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APPENDIX

This document supports the Road User Charge Task Force Report to the Oklahoma Legislature.

DECEMBER 2023

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APPENDICES

APPENDIX A: OUTREACH AND ENGAGEMENT

A.1 OUTREACH AND ENGAGEMENT PLAN

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Oklahoma RUC Program Public and Stakeholder Outreach and Engagement Plan

Contents

Plan Update & Amendment Log

This outreach plan is a living document. As each phase of the campaign is planned and executed, the outreach plan will be updated with pertinent details, including all evaluation information gleaned from each stage of the outreach and pilot campaigns.

Date Amended	Amended By	Approved By	Description of Updates/Amendments

Research

Problem

Oklahoma, like most states, is facing critical funding issues due to increased fuel efficiency. For the first time in Oklahoma's history, the state is ranked in the Top 5 on a list of U.S. states with the best bridge conditions. Up from the state's 49th ranking in 2004, this is the result of a long-term bridge rehabilitation plan. Now that the state's highway bridges are in good condition, the Oklahoma Department of Transportation can begin dedicating more resources toward other priorities, including bettering pavement conditions, constructing shoulders for rural, two-lane highways, and solving urban traffic congestion issues. But the outlook for funding future maintenance projects for bridges and furthering road improvements is under threat due to increased fuel efficiency impacting state fuel tax collections and inflation eroding the value of the dollars collected. [1]

By 2030, Oklahoma, like other states, will face critical funding challenges for road and bridge maintenance as electrified vehicles (full-electric, plugin, and full hybrids) will likely make up 60-70% of global new car sales. [2] More than half of the revenue collected from the gas tax will be lost to fuel efficiency. [3] Oklahoma's statewide fuel tax collections will continue to decrease as vehicles become more fuel efficient and citizens convert to electric cars. Plus, one must factor in the impact of inflation on current fuel tax collections. Therefore, an alternative funding mechanism is imperative to keep Oklahoma roads and bridges functional. [3] Exploring and testing potential solutions now will prevent a future lack of funding for maintenance of the state's transportation infrastructure, allowing Oklahoma to keep its Top 5 ranking.

Additionally, the current funding model is inequitable. Vehicles that are high mileage, older, or are less fuel efficient pay the most. This impacts rural Oklahomans and low-income families the most. Currently, electric vehicles, and vehicles with high fuel efficiency are paying the least amount of fuel tax. Vehicles that are fully electric, and many of those which offer high fuel efficiency, weigh more than others on the road causing more impact and wear on the state’s highway infrastructure.

Situation Analysis

The OK Legislature passed HB1712, which Governor Stitt signed into law on May 3, 2021, mandating an evaluation of equitable and sustainable user-based alternative funding mechanisms to replace the state fuel tax. [3, 4] Thus, the foundation was laid for the Road Usage Charge (RUC) Pilot Program.

An Oklahoma RUC program would replace the current gas tax. It is a pay-by-mile system designed to charge Oklahoma drivers based on the vehicle miles traveled (VMT) rather than on the total gallons of fuel purchased. Due to the vast range in vehicle fuel efficiency, RUCs equalize every driver's tax burden regardless of fuel and vehicle type compared to Oklahoma's current fuel tax model. Oklahoma is not the only state conducting pilot research programs to learn more about RUC programs.

Oregon and Utah are currently implementing RUC models as equitable funding structures. Colorado, California, Hawaii, Washington, Virginia, and Oklahoma are conducting pilot research projects. Meanwhile, states monitoring transportation trends and researching the RUC model include Alaska, Arizona, Kansas, Idaho, Minnesota, Montana, Nebraska, Nevada, New Mexico, North Carolina, North Dakota, Pennsylvania, Texas, and Wyoming. Findings of an audit of these programs are included in *Appendix 1: Analysis of RUC Programs from the Other States*.

Research Findings

Findings from the research phase help illustrate the situation, gauge current perceptions, identify audiences, and form an understanding of what pilot programs before this one have experienced. While mostly secondary research has been used to prepare this plan, primary research will be a vital part of the overall strategy to aid in properly evaluating the pilot program and participant sentiment toward pay-per-mile charges. The following sub-sections outline the main findings from the research phase, and an information source is identified for each.

Target Audiences

Oklahoma's population is diverse when you view the whole population. When considering age, Tribal Nations; rural residents; the size and scope of the oil & gas and agriculture industries; and a high proportion of the population that is considered impoverished, there are many factors to consider when building a group of test subjects. [5] Essential information about the composition of Oklahoma's citizens should inform where and how pilot program participants are recruited and selected. This information can also build paid media strategies, especially for digital ad solutions.

Oklahoma Population Quick Facts [5]

State Population Estimate as of July 2021	3,986,639
Persons under 18, Percentage	30.0 %
Persons 65 and older	16.2%
White, percentage	73.2%
Hispanic, percentage	11.7%
African American percentage	7.8%
American Indian & Alaska Native alone, percentage	9.7%

A review of these quick facts indicates that ***there are approximately 2,144,811 Oklahomans between 18 and 65 that represent the state's population for potential participants in the Oklahoma pilot project***. We must remember that no matter what older generations prefer, younger generations will shape items for the long term and should be a primary focus. [6]

Recommended Sample Size

Using the general population of Oklahomans between ages 18 and 65, the sample size has been calculated using Qualtrics Sample Size Calculator. ***The recommended minimum sample size is 385 participants.*** Although this is the minimum sample size for statistical validity, the goal should be set higher to account for attrition. The chart below showcases the details of the sample size. Any sample size above what has been calculated will increase the confidence level and reduce the margin of error. The final participant group should reflect diversity based on vehicle type, urban vs. rural residents, income, and other factors which could impact the implementation of a RUC program in Oklahoma.

Confidence Level	95%
Population Size	2,144,811
Margin of Error	5%
Ideal Sample Size	385

Needed Target Public Action

The pilot program will encourage participants to sign up and provide feedback about their own experience with various RUC program components. It is recommended that the communication narrative presents this as an exploration of options, NOT a test of the final proposed solution. Participants should be informed about how they will be a voice in creating a program to fit the needs of all Oklahomans. This approach will encourage open dialogue between pilot program leadership and participants instead of a one-sided review of the technology and process used throughout the pilot. Again, caution should be exercised to not present the pilot program as a formal representation of the final solution to diminish the potential for negative pushback before the results can be reviewed.

Oklahoma-specific Challenges & Opportunities

A detailed review of project-related materials for Oklahoma plus those from other states, identify the following challenges and opportunities:

Challenges

- Oklahoma has an extremely high percentage of out-of-state traffic that passes through the state. [3]
- Oklahoma has significant rural populations who may feel the program is unfair since they must drive more to utilize services and conveniences found only in urban areas.
- Educating Oklahomans on the funding challenge while encouraging them to be a part of identifying the solution.

Opportunities

- Oklahoma leads the nation in size of state turnpike programs and could utilize existing data collection and processing and revenue collection systems for a RUC program. [3]

- Oklahoma's toll interoperability with surrounding states will help develop cooperative programs with neighboring states. [3]
- Tribal Nations in Oklahoma receive a portion of state fuel taxes and will be directly interested in collaboratively developing an RUC system. [3]

Technology-driven Young People

Technology is a massive component of the lives of young people. In April 2022, Axios reported on a poll they conducted with Momentive, stating, "Young consumers' enthusiasm about trending tech is reshaping mass-market preferences and lifting society toward a more sustainable, convenient, and connected future." [6] Items from the poll that could impact transportation and the ability of governments to fund transportation infrastructure are:

* 7 out of 10 young adults would drive an electric car if they could afford it.
* More than half of 18- to 24- year olds want drones to deliver to their homes.
* 67% of the Gen Z population would prefer living in a smart city.
* 82% of 18- to 24- year olds support micro-mobility (electric scooters, e-bikes, and e-skateboards) in public places.

One finding from the same study indicates that 73% of adults worry that younger people in the workplace won't be able to save enough for retirement to live comfortably. Because the new funding model will impact younger people for the majority of their life and concerns about their long-term financial well-being are being identified, it is important to educate Oklahomans on the specific individual impact this will have on their personal budget. Awareness of this should also be considered when creating messaging for the pilot program to prevent skewing of data.

Auto Insurance Telematics

Many U.S. consumers already allow far more than their mileage to be monitored to lower insurance premiums. This could make it easier for some Oklahomans to understand the technology behind a RUC funding model. Telematic programs started by insurance companies aim to reduce auto insurance premiums if you are a safe driver, drive less than expected, and other factors. [7] Some even offer usage-based insurance (UBI) tips – thus, they base premiums on total miles driven, much like a RUC. [8]

A 2021 study by J.D. Power states that 16% of auto insurance customers in the U.S. have already started allowing monitors within their cars' smartphones to report miles and driving habits. The same study discovered that 34% of auto insurance consumers want to try it out. Collectively, this represents the attitudes of half of U.S. insured drivers. If the sentiment of RUC is comparable, these findings illustrate a strong potential for exploring and adopting similar programs for funding transportation infrastructure. [8]

Campaign Messaging

After reviewing past pilot programs and additional information about RUCs, campaign messaging should be created to increase knowledge of RUCs, influence opinions, and encourage participation in the pilot program. While the focus is on the pilot program, this will be the first time many Oklahomans have heard of RUCs and the legislation passed to explore this type of program.

RUC programs are complex, and time investment will be needed to understand, and potentially change, Oklahoman's initial attitudes. In Oregon, education on these topics during a pilot program proved essential in understanding state transportation funding levels. Oregonians reported they were inspired to develop a more thorough understanding of the topic. From the pilot program's start to the end, the number of people who felt Oregon's transportation system was underfunded grew from 44% to 72%. Conversely, respondents' familiarity with RUC programs has remained unchanged since 2016, further highlighting the need to educate Oklahomans about this terminology. [9]

Furthermore, messaging should be prepared for those presenting a counterargument to RUCs in general or the pilot program.

Messaging Focus

A key message platform will be developed for ongoing reference by any spokesperson, copywriter, social media content creator, and other key campaign team members. This messaging should also be shared with digital influencers and third-party entities promoting and speaking about the pilot program for continuity's sake. Preliminary research suggests the messaging platform should include, at minimum, messaging about the following listed items. This is not an exhaustive list, and the critical message platform presented later in the plan will be considered a working platform that will develop and change with the pilot program and beyond.

1. Defining the need to shift funding mechanisms
2. Defining pay-per-the-mile programs
3. Privacy concerns
4. Pilot Program sign-up instructions
5. Reactive messaging to sensitive or unpopular reactions that come about from primary research

Bilingual Campaign Assets

As indicated above, the Oklahoma population is 11.7% Hispanic. [5] Translation of campaign language should be a priority. Ensuring all websites are accessible in multiple languages, critical campaign assets are available in Spanish, and someone working on implementing the pilot can answer questions for participants that may only speak Spanish.

Planning

Goal

To encourage Oklahomans to participate in an Oklahoma-based pilot program focused on road usage charges and provide feedback on their experience.

Target Audiences

Target Audiences for Pilot Program

For this plan, the pilot must provide the most diverse data sample possible. Based on the review of program documents, previous pilot program stats, and the third-party data, the recommended target public for education, awareness, and advocacy efforts are as follows.

Internal	RUC Taskforce, ODOT, OTA
Interagency	DEQ, Highway Patrol, OMES Fleet, Tourism, Agriculture, and others
Stakeholders	Rural Transportation Planning Organizations, Legislators, ACOG, INCOG, Tribes, Car rentals, Oklahoma Municipal League, and others
General Public	Civic groups, auto shows, EV Owners Coalition, New & Used Car Commission, Coffee & Cars, and others

Composition of Pilot Test Participants

While the target Audiences are broad, the composition of the pilot test participants should be narrowed to focus on a representative sample of users in Oklahoma. ODOT has stated, "Outreach will specifically target urban, rural, and Tribal populations and will include a cross-section of income levels including underserved and disadvantaged populations, and areas of persistent poverty." [3] As directed by HB 1712, the following general breakdown of Pilot Program Volunteer User Groups should be adhered to for this study. The numbers in this table are based on the goal of securing 500 participants for the pilot. This breakdown is generally reflective of Oklahoma's population, thereby providing a representative sample

Cohort	User Group	% of Participants	# of Each Needed for Pilot Program *(some may fit into more than one user group)*
1	PIKEPASS Users	50%	250
	Non-PIKEPASS Users	50%	250
2	Urban	67%	335
	Rural	33%	165
3	Tribal Members	13%	65
	Non-Tribal Members	87%	435
4	Below Poverty Level	15%	75
	Above Poverty Level	85%	425

Vehicle Types for Pilot Program

Beyond a mix of gas, hybrid, and total electric vehicles, Oklahoma will evaluate various vehicle types. According to the Surface Transportation System Funding Alternates grant application prepared by ODOT, commercial trucks will be excluded from the RUC Pilot Program since they already report interstate mileage to comply with the International Fuel Tax Agreement (IFTA) program. [10] Vehicle types participating in the Oklahoma pilot program should include:

1. Private passenger gas/hybrid cars, SUVs, trucks, and vans
2. Private passenger electric cars, SUVs, trucks, and vans
3. Private bus and RVs
4. Motorcycles
5. Commercial delivery trucks
6. Rental car fleets
7. Public agency fleets

Approach

The pilot program will be more successful if the participants are not persuaded by positive and negative public opinion, which could arise after the initial call for participants. Therefore, this plan aims to meet the goal without a widespread, general announcement. As previously outlined, the tactics implemented will be particular and directed at obtaining a sample group. A secondary message platform will be developed to address additional needs for general RUC messaging beyond that specific to the pilot program.

Objectives, Strategies & Tactics

NOTE: *This plan blends output- and outcome-based objectives. While outcome objectives are often the more preferred, the broad scope of this campaign requires numerous outputs that should be included.*

* ***KEY MESSAGES TO USE WILL BE SELECTED FOLLOWING THE BRAND VISIONING WORKSHOPS AND ADOPTION OF THE FINAL KEY MESSAGE PLATFORM. FOLLOWING THAT THEY WILL BE UPDATED AS NEEDED SINCE THIS IS A LIVING DOCUMENT.***

Objective 1: Host two (2) brand visioning workshops no later than October 15, 2022, with 20 participants each to sample perceptions about RUC from potential pilot program participants

Communication Strategy	Key Messages to Use * (Indicated by Number to Correspond with Key Message Platform)	Tactics and Tools	Timetable	Evaluation Metrics/Outputs
Conduct primary research in the form of workshops aimed at gathering information to inform brand development (qualitative)	These workshops will help inform the development of the key message platform. Some message points may be tested to see how relatable and understandable they are, but no direct messaging will be used in this exploratory and qualitative workshop.	▪ Send invites via email ▪ Encourage RSVP via Google Form ▪ Direct invites to known parties who would likely participate ▪ Secure facilities, A/V, & food for the workshops ▪ Build a PPT deck for workshops ▪ Include final findings in Appendix 3 of this document ▪ Update outreach plan to reflect the data gathered and lessons learned	Due no later than October 15, 2022	▪ Attendance numbers ▪ Composition of workshop sample based on criteria of the pilot program sample group ▪ Draft creative brief for Jones PR creative team based on input and opinions of workshop participants
Define road usage charges to identify initial reactions to nomenclature & associated terminology		▪ Identify the name that requires the least amount of education to achieve adoption ▪ Update brand, plan, and messaging to match findings	Due no later than September 30, 2022	▪ Sentiment and reaction to various names that define RUC

Identify an initial level of understanding to help with the overall pilot program messaging		▪ Qualitative survey questions during workshops ▪ Coding of survey data to I.D. common themes and baseline measurement	Due no later than September 30, 2022	▪ I.D. what workshop participants already know about RUC-style programs
Identify and obtain approval of program name		▪ Workshop potential names ▪ Consider any names brought up at the workshops ▪ Submit two names with the highest quality feedback for consideration and selection of the final name	Due no later than October 15, 2022	▪ Approval of the taskforce

Objective 2: Develop a brand kit that includes brand architecture, logo, colors, and tagline no later than October 27, 2022

Communication Strategy	Key Messages to Use * (Indicated by Number to Correspond with Key Message Platform)	Tactics and Tools	Timetable	Evaluation Metrics to Use
Develop creative brief		▪ Use the results of brand visioning workshops to draft brief ▪ Meet with the creative director to answer any questions about data from workshops and the creative brief ▪ Prepare a brand kit for distribution to the client and other necessary parties	Due no later than October 27, 2022	▪
Develop brand architecture		▪ Collaborate with the creative director to develop brand architecture	Due no later than October 27, 2022	▪ Output completed
Present and seek approval of recommended assets		▪ Present logos, slogans, colors, themes, graphics, to client for review and finalize based on feedback	Due no later than November 2022	▪ Output completed

Objective 3: Secure 500 participants for the Oklahoma RUC pilot program no later than June 2023

Communication Strategy	Key Messages to Use * (Indicated by Number to Correspond with Key Message Platform)	Tactics and Tools	Timetable	Evaluation Metrics
Enlist industry stakeholders to accelerate the involvement		▪ Meetings to enlist support and build a list of potential communication channels for outreach from stakeholders and government agency partners ▪ E-mails to target audiences the stakeholders can reach ▪ Social media posts on stakeholders' social channels ▪ Direct outreach to individuals who may want to participate	Begin outreach to stakeholders for planning meetings in October 2022 ____ Begin implementation on January 5, 2023	▪ Output completed ▪ Total number of email opens ▪ Total number of referrals from emails to online registration ▪ Number of social posts made by industry stakeholders
Set up kiosk/booth to encourage sign-ups at auto shows		▪ Secure space at OKC and Tulsa auto shows ▪ Develop a booth or kiosk where sign-ups will take place ▪ Build collateral and messaging on incentives for participation in the pilot program	Secure booth space by November 15, 2022 ____ Creative due no later than December 31, 2022 ____ Begin planning and execution on January 5, 2023	▪ Total auto show attendance ▪ Total number of sign-ups ▪ Total amount of information passed out

Social media		▪ Create social media platforms specifically for RUC ▪ Assign manager of social platforms to oversee execution and community management ▪ Create a publishing schedule for social channels ▪ Monitor for positive and negative feedback (screen capture to preserve content)	Secure channels upon approval of the final name ____ Brand channels upon final brand creative approval November 2022 ____ Begin publishing activities no later than November 15, 2022	▪ Overall engagement numbers ▪ Total number of referrals to online registration ▪ Standard social metrics such as shares, likes, and others
Digital influencers		▪ Engage influencers to help with outreach to potential pilot participants ▪ Identify and engage potential influencers to participate in the pilot and share stories throughout the program	Complete and have produced no later than December 31, 2022	▪ Output completed ▪ Engagement of influencer's audiences
Paid Media		▪ Develop paid media strategy for LinkedIn to target potential pilot participants	Complete media plan and have scheduled to begin no later than January 5, 2023	▪ Total number of referrals to online registration ▪ Total number of sign-ups

Creative Assets & Production		▪ Create the following assets: fact sheets, stickers, window clings, travel mugs, posters/flyers, t-shirts ▪ Creative digital ad assets for LinkedIn ▪ Create a tradeshow backdrop & iPad stand for the auto show registration booth ▪ Infographics for social media, web, and presentations	Complete and have produced no later than December 31, 2022	▪ Outputs completed ▪ Track using unique QR codes for each creative asset to determine which ones are working and those that are not performing
Landing Page		▪ Write copy for landing page encouraging sign-up for pilot ▪ Write copy for a landing page explaining what RUC is, how it works, and why Oklahoma is considering it ▪ Design landing page ▪ Purchase URL upon final name selection being made	Complete and have produced no later than December 31, 2022	▪ Monthly visits ▪ Total number of online registrations ▪ Time spent on page ▪ Direct versus linked traffic and source information from non-direct traffic

Objective 4: Recruit a minimum of 75 participants from Hispanic and 65 participants from Tribal communities for the Oklahoma RUC pilot program no later than INSERT HNTB's SIGN-UP DEADLINE

Communication Strategy	Key Messages to Use * (Indicated by Number to Correspond with Key Message Platform)	Tactics and Tools	Timetable	Evaluation Metrics to Use
Work with Tribal Nations to secure participants		▪ Hold meeting with tribal leadership ▪ Social media posts on stakeholders' social ▪ E-news articles ▪ If necessary, secure speaking opp	Begin January 5, 2023	▪ Output completed ▪ Total number of email opens ▪ Total number of social posts ▪ Number of speaking opps
Paid Media		▪ Targeted LinkedIn advertising to meet cohort goals	Complete media plan and have scheduled to begin no later than January 5, 2023	▪ Total number of referrals to online registration ▪ Total number of sign-ups
Work with Oklahoma Hispanic Chamber of Commerce		▪ Social media posts on stakeholders' social ▪ E-news articles ▪ If necessary, secure speaking opp to chamber leadership	Begin January 5, 2023	▪ Output completed ▪ Total number of email opens ▪ Total number of social posts ▪ Number of speaking opps

Objective 5: Demonstrate a 15% increase in understanding and recall of the Oklahoma RUC pilot program messaging by December 1, 2023

Communication Strategy	Key Messages to Use * (Indicated by Number to Correspond with Key Message Platform)	Tactics and Tools	Timetable	Evaluation Metrics to Use
Conduct a pre-pilot survey with pilot program participants		▪ Build survey instrument ▪ Encourage all participants to respond ▪ Tabulate results and add them to the Evaluation section of the outreach plan; report to the taskforce	Complete no later than June 1, 2023	▪ Output completed ▪ Total number of respondents ▪ Baseline understanding of RUC knowledge
Conduct a post-pilot survey with pilot program participants		▪ Build survey instrument ▪ Encourage all participants to respond ▪ Tabulate results and add them to the Evaluation section of the outreach plan; report to the taskforce	Conduct two weeks before the end of the pilot	▪ Output completed ▪ Total number of respondents ▪ Final understanding of RUC knowledge
Conduct four short, monthly surveys during the pilot to gather feedback for communication		▪ Build a survey instrument with "homework" asking participants to share written or recorded video feedback (online focus group style) ▪ Encourage all participants to respond ▪ Tabulate results and add to the Evaluation section of the outreach plan, report to the taskforce ▪ Flag best feedback for outreach and education campaigns	Conduct on the first week of each month of trial with results prepared by the end of the month	▪ Output completed ▪ Total number of respondents ▪ Level of understanding

Objective 6: Create a video repository of at least five (5) pilot participant video testimonials upon completion of the program within 90 days of pilot completion

Communication Strategy	Key Messages to Use * (Indicated by Number to Correspond with Key Message Platform)	Tactics and Tools	Timetable	Evaluation Metrics to Use
Identify best spokespersons from interaction with pilot participants (in-person and survey feedback)		▪ Interact with participants to find the best personalities for the video format ▪ Review survey information to identify participants with the highest understanding of RUC	Ongoing throughout pilot	▪ Output completed
Produce five video testimonial videos		▪ Identify video production lead ▪ Secure location(s) for a video shoot ▪ Script video questions	Within 90 days of pilot completion	▪ Output completed
Create YouTube Channel		▪ Create a YouTube channel for RUC ▪ Share on social media ▪ Share with influencers ▪ Link to in press releases	Secure channels upon approval of the final name ____ Brand channels upon final brand creative approval on October 27, 2022 ____ Begin publishing activities no later than December 15, 2023	▪ Output completed ▪ Total number of likes ▪ Total number of subscribers ▪ Total shares

Embed to Landing Page		▪ Share embed code with web designer/developer ▪ Share on social media ▪ Include a link in press releases	Upon completion of videos, add them immediately to the website	▪ Output completed

Objective 7: Conduct three (3) focus groups with participants who complete the RUC pilot program to inform future marketing and PR efforts within 30 days of pilot completion

Communication Strategy	Key Messages to Use * (Indicated by Number to Correspond with Key Message Platform)	Tactics and Tools	Timetable	Evaluation Metrics to Use
Conduct three focus groups with up to 10 participants each		▪ Identify and invite participants ▪ Create a list of questions/topics ▪ Secure focus group room facility ▪ Name focus group facilitator ▪ Record focus group sessions	Within 30 days of completing the pilot	▪ Output completed ▪ Attitudes and sentiment towards RUC ▪ Feedback for future RUC program

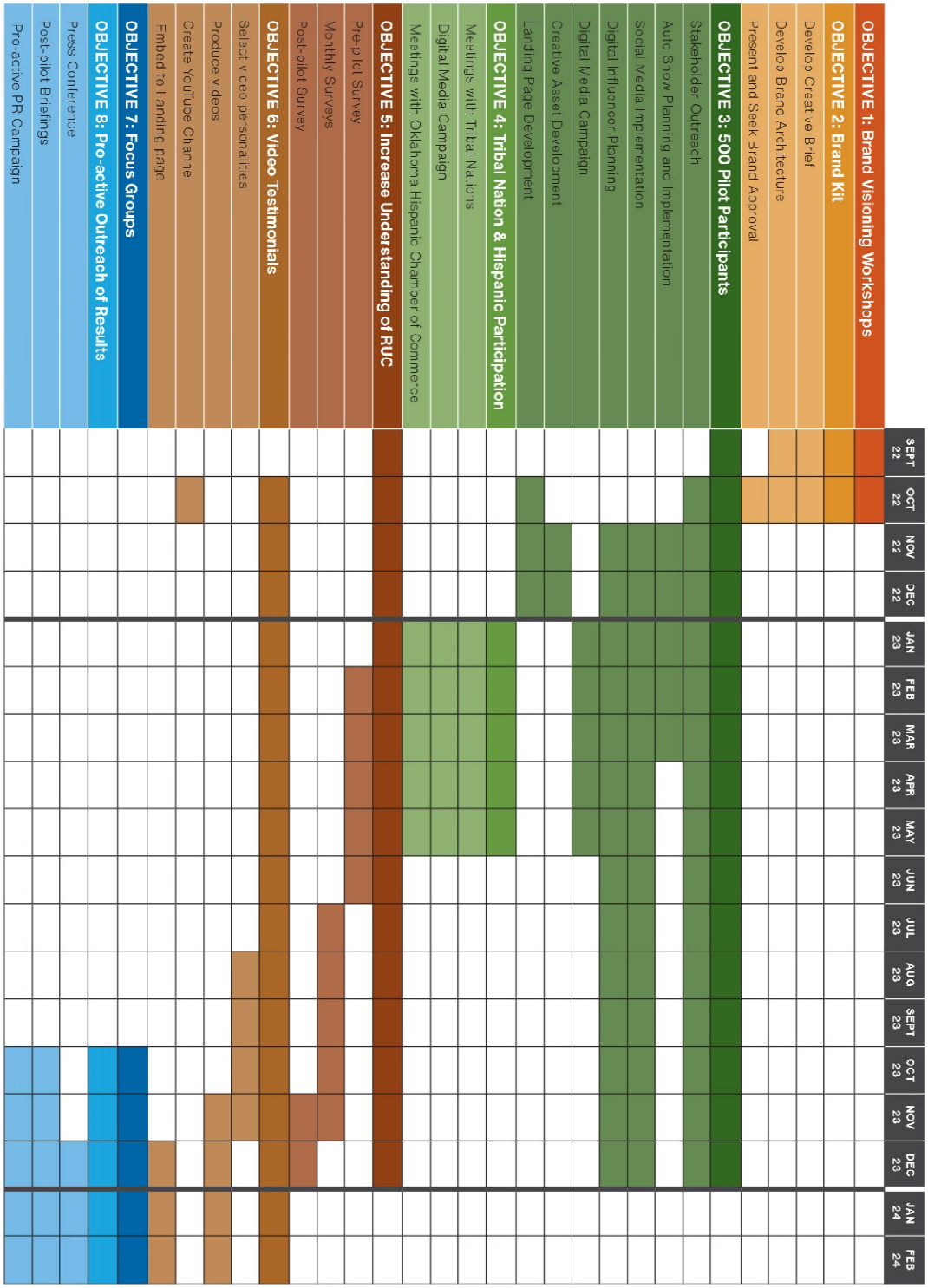
Objective 8: Conduct post-pilot program briefings and press conferences no later than 90 days of pilot completion

Communication Strategy	Key Messages to Use * (Indicated by Number to Correspond with Key Message Platform)	Tactics and Tools	Timetable	Evaluation Metrics to Use
Conduct post-pilot briefings with the outreach team		▪ Set date and location for an outreach team to report to the taskforce ▪ Create agenda and meeting items such as a PPT deck	Within 90 days of the pilot ending	▪ Output completed
Host press conference		▪ Set date and location for a press conference ▪ Identify spokespersons ▪ Develop run of show and talking points ▪ Prepare any handouts, visual aids, and video presentations	Within 90 days of the pilot ending	▪ Output completed ▪ Earned media results
Proactive PR Campaign		▪ Prepare story pitches ▪ Arrange for interviews – print and broadcast ▪ Media train spokespersons to be interviewed on final RUC messaging developed after all feedback has been gathered from pilot participants	Within 90 days of the pilot ending	▪ Output completed ▪ Earned media results

Objective 9: Identify and complete twelve (12) speaking opps across the state in 2023 – during both the pilot participant recruitment and during the pilot itself

Communication Strategy	Key Messages to Use * (Indicated by Number to Correspond with Key Message Platform)	Tactics and Tools	Timetable	Evaluation Metrics to Use
Book and present at civic, government, and other meetings with audiences important to RUC		▪ Identify speaking opps ▪ Identify spokespersons across the state who could present ▪ Create talking points ▪ Create a PPT deck ▪ Train any speakers on talking points ▪ Book speaking opps	Within 90 days of the pilot ending	▪ Output completed ▪ Qualitative analysis of audience feedback and acceptance of RUC

Implementation



Implementation details will be added for each facet of the plan upon approval of the plan tactics. This section of the outreach plan includes notes on how each aspect of the objectives will be implemented. Updates and implementation notes for each item will be updated weekly or following meetings with HNTB.

Brand Visioning Workshops

Two workshops will be held to compile data from sources representing the intended composition of test pilot program participants.

Workshop #1 – Oklahoma City metro

- Location: Rose State University
- Date: September 22, 2022
- Time: noon to 1 p.m.

Workshop #2 – Weatherford, OK

- Location: Lucille's Roadhouse
- Date: September 29, 2022
- Time: 11:45 a.m. to 1 p.m.

Update Log for Brand Visioning Workshops

- ***September 9, 2022:*** JonesPR recommended hosting a third brand visioning workshop for internal stakeholders such as ODOT and OTA before beginning creative development.

Brand Development Timeline

Task/Tactic	Date Due	Date Completed	Assigned To	Notes
Creative Brief: outlines the creative direction for designer to follow	October 15, 2022		▪ Cory – First draft of the brief ▪ Suzanne/Brenda – review of brief ▪ Chris – final review of brief	▪ Insert here ▪ Insert here
Brand Architecture: succinctly summarizes the overall brand narratives and tone	October 15, 2022		▪ Cory – First draft ▪ Suzanne/Brenda – review ▪ Chris – final review	▪ Insert here ▪ Insert here
Brand Kit: includes all final brand related deliverables in the engagement memo	November 15, 2022		▪ Chris	▪ Insert here ▪ Insert here

Update Log for Brand Development

- ***September 9, 2022:*** JonesPR confirmed with Robyn at HNTB that final creative assets were not due with the draft plan. Due with the first draft of the plan is the approach and schedule for the creative development of the brand.

References

1. Oklahoma Department of Transportation, *Oklahoma climbs to No. 5 in the nation for good highway bridge conditions*, Oklahoma Department of Transportation, Editor. 2022, Oklahoma Department of Transportation,: oklahoma.gov/odot.
2. UBS Editorial Team, *Electrified vehicle could make up 60-79% of global sales by 2030*, M.C.J. Melvin, Editor. 2022, UBS: UBS Global Wealth Management Website.
3. Oklahoma Department of Transportation, *Oklahoma Road User Charge Pilot Program Surface Transportation System Funding Alternatives Discretionary Grant Application*, in *Funding Opportunity Number: 693JH621-STSFA*, O.D.o. Transportation, Editor. 2021. p. 52.
4. Hill and Hilbert of the House and Haste of the Senate, *HB No. 1712*. 2021. p. 5.
5. United States Census Bureau. *QuickFacts Oklahoma*. 2022 [cited 2022 August 17, 2022]; Available from: https://www.census.gov/quickfacts/fact/table/OK/RHI125221#RHI125221.
6. Jennifer A. Kingston *Axios-Momentive poll: Young people are the biggest "techno-optimists"*. 2022.
7. Waddell, K., *What You're Giving Up When You Let Your Car Insurer Track You In Exchange For Discounts*, in *Consumer Reports*. 2021, Consumer Reports: consumerreports.org.
8. J. D. Power, *Auto Insurance Customer Satisfaction Stalls Despite $18 Billion in Premium Relief, J.D. Power Finds*, G. Effler, Editor. 2021, J.D. Power: https://www.jdpower.com/business/press-releases/2021-us-auto-insurance-study.
9. Rash, M.G.a.J. *People finally get RUC: Evolution of OReGO Messaging*. in *Road Usage Charging & Finance Conference*. 2022. Denver, CO.
10. Nees, G. *How technology and RUC work hand in hand*. in *Road User Charging Conference USA*. 2022. Miami Beach, FL: Be-Mobile.
11. Rohde, B. *Mileage-based User Fee Alliance Updates & Forecase*. in *Road User Charging Conference USA*. 2022. Miami Beach, FL: MBUFA.
12. Griffith, R. *Washington State Road Usage Charge Assessment*. in *Road User Charging Conference USA*. 2022. Miami Beach, FL.
13. RUC West, *RUC West Fact Sheet: New Paths to Road Funding*, R. West, Editor. 2020, RUC West: www.RUCwest.org. p. 2.

Appendix 1: Analysis of RUC Programs from Other States

This information is a quick reference of data pulled from various sources. Information within this section will be updated as more is learned throughout the pilot program and subsequent document reviews.

Rates Paid by Citizens of Other States

Oregon [11]	1.8 cents per mile
Washington [12]	2.5 cents per mile capped at $225
Utah **[11]**	1.5 cents per mile or a $120 EV fee
Virginia **[11]**	Can opt to pay-per-mile vs. highway usage fee
Connecticut (Truck Tax Fee) **[11]**	Tax based on truck weight and miles traveled ranging between 2.5 cents per mile to 17.5 cents per mile.

Types of Roads Included for RUC

Oregon **[11]**	State, City, and County Roads

Credits Offered

Oregon **[11]**	• Non-refundable credits for fuel taxes paid *(credited to drivers' accounts as they drive taxable miles)* • Drivers with vehicles of 40+mpg can lower registration rates if they join OReGO
Washington [12]	$225 EV surcharge is waived for vehicles participating in RUC

Usage of Funds Collected

Oregon **[11]**	Revenues are added to State Highway Fund for road and bridge projects.

Rates Paid by Citizens of Other States

Oregon **[11]**	1.8 cents per mile

Appendix 2: Key Message Platform

What is a key message platform?

A key message platform is a grouping of meaningful messages that support a position and educate the target Audiences. Based on truths, key messages are supported by facts, statistics, anecdotes, and analogies. Essential qualities of key messages to keep in mind when developing them are:

- Keep messages broad to foster adoption of the campaign's position – think elevator speech
- Make them brief and simple to remember
- Support each key message with additional proof points such as facts, stories, stats, figures, analogies, anecdotes, and more
- Craft them to express the campaign's vision and mission which may involve statements of values and beliefs

The following key message platform includes primary points the campaign should convey to aid in reaching the goal of securing 500 pilot program participants and proving the position of the program. Responses during future interviews will focus on these messages but vary slightly based on the spokesperson, story angle, and target public.

How to use the key message platform

Each key message will contain phrases or words that are **underlined and highlighted in bold text**. Think of these words or phrases as prompts. These prompts are easy to remember and help keep a spokesperson's thoughts organized and on message. It is recommended that no questions be answered in an interview if they are not addressable by one of the key messages provided within the plan. Questions without an immediate answer covered in the key message platform should be noted and a solution delivered as a response to the interview if necessary.

REMINDER: ***The key messaging platform is a living document and is current as of INSERT MOST RECENT APPROVAL DATE. JonesPR will continue to update as new facts and figures become available.***

MORE KEY MESSAGES WILL BE DEVELOPED AND FINALIZED FOLLOWING THE BRAND VISIONING WORKSHOPS.

Summary of Key Messages

- Oklahoma faces **funding threats** as fuel efficiency increases.
- Oklahoma is **exploring sustainable, alternative funding options** to identify funding solutions that could work for all Oklahomans.
- **Oklahoma is at the forefront** of this national transportation funding issue.
- **Low-income Oklahomans pay the most in gas tax** since most drive less fuel-efficient and older vehicles.
- **Privacy concerns are a vital component** of RUC programs.
- Oklahoma is preparing to **launch a pilot program** to research a road usage charging (RUC) system.

Key Messages with Supporting Points

- Oklahoma faces **funding threats** as fuel efficiency increases and outpaces the cost of maintaining and improving roads and bridges.
    - Insert Oklahoma-specific data talking point here after meeting with ODOT to get verified numbers on funding threat.
    - Insert Oklahoma-specific scenario talking points here after meeting with ODOT to get actual numbers (refers to Dawn's recommendation, but we need to get data from her in the coming months).
    - Electrified vehicles could make up 70 to 80 percent of all automobile sales by 2030. [2]
    - For nearly 20 years, gas tax revenues across the county have fallen due to fuel efficiency, decreasing purchasing power for construction materials, and safety programs. [13]
    - Washington State has stated that their gas tax would need to be increased by 1.7 cents per gallon EVERY YEAR through 2040 to maintain their current level of funding. [12]

- Oklahoma is **exploring sustainable, alternative funding options** to identify funding solutions that could work for all Oklahomans.
    - The OK Legislature passed HB1712, which Governor Stitt signed into law on May 3, 2021, mandating an evaluation of equitable and sustainable user-based alternative funding mechanisms.
    - RUC systems are a pay-by-the-mile program where drivers pay based on miles driven instead of gallons of fuel used. [13]
    - The RUC pilot program will identify areas where costs can be reduced and user experience can be improved.

  - ODOT will ensure that the final RUC program benefits Tribal Nations "at a level at least equal to the tribes' current fuel tax benefit." [3]

- **Oklahoma is at the forefront** of this national transportation funding issue.
  - Oklahoma is one of only five states testing a RUC program.
  - Only two states have policies in place to implement a RUC program.
  - Oklahoma wants to protect Oklahomans by providing safe roads and bridges for traveling to work, taking vacations, maintaining freight movement, conducting business, and visiting friends and family.
  - To continue with Oklahoma's current funding structure would allow the state only to maintain status quo levels leaving a funding deficit for improvements and maintenance.

- **Low-income Oklahomans pay the most in gas tax** since most drive less fuel-efficient and older vehicles.
  - In other states, RUC programs indicate tax burdens can be shifted, making them more **equitable and fairer**. [12]
  - The disproportionate tax burden can be regulated with caps on total charges, flat fees, introductory discounted rates, and other waivers.

- **Privacy concerns are a vital component** of RUC programs.
  - Occasional odometer readings are the only data needed to implement a RUC program in Oklahoma.
  - Most RUC programs offer non-GPS and manual reporting options. [12]
  - States working to implement RUC programs offer privacy protection in the laws passed to create and govern these programs. [12]
  - Washington State offers four mileage reporting options that require no location information. [12]

- Oklahoma is preparing to **launch a pilot program** to research a road usage charging (RUC) system.
  - Oklahoma is seeking 500 participants to test a sample RUC program and provide feedback.
  - Tribal Nations currently receive part of the Oklahoma Fuel Tax; therefore, participation of Tribal Nation members is crucial to developing a fair system.
  - Younger Oklahomans should participate as this program will impact them for life.
  - Pilot program participants will represent PIKEPASS users, rural and urban citizens, Tribal members, and Oklahomans of various income levels.

APPENDIX A: OUTREACH AND ENGAGEMENT

A.2 ONBOARDING MATERIALS

OKLAHOMA

fair miles OKLAHOMA

What to Expect

During your participation in the Fair Miles Oklahoma pilot, you will receive frequent notifications from the Fair Miles Oklahoma team related to the activities listed below. All notifications from Fair Miles Oklahoma will be sent through SMS/text (sender would be Fair Miles) or email (support@fairmilesok.com), depending on the preference selected during enrollment and the type of information being communicated. You will only receive official notifications from Fair Miles Oklahoma, you will not receive any marketing materials. At times, the Fair Miles Oklahoma team may require action on your part or for you to confirm an action or activity such as:

- Simulated Invoices and Acknowledgement
    - You will receive simulated monthly invoices throughout the pilot. Since the invoices are **simulated** and **no payment** will be required, we will ask you to acknowledge the invoice by clicking on the link in the invoice notification. When you acknowledge the invoice, you will also be asked to select a simulated payment method preference based on what payment method you **would likely** use if this were a real invoice. You will **not** be able to pay this invoice as it is a simulation. An FAQ link about invoice acknowledgment will also be attached.
    - You will receive additional reminder notifications about invoices if you don't acknowledge any invoice by the due date.
    - Once you acknowledge and submit your preferred payment method, you will receive an email confirmation and receipt for your simulated payment.
- Incentives
    - You will be eligible for periodic incentives during your participation in the pilot. To receive your incentive, every month of the program, you MUST:
        - Drive your vehicle with your MRO active.
            - An invoice will not be sent if the vehicle is not driven.
            - You will not receive an incentive if no mileage is reported as you will not receive an invoice.
        - Acknowledge your simulated invoice and select from a dropdown menu your preferred payment method and click submit.
        - Complete applicable surveys.
            - When you acknowledge your invoice and submit your preferred payment method, you will receive a separate notification with a link to a short survey.
            - Once the survey is completed, you will receive an email with a link to claim your e-gift card.
    - NOTE: You will have until the end of each month to acknowledge your simulated invoice, select your preferred payment method, and complete the month's survey to receive your incentive. If you do not complete all three actions listed above, you will not receive that month's incentive.
- Replacing Plug-In Device

    - If you misplace your Plug-In Device or it does not work, you can request a new one by sending an email to support@fairmilesok.com or by phone at (833) 324-7645.
- Password
    - If you need to reset your password to your Fair Miles website account, you can reset your password by clicking the “forgot password” link on the login screen. If you continue to have issues, please email support@fairmilesok.com or call (833) 324-7645.
- Remove Vehicle
    - If you need to remove your vehicle from the program, log in to your account at www.fairmilesok.com to request the removal of the vehicle.

These are categories of activities that you may receive notifications on during your participation:

- Changes to vehicle status
- Enrollment status
- Odometer photo activities
- Review Terms and Conditions
- Account update
- Mileage data status
- Plug-In Device status

Mileage Reporting Option Information

There are four Fair Miles program Mileage Reporting Options (MRO) included in this pilot. Availability of options varies depending on the make, model, and year of your vehicle. During enrollment, the system will inform you which MRO is available for you based on your vehicle. Please be sure to read each option carefully. **Once you enroll and select your MRO, you cannot switch to a different MRO during the pilot**.

MRO	Instructions	Requirements
Plug-In Device (with or without GPS)	If your vehicle is equipped with an Onboard Diagnostic (OBD) port, you have the option of using a Plug-In Device inserted into your vehicle to automatically log your miles in the program. 1. This device will be sent to you with instructions on how to connect it to your vehicle. During enrollment, you will choose if you would like to have the GPS option enabled by checking the "Enable GPS" box. 2. The "DriveSync for Fair Miles" link will also be used as part of this MRO. To add this site to your home screen, click here on your smartphone. 3. You will take and upload a photo of your odometer on the first and last month of participation. Please note that if you currently utilize a plug-in device through your insurance company, you should **NOT** choose this option as your OBD port is already in use by your insurance company. 4. If you need to remove your device for a temporary reason, reinstall the Plug-In Device for Fair Miles Oklahoma before the vehicle is driven again. 5. Click the link below to view the FAQ page for the Plug-In Device option. <Link to FAQ for Plug-In Device>	● **An OBD port** ● **Apple or Google IOS based Smartphone with a camera** ● **Plug-In Device**
In-Vehicle Telematics (with or without GPS)	If available for your make and model, your miles driven will be collected via technology built into your vehicle. Other programs such as OnStar work in a similar way. 1. You will need to have In-Vehicle Telematics with your vehicle manufacturer. During enrollment, you will log-in to that account and give permission for the manufacturer to send your vehicle information to Fair Miles Oklahoma for mileage to be collected.	● **A telematics account with your vehicle manufacturer** ● **Apple or Google IOS based Smartphone may be required**

	2. You may need a smartphone depending on your vehicle's manufacturer to activate In-Vehicle Telematics on your vehicle. 3. This option does not require a separate Fair Miles smartphone app, and, depending on your vehicle, may not require a smartphone at all. You will be able to view your miles driven through the Fair Miles Oklahoma website. 4. Click the link below to view the FAQ page for the In-Vehicle Telematics option. <Link to FAQ for In-Vehicle Telematics>	
Manual Odometer Photo	1. For this MRO, you will take a photo of your odometer at enrollment and upload the photo to the DriveSync for Fair Miles link to begin. 2. To save the DriveSync for Fair Miles link to your smartphone home screen, click the link here on your smartphone to be transferred to the DriveSync for Fair Miles website. 3. Once you click on the link, you will follow the instructions to activate your vehicle. 4. Before the end of each month, you will take a photo of your odometer and upload it to the DriveSync for Fair Miles link. 5. Click the link below to view the FAQ page for the Manual Odometer Photo option. <Link to FAQ for Manual Odometer Photo>	• **Apple or Google IOS based Smartphone with a camera** • **DriveSync for Fair Miles**
Mobile App for FairMiles	You will need a smartphone with an Android or IOS operating system to download the Mobile App for FairMiles. 1. Once the Mobile App for FairMiles is downloaded, you will need to create a user account. 2. Once signed in, you will need to connect your vehicle to Bluetooth®. If you are unable to connect to Bluetooth®, please refer to your vehicle manufacturer's user manual or contact the manufacturer for help with your specific vehicle. Once the Smartphone and vehicle are connected, the Mobile App for FairMiles will utilize that connection. 3. The Mobile App for FairMiles will also request access to your smartphone's location and your camera for you to be able to upload a photo of your VIN at the beginning of the program and a photo of your odometer on the first and last month of participation. (The most common places to locate your VIN are on	• **Apple or Google IOS based Smartphone** • **Mobile App for FairMiles** • **Bluetooth® compatible vehicle**

	the driver's door, the dashboard on either the driver's or passenger's side, or your vehicle's title or registration). 4. After the Bluetooth® pairing is complete, the Mobile App for FairMiles will utilize "Hands-Free Mode" and you will not need to open or close the Mobile App for FairMiles in the future. 5. If more than one person will be driving your enrolled vehicle, you will need to create a sub-user. Add the sub-user via the app and it will send them a notification to download the app and enroll in the program. Every sub-user will need to enroll with the Mobile App for FairMiles so that they will be able to use their own phones when operating the vehicle. You will need to have your phone in the vehicle for mileage to be recorded. 6. Click the link below to view the FAQ page for the Mobile App for FairMiles. <Link to FAQ Mobile App for FairMiles>	

APPENDIX A: OUTREACH AND ENGAGEMENT

A.3 RECRUITING, OUTREACH, AND ENGAGEMENT

OKLAHOMA

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Pilot Recruitment Report

Table of Contents

Overview

Recruitment for Fair Miles Oklahoma started with Oklahomans knowing little, if anything, about the state of Oklahoma's road user charges—the outreach process aimed at recruiting 500 Oklahomans to participate in the pilot. Simultaneously, the goal was to inform and educate potential participants about a road user charge program's concept, technology, and benefits.

An omnichannel approach utilized on-site activations, speaking engagements, networking, print and digital advertising, social media, website marketing, promotional items, and more.

This report outlines recruitment activities and addresses items that should be considered before a future pilot or implementation of a road user charge program starts in Oklahoma.

Situational Analysis

During the recruitment phase of the Fair Miles Oklahoma Pilot, numerous transportation-related topics landed on the front pages of daily and weekly newspapers, as well as appeared on television. Much of this coverage focused on the anti-turnpike movement near Norman and the need for more progress for Tulsa-area roads and bridges. Due to the harmful nature of these stories, the volume of negative social media posts, and ongoing litigation covered by the news, proactive pitching was limited. It was imperative to ensure the anti-turnpike group didn't try to connect Fair Miles Oklahoma, to their mission. Not only did this alter the proactive strategy, but it also tempered the enthusiasm of journalists to cover the Fair Miles Oklahoma pilot.

Despite these initial challenges, many opportunities did work, if not better than taking the traditional Public Relations route for recruitment. On-site activations, speaking opportunities, and membership-based organizations helped drive recruitment when coupled with networking and word-of-mouth.

Program Branding

Brand visioning workshops, a modified focus group format that can accommodate larger groups, were utilized to discover how Oklahomans perceive a road user charge program. Additionally, the workshops provided a glimpse into the current opinions of Oklahoma's roads and bridges.

Over 50 people participated in Weatherford, Guymon, Oklahoma City, Tulsa, and Ada workshops. An on-site workshop was also held with key staff and leadership from The Oklahoma Department of Transportation (ODOT).

The data gathered, and insights shared with the workshop moderator played a pivotal role in shaping the Fair Miles Oklahoma brand platform and crafting key messaging for public communication.

Key findings from the workshops include:

- Rejected "road user charge," likening it to the expansion of the turnpike system.
- Oklahomans prefer "pay-per-mile" over "road user charge."
- Oklahomans prefer "fair" over "equitable."
- The top color was orange, followed by blue.
- More than half indicated they would participate in the pilot.
- Oklahomans are not fans of a manual reporting option, indicating it seems easy to manipulate or avoid.

Final Logo & Brand Guidelines (See the final branding report in the appendixes for a complete snapshot of the branding process and the alternative logo option.)

Colors

Sky Blue
light

C72 M17 Y0 K0
R28 G166 B223
#1CA6DF
Pantone 2171

Sky Blue
dark

C100 M48 Y0 K14
R0 G102 B166
#0066A6
Pantone 2384

Clay Red

C0 M77 Y97 K15
R209 G84 B32
#
Pantone 7580

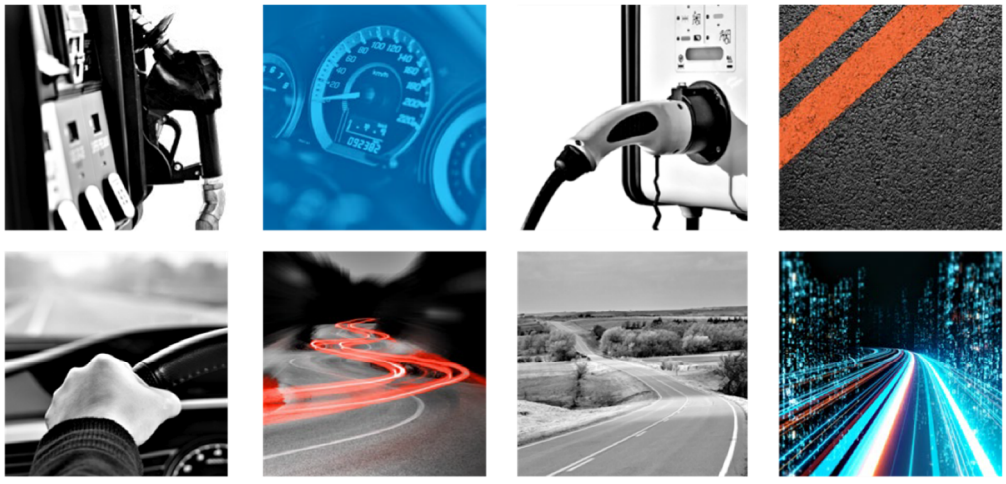
Slate Grey

C0 M0 Y100 K88
R70 G70 B70
#464646
Pantone Cool Gray 10

Font

Montserrat regular

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890.,'"-;:!?&%#@*()

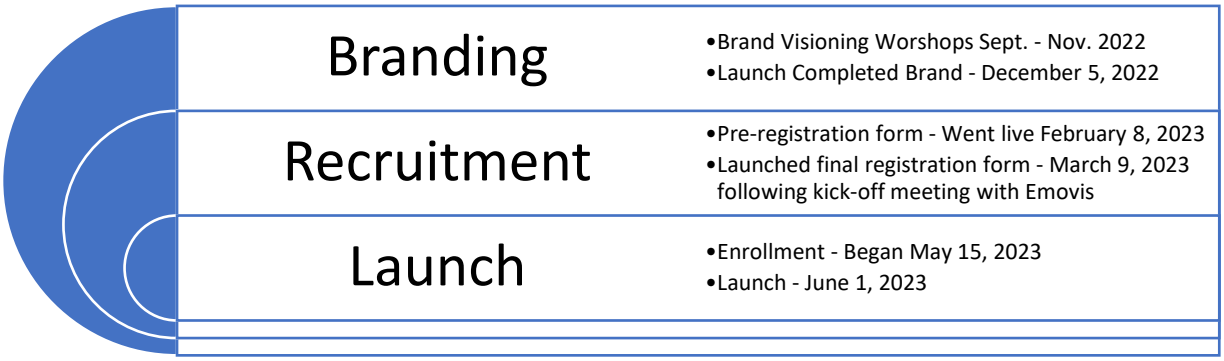


Textures


fair miles
OKLAHOMA


fair miles
OKLAHOMA

Timeline



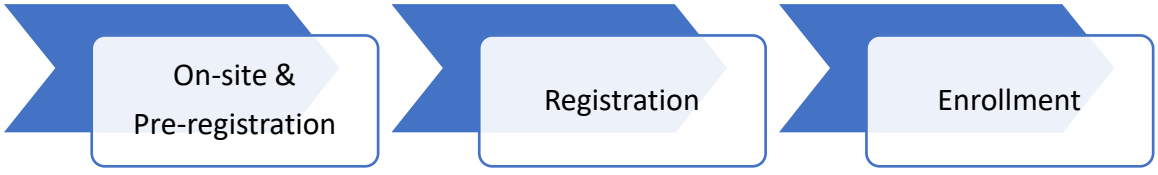
Stakeholder Engagement

The following stakeholder engagement was initiated to meet the requirements of the legislation and grant.

1. Highways users: This was accomplished with educational talking points for Oklahoma City and Tulsa International Auto Shows attendees and through engagement with pilot participants.
2. Transportation stakeholders and vehicle manufacturers: See the speaking engagements for a list of transportation stakeholders engaged. Conversations were held with auto dealers and the Oklahoma Association of Auto Dealers to represent vehicle manufacturers. They supported the efforts to conduct the pilot and look forward to learning about the final insights learned from Oklahomans.
3. Stakeholders representing vehicle users: Impromptu conversations were held with auto dealers during the Oklahoma City and Tulsa International Auto Shows. Also, a call was held with the
4. Fuel distributors: HNTB has a mid-November meeting with fuel distributors and marketers. These meetings include the industry organization's chairman, Scott Minton, who is also on Oklahoma's RUC Task Force.

Registration and Enrollment Process

The registration and enrollment process consisted of three straightforward steps, culminating in participants selecting a mileage reporting option. The subsequent text and accompanying graphic provide an in-depth overview of the recruitment process for both registration and enrollment.



On-site & Pre-registration: Pre-registration was only used at auto shows, speaking engagements, and other events where participants might not have their VIN with them. Pre-registration was also opened earlier than the registration portion of the process to begin capturing the names and email addresses of participants who expressed interest early on. Participants were only required to share their name and email address.

Registration: If a participant pre-registered during an event or speaking engagement, at this stage, they were asked to provide contact information, vehicle information, and their VIN. If a participant registered from a bulk email from a membership-based organization or on the Fair Miles Oklahoma website, they began registering here.

Enrollment: Once a participant's information was confirmed, it was transferred to Emovis for enrollment. At this step, each participant was asked to verify the last four digits of their VIN, open an account, select a mileage reporting option, and activate (if necessary) the reporting device.

PRE-REGISTRATIONS	FULL REGISTRATIONS	FINAL ENROLLMENT
1,247	713	444

Final Recruitment Numbers

Total registrations dropped significantly between each phase of the registration process.

Each successive step required of potential participants resulted in substantial attrition, with approximately half of them disengaging each time additional information was requested. Preliminary survey results suggest that these extra steps led to frustration and consumed excessive time, ultimately causing the loss of interested participants. Another insight is the fact that when pre-registrations were asked to later provide their VIN for the car they wanted to register, attrition was more than 50%. Several cited they didn't feel comfortable sharing their VIN for privacy-related concerns.

Initially, recruitment kicked off with four cohorts, each with a minimum number of participants needed. They were PIKEPASS holders (minimum of 50% or 250 participants), Rural dwellers (33% or 165 participants), Tribal Nation members (13% or 65 participants), and Households Below the Poverty Level (15% or 75 participants).

> ***The following results are based on recruitment efforts and not final enrollment numbers. Final enrollment numbers will be reflected in the reporting from Emovis, who managed enrollment.***

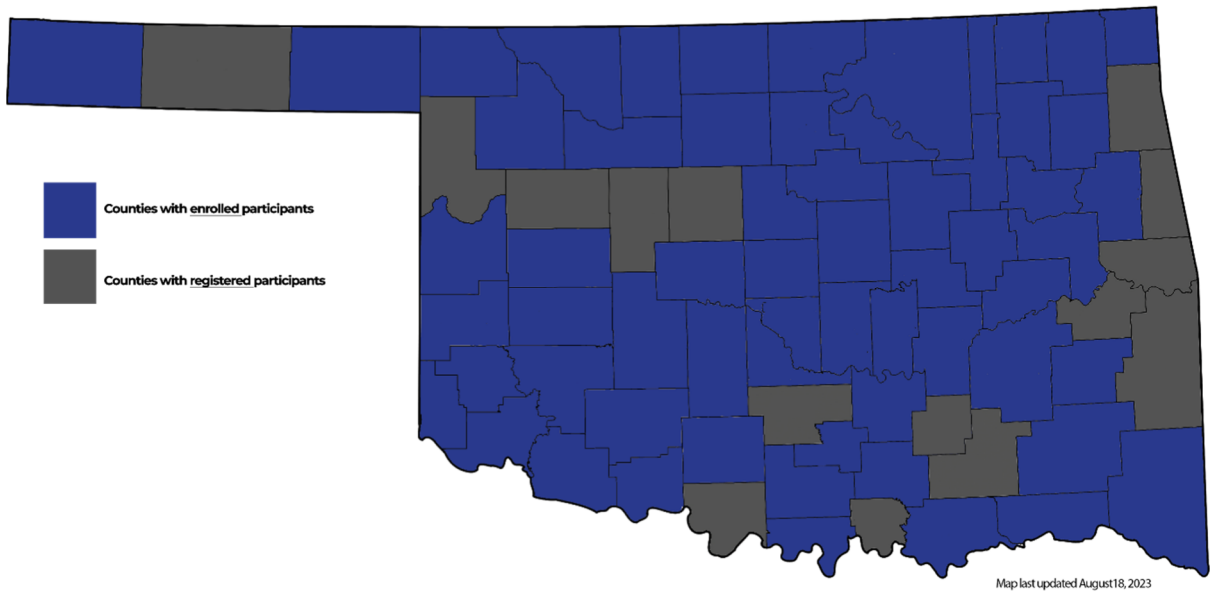
BELOW POVERTY LEVEL	RURAL DWELLERS
68	254
9.33% UNDER GOAL	53.94% OVER GOAL

TRIBAL MEMBERS	PIKEPASS HOLDERS
84	548
29.23% OVER GOAL	119.2% OVER GOAL

County Participation

Approximately 90 days after recruitment began, another parameter required registrations from all 77 counties.

Recruitment efforts procured registrations from ALL 77 counties. Attrition between recruitment and enrollment phases resulted in a total of 63 counties.



Recruitment Activities

Auto Shows

The most significant pre-registrations and registrations were gathered during the Oklahoma City and Tulsa International Auto Shows. Oklahoma City was the best-producing lead-generating show, with 547 sign-ups compared to 52 in Tulsa. Despite lower overall sign-ups, more registrations were processed from the Tulsa area than in Oklahoma City.

Additionally, across the street from the Oklahoma City International Auto Show was the State High School Basketball Tournament. The tournament attendees were offered free admission to the auto show, positioning the Fair Miles Oklahoma brand in front of thousands of additional drivers across the state.

Aligning with the auto shows allowed Fair Miles Oklahoma to benefit from the following marketing and media opportunities:

- Placement at both shows near the drive-in movie area and classic car show for optimized foot traffic.
- FMO logo in all print and television ads.
- FMO logo on all on-site event signage.
- Five hundred free tickets for giveaways (these were used to draw people to the show and sign up via grassroots distribution efforts such as neighborhood events and door-knocking).

Promotional products were used to help incentivize sign-ups. Items distributed included battery-powered flashlights, phone charging cables, coin purses, stickers, and tire gauges. The flashlights and tire gauges were the most popular items, indicating that all future promotional items should be helpful in a vehicle.

Additionally, a booth was set up at the South OKC Car Show. Due to a weather-related date change, the event could have been better attended, and only five registrations were secured.

Member-based organizations

Member-based organizations proved very fruitful for the recruitment phase of the pilot project. Besides the auto shows, this group yielded the most significant registrations. These groups helped drive registrations by emailing their membership about Fair Miles, Oklahoma. This recruitment tactic also attracted state and community leaders to register. Numerous groups were asked to participate. However, the initial groups contacted were pushed out and coordinated also with sister organizations and other subsidiaries. Those were not always reported. Groups that help was requested from and helped as part of the recruitment phase include:

- Leadership Oklahoma
- Oklahoma Farm Bureau
- Oklahoma Municipal League

- Enid Chamber of Commerce
- The Oklahoma Academy
- Association of County Commissioners of Oklahoma
- Oklahoma Association of Electric Cooperatives
- Oklahoma Association of Auto Dealers

Speaking engagements

Speaking engagements were used to inform and recruit potential participants. Several speaking engagements to industry groups helped position Oklahoma as a road user charge program development leader. Numerous national speaking opportunities have been made available now that Oklahoma is known as a transportation industry leader. More speaking engagements that will feature the results and findings of the pilot will be scheduled for early to mid-2024.

September 2022	Ada Rotary Club	Russell Hulin	In-person
October 2022	American Association of State Highway and Transportation Officials Annual Meeting	Dawn Sullivan	In-person
Nov 2022	Association of County Commissioners Fall Conference	Dawn Sullivan/Russell Hulin	In-person
Jan 2023	ODOT Department Head Meeting	Dawn Sullivan	In-person
May 2023	ODOT Tribal Advisory Board Meeting	Mike Patterson	In-person
June 2023	Southwest Oklahoma Regional Transportation Planning Organization Policy Board Meeting	Dawn Sullivan	Virtual
June 2023	Oklahoma Association of Regional Councils Board Meeting	Dawn Sullivan	In-person
June 2023	Indian Nations Council of Governments Transportation Policy Committee	Dawn Sullivan	In-person
June 2023	IBTTA Road User Charging & Finance Summit	Joni Seymour	In-person
July 2023	Indian Nations Council of Governments Board of Directors Meeting	Russell Hulin	In-person
July 2023	Association of South-Central Oklahoma Governments REAP Workshop (Duncan)	Russell Hulin	In-person
August 2023	Mileage-Based User Fees Workshop & Peer Exchange w/ NJDOT	Dawn Sullivan	Virtual
September 2023	South Western Oklahoma Development Association Grant Workshop	Dawn Sullivan	In-person

Chambers of Commerce/Economic Development

Throughout the recruitment process, contact was made with thirty-six chambers of commerce. Each was asked to promote the pilot and help make sure their community, county, or area was represented.

Communities contacted were:

Alva
Chandler
Choctaw
Claremore
Clinton
Coweta
Cushing
Durant
Elgin
Elk City
Enid
Frederick
Greater Oklahoma City Hispanic Chamber of Commerce
Guymon
Hobart
Hooker
Hugo
Jay
Love County
Marshall County
McAlester
Miami
Muskogee
Noble
Oklahoma City
Owasso
Perry
Poteau
Pryor
Skiatook
Stillwater
Tecumseh
Tonkawa
Tulsa
Waurika
Weatherford

**denotes chamber sent out recruitment email provided*

Advertising

A state-wide newspaper advertising campaign was implemented utilizing the Oklahoma Press Association's network. Ads ran for two weeks in 107 papers for 214 ad placements. The following newspapers ran Fair Miles Oklahoma ads:

Ada News
Afton American
Allen Advocate
Altus Times
Alva Review Courier
Anadarko Daily News
Antlers American
Apache News
Atoka County Times
Beaver Herald-Democrat
Blackwell Journal-Tribune
Boise City News
Bristow News
Broken Bow News
Buffalo Weekly News
Cache - The County Times
Carnegie Herald
Checotah-McIntosh Co. Democrat
Chelsea Reporter
Cheyenne Star
Claremore Progress
Clayton Today
Cleveland Progress
Clinton Daily News
Coalgate Record
Comanche Times
Cordell Beacon
Country Connection - Caddo County

Cyril News

Duncan Banner

Durant Democrat

Elgin - Comanche County Chronicle

Elk City News

Enid News & Eagle

Eufaula Indian Journal

Fairfax Chief

Frederick Press-Leader

Freedom Call

Garber-Billings News

Geary Star

Grove Sun

Guymon Daily Herald

Harper County Leader

Henryetta Free-Lance

Hobart Democrat-Chief

Holdenville News

Hominy News

Hooker Advance

Hugo News

Idabel-McCurtain County Gazette

Inola Independent

Jay-Delaware County Journal

Keystone Gusher

Konawa Leader

Madill Record

Mangum Star

Marlow Review

McAlester News-Capital

Miami News-Record

Mooreland Leader

Mountain View News

Muskogee Phoenix

Newkirk Herald Journal

Nowata Star

Okeene Record/Canton Times

Okemah News Leader

Okmulgee Tribune

Oologah Lake Leader

Owasso Reporter

Pawnee Chief

Ponca City News

Poteau Daily News

Pryor - The Paper

Ringling Eagle

Roland - Eastern Times Register

Sallisaw - Sequoyah County Times

Sand Springs Leader

Sapulpa Daily Herald

Sayre - Beckham County Record

Seiling - Dewey County Record

Seminole Producer

Sentinel Leader

Shattuck - Northwest Oklahoman

Skiatook Journal

Snyder - Kiowa County Democrat

Spiro Graphic

Stillwell Democrat-Journal

Tahlequah Daily Press

Talihina American

Thomas Tribune

Tishomingo-Johnston County Sentinel

Tonkawa News

Tulsa Oklahoma Eagle

Valliant Leader

Vian Tenkiller News

Vici Vision

Vinita Journal

Wagoner County American-Tribune

Walters Herald

Waurika News-Journal & Ryan Leader

Waynoka - Woods County Enterprise

Weatherford News

Westville Reporter

Wetumka - Hughes County Tribune

Wewoka Times

Wilburton-Latimer County News Tribune

Woodward News

Overall, the newspaper advertising campaign was better at producing awareness than driving registrations. Approximately 16 registrations resulted from the traditional advertising campaign.

Traditional Ad Creative

Social Media (Paid and Organic)

Social media was initially planned to be a more significant part of the recruitment efforts. However, the negative media coverage mentioned in the Situational Analysis was being fueled by online debates within private and public groups and threatened to derail the positive information being presented by Fair Miles Oklahoma. Social media was only implemented once most participants had been registered to prevent any impacts on the recruitment efforts.

Social media posting began on May 20, 2023. On August 1, 2023, ODOT began leading all social media efforts related to Fair Miles Oklahoma.

Facebook Page

https://www.facebook.com/fairmilesok

Followers: 143

Number of posts: 30

Paid Advertising: Yes

LinkedIn Page

http://www.linkedin.com/company/fairmilesok

Followers: 3

Number of posts: 0

Paid Advertising: No

Paid Facebook Campaigns

Western Oklahoma Engagement Campaign

Spend: $500

Reach: 30,808

Impressions: 116,154

Engagements: 811

Link Clicks: 771

Southeastern Oklahoma Engagement Campaign

Spend: $500

Reach: 34,424

Impressions: 121,732

Engagements: 819

Link Clicks: 770

June/July Follower Ads

Spend: $150

Page Likes: 116

Reach: 3,944

Impressions: 10,841

Engagements: 145

Link Clicks: 77

Boosted Posts

Spend: $350

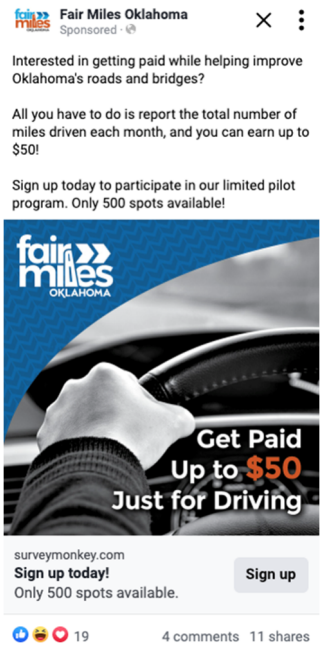
Reach: 33,408

Impressions: 74,348

Engagements: 667

Link Clicks: 618

Example of engagement ad:



Example of follower ad:

Examples of some of the most popular boosted posts:

Social Media Graphics


fair miles OKLAHOMA
HELP BETTER OKLAHOMA'S ROADS & BRIDGES


fair miles OKLAHOMA
GOT A CAR?
WANT TO EARN UP TO
$50?


fair miles OKLAHOMA
EARN UP TO
$50
CLAIM YOUR SPOT TODAY!

