



Minnesota Distance-Based Fee Demonstration Technical Advisory Committee

April 23rd, 2021

Scott Peterson

TAC Chair

Agenda

1. Welcome – Scott Peterson (5 min)
2. Host and Roundtable Announcement – Lee Munnich, HHH (2 min)
3. Overview and Updates – Ken Buckeye, MnDOT (10 min)
4. Demonstration Project Status – Markell Moffett, WSP (5 min)
5. Focused Project Deliverables – Mike Warren, WSP (10 min)
 - Mock Audit and Rate Setting Framework
 - Demonstration Project Report Overview
6. Review of Rural/Urban and Administrative Costs Survey Results – Meredith Benesh, HHH (5 min)
7. Privacy Memo and Discussion - Frank Douma, HHH (20 min)
8. Discussion – Scott Peterson (10 min)
9. Adjourn

Host and Roundtable Announcement

Lee Munnich, munni001@umn.edu

Humphrey School of Public Affairs

University of Minnesota

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.

Overview and Updates

Ken Buckeye, kenneth.buckeye@state.mn.us

MnDOT

Demonstration Project Status

Markell Moffett, Markell.Moffett@wsp.com

WSP

Timeline and Status



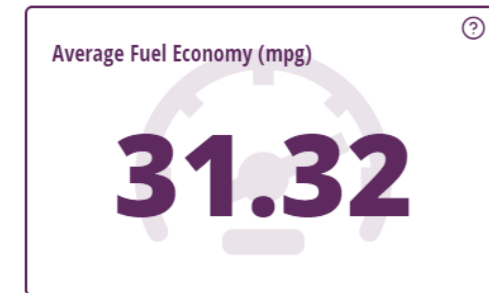
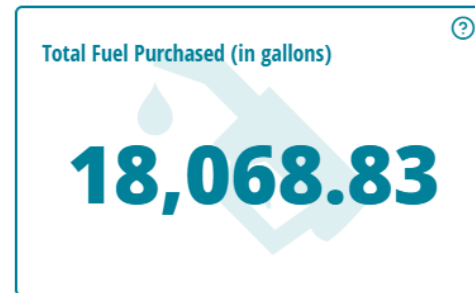
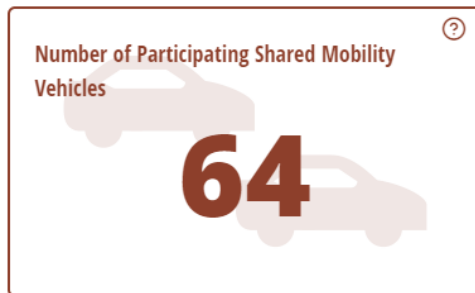
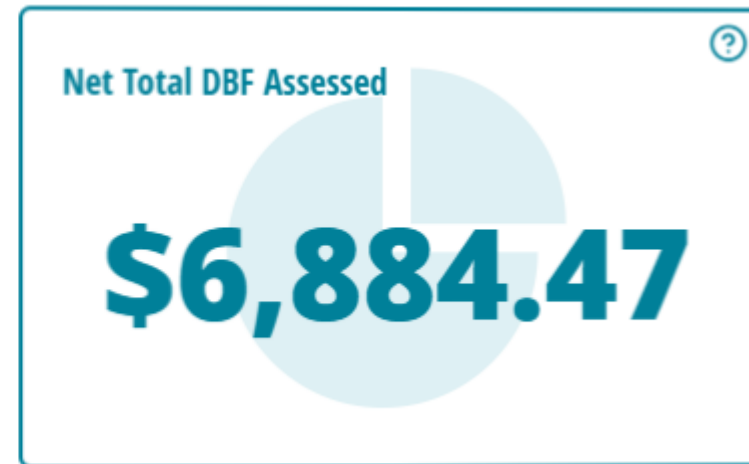
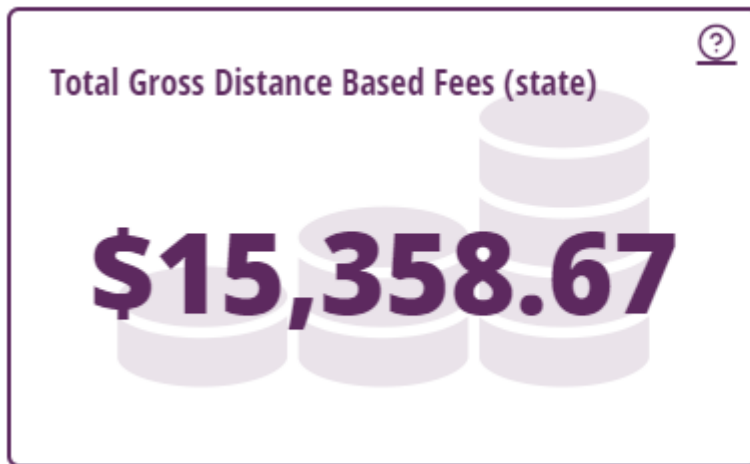
DEMONSTRATION COMPLETE



