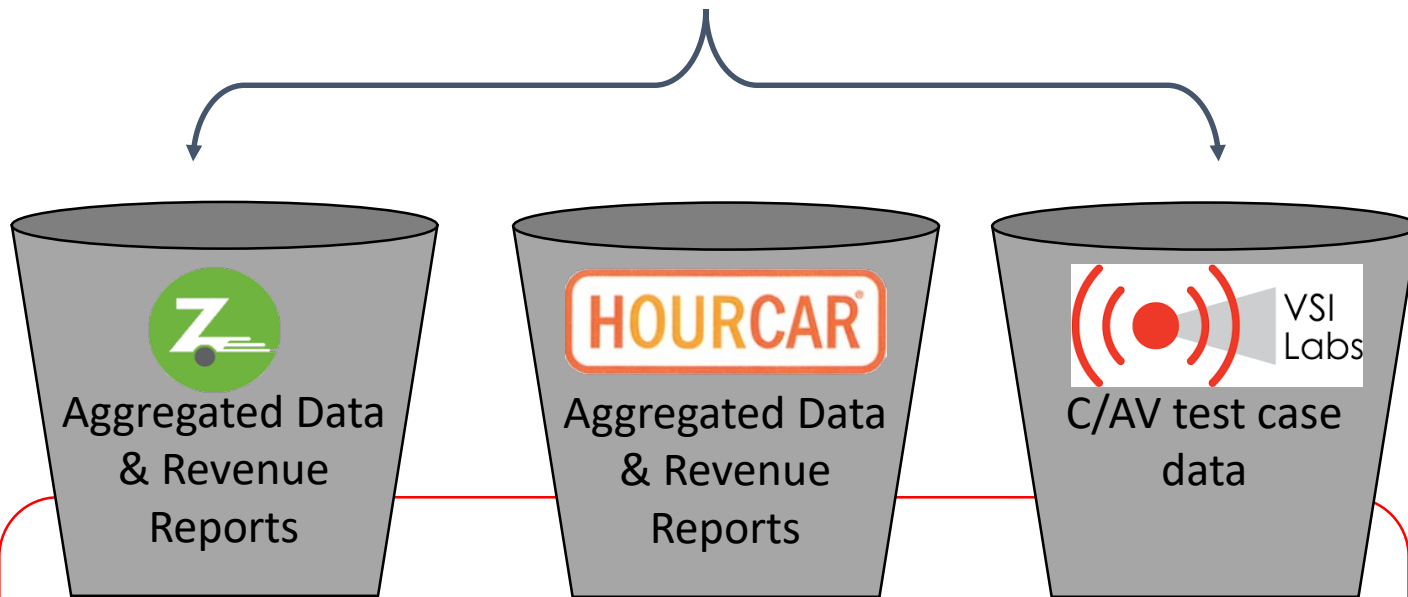


Demonstration Stage 3



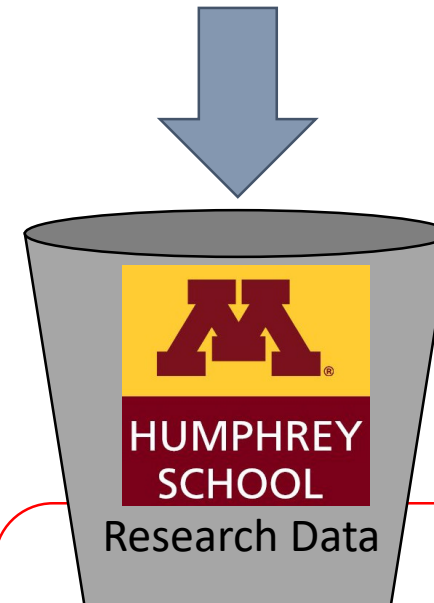
Data & Reporting

Monthly upload of
aggregated source data from
providers

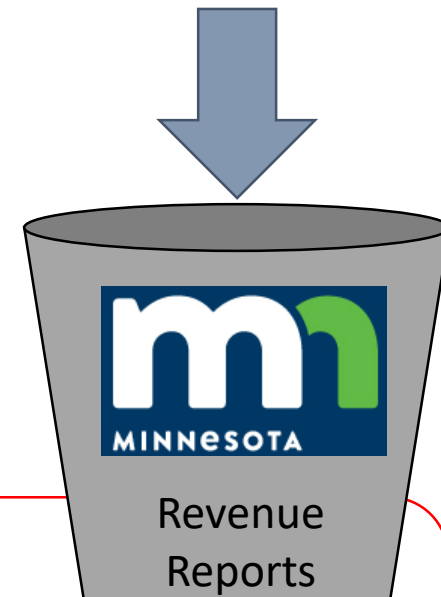


SM providers will be able to access their respective buckets ONLY
WSP Admin can access all buckets for review and QA

WSP QA-ed and
transferred source
data



WSP (S1) and SM
Providers (S2 & 3)
Revenue Reports



WSP can access all buckets
HHH can access Research and State bucket
State can only access their respective bucket

Mock Audit

A mock audit between each SM Provider and Revenue to show traceability and accuracy from financial reports to source data

- Designate a reporting period to conduct the audit
- Develop audit procedures IAW existing Revenue policies
- Identify audit representatives from Revenue, Zipcar, and HOURCAR
- Document findings to include in evaluation and final report
- Conduct audit gap analysis to determine enhancements needed for future program



Drafted briefing papers on each of the following issues related to DBF's:

- Privacy
- Equity
 - Social
 - Rural / Urban
 - Modal
- Collection and Administrative Costs

Will discuss in greater depth at subsequent meetings



Questions and Open Discussion

Adjourn