Media Relations

Four state-wide media relations campaigns were implemented as part of the recruitment efforts. These efforts were completed on the following dates:

- March 30 – Print, online, and television
- April 4 - Print, online, and television
- April 4 – Radio push
- April 21 - Print, online, and television

These efforts resulted in the following outlets and more:

A full media coverage report can be accessed via Fair Miles Oklahoma Media Coverage.

Website

A one-page landing page style website was constructed to inform and educate potential participants and provide online registration. The site followed the brand standards informed by the brand visioning workshops.

The website launched on January 18, 2023. The site saw significant traffic during the recruitment phase, which ended on August 11, 2023.

Website analytics from January 18, 2023, to August 11, 2023:

- Total unique visitors = 4,517
- Avg. session duration = 12 min. 42 sec. (average time spent on a website is 53 sec.)
- Total sessions = 6,225
- Devices site was accessed with Mobile 50% (3,106), Desktop 49% (3,027) and Tablet 1% (91)
- Thursday was the day of the week with the most sessions, with Wednesday being a close second.
- Traffic originated mostly from the direct input of the URL (3,093) followed by Google searches (1,039), Facebook (983), surveys (348), and the Emovis participant website (161)

Tribal Outreach

Throughout the recruitment process, Tribal Nations were engaged in numerous ways. These include:

- Representatives for the Chickasaw Nation participated in the Brand Visioning Workshops.
- Transportation officials of Tribal Nations were individually contacted a minimum of three times by the Jones PR team and Jones PR's Native American Council.
- Fair Miles Oklahoma was added as an agenda item to an ODOT Tribal Transportation Council meeting where tribal transportation leaders were asked to help secure Tribal representation.
- Tribal transportation officials, or their proxies, attending any of the ODOT RUC Task Force Meetings were met with following the meetings to encourage participation.

Lessons Learned

Networking with family and friends

Asking participants to encourage coworkers, family, and friends to register was very fruitful. One office that emailed all employees yielded 33 registrations in less than 36 hours. For future recruitment efforts, a window period of more than 90 days is recommended so that this tactic can be more fully utilized to drive registrations. Working with key corporations and businesses across the state that have solid internal communication programs would yield more registrations.

Event-based recruitment

Promoting Fair Miles Oklahoma at events is very cost-effective. Each event socializes and builds awareness of the issue and the potential solution being explored, but it is also a great way to connect with potential participants directly. On-site event-based recruitment was the most effective tactic for total registration volume.

Recruitment via member-based organizations

Nearly equally as fruitful as the event-based recruitment efforts, member-based organizations drove a large portion of registrations. Using this tactic provided instant credibility for the Fair Miles Oklahoma concept and pilot due to the notoriety of the organizations. Recruitment through these types of organizations also yields community and business leader registrations.

Speaking engagements

Based on the number of registrations produced by engaging as a speaker for various organizations, these should not be relied on to drive registrations. Instead, they played a significant role in promoting and building awareness of the pilot with key leaders throughout Oklahoma. This made it easier to encourage them to send recruitment materials to their members on ODOT's behalf. A prime example would be the more than 40 registrations received due to speaking and later working with the Association of County Commissioners of Oklahoma to send the registration link state-wide.

Future Considerations

Incentives

Marketing a $50 incentive sounds reasonable for the little effort participants are asked to expend. However, the reality is that the incentive needed to be higher for the cumbersome registration, enrollment, and device activation process. Potential participants were frustrated before they even made it to the part of the process where they could take the pre-survey and earn their first $10 incentive. Later survey results will address this issue and help determine the recommended incentive amount for future pilots.

Enrollment Process

Any future enrollment efforts must be made as simple and quick as possible. VIN verification and MRO selection should be made available when a participant registers and not delayed as a later part of the process. Anything requiring more than one step to share and verify information is too complex and frustrating for the participants.

Partner with DMV

Recruitment efforts should be aligned with the DMV. Creating such a partnership will allow for the recruitment of participants when they register automobiles, apply for a new license, and so forth. Such a partnership models what other states have successfully implemented, allowing for a more streamlined registration process.

Launch Date

When recruiting participants, minimizing the time gap between their registration and the enrollment start date is crucial to prevent them from becoming disengaged or losing interest. On the other hand, recruiting 500 participants typically requires a lead time of over 90 days. Therefore, it is essential to generate ideas for keeping participants engaged during this period without overwhelming them with too much information about road user charges, which could potentially bias the pre-survey findings. Additionally, it is advisable to establish an early launch date and engage all external vendors

concurrently to facilitate seamless collaboration on aspects such as the timeline, registration/enrollment process, and more.

Tribal Recruitment

Working in advance with Tribal Governments and hosting similar meetings in addition to the task force for Tribal representatives is strongly encouraged. Another option would be to invite the entire Tribal Transportation Council to attend all task force meetings.

Final Participant and State-wide Insights

It is suggested that the final focus groups with selected participants still be held. This will provide the last key part to help round out a rich evaluation of the pilot and public perception of a pay-per-mile system.

Additionally, it is recommended that a sample of Oklahomans that aligns with the demographic profiles of current drivers be obtained. This sample will be used to drive survey responses of a final survey that could be generalized to represent the state population. This will provide a quantitative research analysis, lifting the confidence level and margin of error to a level that classifies this final report as a scientific study that can be generalized to the population.

APPENDIX A: OUTREACH AND ENGAGEMENT

A.4 PILOT SURVEY RESULTS

OKLAHOMA

fair miles OKLAHOMA

Oklahoma Pay-Per-Mile Program

MRO Survey Results

August 8, 2023

Executive Summary

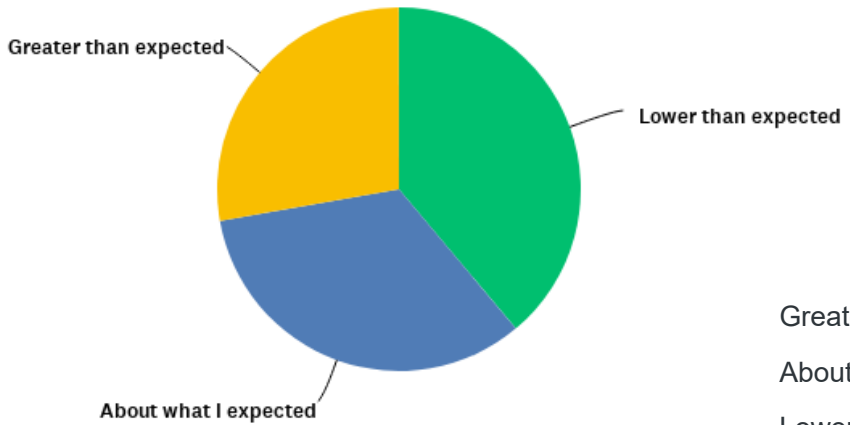
General Overview

- Slightly more participants felt the invoice amount was more significant than they expected.
- Overall, participants feel that participating is easy and doesn't require too much time.
- Most respondents are using plug-in devices and mobile app MROs.
- Of the four MROs, the GPS-enabled options were reported as the easiest to use. Next was the mobile app, followed by telematics. The manual option was by far considered the most difficult.
- Participants consider the mobile app MRO the least accurate and feel the GPS-enabled device is the most accurate.
- Installing plug-in devices is viewed as very easy.
- Manual odometer reporting participants are unfavorable towards the apps or the actual MRO.
- Reminders and communication regarding invoices and reporting are the most predominant themes throughout negative comments made by participants.

General Questions

Question 1

Q1 What is your reaction to the fee amount in your first mock invoice?



Greater than expected	38.89%
About what I expected	33.33%
Lower than expected	27.78%

Total Answers = 54

Question 2

Q2 How easy is it to participate in the Fair Miles Oklahoma program?

MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
1.00	4.00	2.00	1.94	1.01

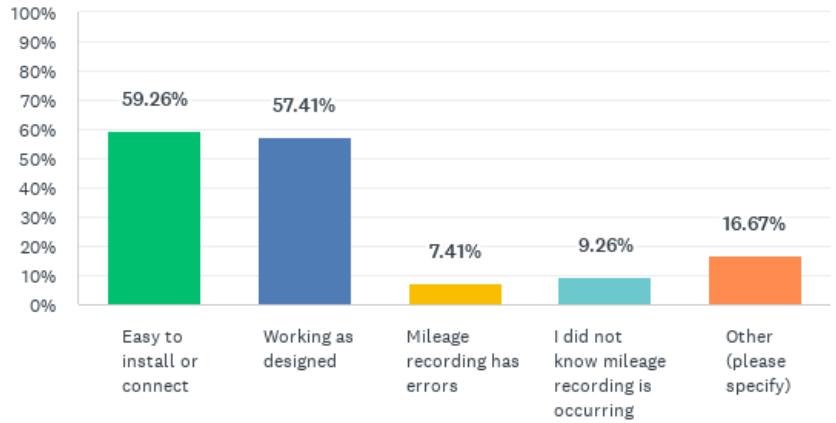
Participants were asked to rank ease of participation on a scale of one (Very Easy) to five (Very Difficult).

- **Minimum and Maximum:** The lowest and highest value (answer choice) selected by at least one respondent.
- **Mean:** The average of all responses.
- **Median:** The midpoint at which all responses are evenly divided above or below.
- **Standard deviation:** The amount of spread or distance from the mean.

Total Answers = 54

Question 3

Q3 Overall, how do you feel about this mileage recording and reporting concept? (Select all that apply)



Total Answers = 54

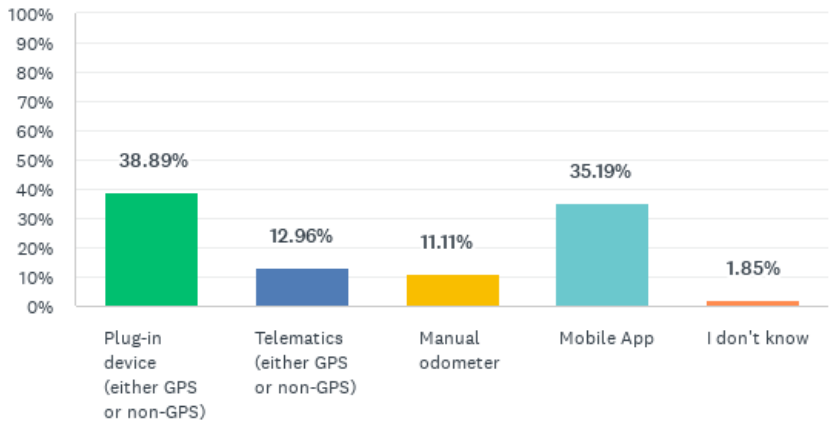
Nine participants selected "Other" and provided the following comments

(Please note these are provided as submitted and have not been edited):

- A reminder to submit a photo instead of a missing submission email would have been nice
- Does not record when I'm connected to Apple Car Play.
- I couldn't see any updates on mileage in the app, but i could see it on the computer web browser
- Bugs need working out
- Mileage doesn't seem accurate but maybe it is delayed?
- Difficult to get installed, had to try and initialize multiple times
- I was confused at first. I either misread the information or it was incomplete.
- I was on vacation and not driving
- Should be easy but seems to have SMS and email issues

Question 4

Q4 What mileage recording and reporting option are you using?



Total Answers = 54

GPS-enabled Device Related Questions

Question 5

Q5 How easy is it to use the GPS-enabled device?

MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
1.00	5.00	5.00	4.10	1.34

Only participants that indicated they were using a GPS-enabled device were eligible to answer this question. Participants were asked to rank ease of using a GPS-enabled device on a scale of one (Very Difficult) to five (Very Easy).

- **Minimum and Maximum:** The lowest and highest value (answer choice) selected by at least one respondent.
- **Mean:** The average of all responses.
- **Median:** The midpoint at which all responses are evenly divided above or below.
- **Standard deviation:** The amount of spread or distance from the mean.

Total Answers = 21

Question 6

Q6 How accurate do you think your plug-in device is when reporting your mileage?

MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
1.00	4.00	1.00	1.67	0.89

Only participants that indicated they were using a GPS-enabled device were eligible to answer this question. Participants were asked to evaluate the accuracy of their plug-in device on a scale of one (Very Accurate) to five (Not Accurate At All).

- **Minimum and Maximum:** The lowest and highest value (answer choice) selected by at least one respondent.
- **Mean:** The average of all responses.
- **Median:** The midpoint at which all responses are evenly divided above or below.
- **Standard deviation:** The amount of spread or distance from the mean.

Total Answers = 21

Question 7

Q7 If you selected a GPS-enabled device over a non-GPS-enabled device, please explain why you picked the GPS-enabled option.

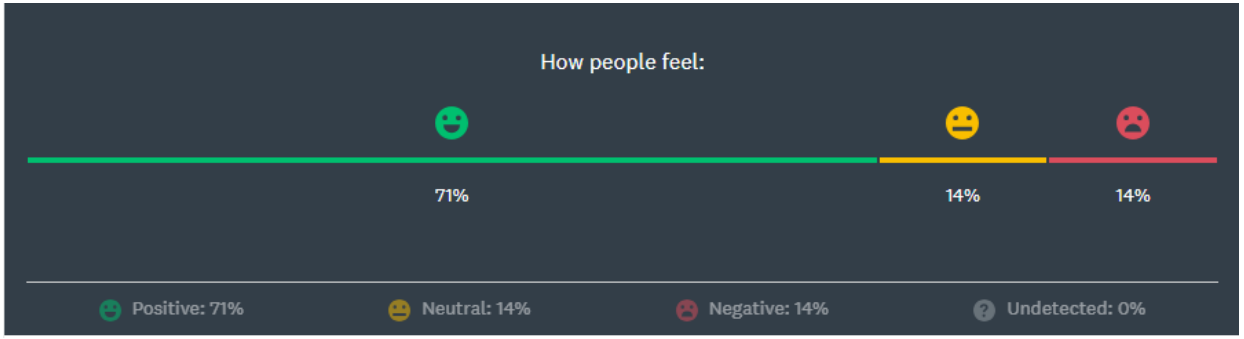
Participant's Explanation	Number of Responses
Easy or Less Work	8
Accuracy	2
View Helpful Information (i.e. – mileage)	2
No Answer	2

Only participants that indicated they were using a GPS-enabled device were eligible to answer this question. Participants were asked to describe their choice. Their answers were double-coded for accuracy.

Total Answers = 14

Question 8

Q8: Please describe your experience installing the plug-in device.



Only participants that indicated they were using a GPS-enabled device were eligible to answer this question. Their answers were double-coded for accuracy.

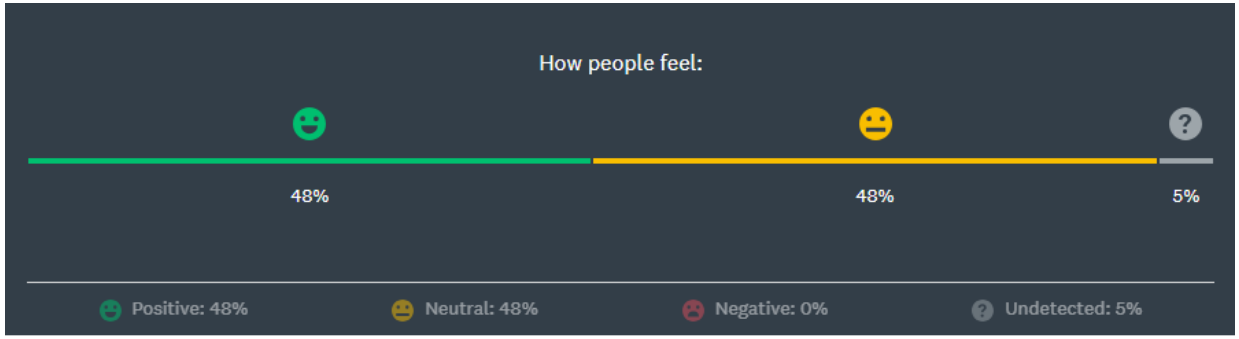
Total Answers = 21

Three participants provided the negative descriptions listed below. These are being included to provide context for their experience ***(Please note these are provided as submitted and have not been edited):***

- Didn't work at first
- Very difficult, as the plugin seems to be working, but then I would get texts that it hadn't been initialized. I would like a web application that will tell me whether or not my device reported
- I had trouble with the first time installing, it took a bit to realize it wasn't working. Second time it worked fine.

Question 9

Q9: How do you feel overall about using the plug-in device to report your mileage?



Only participants that indicated they were using a GPS-enabled device were eligible to answer this question. Their answers were double-coded for accuracy.

Total Answers = 21

Key Participant Insights:

- Two participants who gave positive answers included concerns about not being able to plug in diagnostic devices due to the size of the OBD plugin supplied by Fair Miles Oklahoma.
- The 5% undetected represents one participant whose answer didn't represent one of the three sentiments being stated, "It's the best option for me."

Telematics Related Questions

Question 10

Q10 How easy was it to sign up for the telematics reporting option?

MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
1.00	4.00	1.00	1.86	1.12

Only participants that indicated they were using the telematics option were eligible to answer this question. Participants were asked to choose how easy it was to sign up for telematics on a scale of one (Very Easy) to five (Very Difficult).

- **Minimum and Maximum:** The lowest and highest value (answer choice) selected by at least one respondent.
- **Mean:** The average of all responses.
- **Median:** The midpoint at which all responses are evenly divided above or below.
- **Standard deviation:** The amount of spread or distance from the mean.

Total Answers = 7

Question 11

Q11 How accurate do you think the telematics option is when reporting your mileage?

MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
1.00	3.00	2.00	1.86	0.83

Only participants that indicated they were using the telematics option were eligible to answer this question. Participants were asked to score the accuracy of telematics on a scale of one (Very Accurate) to five (Not Accurate at All).

- **Minimum and Maximum:** The lowest and highest value (answer choice) selected by at least one respondent.
- **Mean:** The average of all responses.
- **Median:** The midpoint at which all responses are evenly divided above or below.
- **Standard deviation:** The amount of spread or distance from the mean.

Total Answers = 7

Question 12

Q12: If you selected a GPS-enabled device over a non-GPS-enabled device, please explain why you picked the GPS-enabled option.

Only one of the participants using telematics answered this survey. Their answer is below. This question was not coded or statistically analyzed due to the singular response.

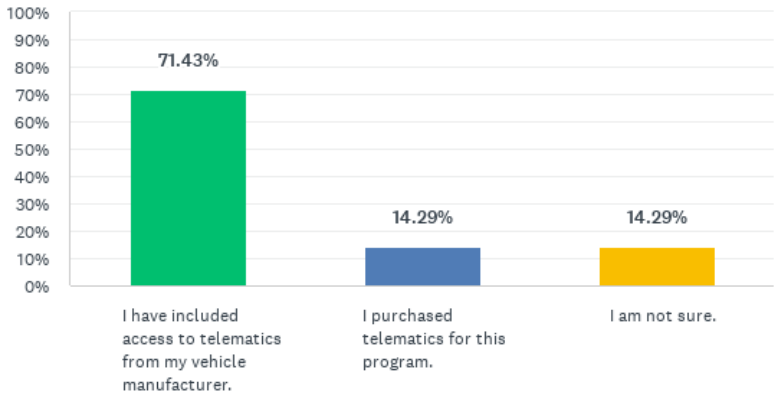
- Seemed it would be easy to let the vehicle report the mileage

Only participants that indicated they were using the telematics option were eligible to answer this question.

Total Answers = 1

Question 13

Q13 Did you have access to telematics previously or did you purchase telematics for this program?



Only participants that indicated they were using the telematics option were eligible to answer this question.

Total Answers = 7

Question 14

Q14: How much did you pay for telematics?

Only one of the participants using telematics answered this survey. Their answer is below. This question was not coded or statistically analyzed due to the singular response.

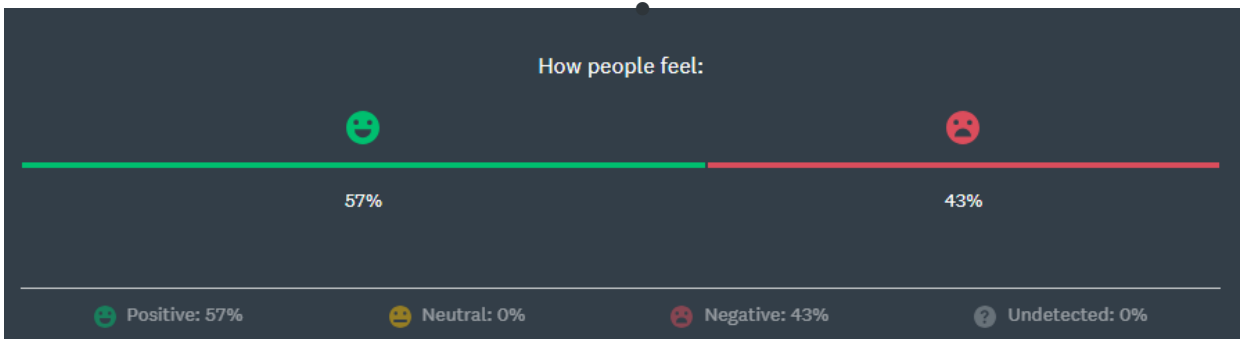
- $200

Only participants that indicated they were using the telematics option were eligible to answer this question.

Total Answers = 1

Question 15

Q15: How do you feel overall about using telematics to report your mileage?



Only participants that indicated they were using telematics were eligible to answer this question. Their answers were double-coded for accuracy.

Total Answers = 7

Negative descriptions are listed below to provide context for their experience ***(Please note these are provided as submitted and have not been edited):***

- Feels invasive
- I like the ease of it but have concerns about double taxation if I don't opt into the GPS-enabled option. For example, I travel out of Oklahoma and purchase gas and pay tax on that purchase in another state, but then Oklahoma is still going to tax me on it based on my mileage via telematics.
- Little bit of "big brother" uncomfortableness, but worked really well and unintrusive.

Manual Odometer Related Questions

Question 16

Q16 How easy is it to input your odometer readings into the mobile app?

MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
1.00	4.00	2.00	2.43	1.40

Only participants that indicated they were using the manual odometer reporting option were eligible to answer this question. Participants were asked to rank reporting via the app on a scale of one (Very Easy) to five (Very Difficult).

- **Minimum and Maximum:** The lowest and highest value (answer choice) selected by at least one respondent.
- **Mean:** The average of all responses.
- **Median:** The midpoint at which all responses are evenly divided above or below.
- **Standard deviation:** The amount of spread or distance from the mean.

Total Answers = 7

Question 17

Q17 How easy was it to submit your VIN photo?

MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
2.00	4.00	2.00	2.57	0.73

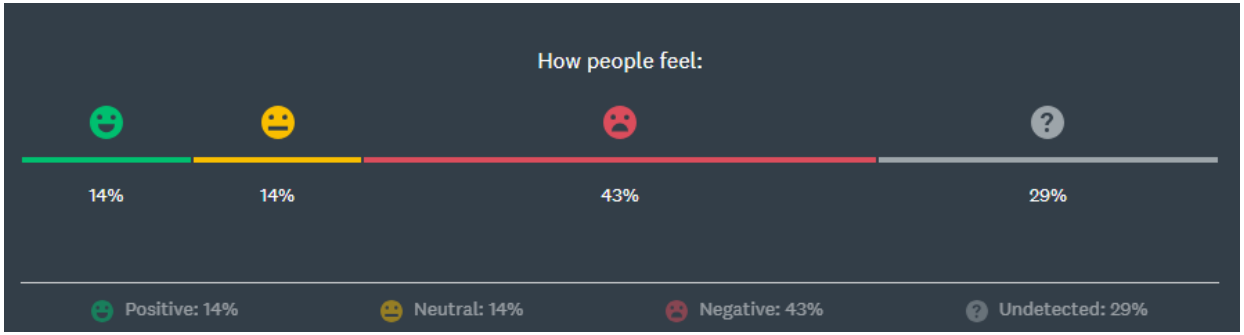
Only participants that indicated they were using the manual odometer reporting option were eligible to answer this question. Participants were asked to assess how easy it was to upload their VIN photo on a scale of one (Very Easy) to five (Very Difficult).

- **Minimum and Maximum:** The lowest and highest value (answer choice) selected by at least one respondent.
- **Mean:** The average of all responses.
- **Median:** The midpoint at which all responses are evenly divided above or below.
- **Standard deviation:** The amount of spread or distance from the mean.

Total Answers = 7

Question 18

Q18: Please describe your experience setting up the mobile app.



Only participants that indicated they were using telematics were eligible to answer this question. Their answers were double-coded for accuracy.

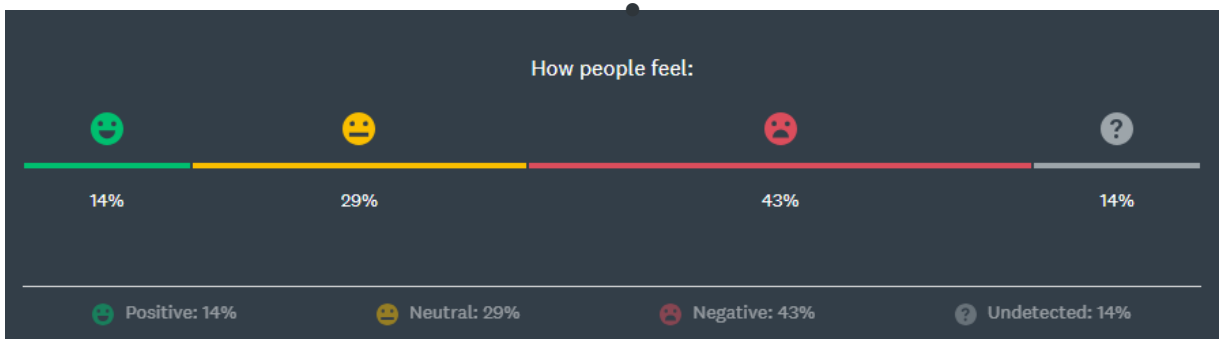
Total Answers = 7

Negative descriptions are listed below to provide context for their experience ***(Please note these are provided as submitted and have not been edited):***

- Too many passwords between too many apps, websites, and emails.
- No mobile app, only mobile website. Unless I'm missing something the Android link just went to a website
- I couldn't set up the mobile app to submit my odometer photo and had to log in to the website from my phone

Question 19

Q19: How do you feel overall about using the manual option to report your mileage?



Only participants that indicated they were using telematics were eligible to answer this question. Their answers were double-coded for accuracy.

Total Answers = 7

Negative descriptions are listed below to provide context for their experience ***(Please note these are provided as submitted and have not been edited):***

- If your wifi is fast it works great. If your phone data is slow it won't download
- It would be much easier to do through an app with a push notification to remind you to submit your mileage.
- Would prefer an app based experience rather than mobile web. It would make submitting from the vehicle much easier

Mobile App Related Questions

Question 20

Q20 How easy is it to use the mobile app?

MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
1.00	4.00	1.00	1.74	0.91

Only participants that indicated they were using the mobile app reporting option were eligible to answer this question. Participants were asked to assess how easy it was to use the mobile app on a scale of one (Very Easy) to five (Very Difficult).

- **Minimum and Maximum:** The lowest and highest value (answer choice) selected by at least one respondent.
- **Mean:** The average of all responses.
- **Median:** The midpoint at which all responses are evenly divided above or below.
- **Standard deviation:** The amount of spread or distance from the mean.

Total Answers = 19

Question 21

Q21 How accurate do you think the mobile app is when reporting your mileage?

MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
1.00	4.00	2.00	2.16	0.93

Only participants that indicated they were using the mobile app reporting option were eligible to answer this question. Participants were asked to assess the accuracy of the mobile app on a scale of one (Very Accurate) to five (Not Accurate at All).

- **Minimum and Maximum:** The lowest and highest value (answer choice) selected by at least one respondent.
- **Mean:** The average of all responses.
- **Median:** The midpoint at which all responses are evenly divided above or below.
- **Standard deviation:** The amount of spread or distance from the mean.

Total Answers = 19

Question 22

Q22 How easy it is to connect via Bluetooth?

MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
1.00	4.00	2.00	1.95	0.94

Only participants that indicated they were using the mobile app reporting option were eligible to answer this question. Participants were asked to assess the ease of connecting via Bluetooth on a scale of one (Very Easy) to five (Very Difficult).

- **Minimum and Maximum:** The lowest and highest value (answer choice) selected by at least one respondent.
- **Mean:** The average of all responses.
- **Median:** The midpoint at which all responses are evenly divided above or below.
- **Standard deviation:** The amount of spread or distance from the mean.

Total Answers = 19

Question 23

Q23 If you added another user, how easy was it to add the second user?

MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
1.00	4.00	3.00	2.83	0.69

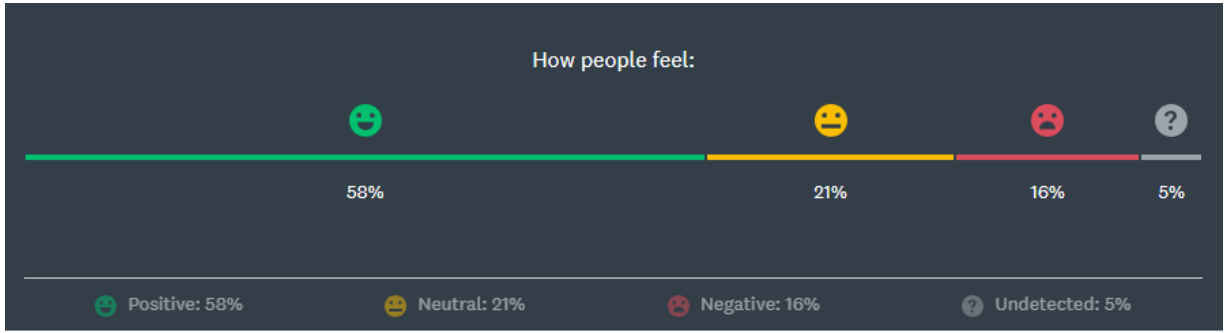
Only participants that indicated they were using the mobile app reporting option were eligible to answer this question. Participants were asked to assess the ease of adding a second user to the mobile app on a scale of one (Very Easy) to five (Very Difficult).

- **Minimum and Maximum:** The lowest and highest value (answer choice) selected by at least one respondent.
- **Mean:** The average of all responses.
- **Median:** The midpoint at which all responses are evenly divided above or below.
- **Standard deviation:** The amount of spread or distance from the mean.

Total Answers = 12

Question 24

Q24: How do you feel overall about using the mobile app to report your mileage?



Only participants that indicated they were using telematics were eligible to answer this question. Their answers were double-coded for accuracy.

Total Answers = 19

Negative descriptions are listed below to provide context for their experience ***(Please note these are provided as submitted and have not been edited):***

- If your wifi is fast it works great. If your phone data is slow it won't download
- It would be much easier to do through an app with a push notification to remind you to submit your mileage.
- Would prefer an app based experience rather than mobile web. It would make submitting from the vehicle much easier

Oklahoma Pay-Per-Mile Program

Social Media Survey Results

October 8, 2023

Executive Summary

General Overview

- 99% of respondents wrote sample social media posts with a positive tone
- A few participants reporting liking the program but felt the mobile app needed more work
- Overall participants find the pay-per-mile model to be fair and easy to participate in

Question 1

Q1: Please write a sample social media post about Fair Miles Oklahoma that would represent something you would post today for your family and friends to see. You can write it in a format suitable for Facebook, Instagram, Twitter, or any other social media platform. Have fun and explain how Fair Miles Oklahoma could be a benefit to you and others. (These are for research purposes only and will not be posted on social media.)

Full text of sample posts on following pages.

Total Answers = 85

Q1 Please write a sample social media post about Fair Miles Oklahoma that would represent something you would post today for your family and friends to see. You can write it in a format suitable for Facebook, Instagram, Twitter, or any other social media platform. Have fun and explain how Fair Miles Oklahoma could be a benefit to you and others. (These are for research purposes only and will not be posted on social media.)

Answered: 85 Skipped: 0

#	RESPONSES	DATE
1	Woo Hoo try Fairmiles	9/1/2023 5:17 PM
2	#fairmilesoklahoma	8/29/2023 7:58 PM
3	#Fair Miles Oklahoma! Making America roads great again	8/29/2023 7:57 PM
4	Changes in car fuels and road maintenance issues means that we need to update the outdated #GasTax! That's why I am currently in a pilot program to test paying per mile driven with #FairMilesOklahoma. The key would be to eliminate the state gas tax altogether and instead charge users a fee per mile driven. Therefore, you would pay what you use and it would also help level the playing field for gas and EV cars! This is a truly innovative approach, and I am happy to join this pilot program!	8/23/2023 10:52 AM
5	Fair Miles Oklahoma is a great program. It’s so easy to use: login, view monthly bill, and pay electronically! And it’s so much cheaper than gas!!	8/22/2023 7:04 PM
6	If I had an electric car this would be my fair use of Oklahoma highways. We take for granted just how important they are to everyone and just how much it costs to make it all possible.	8/22/2023 7:42 AM
7	Come on Oklahoma, let’s use Fair Miles to better understand our miles!	8/21/2023 5:04 PM
8	Oklahoma! The future is here. Our taxes from the gas tax go to building Oklahoma and fixing our roads. As EV vehicles continue to rise, we need to think about how we will keep investing in our transportation. Consider doing more research on our options at fairmiles.com	8/21/2023 1:20 PM
9	Accessing my FairMiles activity in Oklahoma is easy and lets me review my activity in real time. Join our pilot today and give valuable input for our states future!	8/18/2023 11:18 AM
10	Fair Miles is an equitable approach to funding safe roads and bridges.	8/17/2023 8:22 PM
11	The program is simple and easy to use. I used the plug in model and it is very accurate.	8/16/2023 6:41 AM
12	This is an interesting idea. I love how little the tax is compared to what I pay in gas tax.	8/15/2023 1:29 PM
13	Fair Miles Oklahoma is a great way for Oklahoma drivers to pay for the miles they are driving. In a world with ever changing	8/14/2023 9:09 AM

	fuel types, this could be the only funding moving forward for our roads and highways.	
14	We need better roads and safe bridges(I for one do not like to worry if the bridge under me is going to crack in half and I fall to my doom). I'm here to do my part in filling all those pot holes and you should too!	8/14/2023 7:21 AM
15	Fairmiles is a pain if u drive different vehicles because the app wants location to be turned on to "always" instead of letting you use "only when using the app"	8/14/2023 6:34 AM
16	This program may help the future of oklahoma	8/13/2023 10:39 PM
17	Currently tracking my car mileage with Fair Miles! Interesting to see how many miles I drive in a month!	8/13/2023 9:04 PM
18	Fair Miles is a state-wide pilot study that aims to explore alternative funding options to replace the state fuel tax. The program seeks to establish a fair funding model that treats roads like utilities and only charges you for what you use.	8/13/2023 7:30 PM
19	Fair miles is paying me through drive! It can pay you too!	8/13/2023 7:18 PM
20	Fair Miles has a terrible user experience and interface. So much room for improvement.	8/13/2023 6:01 PM
21	Updating my mileage for my participation in Fair Miles OK!	8/13/2023 4:23 PM
22	FairMiles OK is fair for all!!	8/12/2023 2:38 PM
23	Fair Miles Oklahoma lets you pay online for your road/fuel tax. Plus a great to track monthly mileage!	8/11/2023 9:12 AM
24	This is an easy way to keep up fair funding of our roads and bridges. All vehicles are charges equally.	8/10/2023 11:21 AM
25	Fair miles is a program designed to fairly assess tax to help with roads and bridges. Once enrolled, the process takes care of itself.	8/9/2023 10:10 PM
26	If I use it, I should pay my share.	8/9/2023 6:17 PM
27	I can't believe the state of Oklahoma would invest so many resources into a meaningless tech meant to replace our gas tax for taking care of our roads. Can't wait to forget to pay this bill.	8/9/2023 5:53 PM
28	Fairmiles Oklahoma is exactly what the name of the program indicates - paying to help maintain Oklahoma's roads based on your usage. Which is more fair than paying a flat tax. With decreased gasoline usage, there is less gas tax income going to maintain our roads which even worse driving conditions which affects your tires, steering, suspension ... Who's got time and extra $$$ for that?	8/9/2023 3:43 PM
29	Fairies Oklahoma is exactly what the name of the program indicates - paying to help maintain Oklahoma's roads based on your usage. Which is more fair than paying a flat tax. With decreased gasoline usage, there is less gas tax income going to maintain our roads which even worse driving conditions which affects your tires, steering, suspension ... Who's got time and extra $$$ for that?	8/9/2023 3:41 PM
30	Tried to use my FairMiles app today but had to disable because the location services requirement to be on all the time drains my phone battery.	8/8/2023 8:58 PM
31	Just finished driving on the turnpike, paid thru Fair Miles Oklahoma!	8/8/2023 5:43 PM
32	Wonder why Oklahoma (and the US) has bad roads with potholes etc? It's because we don't pay for it! Fair Miles will charge for only what you drive, meaning if you don't drive much you won't pay much!	8/8/2023 2:27 PM

33	Join me in participating in Oklahoma's future by signing up to be a part of the FairMiles Infrastructure Funding Program!	8/8/2023 10:52 AM
34	Attempting to accurately report miles driven to assist the State of Oklahoma in their FairMiles campaign for an ultimate road user tax. Alas, as is everything governmental, the system is inaccurate and cumbersome.	8/8/2023 7:11 AM
35	Fair Miles is for everyone to pay fair share of road usage. Time for electric cars to pay for road usage.	8/8/2023 7:05 AM
36	I joined Fair Miles to help Oklahoma maintain our roads. Since I have a hybrid and use less gas, I don't pay as much in taxes to help with roadwork. I want to do my part, and it wasn't too costly - only 5.99 for driving 599 miles.	8/7/2023 5:44 PM
37	Help improve road funding by joining Fair Miles OK! There are no free roads, and Fair Miles OK is a way to ensure that all users pay their fair share for road usage.	8/7/2023 4:39 PM
38	Please signup for this worthwhile pilot project, Fairmiles, to help ODOT gather information for a solution for future transportation funding.	8/7/2023 3:06 PM
39	I think we would all agree that Oklahoma roads need help. Did you know that the majority of funding for our roads comes from fuel taxes? Vehicles that don't use gasoline or diesel fuel along with the increased fuel efficiency in vehicles that do means we are losing ground on the revenue it takes to support our roads. Fair Miles is a new approach to collecting revenues to support our roads...it's a pay-per-use fee on the miles you drive instead of paying taxes on the fuel you consume.	8/7/2023 1:46 PM
40	Fair miles is easy and accurate. No hassle at all.	8/7/2023 11:40 AM
41	Everyone should use fairmiles! It's easy to use and fun to see the mileage you use.	8/7/2023 11:00 AM
42	Fair Miles shows I can pay less for fuel tax by the mile, rather than by the gallon. It is more equitable because everyone pays the same.	8/7/2023 10:38 AM
43	Fair Miles is so easy to use! Instead of paying a fuel tax, Fair Miles tracks the miles I actually drive, so I only pay for what I drive. The invoicing and payments are all online and very convenient. I recommend paying per mile.	8/7/2023 9:34 AM
44	I am participating in a pilot program to help the state of Oklahoma find a way to restore lost revenue for our roads and bridges. If you want to help, go here to find out more! (Link)	8/7/2023 8:48 AM
45	Fair Miles Oklahoma is a fair platform for collecting a tax that is slowly dwindling due to higher mpg vehicles and alternative fuels.	8/7/2023 8:24 AM
46	Hey, I'm participating in FairMiles, a pilot pay-per-mile revenue model that could replace the current fuel tax. As fuel tax becomes unsustainable, a pay-per-mile system would allow Oklahoma to use technology to log miles traveled and charge each vehicle accordingly. This funding model would allow for the future collection of user fees by simply charging drivers based on the miles they drive versus the gallons of fuel they purchase. For more info, visit: https://www.fairmilesok.com/	8/7/2023 8:08 AM
47	Mileage log for July 2023. Wish I could have two vehicles on my email account....	8/7/2023 6:38 AM
48	Fair Miles Oklahoma would be a fair means of replacing the lost revenue from the gas tax. Cars today are more fuel efficient and the use of electric vehicles will become more prominent. Also, electric vehicles do use gas and that is lost tax revenue. Fair Miles Oklahoma would be an equitable means for all vehicles and they would only pay for those miles traveled in Oklahoma.	8/6/2023 5:09 PM
49	I wouldn’t post	8/6/2023 4:45 PM

50	This is totally different from old style charge, it's charged by different rate of in-the-state miles and out-of-state miles.	8/6/2023 2:10 PM
51	I’m still not sure how accurate this program will be. I have lots of questions about how people from out of state will pay their share.	8/6/2023 2:02 PM
52	Fair miles is easy to use. App could've been way better though	8/6/2023 10:03 AM
53	Fair miles is easy to use, but the app definitely needs some work to it.	8/6/2023 10:01 AM
54	Paying for the maintenance on the roads you actually drive based on the miles you drive vs higher taxes on gas.	8/5/2023 5:34 PM
55	Kinda cool to see how much I drive in a week. Sorta like a step counter, but I get $10 to participate each month and the hardest thing is remembering my login info!	8/5/2023 4:39 PM
56	As more and more electric vehicles take to the road, the old gas tax won't work anymore. FMO is the way forward to ensure every driver is paying their fair share of the cost to expand and maintain our roadways.	8/5/2023 3:56 PM
57	Having a great Saturday enjoying all there is to do in Northern Oklahoma.	8/5/2023 12:13 PM
58	Fair Miles Oklahoma is a program to fairly share the financing of the roads in Okla. thru an alternate to the gasoline tax. Currently, electric vehicles contribute nothing to the roads in oklahoma as they do not buy gasoline. Fair Miles is attempting to create a method of fairly reporting miles driven and all Oklahoma vehicles would pay a per mile fee. This is after the legislature removes the portion of the taxes currently being charged on our gasoline purchases at the pump. Electric vehicles should pay more per miles driven to offset the Federal gasoline taxes that gasoline purchases will still have to make.	8/5/2023 12:13 PM
59	Fair miles The good: Easy billing and tracking your miles The bad: I feel like the government is tracking me and I don’t like paying taxes	8/5/2023 12:07 PM
60	Have you guys signed up for the fair mikes in Oklahoma? It’s easy to set up, and you make a little cash!	8/5/2023 12:06 PM
61	Fair taxes for Fair Miles	8/5/2023 10:55 AM
62	This per mile driven method of funding roads and bridges should be the future for equitable financing of our transportation infrastructure.	8/5/2023 10:35 AM
63	Fair Miles is easy to use and reports accurate mileage	8/5/2023 10:33 AM
64	Sign up for Fair Miles Oklahoma today. It’s so easy!	8/5/2023 9:38 AM
65	Fair Miles Oklahoma is a great way to track you use of Oklahoma roads and remit your driving taxes.	8/5/2023 9:02 AM
66	Paying for miles driven and not per gallon!	8/5/2023 8:10 AM
67	This fairmiles app is pretty neat. It tracks the miles my truck has actually driven so I only pay taxes for MY use of the roads! It's nice to know I'm contributing to maintenance on the roads I use, and the burden is spread out to everybody.	8/5/2023 8:07 AM
68	Fair Miles Oklahoma Rocks!!!	8/5/2023 7:46 AM
69	Trying out the fair miles to help with figuring out a better way to help pay for our ever deteriorating roads. This is a way for everyone to pay and not just us who drive gas powered cars and trucks. So far seems to be a very fair and easy program. If you get the chance give it a try.	8/5/2023 7:43 AM

70	This program seems like a fair way for drivers to pay for roads and highway maintenance.	8/5/2023 7:38 AM
71	Fair miles is an easy and fun way to keep track of your miles and ensure that the wear and tear on Oklahoma roads is being paid for and maintained equally by all users!	8/5/2023 7:21 AM
72	Fair Miles Oklahoma would be a benefit because it taxes road users for the miles we actually drive.	8/5/2023 7:15 AM
73	Fairmiles charges .01 per mile and puts it back towards maintaining our roads... see all that construction on your way to work this morning? That's your cents at work!	8/5/2023 7:03 AM
74	I can’t think of anything	8/5/2023 7:02 AM
75	Fair Miles Oklahoma, where everyone shares the responsibility of Oklahoma’s highway system.	8/5/2023 6:39 AM
76	Changes are coming in how we pay for our highways, come join us in finding the new way.	8/5/2023 6:31 AM
77	Fair Miles is a great program and pricing is fair. Love this program	8/5/2023 6:24 AM
78	I feel that Fair Miles Oklahoma is a great way to capture the real cost of driving here.	8/5/2023 5:32 AM
79	Excited to see see improved road conditions as everyone pays their part with Fair Miles!	8/5/2023 5:08 AM
80	Fairmiles will help in maintaining Oklahoma's highways and bridges.	8/5/2023 3:33 AM
81	Fair miles will assist with monitoring Oklahoma roads and the amount of travel those roads experience.	8/5/2023 12:38 AM
82	Not sure yet, whether it is better to pay per mile or at the pump.	8/5/2023 12:29 AM
83	Have you heard of Fair Miles Oklahoma? Join me by signing up, this will help our fellow Oklahoman with funding our roads.	8/5/2023 12:14 AM
84	Oklahoma is planning on punishing electric vehicles! They will charge a per mile amount even though cars cause no significant road damage. This is one of the many reasons this state will stay backwards and in the bottom of the country in every possible metric.	8/5/2023 12:06 AM
85	Fair Miles is a great program, helping to maintain roads and bridges even though the fuel tax is decreasing with newer model cars. I like the idea of paying per mile, it is the most fair way to collect the funds to keep our roads driveable.	8/4/2023 11:36 PM

Oklahoma Pay-Per-Mile Program

Customer Service Survey Results

November 8, 2023

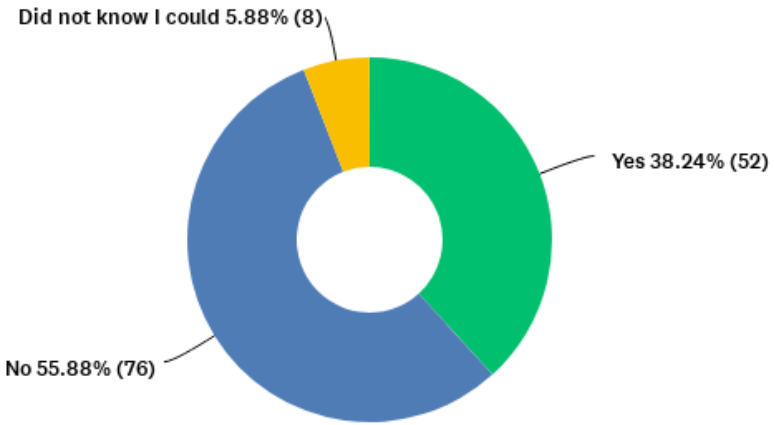
Executive Summary

General Overview

- Participants who reported using customer service used email more than phone.
- Overall, participants found the customer service team to be helpful and the experience positive.
- Nearly all participants reported that tracking their mileage did not alter how they plan for a drive or their driving habits.
- Participants found information on the website to be trustworthy.
- Credit card was overwhelmingly the most popular payment method reported.
- Venmo, PayPal, and Cash App are the most recommended payment methods to be added.
- Participants didn’t report a personal gain or benefit from paying by the mile, but they did indicate that the state of Oklahoma would benefit from this type of program.
- Approximately 40 participants said that paying by the mile helped them budget better.
- Nearly half of participants recommended the state adopt a pay-per-mile program with the second most popular option being an annual flat fee per vehicle.

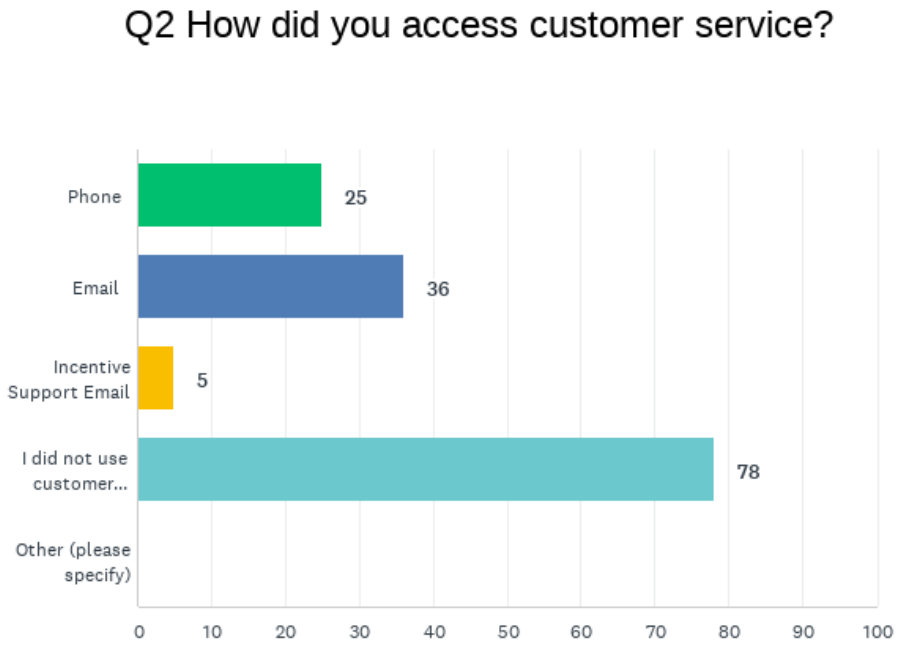
Question 1

Q1 Have you called or emailed the Fair Miles Oklahoma support team?



Total Answers = 136

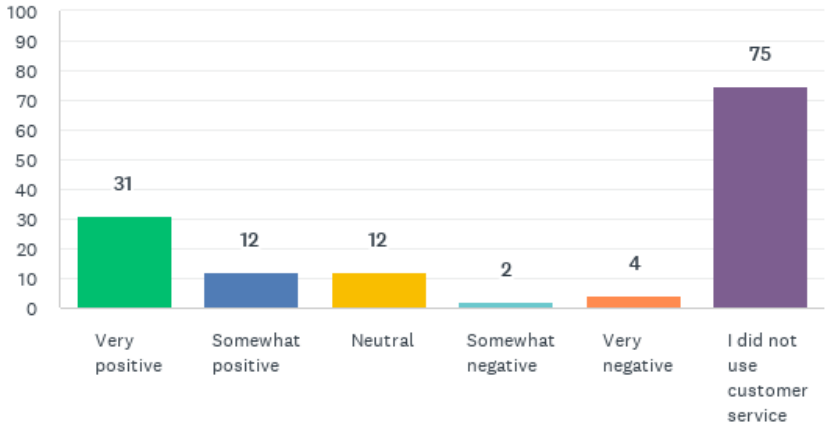
Question 2



Total Answers = 135

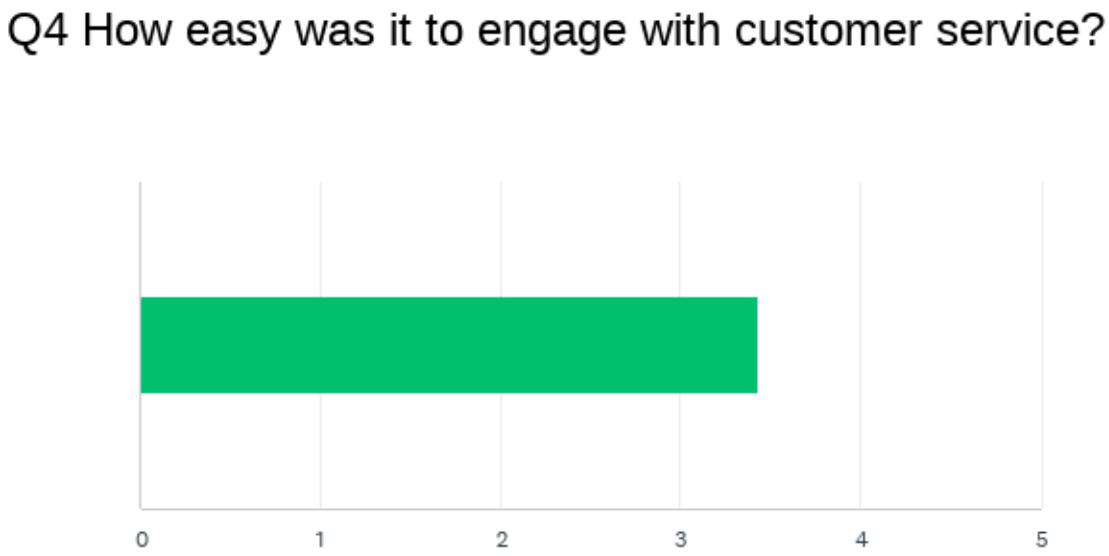
Question 3

Q3 Overall, how would you rate the quality of your customer service experience?



Total Answers = 136

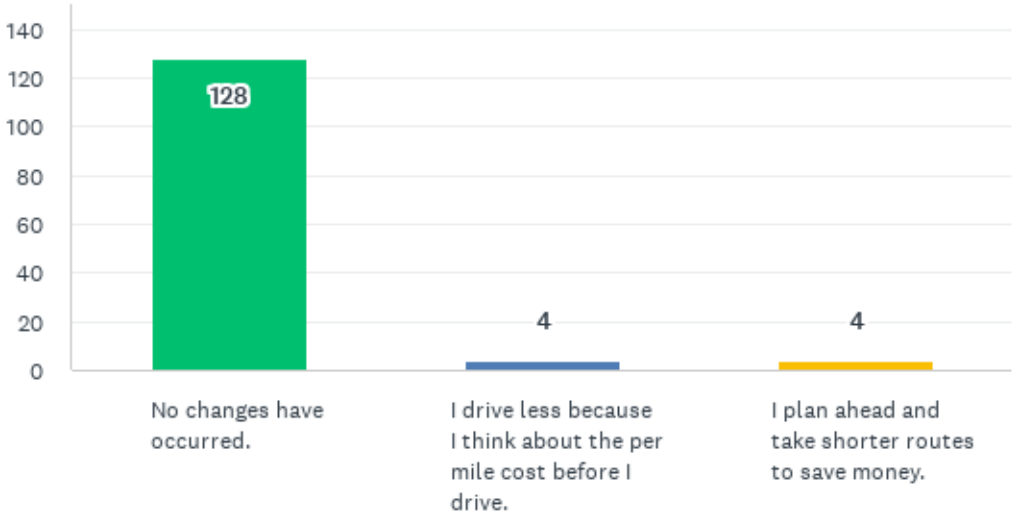
Question 4



Total Answers = 135

Question 5

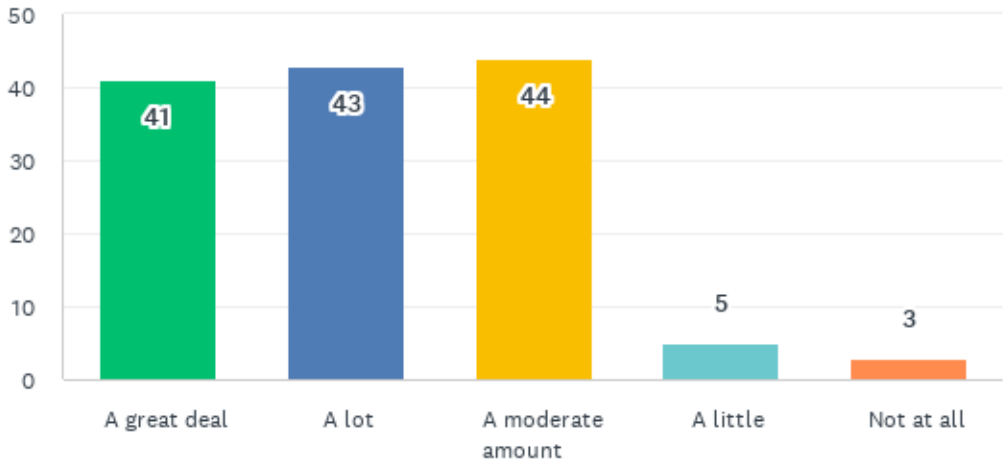
Q5 How have your driving habits changed since beginning Fair Miles Oklahoma?



Total Answers = 136

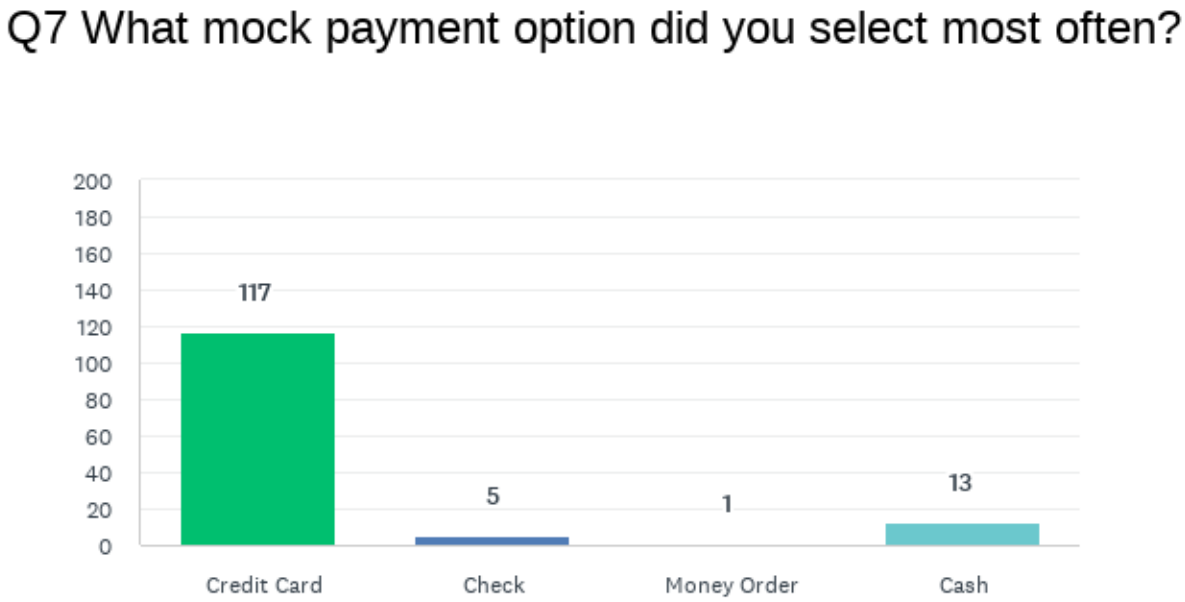
Question 6

Q6 How much do you trust the information on the Fair Miles Oklahoma website?



Total Answers = 136

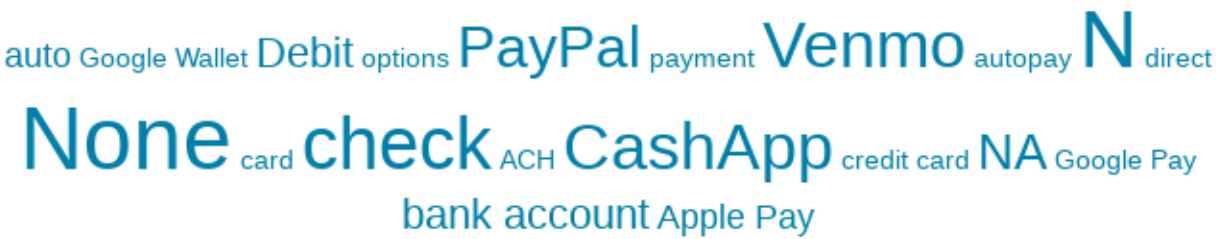
Question 7



Total Answers = 136

Question 8

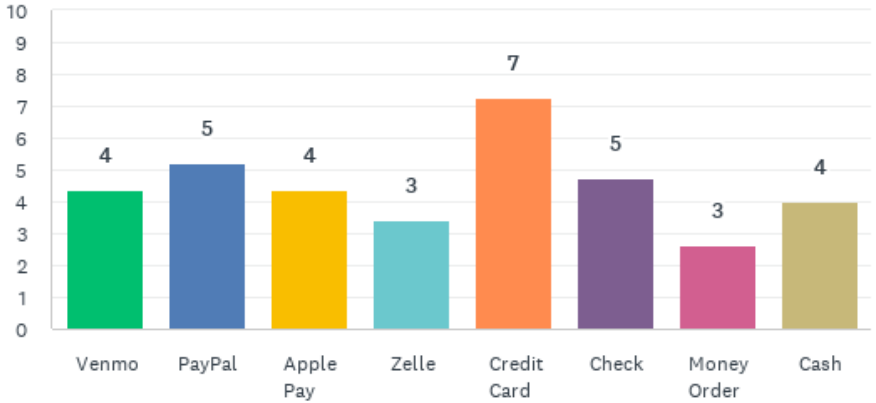
Q8 What other payment method would you prefer to use that is not a current option offered on your monthly invoice?



Total Answers = 136

Question 9

Q9 Please indicate your preference for payment type by ordering the available options from favorite (move to the top) to your least preferred (move to the bottom).

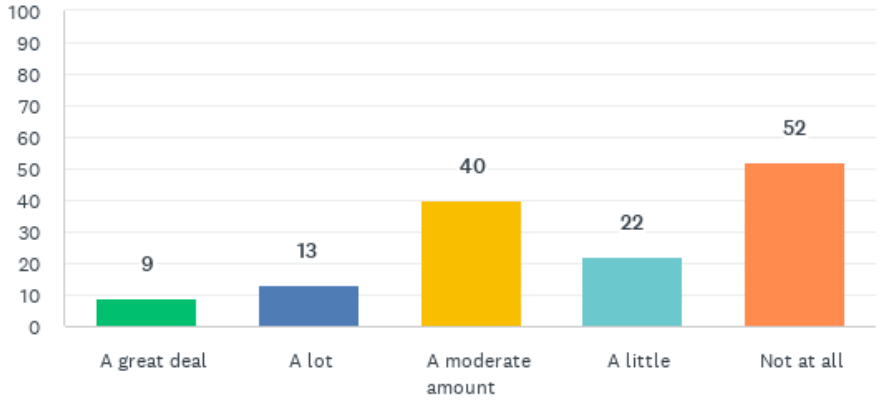


Total Answers = 136

Note: Results are shown as weighted averages

Question 10

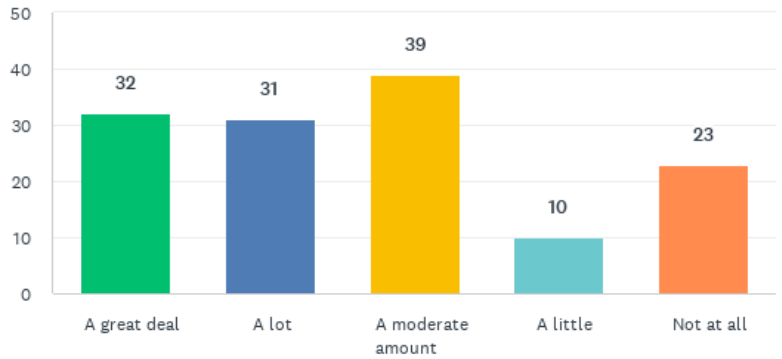
Q10 To what extent does paying transportation taxes by the mile versus by the gallon help you control your finances so you can meet your financial goals?



Total Answers = 136

Question 11

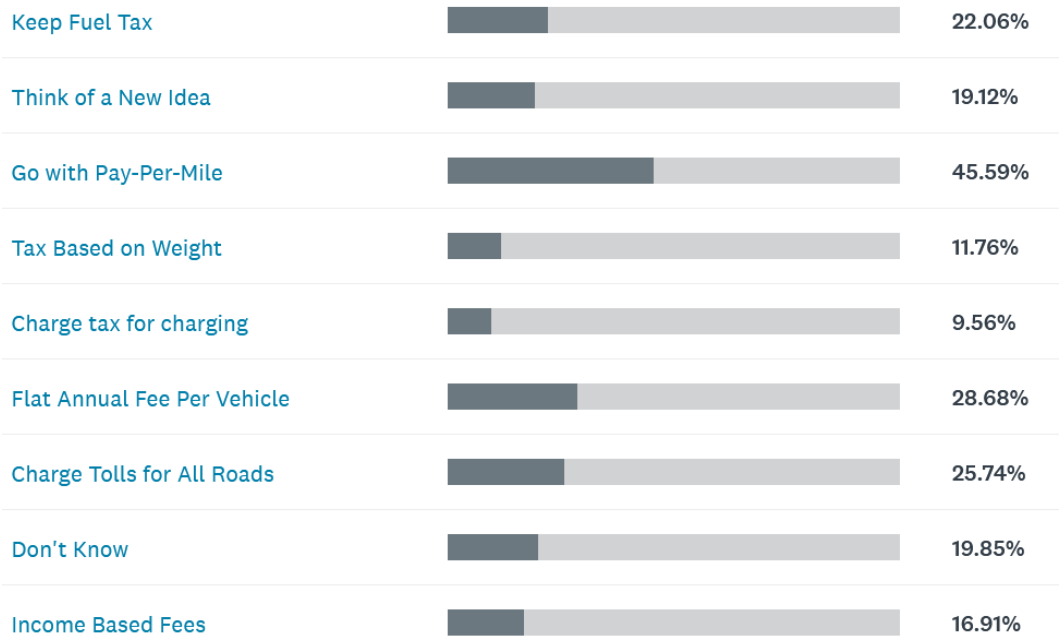
Q11 To what extent does paying transportation taxes by the mile versus by the gallon help the state of Oklahoma meet its financial goals?



Total Answers = 135

Question 12

Q12 Please describe an alternate funding model that you think could replace the state fuel tax and generate revenue for road and bridge maintenance and construction?



Total Answers = 136

Oklahoma Pay-Per-Mile Program

Close-out Survey Results

November 27, 2023

Executive Summary

General Overview

- Most participants were aware of Oklahoma's fuel tax rate.
- Overall, participants' understanding of a pay-per-mile program remained the same, with little to no growth over the pilot term.
- Most participants can easily describe a pay-per-mile program to others with a positive tone.
- The level of support for a pay-per-mile program remained even from the start to the end of the pilot. Little to no growth in the level of support was experienced.
- When asked to describe a pay-per-mile program, participants find it fair, easy, and necessary.
- Often, participants feel a pay-per-mile program is fairer than the current fuel tax.
- Participants' attitudes towards data privacy remained unchanged throughout the pilot.
- Approximately one-third of participants felt their monthly charges were fair, with most others feeling indifferent about them.
- Participants want to understand better how out-of-state drivers will be charged.

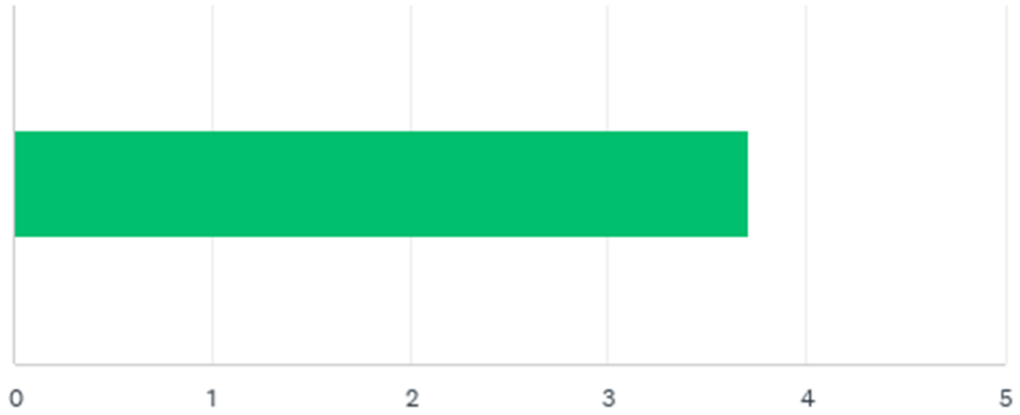
Question 1

Q1 How much is Oklahoma's current fuel tax (per gallon of fuel purchased)?

Total Answers = 94

Question 2

Q2 Today, how would you rate your understanding of a pay-per-mile funding model?



Total Answers = 94

Question 3

Total Answers = 94

Q3 If asked today, how would you describe a pay-per-mile funding model in two sentences or less?

Nearly all participants had a positive tone to their descriptions. Most were accurate in their description. This information is meant to help inform future marketing efforts. Utilizing language close to these responses will lower the educational barrier and facilitate faster program adoption.

Full text of all 94 answers are on the following slides.