By the Numbers

Demonstration Totals: April 2020 through March 2021

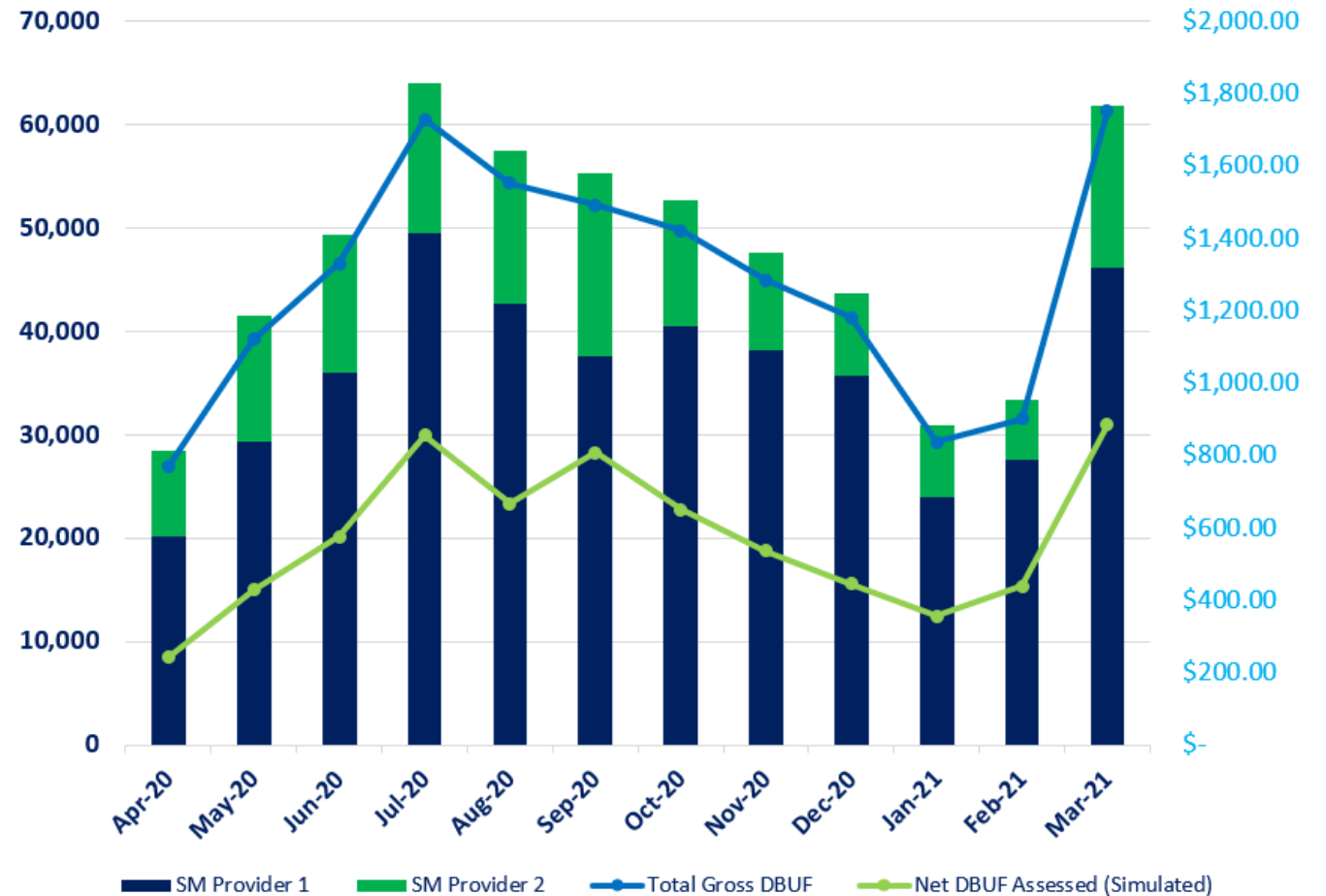
Demonstration Dashboard available on the MnDOT Distance Based Fees (DBF) website: <https://dbf.dot.state.mn.us/demonstration-results/>