Question 3

1	Vehicle taxed on amount driven regardless of type of vehicle.
2	Vehicles are taxed based on how much they utilize roadways regardless of the energy source.
3	Pay/mile replaces tax revenue not paid by electric vehicle road usage from fuel taxes.
4	Drivers are charged for miles driven instead of per gallon of gas purchased.
5	Cheaper than gas
6	Instead of paying a gas tax at the pump, you'll pay for the actual in-state miles you drive once a month.
7	You pay a certain amount per mile driven in a given time period. The rate is different if you travel out-of-state.
8	Rather than charging a flat fee in lieu of fuel tax to EV owners; a pay per mile model chargers based on miles driven, as a measure of wear and tear on Oklahoma roads. This ensures EV drives are paying a fair amount based on mileage driven.
9	Pay/mile funding helps capture fuel tax revenue lost to electric vehicle purchase/utilization.
10	Pay-per-mile offsets the fuel tax revenue lost by increasing electric vehicle purchases/usage.
11	Pay per mile is based on each cars distance traveled. Electric cars will be taxed equally .
12	You pay a fee for the miles you drive in state to fund highway construction and maintenance instead of paying for it at the pump in gas taxes.
13	You pay for every mile you drive instead of paying a motor fuel tax.
14	This is usage funding for the state's economy whether you use a gas vehicle, hybrid or EV. The more a person drives and uses roads, turnpikes and highways the more they will contribute to maintaining those roads for the future.
15	You are charged per mile that you drive
16	Fair and equitable program to fund state road and bridge repair and maintenance.
17	As cars become more fuel efficient and electric we need a more fair model to tax users of rhe roads ans highway's
18	Effort to make costs fair by balancing gas taxes and road usage.
19	Pay for what you actually use at a fair per mile cost shared by everyone.

Question 3

20	N/A
21	Instead of charging for gas people will be charged by miles driven.
22	A tax scheme that allows all vehicles that use our roads to pay for their portion of road usage, regardless of fuel or efficiency.
23	Pay per mile driven
24	easy and more equitable
25	Pay per mile would eliminate the state fuel tax and you would pay based on how many miles you drive
26	Depending on how many miles you drive a vehicle depends on the amount of taxes you will pay. This does not take into account the amount of driving NOT done on Oklahoma state funded roads.
27	Instead of paying per gallon of gas, you would be charged based on the miles you drive.
28	More fuel efficient cars means less fuel tax dollars.
29	Road tax
30	I'd say it's a tradeoff for by the gallon fuel tax. The state needs to collect revenue in some shape or form
31	You are charged by how many miles you drive.
32	You pay a fee/tax based on the actual miles driven for each non-commercial vehicle in your household.
33	You'd be charged for each mile you drive per month. Tracking mileage miles for all vehicles driving on Oklahoma roads is unclear.
34	Drivers pay a very small tax for each mile driven. This tax helps maintain roads.
35	This system assesses fees based on how much you drive. The funding models can be highly adaptable for users.
36	A system which more accurately captures actual roadway and bridge use in the state. The end goal of this model is to ensure that the cost of infrastructure construction and maintenance is fairly distributed among the users.
37	Honestly I'm not really sure.
38	Something the state is working on to help increase funds that are being missed because of electric and high fuel efficient cars?
39	Ypu pay based on how much you travel. Pay per mile.
40	I couldn't because I don't know much about it.
41	You have to report your mileage to the state and pay a fee based on that mileage.
42	Tax on how much you drive instead of a tax on how much gas you use
43	In lieu of paying taxes on the fuel at the pump, pay-per-mile funding sets a fee rate for each mile traveled in the state of Oklahoma. These fees go to funding Oklahoma roads.

Question 3

44	A tax to replace the fuel tax that is based on your actual driving and use of our roads system, in order to recoup losses from electric vehicles and increased fuel efficiency.
45	You pay an annual or monthly per mile fee for miles driven and not a gasoline tax.
46	Drivers pay a fee based on the number of miles driven.
47	You are charged tax for miles driven. This tax would replace the per gallon tax for fuel.
48	Instead of paying a fuel tax, I would pay a tax on the miles I actually drive.
49	You pay for the amount of in-state mileage you drive in lieu of paying a fuel tax per gallon.
50	Pay per mile is just that, you pay for the mileage that you drive. No matter what kind of Vehicle you have everyone pays the same rate.
51	Paying for roads based on actual usage.
52	It is a use tax based on vehicle weight and miles driven.
53	Instead of paying tax at the pump, you'll pay per mile you drive!
54	The pay per mile model allows the state to get money based on how many miles a person drives versus how much gas they buy.
55	Motorists pay tax on the miles driven.
56	Reflects actual miles driven
57	It is lacking the ability to track actual miles driven if the app is not on WiFi or bluetooth.
58	Only pay for what you drive. More fair to all.
59	You pay for miles actually driven. Similar to a tolling model.
60	Oklahoma loses fuel tax revenue from electric vehicles. The pay/mile model generates road maintenance revenue from all vehicles using the roadway.
61	You pay a tax based on how many miles you drive in Oklahoma.
62	With the increased used of electric vehicles, Oklahoma loses fuel tax revenue that is used to maintain roadways. By adding a pay-per-mile funding, revenue is generated fairly be all vehicles using the roadway.
63	A poorly designed government intervention making a problem far too complicated.
64	The app runs my phone battery dead.
65	Road tax is assessed based on actual miles driven instead of gallons of fuel purchased.
66	Fair and equitable!
67	Easy and straight forward.
68	This is based on how many miles the person drives on the roads rather than how many gallons of gas are used.

Question 3

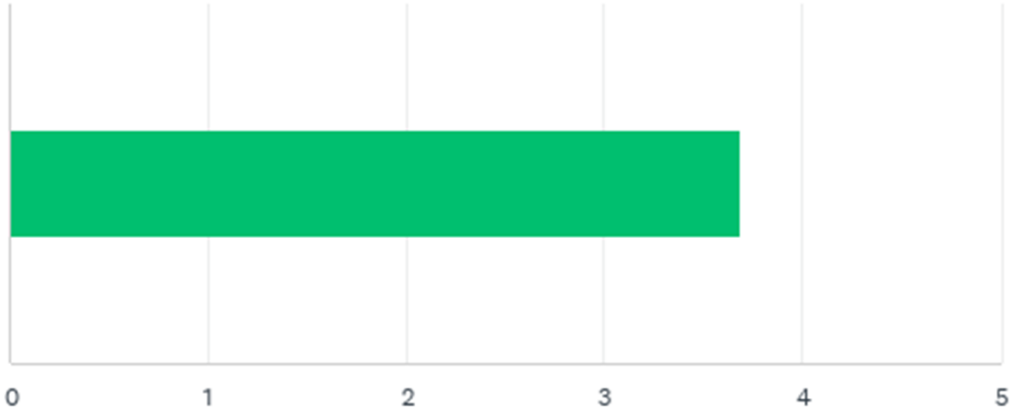
69	Paying a fair share to maintain roads in Oklahoma through a pay-per-mile process instead of through taxes at the gas pump.
70	Not fair. Penalty for driving too much.
71	It's a pay per mile option as opposed to the imposed .20¢ per gallon. Cars are more fuel efficient, and now with EVs so we need to change the process.
72	Pay per mile at a rate determined by vehicle type/weight
73	As it sounds, tax is assessed at a fixed rate/mile based upon vehicle type.
74	Cost is a penny per mile
75	Drive less, pay less.
76	It's Oklahoma's attempt to charge cars that don't use fuel. It's our attempt to stifle the progress necessary to save the planet.
77	A flat rate based upon miles driven.
78	The pay-per-mile model would replace the turnpikes and everyone would pay so much per mile of driving.
79	You pay a flat fee per mile you drive in Oklahoma roads, instead of paying a tax per gallon gas when you fill up.
80	No more fuel tax. Pay per mile instead.
81	more similar to tools - pay for what you drive
82	A per mile charge instituted to provide funds for roadway safety and maintenance. Such a scheme is necessary due to declining fuel tax revenue as a result of electric vehicles.
83	Na
84	Basically the program is to help maintain roads and infrastructure in the state. Since electric vehicles wouldn't pay a fuel tax, since they don't buy fuel, this program would help determine what their tax would be by using a pay per mile funding model.
85	It is supposed to add on the the current fuel tax that is to low.
86	Some what good.
87	Pay taxes to support road infrastructure based on how much you drive.
88	Pay a tax based on the miles you drive.
89	Taxes would be calculated on a per-vehicle basis and tied directly to the amount of miles the vehicle spends on Oklahoma roads.
90	Additional tax on poor, working class citizens who have to drive to work.
91	An alternate to the fuel tax that allows you to pay by how much you drive
92	You only pay for what you drive not a flat rate.

Question 3

93	It would replace the gas tax so that everyone driving gas or electric powered vehicles would pay their fair share.
94	Charge people for what they drive so electric cars pay for roads

Question 4

Q4 Based on your current understanding, how supportive are you of the pay-per-mile model as a potential replacement for Oklahoma's fuel tax?



Total Answers = 94

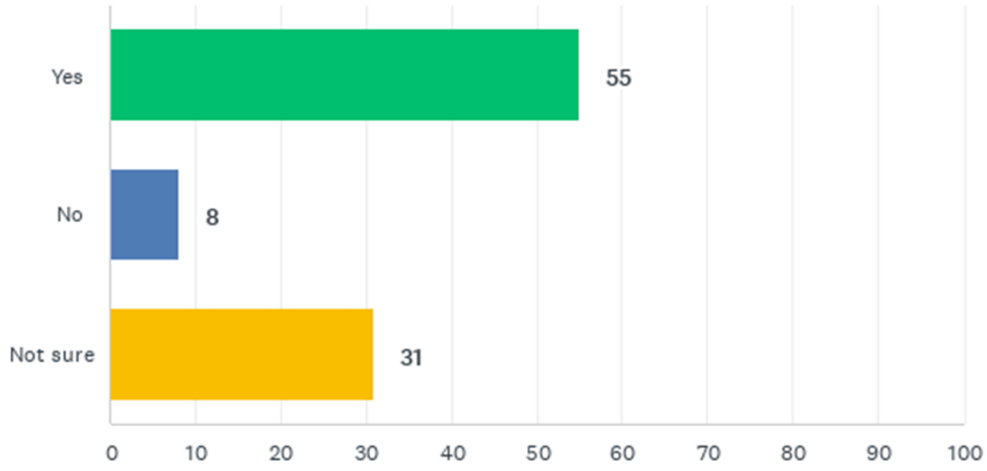
Question 5

Q5 What three words would you use to describe pay-per-mile funding models?

Total Answers = 94

Question 6

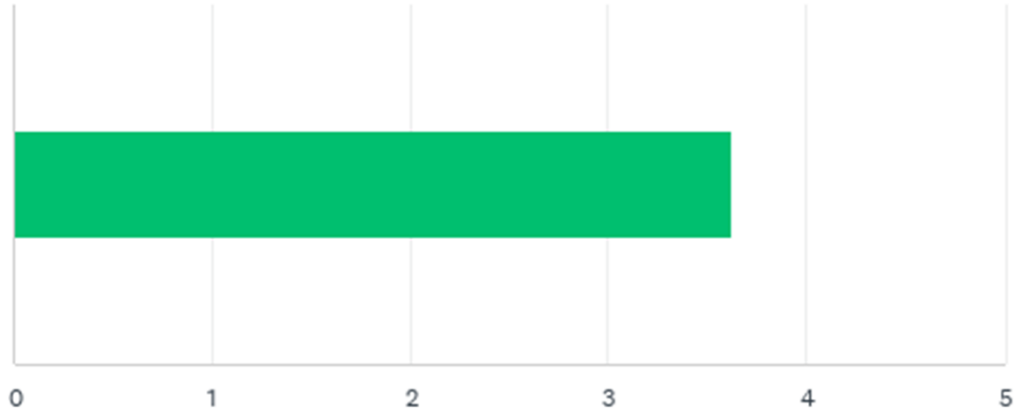
Q6 Do you feel a pay-per-mile program is fairer than the current fuel tax model?



Total Answers = 94

Question 7

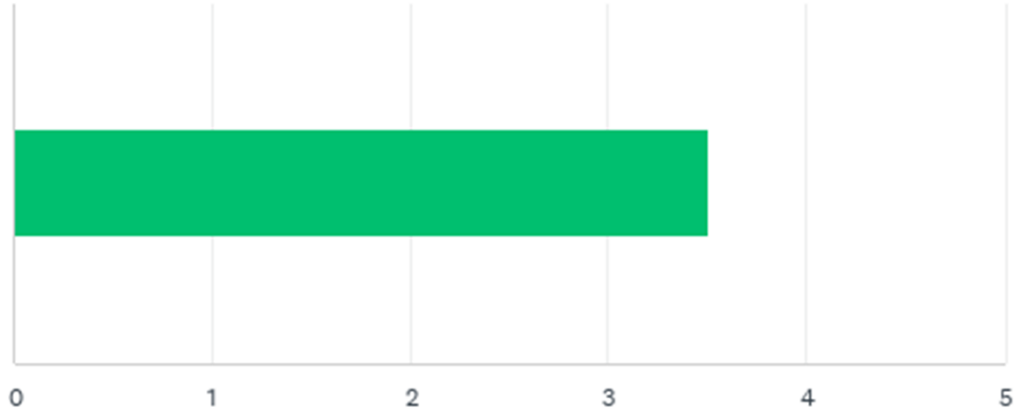
Q7 On a scale of 1 (No Trust) to 5 (Full Trust), how much do you trust Fair Miles Oklahoma with the privacy and security of your vehicle mileage data?



Total Answers = 94

Question 8

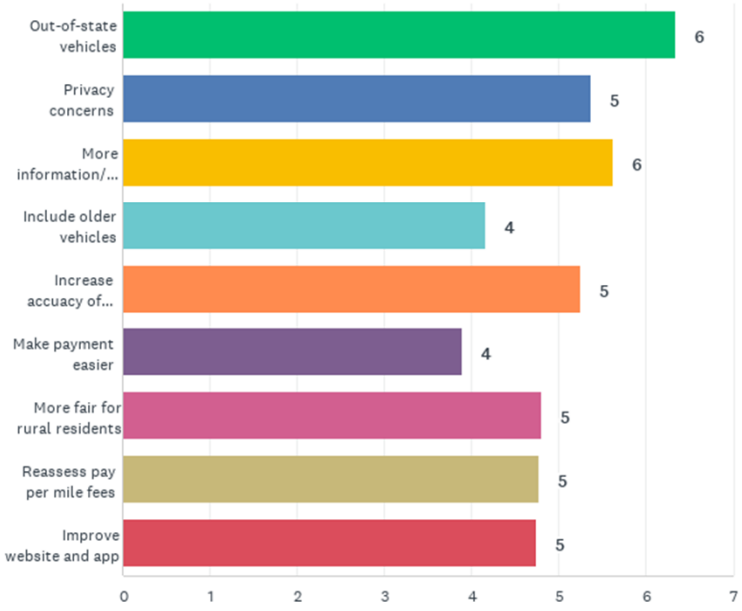
Q8 On a scale of 1 (No Trust) to 5 (Full Trust), how much do you trust Fair Miles Oklahoma with the privacy and security of your personal data?



Total Answers = 94

Question 9

Q9 As Oklahoma looks to create a more sustainable source of funding for ongoing transportation maintenance and innovation costs, how would you rank and prioritize features most important to you in a pay-per-mile model? (Arrange in order of preference with the most important items at the top and least important to the bottom.)



Note: Results are shown as weighted averages

Total Answers = 94

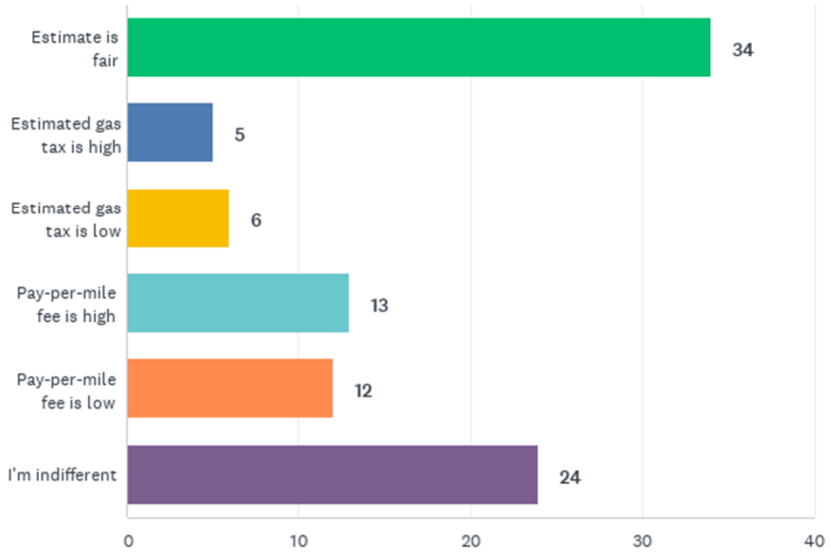
Question 10

Q5 What three words would you use to describe pay-per-mile funding models?

Total Answers = 94

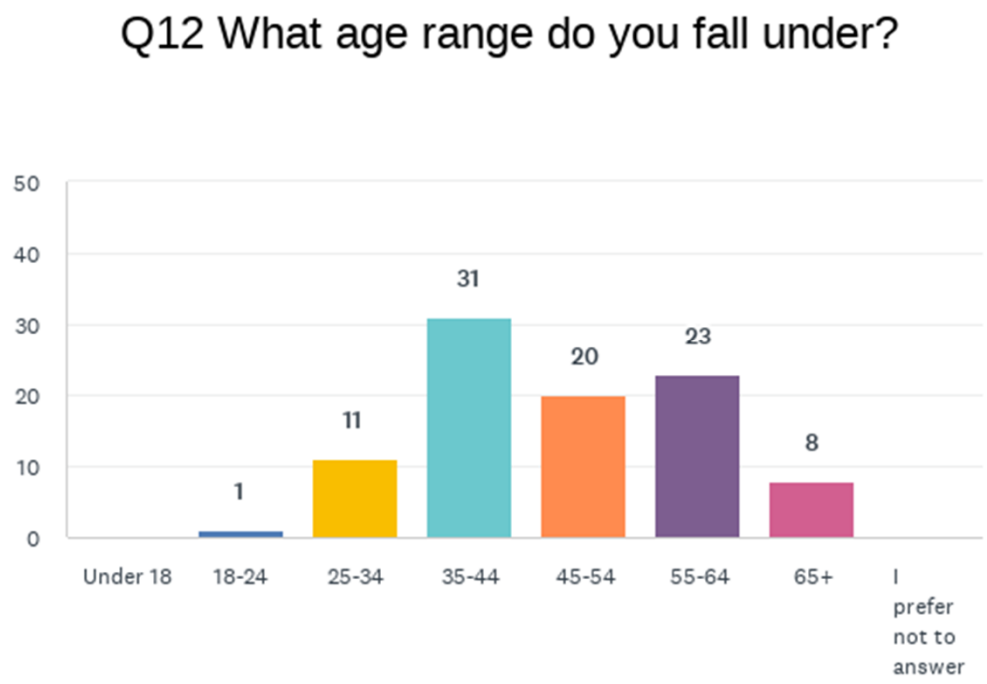
Question 11

Q11 When comparing your pay-per-mile fees to the state fuel tax, which statement most closely reflects your current thoughts?



Total Answers = 94

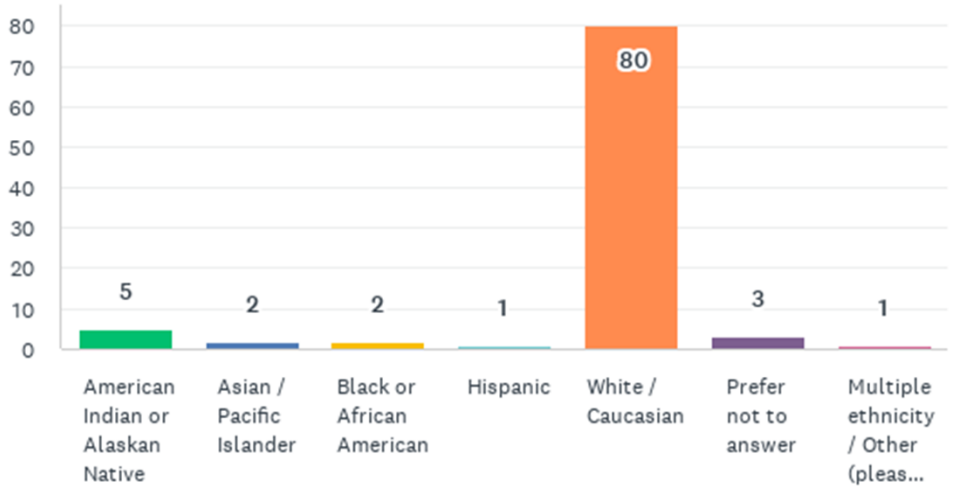
Question 12



Total Answers = 94

Question 13

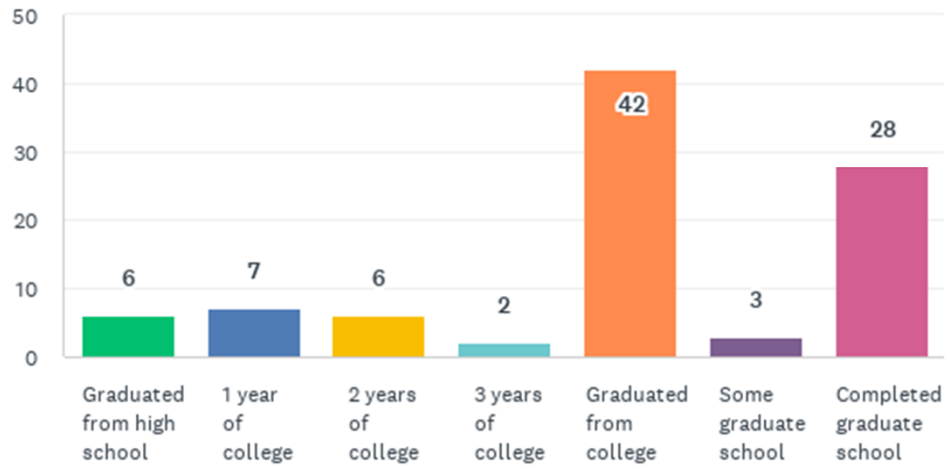
Q13 Which race/ethnicity best describes you? (Please choose only one.)



Total Answers = 94

Question 14

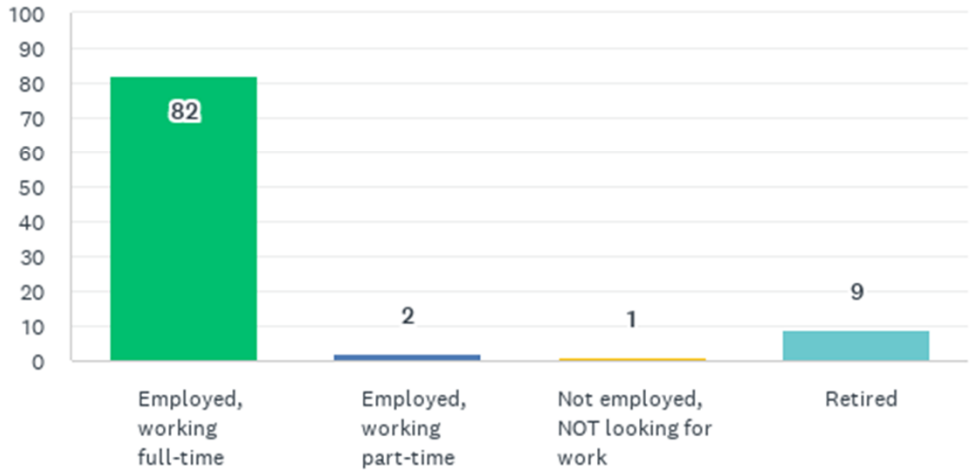
Q14 What is the highest level of education you have completed?



Total Answers = 94

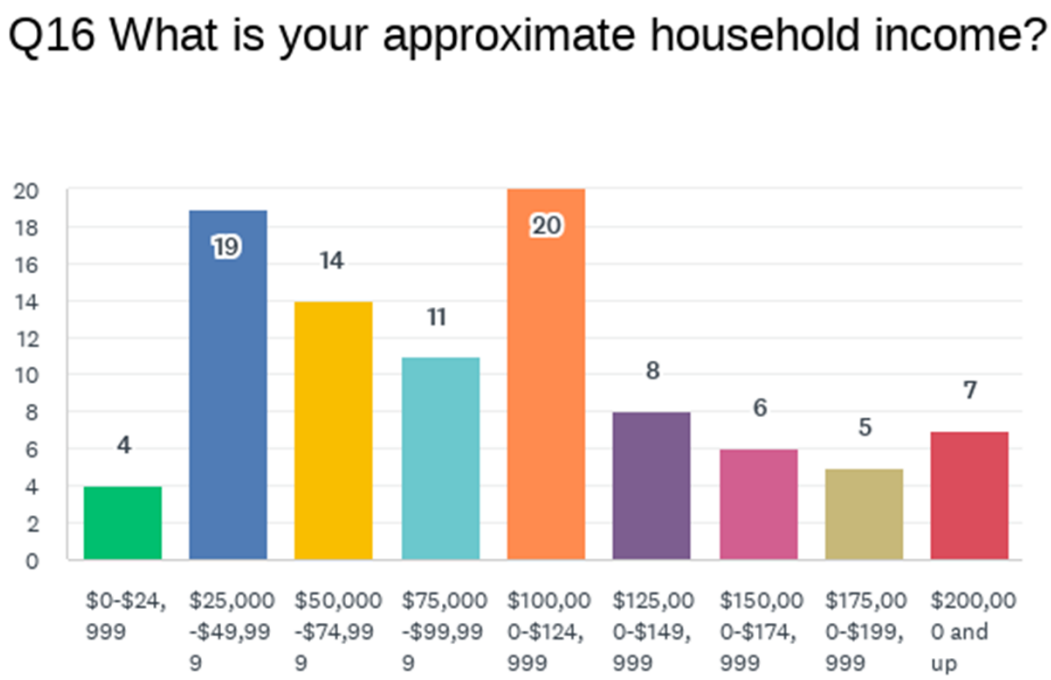
Question 15

Q15 Which of the following categories best describes your employment status?



Total Answers = 94

Question 16



Total Answers – 94

APPENDIX B: PILOT PLANNING

B.1 CONCEPT OF OPERATIONS

OKLAHOMA

fair miles OKLAHOMA

OKLAHOMA

PAY PER MILE PILOT
CONCEPT OF OPERATIONS

Final

March 2023

fair miles OKLAHOMA

CONTENTS

ACRONYM LIST

Abbreviation	Term
ACOG	Association of Central Oklahoma governments
AM	Account Manager
DMV	Department of Motor Vehicles
FAQ	Frequently Asked Question
FHWA	Federal Highway Administration
GPS	Global Positioning System
HB	House Bill
INCOG	Indian Council of Governments
LMPO	Lawton Metropolitan Planning Organization
MPO	Metropolitan Planning Organization
MRO	Mileage Reporting Option
ODOT	Oklahoma Department of Transportation
OTA	Oklahoma Turnpike Authority
PAC	Payment Administration Center
PCI	Payment Card Industry
PII	Personally Identifiable Information
RUC	Road User Charge
PPM	Pay Per Mile
STSFA	Surface Transportation System Funding Alternatives
UN	User Need
USDOT	United States Department of Transportation
VMT	Vehicle Miles Traveled

1. SCOPE

This document provides the concept of operations (ConOps) for the pay per mile (PPM) pilot ("Pilot") that is part of a larger project in Oklahoma to evaluate user-based alternative transportation funding mechanisms for the state. The project ("Project") is led by the Oklahoma Department of Transportation (ODOT) with collaboration from the Oklahoma Turnpike Authority (OTA), Federal Highway Administration (FHWA) (as the administrator of a Surface Transportation System Funding Alternatives (STSFA) grant that is partially funding this project) and other stakeholders. The PPM project and Pilot concept have been branded as Fair Miles Oklahoma. In addition to the Pilot and Project, there is a larger PPM Program ("Program") in the state that includes all efforts related to PPM. These terms are all defined in detail within the next section.

1.1 PROGRAM DESCRIPTION

The State of Oklahoma is experiencing a decrease in the effectiveness and sustainability of its statewide fuel tax, a major component of infrastructure funding. In addition to inflation, improving fuel efficiency and increasing use of electric and hybrid vehicles will all contribute to a substantial decline in fuel tax revenues into the future. Because low mileage and alternative fuel vehicles also contribute to wear-and-tear on the statewide transportation system, alternative transportation funding will be required to meet the state's long-term transportation needs. Many other states are evaluating the potential for programs that charge users fees based on the vehicle miles traveled (VMT) rather than fuel purchased, equalizing the tax burden across all users regardless of fuel and vehicle type. Recognizing that the current fuel tax is an ineffective, unsustainable, and inequitable funding mechanism, and to demonstrate its commitment to alternative transportation funding, the Oklahoma Legislature passed House Bill (HB) 1712[1], which the Governor signed into law on May 3, 2021. This legislation mandates the formation of a Task Force charged with evaluating user-based alternative transportation funding mechanisms and conducting a pilot.

The Bill received overwhelming support with approximately 80% of legislators, from the House and Senate, voting for approval. To help meet this legislative mandate, ODOT on behalf of a multidisciplinary Task Force that includes state agencies and commissions, transportation industry subject matter experts, freight industry leadership, Tribal Nation representation, municipalities and Metropolitan Planning Organizations (MPOs), is conducting a voluntary pilot involving a small number of participants to aid in the development and future deployment of a PPM program that addresses challenges and opportunities that are unique to Oklahoma.

Collectively, HB 1712, the Task Force, and the efforts to plan, pilot and engage stakeholders and solutions make up Oklahoma's PPM Program. Within this Program is the Fair Miles Project, which include the efforts undertaken by ODOT and their consultant team led by HNTB and Jones PR, to complete the planning, engagement, and pilot efforts. These are described further below and summarized in Figure 1:

- Oklahoma PPM Program:
    - HB 1712 and all it encompasses:
        - Consult with users to ensure fair and equitable distribution of gas tax burden across all vehicles
        - Study the availability, adaptability, reliability, and security of recording and reporting usage

[1] http://webserver1.lsb.state.ok.us/cf_pdf/2021-22%20ENR/hB/HB1712%20ENR.PDF

        - Study the ease and cost of administering the collection of taxes and fees
        - Ensure that processes for protecting the integrity of the data and safeguard the privacy of drivers
        - Collaborate with states on potential interoperability opportunities to capture out-of-state drivers
        - Develop and implement a voluntary pilot program to assess mileage-based revenue collection
        - Sample individuals willing to participate in the pilot program for testing purposes
        - Seek available federal funds for studies, demonstration projects or pilots
    - Task Force:
        - Multi-agency group charged with evaluating user-based alternative transportation funding mechanisms and conducting a pilot
    - PPM Project Objectives
        - Discover the possibilities for PPM in Oklahoma
        - Develop alternatives and understand benefits and impacts
        - Gain public and stakeholder support
        - Conduct pilot to prove concepts
        - Develop a path forward for Oklahoma
        - Have a recommendation for the Oklahoma state legislature by December 2023
- PPM Project consists of three elements:
    - Planning
        - Policy Framework
        - Funding Analysis
        - Assessment of Tolling Back Office Synergies
        - Assessment of Out-of-State PPM Strategies
        - Assessment of Tribal Impacts and Opportunities
        - Coordination with PPM Account Manager (AM) including scope development.
    - Engagement:
        - Outreach and Engagement Plan
        - Project branding and marketing
        - Public meetings, surveys, focus groups
        - Engage with Pilot participants: recruit, onboard, communicate, survey
        - Reporting
    - Pilot:
        - Develop and implement a PPM system for approximately 500 participants representing a diverse cross-section of Oklahoma residents, using a third-party AM. Mock transactions will be used for the duration of the Pilot, which must be completed by December 2023.

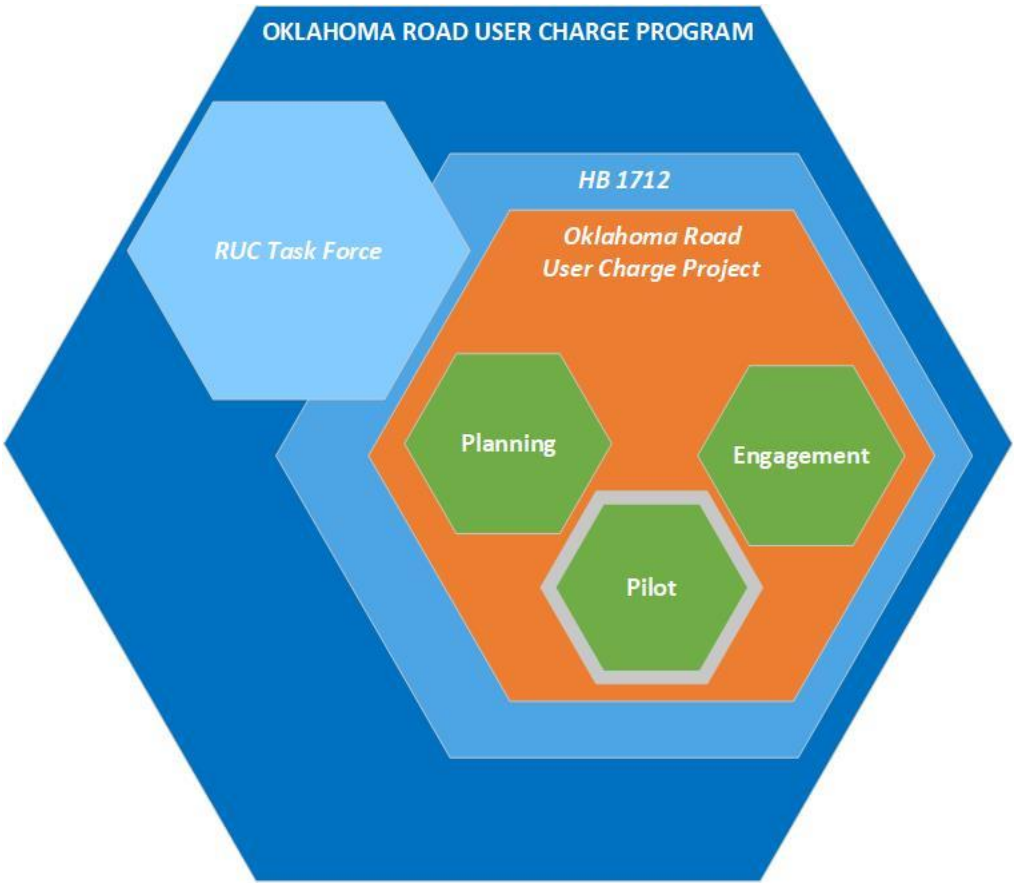


Figure 1. Components of Oklahoma PPM Program

1.1.1 LOCATION

The Oklahoma PPM Pilot will be implemented throughout the entire state. Oklahoma is centrally located and is bordered by the states of Kansas, Missouri, Arkansas, Texas, New Mexico, and Colorado. Interstates 35, 40, and 44 intersect in the center of the state, in and around Oklahoma City, providing wide-reaching connections for passenger and freight transport. Figure 2 below shows Oklahoma's geographic location and surrounding states.

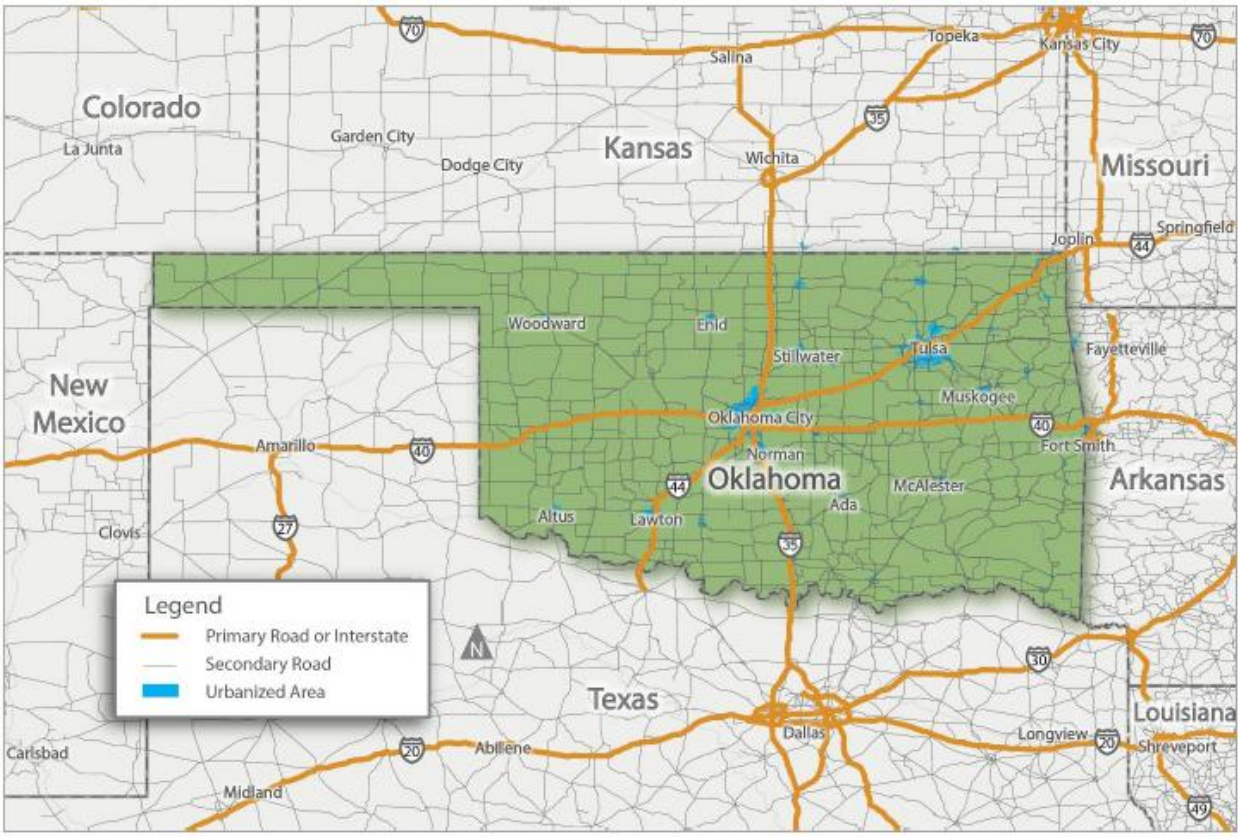


Figure 2.Oklahoma's Existing Transportation Network

1.1.2 PILOT OVERVIEW

While the overall Project is approximately 18 months, the operational period of the Pilot will run for six (6) months, scheduled to begin in June 2023. ODOT desires an earlier start date, if possible, and will collaborate with the AM team (which consists of Emovis and Gannett Fleming) to determine whether that is feasible. The initial report to the Oklahoma state legislature is scheduled for delivery in December 2023. Figure 3 below illustrates the projected overall Pilot schedule and schedule of Tasks within that schedule.

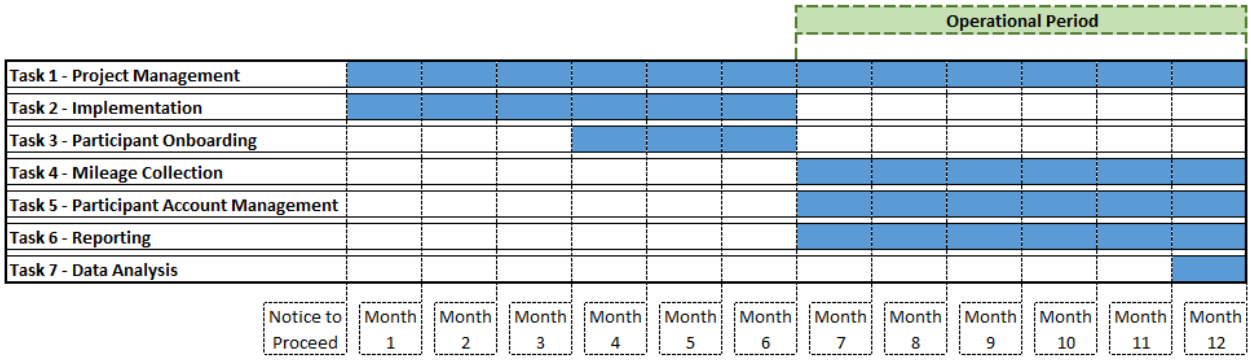


Figure 3 - Estimated Pilot Schedules

The voluntary Pilot has a completion target of 500 participant vehicles. All participants will be Oklahoma state residents using their own vehicles (Participant Vehicles) which must be registered in Oklahoma. Due to the potential for attrition of participants during the duration of the Pilot, it is expected that approximately 600 participant vehicles will be the initial goal for recruitment. It is assumed that one "participant" equals one registered vehicle; therefore, one individual (Oklahoma licensed driver) can enroll multiple vehicles, but this would count as multiple participants. Participants will select the method by which they report their vehicle mileage; among the potential options that may be available include manual odometer reporting, global positioning system (GPS), and non-GPS plug-in device, etc.

For each participant, miles driven will factor into a mock PPM charge and be invoiced to participants during the six-month pilot period. For global positioning system (GPS)-enabled mileage reporting options (MRO), only miles driven in Oklahoma will be factored into the charge. For all other MROs, all miles driven will be factored into the calculation.

The Pilot will demonstrate and evaluate elements of a potential PPM system which may include:

- Enrollment/De-enrollment
- Mileage recording and reporting
- Pay-per-mile charge calculation, invoicing, and mock transaction/payment posting
- Mock enforcement
- Evaluation and reporting

PILOT VISION

Oklahoma is exploring a PPM model to provide a sustainable transportation revenue source for the state of Oklahoma that ensures a fair and equitable tax burden. The Pilot will allow flexibility and choice for a variety of stakeholder and user preferences and needs. The Project will evaluate user understanding and acceptance of PPM concept among multiple user groups, including but not limited to urban, rural, and Tribal Nation users by addressing the unique challenges within the distinctive populations.

PILOT GOALS

During the span of the Project, ODOT will develop a voluntary PPM Pilot to meet the following goals:

- Effectively and accurately measure vehicle mileage, and evaluate methods to collect charges, audit collections, and enforce PPM compliance.
- Engage the public and stakeholders so a broad set of users' voices of Oklahoma's highway system are heard while developing a future Oklahoma program.
- Develop a fair and equitable solution to declining fuel tax revenues for all drivers while also providing flexibility for a variety of users and vehicle types.
- Minimize PPM transaction costs by leveraging existing tolling back-office operations and capabilities and optimizing the interface between the tolling back office and third-party AMs.

PILOT OBJECTIVES

The objectives outlined in the table below align with Project goals and the Oklahoma HB 1712 legislative directives. In addition, ODOT was awarded a United States Department of Transportation (USDOT) STSFA grant to assist with Pilot funding. Consequently, these objectives also align with STSFA program requirements.

Table 1. ODOT PPM Pilot Objectives

Objective	Activities
Test the design, acceptance, and implementation of user-based alternative revenue mechanisms	- Study the availability, adaptability, reliability, and security of recording and reporting vehicle mileage. - Recruit a cross section of users in the pilot program. - Conduct outreach and evaluate how PPM can meet Oklahoma's financial needs while having public support.
Improve the functionality of such user-based alternative revenue mechanisms	- Identify opportunities for technology vendors to interface with OTA for future operations, post-pilot. - Engage private third-party AM to identify innovative PPM data collection technologies and methods; methodologies are to be determined. - Ensure processes for protecting the integrity of the data and safeguarding the privacy of drivers.
Conduct outreach to increase public awareness	- Consult with users to understand their perception of fair and equitable distribution of fuel tax burden across all vehicle types. - Sample individuals willing to participate in the voluntary pilot program for testing purposes.
Provide recommendations regarding adoption and implementation of user-based alternative revenue mechanisms	- Develop and implement a voluntary pilot program to assess VMT revenue collection.
Minimize the administrative cost of any potential user-based alternative revenue mechanisms	- Study the ease and cost of administering the collection of PPM fees.

1.1.3 PILOT NEED AND PURPOSE (BACKGROUND)

The combined efforts to explore road user charge (RUC) in other states, along with the Oklahoma Legislature's passage of HB 1712 on May 3, 2021, have created a solid foundation from which ODOT will explore additional RUC challenges and solutions relative to the state's unique characteristics. In addition to the goals of the Pilot outlined above, the overall Project will explore additional items including:

- Tolling synergies: With OTA having the most centerline miles of any single toll operator in the United States, along with a close integration to ODOT and a well-established back-office system, the Project seeks to explore how these resources can be leveraged for Pilot data collection, processing, and future revenue collection for RUC.
- Impact and Functionality of a PPM model on Tribal Nations: The Project, separate from this Pilot and its concept, will enable collaboration with Tribal Nations to develop fair and equitable PPM strategies as part of the final Project report to the Oklahoma State Legislature. Pilot participant recruiting will also include Tribal Nation drivers; if participants from Tribal Nations join, this will enable the Pilot team to evaluate the performance of the system relative to these types of participants.
- Distinguishing between in state and out-of-state miles driven: With Oklahoma being a major crossroads for interstate travel, it is important that the Pilot distinguishes between VMT in Oklahoma versus passing through. The overall Project will examine interoperability for PPM programs with other states, while the Pilot will only include participants licensed in Oklahoma; certain MROs will support the calculation of mileage and fees for miles driven in the state.

While some of these needs are relative to the larger Project, the opportunities and challenges specific to the Pilot and its concept include:

- Developing programs that ensure a fair and equitable distribution of the fuel tax burden throughout the state.
- Testing acceptance with a variety of collection methodologies to identify what works best for Oklahomans.
- Determine the optimal mix of data gathering and processing methods to maximize efficiencies and minimize the cost of collection.
- How to collect, manage, process, and store data in a state largely concerned with privacy securely and privately.
- Evaluate the transferability of existing back-office toll operations to PPM program.
- How to establish an equitable PPM rate for all users in the state.
- Understanding roles and responsibilities relative to state transportation and tolling agencies (ODOT and OTA) and third-party AMs and creating appropriate interfaces to execute the Pilot.

1.1.4 REFERENCES

- Oklahoma House Bill 1712:
  - http://webserver1.lsb.state.ok.us/cf_pdf/2021-22%20ENR/hB/HB1712%20ENR.PDF
- State RUC Pilot Results:
  - https://www.ncsl.org/research/transportation/state-road-user-charge-pilot-results-and-legislative-action.aspx#
  - State RUC fact sheets
- USDOT FHWA Surface Transportation System Funding Alternatives (STSFA) Program Recipients and Partners
  - https://ops.fhwa.dot.gov/stsfa/recipients_partners.htm
  - A basic list of the grants that various states have received for RUC pilots and programs.
- Oklahoma Long Range Transportation Plan:
  - https://www.oklongrangeplan.org/
- OK HB 1602 Computer Data Privacy Act
- OK HB 2969
- OK HB 3447 Uniform Personal Data Protection Act
- OK DOT STSFA Grant Application
- Washington State Road User Charge Concept of Operations:
  - https://wstc.wa.gov/wp-content/uploads/2019/08/Road-Usage-2015-0227-WA-RUC-Concept-of-Operations.pdf
- United States Department of Transportation National Reference Architecture for Intelligent Transportation Systems:
  - Architecture Reference for Cooperative and Intelligent Transportation (arc-it.net)

2. CURRENT SITUATION

This section outlines the stakeholders involved in this project and describes the current situation into which the project and this Pilot will be deployed.

2.1 PROJECT STAKEHOLDERS

Table 2 outlines the Project stakeholders, and includes all organizations involved in delivering the PPM Project including this Pilot concept.

Table 2. Project Stakeholders

Stakeholder	Role	Responsibility
Oklahoma State Legislature	Sponsor	Review project results.
Oklahoma Department of Transportation (ODOT)	Lead agency / pilot owner	Administering project funds; conducting and managing pilot program.
Oklahoma Turnpike Authority (OTA)	Cooperating agency	Pilot input on customer interaction and management. Project input on tolling synergies.
Account Manager (AM)	System administrator (Implementation and Operations)	Implementing, operating, and maintaining the pilot PPM system.
Consultant Team (HNTB and Jones PR)	Project execution	Delivering project results, including the pilot concept, requirements, and evaluation as well as all activities to prepare the final report to the State Legislature.
Tribal Nation(s): Indian Nations Council of Governments (INCOG)	Input, pilot participation	Provide consistent collaboration; offer insights on implementation of PPM in tribal nations.
Metropolitan Planning Organizations (MPO): - Association of Central Oklahoma governments (ACOG) - Lawton MPO (LMPO) - Frontier MPO (Frontier)	Input	Collaborate with OTA and ODOT on outreach, engagement and pilot definition through input and review.
Federal Highway Administration	Project sponsor	Grant administrator and funding authority.
Oklahoma residents*	Input and pilot participation	Input to pilot program concept, participation in pilot program and input to the pilot evaluation.

* It should be noted that the Pilot will recruit a diverse set of participants from the state of Oklahoma, drivers that are licensed in the state of Oklahoma. This will include:

- PikePass account holders
  - Urban and rural
  - Tribal and non-tribal
  - Above and below poverty level
- Non-PikePass residents:
  - Urban and rural
  - Tribal and non-tribal
  - Above and below poverty level

Additional selection criteria may be developed during the recruiting process (collaboratively with the project owners and administrators) to ensure a wide range of demographic criteria are represented. At this point, specific target numbers for each demographic have not been set so long as each is represented.

From these groups, the Pilot will also seek to have representation from a variety of vehicle types. One participant will equal one registered vehicle in the state of Oklahoma. The vehicle types will include:

- Motorcycles
- Private vehicles with various gross vehicle weight ratings,[2] for example:
    - Private passenger gasoline/hybrid cars and vans
    - Private passenger electric cars and vans
    - Private gasoline/hybrid sport utility vehicles (SUVs) and trucks
    - Private electric heavy duty SUVs and trucks
    - Private buses and recreational vehicles (RVs)
    - Commercial delivery trucks
- Rental car fleets
- Public agency fleets

2.2 DESCRIPTION OF EXISTING ENVIRONMENT

Oklahoma has already recognized the decreasing effectiveness and sustainability of its statewide fuel tax, hence the passage of HB 1712 and the creation of the Task Force. However, ODOT is also uniquely positioned to pilot a PPM system due to its involvement in RUC America and the close relationship with the OTA. Several characteristics in Oklahoma pose unique challenges and opportunities to the equitable implementation of a statewide PPM program. These include:

- OTA has the most centerline miles of any single toll operator in the United States with 630 centerline miles of tolled roadways either existing or under construction.[3] They are closely integrated with the ODOT and have a well-established back-office system that processed approximately 186 million toll transactions in 2019. OTA's PikePass system includes 828,560 active accounts and 2,705,813 active PikePass transponders. It is likely that this existing system could be leveraged for data collection, data processing, and revenue collection for a pay-per-mile fee.
- Many of Oklahoma's 38 recognized Tribal Nations are allotted 4.5% percent of the statewide fuel tax revenues through signed compacts. As overall fuel tax revenues decrease, these Tribal Nations have a vested interest in the development of a fair, equitable, and sustainable revenue source. Any statewide PPM program should provide benefits at a level at least equal to the current levels.
- Oklahoma is a national transportation crossroad with a very high percentage of out-of-state passthrough traffic. For example, on the Oklahoma Turnpike, 37% of Oklahoma Turnpike vehicles are out-of-state.

3. JUSTIFICATION FOR CHANGES

This section presents the rationale for the Pilot at a granular level. It includes the proposed user needs that the Pilot must implement. At a high level, relative to the current environment, the justifications for changes are:

[2] https://afdc.energy.gov/data/10380
[3] https://pikepass.com/about/FAQs.aspx

- Tolling synergies will be sought. The system must be able to work for Oklahomans who are PikePass users and those who are not. The results of the Pilot will inform the data architecture and technology integrations that may be required to leverage this existing system for an expanded purpose. This analysis could serve as a model of collaboration and innovation for other pilots and third-party AMs to explore synergies between existing toll revenue collection and PPM revenue collection as well as identify efficiencies and cost savings.
    - Separate from the Pilot, the overall Project will evaluate what opportunities and challenges exist in leveraging an existing tolling back office to share data and process PPM transactions.
- Tribal Nation participation in the Pilot will be sought voluntarily but not required. Equity and fairness in the Pilot will be examined in different ways; for example, a variety of methods to exchange data for road user charging will be explored.
    - The Project will provide a unique partnership opportunity to collaboratively coordinate with Tribal Nations to develop fair and equitable PPM strategies while providing transferrable solutions to other interjurisdictional (regional) RUC applications nationwide. The Project will coordinate and encourage meaningful participation with Tribal Nations to understand their needs, impacts and benefits of PPM to deliver equitable mobility and funding solutions for all Oklahomans. The analysis will evaluate incorporating tailored regional policies and strategies under the statewide framework and will provide transferrable strategies for other regional RUC collection approaches.
- Out-of-state synergies will be evaluated: The Pilot recruitment will focus on Oklahoma licensed drivers and vehicles, not out-of-state drivers. While the Pilot will not specifically examine how the system will function for out-of-state passthrough traffic, the larger Project effort will make suggestions on this topic through the evaluation of existing interoperability agreements. The Project will determine if OTA's existing toll interoperability agreements with surrounding states including Texas and Kansas could be leveraged to capture revenue from out-of-state drivers and establish a path to interstate interoperability and reciprocity. Additionally, the Project will explore how the regional tolling interoperability hubs might be leveraged to share VMT and account data to process PPM transactions.
- Public outreach and engagement is a key element of the Pilot: Finally, ODOT is committed to meaningful engagement with their residents on the topic of road user charging. Therefore, awareness and education are an important part of the overall PPM program, with specific efforts being undertaken for the Project and this Pilot to engage with the Task Force and the residents of Oklahoma. These efforts from focus groups, recruiting events and Pilot updates will validate the user needs and concept outlined in this document.

3.1 USER NEEDS

Through ODOT's STSFA grant application and engagement with ODOT, OTA and the Task Force, high level priorities were identified. Analysis and discussion around these high-level priorities have resulted in a preliminary set of user needs. These will be reviewed with the stakeholders identified in the previous section, assigned to one or more stakeholders, and prioritized as part of the finalization of the Pilot concept.

High-level priorities, originating within the individual stakeholder organizations, include:

- Customer privacy and security; OTA is committed to maintaining Payment Card Industry (PCI) compliance. Therefore, any Personally Identifying Information (PII) from participants must be processed and aggregated in a manner that prevents individual pilot program participants from being identified.

- An AM will be a key part of the Pilot to complete the definition of the system. They will be primarily responsible for collecting and managing information required to enroll/disenroll participants and create and process PPM transactions.
- To ensure equity and fairness, the system needs multiple methods of data reporting and collection.
- At the conclusion of the Pilot, only information required to evaluate the Project and report results will be retained.

From the Pilot system perspective, the table below indicates the key stakeholders who will be engaged in the critical system tasks of development, operations, and maintenance of the system. Table 3 defines the Pilot stakeholders and their role; please note, this role is intended to be a brief description of their involvement in the Pilot, not an exhaustive list of requirements.

Table 3. Pilot Users

Stakeholder	Role
The below stakeholders have defined user needs for the Pilot from a development, operations, and maintenance perspective. These are the main users who will use and interact with the Pilot system.	
ODOT	- Pilot Owner - Contract manager for AM to ensure delivery of all Pilot requirements - Collect and manage Pilot data for reporting purposes - Responsible for Pilot auditing, if needed
OTA	- Pilot input to concept definition, evaluation and requirements, and customer interaction - Pilot Operations (review and monitor pilot results)
AM	- Pilot input regarding concept, evaluation, data management and requirements definition - Responsible for development, operations, and maintenance of PPM Pilot system - Responsible for enrollment/disenrollment and account administration for Pilot participants - Responsible for collecting and managing Participant account and mileage data - Responsible for invoicing - Responsible for providing Pilot data to ODOT and OTA for reporting and auditing purposes - Responsible for Pilot customer service, monitoring, and troubleshooting
Participants	- Responsible for Pilot participation including enrolling and disenrolling (if needed) and providing Pilot feedback via interviews, focus groups, surveys, etc.
Consultant Team	- Responsible for recruiting potential participants and collecting an initial set of information to follow-up on for full enrollment - Responsible for Pilot development including concept, data management and privacy, evaluation planning, requirements, and testing - Responsible for engaging with and managing and coordinating among all Pilot stakeholders

Table 4. Oklahoma PPM Pilot User Needs

User Need Number	Stakeholder	User Need
1	Participant	As a participant, the road user charge system must be voluntary.
2	Participant	As a participant, I must be able to opt-out of the road user charge system at any time.

User Need Number	Stakeholder	User Need
3	Participant	Pilot participants must be able to use the road user charge system regardless of whether they are a PikePass customer or not.
4	Participant	As participant, I need to set up and maintain an account.
5	Participant	As a participant, I must be able to select a preferred method of mock payment for my mileage charges.
6	Participant	As a participant, I must be able to receive and view monthly transaction of my mileage charge.
7	Participant	As a participant, I must be able to have questions about the road user charge system answered.
8	Participant	As a participant, I want multiple mileage reporting options and mock payment methods available to me.
9	Participant	As a participant, I want to be able to dispute or question system invoices.
10	Participant	As a participant, I want multiple methods available to contact customer support.
11	ODOT	As the system owner, the road user charge system must be interoperable and use a combination of systems, devices, and operational methods for the collection of mileage data.
12	ODOT	As the system owner, the road user charge system must protect any personally identifiable information for participants.
13	ODOT	The road user charge system must be able to identify when mock transactions are not acted upon/acknowledged and provide a summary of these accounts.
14	ODOT	The road user charge system will adhere to ODOT established standards for data security.
15	ODOT	The road user charge system will include a diverse set of Oklahoma residents in terms of age, tribal/non-tribal, PikePass/non-PikePass, income level, and zip code.
16	ODOT	The road user charge system should provide ODOT a participant report of mileage fees invoiced to enable a comparison between pay per mile and fuel tax or electric vehicle charges.
17	AM	The road user charge system needs to collect necessary system usage/mileage and participant personal data to create an invoice for participants.
18	AM	The road user charge system needs to provide functionalities and communications with participants to process mock road user charge invoices and answer questions and concerns regarding accounts and charges.
19	ODOT and AM	The road user charge system needs to manage and protect system usage data necessary to invoice road user charges.
20	ODOT and AM	The road user charge system must retain only the data necessary to complete the pilot evaluation process and will purge all data once complete.
21	ODOT and AM	The road user charge system needs to flag and report accounts that do not acknowledge and act on invoices by the due date.

User Need Number	Stakeholder	User Need
22	ODOT and OTA	The road user charge system needs to provide a pilot dashboard and generate both canned and ad hoc system reports.
23	AM	The road user charge system needs to collect, manage, and protect all raw data collected by the system for the purpose of calculating a road user charge; this is expected to include participants vehicle year, make, model, license plate number, in-state versus out-of-state driving location and vehicle identification number (VIN).
24	AM	The road user charge system needs to collect, manage, and protect all participant contact information for purposes of onboarding and invoicing, which will include name, mailing address, telephone number, email address and cohort information including urban or rural, income level, tribal/non-tribal, and PikePass/non-PikePass.
25	AM	The road user charge system will process the data collected from participants to calculate the road user charge.
26	AM	The road user charge system needs to store and transmit all participant and vehicle information securely.
27	AM	The road user charge system needs to restrict access to all road user charge system operational data to only authorized users from the Pilot team.
28	AM	The road user charge system must distinguish between miles driven in OK versus out of state for mileage reporting methods that include location data.

4. PILOT CONCEPT OVERVIEW

The Pilot will deploy a PPM system in partnership with an AM who will implement, operate, and maintain the system. This section presents the Pilot's specific physical context diagram, which outlines the physical items and information flows. This section also includes a diagram that outlines the system's functions to the extent that they map to the Operational Scenarios contained later in this document.

4.1 PILOT COMPONENTS AND CONTEXT

A simplified physical architecture is proposed for the Pilot, which aligns with the system components that will be implemented by the AM to deliver a road user charge system for the Pilot participants.

In this physical architecture, a participant will enroll and manage their account (both account information and invoice and payment exchanges) through a personal device. Participant and vehicle data will be shared between participants and the AM (who owns, operates, and maintains the payment administration center, PAC). Mileage data will be transmitted to the PAC from a participant or their vehicle (i.e., the device in the vehicle).

It is also envisioned that the PAC will communicate with ODOT and OTA to exchange aggregated, de-identified information regarding the general system information including the number of accounts created and active, number of miles driven, number of participants by vehicle/cohort type, mileage reporting methods, and some account information including the number of invoices not acknowledged/acted upon. The system will process mock payments; therefore, credit card information will not be required. However, payment confirmation and

reporting will also be exchanged between the PAC and the participant through an invoice acknowledgement or similar process.

The physical components of the Pilot are defined below and shown in Figure 4 in terms of how they relate to one another and what information is exchanged between them.

- Agency Back Office:
    - ODOT's back office system that will collect aggregate, de-identified data necessary to monitor and evaluate the system. Since additional interfaces would be established and this center potentially modified to accommodate the Pilot data, it is included inside the system boundary.
- PPM AM Back Office:
    - A PPM AM's back office system that administers the PPM system including collecting all data required to manage participants' accounts, collect, manage, and process mileage data, calculate road user charges, and complete payment administration activities.
- Consultant Back Office:
    - The system which will collect and manage recruiting information for potential participants. It will interface with the AM back office to exchange this information to continue full enrollment and disenrollment, if applicable.
- Participant:
    - Participant Personal Information Device:
        - A participant's device (whether phone, computer, or manual) to enroll, create and manage an account, report mileage (if done manually), view statements, make mock payments and engage customer support as needed.
    - Participant Vehicle:
        - A participant's vehicle that, if equipped with a plug-in device, can provide mileage data to the PAC.

This Pilot concept contains user needs relative to all objects within the system boundary, shown in blue. Please note that for the initial concept, it is not planned to collect PPM data through OTA's existing electronic toll infrastructure on the Oklahoma Turnpike since this would not support non-PikePass participants.

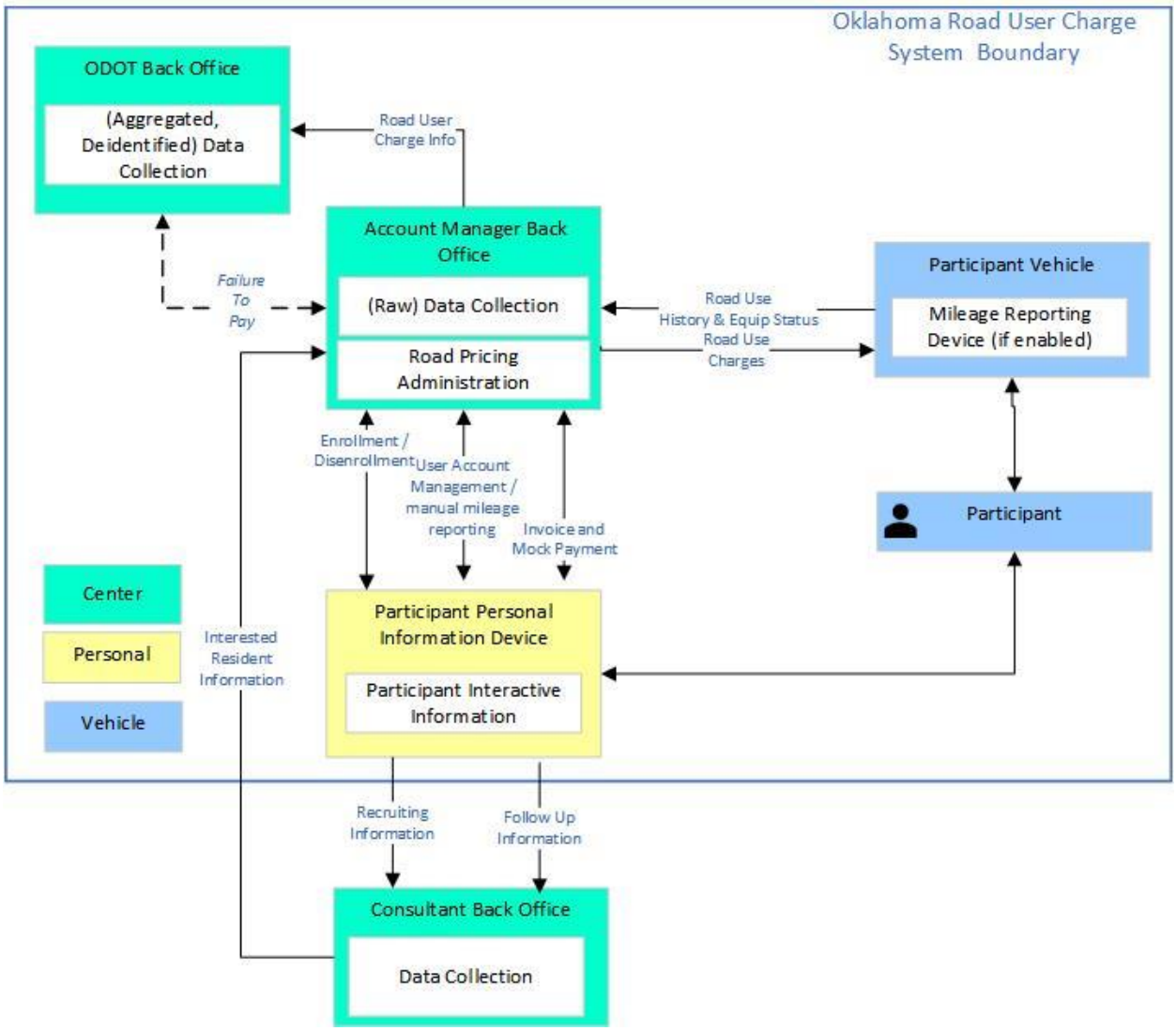


Figure 4. OK PPM Pilot Context Diagram (Physical View)

4.2 PILOT FUNCTIONS

While the context diagram clarifies the system components, it is also helpful to understand what processes and functions (shown by the information flow arrows in Figure 4) will be implemented during the Pilot. These will correspond to the Operational Scenarios shown later in the document. The system functions are shown below in Table 5.

The Pilot functions anticipated include both activities that will be ongoing and recurring (i.e., normal system operation) and those that occur on an as needed basis. The activities (and the stakeholder who executes them) are included in the table below. These correspond to the figure that follows.

Table 5. Pilot Functions

Activity	Stakeholder(s)	Description
Enrollment	- Consultant Team	- Identify participants

Activity	Stakeholder(s)	Description
	- Potential Participants - AM	- Collect personal and vehicle data to identify potential vehicles and participants - Complete enrollment
Installation and Account Set-Up	- Participants - AM	- Onboard participants - Install devices (if needed to report mileage) - Provide mobile application (and instructions for set-up and use to select subset of participants) - Take and provide odometer photos upon set up (and periodically if needed) - Set up accounts
Drive	- Participants	- Describes any participant interaction with the system including: ➢ Regular driving and travel as normal ➢ Receiving mock payment confirmation ➢ Receiving any system reports ➢ Receiving response on any inquiries or troubleshooting ➢ Initiating an opt out from the Pilot (disenrollment)
Collect Account and Mileage Data	- AM	- Collecting miles driven data for each participant
Calculate Pay Per Mile Fee	- AM - ODOT	- Determining the Pilot pay per mile fee - Processing mileage data - Determining miles driven in Oklahoma (for certain mileage reporting options) - Connecting miles to participants - Calculating the pay per mile fee for each participant
Invoice	- AM - Participants	- Connect charges to participants - Generating and sending invoices to participants - Sending invoices to system owners (ODOT and OTA)
Payment	- Participants - AM	- Participant to provide mock payment of invoice within a specified number of days - AM to receive and confirm payment
Manage and Protect Data	- AM - ODOT - Consultant Team	- Manage and protect participants' personal information - Manage and protect participants' vehicle information - Manage and protect road user fee transaction data and history
Enforcement	- AM - ODOT	- Monitor mock payments - Flag non-payment or other invoice processing issues - Follow up action to flag license or registration information - Notify participants of payment issue
Monitoring and Customer Support	- AM - Consultant Team - Participants	- Monitor system performance and up time - Identify and correct system issues - Receive and respond to participant questions and issues - Report to system owner on system operations
Reporting and Quality	- AM - ODOT and OTA	- Monitor and track evaluation indicators

Activity	Stakeholder(s)	Description
	- Consultant Team	- Perform periodic system audit to ensure Pilot functionality
Disenrollment	- Participant - AM - ODOT and OTA - Consultant Team	- Actions to enable participants to withdraw at any time (including mid- and post-pilot) - Includes deletion of a participant account and purging of all raw data that has been collected from the participant - Includes after-action survey to understand rationale for the disenrollment (if mid-pilot) or overall system feedback (if post-pilot)

In operation, these activities function as outlined below.