Monthly Averages

- **47,153 Reported Miles**
- **1,505.7 Gallons Purchased**
- **\$1,279.89 Gross DBF**
- **\$573.71 Net DBF** *(After Fuel Tax Credits)*
 - **\$329.32 State DBF**
 - **\$244.38 Federal DBF**

Monthly Reported Miles and DBF



Additional Demonstration Activities

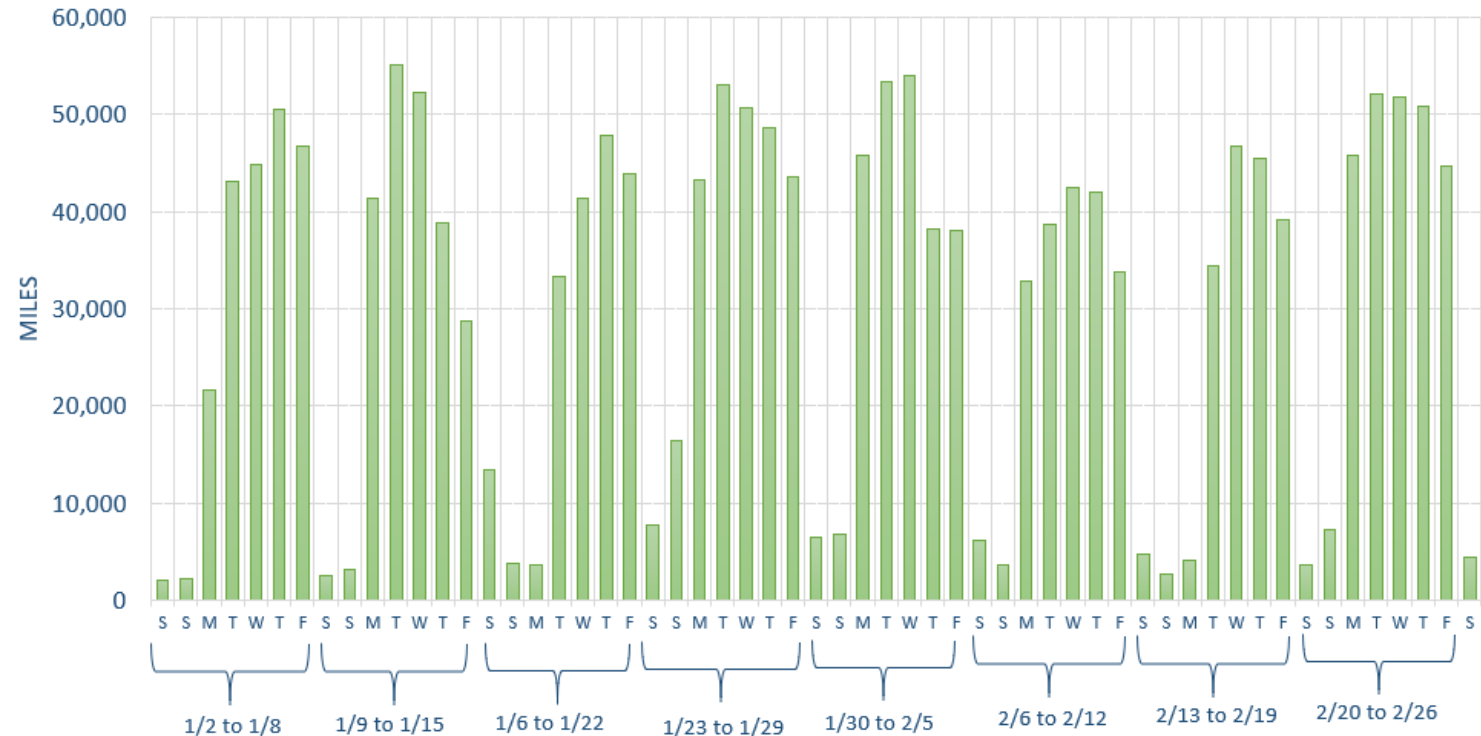
MnDOT Fleet Telematics data

- Large dataset (~1,800 vehicles)
- Consistent
- Cyclical
- Fleet-based

Supports project goals and objectives

- Ease of collection using telematics
- Scalable
- Transferable
- Reduce evasion
- Potential reduction in costs (administrative, collection, evasion)

MnDOT Fleet - Vehicle Miles Traveled by Day



A Demonstration of “Firsts”

First DBF Demonstration in the Nation to:

- ✓ Collect data from a connected/automated vehicle for the purpose of assessing a DBF
- ✓ Assess a DBF on Shared Mobility Providers
- ✓ Conduct an in-depth financial and operational audit
- ✓ Focus on capturing data directly from onboard vehicle telematics

Focused Project Deliverables

Michael Warren, Michael.Warren@wsp.com

WSP

Three Focused Deliverables

Mock Audit:

- ✓ Audited mileage and DBF transaction calculation from shared mobility fleet vehicle all the way to Department of Revenue Reporting
- ✓ Shows traceability from data and collection source all the way through financial reporting and collection
- ✓ First ever audit conducted on a per-mile fee demonstration

Rate Setting Framework:

- ✓ Provides process and considerations for setting a per-mile rate
- ✓ Identifies potential revenue objectives, fleet segmentation, and adjustments based on certain criteria
- ✓ First ever rate framework developed for a per-mile fee program

Final Demonstration Report:

- ✓ Provides the outcomes of the year-long demonstration
- ✓ Presents the process used to design, deploy, operate, and administer the demonstration
- ✓ Identifies key findings and future considerations

Mock Audit

- Evaluated reporting and transaction calculation accuracy for April, May, June, and November 2020
- SM Provider data from both Zipcar and HOURCAR was evaluated for accuracy
- One error found due to one vehicle not reporting mileage

Apr-20					
Zipcar		Check	Source	Type	
	Miles Check	OK	RevReport	Miles	8240
	Fuel Check	OK	RevReport	Fuel	248.228
	Calc Check	OK	Trip Data	Miles	8240
			Fuel Data	Fuel	248.228
Hourcar	Miles Check	OK	RevReport	Miles	20182
	Fuel Check	OK	RevReport	Fuel	872
	Calc Check	OK	Trip Data	Miles	20182
			Fuel Data	Fuel	872

May-20					
Zipcar		Check	Source	Type	
	Miles Check	OK	RevReport	Miles	12137
	Fuel Check	OK	RevReport	Fuel	305.524
	Calc Check	OK	Trip Data	Miles	12137
			Fuel Data	Fuel	305.524
Hourcar	Miles Check	OK	RevReport	Miles	29344
	Fuel Check	OK	RevReport	Fuel	1171
	Calc Check	OK	Trip Data	Miles	29344
			Fuel Data	Fuel	1171