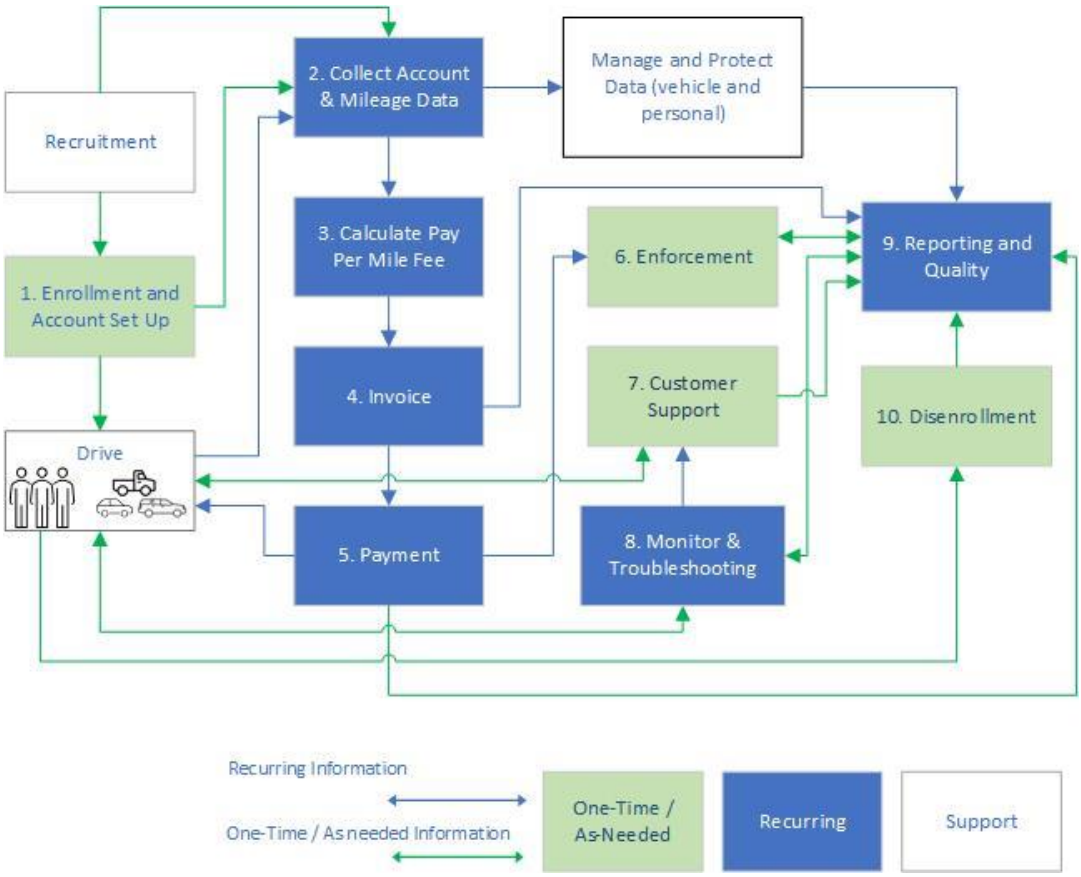


Figure 5. Pilot System Functions

5. OPERATIONAL SCENARIOS

Operational scenarios describe an event or sequence of events that includes every interaction of the Pilot or its functions with its users, as well as interaction among its components. Therefore, these scenarios correspond

heavily to the functions described in Figure 5. These scenarios will reflect all the user needs outlined earlier in this concept.

The scenarios include the following components:

1. **Scenario:** An instance of a use case describing a sequence of events, activities carried out by the user, the system, and the environment.
2. **Users:** The data end-users and/or ultimate beneficiaries or participants in the scenario.
3. **Data:** Recorded information that is needed to address or facilitate the given operational scenario.
4. **Components:** Pilot components that are used to collect, capture, or act on the data.
5. **Events/activities:** The defined sequence of activities to perform to satisfy the scenario and user needs.
6. **Additional Capabilities and Challenges:** Additional capabilities or challenges that would be created by technology application in this scenario.
7. **User Needs:** Uniquely identifiable, solution-free statements that describe a major desired capability, including the rationale or intent as to why the capabilities are needed in the system.

SCENARIO 1: PARTICIPANT ENROLLMENT AND ACCOUNT SET-UP

Scenario: Enrollment
The objective of this scenario is to create awareness for the Pilot system, enroll the target number of participants and complete their account set-up.

Users	Data	Component
- Consultant Team - Potential Participants and Participants - AM	- Recruiting information: potential participant first and last name, email, and zip code - Follow up indication of interest: vehicle make, model year, vehicle identification number (VIN), license plate number, and cohort information: PikePass (yes or no), Tribal Nation (yes or no), rural or urban, annual income above or below the poverty line) - Enrollment information: participant personal information (telephone number and mailing address), preferred method of mileage reporting, preferred invoicing method	- AM Back Office

Events:

1. Connect with interested participants to inform them of the Pilot and participant expectations; collect and store personal and cohort information for follow up
2. Follow up link provided to potential participants to collect additional vehicle information, transfer of all recruitment information to AM to complete enrollment on a rolling basis
3. Provide enrollment package, verify participant data and reporting method, and obtain participant consent
4. Participant completes enrollment and account set up through a web portal and participant account is created
5. Instructions and preferred MRO are provided. Participant completes device installation/set up (if applicable)
6. Validate account / device operations

7. Provide customer support and Pilot resources 8. Store, protect, and manage enrollment and account data
Challenges: - Communicating concept of road user charging to the public - Articulating data privacy protections for personal and vehicle information - Securing the target number of Pilot participants
User Needs: 1, 3, 4, 14, 15, 23, 24

SCENARIO 2: COLLECTING MILEAGE DATA

Scenario: Collecting Mileage Data

The objective of this scenario is to collect and manage vehicle miles travelled data (for miles driven within Oklahoma) for each participant

Users	Data	Component
- Participants - AM	- Participant personal information (name, email, telephone number, mailing address) - Vehicle information (Make, Model, Year, VIN, License Plate/Registration) - Vehicle miles travelled	- Participant Vehicle - AM Back Office

Events:

1. Regardless of reporting method, vehicle miles travelled for a specific reporting period will be collected by the payment administration center for each participant
2. AM back office will identify miles travelled in Oklahoma (as opposed to out-of-state) for each participant using a location-supported MRO
3. AM back office will store, protect, and manage relevant data to calculate mileage charge for each participant

Challenges:

- Only certain MROs support location-based identification of miles driven. Therefore, some MROs will support the AM's ability to calculate miles driven in Oklahoma. For other MROs, all miles driven will be calculated and included on a participant invoice.

User Needs: 11, 12, 14, 17, 19,23, 24, 26, 28

SCENARIO 3: CALCULATING MILEAGE FEE

Scenario: Calculating a road user charge

The objective of this scenario is to calculate the mileage charge for miles driven in Oklahoma for each participant.

Users	Data	Component
- ODOT - AM	- Participant personal information (name, email, telephone number, mailing address) - Vehicle information (Make, Model, Year, License Plate/Registration, - Vehicle miles travelled - Pay per mile rate	- AM Back Office

Events:

1. ODOT (with Consultant Team and Task Force) determines the per-mile mileage rate for public roads
2. AM accesses the miles driven for each participant

3. AM computes the mileage charge for each participant by multiplying the number of miles traveled in state on public roads (along with all miles traveled when mileage reporting device's location capability is turned off) by the per-mile rate
Challenges: - Per-mile mileage rate needs to be determined - Only certain MRO will support identifying miles driven in Oklahoma versus out of state
User Needs: 3, 12, 17, 19, 23, 25, 28

SCENARIO 4: GENERATING PARTICIPANT INVOICE

Scenario: Generating a road user charge invoice
The objective of this scenario is to generate and send participants periodic invoices showing miles driven in Oklahoma and charges accrued for mock payment.

Users	Data	Component
- ODOT - AM - Participant	- Participant personal information (name, email, telephone number, mailing address) - Vehicle information (Make, Model, Year, License Plate/Registration, VIN) - Road user charge per participant	- AM back office - Participant Personal Device - ODOT back office

Events:

1. Owner (ODOT) and participant determine invoicing method and frequency
2. Participant saves preferred mock payment methods to their account
3. AM prepares/distributes account statements to participants
4. Payment Administration System allows for a variety of payment methods (credit card, cash, check, money order, electronic payment methods such as Venmo, PayPal or Apple Pay). Although no payment or credit card information will be required from participants, the invoice acknowledgement and/or survey may inquire as to participants' preferred payment method

Challenges:

- Determine invoice format and content (AM, ODOT and Consultant Team)
- Determine whether participants can inform or change invoice format and delivery method

User Needs: 4, 8, 6, 16, 17, 19, 24, 26, 28

SCENARIO 5: COLLECTION OF MOCK PAYMENT

Scenario: Collecting mock payment for PPM invoice
The objective of this scenario is to simulate a participant's payment (and non-payment) of the mock invoice.

Users	Data	Component
- AM - Participant	- Participant personal information (name, email, telephone number, mailing address) - Road user charge per participant	- AM back office - Participant personal information device

Events:

1. Participant receives invoice via email monthly
2. Participant must open and acknowledge invoice receipt and review
3. Additional actions may be triggered by invoice acknowledgement (for example, survey response and incentive payment) for select invoices
4. Payment Administration System reconciliation reporting to owner (ODOT and OTA) monthly. This will include total invoices prepared and distributed, acknowledged/not acknowledged.

Challenges:

- Presenting the road user charge to the participant in an informative, educational manner such that the calculation is clear as is the expectation and process for mock payment - Determining if invoice acknowledgement should be tied to participant surveys and incentives
User Needs: 5, 6, 13, 16, 17,18, 21, 24

SCENARIO 6: ENFORCEMENT

Scenario: Enforcement

The objective of this scenario is to demonstrate the system's response when a participant takes no action on an invoice.

Users	Data	Component
- ODOT - AM - Participant	- Participant account information (name, email, telephone number, mailing address, VIN, license plate, etc.) - Invoice	- AM back office - Participant personal information device - ODOT back office

Events:

1. Participant does not acknowledge and act on an invoice received within a specified time
2. Account manager monitors invoicing activity via data/dashboards
3. Account manager or system flags invoices not viewed and acknowledged
4. Account manager sends reminder(s) to participant to act on the invoice
5. Account manager reports monthly to ODOT on system and participant activity, including number of accounts with outstanding invoices
6. If invoice is still not acted upon after the specified number of reminders, the participant will be notified of account action, which may include withholding of incentives not yet provided

Challenges:

- Determine specific actions relative to mock enforcement; scenario currently proposes withholding of pilot incentives

User Needs: 13, 21, 22

SCENARIO 7: CUSTOMER SUPPORT

Scenario: Customer Support

The objective of this scenario is to outline system monitoring and how customer support is provided to participants. It is essential to have a feedback mechanism available for participants to engage with system administrators on system and charge-related questions. This scenario may require definition of pre-conditions, such as reference to the participant website and/or frequently asked questions (FAQ).

Users	Data	Component
- AM - Participant - Consultant Team*	- Participant personal information (name, email, telephone number, mailing address)	- AM back office - Participant personal information device - Consultant back office

Events:

*Consultant team to engage and provide frequently asked questions (FAQ) regarding Program, Project and Pilot overview. AM to provide PPM system monitoring and customer support for account and technical issues related to the system. 1. Identify common questions and answers for an FAQ and participant enrollment 2. Update and maintain FAQ and links to relevant resources and points of contacts on Pilot website 3. Enable multiple paths for participants to contact system support (consultant team and AM) including web and telephone 4. Create processes for standard requests like updating account information or disputing a charge 5. Create and provide regular report to system owners providing customer service metrics
Challenges: - Determine if a single scenario adequately captures all potential activities under customer support from account issues/updating, payment method updating, invoice dispute, etc. - Determine reporting requirements for customer service metrics
User Needs: 3, 7, 9, 10, 22

SCENARIO 8: MONITORING AND TROUBLESHOOTING

Scenario: Monitoring and Troubleshooting

The objective of this scenario is to demonstrate the system response to systems issues, regardless of which process encounters an issue. This may include system failure and device malfunction as sub-scenarios.

Users	Data	Component
- ODOT - AM - Participant	- Participant data - System usage data - Invoice data	- AM back office - Participant personal information device - Participant vehicle - ODOT back office

Events:

1. Device, account, and reporting monitoring by account manager
2. Identification/trigger of issue (whether account or device)
3. Notification of issue and planned response/response timeframe (to ODOT)
4. Issue resolution (ex. account update, incorrect reporting, odometer or OBD II device repair/replacement, etc.)
5. Data recovery if loss is encountered as part of the issue
6. Reporting of issues and resolutions to system owner (ODOT)

Challenges:

- Consider breaking into sub-scenarios depending on which component and/or function fails
- AM will leverage standard design and system requirements to identify additional sub-scenarios
- Event #4 may overlap with customer support to the extent that troubleshooting involves participants

User Needs: 18, 20, 22

SCENARIO 9: REPORT AND QUALITY

Scenario: Reporting and Quality

The objective of this scenario is to demonstrate the system's ability to generate required reports and maintain accurate, high quality system data.

Users	Data	Component
- ODOT - OTA - Consultant Team	- System usage data - Invoice data	- AM back office - ODOT back office

- AM		

Events:

1. ODOT and OTA provide input on the contents for all reports
2. Month-end triggers automatic, canned report from the system to authorized users (ODOT, OTA, Consultant Team) to include total enrollment, total # miles driven, total # vehicles/by vehicle type, # participants by MRO
3. Month end triggers automatic, public facing report for use by the Consultant Team and AM in outreach and communications
4. Month end triggers a private, project-team facing report with detailed pilot metrics related to customer support, disenrollment, and monitoring/troubleshooting
5. At the conclusion of the Pilot, authorized user(s) at ODOT will receive aggregated, deidentified data.
6. Whether event 1, 2, 3, or 4, the system generates required data and presentation of information

Challenges:

- Consider breaking into sub-scenarios depending on functionality (reporting or auditing) and type of function (planned/recurring or unplanned/ad hoc)

User Needs: 13, 16, 22, 27, 28

SCENARIO 10: PARTICIPANT DISENROLLMENT (PILOT DEMOBILIZATION)

Scenario: Disenrollment and Demobilization

The objective of this scenario is to enable participants to withdraw their participation from the Pilot. The events in this scenario will be replicated at the conclusion of the Pilot to demobilize and discontinue system operations, beginning with event #4.

Users	Data	Component
- ODOT - AM - Participant - Consultant Team	- Participant personal information (name, email, telephone number, mailing address) - Vehicle information (Make, Model, Year, License Plate/Registration, VIN)	- Payment Administration System - Participant personal information device - ODOT Back Office - Consultant Back Office

Events:

1. Participant notifies AM of desire to withdraw
2. Consultant Team provides (and participant completes) disenrollment form to indicate reason for withdrawal
3. AM processes the disenrollment form including notifying ODOT of withdraw. This will be included in recurring system-generated reports described in Scenario #9
4. AM creates final invoice/statement for both participant and ODOT to 'close out' Pilot participation
5. Consultant Team update future outreach and stop future distribution of survey and incentive information
6. AM and Consultant Team purge all raw participant and vehicle information from system(s) in accordance with data management plan
7. AM and Consultant Team provide verification and report of account deactivation and data purge to ODOT

Challenges:

- Determine roles and responsibilities relative to participant management
- Removing participants at the conclusion of the Pilot (Pilot demobilization) is a subset of the events listed in this scenario and likely includes only Step 6 and 7
- Consider sub-scenario for non-voluntary disenrollment to remove participants who do not activate MROs or acknowledge invoices. This includes a subset of the events contained in this scenario

User Needs: 1, 2, 14

6. SUMMARY OF IMPACTS

The PPM Pilot will be evaluated as part of the Project report to the state legislature. The following items will be considered.

6.1 BENEFITS AND CHALLENGES

The Pilot evaluation report will speak to how the Pilot has addressed Oklahoma's stated challenges including:

1. How to securely and privately collect, manage, process and store PPM data in a state concerned with privacy;
2. How to establish an equitable PPM rate for all users;
3. How to collect PPM cost-effectively and efficiently, which directly contributes to system sustainability; and
4. How to uniquely tailor the PPM program throughout the state to be inclusive for users from urban and rural areas, all income levels, and Tribal Nations.

The challenges being evaluated align with Federal requirements and priorities in road user charging, which include:

- Interoperability
- Public Acceptance
- Protection of Personal Privacy
- Cost Efficiency (of 3rd party vendors for fee collection and operation)
- Equity/Justice 40
- Ease of Compliance
- Reliability and Security of Technology Solution

6.2 EVALUATION METRICS

The Pilot's high-level outcomes are defined in the table below. The user needs will be mapped to these outcomes. Draft hypotheses and indicators are included in the table below.

Table 6. PPM Pilot Evaluation Outcomes, Hypotheses, and Indicators

	#	Hypotheses	Performance Measures Indicators
Acceptance	1A	Education and awareness improve participant acceptance of a PPM system.	• **Quantitative:** Number of PPM educational/awareness website page impressions. • **Qualitative:** Participant's measured acceptance of a PPM concept.
	2A	Ease of use of the PPM system will influence participant acceptance.	• **Qualitative:** Participant's measured acceptance influenced by ease of use of mileage recording and reporting alternatives.
	3A	Accuracy and reliability of mileage recording and reporting will influence participant acceptance of a PPM system.	• **Quantitative:** Number of reporting errors from mileage recording and reporting, number of reported tickets of errors related to mileage recording and reporting.

	#	Hypotheses	Performance Measures Indicators
			• **Qualitative:** Participant's perceived accuracy and reliability of mileage recording and reporting influencing participant acceptance of system.
	4A	Fairness of PPM rates/fees will influence participant acceptance of system.	• **Qualitative:** Participant's perceived fairness of PPM rates/fees influencing participant acceptance of system.
	5A	Participants will engage with the PPM system for the entirety of the pilot.	• **Quantitative:** Number of participant disenrollment (include dates). • **Qualitative:** Disenrollment survey results.
	6A	The well-designed customer service system impacts participant acceptance.	• **Quantitative:** Number of customer service related inquiries and customer service metrics. • **Qualitative:** Participant view of the PPM system customer service process, PPM system's customer service process and overall PPM pilot customer service process.
	7A	Participants find value in PPM system leading to participant acceptance.	• **Qualitative:** Participants find value in PPM system, participants find benefit in the value-added features in the MRO app, participant value rating with overall PPM system acceptance rating.
Privacy	8P	PPM system protects participant PII and location data.	• **Qualitative:** Existing data encrypted to industry standards, data is protected throughout the entire life cycle of the data (rest and in transit), and participant's perceived security and privacy of the system, location data is protected.
	9P	PPM system will respond to and resolve privacy concerns.	• **Quantitative:** Number of customer service tickets related to privacy (participant and agency) before and during the pilot, response time to data subject requests, results of any privacy internal audits, and on-time owner notifications for privacy breaches.
Equity	10E	PPM fees will be equitable across all participant segments (rural, suburban, urban, tribal, and all income levels).	• **Quantitative:** Comparison of PPM fees by participant type (rural, suburban, urban, tribal, and all income levels). • **Qualitative:** Participant opinion on PPM fees being equitable across rural, suburban, urban, tribal, and different income level participants.
	11E	PPM fees will be equitable across similar vehicle types and model years.	• **Quantitative:** Comparison of PPM costs by vehicle type and model years. • **Qualitative:** Participant opinion on PPM fees being equitable across vehicle types and model years.
	12E	All participants will have the same options for PPM payments.	• **Quantitative:** PPM invoicing and payment process. • **Qualitative:** Participant opinion on PPM system being equitable based on PPM payment options.
Scalability	13S	The PPM system cost per user type (TBD) will not increase (and should decrease) as the system scales and adds participants.	• **Quantitative:** Cost estimates of the system scaling up (economy of scale).
	14S	The mileage recording and reporting methods will be accurate, robust, and adaptable to support system scalability.	• **Quantitative:** Number of mileage recording and reporting methods in use during the pilot, number of reporting errors from mileage recording and

	#	Hypotheses	Performance Measures Indicators
			reporting, number of reported tickets of errors related to mileage recording and reporting.
	15S	The PPM invoicing and payment processes will be able to scale with increased participants and mileage recording methods.	• **Quantitative:** PPM invoicing and payment process and system scalability capabilities.
Sustainability	16SS	PPM fees calculated by the different mileage recording and reporting methods will be approximate which will make the system have consistent data recording and a sustainable PPM system.	• **Quantitative:** Comparison of on-board diagnostics (OBD) II MRO recording and one-time manual odometer reading (photo by user) with the same inputs (same vehicle).
	17SS	The PPM system will provide a more sustainable source of state transportation funding compared to the existing gas tax.	• **Quantitative:** Projected PPM system net revenue over 10 years, projected fuel tax collection net revenue over 10 years.

APPENDIX B: PILOT PLANNING

B.2 EVALUATION PLAN

OKLAHOMA

OKLAHOMA PAY PER MILE PILOT EVALUATION PLAN

April 2023

fair miles OKLAHOMA

TABLE OF CONTENTS

ACRONYMS

Abbreviation	Term
AM	Account Manager
ConOps	Concept of Operations
DMP	Data Management Plan
EP	Evaluation Plan
FHWA	Federal Highway Administration
GPS	Global Positioning System
ITS	Intelligent Transportation Systems
MRO	Mileage Reporting Option
OBD II	On-board diagnostics II
ODOT	Oklahoma Department of Transportation
OTA	Oklahoma Turnpike Authority
PPM	Pay Per Mile
PII	Personally Identifiable Information
RUC	Road User Charge
STSFA	Surface Transportation System Funding Alternatives
VMT	Vehicle Miles Traveled

DEFINITIONS

Word	Definitions
Acceptance	Participants agree the pilot PPM system is well-designed for the state of Oklahoma and for their involvement in the system.
Account Manager	The Account Manager (AM) is Emovis and Gannett Fleming for this Pilot.
Adaptability	Adaptability is how Mileage Recording Options (MROs) are compatible with a range of vehicle systems.
Availability	Availability is how easy it is to record (install and operate MRO) and report mileage.
Fairness	Fairness is the distribution of the transportation tax burden being appropriate for all vehicle types.
Overall PPM System Website Manager	The Overall PPM System Website Manager is Jones PR for this Pilot.
Participant Survey Manager	The Participant Survey Manager is Jones PR for this Pilot.
Pilot Consultant Team	The Pilot Consultant Team is HNTB for this Pilot.
Privacy	Privacy is the data not being openly available to the public and PII not attached to the data.
Protects	Protects is the active safeguarding of data from adversaries.
Reliability	Reliability is the system performing the expected tasks at a high frequency (>90%). The system would be dependable on recording and reporting VMT.
Technological Literacy	Technological literacy is how well participants understand technology and how well they can use technology.

1. OVERALL OBJECTIVES, PRINCIPLES, AND ORGANIZATION

1.1. PURPOSE OF EVALUATION PLAN

This Evaluation Plan (EP) supports the pay per mile (PPM) Pilot ("Pilot") that is part of a larger project in Oklahoma by supplying a framework for evaluating the performance of the deployed solutions in terms of acceptance, privacy, equity, scalability, and sustainability. The EP also provides traceability to, verification of, and responsibility for the targeted objectives of the Pilot. The EP will define the performance measures and the process to evaluate the pilot outcomes. By establishing a robust set of performance measures, this plan helps stakeholders understand how the PPM system would meet the identified objectives and serve the state of Oklahoma and its traveling public. The Pilot will be led by the Oklahoma Department of Transportation (ODOT) with collaboration from the Oklahoma Turnpike Authority (OTA), Federal Highway Administration (FHWA) (as the administrator of a Surface Transportation System Funding Alternatives (STSFA) grant that is partially funding this project) and other stakeholders. The PPM project and Pilot concept have been branded as Fair Miles Oklahoma. Other elements of the broader Oklahoma PPM project include assessing the impacts on Tribal Nations and charging of Out-of-State vehicles. Consideration for these elements will not be part of this pilot.

Key Activities of the Evaluation Plan:

- Define performance measures
- Outline data collection plan(s)
- Describe evaluation criteria related to the Pilot
- Detail project reporting protocols

The EP's intended audience is the pilot owner/sponsor (ODOT), key stakeholders [OTA and the Account Manager (AM)], and the consultant team. The AM team consists of Emovis and Gannett Fleming and the consultant team includes HNTB. The EP and subsequent results will inform a larger report to the Oklahoma State Legislature about the Oklahoma Fair Miles project.

1.2. FRAMEWORK AND METHODOLOGY

The EP is based on the FHWA Systems Engineering for Intelligent Transportation Systems (ITS) process[1]. Figure 1 shows a project-tailored systems engineering "V" diagram, identifying the flow and relationships between the various elements (steps) in the systems engineering process, including this EP and a subsequent Data Management Plan (DMP). The EP builds on the user needs and evaluation metrics defined in the Concept of Operations (ConOps). Throughout the 6-month Pilot, the project team will utilize the EP to analyze the pilot outcomes. The EP will use before-and-after studies, post-trend analysis, cross-tabulation analysis, and other study models to effectively analyze the Pilot.

[1] Systems Engineering for ITS Handbook, https://ops.fhwa.dot.gov/publications/seitsguide/.

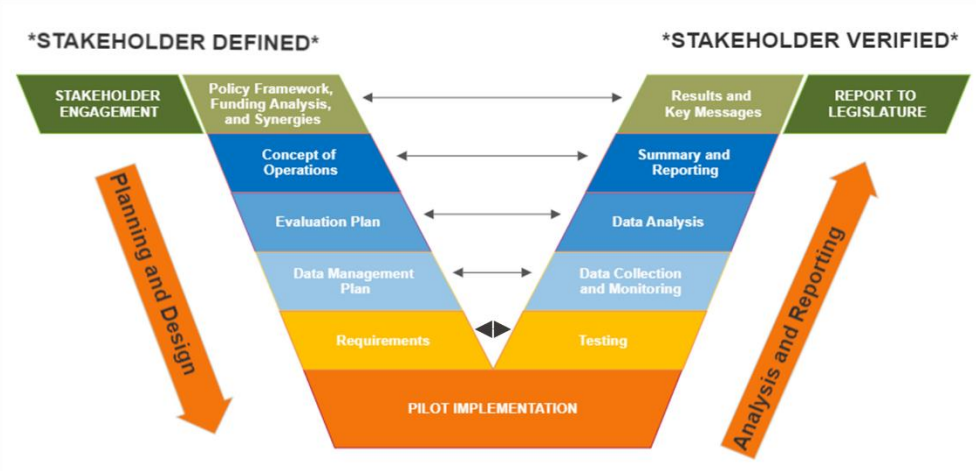


Figure 1. Systems Engineering "V" Diagram for Pilot Process

1.2.1. RELATIONSHIP TO OTHER DOCUMENTS

The EP draws upon other pilot level documentation. In Figure 1, the systems engineering "V" diagram for the pilot process displays where the EP fits with other project documentation.

- **Concept of Operations:** The ConOps defines the foundation for the design and analysis of the Pilot system. The document describes the stakeholders' roles and responsibilities, user needs, and high-level overview of the system. The ConOps describes the objectives of the Pilot and guides the creation of the performance measures.
- **Data Management Plan:** The DMP will provide an overview of how the system will securely collect, process, and store data. The EP will utilize the data collection process for assessment of the pilot outcomes.
- **Pilot Requirements:** The Pilot Requirements lay out the technical structure of the system and the needs of the system design to meet pilot objectives. The ConOps user needs are broken down further into pilot requirements. The EP will analyze the outcomes from the pilot designed by the requirements.

1.3. PILOT DESCRIPTION

The Pilot will operate a road user charge (RUC) system in Oklahoma for 6 months and include a minimum of 500 participants (initial recruitment of 600 participants to account for attrition). ODOT and the project team determined the pilot participant size to effectively represent the traveling Oklahoma public. An account manager (AM) will deploy and operate the RUC system designed to ODOT's requirements. The AM will also select the mileage reporting options (MROs) and methods for the Oklahoma PPM Pilot. For each participant, miles driven will factor into a mock fee and be invoiced to participants during the six-month pilot period. For global positioning system (GPS)-enabled and cellular MRO, only miles driven in Oklahoma will be factored into the fee. For all other MROs, all miles driven will be accounted into the fee calculation. The location data will only be used for the purpose of differentiating in-state mileage from out-of-state mileage. Also, the pilot monetary transactions and enforcement of unpaid invoices will be simulated only, and no payments will be collected (or tickets/enforcement issued).

From public feedback meetings, the attendees prefer the name PPM over the industry standard name of the system, RUC. The EP will refer to the RUC system as the PPM system throughout the document.

1.4. OKLAHOMA PPM PILOT GOALS AND OBJECTIVES

Following are the goals and objectives of the PPM Pilot. These goals and objectives were first articulated in the Oklahoma RUC Pilot Program STSFA Discretionary Grant Application[2] and reflect the decisions made during a February 2023 stakeholder meeting.

1.4.1. PILOT GOALS

- Effectively and accurately measure vehicle mileage, and evaluate methods to collect fees, audit collections, and enforce PPM compliance.
- Engage the public and stakeholders so users' voices of Oklahoma's highway system are heard while developing a future Oklahoma program.
- Develop a fair and equitable solution to declining fuel tax revenues for urban, rural, and Tribal Nation drivers while also providing flexibility for a variety of users and vehicle types.
- Research how to minimize PPM transaction costs by leveraging existing tolling back-office operations and capabilities and optimizing the interface between the tolling back office and third-party AMs.

1.4.2. PILOT OBJECTIVES

- Test the design, acceptance, and implementation of user-based alternative revenue mechanisms.
- Improve the functionality of such user-based alternative revenue mechanisms.
- Conduct outreach to increase public awareness.
- Provide recommendations regarding adoption and implementation of user-based alternative revenue mechanisms.
- Minimize the administrative cost of any potential user-based alternative revenue mechanisms.

1.5. REPORTING PROTOCOLS

The AM and pilot consultant team will collaborate to report pilot data and outcomes. The following pilot reporting protocols support the necessary system data, monthly pilot results, and final pilot evaluation report.

- ***System Data:*** The AM will produce monthly system reports to ODOT, OTA, and the consultant team. The report will include the system data described in Section 1.8.2 Reporting Methods.

- ***Pilot Evaluation Plan Monthly Results and Final Pilot Evaluation Report:*** The pilot consultant team will produce monthly pilot evaluation reports along with the final pilot evaluation report for ODOT. Throughout the Pilot, the consultant team will validate the system following the EP. For the final pilot evaluation report, the document will go through one round of review with stakeholders.

[2] Oklahoma Department of Transportation (ODOT). "Oklahoma Road User Charge Pilot Program Surface Transportation System Funding Alternatives Discretionary Grant Application." 2021.

1.6. PILOT SCHEDULE WITH MILESTONES

The evaluation will occur concurrent with the 6-month duration of the Pilot. At the end of the 6 months, the pilot consultant team will submit the initial pilot evaluation report to ODOT with a final report in June 2024. Figure 2 displays the pilot schedule.

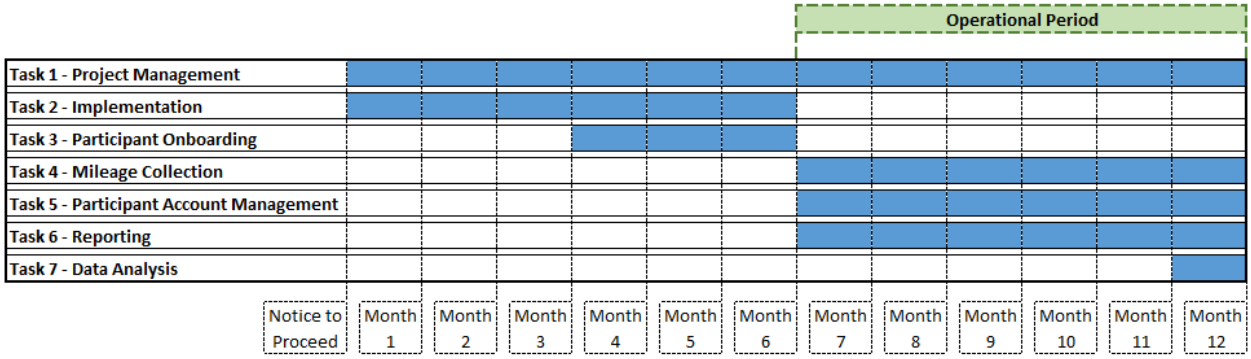


Figure 2. PPM Pilot Timeline

1.7. PERFORMANCE MEASURES

1.7.1. PURPOSE OF PERFORMANCE MEASURES

The performance measure indicators gauge the impact of meeting pilot objectives. Establishing the performance measures early helps key stakeholders agree on how system performance and project success will be measured. The performance measures are also necessary to establish baseline data needs for before-and-after studies. Along with the user needs, the ConOps describes the performance measures. The hypotheses and performance measures are described in Section 1.7.3.

1.7.2. PERFORMANCE MEASURES OWNERS AND RESPONSIBILITIES

The pilot consultant team will be responsible for implementing, collecting data, analyzing, and reporting the EP results. For each performance measure owner, responsibilities are established to ensure accountability of implementing the EP. Performance measure owners are ODOT data owners, the AM, and Participant Survey Manager. The pilot consultant team will collaborate with the designated owners to collect the data and evaluate the pilot outcomes.

The pilot consultant team will provide templates and guidelines to assist the performance measure owners in submitting data. It will be the responsibility of the pilot consultant team and performance measure owners to ensure the appropriate descriptors (meta-data) are available, and consistent formats are used across data collection types. Table 1 describes the performance measure owners and responsibilities for each hypothesis.

1.7.3. PERFORMANCE MEASURES

Table 1 describes the performance measures indicators and data/information owners and responsibilities based on the hypotheses of the targeted pilot outcomes/objectives including acceptance, privacy, equity, scalability, and sustainability.

Table 1. PPM Pilot Hypotheses, Performance Measures Indicators, Data/Information Owners, and Responsibilities

	#	Hypotheses	Performance Measures Indicators	Data/Information Owners and Responsibilities
Acceptance	1A	Education and awareness improve participant acceptance of the PPM system.	• **Quantitative:** Number of PPM educational/awareness website page impressions. • **Qualitative:** Participants measured acceptance of the PPM system.	• **Participant Survey Manager:** Provides survey results on participants measured acceptance of the PPM system as it relates to education and awareness. • **Overall PPM System Website Manager:** Provides number of PPM educational/ awareness website page impressions through Google Analytics.
	2A	System ease of use will influence participant acceptance.	• **Qualitative:** Participants measured acceptance influenced by MROs ease of use, and participants measured acceptance of the PPM system.	• **Participant Survey Manager:** Provides survey results on participants measured acceptance influenced by MROs ease of use.
	3A	Accuracy and reliability of MROs will influence participant acceptance of the PPM system.	• **Quantitative:** Number of reporting errors from MROs, and number of reported tickets related to MROs errors. • **Qualitative:** Participants opinion on accuracy and reliability of MROs influencing participant acceptance of the PPM system.	• **Account Manager:** Provides number of reporting errors from MROs, and number of reported tickets related to MROs errors. • **Participant Survey Manager:** Provides survey results on participants opinion on accuracy and reliability of MROs influencing participant acceptance of the PPM system.
	4A	Fairness of fee structure will influence participant acceptance of the PPM system.	• **Qualitative:** Participants opinion on fairness of fee structure influencing participant acceptance of the PPM system.	• **Participant Survey Manager:** Provides survey results on participants opinion on fairness of fee structure influencing participant acceptance of the PPM system.
	5A	Participants will engage with the PPM system for the entirety of the Pilot.	• **Quantitative:** Number of participant disenrollments (include estimated dates). • **Qualitative:** Disenrollment survey results.	• **Participant Survey Manager:** Provides number of participant disenrollment (include estimated dates), and disenrollment survey results.
	6A	The well-designed customer service system impacts participant acceptance.	• **Quantitative:** Number of customer service related inquiries and customer service metrics. • **Qualitative:** Participants opinion of the PPM system customer service process, participants measured acceptance of the PPM system, and	• **Participant Survey Manager:** Provides survey results on participants opinion of the PPM customer service process, and participants measured acceptance of the PPM system.

	#	Hypotheses	Performance Measures Indicators	Data/Information Owners and Responsibilities
			AM systems customer service process and overall PPM pilot customer service process.	• **Account Manager:** Provides AM system customer service process, number of customer service related inquiries and customer service metrics. • **Overall PPM System Website Manager:** Provides overall PPM pilot customer service process, number of customer service related inquiries and customer service metrics.
	7A	Participants find value in the PPM system leading to participant acceptance.	• **Qualitative:** Participants opinion on the value of the PPM system, participants opinion on the benefit of the value-added features in the MRO on-board diagnostics (OBD) II and cellular applications, and participants measured acceptance of the PPM system.	• **Participant Survey Manager:** Provides survey results on participants opinion of value on the PPM system, survey results on participants opinion on the benefit of the value-added features in the MRO OBD II and cellular applications, and participants measured acceptance of the PPM system.
Privacy	8P	System protects the participants personally identifiable information (PII) and location data.	• **Qualitative:** Existing data encrypted to industry standards, data is protected throughout the entire life cycle of the data (at rest and in transit), and participants opinion on security and privacy of the system, and location data privacy process and policy.	• **Account Manager:** Provides existing data encrypted to industry standards, and data is protected throughout the entire life cycle of the data (rest and in transit), and location data privacy process and policy. • **Participant Survey Manager:** Provides survey results on participants opinion on security and privacy of the system.
	9P	System will respond to and resolve privacy concerns.	• **Quantitative:** Number of customer service tickets related to privacy (participant and agency) before and during the Pilot, and response time to data subject requests. • **Qualitative:** Results of any privacy internal audits, and on-time owner notifications if there is a privacy breach.	• **Account Manager:** Provides response time to data subject requests, and on-time owner notifications if there is a privacy breach. • **Pilot Consultant Team:** Provides number of customer service tickets related to privacy (participant and agency) before and during the Pilot and results of any privacy internal audits.
Equity	10E	Fees will be equitable across all participant segments (rural, suburban, urban, tribal, and all income levels).	• **Quantitative:** Comparison of fees by participant type (rural, suburban, urban, tribal, and all income levels). • **Qualitative:** Participants opinion on fees being equitable from rural, suburban, urban, tribal, and different income level participants.	• **Account Manager:** Provides fee comparison by participant type (rural, suburban, urban, tribal, and all income levels). • **Participant Survey Manager:** Provides survey results on participants opinion on fees being equitable from rural, suburban, urban, tribal, and different income level participants.

	#	Hypotheses	Performance Measures Indicators	Data/Information Owners and Responsibilities
	11E	Fees will be equitable across similar vehicle types and model years.	• **Quantitative:** Comparison of fees by vehicle type and model years. • **Qualitative:** Participants opinion on fees being equitable across vehicle types and model years.	• **Account Manager:** Provides fee comparison by vehicle type and model years. • **Participant Survey Manager:** Provides survey results on participants opinion on fees being equitable across vehicle types and model years.
	12E	All participants will have the same options for PPM payments.	• **Quantitative:** Number of payment options and payment selection counts per payment type. • **Qualitative:** Participants opinion on PPM system being equitable based on payment options, and invoicing and payment process.	• **Account Manager:** Provides invoicing and payment process and options. • **Participant Survey Manager:** Provides survey results on participants opinion on PPM system being equitable based on payment options.
Scalability	13S	The system cost per MRO will not increase (and should decrease) as the system scales and adds participants.	• **Quantitative:** Cost estimates of the system scaling up (economy of scale metrics).	• **Account Manager:** Provides cost estimates of the system scaling up (per MRO).
	14S	The MROs will be accurate, robust, and adaptable to support system scalability.	• **Quantitative:** Number of MROs in use during the Pilot, number of recording and reporting errors from MROs, number of customer service tickets related to errors with MROs.	• **Account Manager:** Provides number of MROs in use during the Pilot, number of recording and reporting errors from MROs, and customer service tickets related to errors with MROs.
	15S	The invoicing and payment processes will be able to scale with increased participants and MROs.	• **Qualitative:** Invoicing and payment process and system scalability capabilities.	• **Account Manager:** Provides invoicing and payment process and system scalability capabilities.
Sustainability	16SS	Mileage calculated by the different MROs will be approximate which will make the system have consistent data recording and be a sustainable PPM system.	• **Quantitative:** Comparison of OBD II MRO data, cellular MRO data, and one-time manual odometer readings (photo by user) by the same vehicles.	• **Account Manager:** Provides comparison of OBD II MRO data, cellular MRO data, and one-time manual odometer readings (photo by user) by the same vehicles.
	17SS	The PPM system will provide a more sustainable source of state transportation funding compared to the existing gas tax.	• **Quantitative:** Projected PPM system net revenue over 10 years, and projected fuel tax collection net revenue over 10 years.	• **Pilot Consultant Team:** Provides projected PPM system net revenue over 10 years and projected fuel tax collection net revenue over 10 years.

1.8. PILOT DATA COLLECTION

The success of the EP is dependent on the quality of data received for the analysis. The pilot data collection section (Section 1.8) will help identify methods to retrieve high-quality data in a systematic manner. The AM and pilot consultant team will work together on collecting the appropriate data in a timely fashion and in the required format. Separate from the EP, the DMP outlines how data should be handled throughout the Pilot. In accordance with the DMP, the EP will follow the data collection protocols to ensure data is collected securely.

1.8.1. MILEAGE RECORDING

The AM will use a combination of systems, devices, and/or operational methods for collecting mileage data for the Pilot. The data includes the quantity of miles driven and location of the participant vehicles, only for the purpose of differentiating in-state mileage from out-of-state mileage. Participant VMT will be recorded for the duration of the Pilot (6 months). The AM will select the specific MROs and methods.

1.8.2. REPORTING METHODS

The AM is required to understand, comply, and help with the EP data collection process in compliance of the DMP. With data being a dependency for a successful evaluation, the AM will be reporting monthly to ODOT, OTA, and the consultant team. In addition to the AM's monthly reports, the consultant team will use the data collected to produce separate evaluation monthly reports and the final pilot evaluation report. Based on a February 2023 stakeholder meeting, the monthly reports are expected to have the following data and information.

Monthly AM Reports Data and Information:

- Participant and Mileage Reporting
    - List, count, and statuses of participants and participant vehicles, including details about participant types.
    - Total mileage driven as part of the project, broken down by in-state, out-of-state, and unknown locations.
    - Mileage driven by individual vehicles and the corresponding participant.
    - Status and health of system and devices in fleet.
    - Participation rates, including accounts which are no longer incurring mileage.
- Revenue Reporting
    - Lists of all simulated fees, broken down by participant account and participant vehicle, and with the corresponding mileage.
    - Simulated fees generated per billing period with corresponding simulated revenue received.
    - Aging data related to invoices that have not received a simulated payment.
    - Simulated revenue for the participant population in each billing period versus revenue that would have been generated by the gasoline tax for the participant population in each billing period.
- Reconciliation Reporting
    - Data transmitted versus data received.
    - Counts of mileage transmitted versus mileage received.
    - Counts of participants and participant vehicles for which data was transferred versus data received.

1.9. EVALUATION CRITERIA FRAMEWORK

Starting with Section 1.11, the EP describes the evaluation framework for each performance measure. The EP will analyze the acceptance, privacy, equity, scalability, and sustainability of the Pilot system. This part of the plan will include the necessary information for accessing the pilot outcomes/objectives; this includes the outcome/objective, hypothesis, performance measure indicators, owner, data required, baseline measures, and evaluation approach. The definitions of the evaluation parameters are found in section 1.11 Terminology.

1.10. ASSUMPTIONS AND CONSTRAINTS

The design of the EP considers the following assumptions and constraints:

- The participant survey responses will be subjective based on the pilot participants different perspectives and definitions of certain terms (i.e., acceptance, fair, equitable, and value).
- The participant's comfort with using technology can affect survey responses.
- Not all participants are inclined to report all privacy concerns in the formal Pilot help desk ticket system.
- The determination on what is considered equitable across vehicle types, vehicle model years, and participant segments.
- The AM's scaling cost estimate would be different from competitors.
- The fuel tax collection net revenue is based on estimates created by the AM.
- The cost estimate without integration to the OTA tolling back office will come from the AM.

1.11. TERMINOLOGY

Each pilot outcome/objective hypothesis addresses the performance measures indicators. These indicators will help collect, monitor, and analyze data related to the performance measures to best assess the pilot outcomes. Under each performance measure, this section describes the outcome/objective category, hypothesis, performance measure indicator, data/ information owner and responsibilities, data required, baseline measures, and evaluation approach. Reference the definitions of key terms at the start of the EP.

- **Outcome/Objective Category** describes the overall targeted goals of the Pilot.
- **Hypothesis** is the aimed outcome based on the pilot objectives.
- **Performance Measure Indicators** is the measurements to evaluate the pilot results against the aimed outcomes.
- **Data/Information Owner & Responsibilities** will list the party that owns the data/information and the corresponding data/information needed for the evaluation.
- **Data Required** includes data and information necessary for assessing the performance of the Pilot. The data and information can range from survey results to AM system data.
- **Baseline Measures** details the starting conditions for the pre-post analysis.
- **Evaluation Approach** is a set of analysis methods to evaluate the specific hypothesis.

2. EVALUATION PLAN

2.1. CATEGORY 1: ACCEPTANCE

2.1.1. #1A: EDUCATION AND AWARENESS

- ***Outcome/Objective Category*** – Acceptance
- ***Hypothesis*** – Education and awareness improve participant acceptance of the PPM system.
- ***Performance Measures* Indicators**
  - Quantitative: Number of PPM educational/awareness website page impressions
  - Qualitative: Participants measured acceptance of the PPM system.
- ***Data/Information Owner & Responsibilities***
  - Participant Survey Manager - provides survey results on participants measured acceptance of the PPM system as it relates to education and awareness.
  - Overall PPM System Website Manager - provides number of PPM educational/ awareness website page impressions through Google Analytics.
- ***Data Required***
  - Quantitative: Website traffic data (website visits, average time on education/awareness page(s), bounce rate (total number of one-page visits/total number of entries to website)).
  - Qualitative: Participant survey feedback on education and awareness improving participant acceptance of the PPM system.
- ***Baseline Measures*** – Participant Pre-Pilot Survey on participant initial measured acceptance of a PPM system.
- ***Evaluation Approach***
  - ☐ Review the website traffic data.
  - ☐ Review the participant survey feedback and perform a trend analysis on measured acceptance over the duration of the Pilot related to education and awareness.

2.1.2. #2A: EASE OF USE

- ***Outcome/Objective Category*** – Acceptance
- ***Hypothesis*** –System ease of use will influence participant acceptance.
- ***Performance Measures* Indicators**
  - Qualitative: Participants measured acceptance influenced by ease of use of MROs, and participants measured acceptance of the PPM system.
- ***Data/Information Owner & Responsibilities***
  - Participant Survey Manager - provides survey results on participants measured acceptance influenced by MROs ease of use.
- ***Data Required***
  - Qualitative: Participant survey feedback on MROs ease of use influencing participant acceptance of PPM system, participant survey feedback on MROs ease of use influencing participant acceptance of the PPM system.
- ***Baseline Measures*** – Participant survey feedback from the first month of the Pilot.
- ***Evaluation Approach***
  - ☐ Review the participant survey feedback and perform a trend analysis on measured acceptance over the duration of the Pilot related to the MROs ease of use.

2.1.3. #3A: ACCURACY AND RELIABILITY

- ***Outcome/Objective Category*** – Acceptance
- ***Hypothesis*** – Accuracy and reliability of MROs will influence participant acceptance of the PPM system.
- ***Performance Measure Indicators***
  - Quantitative: Number of reporting errors from MROs, and number of reported tickets related to MROs errors.
  - Qualitative: Participants opinion on accuracy and reliability of MROs influencing participant acceptance of the PPM system.
- ***Data/Information Owner & Responsibilities***
  - Account Manager - provides number of reporting errors from MROs, and number of reported tickets related to MROs errors.
  - Participant Survey Manager - provides survey results on participants opinion on accuracy and reliability of MROs influencing participant acceptance of the PPM system.
- ***Data Required***
  - Quantitative: MROs error data, and system customer service data.
  - Qualitative: Participant survey feedback on accuracy and reliability of MROs influencing participant acceptance of the system.
- ***Baseline Measures*** – MROs error data and system customer service data for the first month of the Pilot. Participant survey feedback for the first month of the Pilot.
- ***Evaluation Approach***
  - ☐ Review the participant survey feedback and perform a trend analysis on measured acceptance over the duration of the Pilot related to the accuracy and reliability of MROs.
  - ☐ Review the AM customer service system for participants reporting errors in accuracy and reliability of MROs.
  - ☐ Review the AM system to analyze error messages from MROs.

2.1.4. #4A: FAIRNESS

- ***Outcome/Objective Category*** – Acceptance
- ***Hypothesis*** – Fairness of fee structure will influence participant acceptance of the PPM system.
- ***Performance Measure Indicators***
  - Qualitative: Participants opinion on fairness of fee structure influencing participant acceptance of the PPM system.
- ***Data/Information Owner & Responsibilities***
  - Participant Survey Manager - provides survey results on participants opinion on fairness of fee structure influencing participant acceptance of the PPM system.
- ***Data Required***
  - Qualitative: Participant survey feedback on fairness of fee structure influencing participant acceptance of the PPM system.
- ***Baseline Measures*** – Participant survey feedback for the first month of the Pilot.
- ***Evaluation Approach***
  - ☐ Review the participant survey feedback and perform a trend analysis on acceptance over the duration of the Pilot related to fairness of fee structure.

2.1.5. #5A: ATTRITION

- ***Outcome/Objective Category*** – Acceptance
- ***Hypothesis*** – Participants will engage with the PPM system for the entirety of the Pilot.
- ***Performance Measure Indicators***
  - Quantitative: Number of participant disenrollment (include dates).

- Qualitative: Disenrollment survey results.

- ***Data/Information Owner & Responsibilities***
  - Participant Survey Manager - provides number of participant disenrollment (include dates), and disenrollment survey results.
- ***Data Required***
  - Quantitative: AM System disenrollment data.
  - Qualitative: Disenrollment survey data (throughout the Pilot).
- ***Baseline Measures*** – Disenrollment data and survey data for participants disenrolling prior to the start of the Pilot.
- ***Evaluation Approach***
  - ☐ Review the disenrollment data by date.
  - ☐ Review the participant survey feedback and perform a trend analysis on acceptance over the duration of the Pilot related to disenrollment.

2.1.6. #6A: CUSTOMER SERVICE

- ***Outcome/Objective Category*** – Acceptance
- ***Hypothesis*** – The well-designed customer service system impacts participant acceptance.
- ***Performance Measure Indicators***
  - Quantitative: Number of customer service related inquiries and customer service metrics.
  - Qualitative: Participants opinion of the AM system customer service process, participants measured acceptance of the PPM system, and AM system customer service process and overall PPM pilot customer service process.
- ***Data/Information Owner & Responsibilities***
  - Participant Survey Manager - provides survey results on participants opinion of the PPM customer service process, and participants measured acceptance of the PPM system.
  - Account Manager - provides AM system customer service process, number of customer service related inquiries and customer service metrics.
  - Overall PPM System Website Manager - provides overall PPM pilot customer service process, number of customer service related inquiries and customer service metrics.
- ***Data Required***
  - Quantitative: Customer service data.
  - Qualitative: Participant survey data, and all customer service processes.
- ***Baseline Measures*** – Customer service data prior to the start of the Pilot.
- ***Evaluation Approach***
  - ☐ Review customer service processes.
  - ☐ Review customer service system data.
  - ☐ Review the participant survey feedback and perform a trend analysis on acceptance over the duration of the Pilot related to customer service.

2.1.7. #7A: VALUE

- ***Outcome/Objective Category*** – Acceptance
- ***Hypothesis*** – Participants find value in the PPM system leading to participant acceptance.
- ***Performance Measure Indicators***
  - Qualitative: Participants opinion on the value of the PPM system, participants opinion on the benefit of the value-added features in the MRO on-board diagnostics (OBD) II and cellular applications, and participants measured acceptance of the PPM system.
- ***Data/Information Owner & Responsibilities***
  - Participant Survey Manager - provides survey results on participants opinion of value on the PPM system, survey results on participants opinion on the benefit of the value-added

features in the MRO OBD II and cellular applications, and participants measured acceptance of the PPM system.

- ***Data Required***
  - Qualitative: Participant survey data.
- ***Baseline Measures*** – Pre-survey data on participants opinion of value of the PPM system.
- ***Evaluation Approach***
  - ☐ Review the participant survey feedback and perform a trend analysis on acceptance over the duration of the Pilot related to value.

2.2. CATEGORY 2: PRIVACY

2.2.1. #8P: PERSONALLY IDENTIFIABLE INFORMATION

- ***Outcome/Objective Category*** – Privacy
- ***Hypothesis*** – System protects the participants personally identifiable information (PII) and location data.
- ***Performance Measure Indicators***
  - Qualitative: Existing data encrypted to industry standards, data is protected throughout the entire life cycle of the data (rest and in transit), participants opinion on security and privacy of the system, and location data privacy process and policy.
- ***Data/Information Owner & Responsibilities***
  - Account Manager - provides existing data encrypted to industry standards, data is protected throughout the entire life cycle of the data (rest and in transit), and location data privacy process and policy.
  - Participant Survey Manager - provides survey results on participants opinion on security and privacy of the system.
- ***Data Required***
  - Qualitative: AM data encryption standards, data protection documentation, location data privacy process and policy, and participant survey feedback on security and privacy of the system.
- ***Baseline Measures*** – Data encryption of PII collected the first month of the Pilot. Participant survey feedback for the first month of the Pilot.
- ***Evaluation Approach***
  - ☐ Review the data encryption standards, data protection documentation, and location data privacy process and policy.
  - ☐ Review the participant survey feedback and perform a trend analysis on protection of PII and location data.

2.2.2. #9P: RESPONSE TO PRIVACY CONCERNS

- ***Outcome/Objective Category*** – Privacy
- ***Hypothesis*** – System will respond to and resolve privacy concerns.
- ***Performance Measure Indicators***
  - Quantitative: Number of customer service tickets related to privacy (participant and agency) before and during the Pilot, and response time to data subject requests.
  - Qualitative: Results of any privacy internal audits, and on-time owner notifications for privacy breaches.
- ***Data/Information Owner & Responsibilities***
  - Account Manager - provides response time to data subject requests, and on-time owner notifications for privacy breaches.
  - Pilot Consultant Team - Number of customer service tickets related to privacy (participant and agency) before and during the Pilot and results of privacy internal audits.

- ***Data Required***
  - Quantitative: System customer service data and data subject requests response times.
  - Qualitative: Privacy internal audit report, and privacy breaches reporting.
- ***Baseline Measures*** – Customer service data prior and at the start of the Pilot.
- ***Evaluation Approach***
  - ☐ Review the AM customer service system for participants reporting tickets related to privacy concerns.
  - ☐ Review the data subject requests response times.
  - ☐ Review the privacy internal audit report and privacy breaches reporting.

2.3. CATEGORY 3: EQUITY

2.3.1. #10E: EQUITABLE FEE STRUCTURE ACROSS DEMOGRAPHICS

- ***Outcome/Objective Category*** – Equity
- ***Hypothesis*** – Fees will be equitable across all participant segments (rural, suburban, urban, tribal, and all income levels).
- ***Performance Measure Indicators***
  - Quantitative: Comparison of fees by participant type (rural, suburban, urban, tribal, and all income levels).
  - Qualitative: Participants opinion on fees being equitable from rural, suburban, urban, tribal, and different income level participants.
- ***Data/Information Owner & Responsibilities***
  - Account Manager - provides fee comparison by participant type (rural, suburban, urban, tribal, and all income levels).
  - Participant Survey Manager - provides survey results on participants opinion on fees being equitable from rural, suburban, urban, tribal, and different income level participants.
- ***Data Required***
  - Quantitative: Fee data by participant type (rural, suburban, urban, tribal, and different income levels).
  - Qualitative: Participant survey feedback on equity of the system by participant type (rural, suburban, urban, tribal, and different income levels).
- ***Baseline Measures*** – Participant survey feedback for the first month of the Pilot.
- ***Evaluation Approach***
  - ☐ Review the participant survey feedback on equity and perform a trend analysis against fees, and demographic data of participants.

2.3.2. #11E: EQUITABLE FEE STRUCTURE ACROSS VEHICLE TYPES AND MODEL YEARS

- ***Outcome/Objective Category*** – Equity
- ***Hypothesis*** – Fees will be equitable across similar vehicle types and model years.
- ***Performance Measure Indicators***
  - Quantitative: Comparison of fees by vehicle type and model years.
  - Qualitative: Participants opinion on fees being equitable across vehicle types and model years.
- ***Data/Information Owner & Responsibilities***
  - Account Manager - provides fee comparison by vehicle type and model years.
  - Participant Survey Manager - provides survey results on participants opinion on fees being equitable across vehicle types and model years.
- ***Data Required***
  - Quantitative: Fee data, and participant data (vehicle type and model years).

- Qualitative: Participant survey feedback on equity of the system by vehicle types and model years.

- ***Baseline Measures*** – Participant survey feedback for the first month of the Pilot.
- ***Evaluation Approach***
  - ☐ Review the fee data against vehicle type and model year of participants.
  - ☐ Review the participant survey feedback on equity and perform a trend analysis against fee, vehicle types, and model years.

2.3.3. #12E: FAIR INVOICE AND PAYMENT OPTIONS

- ***Outcome/Objective Category*** – Equity
- ***Hypothesis*** – All participants will have the same options for PPM payments.
- ***Performance Measure Indicators***
  - Qualitative: Participants opinion on PPM system being equitable based on payment options, and invoicing and payment process.
- ***Data/Information Owner & Responsibilities***
  - Account Manager - provides invoicing and payment process and options.
  - Participant Survey Manager – provides survey results on participants opinion on PPM system being equitable based on payment options.
- ***Data Required***
  - Qualitative: Invoice and payment process information.
  - Qualitative: Participant survey feedback on equity of the system by payment and invoicing options.
- ***Baseline Measures*** – Participant survey feedback for the first month of the Pilot.
- ***Evaluation Approach***
  - ☐ Review invoicing and payment process options for all participants.
  - ☐ Review the participant survey feedback on equity and perform a trend analysis against payment and invoicing options.

2.4. CATEGORY 4: SCALABILITY

2.4.1. #13S: SYSTEM SCALING COSTS

- ***Outcome/Objective Category*** – Scalability
- ***Hypothesis*** – The system cost per MRO will not increase (and should decrease) as the system scales and adds participants.
- ***Performance Measure Indicators***
  - Quantitative: Cost estimates of the system scaling up (economy of scale metrics).
- ***Data/Information Owner & Responsibilities***
  - Account Manager – provides cost estimates of the system scaling up (per MRO).
- ***Data Required***
  - Quantitative: Scaling cost estimate data (per MRO).
- ***Baseline Measures*** – There are no baseline measures.
- ***Evaluation Approach***
  - ☐ Review the scaling cost estimate data (per MRO).

2.4.2. #14S: MILEAGE RECORDING AND REPORTING METHODS

- ***Outcome/Objective Category*** – Scalability
- ***Hypothesis*** – The MROs will be accurate, robust, and adaptable to support system scalability.
- ***Performance Measure Indicators***
  - Quantitative: Number of MROs in use during the Pilot, number of recording and reporting errors from MROs, number of customer service tickets related to errors with MROs.
- ***Data/Information Owner & Responsibilities***
  - Account Manager – provides number of MROs in use during the Pilot, number of recording and reporting errors from MROs, number of customer service tickets related to errors with MROs.
- ***Data Required***
  - Quantitative: MRO count, reporting errors data, help desk tickets related to mileage recording and reporting problems.
- ***Baseline Measures*** – Recording and reporting error data and customer service tickets for the first month of the Pilot.
- ***Evaluation Approach***
  - ☐ Review number of MROs used during the Pilot.
  - ☐ Review the recording and reporting errors.
  - ☐ Review the customer service tickets related to MRO problems.

2.4.3. #15S: SCALABLE INVOICE AND PAYMENT PROCESS

- ***Outcome/Objective Category*** – Scalability
- ***Hypothesis*** – The invoicing and payment processes will be able to scale with increased participants and MROs.
- ***Performance Measure Indicators***
  - Qualitative: AM's invoicing and payment process and system scalability capabilities.
- ***Data/Information Owner & Responsibilities***
  - Account Manager - provides invoicing and payment process and system scalability capabilities.
- ***Data Required***
  - Qualitative: Invoice and payment process information, system scalability capabilities.
- ***Baseline Measures*** – There are no baseline measures.
- ***Evaluation Approach***
  - ☐ Review invoicing and payment processes for all participants.
  - ☐ Review system scalability capabilities with invoicing and payment.

2.5. CATEGORY 5: SUSTAINABILITY

2.5.1. #16SS: EQUIVALENT FEES

- ***Outcome/Objective Category*** –Sustainability
- ***Hypothesis*** – Mileage calculated by the different MROs will be approximate which will make the system have consistent data recording and be a sustainable system.
- ***Performance Measure Indicators***
  - Quantitative: Comparison of OBD II MRO data, cellular MRO data, and one-time manual odometer readings (photo by user) by the same vehicles.
- ***Data/Information Owner & Responsibilities***
  - Account Manager – provides comparison of OBD II MRO data, cellular MRO data, and one-time manual odometer readings (photo by user) by the same vehicles.

- ***Data Required***
    - Quantitative: OBD II MRO data, cellular MRO data, and one-time manual odometer readings with the same inputs (same vehicle).
- ***Baseline Measures*** – There are no baseline measures.
- ***Evaluation Approach***
    - ☐ Compare OBD II MRO data, cellular MRO data, and one-time manual odometer readings with the same inputs (same vehicles).

2.5.2. #17SS: PPM SYSTEM VS. FUEL TAX NET REVENUE

- ***Outcome/Objective Category*** – Sustainability
- ***Hypothesis*** – The PPM system will provide a more sustainable source of state transportation funding compared to the existing gas tax.
- ***Performance Measure Indicators***
    - Quantitative: Projected PPM system net revenue over 10 years, and projected fuel tax collection net revenue over 10 years.
- ***Data/Information Owner & Responsibilities***
    - Pilot Consultant Team – provides projected PPM system net revenue over 10 years, and projected fuel tax collection net revenue over 10 years.
- ***Data Required***
    - Quantitative: Projected PPM system revenue, and projected fuel tax collection revenue.
- ***Baseline Measures*** – Historic Oklahoma fuel tax collection revenue.
- ***Evaluation Approach***
    - ☐ Compare the PPM system net revenue to the fuel tax collection net revenue over 10 years.

3. CONCLUSION

The Oklahoma PPM Pilot EP defines performance measures and evaluation methods to assess the pilot outcomes. The EP results provide analysis on how well the designed PPM system performed against the goals and objectives of the program. The pilot consultant team will collect evaluation data in accordance with the EP and DMP. Data and information owners and their responsibilities ensure the availability of data for the analysis. At the core of the evaluation, each outcome/objective is associated to a hypothesis, performance measures indicators, and evaluation methods.

The EP will evaluate the pilot outcomes for the following:

- Acceptance
  - Education and Awareness
  - Ease of Use
  - Accuracy and Reliability
  - Fairness
  - Attrition
  - Customer Service
  - Value
- Privacy
  - Personally Identifiable Information
  - Response to Privacy Concerns
- Equity
  - Equitable Fee Structure across Demographics
  - Equitable Fee Structure across Vehicle Types and Model Years
  - Fair Invoice and Payment Options
- Scalability
  - System Scaling Costs
  - Mileage Recording and Reporting Methods
  - Scalable Invoice and Payment Process
- Sustainability
  - Equivalent Fees
  - PPM System vs. Fuel Tax Net Revenue

4. NEXT STEPS

The implementation of the Oklahoma PPM Pilot EP will commence prior to the pilot start date. For the pilot trend analysis, the pilot consultant team will collect baseline measures for the study and set up data collection processes. During the pilot operations, the consultant team will continue to collect data and information from performance measure owners to make evaluations. The bulk of the analysis will occur during the 6-month Pilot and the initial evaluation report will be submitted at the end of the Pilot with a final report in June 2024.

APPENDIX B: PILOT PLANNING

B.3. MONTHLY EVALUATION PLAN RESULTS

FAIR MILES OKLAHOMA PAY PER MILE PILOT MONTHLY EVALUATION REPORT

PILOT DESCRIPTION AND STATUS

The Fair Miles Oklahoma pay per mile (PPM) pilot is currently operating a road user charge (RUC) system for a 6 month period in Oklahoma with volunteer participants from the public and Oklahoma Department of Transportation (ODOT) fleet. This month's Evaluation Report covers high-level pilot activities and survey responses from pre-pilot (May 1st – 31st) to the end of the first month of pilot operation (June 1st – 30th). Pre-pilot surveys were distributed to participants at enrollment which started on May 15th and will continue through August 15th. Please note that some data and results shown in this report are interim in nature as certain surveys and data gathering efforts are ongoing. These results will be updated and finalized as the pilot progresses.

From initial registration in March through June 30th, the pilot had over 550 registrations which is the first step of the onboarding process. 217 (around 43%) of these initial registered pilot participants eventually completed the full enrollment necessary for Fair Miles Oklahoma account activations to participate in the pilot. Recruiting efforts will continue until August 11th to recruit newly interested participants and to follow-up with those who initially registered but did not complete account activation. The factors leading to failure to complete the full enrollment process appear to be combinations of participant and system factors, the latter of which is more direct control by the pilot team. The pilot team is working with the Account Manager to examine possible causes for participants not proceeding through all steps in the enrollment process. Some possible reasons include not receiving SMS messages to activate their account which could be affecting participant numbers. While the completion of enrollment has fallen short of original targets, the distribution of participants in most demographic categories has provided a statistically significant representation and therefore the impact of reduced registrations may be minimal to overall project goals.

PILOT METRICS

Table 1: Executive Summary Overall Pilot Metrics

Metric Name	Pre-Pilot (5/1-5/31)	June (6/1-6/30)
Number of Participants	77	217
Participation Rate	40 active vehicles (52%)	138 active vehicles (62%)
GPS Distribution	53 (70%) GPS-enabled vehicles	131 (60%) GPS-enabled vehicles
Mileage Reporting Options Distribution	OBD: 33 (43%) Manual Reporting: 19 (25%) App: 15 (19%) Telematic: 10 (13%)	OBD: 59 (27%) Manual Reporting: 79 (36%) App: 63 (29%) Telematic: 16 (7%)
Miles Driven	11,015 miles	69,516 miles
Number of Survey Results Collected	62	85

EVALUATION TRACKING

This section displays high level reporting outcomes for each evaluation category based on survey responses and system data. The enrollment survey is still ongoing and therefore, these values will continue to change until that survey is complete.

Acceptance
40% of participants value the fairness of a PPM System.
The average level of participant support for a PPM program is 3.0, based on a scale of 1 (lowest) to 5 (highest).

Privacy
The average participant opinion of trusting the PPM system with the privacy and security of their personal data and vehicle mileage data is 3.5 on a scale of 1 (No Trust) to 5 (Full Trust).

Equity
The average participant opinion of the PPM system being equitable is a 3.0 on a scale of 1 (lowest) to 5 (highest).

Scalability
A total of 44 participants did not receive the SMS text of the 106 invoices that were distributed.

Sustainability
$716.67 monthly PPM system fees were collected.

THIS REPORT IS USING PARTIAL DATA (5/1/2023-06/30/2023).
The partial data should NOT be used to make overall pilot (6/2023 – 12/2023) evaluations.

Date Submitted	Period Covered by Report
July 14th, 2023	May 1st – June 30th

FAIR MILES OKLAHOMA PAY PER MILE PILOT MONTHLY EVALUATION REPORT

PILOT DESCRIPTION AND STATUS

The Fair Miles Oklahoma pay per mile (PPM) pilot completed its 2nd month of operations in July. This month's Evaluation Report covers high-level pilot activities and survey responses from May 1st to July 31st, 2023. The survey data is from the pre-pilot survey (May 15th – August 15th) and Survey #2 (July 5th – August 4th). Please note that some data and results shown in this report are interim in nature as certain surveys and data gathering efforts are ongoing. These results will be updated and finalized as the pilot progresses. Also, for monthly reporting purposes, the data is extracted on the last day of each month to capture snapshots of each month's progress. Monthly data will change slightly once all mileage reporting options (MRO) data is processed. For example, monthly manual reporting mileage will change due to latency of when odometer photos are submitted and are processed.

As a result of continued recruiting efforts, total enrolled accounts increased to 309. Active recruitment will continue until August 11th to recruit more participants and to circle back with those who initially registered but did not complete account activation. The June issues in short message service (SMS) messages delivery to participants have been resolved and all participants are now receiving SMS messages. From May 31st – July 31st nine accounts were closed (MRO types: four app, three manual reporting, two on-board diagnostics (OBD), and one telematics). One of the closed accounts had two vehicles registered (one MRO type each). The attrition survey results are being processed.

PILOT METRICS

Table 1: Executive Summary Overall Pilot Metrics

Metric Name	Pre-Pilot (5/1-5/31)	June (6/1-6/30)	July (7/1-7/31)
Total Enrolled Accounts	77	217	309
Participation Rate	40 active vehicles (52%)	138 active vehicles (62%)	198 active vehicles (64%)
GPS Enabled MROs Distribution	53 (70%)	131 (60%)	176 (59%)
Mileage Reporting Options (MRO) Distribution	OBD: 33 (43%) Manual Reporting: 19 (25%) App: 15 (19%) Telematic: 10 (13%)	OBD: 59 (27%) Manual Reporting: 79 (37%) App: 63 (29%) Telematic: 16 (7%)	OBD: 66 (22%) Manual Reporting: 112 (38%) App: 100 (33%) Telematics: 16 (5%) Null: 6 (2%)
Miles Driven per Month	11,015 miles	69,516 miles	75,900 miles
Number of Survey Results Collected per Month	Pre-Pilot Survey: 62	Pre-Pilot Survey: 85	Pre-Pilot Survey: 56 Survey #2: 54

EVALUATION TRACKING

This section displays high level reporting outcomes for each evaluation category based on survey responses and system data. The enrollment survey is still ongoing and therefore, these values will continue to change until that survey is complete.