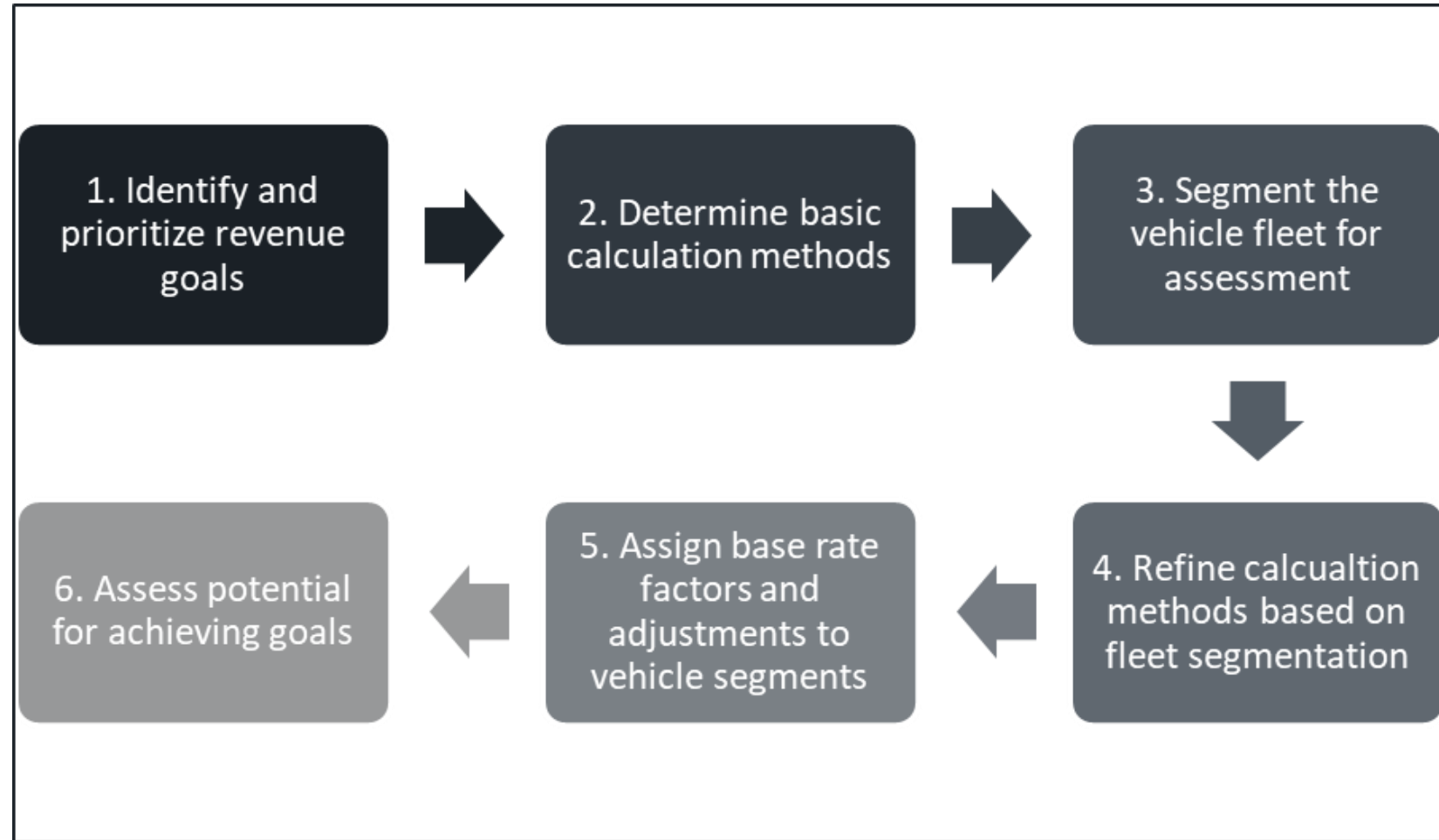
Jun-20					
Zipcar		Check	Source	Type	
	Miles Check	OK	RevReport	Miles	13,253
	Fuel Check	OK	RevReport	Fuel	146.584
	Calc Check	OK	Trip Data	Miles	13253
			Fuel Data	Fuel	146.584
Hourcar	Miles Check	OK	RevReport	Miles	36007
	Fuel Check	OK	RevReport	Fuel	1461
	Calc Check	OK	Trip Data	Miles	36007
			Fuel Data	Fuel	1461

Nov-20					
Zipcar		Check	Source	Type	
	Miles Check	OK	RevReport	Miles	9,313
	Fuel Check	OK	RevReport	Fuel	313.317
	Calc Check	OK	Trip Data	Miles	9313
			Fuel Data	Fuel	313.317
Hourcar	Miles Check	Error	RevReport	Miles	38209
	Fuel Check	OK	RevReport	Fuel	1281
	Calc Check	OK	Trip Data	Miles	38527
			Fuel Data	Fuel	1281

[(# vehicle miles traveled in Minnesota) x (1.6¢ per mile)] – [(# gallons of fuel purchased) – (28.5 ¢ per gallon)]

Rate Setting Framework

- Established processes for how to set a per-mile rate
- Outcomes established during a Rate Setting Visioning Workshop between MnDOT, HHH, and WSP on July 31, 2020
- Set forth considerations and methods for how to set a per-mile rate
- Additional collaboration between WSP, MnDOT, and HHH expected to refine framework



Rate Setting Considerations

Consideration	Method
Revenue Position <i>(Establishes a base rate position)</i>	<ul style="list-style-type: none"> • Revenue Neutral – Rate is set to equal what is currently collected from fuel tax revenues and other fees plus administrative costs • Revenue Augmenting – Rate is set to increase current revenue position • Use Monetization – Rate is set to reflect the cost imposed by users on the transportation network (congestion, weight, emissions, etc.) • Administrative Cost – Additional per-mile rate based on costs needed to administer program
Vehicle Segmentation	<ul style="list-style-type: none"> • Weight (Light, Medium, Heavy as defined by the FHWA Vehicle classifications) • Emissions • Powertrain (Internal combustion, Alternative fuel, All electric, Hybrid-electric) • Primary Vehicle Use (Personal, Light commercial, Fleet, Agricultural...) • DBF Reporting Option (Manual, Technology Non-location based, Technology location based, Embedded telematics...)
Potential Rate Adjustments	<ul style="list-style-type: none"> • Congestion Mitigation • Income Equity • Geographic Equity • Accessibility in underserved communities