Acceptance — The average level of participant support for a PPM program is 3.3, based on a scale of 1 (lowest) to 5 (highest). The average opinion on pilot participation being easy is 1.9, based on a scale of 1 (very easy) to 5 (very difficult).

Privacy — The average participant opinion of trusting the PPM system with the privacy and security of their personal data and vehicle mileage data is 3.5 on a scale of 1 (No Trust) to 5 (Full Trust).

Equity — 36% of participants feel the PPM model is fairer than the current fuel tax model, 55% are not sure, and 9% do not think it is fairer.

Scalability — A total of 88 participants paid/acknowledged their invoice out of 106 invoices that were distributed.

Sustainability — $759 monthly PPM system fees were collected in July.
Nine accounts have been closed since the beginning of the pilot.

THIS REPORT IS USING PARTIAL DATA (5/1/2023-07/31/2023).
The partial data should NOT be used to make overall pilot (6/2023 – 12/2023) evaluations.

Date Submitted	Period Covered by Report
August 15th, 2023	May 1st – July 31st

FAIR MILES OKLAHOMA PAY PER MILE PILOT MONTHLY EVALUATION REPORT

PILOT DESCRIPTION AND STATUS

The Fair Miles Oklahoma pay per mile pilot completed its 3rd month of operations in August. This month's Evaluation Report covers high-level pilot activities and survey responses from May 1st to August 31st, 2023. The survey data is from the Pre-Pilot Survey/Survey #1 (May 15th – August 15th), Survey #2 (July 5th – August 4th), and Survey #3 (August 5th – September 4th). Data and results shown in this report are preliminary as survey and data gathering efforts are ongoing. These results will be updated and finalized as the pilot progresses.

During the month of August, total enrollment increased to 426 from the last active recruitment effort. Pilot enrollment closed on August 15th and five accounts were closed (MRO Types: three manual reporting, and two app). Survey #3 was released on August 5th and concluded on September 4th. The survey asked participants to draft a sample social media post about Fair Miles Oklahoma for family and friends. To date, the social media post responses are 71% positive, 19% neutral, and 10% negative. A sampling is shown below. The next Survey #4 about customer service runs from October 5th to November 4th.

Survey #3 Social Media Post Results Samples:

- *"Fair Miles Oklahoma is a great way for Oklahoma drivers to pay for the miles they are driving. In a world with ever changing fuel types, this could be the only funding moving forward for our roads and highways."*
- *"Fairmiles Oklahoma is exactly what the name of the program indicates – paying to help maintain Oklahoma's roads based on your usage. Which is more fair than paying a flat tax. With decreased gasoline usage, there is less gas tax income going to maintain our roads which causes even worse driving conditions which affects your tires, steering, suspension Who's got time and extra $$$ for that?"*
- *"Fair miles, The good: Easy billing and tracking your miles. The bad: I feel like the government is tracking me and I don't like paying taxes"*
- *"Tried to use my FairMiles app today but had to disable because the location services requirement to be on all the time drains my phone battery."*

PILOT METRICS

Table 1: Executive Summary Overall Pilot Metrics

Metric Name	Pre-Pilot (5/1-5/31)	June (6/1-6/30)	July (7/1-7/31)	August (8/1-8/31)
Total Enrolled Accounts	77	217	309	426
Total Participation Rate	40 active vehicles (52%)	138 active vehicles (62%)	198 active vehicles (64%)	304 active vehicles (71%)
GPS Enabled MROs Distribution	53 (70%)	131 (60%)	176 (59%)	237 (56%)
MRO Distribution *Updated from the July Emovis Report to fix an error.	On-Board Diagnostics (OBD): 33 (43%) Manual Reporting: 19 (25%) App: 15 (19%) Telematic: 10 (13%)	OBD: 59 (27%) Manual Reporting: 79 (37%) App: 63 (29%) Telematic: 16 (7%)	OBD: 75 (24%)* Manual Reporting: 119 (39%)* App: 99 (32%)* Telematics: 16 (5%)*	OBD: 96 (23%) Manual Reporting: 176 (41%) App: 135 (32%) Telematics: 19 (4%)
Miles Driven per Month **Updated with Manual Reporting Counts.	11,015 miles**	72,964 miles**	114,285 miles**	243,643 miles
Number of Survey Results Collected per Month	Pre-Pilot Survey: 62	Pre-Pilot Survey: 85 additional surveys	Pre-Pilot Survey: 56 additional surveys Survey #2: 54	Pre-Pilot Survey: 80 additional surveys Survey #2: 4 additional surveys Survey #3: 84

THIS REPORT IS USING PARTIAL DATA (5/1/2023-08/31/2023).
The partial data should NOT be used to make overall pilot (6/2023 – 12/2023) evaluations.

Date Submitted	Period Covered by Report
September 15th, 2023	May 1st – August 31st

FAIR MILES OKLAHOMA PAY PER MILE PILOT MONTHLY EVALUATION REPORT

PILOT DESCRIPTION AND STATUS

The Fair Miles Oklahoma pay per mile (ppm) pilot completed its 4th month of operations. In September, the Pilot included a subset survey for 114 registered individuals who did not complete the enrollment process. The subset survey shows 95% (21 of 22) of the participants who responded are facing challenges with the complexities of engaging with the Pilot. Most of the survey participants (82%, 18 of 22) thought they were enrolled and/or are having issues with their mileage reporting option (MRO). The Pilot team are investigating these matters. The next survey is about customer service and it runs from October 5th to November 4th.

During the month of September, 317 participants drove 229,160 miles and the system collected $2,291 mock ppm fees. Participants are receiving invoices and messages through the correct communication pathways. The Pilot account manager system accommodated 15 MRO change requests by participants. The large shift from app (10) to on-board diagnostics (OBD) (3) and manual reporting (7) may be correlated with the complex user experience of the app. From the start of the pilot to September 30th, 21 accounts have closed.

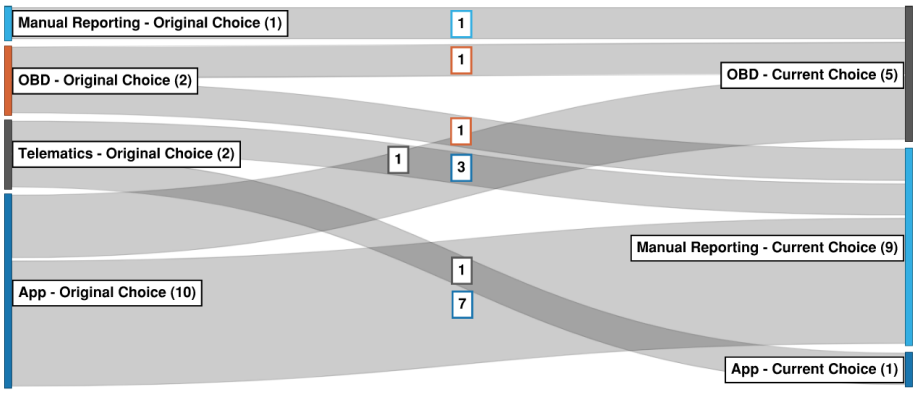


Figure 1: Fair Miles Accounts with MRO Changes (May 1st – September 30th)

PILOT METRICS

Table 1: Executive Summary Overall Pilot Metrics

Metric Name	Pre-Pilot (5/1-5/31)	June (6/1-6/30)	July (7/1-7/31)	August (8/1-8/31)	September (9/1-9/30)
Total Enrolled Accounts	77	217	309	426	421
Total Participation Rate	40 active vehicles (52%)	138 active vehicles (62%)	198 active vehicles (64%)	304 active vehicles (71%)	317 active vehicles (75%)
GPS Enabled MROs Distribution	53 (70%)	131 (60%)	176 (59%)	237 (56%)	230 (55%)
MRO Distribution *Updated from July Emovis Report to fix an error MR= Manual Reporting T= Telematics	OBD: 33 (43%) MR: 19 (25%) App: 15 (19%) T: 10 (13%)	OBD: 59 (27%) MR: 79 (37%) App: 63 (29%) T: 16 (7%)	OBD: 75 (24%)* MR: 119 (39%)* App: 99 (32%)* T: 16 (5%)*	OBD: 96 (23%) MR: 176 (41%) App: 135 (32%) T: 19 (4%)	OBD: 95 (23%) MR: 176 (42%) App: 131 (31%) T: 19 (4%)
Miles Driven per Month **Updated with Manual Reporting Counts	11,015 miles**	72,964 miles**	114,331 miles**	244,358 miles**	229,160 miles
Number of Survey Results Collected per Month ***additional results	Pre-Pilot: 62	Pre-Pilot: 85***	Pre-Pilot: 56*** S #2: 54	Pre-Pilot: 80*** S #2: 4*** Survey #3: 84	Incomplete Enrollment Survey: 22

THIS REPORT IS USING PARTIAL DATA (5/1/2023-09/30/2023).
The partial data should NOT be used to make overall pilot (6/2023 – 12/2023) evaluations.

Date Submitted	Period Covered by Report
October 13th, 2023	May 1st – September 30th

FAIR MILES OKLAHOMA PAY PER MILE PILOT MONTHLY EVALUATION REPORT

PILOT DESCRIPTION AND STATUS

The Fair Miles Oklahoma pay per mile (ppm) pilot completed its 5th month of operations. During the month of October, 316 participants drove 278,741 miles and the system collected $2,787 mock ppm fees. In October, the Pilot sent out the customer service survey (Survey #4) to participants and the survey ran from October 5th to November 4th. The survey received 134 responses. Of the 61 participants who used the customer service center (CSC), 43 or 70% found the customer service experience very positive or somewhat positive. Figure 1 shows the breakdown of customer service experience from Survey #4. Also, the majority (95%, 128 out of 134) of participants found information on the website to be trustworthy. The last day of the Pilot will be November 30th and accounts will be closed on December 1st. The CSC will remain open until December 29th.

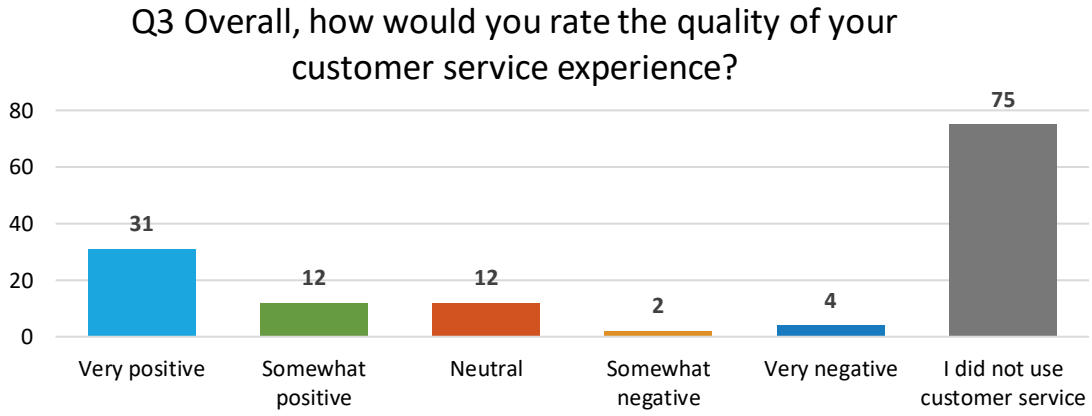


Figure 1: Customer Service Experience Survey Question Results

PILOT METRICS

Table 1: Executive Summary Overall Pilot Metrics

Metric Name	Pre-Pilot (5/1-5/31)	June (6/1-6/30)	July (7/1-7/31)	August (8/1-8/31)	September (9/1-9/30)	October (10/1-10/31)
Total Enrolled Accounts	Reference previous monthly report for data.	217	309	426	421	419
Total Participation Rate		138 active vehicles (62%)	198 active vehicles (64%)	304 active vehicles (71%)	317 active vehicles (75%)	316 active vehicles (75%)
GPS Enabled MROs Distribution		131 (60%)	176 (59%)	237 (56%)	230 (55%)	234 (56%)
MRO Distribution *Updated from July Emovis Report to fix an error MR= Manual Reporting T= Telematics		OBD: 59 (27%) MR: 79 (37%) App: 63 (29%) T: 16 (7%)	OBD: 75 (24%)* MR: 119 (39%)* App: 99 (32%)* T: 16 (5%)*	OBD: 96 (23%) MR: 176 (41%) App: 135 (32%) T: 19 (4%)	OBD: 95 (23%) MR: 176 (42%) App: 131 (31%) T: 19 (4%)	OBD: 96 (23%) MR: 173 (42%) App: 131 (31%) T: 19 (4%)
Miles Driven per Month **Updated with Manual Reporting Counts		72,964 miles**	114,331 miles**	244,358 miles**	229,316 miles**	278,741 miles
Number of Survey Results Collected per Month ***Additional Results		Pre-Pilot: 85***	Pre-Pilot: 56*** Survey #2: 54	Pre-Pilot: 80*** Survey #2: 4*** Survey #3: 84	Incomplete Enrollment Survey: 22	Incomplete Enrollment Survey: 1*** Survey #4: 134
CSC Calls Received	27	42	22	54	28	19

THIS REPORT IS USING PARTIAL DATA (5/1/2023-10/31/2023).
The partial data should NOT be used to make overall pilot (6/2023 – 12/2023) evaluations.

Date Submitted	Period Covered by Report
November 15th, 2023	May 1st – October 31st

FAIR MILES OKLAHOMA PAY PER MILE PILOT MONTHLY EVALUATION REPORT

PILOT DESCRIPTION AND STATUS

The Fair Miles Oklahoma pay per mile (PPM) pilot completed its 6th and final month of operations. The Pilot captured 1,158,575 total miles recorded (miles will increase as final odometer photos are being processed). During the month, 315 participants drove 207,790 miles and the system collected $2,078 mock PPM fees. The final participant survey (Survey #5) was live from November 5th to November 20th and received 94 responses. More than half of the respondents felt a PPM system is fairer than the current fuel tax, as seen below in Figure 1. There was a high level of support for PPM among respondents with the average level of support for the program being 3.7 on a scale of 1 (lowest) to 5 (highest). Also, most of the respondents felt their data is safe within the Pilot. The average participant trust level regarding the privacy and security of their personal data and vehicle mileage data is 3.6 on a scale of 1 (No Trust) to 5 (Full Trust).

In November, there was a mobile app mileage reporting issue that affected 30 accounts. These accounts showed double or triple the actual mileage driven. Once the anomaly was discovered, Emovis notified e-TOLL (the mobile app company) and received the correct mileage to manually update the counts in the Pilot system. The error was rectified quickly and there were no customer calls related to this issue.

The last day of the Pilot was November 30th and accounts closed on December 1st. The customer service center (CSC) will remain open until December 29th.

Figure 1: Fairness Survey Results

PILOT METRICS

Table 1: Executive Summary Overall Pilot Metrics

Metric Name	Pre-Pilot & June	July (7/1-7/31)	August (8/1-8/31)	September (9/1-9/30)	October (10/1-10/31)	November (11/1-11/30)
Total Enrolled Accounts	Reference previous monthly report for data.	309	426	421	419	416
Total Participation Rate		198 active vehicles (64%)	304 active vehicles (71%)	317 active vehicles (75%)	316 active vehicles (75%)	315 active vehicles (76%)
GPS Enabled Mileage Reporting Options (MROs) Distribution		176 (59%)	237 (56%)	230 (55%)	234 (56%)	232 (56%)
MRO Distribution *Updated from July Emovis Report to fix an error MR= Manual Reporting T= Telematics		OBD: 75 (24%)* MR: 119 (39%)* App: 99 (32%)* T: 16 (5%)*	OBD: 96 (23%) MR: 176 (41%) App: 135 (32%) T: 19 (4%)	OBD: 95 (23%) MR: 176 (42%) App: 131 (31%) T: 19 (4%)	OBD: 96 (23%) MR: 173 (42%) App: 131 (31%) T: 19 (4%)	OBD: 95 (23%) MR: 172 (41%) App: 131 (32%) T: 18 (4%)
Miles Driven per Month **Updated with Manual Reporting Counts		114,331 miles**	244,358 miles**	229,316 miles**	278,753 miles**	207,790 miles
Number of Survey Results Collected per Month ***Additional Results		Pre-Pilot: 56*** Survey #2: 54	Pre-Pilot: 80*** Survey #2: 4*** Survey #3: 84	Incomplete Enrollment Survey: 22	Incomplete Enrollment Survey: 1*** Survey #4: 134	Survey #5: 94
CSC Calls Received		22	54	28	19	26

THIS REPORT IS USING PARTIAL DATA (5/1/2023-11/30/2023).
The partial data should NOT be used to make overall pilot (6/2023 – 12/2023) evaluations.

Date Submitted	Period Covered by Report
December 15th, 2023	May 1st – November 30th

APPENDIX B: PILOT PLANNING

B.4 DATA MANAGEMENT PLAN

OKLAHOMA

PAY PER MILE PILOT
DATA MANAGEMENT PLAN

March 2023

fair miles OKLAHOMA

CONTENTS

ACRONYM LIST

Abbreviation	Term
AES	Advanced Encryption Standard
AM	Account Manager
ConOps	Concept of Operations
DMP	Data Management Plan
EP	Evaluation Plan
FHWA	Federal Highway Administration
FIPPS	Fair Information Practice Principles
IAM	Identity and Access Management
IMS	Intelligent Mechatronic Systems
ITS	Intelligent Transportation Systems
MFA	Multi Factor Authentication
MRO	Mileage Reporting Options
NIST	National Institute of Science and Technology
OBU	On-board Unit
ODOT	Oklahoma Department of Transportation
OTA	Oklahoma Turnpike Authority
PCI	Payment Card Industry
PII	Personally Identifiable Information
PM	Performance Measures
PPM	Pay Per Mile
RUC	Road User Charge
SPII	Sensitive Personally Identifiable Information
SSN	Social Security Number
STSFA	Surface Transportation System Funding Alternatives
VIN	Vehicle Identification Number
VMT	Vehicle Miles Traveled

1. SCOPE

This document provides the data management plan (DMP) for the pay per mile (PPM) pilot ("Pilot") that is part of a larger project in the state of Oklahoma to evaluate user-based alternative transportation funding mechanisms in the state. The project (Project) is led by the Oklahoma Department of Transportation (ODOT) with collaboration from the Oklahoma Turnpike Authority (OTA), Federal Highway Administration (FHWA) (as the administrator of a Surface Transportation System Funding Alternatives (STSFA) grant that is partially funding this project) and other stakeholders. In addition to the Pilot and Project, there is a larger PPM Program ("Program"), Fair Miles Oklahoma, in the state that includes all efforts related to PPM. This DMP is created solely for the data in the Pilot.

1.1 PILOT DESCRIPTION

The voluntary Pilot will operate a PPM system in Oklahoma for six months and include a minimum of 500 participants. ODOT and the project team determined the Pilot participant size to effectively represent the traveling Oklahoma public. All participants will be Oklahoma state residents using their own vehicles which must be registered in Oklahoma. Due to the potential for attrition of participants during the Pilot, it is expected that approximately 600 participant vehicles will be the initial goal for recruitment. It is assumed that one "participant" equals one registered vehicle; therefore, one individual (Oklahoma licensed driver) can enroll multiple vehicles, and this would count as multiple participants.

The account manager (Emovis) will deploy and operate the PPM system designed to ODOT's requirements. Emovis will also select the mileage reporting devices and methods to be offered to participants for the Oklahoma PPM Pilot. It is expected that multiple methods will be offered. Based on vehicle miles traveled (VMT) and location, the PPM fee will be calculated and invoiced to Pilot participants. For each participant, the location data will only be used for the purpose of differentiating in-state mileage from out-of-state mileage; only miles driven in Oklahoma will factor into a mock PPM charge and be invoiced to participants during the Pilot period. It should be noted that not all mileage reporting devices and methods support location-based identification of miles driven. The Pilot monetary transactions and enforcement of unpaid invoices will be simulation only - no payments will be collected (or tickets/enforcement issued) – although participants will have to acknowledge and act on the invoices they receive.

The Pilot will demonstrate and evaluate elements of a PPM system which may include:

- Enrollment/Disenrollment
- Mileage recording and reporting
- PPM fee calculation, invoicing and mock transaction/payment posting
- Mock enforcement
- Evaluation and reporting

1.1.1 PILOT VISION

Oklahoma is exploring PPM to provide a sustainable transportation revenue source for the state of Oklahoma that ensures a fair and equitable tax burden. The Pilot will allow flexibility and choice for a variety of stakeholders and user preferences and needs. The Project will evaluate user understanding and acceptance of PPM among multiple user groups, including but not limited to urban, rural, and Tribal Nation users by addressing the unique challenges within the distinctive populations.

1.1.2 PILOT GOALS AND OBJECTIVES

This PPM Pilot is being developed to meet the following Project goals and objectives:

Table 1. Oklahoma PPM Pilot Goals and Objectives

Goals and Objectives	
Goals	Effectively and accurately measure vehicle mileage, and evaluate methods to collect charges, audit collections, and enforce PPM compliance.
	Engage the public and stakeholders so a broad set of users' voices of Oklahoma's highway system are heard while developing a future Oklahoma program.
	Develop a fair and equitable solution to declining fuel tax revenues for urban, rural, and Tribal Nation drivers while also providing flexibility for a variety of users and vehicle types.
	Minimize PPM transaction costs by leveraging existing tolling back-office operations and capabilities and optimizing the interface between the tolling back office and third-party account managers.
Objectives	Test the design, acceptance, and implementation of user-based alternative revenue mechanisms.
	Improve the functionality of such user-based alternative revenue mechanisms.
	Conduct outreach to increase public awareness.
	Provide recommendations regarding adoption and implementation of user-based alternative revenue mechanisms.
	Minimize the administrative cost of any potential user-based alternative revenue mechanisms.

1.1.3 PILOT LOCATION

The Pilot will be implemented throughout the entire state. Oklahoma is centrally located and is bordered by the states of Kansas, Missouri, Arkansas, Texas, New Mexico, and Colorado. Interstates 35, 40, and 44 intersect in the center of the state, through Oklahoma City, providing wide-reaching connections for passenger and freight transport. Figure 1 below shows Oklahoma's geographic location and surrounding states.

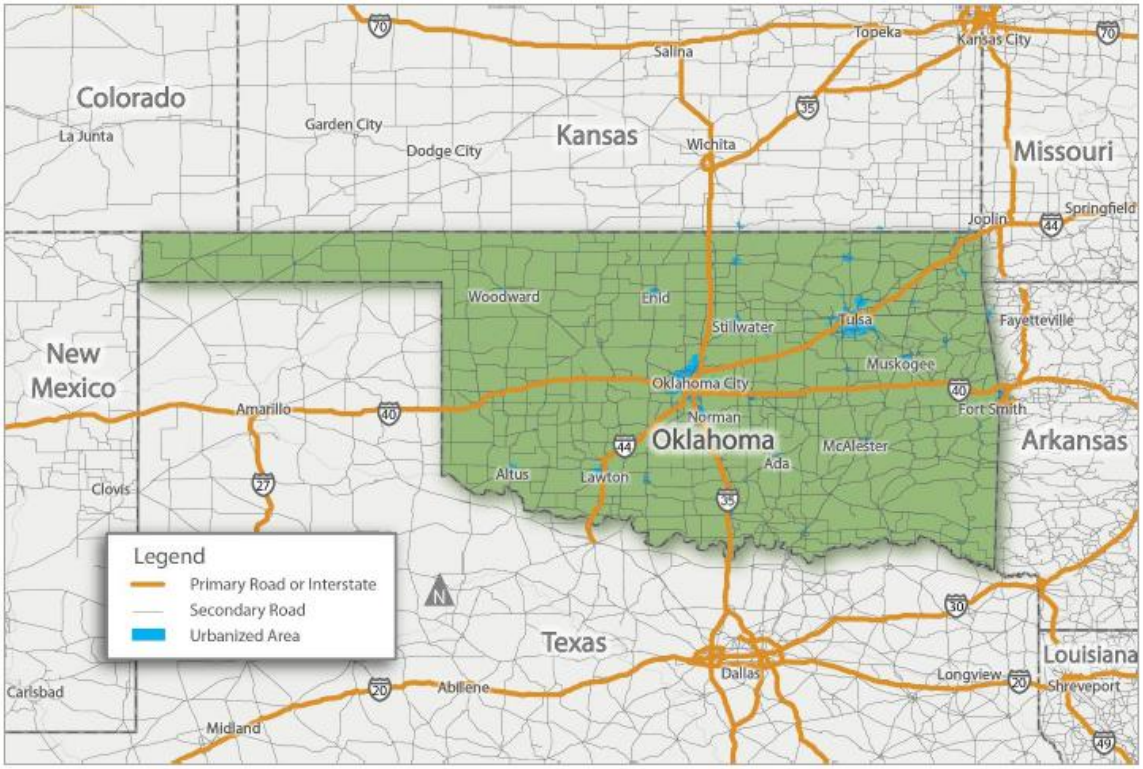


Figure 1. Oklahoma's Existing Transportation Network

1.1.4 PILOT SCHEDULE

Initial data collection will occur during the participant evaluation and onboarding process. This started in January 2023. The operational period of the Pilot will run for six months with an expected start date of July 2023. Based on project efficiencies during participant onboarding, the start date of the operational phase may occur earlier. An initial report to the Oklahoma state legislature which encompasses Pilot evaluation results is initially scheduled for delivery in December 2023 with a final report in June 2024.

1.2 FRAMEWORK AND METHODOLOGY

The DMP is based on the FHWA Systems Engineering for Intelligent Transportation Systems (ITS) process[1]. Figure 2 shows a project-tailored systems engineering "V" diagram, identifying the flow and relationships between the various elements (steps) in the systems engineering process, including this DMP. The DMP is developed from the implementation, operations, and evaluation needs of the project as defined in the Concept of Operations (ConOps) and Evaluation Plan (EP). Throughout the Pilot, the project team will utilize the DMP to ensure data is properly collected, managed, shared, and protected.

[1] Systems Engineering for ITS Handbook, https://ops.fhwa.dot.gov/publications/seitsguide/.

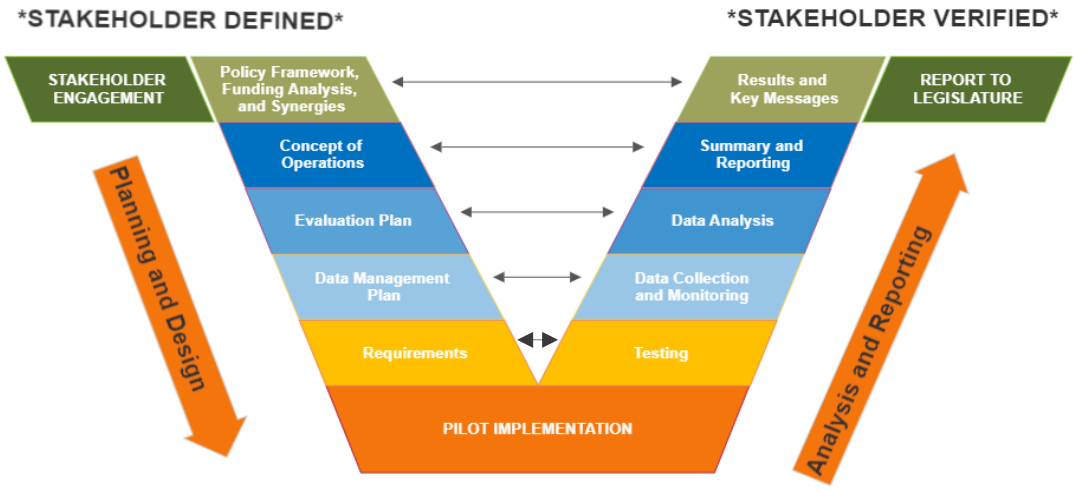


Figure 2. System Engineering "V" Diagram for Pilot Process

1.2.1 RELATIONSHIP TO OTHER DOCUMENTS

The DMP is built off other Pilot level documentation. In Figure 2, the systems engineering "V" diagram for the Pilot process displays where the DMP fits with other project documentation.

- **Concept of Operations:** The ConOps defines the foundation for the design and analysis of the PPM Pilot system. The document describes the stakeholders' roles and responsibilities, user needs, and high-level overview of the system. The ConOps describes the objectives of the Pilot and guides the creation of the performance measures.
- **Evaluation Plan:** The EP defines how the Pilot will be evaluated and the data necessary for that evaluation. This information is utilized to create the DMP.
- **Pilot Requirements:** The Pilot Requirements lay out the technical structure of the system and the needs of the system design to meet Pilot objectives. The ConOps user needs will be broken down further into Pilot requirements. During the requirements process development, the project team will note if any additional data is necessary to implement or evaluate the Pilot and the DMP will be updated as necessary.

1.2.2 REFERENCES

- Oklahoma House Bill 1712:
  - http://webserver1.lsb.state.ok.us/cf_pdf/2021-22%20ENR/hB/HB1712%20ENR.PDF
- State Road User Charge (RUC) Pilot Results:
  - https://www.ncsl.org/research/transportation/state-road-user-charge-pilot-results-and-legislative-action.aspx#
  - State RUC fact sheets

- Oklahoma Computer Data Privacy Act (including Oklahoma House Bill 1602 in 2021 and Oklahoma House Bill 2969 in 2022)
- Oklahoma HB 3447 Uniform Personal Data Protection Act
- Oklahoma DOT STSFA Grant Application
- State of Oklahoma Information Security Policy, Procedures and Guidelines
    - Information Security Policy, Procedures, Guidelines (oklahoma.gov)
- State of Oklahoma Open Records Act (51 O.S. §24A.1 through 24A.18)
    - https://www.oscn.net/applications/oscn/index.asp?level=1&ftdb=STOKST51#OklahomaOpenRecordsAct
- Oklahoma PPM Concept of Operations - Draft
- Oklahoma PPM Evaluation Plan – Draft
- Federal Project Open Data Metadata Schema v.1.1 (data.gov, 2014)
- Fair Information Practice Principles (FIPPs) (FTC, 1998)
- National Institute of Standards and Technology (NIST) Special Publication 800-53(r4) "Security and Privacy Controls for Federal Information Systems and Organizations" – Appendix J (NIST, 2013)

2. PRINCIPLES AND LEGAL PROTECTIONS WHEN COLLECTING DATA

To maintain focus on the importance of privacy and security, the Pilot team has aligned this plan with the following statement of principles that sets out ODOT's strong commitment to privacy and data security.

2.1 STATEMENT OF DATA STEWARDSHIP PRINCIPLES

To test the PPM system as a future and sustainable option for Oklahoma residents, the Pilot team must collect, process, and share some participant information. The Pilot team's utmost priority is to respect individual privacy and to protect personal information. The following data privacy and security principles will guide collection and handling of personal information during this Pilot.

2.1.1 DATA PRIVACY AND SECURITY PRINCIPLES

1. The Pilot will not collect, use, or share personally identifiable information[2] (PII) without the data subject's knowledge and informed consent. This notice and consent will be handled through privacy notices, terms of use, end user license agreements or any other appropriate policy or notice that can be used.
2. The Pilot will collect and use the minimum amount of PII necessary to satisfy the purposes of the Pilot.
3. The Pilot will use and share PII only for the specific purpose to which the data subject consented and will do so in ways that respect individuals' reasonable expectations.
4. The Pilot will take all reasonable measures to ensure the quality and validity of the information it uses.

[2] See Section 8.2 for personally identifiable information definitions.

5. The Pilot will retain PII only for so long as is necessary to accomplish the purposes for which it was collected or to accomplish other compatible purposes.
6. The Pilot will provide a mechanism for individuals to access, correct, and delete their PII.
7. The Pilot will take reasonable data security measures to protect PII.
8. The Pilot will be as transparent as possible about its collection, use, maintenance, and disclosure of personal information, without revealing security measures by following the privacy and security controls included in this document.
9. The Pilot will institute the processes necessary to hold itself accountable for compliance with these principles and with the program policies and procedure documents that implement them. This will be done by automating compliance measures, wherever possible, to establish accountability.
10. The Pilot will notify affected individuals of the existence of and its response to data security breaches.
11. The Pilot will not sell data.

3. DATA DESCRIPTION AND MANAGEMENT

The data to be collected for this Pilot falls into two main categories: data to implement the Pilot and data to evaluate the Pilot. Data is expected to be collected, managed and protected by the select members[3] of the project team including ODOT, Emovis, the communications team (Jones PR) and the evaluation team (HNTB). OTA will have access to view de-identified information.

Initial interest contact information will be collected for approximately 1,000 participants. Only 500-600 individuals will be asked to complete a more thorough application and enroll in the full Pilot. Data will be collected from the time of interest in the Pilot through the completion of the Pilot (approximately 12 months).

The Data Inventory, Appendix A, lists the datasets that will be collected and tracks relevant information on each dataset to ensure all project team members understand their role in collecting, managing, sharing and protecting the data. The Data Inventory table includes:

- Description of the data being collected
- Where the data will come from
- With whom the data will be shared
- How long will the data be collected
- If the data contains personally identifiable information (PII)
- If there are any special access policies that must be followed

3.1 COLLECTION

Data will be collected and processed by Jones PR and their vendors, Virtual Incentives and SurveyMonkey, for website communications, public interest forms, applications to participate, surveys and incentives. Emovis, a private third-party account manager and their vendors who provide and support different mileage reporting

[3] See Section 5.2 User Authentication

options, Insurance and Mobility Solutions (IMS), Smartcar and GeoToll, will collect registration information, PPM and location data. Appendix A: Data Inventory details the data collected and Appendix B: Terms and Policies gives examples of privacy policies and terms of use for the Pilot vendors.

Customer privacy and security are at the forefront of Oklahoma's PPM Pilot. Like many others, Oklahomans have expressed apprehensions with PPM because of the security and privacy implications of data and location sharing. In consideration of these concerns, the Pilot will provide multiple mileage reporting options (MRO). These options range from lower-tech methods such as manual reporting of VMT to high-tech, in-vehicle telematic devices.

The Pilot will be elective, and participants can select which MRO they wish to use. Personal user information, such as contact, vehicle, and data collection preferences, will be collected as part of the Pilot registration process. The amount and nature of information collected will depend on the reporting method selected by the participant. VMT and location data will also be collected for some reporting methods. Only the information required to create and process PPM transactions will be collected.

3.2 MANAGEMENT

Raw PPM data will be managed by Emovis who will provide the necessary and relevant de-identified information to create a dashboard for the project team to review progress on the Pilot. Depending on the participant's chosen MRO, data will either be collected or self-reported to Emovis by users. By using third-party vendors to collect, process and manage the data, the Project will minimize risk and avoid any constraints imposed by public agencies.

3.3 DATA DICTIONARY

A data dictionary provides machine-readable detailed information for a dataset and its columns. At the end of the Pilot, a dataset containing de-identified user data will be shared with ODOT. A data dictionary will be included with that dataset.

3.4 DATA WORKFLOW

Pilot data will be transmitted from users to Jones PR for application into the Pilot and to Emovis through on-board units (OBU), telematic devices, or self-reporting methods. De-identified information will be shared with the project team members for oversight and evaluation purposes. Figure 3 shows the flow of data for this Pilot.

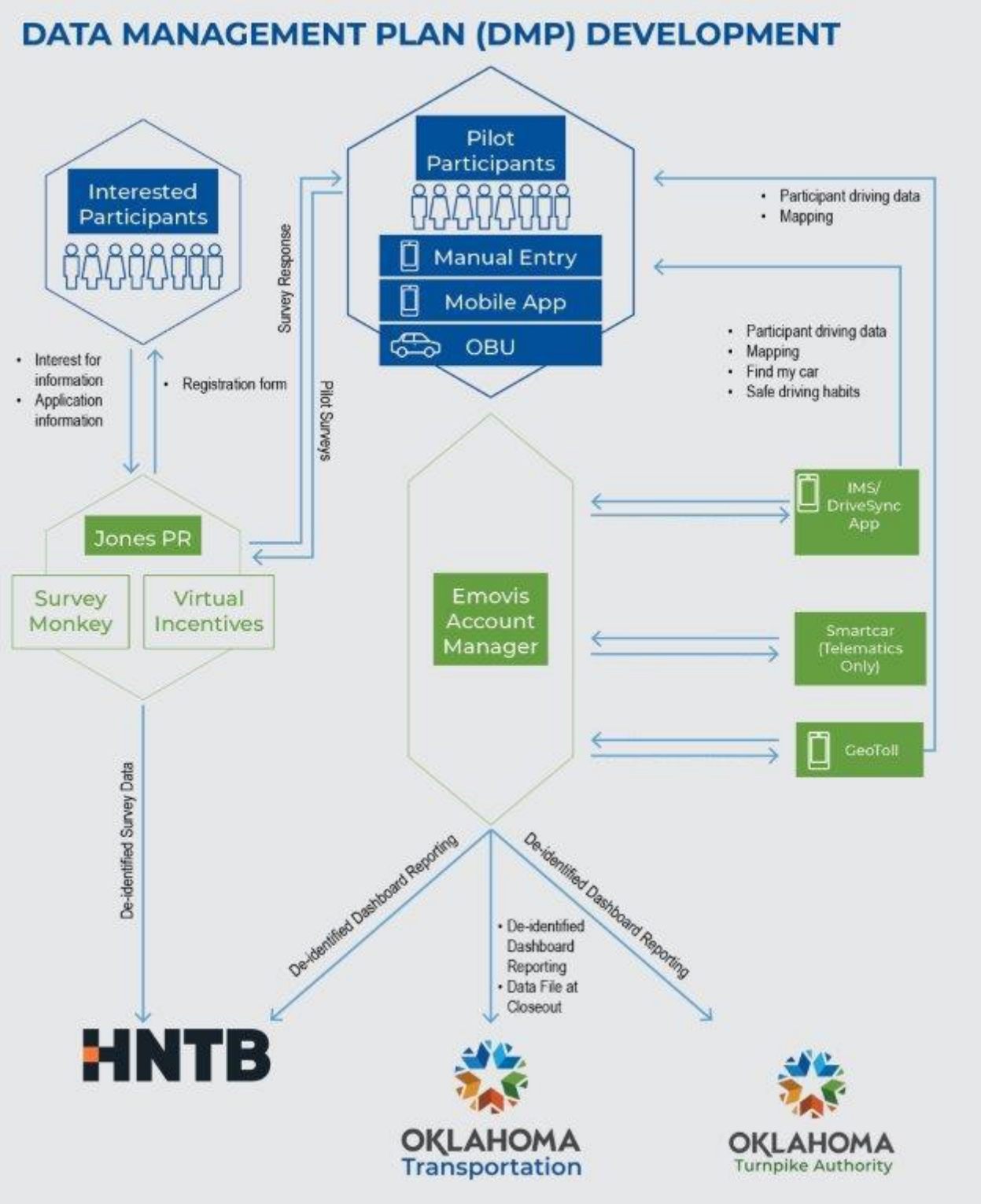


Figure 3: Pilot Data Flow

3.5 VALUE OF THE DATA

Emovis is focused on providing data that is valuable to the project team and Oklahoma residents to properly evaluate PPM options in the future. A project team workshop was conducted in February 2023 to align the data needed to evaluate the Pilot based on the data available for collection. Emphasis was also given on looking at what data would be valuable to share publicly to keep Oklahomans informed on the progress throughout the Pilot. A dashboard sharing the selected data will be created for the project team to monitor progress, create shareable reports and evaluate the Pilot.

Pilot data will also be shared with other states interested in understanding how a PPM program works, as well as with the FHWA for grant reporting purposes.

3.6 MANAGEMENT AND AUDIT CONTROLS

Data management and audit controls are important aspects of collecting data. Emovis and Jones PR are primarily responsible for the management of datasets that will be created during this Pilot. This responsibility will include deciding which internal management and audit controls are appropriate to meet ODOT's requirements which will be laid out by contract.

3.7 STORING DATA

All PPM system usage-related data provided by Participants will be stored by Emovis throughout the Pilot. Emovis uses Microsoft Azure storage products which provides cloud-based storage. Jones PR will be storing contact and Pilot application information from the interested participants on a protected computer with access controls.

4. STANDARDS USED

At the conclusion of the Pilot, Emovis will share a dataset with ODOT that is in a machine-readable format. A sample, non-comprehensive, list of machine-readable formats is provided in Table 1.

Table 1: Sample Formats for Data Sharing

Format	Description
JSON	JSON is a commonly used format for transporting data over the internet
XML	XML if a commonly used format for distributing data over the internet
CSV	A CSV file is a plain text file that contains a list of data

Metadata must be provided that complies with the metadata standards defined in Federal Project Open Data Metadata Schema v.1.1 (data.gov, 2014). This schema is a standard defined and used across the federal government and is extensible to include other necessary fields.

4.1 QUALITY CONTROL MEASURES

Emovis and Jones PR are responsible for their own quality controls which, when applicable, are expected to conform to relevant open data quality characteristics, such as currency, relevance, consistency, reliability, correctness, and completeness.

5. SHARING AND PROTECTING DATA

5.1 SHARING DATA

Privacy is of the utmost importance when it comes to collecting data from the public, especially when it must be shared to implement a Pilot. This Pilot is being executed to minimize the sharing of PII for Pilot implementation purposes only. Jones PR and Emovis will be sharing contact information of participants to get them registered for the Pilot, for survey purposes and to check in with Participants if they leave the Pilot before the end date. Emovis will be sharing de-deidentified data with the project team through a dashboard. Emovis and their vendors, IMS, Smartcar and GeoToll, will share PII internally as necessary to calculate the PPM for each participant. Jones PR and their vendors will share PII internally as necessary to facilitate participant surveys and incentives.

5.2 USER AUTHENTICATION

Emovis and Jones PR will set up user authentication and access privileges within their teams for data containing PII. Below are examples of user classes and dataset access.

- Unauthenticated User: access to all public datasets that do not contain PII.
- Authenticated User: access to all public datasets and datasets containing PII to which organization administrators have provided access through role-based access control.

5.3 CONCERNS WITH SHARING

While ODOT is transparent with government action, ODOT wants to ensure privacy is highly protected in this Pilot where resident data is collected. While the project team and contractors will have privacy practices in place, including following this DMP, there is always a risk of private person re-identification or fraudulent manipulation of the data. Pilot participants will receive disclosure of what data will be collected for this Pilot, for how long it will be stored, who will be collecting it and how it will be shared from the company collecting the data so they can assess the risk.

6. ARCHIVING AND PRESERVATION PLANS

6.1 ARCHIVING STRATEGY

Data collected for this Pilot will be deleted or archived per the State of Oklahoma, ODOT and OTA record disposition schedules.

It is expected for Emovis to share a final de-identified dataset at the completion of the Pilot and will then delete the data in their system. Jones PR will share de-identified data on the survey responses throughout and at the end of the Pilot. Jones PR will delete the contact information and survey responses at the end of the Pilot.

During the project, Emovis will use Microsoft Azure storage and will archive data as appropriate throughout the project.

6.2 BACKUP AND DISASTER RECOVERY

For backup and disaster recovery, the DMP is focused on the data being collected by Emovis.

Emovis will use Azure's zone-redundant storage which replicates the storage account synchronously across three Azure availability zones in the primary region. Each availability zone is a separate physical location with independent power, cooling, and networking. Geo-redundant storage (GRS) copies the data synchronously three times within a single physical location in the primary region using locally redundant storage (LRS). It then copies the data asynchronously to a single physical location in the secondary region. Within the secondary region, data is copied synchronously three times using LRS.

6.3 GENERAL DATA AND SYSTEM INCIDENT RESPONSE PLAN

The Pilot project team will follow the below Incident Response Plan for reporting a loss of data or system operations. For loss of data, the team will:

1. Notify ODOT, including the Chief Innovation Officer at the Oklahoma Transportation Cabinet Agencies, and the Pilot leadership of any suspected or actual loss of data within 48 hours of discovery. For loss of data containing PII, please see **10.2 PRIVACY AND SECURITY INCIDENT RESPONSE Plan**.
2. Assess scope of impact of the incident.
3. Create an incident response team that will investigate and document the incident, preserve evidence, eliminate any ongoing risks, and determine what, if any, violations have occurred.
4. The project team will review the documentation and work with the project team to develop appropriate actions to ensure data collected moving forward will be secure.

For system outage, the team will:

1. Notify ODOT, including the Chief Innovation Officer at the Oklahoma Transportation Cabinet Agencies, and the Pilot leadership of any system outage within 48 hours of discovery.
2. Assess scope of impact of the incident.
3. Create an incident response team that will investigate and document the incident, preserve evidence, eliminate any ongoing risks, and determine what, if any, violations have occurred.
4. Promptly report the impacts of the system outage to the project team.
5. The project team will review the documentation and work with the project team to develop appropriate actions.

All reports in this section shall be retained in the program records according to the requirements of the applicable ODOT records retention schedule.

6.4 PROTECTION FROM MODIFICATION OR DELETION

Emovis team members with administrative privileges in the cloud-based host web storage must be an authorized user and use multifactor authentication to protect the data from modification or deletion. The data storage will

have an integrated Identity and Access Management (IAM) system that utilizes single sign-on and multifactor authentication.

6.5 DATA RETENTION

At the conclusion of the Pilot program, only information required to evaluate the project and report results will be retained. PII will be deleted from all systems and data will be processed and aggregated in a manner that prevents individual Pilot program participants from being identified. Emovis, Jones PR, ODOT and OTA are well practiced on widely accepted data purging methods. The Pilot will leverage ODOT/OTA's existing well-established data purging methods to destroy all short-term or irrelevant PPM-related data.

7. RE-USE, REDISTRIBUTION, AND DERIVATIVE PRODUCTS POLICIES

7.1 PERMISSIONS TO USE DATA

Participants will give informed consent for data that will be collected by Jones PR and Emovis for this Pilot. The informed consent allows the Pilot team to use that data and create reports that help evaluate PPM options.

There will be no claims of intellectual property as they relate to the data collected for this Pilot. All de-identified data provided on this project will be free of any claim of ownership and may be re-used, redistributed and used for derivative purposes.

7.2 PUBLIC RECORDS

In Oklahoma, public records are governed by the Oklahoma Open Records Act (51 O.S. §24A.1 through 24A.18).

The Open Records Act defines a "record" as:

(1) *" 'Record' means all documents including, but not limited to, any book, paper, photograph, microfilm, data files created by or used with computer software, computer tape, disk, record, sound recording, film recording, video record or other material regardless of physical form or characteristic, created by, received by, under the authority of, or coming into the custody, control or possession of public officials, public bodies or their representatives in connection with the transaction of public business, the expenditure of public funds or the administering of public property."*

Exceptions exist to protect personally identifiable information of the Pilot Participants.

8. PERSONALLY IDENTIFIABLE INFORMATION

To maintain focus on the importance of privacy and security, the Pilot team has aligned this plan with the following statement of principles that sets out ODOT's strong commitment to privacy and data security. This section explains how ODOT will implement and achieve each of these principles and serve as a responsible data steward.

8.1 COMPLIANCE WITH APPLICABLE LAWS

ODOT will comply in all material respects with all applicable Federal and State laws as they relate to protecting personally identifiable information.

- The Privacy Act of 1974 (Title 5, United States Code, Sec. 552a)

- The Common Rule (Title 45, Code of Federal Regulations, Part 46, Federal Policy for the Protection of Human Subjects)
- State of Oklahoma Information Security Policy, Procedures and Guidelines (https://oklahoma.gov/content/dam/ok/en/omes/documents/InfoSecPPG.pdf)
- State of Oklahoma Open Records Act (51 O.S. §24A.1 through 24A.18)
- State of Oklahoma Public Bodies - Definition of Personally Identifiable Data (74 O.S. § 3106.4)

8.2 PERSONALLY IDENTIFIABLE INFORMATION DEFINITIONS

In order to protect data as it enters the Pilot, the following definitions will be used when reviewing each dataset for inclusion of PII.

- Non-PII is anything that is not or does not have PII. Encrypted data and data reasonably de-identified of PII and Sensitive Personally Identifiable Information (SPII) are Non-PII. Publicly available PII is Non-PII for the purposes of this policy.
- Publicly Available PII is PII that is lawfully available to the general public.
- PII is information that can be used to distinguish or trace an individual's identity alone or when combined with other personal or identifying information which is linked or linkable to a specific individual. Per Title 74 of the Oklahoma Statutes, Section 3106.4 (74 O.S. 3106.4), personally identifiable information is defined as "information which can identify an individual including, but not limited to, name, birth date, place of birth, mother's maiden name, biometric records, Social Security number, official state- or government-issued driver license or identification number, alien registration number, government passport number, employer or taxpayer identification number or any other information that is linked or linkable to an individual, such as medical, educational, financial or employment information."
- SPII is a subset of PII which, if lost, compromised, or disclosed without authorization, could result in substantial harm, embarrassment, inconvenience, or unfairness to an individual. Sensitive PII requires stricter handling guidelines because of the increased risk to an individual if the data are compromised. The following PII is always (de facto) sensitive, with or without any associated personal information:
  - Social security number (SSN)
  - Passport number
  - Driver's license number
  - Vehicle Identification Number (VIN)
  - Biometrics, such as finger or iris print
  - Financial account number such as credit card or bank account number.

- Health information, including medical history, mental or physical condition, or medical treatment or diagnosis.
- Medicare status
- Alien Registration Number

In addition to de facto Sensitive PII, some PII may be deemed sensitive based on context. Some PII becomes SPII when paired with another identifier, such as:

- Citizenship or immigration status
- Ethnic, religious, or sexual orientation or lifestyle information
- Last four digits of SSN
- Date of birth
- Criminal history
- Mother's birth name

The Pilot requires that participants enroll, which, by necessity, may include the collection of SPII. Protecting this data creates special considerations. SPII must be treated in accordance with Federal, State and Local laws.

The Pilot has established policies and procedures to ensure that PII and SPII can be protected in accordance with all applicable standards and documents. PII data is easily commingled with SPII in the context of the rapidly moving exchanges taking place in the movement of data. Because of this, the Pilot will treat all PII as SPII for the purpose of operational security controls. For access to data for use, PII and SPII will be treated separately wherein role-based access controls will be administered to provide appropriate differentiation.

8.3 PAYMENT CARD INFORMATION DEFINITION

Payment card information (PCI) includes any information related to payment cards which will not be collected during this Pilot as all financial transactions will be mock transactions. Participants will have to acknowledge invoices through a to be determined action.

Should PPM move beyond this Pilot and OTA is selected to implement a program, OTA is committed to maintaining PCI compliance. OTA is currently a Level 2 Merchant, processing ~2.6 million credit card transactions annually. OTA partners with 3rd party firms to annually audit and ensure OTA complies with the PCI Data Security Standard.

8.4 ADMINISTRATION AND LEGAL SAFEGUARDS

Emovis will develop administrative and legal safeguards to complement technical de-identification controls to protect data. Depending on the sensitivity and identifiability of the data, Emovis will employ mechanisms such as the following to set controls on Data Platform datasets:

- Contractual Provisions: Data is made available to qualified users under legally binding contractual terms (such as commitments not to attempt to re-identify individuals or link datasets, to update the information

periodically, or to use data in noncommercial and nondiscriminatory ways). Data may be backed up by audit requirements and penalties for noncompliance.

- Tiered Access Controls: This system allows data to be made available to various categories of users through different mechanisms.

9. PRIVACY CONTROLS

The privacy controls described herein are guided by the Fair Information Practice Principles (FIPPs) (Federal Trade Commission, 1998), and the National Institute of Standards and Technology (NIST) privacy-control catalog contained in Special Publication 800-53(r4) "Security and Privacy Controls for Federal Information Systems and Organizations" – Appendix J (NIST, 2013).

The NIST Privacy Control Catalog applies to most U.S. federal information systems. It provides agencies with a structured set of privacy controls, based on best practices, which help organizations comply with generally applicable, and organization-specific, privacy laws, and policies.

9.1 PRIVACY CONTROLS

The Pilot will apply the following controls to all the Pilot data throughout the program's entire data life cycle and will require all sub-awardees and contractors to do the same.

9.1.1 NOTICE AND CONSENT

Where possible, the Pilot will provide timely, clear, and specific notice of its collection, use, and sharing of PII. Through various methods, the Pilot will provide this notice, at the point of collection, to the individuals from whom the PII is being collected. Where a notice at the point of collection is not possible, the Pilot will provide clear and specific notice as soon as practicable.

The Pilot will provide notice and informed consent before collecting or using PII.

9.1.2 DATA MINIMIZATION

The Pilot will collect and use only categories of personal information that are required to fulfill the Pilot objectives. A common best practice that reduces the negative consequences of a breach involving PII is for organizations to limit their PII collection to the least amount needed to accomplish legitimate purposes. The Pilot team members will identify the minimum PII elements that are relevant and necessary to accomplish the legally authorized purpose of the Pilot requirements.

9.1.3 USE AND SHARING OF PERSONALLY IDENTIFIABLE INFORMATION

The Pilot will use and share PII only as needed for the purpose it provides via notice to the data subject, and to which the data subject consented. In addition, the Pilot will seek to ensure that its use and sharing of PII is consistent with data subjects' reasonable expectations.

Data will be shared only with authorized entities (as defined and determined by ODOT) in service of legitimate grant purposes and subject to limitations on use and assurances that the privacy and security of the information will be protected in accordance with this document.

Before the Pilot can use PII for purposes incompatible with those initially disclosed to individuals in privacy notices, it must provide the relevant data subjects with additional privacy notices and receive their informed consent to the use of their data for the new purpose.

The Pilot will not use, sell, or distribute PII collected through the program for any commercial marketing or advertising purposes. The Pilot will use PII only for authorized purposes.

In addition to the above-described purposes, the Pilot may use PII to the extent strictly required:

- To comply with applicable law or respond to valid legal process, including law enforcement or other government requests, but only to the extent strictly required to comply with such requests or processes.
- To protect the rights or interests of the Pilot, its partners, participants, customers, individuals, or others, to prevent the loss of life or serious injury.
- To enforce the Pilot agreements, terms, or notices.
- As otherwise described in its privacy notices.

9.1.4 DATA RETENTION

The Pilot will retain information only for so long as it needs to satisfy the purposes specified in its privacy notices, or for other compatible purposes, and in accordance with the applicable State of Oklahoma Public Records and records retention law and applicable contracts with third-party vendors. When PII is no longer necessary for the purposes specified in its privacy notices or for other compatible purposes, or at the conclusion of the program for which the Pilot collected the PII (whichever comes last), the Pilot will take reasonable steps to destroy, securely erase, or irreversibly de-identify all PII records in accordance with the ODOT record retention schedule to prevent loss, theft, misuse, unauthorized access, or re-identification.

Among other reasons, the Pilot may also retain information to the extent strictly required:

- To comply with applicable laws or respond to valid legal processes, including law enforcement or other government requests.
- To protect the rights or interests of the Pilot, its partners, participants, customers, individuals, or others, to prevent the loss of life or serious injury.
- To enforce the Pilot agreements, terms, or notices.
- As otherwise described in its privacy notices (i.e., privacy policy, end user license agreement or terms of use).

9.1.5 ACCESS, CORRECTION, AND DELETION

Where feasible, the Pilot will provide data subjects with a means to access, correct, and delete their PII that is collected and used. The Pilot privacy notice and consent forms will inform data subjects of these access, correction, and deletion opportunities, and of all other applicable rights under Oklahoma or federal law, as appropriate.

Emovis has an established process (help desk) for receiving and responding to questions, concerns, and complaints from participants in the Pilot in a reasonable, timely manner. The process will allow participants to:

- Request clarification on their data rights and the Pilot data uses and protections.
- Access and inspect their PII maintained in the Pilot information systems through a web-based account system.
- Correct, update, and seek review of inaccurate or outdated PII that they have provided.
- Request information about any logged disclosure of their personal information held under the Pilot systems as well as the date and recipient of that disclosure.
- Request to opt out or leave the program for which they have registered.
- Request deletion of existing PII and cease the collection of new PII after the participant has left the Pilot. Where feasible and where data retention is not required, the Pilot may delete existing PII and cease to collect new PII if a participant leaves the program.

9.1.6 TRANSPARENCY

The Pilot will be open about its information collection and use practices. Jones PR, Emovis, and their vendors will make information available about data collection and use practices to the program participants, residents and interested parties through a public-facing website (in FAQs, Privacy Policy or Terms of Service, whichever is appropriate). In addition, the Pilot is committed to providing individuals with timely, clear, and specific privacy notices.

9.1.7 ACCOUNTABILITY

Emovis and Jones PR will institute the processes necessary to hold itself accountable for compliance this document and the requirements of the State of Oklahoma's Information Security Policy, Procedures and Guidelines.[4]

While the Pilot does not currently foresee sharing PII with a third-party beyond the project team mentioned in this document, if it should happen, the Pilot would maintain a log of all PII disclosures to third-parties. The Pilot will, upon request, make available to data subjects the accounting of this disclosure to third-parties. The Pilot will maintain this record for the lifetime of the program, and it will include:

- The data, nature, purpose, and authority for each disclosure of records.
- The name and address of the person or agency to which the disclosure was made.

[4] Information Security Policy, Procedures, Guidelines (oklahoma.gov)

9.1.8 DE-IDENTIFICATION

According to NIST SP 800-122 (NIST, 2010), generalizing, suppressing, introducing noise into, swapping, or replacing the data with the average value can introduce anonymity. The Pilot differentiates de-identification and anonymization; anonymization implies re-identification is rendered impossible per NIST SP 800-188 (NIST, 2016). Perfect anonymization is difficult, if not impossible. However, effective de-identification techniques reduce the chance of inadvertent exposure of a person's data. The Pilot chooses to use de-identification as the appropriate approach to protect personal information.

De-identification will be applied to the Pilot data by de-identifying data with an appropriate technique relevant to the type of dataset and the authorized use. Emovis will de-identify the participant data before making the Pilot data available on a web-based dashboard.

9.1.9 DATA QUALITY

Emovis will ensure that information originated from the PPM system is valid, fresh, and complete for the purposes specified in its privacy notices.

9.1.10 THIRD-PARTIES

Emovis will establish privacy roles, responsibilities, and access requirements for IMS and Smartcar as team members that may interact with program PII. The Pilot team members will share this document to all third-party contracts where the third-party collects, maintains, possesses, accesses, uses, stores or destroys personal information collected through the Pilot Program. These entities will comply in all material respects with the security and privacy requirements of this document.

10. SECURITY CONTROLS

Data security is fundamental to ODOT, partner agencies, and public confidence in the Pilot and the overall success of the program's objectives. While no information system can guarantee that a breach will never happen, the Pilot team views data security as a foundational principle. It is dedicated to ensuring that all the Pilot data including PII will be stored only on technology infrastructure that employs security controls commensurate with the risk to the individual that would result from unauthorized access, disclosure, or use of the information.

The Pilot will:

- Protect all PII, electronic and hardcopy, in its custody from unauthorized disclosure, modification, or destruction so that the confidentiality, integrity, and availability of the information are preserved.
- Store PII only on technology infrastructure employing security controls commensurate with the risk to the individual that would result from unauthorized access, disclosure, or use of the information.
- Encrypt all PII in transit or at rest.
- Encrypt all PII transmitted or downloaded to mobile computers/devices.
- Ensure that all individuals having access to PII have received training in the policies and procedures that protect PII.

Security controls have been or are being defined by the scope of the Emovis and Jones PR contracts and are subject to compliance with the State of Oklahoma's Information Security Policy, Procedures and Guidelines.[5] Each team member will deliver the appropriate level of security controls based on the data they collect, manage, share and store. The following categories of security are being considered:

- Physical Control
- Authorization – ID and Role Based: Including the use of multi-factor authentication (MFA) being required to access PII.
- Security Operations - Both passive and active monitoring
- Data Loss Prevention
- Access Control – Remote Electronic Access to Devices and Systems
- Patching, Vulnerability Management, Antivirus and Malware-checking
- Training

The following sections outline security controls that have been defined.

10.1 ENCRYPTION

All data collected through the Pilot that contains PII will be encrypted while in transit and at rest. Because reasonably de-identified data has already had all PII removed by the application of a technical filter, it is the only form of data permitted to be stored or transmitted in clear text or as appropriate. 256-bit Advanced Encryption Standard (AES) encryption or better will be used for all other data types. Where reasonably possible, encryption in transit and at rest will be used for all types of data.

10.2 PRIVACY AND SECURITY INCIDENT RESPONSE PLAN

The Pilot project team will follow the below Privacy and Security Incident Response Plan for reporting a breach, suspected breach, or unauthorized exposure of any data. The team will:

1. Notify ODOT, including the Chief Innovation Officer at the Oklahoma Transportation Cabinet Agencies, and the Pilot leadership of any suspected or actual privacy breach, unauthorized exposure, or system compromise within 48 hours of discovery.
2. Assess scope of impact of the incident.
3. Create an incident response team that will investigate and document the incident, preserve evidence, eliminate any ongoing risks, and determine what, if any, violations have occurred.
4. Promptly report any suspected loss of control of data, system breach or failure by Fair Miles, its subgrantees or contractors that does not result in the unauthorized disclosure of PII. This could include suspected unauthorized collection, use, maintenance, dissemination, or deletion of PII.
5. Promptly report any unauthorized disclosure of PII by the Pilot, its subgrantees or contractors. This could include actual unauthorized collection, use, maintenance, dissemination, or deletion of PII.

[5] Information Security Policy, Procedures, Guidelines (oklahoma.gov)

a. Reportable to law enforcement

b. Any unauthorized disclosure of privacy data will also require notification of participants and any State of Oklahoma authority as determined in the legal compliance review by the ODOT.

All reports in this section shall be retained in the program records according to the requirements of the applicable ODOT records retention schedule.

APPENDIX A: DATA INVENTORY

Dataset	Description of Data (including data elements)	Data Type	Source of the Data	Responsible Party	Collection Approach	Sharing Method	Frequency	Expected Period of Data Collection	Will Data Collection Continue After Pilot?	Users of the data (who data is going to during transfer)	Value of the Data to the Users	Does it contain PII? (SPII/PHI/PCI)	Needed for Evaluation Plan?	Access policies for the data (special restrictions on usage/viewing)	Where is the data located after sharing/transfer?
Name of the Dataset	*A brief description of data contents*	*Data Format*	*Name of the Source organization/ agency that collected initial dataset*	*Name of the person responsible for maintaining data*	*How did they collect the data?*	*Data Transfer Method (API, SFTP, Manual Export, etc.,)*	*Frequency of data update*	*Timeline for collecting data*	*Will data collection continue after Period of Collection*	*Intended users of data*	*A brief description of expected value of data to the users*	*Does the data contain personal information (PII, SPII, PCI, and PHI)*	*Is data needed for evaluation*	*Any special restrictions on usage/viewing of the data*	*Where does data reside?*
Recruiting Interest Form	First name Last name Email address Pikepass holder (Y/N) Member of Tribal Nation (Y/N) Rural/Urban Annual household income over $27,750 (Y/N)	Excel spreadsheet	Interested Participant completes form online created by Jones PR	Jones PR	Website - www.fairmilesok.com	Secure email	Updated as interested parties submit information	1/2023 - 9/2023	No	Jones PR	Jones PR will vet these interested participants to decide whether to move them onto full registration.	Yes	Yes, to show how many were interested versus how many made it through the pilot. This data can be de-identified.	Jones PR should de-identify data before sharing it with the project team.	Jones PR. No sharing of exact dataset should be needed - only an aggregated set of numbers, etc. to move pilot into the participant application phase.

Dataset	Description of Data (including data elements)	Data Type	Source of the Data	Responsible Party	Collection Approach	Sharing Method	Frequency	Expected Period of Data Collection	Will Data Collection Continue After Pilot?	Users of the data (who data is going to during transfer)	Value of the Data to the Users	Does it contain PII? (SPII/PHI/PCI)	Needed for Evaluation Plan?	Access policies for the data (special restrictions on usage/viewing)	Where is the data located after sharing/transfer?
Participant Application - Consideration of Pilot Acceptance	First name Last name Billing address Email address Phone number Vehicle type (make/model) Vehicle year Vehicle license plate number VIN Preferred method of reporting OTA transponder (Y/N) Enrollment date Pikepass holder (Y/N) Member of Tribal Nation (Y/N) Rural/Urban Annual household income over $27,750 (Y/N)	Excel spreadsheet	Interested Participant completes form online created by Jones PR	Jones PR	Via email with link to website with registration form	Secure SharePoint site	Monthly	2/2023 - 9/2023	No	Emovis	Emovis needs this information to set up participant accounts.	Yes	Maybe. This data may not be needed if the pilot report data is sufficient. If anything is needed from this data, HNTB may need it in a de-identified form to assist with evaluation.	Access management will be set up by Emovis based on who needs to access to data.	Jones PR and Emovis will continue to hold the original data until the Pilot is over then will destroy.

Dataset	Description of Data (including data elements)	Data Type	Source of the Data	Responsible Party	Collection Approach	Sharing Method	Frequency	Expected Period of Data Collection	Will Data Collection Continue After Pilot?	Users of the data (who data is going to during transfer)	Value of the Data to the Users	Does it contain PII? (SPII/PHI/PCI)	Needed for Evaluation Plan?	Access policies for the data (special restrictions on usage/viewing)	Where is the data located after sharing/transfer?
Participant Registration Form from Emovis	First name Last name Billing address Email address Phone number Vehicle type (make/model) Vehicle year Vehicle license plate number VIN Preferred method of reporting OTA transponder (Y/N) Enrollment date Pikepass holder (Y/N) Member of Tribal Nation (Y/N) Rural/Urban Annual household income over $27,750 (Y/N)	Web form	Selected Participants complete form online created by Emovis	Emovis	Via email with link to website with registration form	De-identified data will be available in a dashboard	Daily	4/2023 - 9/2023	No	ODOT, OTA, HNTB, Jones PR	Emovis needs this information to set up participant accounts. ODOT needs this information for pilot management and evaluation purposes. OTA and HNTB need this information for evaluation purposes. Jones PR needs this information to respond to media inquiries.	Yes when collected but no, not when shared.	Yes	Access management will be set up by Emovis based on who needs to access to data internally. Externally, select team members will have access to the data through a de-identified dashboard.	Emovis will continue to hold the original data until the Pilot is over then will give a full data file to ODOT then destroy original data.
Manually entered mileage and data	Vehicle ID User ID Start time End time Distance traveled while in Oklahoma Distance traveled while in other states	Webform	Emovis	Emovis	Via phone app, website, participant portal	Manual entering	As needed	6/2023 - 1/2024	No	Emovis	Emovis needs this data to manage pilot and produce monthly invoices and reports.	Yes/Maybe	Not until it gets aggregated into the dashboard	Only Emovis Authorized Users	Emovis No sharing until report is created

Dataset	Description of Data (including data elements)	Data Type	Source of the Data	Responsible Party	Collection Approach	Sharing Method	Frequency	Expected Period of Data Collection	Will Data Collection Continue After Pilot?	Users of the data (who data is going to during transfer)	Value of the Data to the Users	Does it contain PII? (SPII/PHI/PCI)	Needed for Evaluation Plan?	Access policies for the data (special restrictions on usage/viewing)	Where is the data located after sharing/transfer?
OBU data (OBD2)	Vehicle ID User ID Start time End time Distance traveled while in Oklahoma Distance traveled while in other states Health status of device Maintenance on device Other telematics info	Spreadsheet	IMS	IMS	OBU device	Secure transmission	As needed	6/2023 - 1/2024	No	Emovis	Emovis needs this data to manage pilot and produce monthly invoices and reports.	Yes/Maybe	Not until it gets aggregated into the dashboard	Only Emovis Authorized Users	Emovis No sharing until report is created
Customer Complaint	Date of complaint Type of complaint Description of complaint Resolution of complaint	Excel spreadsheet	Emovis	Emovis	Via phone or website	Email	As needed or monthly	5/2023 - 1/2024	No	Emovis, ODOT, OTA, HNTB, Jones PR	Emovis needs this to rectify the complaint. ODOT for the same reason and for pilot evaluation. OTA and HNTB need this information for evaluation purposes. Jones PR needs this information to respond to media inquiries.	No	Yes	If no PII, no	Emovis and ODOT (Maybe OTA)
IMS Data	Participant ID Participant odometer photo	Excel spreadsheet	IMS	IMS	Via DriveSync app	Secure transmission	As needed	5/2023 - 1/2024	No	Emovis	Emovis needs this data to manage pilot and produce monthly invoices and reports.	Maybe	Not until it gets aggregated into the dashboard	Access management will be set up by Emovis based on who needs to access to data.	IMS and Emovis

Dataset	Description of Data (including data elements)	Data Type	Source of the Data	Responsible Party	Collection Approach	Sharing Method	Frequency	Expected Period of Data Collection	Will Data Collection Continue After Pilot?	Users of the data (who data is going to during transfer)	Value of the Data to the Users	Does it contain PII? (SPII/PHI/PCI)	Needed for Evaluation Plan?	Access policies for the data (special restrictions on usage/viewing)	Where is the data located after sharing/transfer?
Smartcar Data	Participant location Participant odometer number	Spreadsheet	Smartcar	Smartcar	In-vehicle telematics	Secure transmission	As needed	5/2023 - 1/2024	No	Emovis then IMS	Emovis needs this data to manage pilot and produce monthly invoices and reports.	Yes	Not until it gets aggregated into the dashboard	Yes, Emovis will be a pass through for the data and specifically not review the location data but will send it on to IMS and destroy it.	Smartcar and IMS
GeoToll Data	Participant location Participant odometer photo	Spreadsheet	GeoToll	GeoToll	Mobile App	Secure transmission	As needed	5/2023 - 1/2024	No	Emovis	Emovis needs this data to manage pilot and produce monthly invoices and reports.	Yes	Not until it gets aggregated into the dashboard	Access management will be set up by Emovis based on who needs to access the data.	GeoToll and Emovis

Dataset	Description of Data (including data elements)	Data Type	Source of the Data	Responsible Party	Collection Approach	Sharing Method	Frequency	Expected Period of Data Collection	Will Data Collection Continue After Pilot?	Users of the data (who data is going to during transfer)	Value of the Data to the Users	Does it contain PII? (SPII/PHI/PCI)	Needed for Evaluation Plan?	Access policies for the data (special restrictions on usage/viewing)	Where is the data located after sharing/transfer?
Dashboard	Account status Vehicles by device Vehicles by GPS Miles driven in-state Miles driven out of state Make of vehicle Model of vehicle Invoice amount Payments received since last invoice Past due amounts Number of Pikepass holders Number of members of a Tribal Nation Number of rural versus urban Annual household income over $27,750	Web accessed dashboard	Emovis	Emovis	Accumulated from other datasets	Dashboard	Daily	6/2023 - 1/2024	No	ODOT and maybe OTA	ODOT needs this to manage and evaluate the pilot. OTA and HNTB need this information for evaluation purposes. Jones PR needs this information to respond to media inquiries.	No	Yes	If no PII, no	ODOT, Jones PR, OTA and HNTB
Monthly Report - user info	User ID Vehicle ID Miles driven in-state Miles driven out of state Invoice amount Payments received since last invoice Past due amounts Totals of the above for month	Downloaded from web accessed dashboard	Emovis	Emovis	Accumulated from other datasets	Dashboard	Daily	6/2023 - 1/2024	No	ODOT and maybe OTA	ODOT needs this to manage and evaluate the pilot. OTA and HNTB need this information for evaluation purposes. Jones PR needs this information to respond to media inquiries.	No	Yes	If no PII, no	ODOT, Jones PR, OTA and HNTB

Dataset	Description of Data (including data elements)	Data Type	Source of the Data	Responsible Party	Collection Approach	Sharing Method	Frequency	Expected Period of Data Collection	Will Data Collection Continue After Pilot?	Users of the data (who data is going to during transfer)	Value of the Data to the Users	Does it contain PII? (SPII/PHI/PCI)	Needed for Evaluation Plan?	Access policies for the data (special restrictions on usage/viewing)	Where is the data located after sharing/transfer?
Monthly Report - Other Info	Health status of OBU Maintenance of OBU Devices	Downloaded from web accessed dashboard	Emovis	Emovis	Accumulated from other datasets	Dashboard	Daily	6/2023 - 1/2024	No	ODOT and maybe OTA	ODOT needs this to manage and evaluate the pilot. OTA and HNTB need this information for evaluation purposes. Jones PR needs this information to respond to media inquiries.	No	Yes	If no PII, no	ODOT, Jones PR, OTA and HNTB
Participant Surveys	TBD (up to five surveys)	Excel spreadsheet	Interested Participant completes survey online created by Jones PR and sent through SurveyMonkey	Jones PR	Via email link to SurveyMonkey or may have link to web survey on mock invoice	Via email	After each survey	2/2023 - 1/2024	No	ODOT	ODOT needs this to manage and evaluate the pilot. OTA and HNTB need this information for evaluation purposes. Jones PR needs this information to respond to media inquiries.	No	Yes	If no PII, no	ODOT, Jones PR, OTA and HNTB

Dataset	Description of Data (including data elements)	Data Type	Source of the Data	Responsible Party	Collection Approach	Sharing Method	Frequency	Expected Period of Data Collection	Will Data Collection Continue After Pilot?	Users of the data (who data is going to during transfer)	Value of the Data to the Users	Does it contain PII? (SPII/PHI/PCI)	Needed for Evaluation Plan?	Access policies for the data (special restrictions on usage/viewing)	Where is the data located after sharing/transfer?
End of Pilot Report	Account status Vehicles by device Vehicles by GPS Miles driven in-state Miles driven out of state Make of vehicle Model of vehicle Invoice amount Payments received since last invoice Past due amounts Number of Pikepass holders Number of members of a Tribal Nation Number of rural versus urban Annual household income over $27,750 1st three digits of zip code	Excel spreadsheet	Emovis	Emovis	Accumulated from other datasets	Via email	At the end of the pilot	5/2023 - 1/2024	No	ODOT	ODOT needs this for future RUC evaluation.	No	Yes	If no PII, no	ODOT

APPENDIX B: TERMS AND POLICIES

Jones PR and Emovis have contracted with vendors who have their own privacy policies, terms of use and other relevant documents that participants will be asked to consent to as they register for the Pilot. These are existing policies from each company's website.

Company	Privacy Policy	Terms	Other Relevant Documents
GeoToll	https://www.geotoll.com/privacy	https://www.geotoll.com/copy-of-privacy-policy	
IMS	https://ims.tech/privacy-policy/		
Smartcar	https://smartcar.com/privacy/	https://smartcar.com/terms/	
SurveyMonkey	https://www.surveymonkey.com/mp/legal/privacy/	https://www.surveymonkey.com/mp/legal/terms-of-use/	https://www.surveymonkey.com/mp/legal/
Virtual Incentives	https://www.virtualincentives.com/privacy-policy/	https://www.virtualincentives.com/terms-conditions/	https://www.virtualincentives.com/data-protection-notice-eu-relevance/

APPENDIX C: PILOT OPERATIONS

C.1 REQUIREMENTS TRACEABILITY MATRIX

Oklahoma DOT Fair Miles RUC Pilot

Requirements Traceability Matrix

No.	Requirements Description REVISED	Requirement Category	Requirement Mapping/ Deliverable	Requirement Mapping/ Section	Validation Method	Validation Status	Validation Approval Date	Validated by	Pilot Readiness Test Mapping for Validation	Pilot Readiness Test Status	Jira	Complete, Development, Testing, Passed Status	Test case # needs to beincluded in the final report Test Case	Notes
1	For those Tasks which are executed between ODOT and the AM, the AM shall ensure the following with respect to all data, Software, System(s), Device(s), and operations:	Operational	Operations Plan	OPS 4	Inspection				N/A	N/A	N/A		N/A	
2	a) Data-at-rest is protected,	Functional	System Design Document	Security	Inspection									
3	b) Data-in-transit is protected,	Functional	System Design Document	Security PRT							RUCS-1528	Complete	RUCS-1553	
4	c) Access permissions and authorizations are managed, incorporating the principles of least privilege and separation of duties,	Functional	System Design Document	Security	Inspection									
5	d) Identities and credentials are issued, managed, verified, revoked, and audited for authorized devices, users, and processes,	Operational	System Design Document	Security	N/A									
6	e) Physical access to assets is managed and protected,	Operational	System Design Document	Security	N/A									
7	f) Third-party stakeholders (e.g., suppliers, customers, partners) understand their roles and responsibilities,	Operational	System Design Document	Security	N/A									
8	g) Protections against data leaks are implemented,	Operational	System Design Document	Security	Inspection									
9	h) The development and testing environment(s) are separate from the production environment,	Operational	System Design Document	Environments	Inspection									
10	i) Response and recovery plans are tested, and	Operational	Operations Plan	OPS 4	Inspection				N/A	N/A	N/A		N/A	
11	j) Configuration change control processes are in place.	Operational	Project Management Plan	7. Configuration Management	Inspection				N/A	N/A	N/A		N/A	
12	The AM shall provide comprehensive project management Services related to its executed scope within the Project.	Operational	Project Management Plan	1. Instroduction to the PMP	Inspection				N/A	N/A	N/A		N/A	
13	The AM shall hold biweekly meetings with ODOT, OTA, and/or ODOT Designated Representatives throughout the duration of the Project.	Operational	Project Management Plan	8.3 Meetings	Inspection				N/A	N/A	N/A		N/A	
14	The biweekly meetings shall provide statuses on schedule, procurement, design or development, testing readiness, and operations.	Operational	Project Management Plan	8.3 Meetings	Inspection				N/A	N/A	N/A		N/A	
15	Biweekly meetings will be held remotely via a teleconferencing platform provided by the AM.	Operational	Project Management Plan	8.3 Meetings	Inspection				N/A	N/A	N/A		N/A	
16	The AM shall provide a secure location for the digital storage of its Project Documentation.	Operational	Project Management Plan	7.4 Document Control and Document Management System	Inspection									
17	The digital storage location shall be made accessible to both ODOT and OTA for the retrieval of Submittals.	Operational	Project Management Plan	7.4 Document Control and Document Management System	Inspection				N/A	N/A	N/A		N/A	
18	All versions of Documentation submitted as part of the Project shall be retained in the storage location for the duration of the Project.	Operational	Project Management Plan	7.4 Document Control and Document Management System	Inspection				N/A	N/A	N/A		N/A	
19	The AM shall manage all Documentation within the digital storage location and ensure version history remains intact throughout the duration of the Project.	Operational	Project Management Plan	7.4 Document Control and Document Management System	Inspection				N/A	N/A	N/A		N/A	
20	Formal submittals on the Project shall be made via upload of the applicable Documentation to the digital storage location and the delivery of a corresponding transmittal letter via e-mail to an ODOT Designated Representative.	Operational	Project Management Plan	7.4 Document Control and Document Management System	Inspection				N/A	N/A	N/A		N/A	
21	Documentation submitted by the AM will undergo a single round of review by ODOT, OTA, and/or other parties at the direction of ODOT.	Informational	Project Management Plan	7.7 Review and Update and Approval Process	Inspection				N/A	N/A	N/A		N/A	
22	Comment logs for each Submittal will be generated and returned to the AM within seven (7) Business Days.	Informational	Project Management Plan	7.7 Review and Update and Approval Process	Inspection				N/A	N/A	N/A		N/A	
23	The AM will collaborate with all necessary parties to resolve all comments and update the applicable Documentation in order to receive final Approval of each Submittal from ODOT.	Operational	Project Management Plan	7.7 Review and Update and Approval Process	Inspection				N/A	N/A	N/A		N/A	
24	If additional Tasks are executed after NTP is issued to the AM, the following documents shall be updated and resubmitted to ODOT for review and Approval:	Operational	Project Management Plan	7.7 Review and Update and Approval Process	Inspection				N/A	N/A	N/A		N/A	
25	a) Project Schedule,	Operational	Project Management Plan	7.7 Review and Update and Approval Process	Inspection				N/A	N/A	N/A		N/A	
26	b) Operations Plan, and	Operational	Project Management Plan	7.7 Review and Update and Approval Process	Inspection				N/A	N/A	N/A		N/A	
27	c) Pilot Readiness Test Plan (if the Pilot Readiness Test has not already been performed).	Operational	Project Management Plan	7.7 Review and Update and Approval Process	Inspection				N/A	N/A	N/A		N/A	
28	The AM will support the creation of the Project's Concept of Operations (ConOps) document by providing input and feedback as the document is being created.	Operational	Project Management Plan		Inspection				N/A	N/A	N/A		N/A	
29	At the time of NTP, the ConOps will be in early draft form. This will provide an opportunity for the AM to help guide the Project toward a successful outcome.	Informational	Project Management Plan		Inspection				N/A	N/A	N/A		N/A	
30	The AM shall create a Project Schedule and submit it to ODOT for review and Approval. The Project Schedule must include the following:	Operational	Project Schedule	Project Schedule	Inspection	Approved	3/21/2023	Russell H/ODOT	N/A	N/A	N/A		N/A	
31	a) Identification of all activities required for the completion of the AM's executed scope,	Operational	Project Schedule	Project Schedule	Inspection	Approved	3/22/2023	Russell H/ODOT	N/A	N/A	N/A		N/A	
32	b) A work breakdown structure (WBS) which provides identification numbers for each activity,	Operational	Project Schedule	Project Schedule	Inspection	Approved	3/23/2023	Russell H/ODOT	N/A	N/A	N/A		N/A	
33	c) Planned and actual durations for all identified activities,	Operational	Project Schedule	Project Schedule	Inspection	Approved	3/24/2023	Russell H/ODOT	N/A	N/A	N/A		N/A	
34	d) Logical relationships between activities, including identification of predecessor and successor activities, and	Operational	Project Schedule	Project Schedule	Inspection	Approved	3/25/2023	Russell H/ODOT	N/A	N/A	N/A		N/A	
35	e) A historical record of all baseline schedules for tracking of variances.	Operational	Project Schedule	Project Schedule	Inspection	Approved	3/26/2023	Russell H/ODOT	N/A	N/A	N/A		N/A	
36	The AM shall update and manage the Project Schedule for the duration of the Project.	Operational	Project Schedule	Project Schedule	Inspection	Approved	3/27/2023	Russell H/ODOT	N/A	N/A	N/A		N/A	

37	Original and updated versions of the schedule must be submitted to ODOT in Portable Document Format (PDF).	Operational	Project Schedule	Project Schedule	Inspection	Approved	3/28/2023	Russell H/ODOT	N/A	N/A	N/A	N/A
38	The AM shall create a Project Management Plan (PMP) and submit it to ODOT for review and Approval.	Operational	Project Management Plan		N/A				N/A	N/A	N/A	N/A
39	The PMP must include a chart showing the AM's Project organizational structure and detail how the AM will manage scope, schedule, risk, change, configurations, and communications within the Project.	Operational	Project Management Plan		N/A				N/A	N/A	N/A	N/A
40	The AM shall create a Requirements Traceability Matrix (RTM) and submit it to ODOT for review and Approval. The RTM will serve as the primary document for validating completion of scope for the Project. The RTM must translate the Statement of Work into numbered Requirements and include the following:	Operational	Requirements Traceability Matrix	Requirements Traceability Matrix	Inspection				N/A	N/A	N/A	N/A
41	a) Identification numbers for each Requirement,	Operational	Requirements Traceability Matrix	Requirements Traceability Matrix	Inspection				N/A	N/A	N/A	N/A
42	b) Categorization of Requirements (e.g., functional, operational, informational, etc.),	Operational	Requirements Traceability Matrix	Requirements Traceability Matrix	Inspection				N/A	N/A	N/A	N/A
43	c) Mapping for where each Requirement is addressed in its respective Deliverable,	Operational	Requirements Traceability Matrix	Requirements Traceability Matrix	Inspection				N/A	N/A	N/A	N/A
44	d) Validation method for each Requirement,	Operational	Requirements Traceability Matrix	Requirements Traceability Matrix	Inspection				N/A	N/A	N/A	N/A
45	e) Mapping for the PRT test case which will validate the Requirement, and	Operational	Requirements Traceability Matrix	Requirements Traceability Matrix					N/A	N/A	N/A	N/A
46	f) Notes fields for tracking context and changes related to each Requirement.	Operational	Requirements Traceability Matrix	Requirements Traceability Matrix	Inspection				N/A	N/A	N/A	N/A
47	The AM shall create a System Design Document (SDD) and submit it to ODOT for review and Approval. The SDD must include the following:	Operational	System Design Document	System Design Document								
48	a) Workflow diagrams and descriptions for all Systems and/or Devices involved in the mileage collection process,	Operational	System Design Document	System Overview / Infrastructure / Date Collection System Integration	N/A							
49	b) Technical specifications for all Devices which are involved in the mileage collection process,	Operational	System Design Document	Data Collection System Integration	N/A							
50	c) Details about the data structures and format of mileage data generated,	Operational	System Design Document		N/A							
51	d) Identification of types of data that will be collected by the System and the security protocols that will be used to protect it,	Operational	System Design Document	Security / Data Collected	Inspection							
52	e) Interface control document(s) for data that will be transmitted to OTA for aggregation and RUC charge calculation, or which would be used by the AM to perform those same functions,	Operational	System Design Document		N/A							
53	f) Bill of Materials identifying all Software, Hardware, and Devices that will be procured to support the executed Tasks, and	Operational	System Design Document	Materials Used	N/A							
54	g) Design for redundancy and system recovery to support business continuity in the event of failures with Systems and/or Devices.	Operational	System Design Document	Disaster Recovery	Inspection							
55	The AM shall create an Operations Plan and submit it to ODOT for review and Approval. The Operations Plan must include the following, as applicable by executed Task:	Operational	Operations Plan	Ops Plan	Inspection							
56	a) Task 1 – Project Management i. Approach to project management staffing and status reporting.	Operational	Operations Plan	OPS 1	Inspection							
57	b) Task 2 – Implementation i. General approach to staffing based on executed Tasks, ii. Approach for supporting business continuity, and iii. Processes for recovering System(s), Devices(s), and/or operations in response to catastrophic failures.	Operational	Operations Plan	OPS 2 - 4	Inspection				N/A	N/A	N/A	N/A
58	c) Task 3 – Participant Onboarding i. Processes for initial communication and onboarding of Participants and ii. Processes and approach for distributing onboarding materials to Participants.	Operational	Operations Plan	OPS 5	Inspection				N/A	N/A	N/A	N/A
59	d) Task 4 – Mileage Collection i. Operational methods that will be used to supplement System- and Device-based mileage collection approaches, ii. Workflows and processes for the integration of Systems, Devices, and operations to capture mileage data, and iii. Approach to tracking and reporting health and status of Systems and/or Devices.	Operational	Operations Plan	OPS 8	Inspection				N/A	N/A	N/A	N/A
60	e) Task 5 – Participant Account Management i. Processes for receiving and aggregating low level mileage data, ii. Processes for calculating charges based on miles traveled, iii. Approach to simulation of payment processing and managing the simulated funds, iv. Processes for generating invoices and statements for Participants and sample layouts of the invoices and statements that will be used, v. Processes for collecting simulated payments from Participants and reconciling those payments against account balances as well as submission and reconciliation of simulated revenues with ODOT, vi. Approach to simulated aging of accounts into and past collection status, vii. Approach to staffing a Particpant support team, viii. Equipment that will be put into production to support communication with Particpants, ix. Methods, processes, and workflows related to the intake, processing, and resolution of inbound communications from Participants, x. Methods and processes for disseminating information to Participants pertaining to changes or updates in the Project, and xi. Methods and processes for protecting and maintaining the security of Participant personally identifiable information (PII), contact information, vehicle information, and all other Participant-related data.	Operational	Operations Plan	OPS 11 -21	Inspection				N/A	N/A	N/A	N/A
61	f) Task 6 – Reporting i. Processes and intervals for the delivery of all Participant, mileage, and revenue reports to ODOT and ii. Layout and format for each Participant, mileage, revenue, and reconciliation report.	Operational	Operations Plan	OPS 23 -24	Inspection				N/A	N/A	N/A	N/A
62	g) Task 7 – Data Analysis i. Approach to staffing to support ad hoc data analyses.	Operational	Operations Plan	OPS 25	Inspection				N/A	N/A	N/A	N/A
63	The AM shall create a Pilot Readiness Test (PRT) Plan and submit it to ODOT for review and Approval. The PRT Plan must include the following, as applicable by executed Task:	Operational	Pilot Readiness Test Plan		N/A							

64	a) Task 2 – Implementation i. Approach to staffing for testing and pilot operations, ii. Identification of roles and responsibilities, iii. Approach for how the test will validate the executed scope of the System and Devices, iv. Methods and templates for documenting performance while executing the PRT, v. Unique identifiers for test scripts and/or test cases, vi. Test scripts and/or test cases which include steps and expected outcomes, and vii. Process for classifying and handling defects.	Operational	Pilot Readiness Test Plan		Inspection						
65	b) Task 4 – Mileage Collection i. Tests which validate the ability of the AM's Systems and Devices to capture mileage data, ii. Tests which validate that the AM's Systems and Devices identify which miles were driven within the state of Oklahoma and which were not, and iii. Tests which validate the generation of mileage data reports for consumption by either OTA or the AM, depending on executed scope.	Operational	Pilot Readiness Test Plan		Inspection						
66	c) Task 5 – Participant Account Management i. Tests which validate the aggregation of low-level mileage data, ii. Tests which validate the calculation of RUC charges based on mileage and the assignment of those charges to the correct Participant, iii. Tests which validate that the equipment deployed by the AM can support all required forms of communication with Participants, iv. Tests which validate the accurate generation of Participant statements and invoices, and v. Tests which validate the simulated payment process.	Operational	Pilot Readiness Test Plan		Inspection						
67	d) Task 6 – Reporting i. Tests which validate the creation of all Participant, mileage, revenue, and reconciliation reports.	Operational	Pilot Readiness Test Plan		Inspection						
68	The AM shall provide all necessary staff, equipment, and facilities required to conduct the PRT in accordance with the PRT Test Plan.	Operational	Pilot Readiness Test Plan		Inspection						
69	The PRT will be coordinated and prepared such that ODOT, OTA, and other ODOT Designated Representatives may witness the test either remotely or in person.	Operational	Pilot Readiness Test Plan		Inspection						
70	The AM shall manage all aspects of the PRT, including the execution of test scripts and test cases, the documentation of test results, tracking of discrepancies and defects, and status reporting.	Operational	Pilot Readiness Test Plan		Inspection						
71	The occurrence of any significant defects may warrant the repeat of a single test, multiple tests, or the entire PRT. ODOT will provide the final determination for the level of retesting required after resolution of defects.	Operational	Pilot Readiness Test Plan		Inspection						
72	At the conclusion of the PRT, the AM will generate a test report and submit it to ODOT for review and Approval.	Operational	Pilot Readiness Test Plan		Inspection						
73	The test report must include the outcome of all test cases, a list of defects, identification of defect dispositions, plans for defect resolution, and an estimated schedule for resolution completion.	Operational	Pilot Readiness Test Plan		Inspection						
74	Upon receipt of ODOT Approval for the test report, the PRT will be considered Approved.	Operational	Pilot Readiness Test Plan		Inspection						
75	The AM shall procure and furnish all necessary equipment, Hardware, Software, Devices, sensors, electronics, supporting information technology (IT) infrastructure, and facilities required to successfully complete the executed scope of each Task.	Operational	Operations Plan	OPS 7	Inspection	N/A	N/A	N/A		N/A	
76	The AM shall include spare parts in its procurement in quantities which ensure that the Project will not experience interruptions when an item fails.	Operational	Operations Plan	OPS 7	Inspection	N/A	N/A	N/A		N/A	
77	The AM shall collaborate with ODOT and its Designated Representatives, including public relations team members, to create and receive ODOT Approval for all correspondence related to the onboarding of Participants into the Project. Onboarding correspondence must include the following:	Operational	Operations Plan	OPS 5, 6, 20. 23	Inspection	N/A	N/A	N/A		N/A	
78	a) Summary information about the Project and its goals,	Operational	Operations Plan	OPS 5	Inspection	N/A	N/A	N/A		N/A	
79	b) Simplified descriptions of the AM's Systems and Devices and clear identification of what types of data will be collected,	Operational	Operations Plan	OPS 5	Inspection	N/A	N/A	N/A		N/A	
80	c) Instructions or processes for Participants to follow related to any of the AM's Systems or Devices,	Operational	Operations Plan	OPS 5	Inspection	N/A	N/A	N/A		N/A	
81	d) Descriptions of the types of communication Participants will receive from the AM, ODOT, OTA, and other parties throughout the duration of the Project, and	Operational	Operations Plan	OPS 5	Inspection	N/A	N/A	N/A		N/A	
82	e) Explanation of the simulated payment process and reassurance that no actual payments will occur.	Operational	Operations Plan	OPS 5	Inspection	N/A	N/A	N/A		N/A	
83	The AM will interface directly with Participants to collect, manage, and protect contact information that will be used for Participant communication throughout the Project.	Operational	System Design Document		Inspection						
84	Contact information that will be sourced includes name, mailing address, telephone number, and e-mail address. No payment information will be collected from Participants.	Functional	Operations Plan	OPS 6	Inspection	N/A	N/A	N/A		N/A	
85	AM will collect information from each Participant pertaining to the Participant Vehicle(s) that they will be using. This information must include the vehicle's year, make, model, license plate number, type, VIN and, if ~~equipped,~~ they are currently a OTA customer ~~transponder number~~ including cohert information (income, tribal and non-tribal, rural or urban).	Operational	System Design Document		PRT			RUCS-1529	Passed	RUCS-1411, RUCS-1412, RUCS-1510, RUCS-1449, RUCS-1410,RUCS-1418, RUCS-1459	
86	Collected contact information must be stored and transmitted securely.	Functional	System Design Document		PRT			RUCS-1530	Passed		
87	Only Authorized Users shall have access to Participant information.	Functional	System Design Document		N/A						
88	**~~Depending on the final division of scope,~~** the AM shall keep ~~transfer collected account data either to OTA as~~ internally for use in Participant account management.	Operational	System Design Document		Inspection						
89	The AM must adhere to ODOT's Data Management Plan (DMP), which will be created for the Project by ODOT. Feedback will be sought from the AM during the creation of the DMP to ensure a successful approach.	Operational	System Design Document		Inspection						
90	The AM will generate and distribute all onboarding materials which are required for Participants to participate in the Project, including any correspondence and Devices.	Operational	Operations Plan	OPS 6	Inspection	N/A	N/A	N/A		N/A	
91	All onboarding materials and related correspondence must be Approved by ODOT prior to being distributed to Participants.	Operational	Operations Plan	OPS 6	Inspection	N/A	N/A	N/A		N/A	
92	The AM shall collect mileage data for all Participant Vehicles in the Project.	Operational	Operations Plan	OPS 11		N/A	N/A	N/A		N/A	
93	Mileage data collected shall include the quantity of miles driven and, only for the purpose of determining whether the miles driven were from within the state of Oklahoma, location of the Participant Vehicle when the miles were driven.	Functional	System Design Document	Telematics Device Compatibility	PRT			RUCS-1531			
94	The AM shall use a combination of Systems, Devices, and/or operational methods for the collection of mileage data which have previously been proven to be successful in previous RUC projects or operations to include OBD II device with GPS, telematics, manual reporting via participant initiated photo, and mobile device via Bluetooth (Note: Mobile app has never been utilized on a previous RUC project).	Operational	Operations Plan	OPS 11	Inspection	N/A	N/A	N/A		N/A	

95	Only Authorized Users (AM and Joni Seymour) shall have access to Participant information.	Functional	System Design Document	Account Management System	PRT			RUCS-1532			
96	The AM will maintain mileage data internally throughout the operational period of the Project.	Operational	System Design Document		N/A						
97	**~~Depending on the final division of scope,~~** the AM shall keep ~~transfer mileage data either to OTA or~~ internally for its own use in calculation of charges.	Operational	System Design Document		N/A						
98	Data shall be structured such that it can be attributed to a specific Participant Vehicle and Participant and aggregated into charges.	Functional	System Design Document	Invoices	N/A						
99	The AM will transfer data in a format Approved by OTA. There is a strong preference for an automated data transfer method to prevent manual reconciliation efforts.	Functional	System Design Document		Inspection						
100	The AM shall monitor the use of mileage capture Devices and identify issues related to Device performance or incorrect usage of Devices by Participants.	Operational	Operations Plan	OPS 10	Inspection	N/A	N/A	N/A		N/A	
101	The AM shall communicate directly and remotely with Participants to inform them of any issues with mileage capture Devices or their use and collaborate with the Participants to resolve such issues.	Operational	Operations Plan	OPS 10	Inspection	N/A	N/A	N/A		N/A	
102	The AM shall manage and be responsible for the cost of the receipt, inspection, disposition, and disposal of failed mileage capture Devices provided by Participants.	Operational	Operations Plan	OPS 22	Inspection	N/A	N/A	N/A		N/A	
103	When mileage capture Devices are determined to have been failed through remote troubleshooting with Participants or other means, the AM shall distribute replacement Devices within five (5) Business Days.	Operational	Operations Plan	OPS 7	Inspection	N/A	N/A	N/A		N/A	
104	When disposing of failed mileage capture Devices, the AM shall ensure that data has been cleared from the Device and no Participant contact or mileage information can be extracted.	Operational	Operations Plan	OPS 22	Inspection	N/A	N/A	N/A		N/A	
105	The AM's means of disposal must be Approved by ODOT.	Operational	Operations Plan	OPS 22	Inspection	N/A	N/A	N/A		N/A	
106	The AM shall create new RUC accounts through the use of the data generated by the Services described in Section 3.2.	Operational	System Design Document								
107	Created accounts shall be used by the AM the record and manage RUC charges generated by each Participant.	Operational	Operations Plan	OPS 12	Inspection	N/A	N/A	N/A		N/A	
108	The AM shall provide calculation of RUC charges for each Participant for each billing period.	Functional	System Design Document	Invoices	PRT			RUCS-1533	Complete	https://emovis.atlassian.net/browse/RUCS-1567	
109	RUC charges shall be broken out by Participant Vehicle on each RUC account.	Functional	System Design Document	Invoices	N/A						
110	RUC charges along with the supporting calculations shall be provided to each Participant for the billing period defined in this scope.	Functional	System Design Document	Invoices	N/A			RUCS-1533			
111	The AM shall source fuel efficiency data for each Participant's Participant Vehicle based on year, make, and model, and use this in combination with current ~~gasoline tax costs~~ Oklahoma gas tax ($0.20/gal) to calculate comparative charges for Participants. These calculations must show what the gasoline tax would have been compared to the RUC charge for the same amount of mileage driven.	Functional	System Design Document	Mileage Processing	PRT			RUCS-1534			
112	Combined with 112	Functional	System Design Document	Mileage Processing							
113	The AM shall provide support for Participant inquiries through various channels that include phone, e-mail, and mail (for MRO shipping and returns only).	Operational	Operations Plan	OPS 19	Inspection	N/A	N/A	N/A		N/A	
114	Participant support will consist of clarifying RUC account charges, resolving disputes, updating account information, updating Participant Vehicle information, updating contact information, creating new accounts, troubleshooting Device issues, and answering general RUC questions.	Operational	Operations Plan	OPS 19	Inspection	N/A	N/A	N/A		N/A	
115	The AM shall provide dedicated staff in all required contact channels to satisfactorily handle inbound RUC volume from 8am-5pm CT.	Operational	Operations Plan	OPS 2	Inspection	N/A	N/A	N/A		N/A	
116	The AM shall send various account notifications to Participants through the System. Account notifications are defined in this section.	Operational	Operations Plan	OPS 8, 10, 11,12,13,16	Inspection	N/A	N/A	N/A		N/A	
117	The AM shall send invoices to RUC accounts that are post-pay and have an outstanding balance.	Operational	Operations Plan	OPS 14	Inspection	N/A	N/A	N/A		N/A	
118	The RUC invoice shall include the registered Participant Vehicle owner's name, address, and vehicle information.	Functional	System Design Document	Invoices				RUCS-1534			
119	The RUC invoice will be e-mailed in a timely manner to the address provided by the Participant and will include RUC charges for the designated billing period for the designated vehicle.	Operational	Operations Plan	OPS 14	PRT	N/A	N/A	RUCS-1535		N/A	
120	The AM shall send RUC account statements via ~~the preferred method~~ e-mail~~/regular mail~~ to each Participant.	Operational	Operations Plan	Ops 13	Inspection						
121	The RUC account statements shall include the Participant's account number, name, address and Participant Vehicle information.	Functional	System Design Document	Invoices	PRT			RUCS-1534			
122	The statement shall also include the RUC charges incurred for the billing period along, the supporting charge calculations, and the comparative charge for the same mileage based on the current gasoline tax and the fuel efficiency of the Participant's vehicle.	Functional	System Design Document	Invoices	N/A			RUCS-1534			
123	The AM shall send all account correspondence necessary to participants via email to ensure RUC accounts are kept up to date with all pertinent account information.	Operational	Operations Plan	OPS 5,6,13.18,19,20	PRT	N/A	N/A	RUCS-1536		N/A	
124	This may include simulated payment updates, e-mail address updates, RUC plan updates, or general account information. The correspondence shall be sent via e-mail ~~the preferred method indicated by the customer~~.	Functional	System Design Document	Correspondences				RUCS-1534			
125	The AM shall send RUC Project updates to all RUC participants via e-mail ~~the participants preferred method~~. Updates may include marketing updates, RUC Project changes, or any other general RUC Project communications.	Operational	Operations Plan	OPS 20	Inspection	N/A	N/A	RUCS-1534		N/A	
126	The AM shall provide a simulated payment processing system to replicate how payments would be processed in a RUC environment. This would be an invoice acknowledgement on the users account via the web. User will acknowledge invoice and select payment method from dropdown menu.	Functional	System Design Document	Simulated Financials	PRT			RUCS-1537			
127	The payment processing simulation shall include post-travel invoice accounts and enrolled Participant accounts.	Functional	System Design Document	??				RUCS-1537			
128	The payment processing simulation should include pre-pay and post-pay scenarios.	Functional	System Design Document	Prepay Post-pay				RUCS-1537			
129	The payment scenario shall also include credit card, check, money order, cash, and other payments options such as Venmo, PayPal, and Apple Pay. Are we not only doing CC? (Simulated Financials)	Functional	System Design Document	Payments	PRT			RUCS-1538			

130	No Participants should be required to enter any actual payment information or be charged for any simulated RUC charges generated as part of the Project.	Functional	System Design Document	Simulated Financials				RUCS-1529		
131	The AM shall provide a simulated enforcement process for RUC accounts that are not paid and age past initial invoice/statement with no payment. A non-acknowledgement of invoice would identify vehicles simulate enforcement.	Functional	System Design Document	Enforcement	PRT			RUCS-1529		
132	This enforcement simulation should provide the ability to flag and report on RUC accounts that age into collections and into a next step such as registration hold.	Functional	System Design Document	Enforcement				RUCS-1529		
133	The AM shall provide reporting Services to ODOT, OTA, and ODOT Designated Representatives throughout the duration of the Project.	Operational	Operations Plan	OPS 23,24		N/A	N/A	N/A	N/A	
134	Reports may be generated programmatically or manually, but the format of each report must be submitted to ODOT for Approval. ~~There is a strong preference for the use of~~ Programmitical, manual, and dashboards which provide near real time data in visual formats such as graphs, charts, and tables are required.	Operational	System Design Document							
	a. Separate reporting will be generated to provide information to the general public	Functional	System Design Document							
135	Reports must be delivered by the AM in accordance with the intervals and formats described in the System Design Document and Operations Plan.	Operational	Operations Plan	OPS 23,24	Inspection	N/A	N/A	N/A	N/A	
136	The AM shall provide detailed and summary reports which provide the following Participant and mileage related information:	Operational	Operations Plan	OPS 23,24	Inspection	N/A	N/A	N/A	N/A	
137	a) List, count, and statuses of Participants and Participant Vehicles, including details about Participant types (manual, non-GPS, GPS, mobile) and ~~OTA transponder status~~,	Functional	System Design Document	Reporting	PRT			RUCS-1540		
138	b) Total mileage driven as part of the Project, broken down by in-state and out-of-state locations,	Functional	System Design Document	Reporting	PRT			RUCS-1541		
139	c) Mileage driven by individual vehicles and the corresponding Participant,	Functional	System Design Document	Reporting	PRT			RUCS-1542		
140	d) Status and health of System and Devices in fleet, and	Functional	System Design Document	Reporting	PRT			RUCS-1543		
141	e) Participant participation rates, including accounts which are no longer incurring mileage.	Functional	System Design Document	Reporting	PRT			RUCS-1544		
142	The AM shall provide detailed and summary reports which provide the following revenue related information:	Operational	Operations Plan	OPS 23,24	Inspection	N/A	N/A	N/A	N/A	
143	a) Lists of all charges, broken down by Participant account and Participant Vehicle, and with the corresponding mileage,	Functional	System Design Document	Reporting	PRT			RUCS-1545		
144	b) Charges generated per billing period with corresponding simulated revenue received,	Functional	System Design Document	Reporting				RUCS-1546		
145	c) Aging data related to invoices that have not received a simulated payment, and	Functional	System Design Document	Reporting	PRT			RUCS-1547		
146	d) Comparison reports which compare the RUC revenue with the amount of revenue that would have been generated by the gasoline tax for the Participant population in each billing period.	Functional	System Design Document	Reporting	PRT			RUCS-1548		
147	The AM shall provide detailed and summary reports which provide the following reconciliation related information:	Operational	Operations Plan	OPS 23,24	Inspection	N/A	N/A	N/A	N/A	
148	a) Data transmitted versus data received,	Functional	System Design Document	??						
149	b) Counts of mileage transmitted versus mileage received, and	Functional	System Design Document	Reporting						
150	c) Counts of Participants and Participant Vehicles for which data was transferred versus data received.	Functional	System Design Document							
151	The AM shall provide staff and Systems as necessary to support ad hoc reporting requests from ODOT, OTA, or other ODOT Designated Representatives. Requested ad hoc reports must be generated and returned to the requesting party within five (5) Business Days.	Operational	Operations Plan	OPS 25	Inspection	N/A	N/A	N/A	N/A	
152	Prior to the conclusion of the Operational Period, and as requested by ODOT or its Designated Representatives, the AM will provide ad hoc analyses pertaining to mileage, revenue, Participants, Participant Vehicles, or reconciliation.	Operational	Operations Plan	OPS 25	Inspection	N/A	N/A	N/A	N/A	
153	The AM shall provide all staff and Systems required to conduct any requested analyses.	Operational	Operations Plan	OPS 25	Inspection	N/A	N/A	N/A	N/A	
154	Due to the short period of time between conclusion of the operations period and delivery of the report the state legislature, requested analyses must be returned to the requesting party within three (3) Business Days.	Operational	Operations Plan	OPS 25	Inspection	N/A	N/A	N/A	N/A	
155	There is a strong preference for the use of user customizable dashboards which present visuals such as graphs, charts, and tables, as opposed to relying only on manual analysis.	Functional	System Design Document	Reporting						

APPENDIX C: PILOT OPERATIONS

C.2 PROBLEM ISSUES AND RESOLUTION MATRIX

OKLAHOMA

fair miles OKLAHOMA

No.	Identified Date	Issue Identified	MRO Type	Issue Cause	Resolution	Issue Status	Resolved Date
1	6/27/2023	Participant had a VIN report over 2000 miles on one day	App	participant crossed in to a different time zone at the exact refresh time causing a glitch	GeoToll and Emovis coordinated to unpost double miles posted	Closed	6/27/28
2	6/27/2023	Monthly milage posting showed 82,249 miles	Manual	participant uploaded 3 odometer photos in the same day	IMS corrected the issue	Closed	6/27/28
3	7/5/2023	User is using Emovis website password to log in to GeoToll.	App	GeoToll app allowing user to reset password without an initial account setup.	GeoToll updated system to give error message stating they have to create account first with verification code	Closed	7/5/23
4	7/11/2023	Participants not receiving Invoice ready SMS notification but receiving Invoice Missing SMS and Invoice Acknowledged SMS with survey link	All SMS users	Twilio Platform flagged as messages going against carrier guidelines.	Twilio had a system wide security update on 7/5 causing all accounts need to register our accounts. Most of the issues is with ATT. Emovis sent emails to those who are getting missing invoice acknowledgement (40 participants) separate email notifying them their invoice is ready with instructions Switched everyone to email until resolved	Open	
5	7/11/2023	GeoToll - Missing mileage for some participants 21	App	Possible issues: *Bluetooth not staying connected *User also may not have additional driver download the app and driving the vehicle GeoToll states that because notifications are not set from them, this prevents them from issuing instructions on how to resolve Bluetooth disconnection issue integration of notification was issue due to both Emovis and Geotoll not having enough time to implement incorporating notification for Emovis tracking/reporting purposes	CSRs have called participants indicating these issues, participants who we were able to contact state they have not disconnected. Can determine at true up what the % leakage is. 8/17 - Push notifications within the app need to be able to be trackable for Emovis Alert should only be pre change, not post change GeoToll will provide list of alerts for Emovis to review and approve 8/30 - GeoToll still needs to provide	Closed	10/25/23
6	7/18/2023	Participantstates that his Fair Miles App will not load. It will try to load and then will disappear. He was going to delete it but was warned it would delete data. He wasn't sure if this would erase any critical data, so he has yet to delete it. Before this malfunction, he said it was working. Then he received a message stating his GPS was not working and said it had all disconnected somehow.	App	He was not connected to Bluetooth	Manuel called Mick, they reinstalled the Geotoll app, and it is working as intended. Manny told him to call us directly if any new issues arise. 8/17 - GeoToll to provide login for their dashboard to provide to CSRs to be able to view what is going on with mobile app usage 8/30 - currently unable to give Emovis CSR limited access. Need to follow up to see how they can give limited access.	Closed	8/15/23
7	7/20/2023	Participant stated he is having issues with activation code. He states he was going to be out of town and our CSC rep scheduled a call with him on 7/27	OBD	OBD Device issue	We do not schedule calls at a later date to resolve issues and have no notes indicating anything scheduled for the 27th. This customer was provided a new activation code 7/7/23. The code worked because we captured his odometer photo on 7/10/23. At this point we have no mileage reporting from his device and have sent him 3 notifications (7/12, 7/15, 7/20) with instructions to install his plug-in device. We will call this customer and see if they need assistance with the device installation. Called Mr.Cummings and told him I called to assist him and answer any questions he might have. But his reply was you guys called yesterday, and I told you to call me next week. I asked for a specific date next week, and he said the 27th. I told him we would be calling him then on the 27th as he requested, and if anything comes up before that date, to give us a call or send us an email. He was contacted, IMS had to reconfigure his device. He began reporting mileage on 8/4/23.	Closed	8/7/23
8	7/21/2023	Participants reporting that they have to connect to mobile app EACH time they get in to the car and manually connect their app. Also that the app cuts Bluetooth connection and does not connect back unless they go back in to the app to reconnect.	App	GeoToll investigating issue, but continues to state that it is due to partipant behavior User had not any activity for extended period of time.	8/17 - Token was extended to 30 days so this does not happen again	Closed	7/24/23
9	7/22/2023	Website not allowing new enrollment	N/A	IMS had DDoS attack: looked random, saturating the external connection. IMS health checks did not pick this up earlier since internal connectivity was not impacted.	Action for IMS: Change the health checks to use an external endpoint on this environment.	Closed	7/22/23
10	7/22/2023	CSC phone lines not working	N/A	It appears something must have failed with the holiday lambda prompt, when calling the number we received a lambda error then immediate disconnect once I had script bypass the flow for both error and success the issue was resolved	This will need to be set back and tested	Closed	7/22/23
11	7/24/2023	Participant report issues with mobile app log on, in addition to others	App	GeoToll install had token expire every 4 days so if someone did not drive their vehicle, it would require	Geotoll had already extended token expiration after the first batch of enrollees. This impacted initial users	Closed	7/28/23

12	8/9/2023	The participant tried to validate the invite code using the email and the phone number but an error message comes up (Image below). The code was re-sent to her via RUC AMS OK but the same error comes up. The second image shows the correspondence that appears in the account; this was the code sent to her. Then The participant was able to validate but now an error comes up on the odometer photo step. In step 3 that section appears grayed out. The participant indicated to have re-installed the app and the app does not respond and she is still getting the same grayed area on step 3.	App	The Odometer capture button seems to be greyed out because she is not connecting to her car play. Can you have this consumer connect to car play - in which case the Capture Odometer option would become active. Once so, she would be able to capture the odometer image and submit to us - and then she would be good to start driving.	CSRs were made aware that Vehicles with car play have two Bluetooth built in. Such user could connect to their car play Or to the BLE on their vehicles. Whichever they choose - during initial vehicle setup, they would need to be connected to that very Bluetooth connection - for completing the steps (VIN and Odometer capture etc.) Or subsequently any drives and mileage calculations etc. In our systems, there is only one truth about the Bluetooth connection of the device/phone with the vehicle. Could be car play or android auto or the vehicle's Bluetooth itself - whichever user chooses to pair with the device. GEO TOLL NEEDS TO ADD THIS IN FAQ OR INSTRUCTIONS 8/17 - GeoToll is contacting Apple and Google to figure out better solution for this issue 8/30 - working on updates to be able to release within 7 days from today to be approved by the app store (should only take about 24 hours for app to approve). 1. Toll run stops when audio run changes - updating this so that this does not happen and app will be able to continue to record miles 2. Revoked permissions affecting toll runs and not capturing mileage. testing to remove this limitation currently and should be able to release in the next couple weeks - app will send out push notification to alert user that Bluetooth is not connected 3. Need to add to instructions to have user allow push notifications. Jee needs to speak to Neha and Ramesh to create API notifications. Emovis to send Error code against these three codes: messages: "Bluetooth permission revoked", messages: "Location permission revoked", messages: "Camera permission revoked",	Closed	10/25/23
13	8/9/2023	Participant indicates to have an issue with the Android app attempting to run on a Samsung s20. He states that he downloaded the app and gone through the steps to set it up, invite code, etc. When he attempts to sign into the app, he cannot get past the login screen. It may appear for a brief time that it's attempting to login, but he does do not get any error codes, wrong password, etc. He also stated that he tried to retrieve his password and does not get an email. As well, he indicated to have removed and reinstalled the app a couple of times since then.	App	trouble shooted all possible technical issues and unable to identify.	Offered to switch MRO, participant request to change to manual	Closed	8/17/23
14	8/11/2023	Mobile app (140 selected MRO) mileages appears to be significantly less than OBD (75 selected MRO). To date: Mobile app showing 98K miles OBD showing 186K	App	Mobile app milage not reporting correctly - Will be able to confirm at true-up Issue related to item #6 - Need to note that participant behavior is unknown and product needs to be improved 8/17 - Possible Bluetooth, possibly that other people driving vehicles may not have app downloaded	8/17 - in the future, when mobile app is chosen, we need to build in to the system for a pop up for participant to input other drivers during enrollment for secondary driver to get email to download app. 8/30 - Need to have further discussion about how to better services this issue	Closed	8/17/23
15	8/11/2023	Participant states she is showing out of state miles and she did not drive out of state	OBD	The mileage message contains an unexpected out-of-state Rule ID, but the vehicle GPS data supports the participant's assertion that these are in-state miles. There is normally a very low occurrence of 302 rule IDs, and usually with 0 mileage (i.e. only if a short but valid set of unexpected latitudes & longitudes are observed). Unfortunately, the interaction of the updated reverse geocoder and specific sequences of live data resulted in failures to reverse geocode. In this scenario, the default action is to use the "international" Rule ID since a valid latitude and longitude existed, but the reverse geocoder failed to determine the corresponding rule ID within defined / known regions (i.e. if the path cannot be found within a known region, it's logical to conclude that it's outside the known region).	IMS is extending their baseline/required test processes to include parallel processing with a split feed from live streams regardless of the scope of the change to help detect this type of unexpected interaction in the future. The testing process for the specific scope of changes involved using batches of historical data which normally works well by processing volumes of data and validating the outputs.	Closed	8/15/23

16	8/14/2023	Participant states he is not reporting mileage	App	GeoToll states he is not connected to Bluetooth	CSR guided him to complete his vehicle set up with the app. When reaching the step 3 on the app (odometer upload), the step appeared as grayed out. It was explained to the participant that this is a Bluetooth connection error. The participant indicated to have the Bluetooth connection on, but it wasn't until the participant turn on the motor of the car that the Bluetooth signal was optimum for connection (this was pointed out by Mr. Cornett). Regarding this matter with the Bluetooth connection/signal issue, I was not aware that the vehicle's motor needs to be on for optimum app function (at least for this participant), is this normal for the app to function effectively? The participant afterward was able to upload the odometer photo and completed the vehicle set up with the app.	Closed	8/15/23
17	8/15/2023	Participant stating they are receiving notification every 24 hours: *Does the app HAVE to show a notification 24/7 on my phone? I get that it's using location in the background; I gave it permission to do so. That said, I should be able to clear the notification. A better option would be to have it pop up once a day or when I get in my vehicle, but allow me to clear it. Having it always there and not being able to clear it is frustrating and makes me feel like a task isn't finished. If this gets rolled out to the public officially, I am confident this will be a constant complaint.* *The message that appears is "MobileApp Fairmiles has Active TollRun. MobileApp Fairmiles using location in the background."* *I have the option to remove the notification for up to 2 hours, then it reappears and I have to reset the timer for it to go away for 2 more hours.*	App		8/17 - GeoToll will get back to us about this issue with android phone about suppressing this notification 8/30 - with new release, will suppress that message permanently	Closed	8/30/23
18	8/30/2023	GEOTOLL APP UPDATES	N/A		8/30 - Geotoll has updated their app to show error message if participant has turned off Bluetooth on the fair miles app (NOT on the phone setting) - GeoToll will send health error code to Emovis daily.	Closed	9/13/23
19	11/7/2023	Duplicate miles for 34 vehicles for 3 day, over 100 instances	App	We've reviewed these cases and unfortunately identified that this is due to overlay / rule id on our side. Our staging environment had updated code, but production had older code that did not know how to filter out this data… and database state got updated :-/ … long story short, this error on our side caused duplication of miles under "rule id = 0" and in total adds up to about 20k extra miles. This impacted 34 vehicles over period of 3 days. (active drivers) Attached is spreadsheet with all vehicles impacted and columns representing erroneous reporting days.	Adjustments made on Emovis System to remove duplicate miles	Closed	11/13/23
20	#########	Final odometer photo notificaiton sent, then odometer photo not recieved notificaiton sent to participant the next day because it was not yet processed (not ncessarily not recieved)	Mobile/Manual/OBD	Due to the duration of the pilot, notificaitions were sent with shorter duration in between notificaitons	For future programs, will rephrase (i.e. "if you have already submitted a photo, please disreagard") as well as send notificaitons with more days in between each notification.	Closed	11/27/23

APPENDIX D: PPM RESEARCH

D.1 POLICY FRAMEWORK

OKLAHOMA

fair miles OKLAHOMA

OKLAHOMA

POLICY FRAMEWORK

March 2023

fair miles OKLAHOMA

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GLOSSARY

Acronym	Definition	Acronym	Definition
ABP	Area Boundary Pricing	MPO	Municipal Planning Organization
ALPR	Automated License Plate Readers	NCAP	New Car Assessment Program
AV	Automated Vehicle	NCHRP	National Cooperative Highway Research Program
CAM	Commercial Account Manager	NHTSA	National Highway Traffic Safety Administration
DBUF	Distance Based User Fee	OBD	On Board Device
DMV	Department of Motor Vehicles	ODOT	Oklahoma Department of Transportation
DOL	Department of Licensing	OTA	Oklahoma Turnpike Authority
DOT	Department of Transportation	OTC	Oklahoma Tax Commission
EPA	Environmental Protection Agency	PCI	Payment Card Industry
ETC	Electronic Toll Collection	PHEV	Plug-in Hybrid Electric Vehicle
EV	Electric Vehicle	PII	Personally Identifying Information
FAST	Fixing America's Surface Transportation Act (2015)	PPM	Pay Per Mile
FHWA	Federal Highway Administration	RUC	Road User Charge
FY	Fiscal Year	SAM	State Account Manager
GPS	Global Positioning System	SFY	State Fiscal Year
HUF	Highway Use Fees	SIRC	Strategic Innovation for Revenue Collection
IIJA	Infrastructure Investment & Jobs Act (2021)	STSFA	Surface Transportation System Funding Alternatives
IRS	Internal Revenue Service	TETC	The Eastern Transportation Coalition
LRTP	Long Range Transportation Plan	TNCs	Transportation Network Companies
LUST	Leaking Underground Storage Tank Program	UBI	Usage Based Insurance
MaaS	Mobility as a Service	USDOT	U.S. Department of Transportation
MBUF	Mileage Based User Fee	VMT	Vehicle Miles Traveled

INTRODUCTION

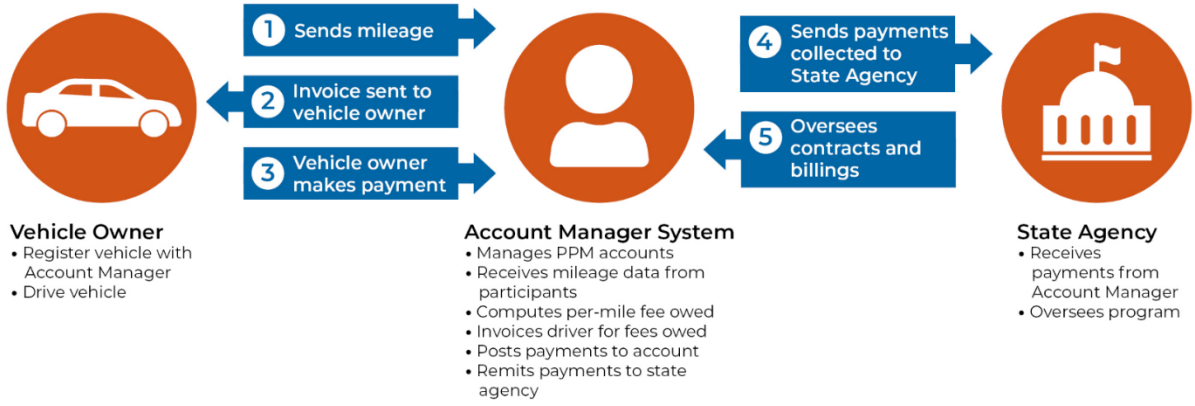
PURPOSE OF FRAMEWORK

The purpose of this Policy Framework is to provide the Oklahoma Department of Transportation (ODOT) with an overview of various policy issues that are relevant to a Pay Per Mile (PPM) Pilot in Oklahoma. This document provides background on the evolution of PPM in the United States, reviews key benefits and opportunities, and addresses the main concerns and challenges of a PPM pilot. Various goals and objectives of a PPM pilot unique to Oklahoma are also discussed in this report. The main goals and objectives for a PPM pilot are addressed and focus on the need to develop a revenue source more sustainable than the statewide fuel tax. This Policy Framework also reviews the benefits and considerations of various reporting methods and pricing strategies that can be used in a PPM pilot along with a look at what different methods have been used across the various state projects. A regulatory and statutory analysis of a PPM pilot at both the state and federal level is also included. Lastly, a look at the Oklahoma PPM pilot framework is provided which includes information such as the number of participants, demographics, the duration of the pilot, and more.

BACKGROUND

Roadways and transportation networks across the country are in large part paid for through fuel tax revenue. These revenues, however, have declined significantly over the last two decades due to an increasing number of more fuel-efficient vehicles, the introduction of electric and other alternative fuels, and a decline in the overall number of vehicle miles driven.[1] State agencies that rely on this revenue are now struggling to keep pace with the costs of maintaining, operating, and building new transportation systems. To meet this challenge, states are exploring new funding sources, such as a Pay-Per-Mile (PPM) program to replace traditional fuel tax revenue by collecting a fee directly from drivers based on their actual travel, not on their fuel consumption. Through a PPM program, drivers are invoiced for the miles the drive, and the money collected is sent to the state to use for necessary road and transportation investment.

Figure 1: How a PPM System Works



[1] RUC America, https://www.rucwest.org/

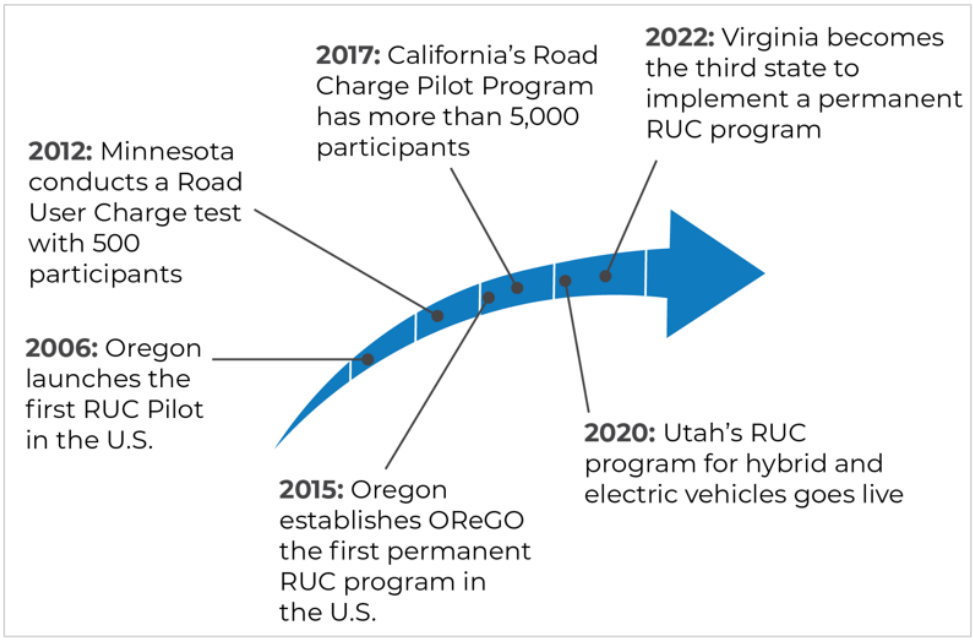
OVERVIEW OF PAY PER MILE ACTIVITIES

This report section provides an overview of the US PPM experience while assessing PPM benefits and opportunities, and PPM concerns and challenges.

A LOOK AT PPM

PPM in the United States can be traced back to 2001, when Oregon's Legislature created a Road User Charge (RUC) Task Force to explore alternative revenue funding sources to eventually replace the motor fuel tax in the state. The Task Force eventually landed on a per-mile charge as its recommendation, and subsequently guided, in 2006, the first PPM pilot project which allowed volunteers to pay a mileage fee at the gas pump in lieu of the gas tax. Since the creation of this Task Force, and Oregon's first pilot, many states around the country have begun to monitor, study, and pilot PPM programs to test the viability of collecting revenue based on a PPM approach. In addition to state-specific efforts, states have pooled together resources through coalitions, including RUC America, formerly RUC West, and the Eastern Transportation Coalition (TETC), formerly the I-95 Corridor Coalition, to share ideas and best practices and carry out studies and pilots. As of 2022 more than 38 states have been involved either directly, through a state lead study, pilot, or program, or indirectly, through a coalition, in at least one PPM initiative.

Figure 2: PPM Timeline



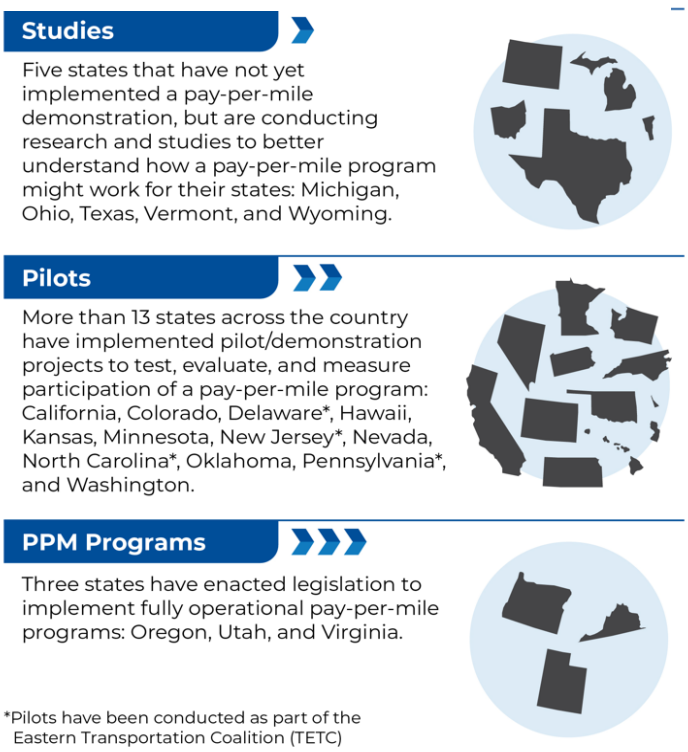
The federal government has also played an important role in the growth of PPM in the United States and this role is likely to expand in the near term. Between the Surface Transportation System Funding Alternatives (STSFA) program established in the Fixing America's Surface Transportation (FAST) Act of 2015 and the Infrastructure and Investment and Jobs Act (IIJA) of 2021, more than $220 million in federal grant funding has been set aside to study and pilot PPM programs. In addition, the IIJA directs the US Department of Transportation (USDOT) to establish a national PPM pilot program.

TYPES OF PPM ACTIVITIES

States and coalitions have participated in and conducted three main types of PPM activities: research studies, pilots, and permanent programs. A description of each type of activity can be found below:

- **Research studies ("studies")** have typically served as a state's entry point to PPM and often are a direct precursor or are bundled together with a pilot project. Studies cover a range of topics and questions on PPM including program feasibility, public perception, technology options and interoperability, equity concerns, and privacy and data security related issues. To date, there have been more than [50] research studies completed.
- **Pilots** involve directly testing different mileage reporting methods and technologies with volunteers. As such, a pilot requires public engagement and provides feedback on the tested technologies and the volunteer's perception of a PPM system. Pilots generally have a duration of 6 to 12 months, and most pilots do not collect real revenue, instead simulating the revenue collection process. [8] states and two coalitions have implemented [12] pilot projects.

Figure 3: PPM Activities



- **PPM programs** are production implementations of PPM and generate actual revenue for the state. As of January 2023, there are three active programs – Oregon, Utah, and Virginia. All three programs are voluntary, meaning individuals can opt into them if they meet certain criteria, but they are not required to participate.

Several states have participated in multiple PPM activities. For example, Oregon has completed PPM research studies, pilot projects, and has implemented a revenue generating program, OReGO. California has completed two separate pilot projects and is planning to launch a third pilot.

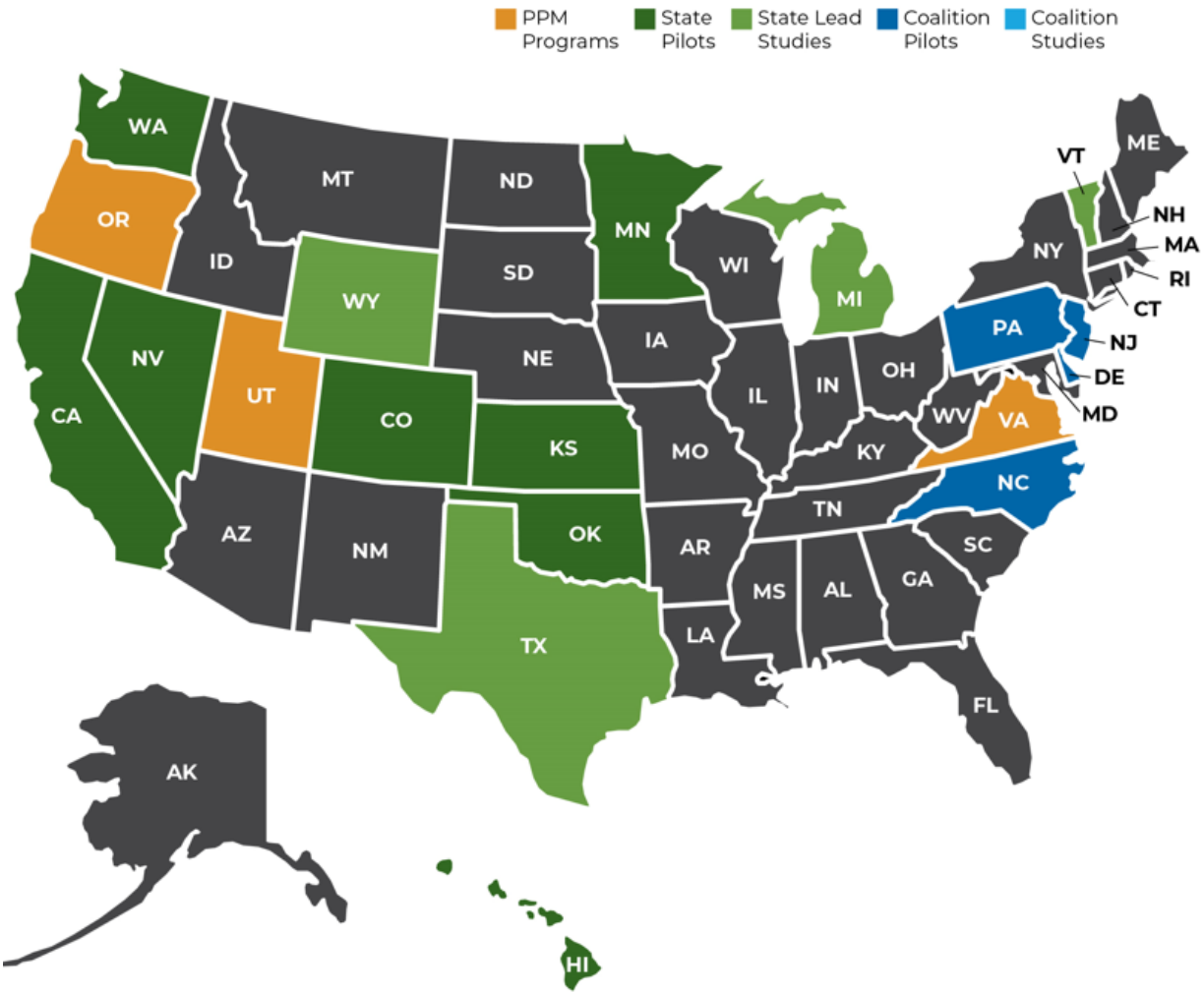
STATES ACTIVE IN PPM

A PPM revenue system is becoming an increasingly attractive approach for states as they search for sustainable funding streams to maintain and improve their transportation systems and replace their non-sustainable reliance on motor fuel taxes. A significant number of state agencies have conducted studies and pilots around the feasibility and acceptance of a PPM system. Other states have introduced and/or approved legislation that promotes studying and piloting PPM activities, *Appendix A* provides a summary of relevant recent legislation. In addition, through involvement in regional coalitions many states have been actively monitoring and participating

PPM and Other Similar Terms

While Oklahoma uses the term PPM to refer to a policy whereby drivers pay for road usage based upon the distance they have driven, other states use different terms such as road usage charging (RUC), mileage-based user fees (MBUF), and vehicle miles traveled (VMT). These terms are regional in nature, and, for purposes of this document, they are used interchangeable.

Figure 4: PPM Activity by State (Map)



in PPM activities. Some of these activities have been funded through federal STSFA grants with a state match of 50% while others have been entirely state funded.