Final Demonstration Report

- Tells the story of this demonstration from visioning, planning, design, testing, deployment, operations, and evaluation
- Describes the processes, the methods, the results and findings, and future considerations for DBF in Minnesota
- Evaluates the demonstration against criteria established by the FHWA STSFA grant program as well as against criteria established by the project team
- Captures future considerations taken from interviews with SM providers, MnDOT, and TAC members
- Current version is in DRAFT form....Requesting TAC review prior to finalization
- Executive Summary, Print-ready Version, and Highly Graphical Presentation forthcoming

Demonstration Report Outline

1. Introduction
2. Project Scope and Concept
3. Phase 1: Proof of Concept
4. Phase 2: Demonstration
 - *Rate Setting Framework Memo, Fuel Tax Credit Options Memo, and Mock Audit Report provided as appendices*
 - *DRAFT version to be sent to all TAC members after this meeting.*
 - *Please review with focus on Sections 6, 7, and 8 relative to your specific area of focus*
 - *We would like to get comments back within one month (By May 23, 2021)*
5. Demonstration Evaluation Results
6. Key Takeaways
7. Future of DBF in Minnesota
8. Conclusion

Review of Rural/Urban Equity & Administrative Costs Survey

Meredith Benesh, bene0110@umn.edu

Humphrey School of Public Affairs

University of Minnesota

- Three themes on **Rural/Urban equity**

1. DBFs are inequitable due to:

- Greater travel distance in rural areas
- Regional income disparities
- Fewer mode choices in rural areas

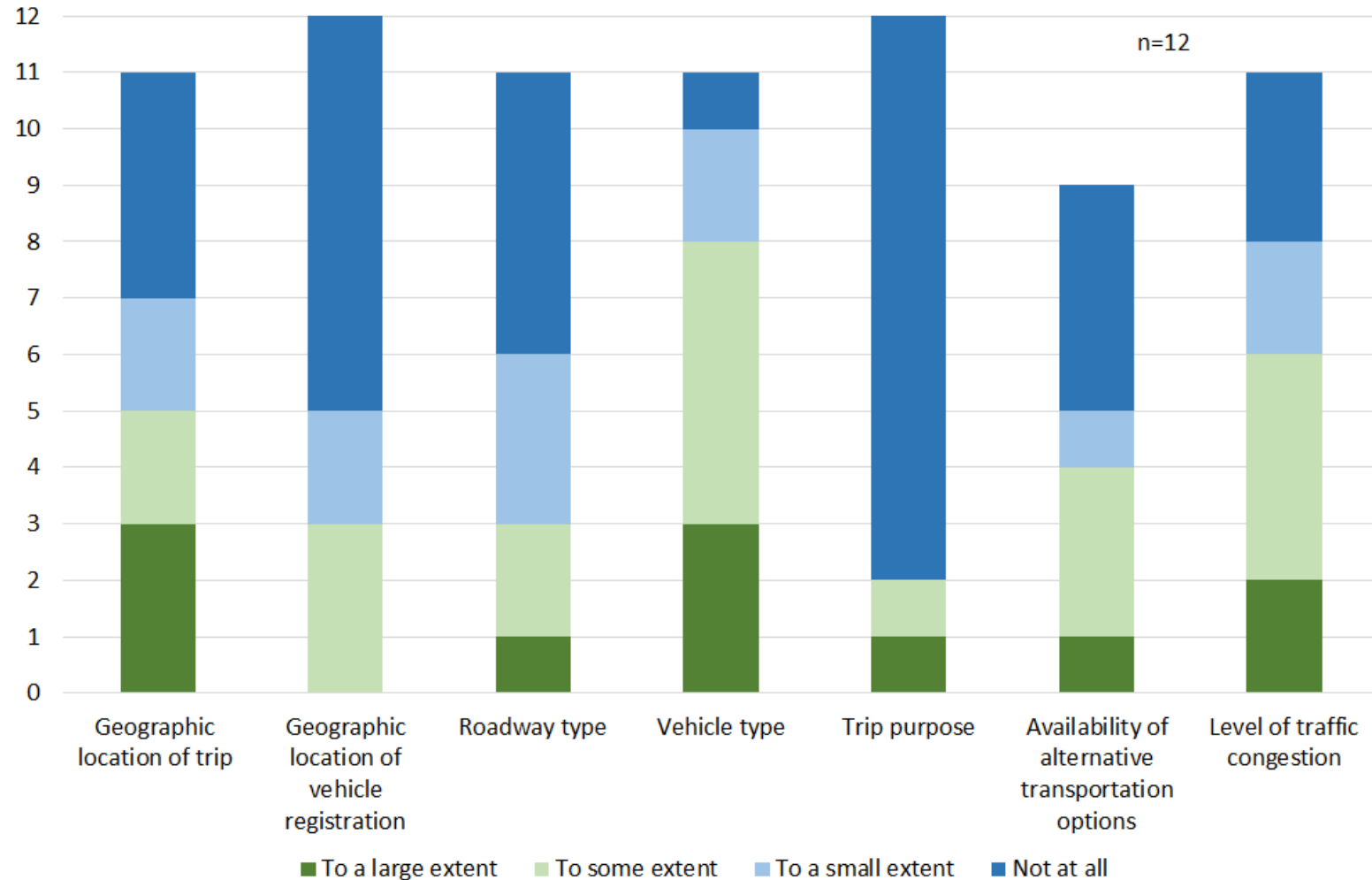
2. DBF system has the potential to be equitable as it is based on miles traveled rather than based on the vehicle fuel efficiency

3. Depends on the fee structure

- **Rate Tailoring**

- Six respondents believe the **rate** should be the **same** for all road users
 - Four believe there should be **other** adjustments to the fee
 - Based on type of vehicle and anticipated congestion
 - Rebate or other reduction in fees for low-income residents
- Five respondents believe it should be **tailored** to user groups
- One respondent believes it would **depend** on the administrative costs

Characteristics to be Considered in a DBF Design



- **Administrative Costs**

- Most respondents feel **administrative costs should be considered** in the DBF rate
 - One respondent feels the high administrative costs is an effective argument against a DBF approach
- Ideas to reduce administrative costs of a DBF
 - Self-reporting system
 - Prepaid system
 - Use of existing technology
 - Implementing a simple system
 - Integration of DBF with other systems (vehicle registration, vehicle insurance payments)

- How to handle out-of-state miles
 - Not charging a fee
 - Charging a fee in the state where the driving occurs
 - Charging the fee where the vehicle is registered

Difficult to handle out-of-state miles in the absence of a national system

Privacy Memo and Discussion

Frank Douma, douma002@umn.edu

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University of Minnesota



DATA PRIVACY, SAFETY AND SECURITY

Data Privacy v. Security

- Related, but not the same
- Security
 - Protect collected data from unauthorized use
- Privacy
 - Whether data collection is appropriate
 - Once collected, whether data used for appropriate purposes
 - Appropriateness can be set by law or contract

Why Does Privacy Matter?

Public policy &/or public opinion can restrain data use and collection because of privacy concerns.

Privacy concerns may limit the deployment of otherwise socially beneficial technologies.