The below table focuses on other (non-Oklahoma) state led PPM studies, pilots, and programs across the country and describes the objectives of each. **Table 1** does not include information on projects that analyze non-PPM alternative funding systems. A more detailed description of many of the projects can be found in **Appendix B.**

Table 1: PPM Activity by State

State	Activity Type	Project Name	Description of Project	Date
California	Study / Pilot	California Road Charge Pilot Program[2]	Launched in 2016 and ran for nine months. During that time, more than 5,000 vehicles from all over the state reported over 37 million miles driven, through six	2016-2017

[2] California Road Charge Pilot webpage, https://caroadcharge.com/projects/california-s-2017-road-charge-pilot/

		(further details in Appendix B)	different reporting and recording methods ranging from manual methods to highly technical methods with optional location-based services.	
		Follow-up Research	Funding to enhance the completed pilot by testing a RUC pilot using pay-at-the-pump/charging stations.	2018
	Study / Pilot	California Four Phase Demonstration[3] *(further details in Appendix B)*	Explored using other emerging technologies in California's RUC Program, such as usage-based insurance, transportation network companies, and automated vehicles, and explored how a mileage-based road charge can be assessed through Pay-at-the-Pump/Electric Charge Points.	2021-2022
	Pilot	California Public-Private Roads Pilot[4]	Caltrans will test the viability of current global positioning system technology to determine which roads are part of a public network and may be subject to a fee.	2023
Colorado	Study	Colorado Mileage- Based User Fee Study[5]	Research project investigated the application of mileage-based user fees as a possible mechanism to improve funding for transportation. The final report documents: 1) state of the practice in MBUF; 2) stakeholder and public perceptions of MBUF in Colorado; 3) operations guidance; and 4) recommendations for next steps	2013
	Pilot	Colorado Road Usage Charge Pilot Program[6] *(further details in Appendix B)*	A pilot program included c. 150 volunteers participating in a demonstration project to gauge and improve user acceptance and system functionality. The pilot tested manual and automated (technology driven) reporting options to collect mileage data and associated revenues were simulated.	2016-2017
Hawaii	Study / Pilot	Hawaii Road Usage Charge Demonstration (HiRUC)[7] *(further details in Appendix B)*	Explored a road usage fee collection based on manual and automated odometer readings at inspection stations and alternative technologies through a Commercial Account Manager. Pilot was split into two main phases: (1) Driving Report comparing gas taxes versus hypothetical road usage charge sent to over 350,000 people; (2) Technology Test Drive where volunteers were recruited to test one of three alternative technology methods to record miles driven and share preferred method.	2019-2021

[3] California Four Phase Demonstration webpage, https://caroadcharge.com/projects/california-four-phase-demonstration/
[4] Public/Private Roads Project webpage, https://caroadcharge.com/projects/public-private-roads-project/
[5] Colorado Mileage-Based User Fee Study, https://www.codot.gov/programs/research/pdfs/2013/mbuf.pdf
[6] CODOT Road Usage Charge webpage, https://www.codot.gov/programs/ruc
[7] HiRUC program webpage, https://hiruc.org/

Kansas	Study / Pilot	Midwest Road Usage Charge Study[8]	Kansas DOT will lead a joint effort working with Minnesota DOT to explore the impacts of RUC implementation in the Midwest, with focus on rural and agricultural populations and intrastate and Interstate commercial freight and supply chain operators.	2021-2024
Minnesota	Study	Mileage-Based User Fee Public Opinion Study[9,10,11]	A three-phase study to better understand public perception of mileage-based user fees that involved: (1) Interviews with transportation experts; (2) focus groups; (3) interviews with general public.	2007-2009
	Study / Pilot	Minnesota Road Fee Test[12]	A six-month technical RUC pilot that used smartphone technology with a GPS application. The pilot involved 500 people from two counties. These individuals were split into three different groups of volunteers.	2011-13
	Study / Pilot	Minnesota Distance-Based Fees Project[13] *(further details in Appendix B)*	A 12-month pilot designed to demonstrate the feasibility of distance-based usage fees through the Mobility-as-a-Service (MaaS) shared mobility model. The goals of the pilot included to design an affordable DBUF program premised on shared mobility, create MaaS partnerships that can leverage existing onboard technologies to collect fees, and conduct a PoC demonstration of data transfer.	2019-2021
Nevada	Study	Nevada Vehicle Miles Traveled (VMT) Fee Study[14]	NDOT in collaboration with local universities evaluated the feasibility and workability of a VMT fee as an alternative transportation funding mechanism to eventually replace the motor fuel tax and meet the future transportation needs of the State of Nevada.	2009-2010
	Pilot	Odometer Reading Pilot Program[15] *(further details in Appendix B)*	An ongoing pilot to collect odometer readings at vehicle licensing facilities. The data collected is being used to evaluate the potential and suitability of a mileage-based fee system as well as to support road construction planning. The pilot does not involve technology, no revenue is collected, and all state motorists are required to participate.	2019-2026
Ohio	Study	Ohio Revenue Alternatives Study[16]	ODOT is completing a research study analyzing a variety of alternative revenue mechanisms including a PPM approach to replace the fuel tax. To do this ODOT is conducting a statewide survey and has created an 18-member External Advisor Committee.	2022-2023

[8] KDOT Midwest Road Usage Charge Study, https://www.ksdotike.org/RUC-study
[9] Mileage-Based User Fee Public Opinion Study: Phase 1 report, http://www.dot.state.mn.us/mileagebaseduserfee/pdf/opinionstudyreport.pdf
[10] Mileage-Based User Fee Public Opinion Study: Phase 2 report, http://www.dot.state.mn.us/mileagebaseduserfee/pdf/MBUFPhase2FinalRpt.pdf
[11] Mileage-Based User Fee Public Opinion Study: Phase 3 report, http://www.dot.state.mn.us/mileagebaseduserfee/pdf/09mbufphase3finalrpt.pdf
[12] Minnesota Road Fee Test webpage, https://www.dot.state.mn.us/mileagebaseduserfee/studies.html
[13] Minnesota Distance-Based Fees Project webpage, https://dbf.dot.state.mn.us/explore
[14] Nevada Vehicle Miles Traveled (VMT) Fee Study, https://www.dot.nv.gov/home/showpublisheddocument/2405/636184267959030000
[15] Nevada Odometer Reading Pilot Program webpage, https://dmv.nv.gov/odometer.htm
[16] Ohio Revenue Alternatives Study about webpage, https://ohioroadfunding.com/faqs/

Oregon	Study / Pilot	Oregon's Mileage Fee Concept and Road User Fee Pilot[17]	A 12-month RUC pilot with 285 volunteer vehicles with on-board equipment that transferred mileage information to pump systems when the participant fueled. The pilot evaluated and analyzed congestion pricing impacts, transaction accuracy, participant acceptance, cost impacts, and ease of use.	2006-2007
	Study / Pilot	Road Usage Charge Pilot[18]	A second pilot run with 88 volunteers that tested four different mileage reporting options: GPS device, non-GPS device, flat fee (manual reporting), and smartphone app. The pilots explored the acceptance of mileage-based fees as well as the system architecture required to establish such a program.	2012-2013
	Program	OReGO – Road Usage Charge Program[19] *(further details in Appendix B)*	A voluntary RUC program open to all passenger vehicles allowing vehicle owners to pay mileage-based user fees as a replacement for fuel taxes. To date more than 2,000 cars have enrolled in the program.	From 2015
	Pilot	OReGO Local RUC Pilot[20]	Pilot with more than 200 Portland-area drivers, which collected data for three potential funding models: (1) Area-boundary pricing, time-of-day road charge pricing within the Portland Metro area; (2) Layer-area pricing, time-of-day road charge pricing in two overlapping areas, such as a city and a county; (3) Corridor pricing, time-of-day road charge pricing on specific highway corridors.	2020-2021
Texas	Study	Vehicle Mileage Fee Exploratory Study[21]	TxDOT hired the Texas Transportation Institute (TTI) to conduct an exploratory study to assess the viability of a mileage-based user fee in Texas. The study provided an overview of the technological and public policy challenges and opportunities of such system. Input was gathered from public focus groups, stakeholder interviews, and technology experts.	2010-2012
Utah	Program	Utah Road Usage Charge Program[22] *(further details in Appendix B)*	A voluntary state-wide RUC program (with almost 4,000 volunteers by the end of 2021) for hybrid and electric vehicles, serving as an alternative to a fixed flat vehicle registration fee. Mileage reporting options include OBD-II devices and embedded telematics through a third-party integration.	From 2020
Vermont	Study	Electric and Highly Fuel-	Evaluated the feasibility of adding an assortment of road usage charges paid by owners/drivers of EVs and	2021-2022

[17] Oregon's Mileage Fee Concept and Road User Fee Pilot final report, https://www.myorego.org/wp-content/uploads/2017/07/RUFPP_finalreport.pdf
[18] Oregon Road User Fee Task Force webpage, https://www.oregon.gov/odot/programs/pages/road-user-fee-task-force.aspx
[19] Ibid.
[20] Oregon Local RUC Pilot webpage, https://www.oregon.gov/odot/Programs/Pages/OReGOPilot.aspx
[21] TxDOT Vehicle Mileage Fee Exploratory Study briefing, https://www.txdot.gov/about_us/commission/2010_meetings/documents/minute_orders/dec15/3.pdf
[22] UDOT Road Usage Charge History and Technical Information webpage, https://udot.utah.gov/connect/about-us/legislative/road-usage-charge-history/

		Efficient Vehicle Road Usage Charge Study[23] *(further details in Appendix B)*	PHEVs. The fee options studied were a mileage-based user fee, an annual flat fee, and a per-kilowatt hour fee. The study included interviews with various stakeholders and the establishment of a RUC Advisory Committee.	
Virginia	Program	Virginia Mileage Choice Program[24] *(further details in Appendix B)*	A voluntary state-wide RUC program for fuel-efficient passenger vehicles, serving as an alternative to the flat highway use fee that is paid by drivers of electric and fuel-efficient vehicles at the time of registration renewal.	From 2022
Washington	Study	Washington State Road Usage Charge Assessment[25]	Study commissioned by the Washington Legislature that assessed the operational feasibility of a road usage charge program, including technology, agency administration, multistate and Federal standards, and other necessary elements.	2012-2013
	Study / Pilot	Washington Road Usage Charge Pilot Project & Assessment[26] *(further details in Appendix B)*	A RUC pilot, with 2,000 volunteer participants, for passenger vehicles, evaluating the feasibility, user acceptance, and system architecture required for a pay-per-mile program as an alternative to fuel taxation. Mileage reporting devices tested in the pilot included odometer photos, OBD with and without GPS and smartphones.	2018-2020

COALITIONS ACTIVE IN PPM

Along with individual state led work, coalitions have been a driving force behind the growth and evolution of PPM in the United States. Coalitions have provided a forum for state transportation agencies to share ideas and best practices at the state level and have supported states as they have carried out PPM studies, pilots, and programs. Coalitions have also enabled DOTs to pool together their resources to carry out studies and pilots at a regional level, testing interoperability along with other principals.

Two coalitions are currently active in PPM the United States: RUC America, formally RUC West, and The Eastern Transportation Coalition (TETC), formerly the I-95 Corridor Coalition.

- **RUC America** is a consortium of 20, mostly western, member states that have pooled together resources to study the viability of per-mile vehicle charging. Member states are Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, Pennsylvania, South Dakota, Texas, Utah, Washington, and Wyoming. To date, the group has funded over 24 RUC-related research studies and projects[27].
- **The Eastern Transportation Coalition (TETC)** is a partnership comprised of 17 east coast states and Washington DC. TETC has a broad mandate focusing on connecting these public agencies across modes of travel to increase safety and efficiency along the I-95 corridor. TETC brings its members together through virtual workshops, peer-

[23] Vermont Electric and Highly Fuel-Efficient Vehicle Road Usage Charge Study webpage, https://vtrans.vermont.gov/planning/policy-planning/ruc
[24] Virginia Mileage Choice Program webpage, https://www.dmv.virginia.gov/general/#va_mileage_choice.asp
[25] Washington State Road Usage Charge Assessment report, https://www.rucwest.org/wp-content/uploads/2016/07/2013_02_waroadusagechargeassessment.pdf
[26] Washington Road Usage Charge Pilot Project & Assessment webpage, https://waroadusagecharge.org/
[27] State Road Usage Charge Toolkit, https://www.ncsl.org/transportation/state-road-usage-charge-toolkit/road-usage-charge-fact-sheet-ruc-america

to-peer exchanges, working groups, training, research and demonstration projects. Among the research areas that TETC members have focused is sustainable transportation funding including PPM fees. Member states include Alabama, Connecticut, Delaware, Washington DC, Florida, Georgia, Kentucky, Maine, Maryland, Massachusetts, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, Tennessee, Vermont, and Virginia[28].

Figure 5: PPM Coalition Participation by State (Map)

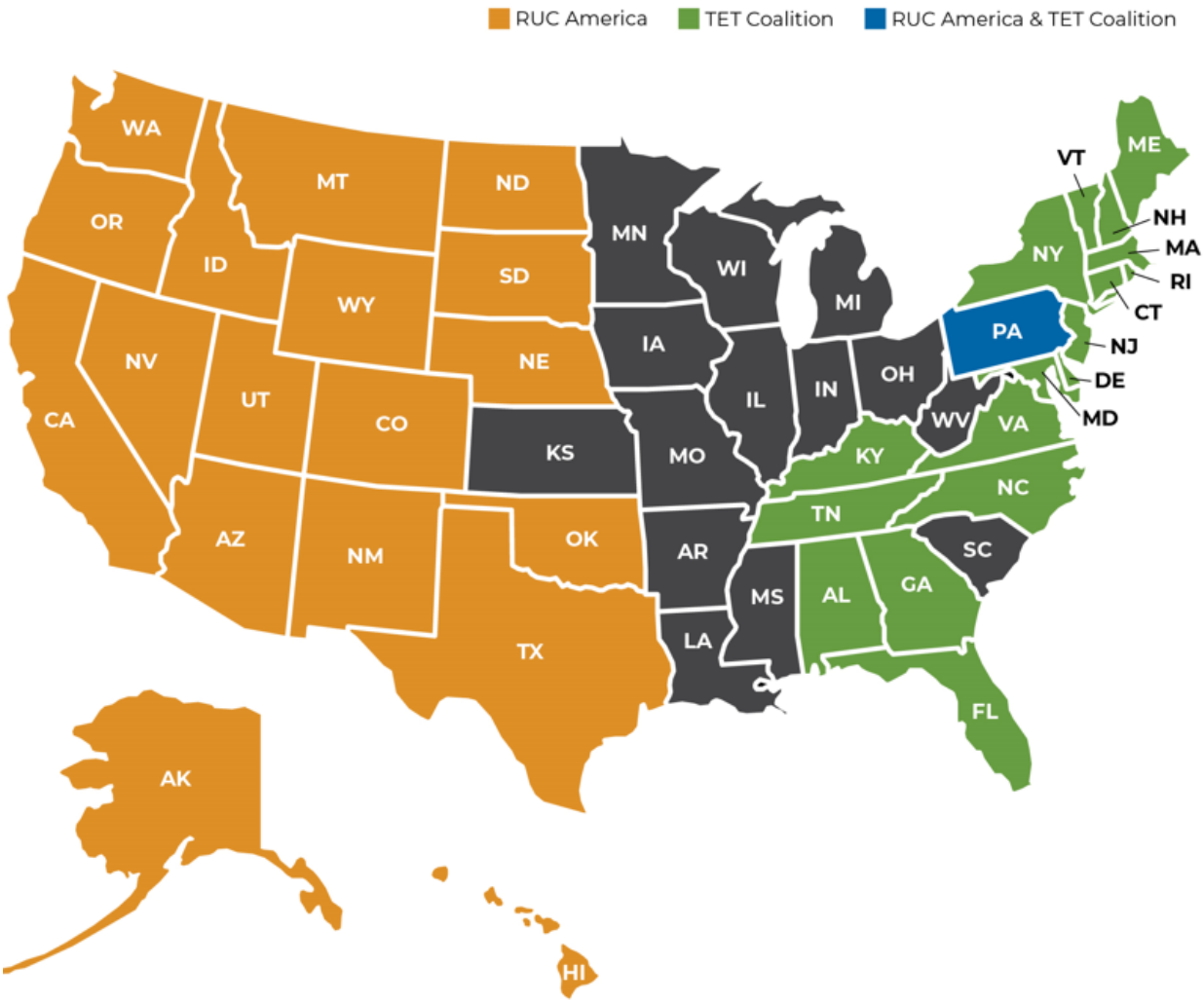


Table 2 below provides a high-level description of the main PPM pilot projects that have been conducted by RUC America and TETC. A more detailed description of selected projects can be found in **Appendix C.**

Table 2: PPM Pilots by Coalition

Coalition	Lead State(s)	Activity Type	Project Name	Description of Project	Date
RUC America	Oregon & California	Study / Pilot	RUC West Regional Pilot	A regional pilot led by California and Oregon with the participation of nine other member states. The pilot evaluated and demonstrated the functions of a clearing house to support interoperability for a	2016-2018

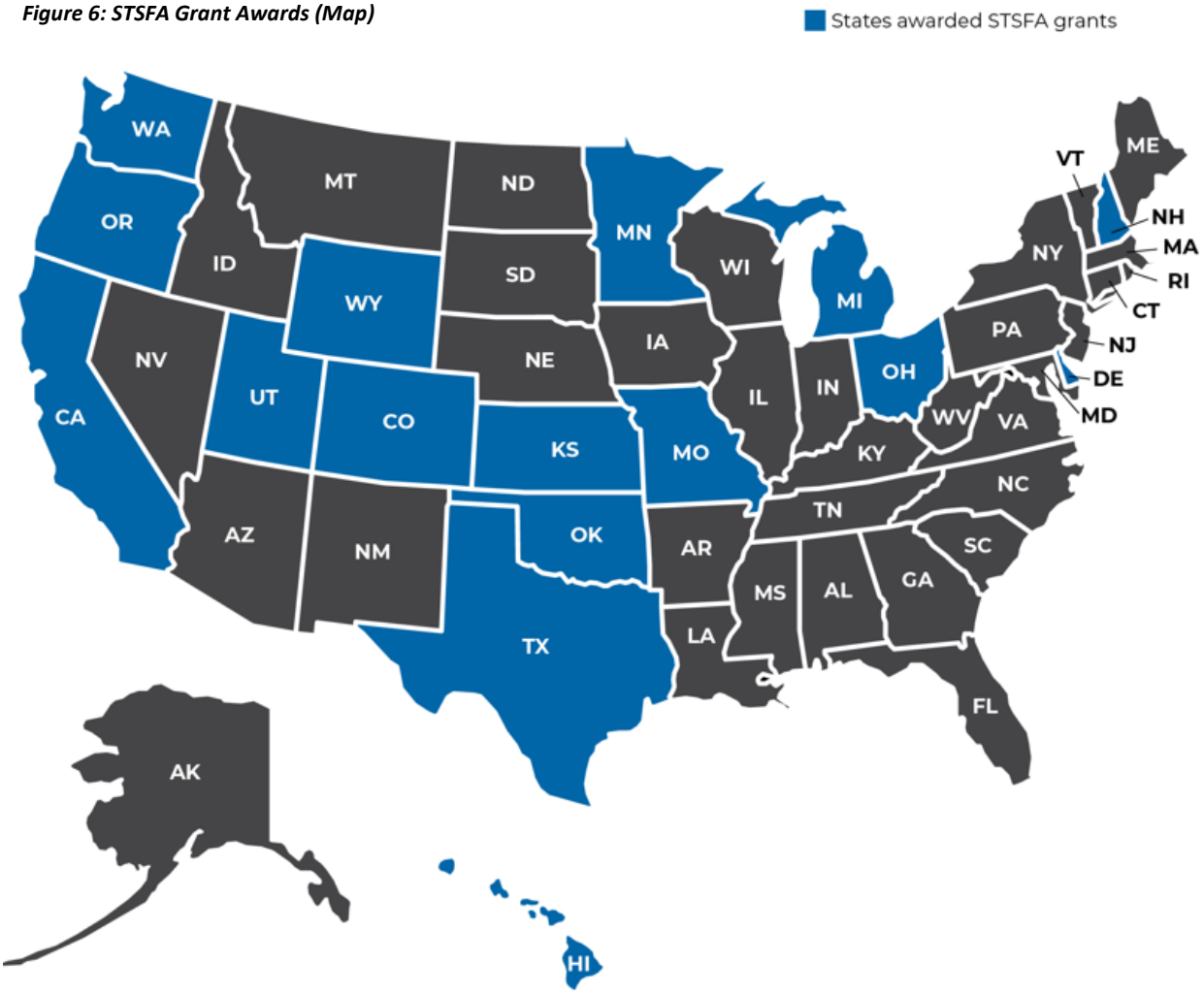
[28] The Eastern Transportation Coalition, https://tetcoalition.org/

			(further details in Appendix C)	regional PPM program. Five commercial account managers participated in the pilot.	
	Oregon	Study / Pilot	Road Usage Charge/ Automated Vehicle Demonstration Project Report[29] *(further details in Appendix C)*	Explored the technical feasibility and unique issues and opportunities that exist in applying a RUC to Autonomous Vehicles. This included how AVs may interface with RUC systems by identifying what opportunities exist to leverage existing technologies within AV implementations to facilitate the RUC to AV interface, and to overcome implementation challenges to increase acceptance.	2020-2021
TET Coalition	Delaware & Pennsylvania	Study / Pilot	I-95 Corridor Coalition Mileage-Based User Fee Study[30] *(further details in Appendix C)*	A three-month pilot project aimed at testing RUC at a regional level and consisting of 155 transportation stakeholders. The pilot tackled issues related to interoperability, technology suitability, value-added services, and the inclusion of tolling within a RUC program.	2017-2018
	No Lead	Study / Pilot	Mileage-Based User Fee Study - Multi-State Truck Pilot[31]	A six-month multi-state mileage-based user fee truck pilot, aimed at identifying and conveying the needs of the trucking industry to alternative transportation funding policies being discussed by federal and state policymakers. The pilot involved 55 commercial participants.	2018-2019
	Delaware & Pennsylvania	Study / Pilot	Mileage-Based User Fee Exploration – Passenger Vehicle Pilot[32] *(further details in Appendix C)*	A four-month pilot for passenger vehicles, following the 2018 initiative, which incorporated volunteers from Delaware and Pennsylvania. The pilot evaluated issues pertaining to interoperability, technology, value added services, and data privacy and security. A total of 889 passenger vehicles participated.	2019
	Delaware, New Jersey, North Carolina, & Pennsylvania	Study / Pilot	Exploration of Mileage-Based User Fee Approaches for All Users[33]	A multi-phase pilot project that included the nation's first National Truck Pilot, the 2020-2021 State Passenger Vehicle Pilot, the Tolling Entity-Led Pilot, and the Geographic Equity Analysis. It involved 221 commercial vehicles, 383 passenger vehicles, 192 tolling customers, and 2,000 responses to public opinion surveys.	2020-2021

[29] RUC Americas RUC / AV Demonstration Project report, https://www.rucwest.org/wp-content/uploads/2022/11/RUC-West_RUC-AV-Demonstration-Project-Report_FINAL.pdf
[30] TETC I-95 Corridor Coalition Mileage-Based User Fee Study, report https://tetcoalitionmbuf.org/wp-content/uploads/2020/07/2018-Coalition-Passenger-Pilot-Final-Report.pdf
[31] TETC Mileage-Based User Fee Study – Multi-State Truck Pilot report, https://tetcoalitionmbuf.org/wp-content/uploads/2020/08/TETC_Phase2_Truck-Pilot_Evaluation_Report_FINAL_REV_20200811.pdf
[32] TETC Mileage Based User Fee Exploration Passenger Vehicle Pilot report, https://tetcoalitionmbuf.org/wp-content/uploads/2021/09/TETC-2019-Passenger-Vehicle-Pilot-Report.pdf
[33] TETC Exploration of Mileage Based User Fee Approaches for All Users report, https://tetcoalitionmbuf.org/wp-content/uploads/2022/02/Exploration-of-Mileage-Based-User-Fee-Approaches-for-All-Users_Condensed-1.pdf

At the federal level, lawmakers provided federal grant programs to support states wishing to explore charging fees related to Vehicle Miles Traveled (VMT) as one potential solution to the transportation funding issue.

Figure 6: STSFA Grant Awards (Map)



In 2015, the FAST Act, a five-year funding and authorization bill for federal surface transportation spending, Section 6020 created a new Section 503(b) of the United States Code which establishes a program to provide federal grants to states for the demonstration of "…user-based alternative revenue mechanisms that utilize a user fee structure to maintaining the long-term solvency of the Highway Trust Fund." The FAST Act authorized $95 million in **Surface Transportation System Funding Alternatives (STSFA) grants** over five years of the program. Since the onset of this program, FHWA has provided a total of [$89.3] million to [37] STSFA projects, see **Table 3** below.

Table 3: STFSA Awards *(below projects can overlap with Activities listed in Table 1 and Table 2 above)*

STFSA Awards[34]			
State	**Fiscal Year**	**Grant Amount**	**Description**
California	2016	$750,000	Road User Charge (RUC) using pay-at-the Pump/ charging stations.
	2017	$1,750,000	The project will explore mechanisms to collect revenue at pay-at-the-pump charging stations.
	2018	$2,030,000	Exploration of California's Road Usage Charge Program (RUC) with emerging technologies and services, such as Usage-Based Insurance (UBI), Transportation Network Companies (TNCs), and Autonomous Vehicles (AVs).
	2020	$2,150,000	Caltrans will test the viability of current global positioning system technology to determine which roads are part of a public network and may be subject to a fee.
	2023	$3,000,000	The pilot will include a study of the potential behavioral changes caused by applying two different rate structures.
Colorado**	2017	$500,000	The project will investigate data collection mechanisms.
Delaware (TET Coalition)	2016	$1,490,000	User fees based with on-board mileage counters in collaboration with members of the I-95 Corridor Coalition.
	2017	$975,000	The project will study equitability and privacy issues in a multi-state region.
	2018	$3,028,000	Use of mileage-based user fees in a multi-state region. The project addresses the requirements for implementation, interoperability, public acceptance, and other potential hurdles across state lines.
	2019	$3,350,000	Addressing Mileage-Based User Fee (MBUF) Barriers through Expanded and Enhanced Pilot Deployments within the I-95 Corridor Coalition States.
	2020	$4,670,000	The Coalition will demonstrate and test paths for MBUF in the DC metro area and seven states -- DE, MD, ME, NC, NJ, PA and VA.
	2023	$4,503,485	This work will continue to build upon previous efforts to determine the feasibility of mileage-based user fees in a multi-state environment by using demonstration pilots, real-world data analysis, and engagement with passenger and truck drivers to identify solutions to implementation barriers (e.g., equity concerns, compliance and enforcement, privacy issues, harmonization across states).
Hawaii	2016	$3,998,000	User fee collection based on manual and automated odometer readings at inspection stations.

[34] STFSA Award Link, Surface Transportation System Funding Alternatives (STSFA) Program - Funding Awards - FHWA Office of Operations (dot.gov)

	2020	$250,000	Hawaii DOT will investigate the current state and completeness of digital mapping data to determine which roads are part of a public network and may be subject to a fee.
	2023	$1,000,000	HDOT will work with state law and other policy makers beginning in 2022 to examine possible next steps for RUC in Hawaii that leverage the existing infrastructure and data from the state vehicle inspection and registration systems.
Kansas / Minnesota	2020	$3,250,000	Kansas DOT will lead a joint effort working with Minnesota DOT to explore the impacts of RUC implementation in the Midwest, with focus on rural and agricultural populations and intrastate and interstate commercial freight and supply chain operators.
Michigan	2023	$2,588,542	MDOT will lead a two-part project that will seek to understand Michiganders' perceptions of RUC. It will also assess the impact of charging for roads on raising revenue, reducing vehicular congestion, and mitigating environmental damage, via a RUC demonstration designed to provide a reliable source of revenue, smooth the demand for roadways thus mitigating peak-time congestion, and offer participants information about, and alternatives to their single occupancy vehicle trips.
Minnesota	2016	$300,000	Use of Mobility-as-a-Service providers (MaaS) as the revenue collection mechanism.
	2018	$999,600	Demonstration of the feasibility of distance-based user fees through the shared mobility model, such as Mobility-as-a-Service (MaaS) providers.
	2023	$1,640,000	Demonstration of the potential of OEM Telematics Data for Calculation of Distance-Based Fees.
Missouri*	2016	$250,000*	Implementation a new registration fee schedule based on estimated miles per gallon.
	2017	$2,772,500	The project will conduct public outreach on concerns related to equity and data security issues.
	2018	$1,782,500	Deployment of innovative strategies such as a vehicle registration fee along with other used-based charges.
New Hampshire*	2018	$250,000	Exploration of road user charges levied in conjunction with vehicle registration fees.
Ohio	2020	$2,000,000	Ohio DOT will obtain data for a large-scale outreach program geared towards educating the public about RUC.
Oklahoma	2023	$1,905,000	This project will develop and conduct a voluntary pilot program involving a small number of participants to aid in the development and future deployment of a RUC Program that addresses potential challenges and opportunities that might be unique to Oklahoma.
Oregon	2016	$2,100,000	Improvements to Oregon's existing road usage charge program.

	2017	$2,315,000	The project will initiate improvements to Oregon's existing road usage charge program.
	2019	$5,000,000	Road usage charging in a connected vehicle ecosystem.
Oregon (RUC America)	2016	$1,500,000	Establishing the consistency, compatibility and interoperability in road user charging for a regional system in collaboration with members of the Western Road User Charge Consortium.
	2017	$2,590,000	The project will launch a pilot between California and Oregon to connect the two states' per-mile road user charging systems, to ultimately expand the concept regionally.
	2018	$950,000	Exploration of Road Usage Charge and Automated Vehicles at both the state level and in a regional interoperable system.
	2019	$250,000	Road usage charge and blockchain.
	2020	$134,875	RUC West will host a conference that will explore opportunities and barriers to interoperability, expand knowledge about RUC and foster new partnerships.
Texas***	2020	$5,000,000	Dallas-Fort Worth will assess the feasibility and technological capability of utilizing smartphone technology to understand travel patterns and the development of an accounting framework.
Utah	2018	$1,250,000	Utah will pilot a road user charge program for alternative fuel vehicles including hybrid and electric vehicles.
	2019	$395,000	Integration of road user charges and express lanes tolling.
	2019	$350,000	Road usage charge local overlay.
	2020	$1,250,000	Utah DOT will develop and validate RUC-specific customer service improvements designed to enhance public acceptability and attract more voluntary participants.
Virginia	2023	$3,314,800	VDOT will use funding to support a mileage-based user fee program that would allow owners of vehicles subject to the state's existing highway user fee to pay the fee on a per-mile basis rather than as a fixed fee.
Washington	2016	$3,847,000	Testing critical elements of interoperable, multi-jurisdictional alternative user-based revenue collection systems. Piloting methods of road usage reporting with Washington drivers.
	2017	$4,600,000	The project will conduct public outreach with users regarding method for assessing and collecting fees.
	2019	$5,525,000	Forward Drive Washington road usage charge demonstration project.
Wyoming***	2019	$250,000	Wyoming Truck Mileage User Fee Pilot.
TOTAL	2016-23	**$91,804,302**	

* STSFA Grants that did not analyze a PPM funding mechanism

** Returned STSFA Grant Funding

*** State's that have yet to launch pilots

In 2021, the IIJA was enacted, which set aside $125 million in new PPM project funding. This funding was split between two PPM programs:

- **Strategic Innovation for Revenue Collection (Section 13001)**, which established grants for states, local governments, and MPOs to test the feasibility of a PPM fee and other user-based alternative revenue mechanisms. In total, $75 million were allocated to this program with the federal share of funding capped at 80% (70% for states that have already received a grant). The new SIRC program replaces the STSFA program, which expired with the FAST Act, and has several important differences: SIRC increases the federal share of funding for local pilots from 50% to 80%, SIRC emphasizes implementation by phasing out funding for pilots and phasing in funding for implementation, and SIRC adds MPO's and local government entities to the list of eligible recipients, and SIRC.
- **National Motor Vehicle Per-Mile User Fee Pilot (Section 13002)**, which is a nationwide pilot led by the USDOT and the Department of the Treasury, with volunteer participants from all 50 states, covering both commercial and passenger vehicles and testing a wide range of technologies. The pilot will focus on objectives around funding, technology testing, and public awareness. In total $50 million was allocated to the national pilot.

KEY BENEFITS AND COMMON CONCERNS

A PPM system can present unique opportunities and challenges that need to be considered and well-understood before launching a PPM study or a pilot program that can impact drivers and communities in different ways. A PPM system's functionality, pricing options, implementation and administration costs, complexity of use, as well as enforceability and user privacy are directly influenced by the selected approach to road usage data recording and reporting methods. The different approaches to PPM recording and reporting methods offer different benefits and concerns, presenting policy makers with a range of options to consider when evaluating a PPM system. The following sections lay out some of the key benefits and common concerns with a PPM system.

BENEFITS AND OPPORTUNITIES

PPM systems provide opportunities to develop more flexible and fair approaches to revenue generation than traditional means (i.e., fuel tax). Unlike the fuel tax, a PPM system can provide a fairer way to charge for roadway use as it can require that all vehicles, including highly fuel-efficient and electric vehicles (EVs), contribute their share of the transportation infrastructure costs. Moreover, it can do so by charging a fee based upon the actual use of the infrastructure unlike a vehicle registration fee or even motor fuel taxes.

In addition to establishing a more sustainable transportation funding source, PPM pricing regimens can be designed to address individual public agency goals. An effective, policy-centric PPM program can include a range of approaches that could help states strike a balance between competing public policy objectives, such as improving mobility, creating greater transportation fairness, reducing carbon emissions, and providing sustainable and adequate transportation funding. While these charges are often associated with revenue generation, PPM can also be used as a congestion management tool if the charge fluctuates by time of day and congestion levels, which could lead to more efficient behavior. PPM fees, unlike the fuel tax, can be linked with congestion levels and the type of road being used to account for transportation costs imposed by driving. For example, by assessing higher fees for driving on congested roadways, a PPM system can address the negative impacts of increased travel demand or the costs that drivers on a congested road impose on other drivers by slowing one another down.

The following are some of the key benefits of PPM that have been identified in previous studies and pilots:

- PPM can be a more **sustainable source of revenue**, as revenue collected aligns with VMT regardless of fuel consumption and is unaffected by changes in fuel economy, fuel type or in the case of EV's, no fuel consumed.
- Maintains the **user-pay principle** for VMT like utilities (pay for what you use)
- **Pricing strategies** can be designed to address individual agency (state and local) goals. For example:
  - Fees could be set higher for urban roadways and lower for local roads
  - Fees could be set higher for heavy trucks to account for increased roadway wear and tear
  - Fees could vary by time of day to help manage congestion levels
  - Fees could account for emissions produced by the vehicle
  - Discounts can easily be provided to groups to support policy objectives (i.e., discount to vehicle owners with lower incomes, etc.)
- Fees can be collected and distributed to multiple governmental entities (i.e., ability to collect fees for local, state, and federal agencies); thus, serving as a multi-entity funding solution
- Current **technologies** can be leveraged for certain implementation approaches, and technological advancements and industry interest is rapidly increasing for wider application.
  - Multiple mileage recording and reporting options are currently available allowing "user choice"
  - In some instances, existing tolling programs and technology can be leveraged to accelerate RUC implementation
  - Connected vehicles will allow in the future more efficient RUC data collection and system implementation and can also bring together more vehicle usage payment options such as fueling/EV charging, parking etc.
- Ability to bring competition into the market utilizing **private account managers**. Typically, there would be some sort of certification process.
- As the amount and type of data becomes more accessible and valuable, additional **monetization opportunities ("value added services")** could exist to offset some implementation costs. This is particularly the case if the program utilizes third-party account managers. Examples of value-added services include fuel or EV charging payments, car service and maintenance offerings, mobility-as-a-service applications, and pay-per-mile vehicle insurance among other options.

CONCERNS AND CHALLENGES

Developing and implementing a PPM system can be a complex undertaking, involving an array of technical, institutional, policy, and user acceptance challenges. As with all new pricing mechanisms, the introduction of a PPM program has the potential of raising public concerns and becoming politicized. The development of a new PPM program would need to consider commonly raised concerns, including one of the most widely reported public concerns, protecting the privacy and security of personal information. There is widespread concern that location-based technology used to record mileage data (e.g., global positioning system (GPS)) could potentially be used to compromise drivers' personal information, such as locations visited.

The following are some of the common concerns and challenges often faced by states as they launch RUC pilot programs to evaluate potential for full RUC implementations:

- **Privacy protection and data security**
  - Perceived intrusion of privacy caused by collection and possession of locational data
  - Security of personally identifiable information
  - How the data collected is used and shared
- **Social Fairness** issues

  - Public resistance and negative perceptions, specifically around implications to low-income households, senior citizens and disabled individuals
  - Perceived unfairness for rural drivers with longer commutes
  - Access to convenient payment options could be more challenging for unbanked or underbanked drivers as RUC fees are typically billed electronically
- **Cost of administration and operation**
  - Administrative cost burden to set-up and implement fee and collection systems
  - Complexity of implementation and transition
- **Technology usage issues and complexities**
  - Ease of use of the mileage reporting technology, particularly aftermarket devices such as OBD-II which require multiple user touch points
  - Perceived accuracy of the mileage reporting technology
- **Enforcement challenges** with potential for fee evasion and vulnerability to fraud
  - Some drivers may not have bank accounts or credit cards which could hinder enforcement
  - Difficulties with assessment of fees and collection of revenues across local and state boundaries
- **Interoperability** across markets, particularly as states are exploring different types of PPM schemes and technologies

OKLAHOMA SPECIFIC PPM GOALS AND OBJECTIVES

BROADER VISION OF OKLAHOMA

As fleet fuel economy continues to increase, and as more alternate fuel vehicles join the fleet, the State of Oklahoma will experience a decrease in the effectiveness and sustainability of its statewide fuel tax, a major component of infrastructure funding. Year-over-year inflation decreases the purchasing power of the fuel tax revenue stream. Additionally, improving fuel efficiency and increasing use of electric and hybrid vehicles will all contribute to a substantial decline in fuel tax revenues and the effectiveness of those revenues into the future. Because low mileage and alternative fuel vehicles also contribute to wear-and-tear on the statewide transportation system, alternative transportation funding will be required to meet the state's long-term transportation needs. Many other states are evaluating the potential for PPM programs that charge users based on VMT rather than fuel purchased, equalizing the costs to build and maintain the infrastructure across all users regardless of fuel and vehicle type.

Oklahoma Secretary of Transportation Tim Gatz and the State of Oklahoma recognized early on the need for an alternative transportation funding mechanism. In 2015, Oklahoma joined the Western Road User Charge Consortium (RUC West), and Secretary Gatz currently serves as the consortium's Vice Chair. RUC West allows 17 states to work synergistically by pooling funds for studies and pilots and providing PPM best practices and research to state transportation officials.[35] This active involvement in the RUC America consortium gives Oklahoma first-hand access to valuable lessons learned and best practices developed from prior studies and projects, which will be leveraged for this Project. The Oklahoma Long Range Transportation Plan (LRTP) also addresses PPM and the importance of establishing an alternate revenue system to eventually replace the declining revenues from the state's fuel tax.[36]

FACTORS UNIQUE TO OKLAHOMA

[35] RUC West – Who We Are. https://www.rucwest.org/about/
[36] Oklahoma Long Range Transportation Plan (2020). Page 112. https://static1.squarespace.com/static/5cd1d280f9df7d00015c6297/t/5f5bbbb6785a5f69c44e3d04/1599847366823/Oklahoma+2045+LRTP+Final+August+2020.pdf

Recent PPM pilots from other states have provided a solid foundation upon which to build. The state of Oklahoma has several characteristics that pose unique challenges and opportunities to the fair and equitable implementation of a statewide PPM program, including:

- The Oklahoma Turnpike Authority (OTA), which has the most centerline miles of any single toll operator in the U.S. and is closely integrated with the ODOT, has a well-established back-office system that processed approximately 186 million toll transactions in 2019. It is possible that this existing system could be leveraged for data collection, data processing, and revenue collection for a PPM program;
- Many of Oklahoma's 38 recognized Tribal Nations are allotted a percentage of the statewide fuel tax revenues through signed compacts. As overall fuel tax revenues decrease, these Tribal Nations have a vested interest in the development of a sustainable revenue source that could offset the decreasing fuel tax revenues; and
- Oklahoma is a national transportation crossroads with a very high percentage of out-of-state passthrough traffic. As an example, on the Oklahoma Turnpike network roughly 40% of the toll revenues collected, around $125 million, are generated from out-of-state motorist.[37]

LEGISLATION AND TASK FORCE

Recognizing that the current fuel tax will become an ineffective, unsustainable, and unfair funding mechanism, and to demonstrate its commitment to exploring alternative transportation funding, the Oklahoma Legislature passed HB 1712, which the Governor signed into law on May 3, 2021. This legislation mandates the formation of a Road User Charge Task Force charged with evaluating user-based alternative transportation funding mechanisms and conducting a pilot program.[38] The Bill received overwhelming support with approximately 80% of legislators, from the House and Senate, voting for approval.[39]

The Road User Charge Task Force will continue until June 30, 2024 and is to be chaired by the Executive Director of the Department of Transportation. The Task Force is required to consist of representation from at least 12 specific State agencies and groups. Oklahoma Statute §69-1931 (A)(2) outlines the responsibilities of the Task Force which states,

"The Road User Charge Task Force shall:

a. consult with highway users and transportation stakeholders, including stakeholders representing vehicle users, vehicle manufacturers and fuel distributors, to ensure fair and equitable distribution of the gas tax burden across all vehicles regardless of fuel source,
b. study the availability, adaptability, reliability and security of methods that may be used in recording and reporting public road usage,
c. study the ease and cost of administering the collection of taxes and fees as an alternative to the current system of taxing highway use through motor vehicle fuel taxes,
d. ensure that processes for collecting, managing, storing, transmitting and destroying data are in place to protect the integrity of the data and safeguard the privacy of drivers,
e. collaborate with other states to seek potential interoperability opportunities to capture out-of-state drivers traveling through Oklahoma,
f. develop and implement a voluntary pilot program to assess the potential for mileage-based revenue collection for Oklahoma's roads and highways as an alternative to the gas tax system,
g. through public outreach, secure a sampling of individuals willing to participate in the pilot program for testing purposes in lieu of paying certain vehicle registration fees, and

[37] Oklahoma Turnpike Authority webpage. https://oklahoma.gov/ota/about-ota.html
[38] Enrolled House Bill No. 1712. Hill and Hilbert of the House and Haste of the Senate. http://webserver1.lsb.state.ok.us/cf_pdf/2021-22%20ENR/hB/HB1712%20ENR.PDF
[39] Oklahoma State Legislature: Information for HB 1712. http://www.oklegislature.gov/BillInfo.aspx?Bill=hb1712&Session=2100

h. seek available federal funds for studies, demonstration projects or pilots associated with the Oklahoma Road User Charge Program's implementation."

A report of the findings and recommendations determined by the Task Force on implementing an Oklahoma Road User Charge Program is due to the Legislature December 31, 2023.

PUBLIC AND STAKEHOLDER ENGAGEMENT

IDENTIFY STAKEHOLDERS

Table 4 below outlines the main Project stakeholders and includes all organizations involved in delivering the PPM Project including this pilot concept.

Table 4: Project Stakeholders

Stakeholder	Role	Responsibility
Oklahoma State Legislature	Sponsor	Review project results.
Oklahoma Department of Transportation (ODOT)	Lead agency / owner	Administering project funds; conducting and managing pilot program.
Oklahoma Turnpike Authority (OTA)	Cooperating agency / back office administration and operations	Pilot input; implementation assistance in potential integration to current tolling back office.
Account Manager	System administrator (Implementation and Operations)	Implementing, operating, and maintaining the pilot RUC system.
Consultant Team (HNTB and Jones PR)	Project execution	Delivering project results, including the pilot concept, requirements, and evaluation as well as all activities to prepare the final report to the State Legislature.
Tribal Nation(s): **Indian Nations Council of Governments (INCOG)**	Input, pilot participation	Provide consistent collaboration; offer insights on implementation of RUC in tribal nations.
Metropolitan Planning Organizations (MPO): - **Association of Central Oklahoma governments (ACOG)** - **Lawton MPO (LMPO)** - **Frontier MPO (Frontier)**	Input	Collaborate with OTA and ODOT on outreach, engagement and pilot definition through input and review.
Federal Highway Administration	Project Observer[40]	Potential grant administrator and funding authority.
Oklahoma residents*	Input and pilot participation	Input to pilot program concept, participation in pilot program and input to the pilot evaluation.

STATE & LEAD AGENCY

ODOT is the Pilot's lead agency responsible for administering project funds and conducting and managing the pilot program demonstration. ODOT is committed through its mission to "provide a safe, economical and effective transportation network for the people, commerce and communities of Oklahoma."[41] ODOT has a proven record of effectively administering federal grant funding and will ensure all agreed-upon components of the Pilot are successfully managed, tracked, and implemented.

[40] *FHWA, if an STSFA grant is awarded to ODOT, would then become a grant administrator and project sponsor.*
[41] ODOT Mission Statement. https://oklahoma.gov/odot/about/mission-statement.html

OTHER STAKEHOLDERS

ODOT will work in close coordination with OTA and Oklahoma's Tribal Nations. ODOT has a long-standing partnership with OTA that promotes fiscal responsibility and economic development for the State of Oklahoma. ODOT and OTA will work cooperatively to define their roles for this project. As a key component of the Pilot, ODOT aims to establish consistent collaboration with Oklahoma's Tribal Nations and will partner with a representative Tribal Nation for the pilot program. The purpose of this partnership is to gain insight on implementing a PPM program across multiple sovereign nations to provide a fair solution.

PUBLIC

The PPM Pilot will include a cross-section of users throughout the state. This includes multiple user groups and vehicle types as directed in HB 1712. Volunteers will be recruited from among current PIKEPASS users and non-PIKEPASS users. Within each of the remaining user groups, a cross-section of volunteers that are representative of the demographics of the state will be recruited from urban and rural areas, Tribal Nations, and other groups.

EDUCATE PARTICIPANTS

ODOT is committed to meaningful engagement with all residents of Oklahoma on the topic of the PPM Fair Miles Pilot and possible future program. Therefore, awareness and education are an important part of the overall PPM Program, with specific efforts being undertaken within the Fair Miles Pilot to engage with the Road User Charge Task Force, stakeholders and the residents of Oklahoma. The Fair Miles Pilot will include outreach strategies to understand awareness and user needs before, during, and after the pilot. The outreach will include a cross section of users and vehicle types and will evaluate attitudes towards PPM throughout the state. Outreach will specifically target urban, rural, and Tribal populations and will include a cross section of income levels including underserved and disadvantaged populations, and areas of persistent poverty. The Pilot will also evaluate practices for gaining public acceptance to tailor different messaging to different demographics.

FUNDING ANALYSIS

AVAILABLE FUNDING (FUEL TAX)

MOTOR FUEL TAX REVENUES (BACKGROUND)

Oklahoma's motor fuel tax consists primarily of two components—a 19.0¢ per gallon tax on gasoline and a 19.0¢ per gallon tax on diesel fuel. This tax rate is augmented by a "motor fuel special assessment fee" of 1.0¢ per gallon, bringing the total state collection rate up to 20.0¢ per gallon for both gasoline and diesel fuel. The current rates went into effect on July 1, 2018. Prior to that date, the fuel tax was 13.0¢ per gallon for gasoline and 16.0¢ per gallon for diesel. The state fuel tax in Oklahoma, which began back in 1933, has only been increased once over the past three decades. The current federal tax rates for gasoline and diesel are 18.4¢ and 24.4¢ per gallon, respectively.

Currently, only three out of the 50 United States (Alaska at 15.13¢ per gallon, Mississippi at 18.79¢ per gallon, and New Mexico at 18.88¢ per gallon) have a gasoline tax that is lower than Oklahoma's. And only two states (Alaska and Mississippi) have a diesel tax that is lower than Oklahoma's.[42] The fuel tax is collected by the Oklahoma Tax

[42] https://www.api.org/-/media/files/statistics/state-motor-fuel-taxes-charts-january-2022.pdf

Commission (OTC) from wholesale fuel vendors. The tax is then rolled into the price posted at the pump. Unlike some states, local governments in Oklahoma are not permitted to tack on an additional fuel tax.[43]

The Oklahoma Tax Commission annually publishes its *Revenue & Apportionment Report*.[44] This report documents the amount of fuel tax revenue collected each fiscal year, which for the state of Oklahoma runs from July through June. An abrupt jump from FY 2018 to FY 2019 was the result of the fuel tax increase that was implemented at the start of FY 2019. Fuel tax revenue in FY 2022 was roughly 38% higher than it was in FY 2010; however, saw a decline of 1% from FY 2022 to FY 2023.

MOTOR FUEL TAX REVENUES (SOURCES & USES – SFY 2023)

In addition to the State Department of Transportation, which receives the largest allocation of motor fuel tax revenues, there are a number of other entities which receive a share of these revenues. In anticipation of a substantial reduction in motor fuel tax and the related revenue, it is important to expand the discussion of impacted programs beyond the DOTs. In Oklahoma, gasoline tax represents a significant portion of the total motor fuel tax collections, which is also the case in most other states.

In State Fiscal Year (SFY) 2023, Oklahoma collected a total of $583.5 million in motor fuel tax which includes gasoline, diesel, natural gas, and special fuels. Of this total, $397.9 million (68.20%) is gasoline tax and $182.5 million (31.28%) are taxes from all other fuels including diesel fuel. **Tables 5-7** below breakdown the allocation of gasoline, diesel, and other fuel taxes in SFY 2023.

Table 5: Allocation of gasoline tax in SFY 2023:

Uses	Amount	% of Total
Highways *(DOT & Turnpike)*	$247,417,535	62.17%
Other	$5,803,705	1.46%
Counties	$95,225,791	23.93%
Tribes	$18,043,614	4.53%
Cities and Towns	$5,461,858	1.37%
Corporation Commission	$26,026,698	6.54%
Total - Gasoline Tax	**$397,979,201**	

Table 6: Allocation of diesel and other fuel tax in SFY 2023:

Uses	Amount	% of Total
Highways *(DOT & Turnpike)*	$127,807,827	70.02%
Counties	$35,916,090	19.68%
Tribes	$7,709,670	4.22%
Corporation Commission	$11,081,955	6.07%
Other	$20,520	0%
Total - Diesel & Other Fuel Tax	**$182,536,062**	

Table 7: Allocation of total motor fuel tax in SFY 2023:

[43] https://okpolicy.org/resources/online-budget-guide/revenues/an-overview-of-our-tax-system/oklahomas-major-taxes/motor-fuel-tax/#:~:text=Oklahoma%20first%20levied%20a%20gas,cents%20per%20gallon%20of%20diesel

[44] The most recent report can be found here: https://oklahoma.gov/content/dam/ok/en/tax/documents/resources/reports/annual-reports/otc/AR-2023.pdf

Uses	Amount	% of Total
Highways *(DOT & Turnpike)*	$375,225,362	64.30%
Other	$5,824,225	1%
Counties	$131,141,881	22.47%
Tribes	$25,753,284	4.41%
Cities and Towns	$5,461,858	.94%
Corporation Commission	$40,108,653	6.87%
Total – Motor Fuel Taxes	**$583,515,263**	

The total state funding for the Oklahoma Department of Transportation (ODOT) highway program during SFY 2023 amounts to $857.7 million with $585.5 million of that total coming from motor fuel taxes. This represents 68% of ODOT's total state funding.

TARGET FUNDING AMOUNT

The calculation of the Target Funding Amount for most mileage-based user fee revenue models involves the total replacement of motor fuel taxes, primarily gasoline taxes and fees. In State Fiscal Year 2023, Oklahoma collected approximately $400 million from the sales of gasoline that was statutorily allocated to several entities and programs that include, but is not limited to, cities, counties, and the Department of Transportation (ODOT). During that same period, the state collected $182.4 million in diesel fuel taxes related fuel consumed, not sold, but consumed within the boundaries of the state.

Focusing on passenger vehicles, generally thought to be powered by gasoline, electricity, or compressed natural gas (CNG), the replacement of $400 million is goal of Fair Miles Oklahoma. However, it is important to note that Oklahomans believe that transportation is funded by a user fee, primarily the fuel tax, not income tax or motor vehicle fees. In SFY 2023, $241.3 million was allocated from income tax collections for the highway program at ODOT and $463.3 million of motor vehicle fees was allocated to several entities for transportation activities. To move Oklahoma to a true user funded transportation system the target funding level for the mile-based user fee in Oklahoma would total $1.1 billion.

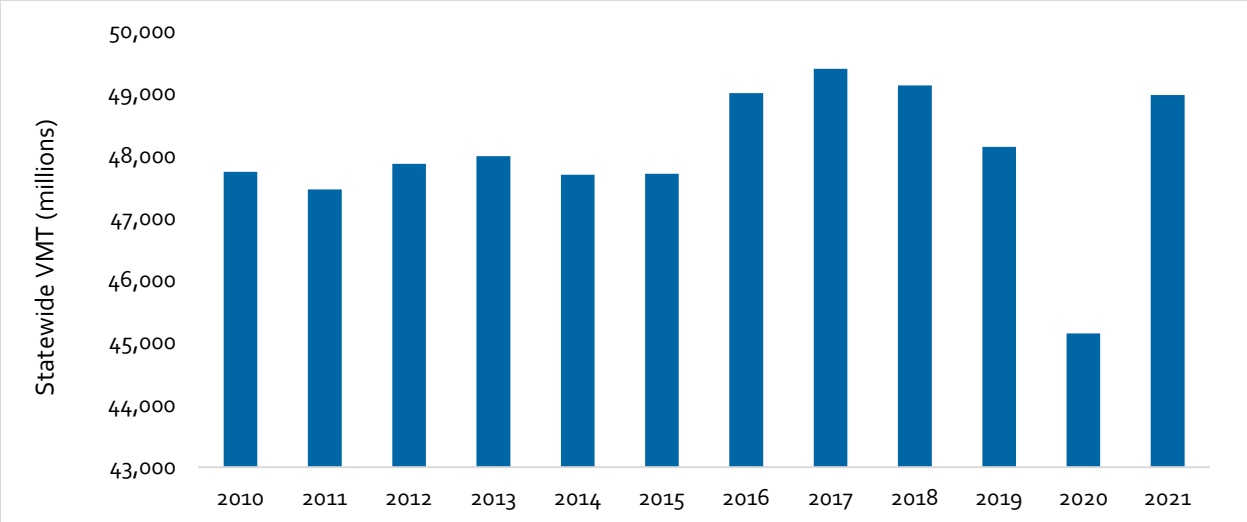
At this point, it is important to understand the impact that near term inflation has had on the state's ability to build and maintain a modern transportation system. A review of the major construction pay items is thought by the engineering and construction industry to be the most accurate measure of cost trends for DOTs. ODOT maintains a sophisticated process for continued tracking of costs to build and maintain roads and bridges in the state. During the period involving SFY2019 through FY2023, the state has experienced cost increases totaling 63%. That level represents a loss of buying power that will impact cities, counties, and ODOT in the delivery of their programs. To keep pace with inflation, to maintain the buying power of 2019, the previously mentioned $1.1 billion funding level would need to be $1.8 billion.

Further, consideration should be given to the federal portion transportation funding that Oklahoma receives annually. The revenue model funding transportation at the federal level is very similar to Oklahoma's. Fuel taxes collected do not fully support the federal program(s) consequently, there is confusion and concern that funding will continue at the required levels as fuel tax collections decline. ODOT's Eight Year Construction Work Plan (Eight Year Plan) is 50% funded by federal revenue. To maintain the momentum created by the investments made in the Eight Year Plan, consideration should be given increasing the Target Funding Amount by the amount of fuel tax decline at the federal level to further devolve the program from the federal government.

VMT ANALYSIS

In each state, the Federal Highway Administration (FHWA) monitors vehicle-miles traveled (VMT) within that state on a monthly basis. The FHWA then compiles the monthly data to estimate statewide annual VMT. **Figure 8**[45] summarizes statewide VMT on Oklahoma's roadways over the past 12 years, from 2010 through 2021. (Data for 2022 has not yet been compiled and published).

Figure 8: Oklahoma Statewide VMT (in millions), 2010-2021



As expected, in the wake of the Covid-related shutdowns, VMT in 2020 was the lowest observed through the entire study period. VMT in 2020 was down over 6% from the previous year, and down nearly 9% from its previous peak in 2017. However, VMT rebounded strongly in 2021, reaching levels that were observed during the pre-pandemic period of 2016-2019.[46]

PPM MILEAGE REPORTING METHODS AND PRICING STRATEGIES

OVERVIEW OF REPORTING METHODS

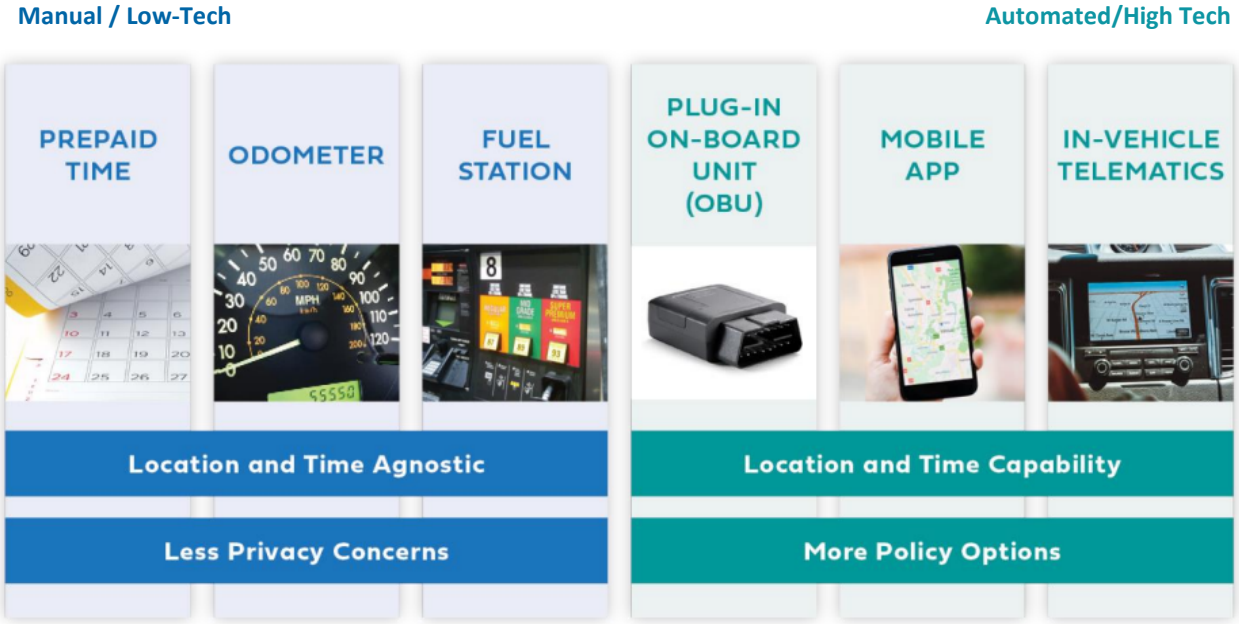
There are various means of recording and reporting road usage data, ranging from low-tech, self-reported, odometer readings to high-tech in-vehicle telematics. Each method has different capabilities, impacts and challenges for implementation and operations. When implementing a PPM system, multiple reporting options can be offered to promote user compliance and buy-in.[47]

Providing multiple low-tech and high-tech mileage reporting options is an essential component to creating a program that could provide services and administer fees fairly to as much of the population as possible.[48] To date, most pilot programs have allowed volunteers to

[45] The data in the graphic below represents data extracted from FHWA, as described in footnote **Error! Bookmark not defined.**. However, for years 2018 through 2021, HNTB had to make adjustments to the data due to obvious internal inconsistencies..
[46] As of the drafting of this document, VMT data for 2022 was only available through August. Initial indications are that VMT stagnated or slightly declined in 2022 in the wake of record fuel prices and elevated inflation.
[47] VMT Fee Assessment Final Report, https://static.tti.tamu.edu/tti.tamu.edu/documents/PRC-14-02F.pdf
[48] Fixing Funding By The Mile, A Primer And Analysis Of Road User Charge Systems, National League of Cities, 2018

pick from a range of low-to-high technology options as a choice in mileage recording and reporting methods. For example, California's 2017 RUC pilot had mileage reporting methods including odometer checks and prepaid time permits on the low-technology side, and automated reporting using a plug-in on-board unit and in-vehicle telematics on the high-technology side, along with multiple other options.

Figure 9: Mileage Reporting Options



The main manual mileage data recording and reporting methods that have been used in pilots and PPM programs around the country have been:

- **Time Permit**: A prepaid fee is charged for an unlimited number of miles of driving for a defined period of time.
- **Distance (Mileage) Permit**: A prepaid fee is charged for fixed number of miles.
- **Odometer reading**: A per mile fee is based on an odometer reading that is either reported by the driver or checked at verified locations on a periodic basis.
- **Fuel Station**: A fee is estimated based on the fuel efficiency of the vehicle and the amount of fuel purchased at the pump.

The main automated mileage recording and reporting options that have been used include:

- **Plug-in Devices with GPS** (OBD-II): A per mile fee is calculated based on the mileage transmitted by a device that plugs into the vehicle's on-board unit. The device has GPS capabilities to provide location and routing information.
- **Plug-in Devices without GPS** (OBD-II): Like the above, a per mile fee is calculated based on the mileage transmitted by a device that plugs into the vehicle's on-board unit. However, in this case the device does not have GPS capabilities.
- **Other Aftermarket Telematics Devices**: For commercial vehicle pilots in California and on the east coast, aftermarket telematics devices were used to transmit mileage and location information.
- **Mobile Cellular Applications**: A per mile fee is calculated based on the mileage transmitted through a mobile application that is synced with cellular communication systems and GPS. In some cases, GPS technology has been turned off.

- **In-Vehicle (Embedded) Telematics:** A per mile fee is calculated and transmitted utilizing telematics devices that are integrated into the vehicle. In-vehicle telematics transmits the vehicle data, which often includes location and mileage data, to a cloud-based data hub. These systems have been tested in more recent pilots in Minnesota and California. This is also a mileage reporting option in both Utah and Virginia's PPM Programs.

MANUAL REPORTING METHODS

Table 8 below provides additional information on the different manual (low-tech) reporting options. This includes key considerations, examples of pilots and programs where the method has been used, and examples of State Account Managers (SAMs) and Commercial Account Managers (CAMs) that have tested the respective mileage reporting method.

The main benefits of a manual reporting option versus an automated option are that it minimizes privacy concerns and is easier and less complex to administer and enforce. However, the manual reporting options lacks the pricing flexibility of an automated option (i.e., it is not able to charge differentiated rates that are based upon time and location) and presents a greater challenge with regards to developing a system that is interoperable across states (i.e., allocating miles and therefore revenues to the correct state if the driver travels across states).

Table 8: Analysis of Manual (Low-Tech) Reporting Options

Method	Description	Considerations	Pilots / Programs *(Account Managers)*
Time Permit	• Flat fee for a specified time period (e.g., monthly, quarterly, annually) for driving an unlimited number of miles during the time period • Can allow for optional odometer checks for mileage true up at the end of the period	• Cannot charge rates based on when or where the vehicle was driven • Avoids privacy concerns • Lower cost of administration since less complex • No enforcement since no mileage collection or reporting • Easy to use for the driver	• California Road Charge Pilot Program *(SAM – CalSAM)* • Oregon Road Usage Charge Pilot
Distance (Mileage) Permit	• Flat fee prepaid for a fixed number of miles over a specific time period • Requires the vehicle owner to purchase additional miles (new permit) once the initial mileage is used • Can allow for odometer checks to confirm mileage	• Cannot charge rates based on when or where the vehicle was driven • Avoids privacy concerns • Lower cost of administration since less complex • No enforcement since no mileage collection or reporting • Easy to use for the driver	• California Road Charge Pilot Program *(SAM – CalSAM)* • Washington Road Usage Charge Pilot Project & Assessment *(CAM – IMS DriveSync)*
Odometer Reading (Self-Reporting)	• Mileage is self-reported on a periodic basis (e.g., during annual registration or inspection, or more frequently) to determine fee • Odometer readings can be reported on a website or by uploading a picture of the odometer on a mobile app	• Cannot charge rates based on when or where the vehicle was driven • Avoids privacy concerns • Lower cost of administration since less complex increased potential for fee evasion unless a certified odometer picture is submitted with the odometer reading. • Easy to use for the driver	• California Road Charge Pilot Program *(SAM – CalSAM)* • Colorado Road Usage Charge Pilot Program *(CAM – Azuga)* • Hawaii Road Usage Charge (Tech Demo) *(CAM – Azuga)*

		• Potential driver "sticker shock" if reporting is annual / infrequent	• OReGO – Road Usage Charge Program *(CAM – Azuga)* • Washington Road Usage Charge Pilot Project & Assessment *(CAMs – IMS DriveSync & emovis)*
Odometer Reading (Checks at Certified Stations)	• Mileage is checked on periodic basis (e.g. during annual registration or inspection, or more frequently) at certified stations to determine fee	• Cannot charge rates based on when or where the vehicle was driven • Avoids privacy concerns • Lower cost of administration since less complex increased potential for fee evasion unless a certified odometer picture is submitted with the odometer reading. • Easy to use for the driver • Potential driver "sticker shock" if reporting is annual / infrequent	• Hawaii Road Usage Charge (Drive Survey) • Nevada Odometer Reading Pilot Program
Fuel Station (Pay-at-Pump)	• A version of an Automatic vehicle identification (AVI) device transmits the vehicle fuel economy rating to a system at the fueling station • Fuel economy rating is multiplied by total gallons purchased to estimate mileage, and the resulting fee is added to the price	• Cannot charge rates based on when or where the vehicle was driven • Avoids privacy concerns • May be complex and costly to administer • Devices may not report fuel consumption accurately in some vehicles • Easy to use for the driver • Could co-exist with the existing fuel tax and allow drivers to pay one or the other • Does not work for alternate fuel vehicles (electric)	• California Four Phase Demonstration *(Partners – GasBuddy, Danlaw, Chargepoint)* • Oregon's Mileage Fee Concept and Road User Fee Pilot

AUTOMATED REPORTING METHODS

Table 9 below provides similar information on the different automated (high-tech) reporting options.

Table 9: Analysis of Automated (High-Tech) Reporting Options

Method	Description	Considerations	Pilots / Programs *(Account Managers)*
Plug-in Device GPS and Non-GPS options / Other Aftermarket Telematics Devices	• Automated mileage recording and reporting via a device that plugs into the vehicle's (on board unit). OBU connects to the Onboard Diagnostic port to estimate mileage • Can be equipped to sync with cellular communications technology, GPS or a system at the fuel station to measure mileage and fuel usage	• The device may have GPS capabilities to provide location and routing information for differentiating mileage by jurisdiction/state and for identifying when the vehicle passes through toll points • Can charge rates based on when or where the vehicle was driven • GPS capabilities introduce privacy concerns	• California Road Charge Pilot Program *(CAMs – Azuga, IMS & EROAD)* • Colorado Road Usage Charge Pilot Program *(CAM – Azuga)* • Hawaii Road Usage Charge (Tech Demo) *(CAM – Azuga)* • Oregon Road Usage Charge Pilot

	• The VIN is also automatically read	• Some OBU devices do not include GPS to avoid the privacy concerns • May be complex and costly to administer • Mobile plans for cellular OBU devices can be substantial compared to the actual RUC fees collected • Devices with GPS capabilities enhance user compliance, but all plug-in devices can be unplugged • Drivers can purchase and install at a low cost • Insurance companies already offer discounts for safe driving based on OBU data, which can help encourage participation in the program • OBU does not work with all vehicles manufactured before 1996, limiting its applicability to newer vehicles • GPS-based devices could co-exist with toll roads	• OReGO – Road Usage Charge Program *(SAM – Emovis / CAMs – Azuga & Emovis)* • Utah Road Usage Charge Program Utah Road Usage Charge Program *(CAM – Emovis)* • Virginia Mileage Choice Program *(CAM – Emovis)* • Washington Road Usage Charge Pilot Project & Assessment *(CAMs – IMS DriveSync & emovis)*
Mobile Application	• Automated mileage recording and reporting via a mobile app that is synced with cellular communication systems and GPS	• GPS capabilities provide location and routing information for differentiating mileage by jurisdiction/state and for identifying when the vehicle passes through toll points • Can charge rates based on when or where the vehicle was driven • GPS capabilities introduce privacy concerns • May be complex and costly to administer • GPS capabilities can enhance user compliance • Enforcement issues could arise with manual activation. To overcome enforcement concerns, an odometer reading picture can be required periodically for reconciliation. • GPS-based devices could co-exist with toll roads	• California Road Charge Pilot Program *(CAM – Azuga)* • Minnesota Road Fee Test • Oregon Road Usage Charge Pilot *(CAM – Emovis)* • Washington Road Usage Charge Pilot Project & Assessment *(CAM – IMS DriveSync)*
In-Vehicle (Embedded) Telematics	• Technology is built into the vehicle for automated recording and reporting • Vehicle sensors, systems, and apps collect and report RUC data	• GPS capabilities provide location and routing information for differentiating mileage by jurisdiction/state and for identifying when the vehicle passes through toll points • Can charge rates based on when or where the vehicle was driven • GPS capabilities introduce privacy concerns • Likely less costly and complex to administer than other automated options	• California Four Phase Demonstration *(CAMs – Mile Auto, Via & EasyMile)* • California Road Charge Pilot Program *(CAMs – Azuga & IMS)* • Minnesota Distance-Based Fees Project *(CAMs – HourCar, Zipcar & VSI labs)*

		• Enhanced user compliance since less opportunity for fraud or theft when build into vehicle. • Seamless experience for users, but the technology is not expected to be widespread for many years given vehicle turnover • High level of accuracy	• Utah Road Usage Charge Program *(CAM – Emovis)* • Virginia Mileage Choice Program *(CAM – Emovis)*

PRICING OPTIONS

A PPM system could be designed to address individual public agency goals by charging flat or variable fees based on several factors, including vehicle fuel efficiency, vehicle class (e.g., light and heavy vehicles), congestion levels on the road, and the road type. The selected technology method for recording and reporting mileage data will directly influence the agency's range of pricing strategy options (e.g., who gets charged, when and how much).

Flat fee pricing strategies are generally technology-agnostic and allow for fee differentiation based on vehicle class and vehicle fuel efficiency. For instance, under a flat fee strategy, heavy trucks could pay higher fees set to cover excessive road wear to account for maintenance and repair needs for roads resulting from heavy truck traffic. The higher fee may also encourage heavy vehicles to make fewer, more efficient trips. In addition, regardless of the data collection technology method, a flat fee program could be structured to only charge certain categories of vehicles, such as electric vehicles, to enable these vehicles to pay their fair share for road usage.

Variable fee pricing strategies, including road-type, zone-based and time of day or congestion pricing, are more limited by selected technology methods. For example, low-technology systems, such as prepaid time and fuel economy mileage estimates, do not collect location data and therefore they are unable to improve the efficiency of road use by charging variable rates for travel during congested periods. Furthermore, low-technology systems such as a self-reporting odometer method, could also be subject to fee evasion with compliant drivers paying more than noncompliant drivers, leading to a potentially less equitable fee structure. Conversely, high-technology systems offer significantly more flexibility to address agency goals with various pricing strategies that could lead to more fair and efficient use of roadways. For example, a GPS-based system could incorporate variable congestion pricing on highly congested urban roadways to encourage drivers to shift some of their trip times to less congested periods or to other transportation modes, thereby alleviating congestion and its effects. These higher-tech solutions also expand opportunities for Account Managers (service providers) to provide value added services directly to the driver.