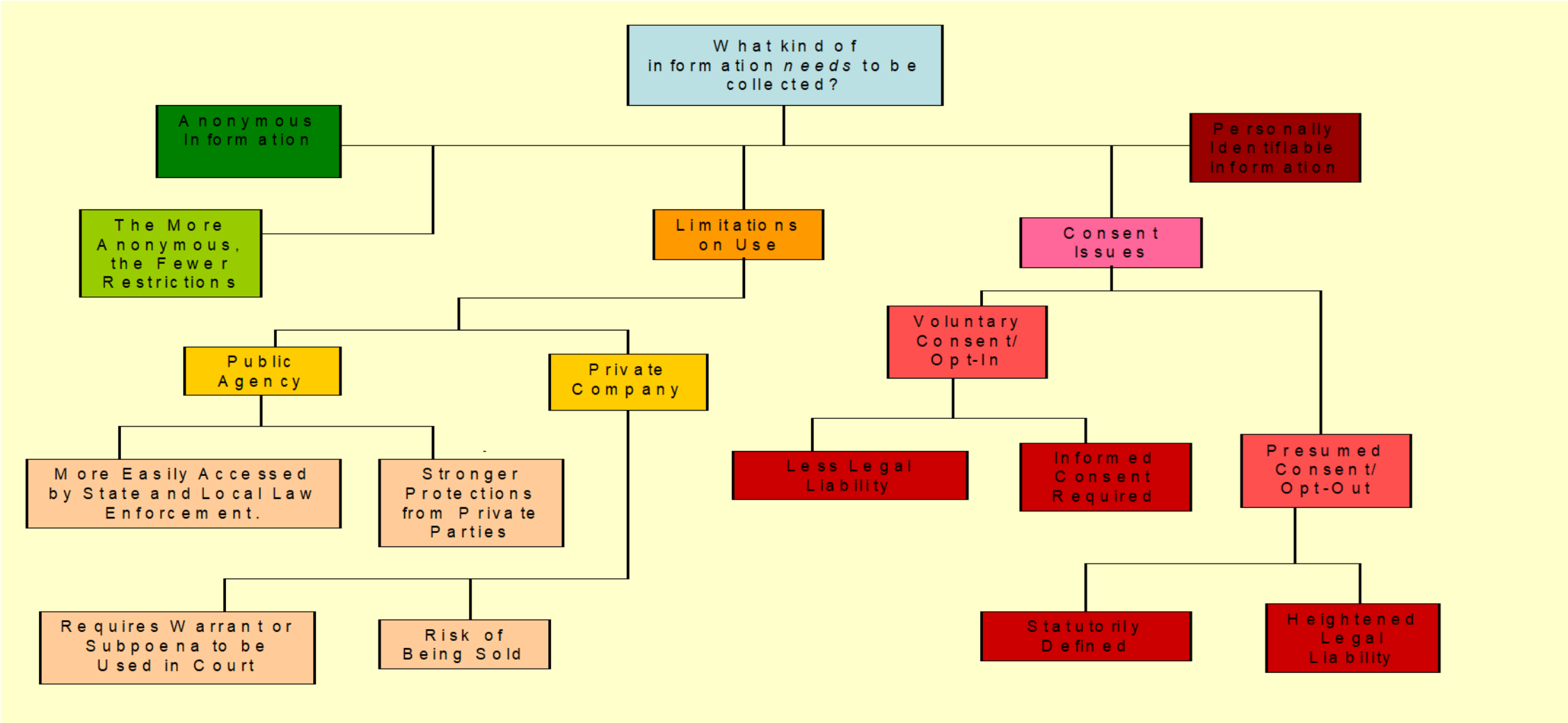


Lessons From History

- **With privacy, public perception matters as much as legal reality**
- Increased safety or efficiency rationales only go so far to offset privacy concerns
- Tackling privacy issues at the outset of technology development can reduce privacy related deployment risks



Quick Summary



“Right to Privacy”

- No single legal source
 - Arises piecemeal from narrow laws and interpretation of constitution by courts
 - No fixed meaning, evolves as society and technology changes.
- Federal constitution and laws set baseline
- States can (and do) increase protections



Transportation Data Privacy

- There is no comprehensive statutory privacy regime
- *Katz Test (1967)*
 - There is a protected privacy right when:
 - 1) An individual has an expectation of privacy; and
 - 2) Society recognizes that expectation as reasonable
- *U.S. v. Knotts (1983)*
 - A person traveling in an automobile on public thoroughfares has ***no reasonable expectation of privacy*** in their movement.

Transportation Data Privacy

- *City of Ontario v. Quon (2010)*
 - Both technology and its meaning in society changing too rapidly for Court to define a reasonable privacy expectation
 - Supreme Court reluctant to make new privacy rules

- *U.S. v. Jones (2012)*
 - GPS unit attached to suspect's car and tracked for a month
 - Ruling: police need a warrant to do this
 - Justices do not agree on rationale/test

Transportation Data Privacy – Mobile Telephone Data

- *Riley v. California (2014)*
 - Data from Mobile phone searched incident to arrest
 - Ruling: police need a warrant to do this
 - Phone = “minicomputer”
 - Would transportation / location data fit this definition?
- *Carpenter v. US (2018)*
 - Location data from Cell phone towers
 - 21st “Pen Register?”
 - Ruling: No, police need a warrant to do this

Transportation Data Privacy – Distance-Based Fee case

Fleet-Based system:

- Opt-in
- Data held privately
- Trend in Cases supports protection of this data

How broad could it go?

- Currently, most people sign over any right to data produced by the vehicle to the OEM as part of the purchase process
 - Law school questions:
 - Did they have any right to that data in the first place?
 - What is the harm?
 - Political questions:
 - Do they know?
 - If they did, would they care?

Discussion

Scott Peterson

DBF Demonstration Evaluation

- Please fill the online survey at:
https://umn.qualtrics.com/jfe/form/SV_9p1nkkm1ETSnQZE
- The survey will take about 10-15 minutes to complete
- Please complete the survey by April 30.

Thank you in advance for your participation! This demonstration and evaluation are a critical part of future transportation funding in Minnesota.

Adjourn

Thank you for your participation!