Overall, a PPM program, versus the motor fuel tax or vehicle registration fees, provides considerably more flexibility to address different policy objectives, such as fairness or efficient roadway usage. Below are some pricing options that can be used to help achieve desired policies.

VEHICLE CLASS

PPM rates would vary depending on a vehicle's classification (i.e., rates could differ between passenger cars, vans, pickups, and larger trucks according to weight, height, axles, etc.). Typically, this pricing option would result in larger vehicles paying more than smaller vehicles.

With this option it is important to determine which classification system to use, as there are multiple accepted classification systems. For example, in the United States the United States Environmental Protection Agency (EPA), the National Highway Traffic Safety Administration [NHTSA as part of their New Car Assessment Program (NCAP)

program], Federal Highway Administration (FHWA), and the U.S. Census Bureau all have different vehicle classification criteria.

A vehicle class pricing approach could be applied across all mileage reporting options.

FUEL EFFICIENCY

Under this pricing option, PPM rates would vary depending on the vehicle's fuel efficiency. Typically, this option would require the state to establish different vehicle fuel efficiency tiers ranging from vehicles with low fuel efficiency (e.g., gas-powered vehicle below 15 MPG) to those not powered by fuel such as electric vehicles.

The actual price charged would depend on the program's structure and the state's policy objectives. For example, under a program where the PPM fee would supplement the motor fuel tax to ensure all vehicle's paid "their fair share", a vehicle with a higher fuel efficiency (such as an electric vehicle) may be required to pay a higher per mile rate. On the other hand, if the PPM program was established to replace the fuel tax, then lower fuel efficiency vehicles may be required to pay a higher per-mile rate to capture the cost of emissions and other pollutants.

A fuel efficiency pricing approach could also be applied across all mileage reporting options.

ZONE-BASED

A zone-based pricing option requires an automated mileage reporting device that collects and reports a vehicle's location data. For this option, the rate charged would differ depending on the zone, or area, in which the vehicle travels. Typically, vehicles traveling in more dense urban zones would pay higher rates than vehicles traveling outside of these zones (i.e., vehicles in rural or suburban areas). There are multiple reasons this is the case including the higher level of congestion and pollution experienced and the greater cost of constructing and maintaining urban infrastructure versus rural.

Zone-based pricing was recently piloted by Oregon, as a congestion relief measure for the city of Portland. Under a FAST Act STSFA grant, OReGO tested the usage of a PPM system for local area pricing. Three sub-pilots were completed. In the Area Boundary Pricing (ABP) sub-pilot, a group of drivers was recruited and equipped with OBD-II devices. Drivers were charged all miles driven within the Portland metropolitan area, which was geofenced, at a rate higher than the statewide RUC fee.[49]

ROAD TYPE

Like a zone-based approach, a road type pricing option requires an automated mileage reporting device with GPS capability. A road type pricing option could charge different rates for public versus private roads and/or different rates depending on the road classification (i.e., urban versus rural interstate, limited access highway, arterial routes, etc.). Generally, in an approach where the rate depends on the road classification, vehicles traveling on larger highways or limited access urban routes would pay more than those traveling on smaller rural roads or local city streets. In addition, road type pricing can be an effective way to direct money from the road's usage straight to the owner and/or operator of the roadway.

TIME-OF-DAY

[49] Local RUC Project Evaluation Report to the Secretary
https://www.oregon.gov/odot/Programs/RUF/OReGO_FASTAct_STSFA2017_LOCALRUC_PilotEvaluationReport.pdf

A time-of-day pricing approach would incorporate differentiated pricing depending on the hour (or another increment of time). Higher prices would normally be charged during peak or daytime traffic hours and lower prices during off-peak or late evening / early morning hours. Additionally, prices could vary during the weekday and weekend.

A time-of-day pricing option would require an automated mileage reporting device, which captured not only the distance driven but also the time when each mile was driven. Time-of-day pricing may not require location tracking.

CONGESTION

Congestion pricing is effectively the combination of zonal (or road type) and time-of-day pricing. For this approach an automated mileage reporting device with GPS capabilities would be needed. This device would need to capture and report mileage, location, and time data.

In the Layer-area Pricing sub-pilot, a separate sub-pilot than Area Boundary Pricing, the OReGO successfully tested a congestion like pricing structure.[50] In this sub-pilot, different rates were applied to vehicles depending on time of day and the area in which they traveled. The rates were as follows:

- Oregon state PPM rate of $0.018: normal rated charged on all Oregon roads during all times of the week
- Multnomah County rate of $0.060: rate charged for drivers on roads in Multnomah County on weekdays between 7am – 10am
- Portland Central Business District rate of $0.12: rate charged for drivers in the Central Business District of Portland on weekdays between 8am – 11am

DISCOUNTS & EXEMPTIONS

A PPM system can easily be adapted to provide specific groups discounts or even exempt them from paying the PPM fee. As discounts could be applied on top of any of the above pricing options, the type of mileage reporting device required would depend on the program's other characteristics. On the other hand, exemptions could be applied across all mileage reporting options.

With regards to discounts, mileage rates can be adjusted based upon criteria such as income level to promote fairness. Discounts could also be applied to groups of individuals such as students and/or seniors. For exemptions, using tolling as an example, emergency or armed force vehicles could be exempt from paying the PPM fee.

KEY PILOT CONSIDERATIONS

SOCIAL EQUITY AND FAIRNESS

The PPM concept is based on the "user pays" principle whereby those who use the transportation network pay an amount proportional to how much they use it.[51] The motor fuel taxes are essentially indirect user fees that only partially account for all costs imposed on the roadway and are marginally only proportional to use given the wide range of fuel economies among vehicles in the fleet. An effective RUC system can be set up to account for the cost of negative externalities (e.g., accidents, noise, emissions) and leads to more efficient behavior and an increase in

[50] Local RUC Project Evaluation Report to the Secretary
https://www.oregon.gov/odot/Programs/RUF/OReGO_FASTAct_STSFA2017_LOCALRUC_PilotEvaluationReport.pdf
[51] I-95 Coalition, Equity and Fairness Considerations in a Mileage-based User Fee System, 2019

societal welfare. This section highlights areas of concern and considerations for drivers with longer commutes, income differences, vehicles with different fuel efficiencies, and urban vs. rural considerations.

LOW INCOME DRIVERS

A Congressional Budget Office report[52] notes that fuel taxes can tend to be regressive; that is, they may impose a larger relative burden on low-income than on high-income households. The same situation may also exist for a PPM system, particularly for low-income families that have longer commutes. The exact impact relative to the fuel tax would depend on the fuel economy of the vehicles driven by those in lower income groups.[53] Several possible mitigation strategies have been proposed, including efforts to tailor the PPM system such that low-income families would be charged a lower per-mile rate, receive a discount, or obtain assistance from the government in paying their PPM fee. Such discounts could be based on actual reported income, household size, and / or location of their residence.[54] It is important to note that no such mitigation programs have been implemented to offset the impacts of the already regressive fuel tax.

Another concern is that it could be challenging to transition unbanked or underbanked drivers into an electronic-based PPM system. The low-income population may be slow to adopt new technologies such as GPS devices for current vehicles or purchase new vehicles equipped with these devices or telematics.

Providing opportunities for drivers to pay fees with cash without the need for credit card or banking relationships could help mitigate payment issues associated with the unbanked or underbanked populations.

RURAL VS. URBAN DRIVERS

There is a concern that rural drivers with longer commutes could be negatively impacted by the PPM model. Research studies have shown that the tax burden for rural and urban households does not appear to significantly change with a switch from fuel taxes to a PPM system.[56] Analyses show that when replacing the gasoline tax with a revenue-neutral flat PPM fee, households in rural census tracts will generally pay less under a PPM system than they are currently paying in gasoline taxes.[57,58] The reduction in payments in rural areas is because rural residents, even though they drive

Table 10: Percentage Change in Payments Under RUC Compared to a Gas Tax (Rural vs. Urban – Mix)[55]

State	Rural	Urban	Mixed
Arizona	-6.1%	0.7%	-1.7%
California	-6.3%	0.3%	-2.4%
Idaho	-3.1%	1.0%	-0.9%
Montana	-1.9%	1.4%	-0.4%
Oregon	-4.8%	1.0%	-2.9%
Texas	-3.1%	0.5%	-1.6%
Utah	-5.5%	0.6%	-3.4%
Washington	-4.8%	1.0%	-3.6%

[52] "Alternative Approaches to Funding Highways;" Congressional Budget Office; March 2011.
[53] I-95 Coalition, Equity and Fairness Considerations in a Mileage-based User Fee System, 2019
[54] Ibid.
[55] RUC West (Americas), Financial Impacts of Road Usage Charges on Urban and Rural Households
https://caroadcharge.com/media/4rrg3xes/financial_impacts_of_ruc_on_urban_and_rural_households_updates_10states.pdf
[56] Road Usage Charge Assessment - Financial and Equity Implications for Urban and Rural Drivers; Washington State Transportation Commission (WSTC); January 2015, https://waroadusagecharge.org/wpcontent/uploads/2020/01/WA-RUC-A-20-Financial-Equity-Implications-for-Urban-Rural-Drivers.pdf
[57] Road Usage Charge Economic Analysis Final Report,
https://www.oregon.gov/ODOT/Programs/ResearchDocuments/SPR774_RoadUsageCharge_Final.pdf
[58] Financial Impacts of Road User Charges on Urban and Rural Households;" Economic Development Research Group Inc. April 2017

more miles, tend to drive older and less fuel-efficient vehicles than those residents living in an urban area.[59,60,61,62] Research findings from a RUC West study, **Table 10** above, show that households in urban areas could see a slight increase of nearly 1 percent in payments under a RUC compared to a fuel tax.[63]

TRIBAL CONSIDERATIONS

Many of Oklahoma's 38 recognized Tribal Nations are allotted a percentage of the statewide fuel tax revenues through signed compacts. As overall fuel tax revenues decrease, these tribal nations have a vested interest in the development of a fair, equitable, and sustainable revenue source. The Oklahoma PPM Pilot will provide a unique opportunity to assesses the impacts and benefits of RUC on tribal nations. Tribal partners will be engaged, and existing agreements/compacts will be evaluated in order to develop tailored policies and revenue distribution options for tribal nations. The Pilot will coordinate and encourage meaningful participation with Tribal Nations to understand their needs, impacts and benefits of PPM to deliver fair mobility and funding solutions for all Oklahomans.

PRIVACY / CYBERSECURITY

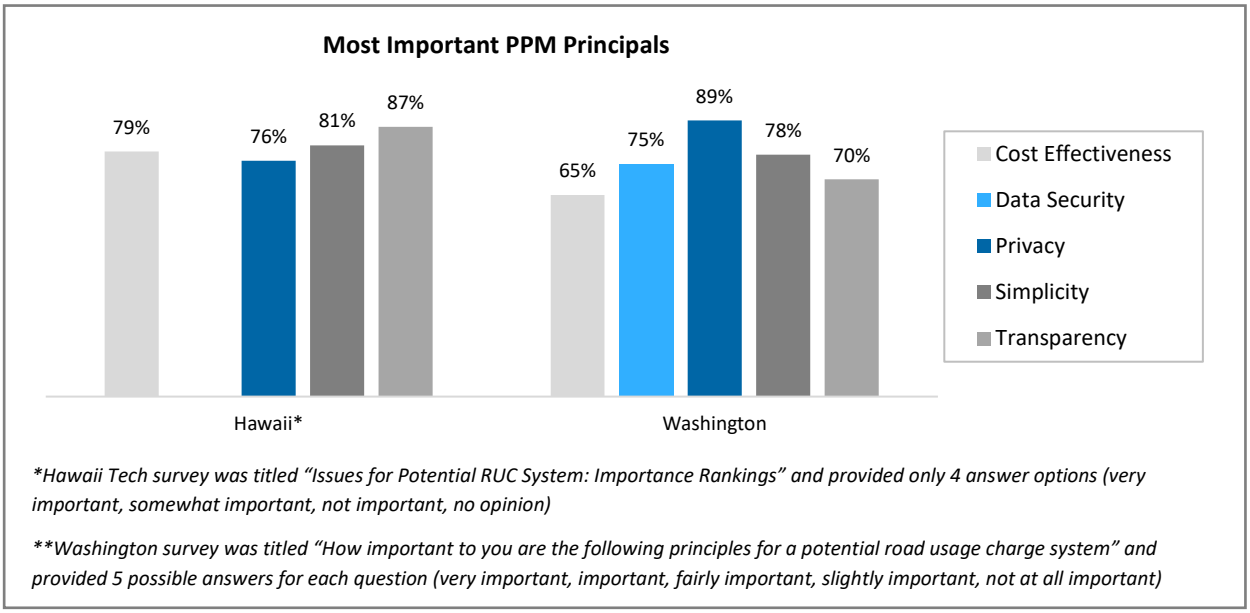
Implementation of a PPM program could raise concerns about personal data privacy and might even raise legal challenges.[64] Privacy concerns are primarily centered around perceived intrusion of privacy caused by collection and processing of individual location data with mileage recording technology such as GPS-based tracking devices. As such, understanding and mitigating public concerns over personal data security is an important consideration when developing a RUC program.

Privacy was a prominent theme in focus group studies and media stories analyzed by the National Cooperative Highway Research Program (NCHRP) in 2016.[65] The topic was discussed in virtually all qualitative studies evaluated, and several summary reports highlighted privacy concerns as one of the participants' key objections to a PPM system. The NCHRP study noted that participants were most alarmed by technology that collected data on travel locations or times, but even simple odometer-based systems raised concerns. The NCHRP study did not provide tentative evidence that PPM support might rise over time, especially if new pilot programs or other activities familiarize people with the PPM concept. Survey data shows that support for replacing the fuel tax with a PPM charge has increased slightly over time, and surveys of participants in two PPM pilot programs found relatively high support levels, suggesting that direct experience with PPM noticeably increases support for these fees.

Privacy and data security were also key concerns identified in surveys by participants of the Washington and Hawaii PPM pilots. Both pilots conducted surveys asking participants to identify which issues (from a list) were most (very) important to them in the context of a PPM system. In the case of Washington, privacy was the most important principal while data security was listed third. For Hawaii privacy was ranked fourth while data security was not an option in the survey. See ***Figure 10*** for ranking of top five principals for each.

[59] Road Usage Charge Economic Analysis Final Report, https://www.oregon.gov/ODOT/Programs/ResearchDocuments/SPR774_RoadUsageCharge_Final.pdf
[60] "Financial Impacts of Road User Charges on Urban and Rural Households;" Economic Development Research Group Inc. April 2017
[61] Road Usage Charge Assessment - Financial and Equity Implications for Urban and Rural Drivers; Washington State Transportation Commission (WSTC); January 2015
[62] Evaluation of the California Road Charge Pilot Program Final Report. CH2M. November 2017. Available at: http://www.dot.ca.gov/road_charge/resources/final-report/appendices/Appendix_3.pdf
[63] "Financial Impacts of Road User Charges on Urban and Rural Households;" Economic Development Research Group Inc. April 2017
[64] Congressional Research Service, Mileage-Based Road User Charges, https://sgp.fas.org/crs/misc/R44540.pdf
[65] Synthesis Report 487: Public Perception of Mileage-Based User Fees. National Cooperative Highway Research Program (NCHRP). 2016

Figure 10: Share of Individuals Survyed that Viewed the Defined Principal as Very Important



**Hawaii Tech survey was titled "Issues for Potential RUC System: Importance Rankings" and provided only 4 answer options (very important, somewhat important, not important, no opinion)*

***Washington survey was titled "How important to you are the following principles for a potential road usage charge system" and provided 5 possible answers for each question (very important, important, fairly important, slightly important, not at all important)*

Survey results as part of the I-95 Corridor Coalition Phase 1 Pilot also show that privacy and security is of concern.[66] Overall, participants ranking "privacy of my personal data" as a high concern dropped from 57 percent to 30 percent following the pilot. Concern with the "security of data" also dropped as a result of the pilot experience but remained a one of the top three. Participant concerns with data accuracy were consistently lower than the sale, security and privacy of data suggesting some comfort with the PPM technology.

Survey results from the I-95 Coalition show that participants who chose plug-in device options – with and without location – had the highest levels of satisfaction in all categories. Over 90 percent of participants who chose the plug-in device with location would not switch mileage reporting options, compared to 57 percent who chose the Smartphone app. In fact, less than half of Smartphone app participants believed this option was a good choice, with nearly 60 percent experiencing some sort of technical issues. This finding suggests that the Smartphone option may not be the best technical option at this time due to the reliance on participants taking action for the approach to be viable. The survey results also revealed the top reasons participants chose the "plug-in device with location" mileage reporting option: ease of installation (96 percent), use of GPS (86 percent), and data accuracy (75 percent).

Similar findings came out of the California Road Charge Pilot Program. In this program, the cohorts with the highest satisfaction were the groups who chose the more automated reporting technologies (OBD plug-in or telematics with GPS). Those who chose the low-tech options had lower satisfaction due to the ongoing burden of having to manually report mileage. Besides survey data, evidence of preference was directly seen as many participants switched from manual to automated reporting options mid-pilot.

[66] I-95 Corridor Coalition, Privacy Considerations in a Mileage Based User Fee System, 2019

To help mitigate privacy concerns and achieve public acceptance, most pilots to date have offered PPM participants a range of mileage recording and reporting options and an ability to opt-in and opt-out of approaches, including options that do not require a location-based technology. For example, PPM systems can operate without GPS-based tracking devices and use odometer reading to mitigate privacy concerns. However, PPM systems that do not use GPS devices are limited in their ability to charge variable rates to meet individual agency goals such as reflecting road congestion as they capture only the total number of miles traveled. Also, this type of system requires some sort of manual intervention to avoid double-charging vehicles that use toll roads. A key component of a PPM system that involves location-based technology is developing an education and outreach program focusing on how information will be used and how privacy will be protected.[67] Best practices include defining how long the data may be retained, the extent to which data should be anonymized, and with whom it can be shared. Another option used to alleviate privacy concerns, adopted in some parts of Europe, is to limit PPM vehicle types to trucks only. Fitting trucks with GPS-based technology would raise fewer privacy concerns than a system encompassing all vehicles. Many private companies already track fleets with GPS-based technology. Trucks could be categorized by weight, number of axles, engine emissions, or other measures, assessing higher charges on vehicles that cause greater roadway wear or emit higher levels of pollutants.

Privacy and Security in Oklahoma

Customer privacy and security is at the forefront of Oklahoma's PPM Program. Like many others, Oklahomans have expressed apprehensions with a PPM Program because of the security and privacy implications of data and location sharing. In consideration of these concerns, the Pilot will provide multiple methods for data reporting and collection. These options range from relatively lower-tech methods such as manual mileage reporting or VMT to high-tech, in-vehicle telematic devices. The Pilot will be elective, and participants can select which data collection method they wish to use. Personal user information, such as contact, vehicle, and data collection preferences, will be collected as part of the program registration process. The amount and nature of information collected will depend on the reporting method selected by the participant. VMT and location data will also be collected for some reporting methods. Only the information required to create and process PPM transactions will be collected.

COSTS

PPM pilots and programs in the U.S. have so far been voluntary and involved relatively small-scale operations with most having less than 5,000 participants. They have involved multiple mileage reporting (i.e., manual vs. automated) and technology options and have rarely allowed for account managers to provide other services. Additionally, PPM programs have not typically focused on either enforcing compliance with the pilot or program or optimizing costs. For these reasons along with others, it is challenging to evaluate the realistic costs for a large-scale adoption.

Noting the above, the costs to establish, collect, and enforce the PPM fee (at least in the short-to-medium term) will almost certainly be greater than the cost to collect the motor fuel tax. The cost associated with collecting the fuel tax is typically cited as around one percent of the revenue collected[68,69]; however, some researchers suggest that the costs of motor fuel tax collections may well be in the vicinity of five percent of the revenue collected.[70] Moreover,

[67] I-95 Corridor Coalition, Privacy Considerations in a Mileage Based User Fee System, 2019
[68] Rand Corporation, Mileage-Based User Fees for Transportation Funding report https://www.rand.org/pubs/tools/TL104.html
[69] TETC, Mileage-Based User Study Final Report, https://tetcoalitionmbuf.org/wp-content/uploads/2020/07/2018-Coalition-Passenger-Pilot-Final-Report.pdf
[70] Ibid.

motor fuel tax cost analysis typically does not account for indirect costs paid by the end-customer. An example is payment processing costs (credit card processing fees, etc.) that are charged on the customer's fuel purchase transactions, resulting in higher fuel rates due to transaction costs on the taxes.

In the case of a PPM system, while system costs vary based upon several factors including technology choices and the number of vehicles subject to mileage fees, recent evidence and modeling suggests that for a well-run state-level system, costs may be as low as five to six percent of revenue. New Zealand's PPM program, which includes almost 800,000 vehicles (more than 150,000 heavy and 600,000 light) has a cost of collection below 5% of revenues.[71] Even with greater administrative costs of a PPM system vs. fuel taxes, mileage fees can be expected to yield far more net revenue over the coming decades than fuel taxes given the shifts toward higher fuel economy and alternative fuel vehicle technologies. See **Table 11** for further details on the estimated costs of administering a PPM program.

Table 11: Administrative Cost of a PPM Program (Industry Est.)

Administrative Cost of a PPM Program (Industry Est.)				
State/ Coalitions	**Type**	**Year**	**Admin Cost (as % of Revenue Collected)**	**Methodology / Comments**
California	Pilot	2017	**2.5-15%**[72] *2-3% - heavy Vehicles only* *5% - high tech devices** *7-8% - low tech devices** *15% - public/state operator* **through private operator*	Cost estimates come from a financial tool built by Caltrans to forecast steady state PPM program costs. The Caltrans model assumes a PPM program that uses private commercial partners, has more than one million vehicles, and utilizes newer technologies (i.e., embedded telematics, etc.)
Hawaii	Pilot	2022	**2-25%**[73] *2-4% - leveraging existing systems* *3-6% - leveraging existing systems plus 3rd party operated options* *15-25% - high tech options*	Lower cost assumes manual odometer reading during vehicle inspection process utilizing the state's existing vehicle inspection infrastructure. Higher costs (15-25%) assumes third party RUC account management system using aftermarket devices
Oregon	Program	2017	**< 10%**[74]	Report notes an objective to keep costs below 10% of revenues collected and notes that program scale (i.e., high number of vehicles) is required to meet this target
TET Coalition	Study	2019	**~18%**[75] *initially but decreasing*	Costs are estimated assuming commercial account manager costs at 10% of gross revenues and additional state administration costs of 8%, decreasing over time. These figures are based upon toll industry benchmarks and not PPM specific analysis
Utah	Program	2021	**<10%**[76]	Represents UDOT's projected steady state costs prior to 2030 assuming a program of 1 million vehicles. UDOT forecasts further declining costs post 2030 as participation grows and lower cost technologies are used to collect fees

[71] California Road Charge Pilot Program, report https://dot.ca.gov/-/media/dot-media/programs/road-charge/documents/rcpp-final-report-a11y.pdf
[72] Ibid.
[73] HiRUC RUC Cost Analysis, Appendix https://hiruc.org/wp-content/uploads/2022/08/E-3-RUC-Cost-Analysis.pdf
[74] The OReGO Program Final Report https://www.oregon.gov/odot/Programs/RUF/IP-Road%20Usage%20Evaluation%20Book%20WEB_4-26.pdf
[75] TETC, Administration and Compliance Tech Memo https://tetcoalitionmbuf.org/wp-content/uploads/2020/07/Coalition-MBUF-Admin-_-Compliance-Issues-Tech-Memo_2019.pdf
[76] Utah Road Usage Charge Report for SB150, https://drive.google.com/file/d/1ZbeymVjg5d9gemPYMplPcVwZAgkI5rf_/view

Vermont	Study	2022	**6-25%**[77] *6% - manual options* *25% - automated (tech) options* *15-20% - combined (manual & automated)*	Vermont's costs estimates are based upon program scenarios with approximately 20,000 vehicles and per-mile rates of between 1.5 and 2.2 cents per mile. These figures include operations, technology, and payment costs
Washington	Pilot	2020	**4-6%***[78] *6% - public/state operator* *4% - private operator* **assumes 6 million vehicles; cost increases to 8-10% range with 1 million vehicles and 16-18% range with 250,000 vehicles*	The analysis of WSDOT focuses largely on cost efficiencies at scale. It shows that costs decrease from 16-18% of revenue to 4-6%, as vehicles increase from 250,000 to 6,000,000. The figures shown here are for a program with 6 million vehicles

How a state decides to collect the mileage data has a great impact on cost of the program, as seen in the *Table 12* above, while the PPM rate impacts the ratio of administrative costs as a percentage of revenue. To date, the more sophisticated the technology used to record mileage, the more expensive the startup costs has been. Reasons for this include the factor that programs have remained small and not yet scaled and most technology solutions are aftermarket. As programs grow the unit cost of technology solutions will decrease as economies of scale are achieved. Further, new in-vehicle technology-based solutions will accelerate and will likely result in less administrative costs and compliance efforts relative to manual-based mileage collection. The PPM rate also impacts the perception of a PPM program's administrative cost, as higher PPM rates decrease the ratio of administrative costs as a percentage of revenues. This can be seen in the example presented in **Table 12** where the administrative cost ratio of Vehicle 2 is considerably lower than Vehicle 1 due to the higher PPM fee charged to this vehicle.

Table 12: PPM Administrative Cost Ratio - Example

PPM Rate Comparison		Vehicle 1	Vehicle 2
VMT	Miles	12,500	12,500
PPM Rate (Illustrative)	$/mile	0.015	0.025
PPM Revenue - Annually	$	187.5	312.5
Annual Cost (Illustrative)	$	25.0	25.0
Cost as % of Revenue	%	13.3%	8.0%

Another factor to consider regarding administrative cost is how a state decides to administer their PPM System. For example, a PPM system can be housed within one or multiple jurisdictions. Single jurisdiction systems, such as those in a single city, will likely use a public institution for administrative functions, while multiple-jurisdiction systems will tend to favor private entities due to the complexity of the administrative infrastructure. In the case of a pay-at-the-pump system, it might allow PPM program to coexist with a motor fuels tax, with vehicle owners having the option of paying one or the other; however, it could be administratively complex.

ADMINISTRATION

Effective PPM program administration requires collaboration across many different groups of stakeholders. Key stakeholder groups include governmental agencies, advisors, account managers and their subcontractors, and the customers.

[77] Vermont Final Report of the Vermont Road Usage Charge Study, https://vtrans.vermont.gov/sites/aot/files/planning/documents/planning/Final%20Report%20of%20VT%20RUC_vfinal.pdf
[78] Washington State Road Usage Charge Assessment report, https://waroadusagecharge.org/wp-content/uploads/2020/01/WSTC-Final-Report-Vol-1-WEB-2020_01.pdf

Multiple governmental institutions and agencies are typically involved in the authorization, planning, development and operation of a PPM program. While the specific stakeholder and their roles and responsibilities can differ from state to state, similar institutions and agencies tend to be involved. These can include:

- The state legislature which forms the policies and laws under a program operates. The legislature typically also monitors the program's evolution
- The Department of Transportation (DOT), or a transportation commission established within the state, which often oversees and coordinates the implementation of a PPM program
- The Department of Motor Vehicles or Licensing (DMV/DOL), which already has significant data retention and security protocols in place and maintains a database of registered vehicles, often takes a leading role in operations. They also can play a major role in key support functions such as external communications
- The Office of State Treasurer or Finance, which provides technical support for funds management

In addition, other agencies such a tolling authority, which have experience with back office and invoicing functions can play an important role.

Based on PPM pilots conducted to date throughout the country, it is envisioned that the private sector may play a lead role in developing and managing a PPM system. This includes commercial account managers (CAMs) – private entities that provide technology-based approaches for PPM programs along with other driver services and amenities. Drive services and amenities, also known as value-added services, provided by CAMs can include vehicle monitoring applications, usage-based insurance, and mobility payment applications (i.e., EV charging, tolling, parking, transit, etc.). These value-added services are typically opt-in and offered through the CAM's smartphone application or a web portal.

In addition to the CAM, there will also likely be a state account manager (SAM) that provides manual approaches such as an annual time permit (for unlimited mileage) and manual odometer readings (as part of a mandated safety inspection and/or emissions testing program). The SAM would accommodate those individuals that do not want a technology-based approach (as provided by CAMS), as well as those individuals who do not have credit cards or bank accounts, or have poor credit, resulting in a CAM not supporting them as a customer.[79] The SAM activities could be outsourced to a private vendor or performed inhouse. In a mandated PPM system, it will be necessary to ensure all vehicles registered in the state are properly enrolled in the PPM system, have chosen a CAM or the SAM, and have selected an approach by which mileage is collected and by which payment will be made. A federal PPM program might benefit from economies of scale and help to keep costs down, or public-private partnerships could be formed to conduct system operations.

INTEROPERABILITY AND ENFORCEMENT

INTEROPERABILITY

ENFORCEMENT AND COMPLIANCE

A RUC system introduces distinct challenges related to fee evasion with some of these challenges agnostic to the mileage reporting method and other dependent on it. General payment evasion tactics include:

[79] I-95 Coalition Mileage Based User Fee Study

- Refusing to make required payments
- Not registering the vehicle with the DMV or with the RUC account manager
- Abandoning the vehicle or moving to another state without making the balance of payments

In addition to these general evasion concerns, each reporting method also brings forth its own set of unique enforcement challenges.

For example, in the case of odometer image reporting, potential evasion tactics encompass the failure to transmit odometer photos to the designated DMV account manager, the submission of fraudulent or digitally manipulated images instead of authentic ones, manipulation of mileage readings on the odometer (including rolling back the mileage), and attempts to influence the inspector in cases where reporting involves inspections.

In the case of the Plug-in Device (OBD-II) reporting method, evasion tactics can involve the removal the device or tampering with it when it is attached to the vehicle.

For In-Vehicle Telematics reporting, potential evasion tactics encompass altering credentials to obstruct data reporting or access by the Central Administration Module (CAM) or state authorities, as well as interfering with the odometer, whether through the OBD port or by interfacing directly with the Controller Area Network (CAN).

PREVENTION AND DETECTION

While new technologies can help address evasion within the RUC system, it remains crucial to establish comprehensive policies that both facilitate detection and impose penalties on offenders. Each of the three distinct evasion methods can be countered with proactive measures.

For Odometer Image Reporting, a multifaceted approach is necessary. Self-reporting should include mandatory submission of live odometer images through a mobile app to prevent the use of outdated photos. Employing AI technology can verify these images against known vehicle characteristics, ensuring their authenticity and preventing manipulation. Furthermore, periodic random checks (audits) could be conducted on vehicles displaying signs of underreporting. These random checks could involve utilizing VIN lookup services to cross-reference data through vehicle data consolidators like CARFAX, as well as physically inspecting the odometer to confirm mileage accuracy and potential tampering. In the realm of public checks, safety inspectors responsible for odometer verification can be required to submit live images during inspections and perform mileage cross-checks using third-party sources such as VIN lookup services.

To deter evasion in Plug-in Device reporting, several preventative measures can be implemented. First, odometer image reporting can also be required at the time the OBD-II mileage readings are reported. If the OBD-II device is unplugged, vehicle owners can be contacted and instructed to provide odometer photos if there is concern related to tampering. Additionally, imposing substantial fees or penalties when the plug-in device is absent from the vehicle for an extended period of time can serve as a strong deterrent.

In the case of In-Vehicle Telematics, prevention methods include prompt communication with vehicle owners in cases where they are logged out of their telematics account and the requirement to log back in and report their mileage once this communication has been received. Significant fees or penalties for failing to do so within a reasonable timeframe can be instituted to discourage evasion.

PENALTIES FOR NON-COMPLIANCE

In order to maintain strict adherence to the regulations governing electric vehicles within the RUC system, it is important to establish and enforce penalties for instances of non-compliance. The enforcement of non-compliance can be executed through a variety of avenues. Initially, this may involve the issuance of warning letters or formal violation notices. Furthermore, one effective measure could be the mandatory prepayment of fees as a means of compelling adherence to the rules. In cases of persistent or severe non-compliance, escalated penalties may come into play, including the imposition of additional fees or other civil monetary penalties. For more severe infractions, such as repeated violations or deliberate evasion, more substantial actions may be warranted. These could encompass actions such as suspending or revoking vehicle registrations, the impoundment of vehicles, or even suspending or revoking driver licenses. It's important to note that implementing some of these measures may necessitate the introduction of new legislation or amendments to existing ones to ensure the effectiveness of the enforcement process.

REGULATORY AND STATUTORY ANALYSIS

FEDERAL

USDOT REGULATIONS

ODOT was awarded a Surface Transportation System Funding Alternatives (STSFA) grant in the amount of $1.9 million to support the initial pilot of a RUC revenue model in Oklahoma. Periodic reporting and a final report will be required to document the lessons learned and the success of the pilot.

In the near future, as mandated by the IIJA, USDOT will conduct a RUC pilot at the national level that will require some additional coordination to create a seamless pricing and collection effort across multiple states.

OTHER FEDERAL

It is likely that the Internal Revenue Service (IRS) will serve as the point of collection for a future federal RUC as it does today with motor fuel tax. There could be needed coordination between the Tax Commission and the IRS when the national pilot is initiated and beyond.

OKLAHOMA

PARTNERSHIP AGENCIES

Partnership agencies include the following:

- **Oklahoma Tax Commission** (OTC) serves as the tax collection agency for the State of Oklahoma and will be an integral part of the discussion after the initial pilot.

  Taxes and assessments that are collected are allocated by OTC to various state agencies, local governments and tribal nations.

- **Oklahoma Corporation Commission** is responsible for the Leaky Underground Storage Tank (LUST) program in Oklahoma.

  The LUST program is financially supported with a one cent assessment on each gallon of motor fuel, relative to the 19 cents per gallon of total taxation. If the motor fuel tax is replaced with a road user charge the decision makers would need to determine how to continue to fund the LUST program. One option would be to replace this one cent assessment under the RUC fee as well.

- **Oklahoma Turnpike Authority** - After participating in the initial pilot, OTA may potentially serve as Account Manager for subsequent pilot efforts and full implementation of a RUC.
- **Oklahoma Counties** - All 77 counties in the State receive a portion of the motor fuel tax allocated by formula from the Tax Commission. If motor fuel tax revenue is replaced by a RUC, considerations will be needed to replace that source of revenue that provide important funding for roads and bridges in those counties.
- **Oklahoma Cities and Towns** - Cities and towns in the State receive a portion of the motor fuel tax allocated by formula from the Tax Commission. If motor fuel tax revenue is replaced by a RUC, considerations will be needed to replace that source of revenue that provide important funding for roads and bridges in those localities.
- **Oklahoma Tribes** - Tribal Nations in Oklahoma individually have motor fuel compacts with the State. The provisions of those compacts require the Tax Commission to formally allocate 4.5% of the motor fuel tax and the fuel assessment collections to 39 tribes in Oklahoma. This revenue is used by the tribes to support transportation in their tribal areas. If the motor fuel tax is replaced with a road user charge the decision makers would also choose to allocate a portion of RUC revenue to the Tribal Nations or find alternate ways to fund the programs currently funded from fuel taxes.

  Tribal Nations in state are an integral part of the Oklahoma community. It is imperative that tribal members participate in the pilot to provide insight and confidence in the process.

TRIBAL

The impacts of a potential road user charge system to tribes in Oklahoma is discussed in the Tribal Strategies and Engagement Assessment as an appendix of the Legislative report.

LEGISLATIVE CONSIDERATIONS

Because a PPM fee is designed to replace the motor fuel tax and could also be used to replace or supplement other revenue sources such as registration fees or the taxation of electricity for charging vehicles, several sections of the state statutes will need to be reviewed and possibly revised if a complete transition from motor fuel taxes to PPM is contemplated. These include:

- Oklahoma Statutes Title 68, §500.1 thru 723: sections dealing with the 19 cents/gallon motor fuel taxation and the allocation of those taxes.
- Oklahoma Statutes Title 68, §-6501 thru 6512: sections relating to the assessment of an annual registration fee for electric and hybrid vehicles and the taxation of electricity used in charging vehicles. (These provisions become effective January 1, 2024).
- Oklahoma Statutes Title 69, §1729 and 1730: sections relating to a “backstop” provision utilizing motor fuel tax receipts for the benefit of OTA. This provision will need to be modified to ensure the “backstop” remains in place. Of note, once OTA certifies that it does not need the fuel tax money for the “backstop”, the money is transferred to ODOT for construction and maintenance.

PILOT FRAMEWORK

PARTICIPATION STRATEGY

VOLUNTARY VS. MANDATORY

The PPM pilot - will be open to all licensed drivers with registered vehicles in Oklahoma. It is also voluntary, instead of mandatory, meaning that eligible drivers can participant in the pilot, but they do not have to.

Participants will select the method by which they report their vehicle mileage; among the potential options that may be available including manual odometer reporting, GPS and non-GPS plug-in device, etc. For each participant with an automated reporting device, only miles driven in Oklahoma will factor into a mock PPM charge and be invoiced to participants during the pilot period. For participants selecting the manual odometer reporting option, all mileage will be charged, as it is not possible with this solution to differentiate miles driven in-state versus out-of-state.

NUMBER OF PARTICIPANTS

The PPM Pilot has a completion target of 500 participant vehicles. All participants will be Oklahoma state residents using their own vehicles which must be registered in Oklahoma. Due to the potential for attrition of participants during the duration of the pilot, it is expected that approximately 600 participant vehicles will be the initial goal for recruitment. It is assumed that one "participant" equals one registered vehicle; therefore, one individual (Oklahoma licensed driver) can enroll multiple vehicles, but this would count as multiple participants.

DEMOGRAPHICS

The PPM Pilot will include participants representing a cross-section of Oklahoma drivers. This includes participants from rural, urban, and Tribal Nations, different vehicle types, and income groups (including underserved communities). Within each urban, rural, or Tribal Nation user group, the pilot will primarily focus on the following user classifications:

- Users of PIKEPASS, Oklahoma's Electronic Toll Collection System (ETC);
- Non-PIKEPASS users; and
- Out-of-state drivers (using Bluetooth readers, Automated License Plate Readers (ALPR), etc. to collect data).

INCENTIVES

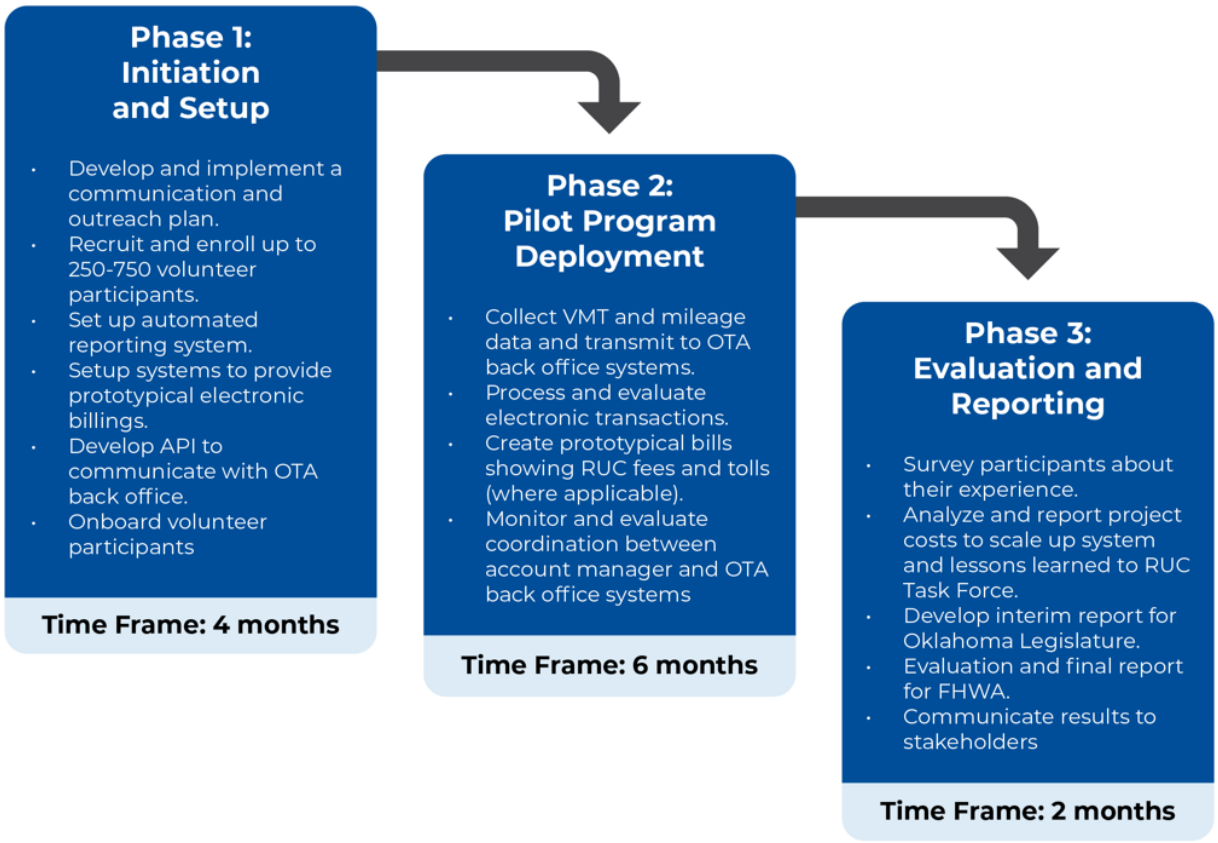
Incentives will be provided to each participant as they complete each survey for a total of up to $50 per participant. Each time a task is completed, the participates will be emailed a link to redeem an e-gift card worth $10. They will have the ability to choose from pre-selected known brands including gas stations. The participants will have 90 days to redeem each $10 gift card. Any unused cards will be refunded to the incentive account for the project.

DURATION

The pilot development and evaluation will span approximately 18-24 months with six months of active data collection and test transaction processes for approximately 500 participants. During the demonstration period, users will be able to select the VMT reporting method best suited to them from among the methods offered.

The Oklahoma RUC pilot is comprised of three phases as shown in the **Figure 11** below. Future phases of RUC program implementation may include discussions with adjacent states about interoperability, expansion of the pilot program to test a larger set of volunteer participants, or statewide expansion of the pilot program.

Figure 11: Oklahoma RUC Pilot Phases



PPM EVOLUTION

NEXT STEPS

A future road user charge implementation roadmap and recommended next steps are included in the final section of the Legislative report provided by the Road User Charge Task Force.

APPENDIX A: PPM LEGISLATION

LEGISLATIVE ACTIVITY (ACTIVE PPM STATES)

CALIFORNIA

In 2014, Senate Bill 1077 established a road charge pilot study that would test the feasibility of funding road and highway repairs based on how many miles a driver travels instead of how much gas they purchase. In 2018, the State Assembly enacted SB 1328, which extended the Road Charge Technical Advisory Committee (TAC) until January 1, 2027 and the group presented recommendations about the RUC pilot on June 29, 2023. The recommendation categories include rate setting, pilot participation design, privacy and data security, organization design, revenue collection and enforcement. A final report is due to the legislature by Dec. 31, 2026.[80] In 2021, the California State Assembly authorized a pilot that will test revenue collection through a pay-per-mile program and applied for a federal grant for this pilot.

HAWAII

IN 2023, SB 1534 ESTABLISHED A MILEAGE-BASED RUC TO REPLACE STATE MOTOR FUEL TAXES BEGINNING ON JULY 1, 2025, FOR EVS. THE BILL ELIMINATES THE $50 ANNUAL STATE VEHICLE REGISTRATION SURCHARGE FOR EVS AND ALLOWS FOR EV OWNERS TO PAY A REGISTRATION SURCHARGE OR A PER-MILE ROAD USAGE FEE UNTIL JUNE 30, 2028. THIS REQUIRES CERTIFICATIONS OF INSPECTION TO STATE THE ODOMETER READING OF VEHICLES AND REQUIRES MOTOR VEHICLE REGISTRATION APPLICATIONS TO SPECIFY IF THE VEHICLES FUEL TYPE IS BATTERY ELECTRICITY. THE HAWAII DOT WILL BE REQUIRED TO PLAN FOR THE DEPLOYMENT OF A STATE MILEAGE-BASED RUC PROGRAM BY 2033 AND SUBMIT A REPORT TO THE LEGISLATURE. MINNESOTA

Legislation introduced in 2021, HF 523, would require owners of an all-electric vehicle to pay a road usage charge (RUC) beginning July 2022, similar to Hawaii's program. The fee would be based on miles driven, multiplied by the excise tax rate for gasoline, divided by the vehicle's fuel economy. HF 523 has only been read in the Legislature and has not been passed or signed into law at this time.

OREGON

In 2001, HB 3946 created the Road User Fee Task Force (RUFTF) to identify new funding sources for road maintenance and repair. In 2013, SB 810 was passed, mandating the creation of an operational RUC program. The first in the country. The Oregon Legislature (HB 2881) modified OReGO in 2019, to allow ODOT to prepare for a future large-scale program by removing the limit on the number of vehicles allowed to participate in the program, increasing the minimum fuel efficiency rating from 17 mpg to 20 mpg, and updating the per-mile charge rate to 1.8 cents per mile.[81]

[80] State Road Usage Charge Toolkit, California, https://www.ncsl.org/research/transportation/state-road-user-charge-pilot-results-and-legislative-action.aspx#

[81] State Road Usage Charge Toolkit, Oregon, https://www.ncsl.org/research/transportation/state-road-user-charge-pilot-results-and-legislative-action.aspx#

In 2020, the Road User Fee Task Force (RUFTF) considered many policy changes to modify and expand the state's RUC operations.[82] They include:

- All new passenger vehicles, beginning with model year 2027, with a combined rating of over 30 mpg, will be required to enter the PPM program
- Drivers can choose to opt of out of the program for the first three years for $400
- Enhanced registration and title fee rates will not apply to those enrolled
- ODOT reporting requirements:
    - Implementation report every two years
    - Equity report due 2022 (not yet published)
    - Climate report due in 2024, addressing how the program can be achieved while meeting State EV adoption goals
    - Medium-Duty report due in 2026 to examine how to include 8,000-26,001-pound vehicles in the program

Legislation introduced in 2023, HB 3297, imposes mandatory per-mile RUC for registered owners and lessees of passenger vehicles of model year 2028 or later that have a rating of 30 mpg or greater, beginning on July 1, 2027, and then of passenger vehicles of model year 2036 or later than have a rating of 20 mpg or greater, beginning July 1, 2035. HB 3297 has only been read in the Legislature and has not been passed or signed into law at this time.

UTAH

In 2015, HB 362 directed UDOT to continue studying RUC as an alternative to the fuel tax, as well as demonstration effort. In 2017, SB 174 was developed to create the Transportation Governance and Funding Task Force and required a report on ways to address funding needs through user charges. In 2018, SB 136 directed UDOT to implement a RUC demonstration program.

In 2019, SB 72 enacted laws (administrative rules) to necessary to implement a permanent RUC program, overriding the demonstration program requirement of SB 136. Administrative rules required UDOT to develop rules for enrollment, withdrawal and removal, mileage reporting, account manager, enforcement, privacy, and data sharing (with the Utah Division of Motor Vehicle).

Per SB 150, UDOT presented its final report to the Transportation Interim Committee in June 2021. The report outlined the two scenarios and analyzed rural participation, data privacy, costs, and technology. SB 150 also reenacted an earlier provision to update its enrollment strategy, participation rates, revenue collection, and strategies to expand annually, by October 1 of each year.

SB 82, passed in 2021, established a special fund created to receive deposits generated by the PPM program. Revenues may be used to cover the costs of program administration and other state transportation purposes.

HB 186, passed in 2022, modified the state's RUC program eligibility and fees. Beginning in 2022, hybrid and PHEV pay an annual flat fee of $56.60 and $21.75, respectively. Beginning on January 1, 2023, EVs can pay $130.24 annually or 1 cent/mile, in 2023 the annual fee increases to $180 or 1.25 cents/mile and in 2032 the annual flat fee increases to $240 or 1.5 cents/mile,

WASHINGTON

[82] "Report from Road User Fee Task Force," Joint Committee on Transportation, https://olis.oregonlegislature.gov/liz/2019I1/Downloads/CommitteeMeetingDocument/227203

The Washington State Legislature enacted HB 2190 in 2012, which directed the Washington State Transportation Commission (WSTC) to create a committee to study the feasibility of transitioning from a gas tax to a PPM program. HB 1160 was enacted in 2019 and required a final report on the pilot. The law also directed WSTC to continue researching the impacts of program and next steps that led to the Forward Drive research phase.

HB 1832, introduced February 15, 2023, would establish a voluntary RUC program beginning July 1, 2025, which would place a 2.5 cent/mile fee on motor vehicle usage of public roadways in the state. HB 1832 mandates that process from the RUC program be used for transportation systems preservation and maintenance purposes and sets January 1, 2030, as the target date for implementation of a comprehensive, mandatory RUC program. HB 1832 was read in the House and referred to the House Committee on Transportation.

RECENT LEGISLATIVE ACTIVITY (OTHER STATES - ENACTED AND CONSIDERED)

RECENTLY ENACTED LEGISLATION

Recent legislative activity among states includes the following:[83]

- **Colorado** – SB 260 (enacted, 2021)
  Beginning in FY 2022-2023, the existing EV fee of $50 per vehicle will be adjusted annually for inflation. The bill also creates an additional fee aimed at capturing the loss of fuel taxes from EVs. The phased-in fee is initially assessed at $9 a year for full-electric vehicles, rising to $90 by 2031. For hybrid vehicles the initial fee is $3 a year, rising to $27 by 2031.
- **Connecticut** – HB 6688 (enacted, 2021)
  Created per-mile motor carrier fees based on truck weight, the fees will range from 2.5 cents to 17.5 cents per mile. Beginning in 2023, all vehicles weighing over 26,000 lbs. will be subject to a Highway User Fee for every mile traveled in the state.
- **Maine** – HB 700 (enacted, 2019)
  A commission studied potential funding solutions for state transportation systems including a voluntary vehicles miles pilot program.
- **Nevada**- SB 413 (enacted, 2021)
  Required the Nevada DOT to establish an advisory working group to study the sustainability of the State Highway Funding and report to the Legislative Council Bureau the findings.
- **Montana**- HB 60 (enacted, 2023)
  Created additional year fees for EVs and plug-in hybrids based on vehicle weight. The fees will go towards highway and road maintenance.
- **Vermont**- HB 479 (enacted, 2023)
  Provides legislative intents for plans to implement a mileage-based user fee (MBUF). Starting July 1, 2025, all battery electric vehicles (BEV) MBUFs will begin collection. PHEVs will not be subject to the MBUFs but will have an increased annual or biennial registration fee.
- **Virginia** – SB 890 (enacted, 2020)
  Implementation of Highway Use Fees (HUF) on electric vehicles and other highly fuel-efficient vehicles achieving at least 25 mpg were created. However, in lieu of paying a HUF, vehicle owners may participate in a voluntary MBUF program beginning July 1, 2022. By enrolling in the MBUF program, a vehicle owner can pay a fee based on actual miles driven instead of a HUF.
- **Texas**- SB 505 (enacted, 2023)

[83] State Road Usage Charge Toolkit, https://www.ncsl.org/research/transportation/state-road-user-charge-pilot-results-and-legislative-action.aspx#

Beginning on September 1, 2023, SB 505 requires EV owners to pay $200 when registering their vehicles or renewing annual registration to fund road construction and repairs. New EV purchases will have to pay two years of registration, or $400, up front.

LEGISLATION FROM 2021-22 UNDER CONSIDERATION

- **Alaska**
  - HB 104 (failed) would have created special biannual registration fee of $100 for owners of alternative fuel vehicles and $50 for owners of plug-in hybrid vehicles. Fees would have been deposited in the special highway fuel tax account.
- **Massachusetts**
  - SB 2350 (pending) is considering a pilot system to study a funding alternative to the gas tax.
  - SB 2265 (pending) would authorize the DOT to explore the feasibility of mileage-based revenue collection. The study would also consider public acceptance, costs and payment options.
  - SB 2351 (pending) would establish per-mile rates for autonomous vehicles (AV), with a base rate of 2.5 cents per mile and would adjust annually based on changes in the consumer price index. An additional amount could be charged for each mile driven by AVs without a passenger, weighing over 4,000 lbs. and operated between 8 a.m. and 8 p.m. within certain congestion zones designated by the state.
- **New York**
  New York (AB 4094, failed) would have created a pilot PPM system
- **Tennessee**
  The Tennessee Legislature is considering a bill (HB 1507, pending) that would establish an infrastructure bank and task it with exploring sustainable financing for state infrastructure projects including the use of road usage charging, such as vehicle miles traveled, for highway, road and bridge projects
- **Vermont**
  Legislation (HB 123, pending) would direct drivers to report miles driven on their taxes.
- **Wyoming**
  Legislation (HB 37, failed) would have created a RUC program.

LEGISLATION FROM 2022-23 UNDER CONSIDERATION

- **Virginia**
  SB 862 (failed) would have repealed and eliminated the Highway use fee and mileage-based user fee program.

LEGISLATION FROM 2023-24 UNDER CONSIDERATION

- **Idaho**
  SB 1065 (pending) would create an alternative way for owners of electric vehicles and plug-in hybrids to pay the additional registration fees based on actual miles traveled. It would create an optional RUC of $.01/mile that would replace the additional fee of either $140 for EVs or $75 for plug-in hybrid vehicles, capped at the additional fee rate.
- **New Mexico**
  SB 22 (pending) would require an additional registration fee for EV and Plug-in hybrid vehicles. The fees would be distributed to the state road fun and the transportation project fund.
- **North Carolina**
  SB 354 (pending) would increase EV fees and add fees for plug-in hybrid vehicles.
- **Pennsylvania**

SB 656 (pending) would create an EV road user charge. Any passenger EV under 14,000 pounds would pay a RUC of $290 per year.

LEGISLATIVE ACTIVITY (FEDERAL)

At the federal level, the **Fixing America's Surface Transportation (FAST) Act of 2015** established the STSFA program to provide grants to States for user-based alternative revenue mechanisms to maintain the Federal Highway Trust Fund. The FAST Act provided $95 million to States from 2016 to 2020.

In 2021, with the passage of the **Infrastructure Investment and Jobs Act (IIJA)**, the STSFA was renamed to the Strategic Innovation for Revenue Collection (SIRC) and modified to focus on data privacy, administrative costs, implementation issues, and equity considerations. The SIRC will provide $15 million annually in grant funding for testing the feasibility of road usage fees and other alternative revenue mechanisms through pilot projects at state, local, and regional levels between 2022 to 2026.[84] In addition, the IIJA provided $50 million in funding for the National Motor Vehicles Per-Mile User Fee Pilot. This is to be national-level pilot program aimed to test different methods of tracking vehicles' miles and establish whether motor vehicle per-mile user fees can generate sufficient revenues to fund transportation longer term. The legislation establishes the following conditions for the pilot[85]:

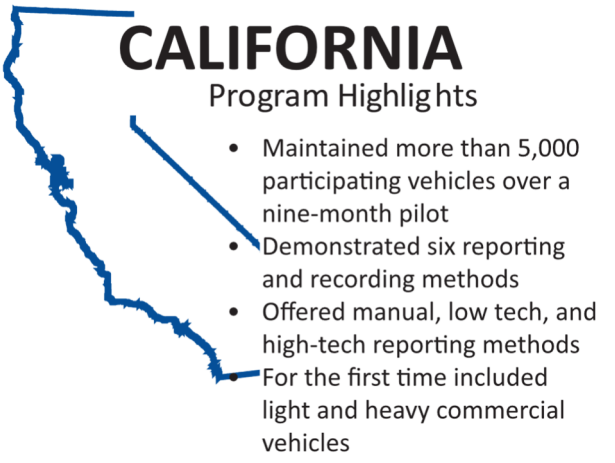
- Providing different methods to track motor vehicle miles
- Soliciting volunteers across all 50 states, DC and Puerto Rico.
- Ensuring equitable geographic distribution of volunteers.
- Including multiple vehicle segments (cars, light trucks, and medium- and heavy-duty trucks).
- Using components of and coordinating with states, and other eligible entities, that have received PPM related grants.

APPENDIX B: SELECTIVE PPM STATE ACTIVITIES

CALIFORNIA

CALIFORNIA ROAD CHARGE PILOT PROGRAM (2017)

The California Road Charge Pilot Program was developed to inform policymakers in response to Senate Bill 1077, which required the implementation of a RUC pilot. The California State Transportation Agency (CalSTA) managed the pilot program through the California Department of Transportation (Caltrans) working closely with the California Transportation Commission, the Road Charge Technical Advisory Committee (TAC), and external stakeholders. The RUC Pilot was divided into four phases over three years – 2015 to 2017.[86]



[84] Fuel Taxes are Teetering on the Edge: Is MBUF our path to sustainable transportation funding? https://tetcoalitionmbuf.org/wp-content/uploads/2022/10/TETC_2022_08_30_SASHTO.pdf
[85] IIJA. https://www.congress.gov/bill/117th-congress/house-bill/3684/text
[86] California Road Charge Pilot Program Highlights, 2017, https://caroadcharge.com/media/xonb3jqw/highlights-brochure-a11y.pdf

Phase 1: Design Conducted 12 statewide public meetings, formulated design principles for what methods and technologies to test, and selected evaluation criteria to assess the results.

Phase 2: Setup Built and tested the systems and technologies envisioned by the TAC, recruited thousands of statewide volunteers, and enrolled over 5,000 vehicles to participate in the pilot.

Phase 3: Operate Participants representing all regions and demographics of the state drove, reported miles using a method and account manager of their choice, made simulated payments and provided feedback on the pilot.

Phase 4: Report An independent evaluator analyzed pilot data and participant input gathered throughout the pilot. CalSTA worked with Caltrans to develop a findings report.

KEY PROGRAM FINDINGS

California's Pilot Project Final Report highlighted several key findings.[87]

Mileage Recording and Reporting Options

- Manual reporting methods are the most secure in terms of privacy but are difficult to enforce and administer. Three manual reporting methods were evaluated.
    - **Time permit** – pre-payment for an unlimited amount of driving for a period of time.
    - **Mileage permit –** pre-payment for a fixed number of miles.
    - **Odometer Charge –**reports miles driven periodically and pays for miles driven at last odometer read-out.
- Plug-in devices are the most reliable options but could be obsolete by the time a program is adopted due to newer technology.
- Smartphone applications with location services and in-vehicle telematics have potential, but need further testing and refinement.

Third Party Vendors

- The pilot proved that third party vendors/account managers are viable for providing necessary services and technologies, as well as offering knowledge and experience to enhance the user experience.

Charge Rate

- A rate of 1.8 cents per mile was established prior to the pilot, by taking the five-year average of gas tax and dividing by the average miles per gallon of the California fleet.

Enforcement and Compliance

- No enforcement or compliance program was tested for the pilot, creating a level of uncertainty on methods costs for enforcement.

Privacy and Data Security

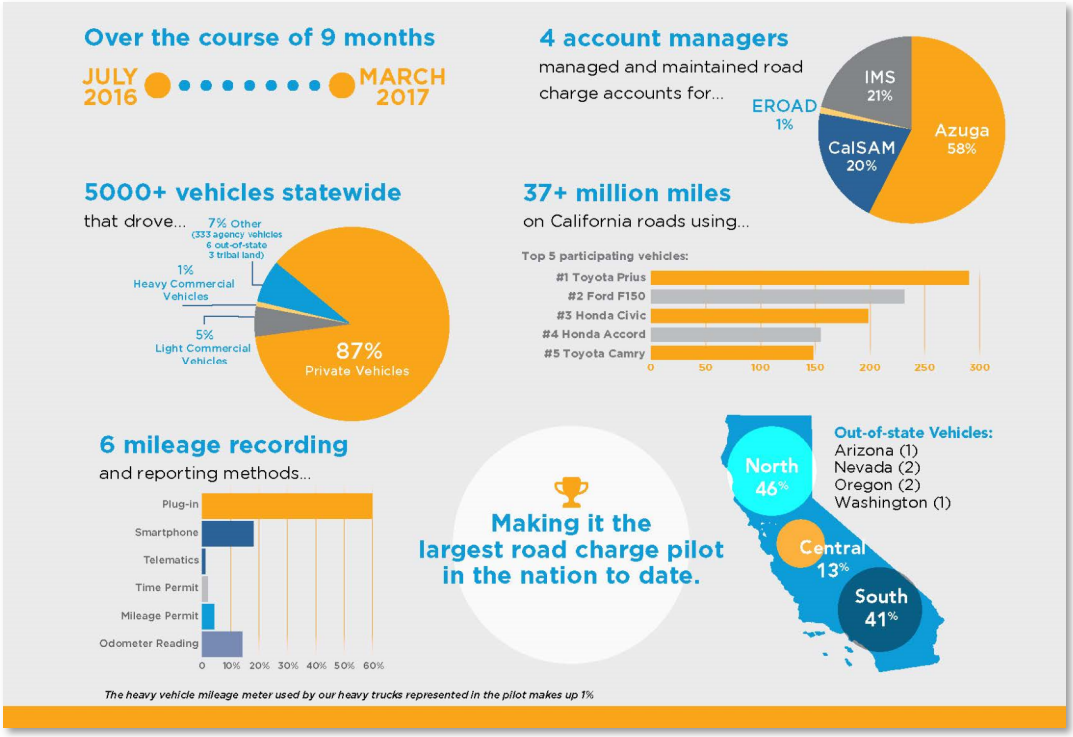
- No breaches or complications, and of little concern for most (78%) pilot participants.

Participant Feedback

- 85% overall pilot satisfaction, with a 4% attrition.
- Participants felt road charge is a more equitable funding solution when compared to a gas tax.

[87] California Road Charge Pilot Program Final Report, 2017, https://caroadcharge.com/media/htbpngos/rcpp-final-report-a11y.pdf

- Over 90% willing to participate again in the future.
- Over half of participants are more aware of how road maintenance is paid for.



California Road Charge Pilot, By the Numbers

CALIFORNIA FOUR PHASE DEMONSTRATION PROGRAM

California's Four-Phase Demonstration Project lasted from January to June 2021 and assessed ways to improve the user experience with four technologies which made up the four phases of the project:[88]

- Phase 1A: Electric vehicle charging stations; Phase 1B: pay-at-the-pump systems
- Phase 2A: Usage-based insurance
- Phase 3A: Ridesharing
- Phase 4A: Autonomous vehicles

[88] Four-Phase Demonstration, California Road Charge, https://caroadcharge.com/media/xgmiqryl/ca_ruc_brochure_032822_final.pdf

The Demonstration compiled date using the Platform for Road Charge Innovation and Mobility Evolution (PRIME), a data warehouse which scrubs and combines data with other California data sources to provide a series of dashboards for transportation planning, forecasting, and operations.

			MILEAGE COLLECTION MECHANISM	FUEL USE REPORTING PROCESS
PHASE 1A Pay-At-The-Pump	participants 33	miles traveled 80,675	Collected from the vehicle and transmitted during fueling events using an OBD Plug-In Device.	Participants used a special gas payment card that allowed fuel consumption and fuel taxes paid to be determined.
PHASE 1B ChargePoint	participants 9	miles traveled 21,763	Collected from the vehicle and transmitted during charging events using an OBD Plug-In Device.	Electric vehicles do not pay fuel taxes, so there was no need to determine fuel consumed.
PHASE 2 Usage-Based Insurance	participants 29	miles traveled 72,116	Provided by the participant on a monthly basis by using a smartphone app to take a photo of the odometer.	Fuel consumption and fuel taxes paid were determined by using the vehicle's estimated fuel efficiency and the reported miles driven.
PHASE 3 Ridesharing	participants 9	miles traveled 175	Collected and reported through the ridesharing service's smartphone app.	Fuel consumption and fuel taxes paid were determined by using the vehicle's estimated fuel efficiency and the reported miles driven.
PHASE 4 Autonomous Vehicles	participants 0	miles traveled 295	In-Vehicle Telematics.	Electric vehicles do not pay fuel taxes, so there was no need to determine fuel consumed.

KEY LESSONS LEARNED

- A Pay-at-the-Pump Road Charge Model can support accurate calculation of fuels tax credits, but no existing business model to support it exists yet.
- Third-party smartphone apps may not accurately capture trip information needed to support a functioning road charge system.
- Technologies and apps for fuel retailers may prove over complex for some motorists.
- At this time, electric vehicles do not directly transfer mileage data through a charging station.
- The usage-based insurance business model aligns well with road charge as mileage data is already reported for the insurance policy, and odometer photo uploads for mileage collection was widely supported by smartphones.
- Ridesharing business model aligns well with road charge but raises considerations about how to assess road charges during non-fare operations and how to assess charges for multiple riders.
- Automated vehicles support a road charge system and could offer additional opportunities for agencies outside of only revenue.
- Automated vehicle businesses may have varying comfort levels with data sharing.

NEXT STEPS

Beginning in April 2023, using a STFSA grant, California began the Public/Private Roads projects to demonstrate the ability of current GPS technology to differentiate between public and private roads in a road charge system[89].

[89] https://caroadcharge.com/

California will engage rural communities about a road charge system through the Public/Private Roads Project. The pilot will be active between April to September 2023,

COLORADO – ROAD USAGE CHARGE PILOT PROGRAM

The Colorado Road Usage Charge Pilot Program (CRUPP) is Colorado's first effort to pilot test the concept. The program was led by the Colorado Department of Transportation (CDOT). Work to study a pay-per-mile (PPM) program has been ongoing since 2007, but the RUCPP began in earnest in 2016 with the set up and implementation of a 4-month statewide pilot.

COLORADO
Program Highlights

- Four-month pilot included nearly 150 participants
- Provided users choice and demonstrated the feasibility of three mileage reporting methods
- Collected mileage data and simulated payments of a road usage charge
- Gathered feedback and ideas from the public and participants through a series of surveys

Four project goals were developed for the pilot program:

- Demonstrate an operational program;
- Identify and evaluate issues;
- Test the feasibility of various mileage-reporting options; and
- Solicit feedback and ideas.

Seven key requirements were identified to develop the pilot concept.[90]

- The pilot should consist of 100 participants.
- The pilot should show vehicular stratification including:
    - A minimum of two vehicles with fuel efficiency between 10-25 MPG;
    - A minimum of two vehicles with fuel efficiency between 25-45 MPG;
    - A minimum of two vehicles with fuel efficiency 45 MPG and above; and
    - At least one electric vehicle.
- The pilot should ensure inclusion of urban and rural participants.
- The pilot should ensure inclusion of GPS-selectees who regularly drive in mountainous terrain.
- The pilot should use a notional rate for the per-mile RUC using the most recent available data on VMT and state gas tax revenues.
- The pilot should capture baseline understanding of transportation funding to shape key messages.
- The pilot should conduct public outreach, educating participants and the public on the current transportation funding model and the PPM concept.

KEY PROGRAM FINDINGS[91]

Demonstration of the RUCPP

The successful demonstration of the program sets the stage for a larger a future concept, and the pilot program established several key requirements to consider for the future.

- **Participation targets** – Participants were representative of both the public (70% of the participant pool) as well as key stakeholder groups and policy makers (30%), and a total of 140 were enrolled with the total number reporting mileage on any given month never dropping below 125.
- **Geographic participant mix** – Participation was higher in urban areas, but the pilot maintained strong participation from rural areas as well. 15% of the vehicles were from rural areas, while 38% were in areas that included both rural and urban geographies.

[90] Colorado Road Usage Pilot Program Final Report, 2017, https://www.codot.gov/programs/ruc/documents/rucpp-final-report
[91] Ibid.

- **Understanding of Transportation Funding** – Several surveys of participants were used to develop an understanding of the public's knowledge and perception of a PPM program. The results helped CDOT's communication teams to develop effective messaging.
- **Identify Communication Techniques and Messages about Transportation Funding and RUC** – The RUCPP used a variety of media including a project website, newsletter, press releases, social media efforts, and engagement through coordination with key stakeholders.

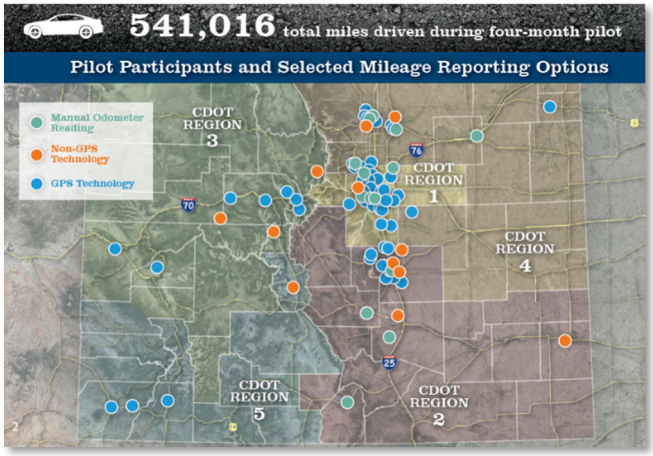
Identification and Evaluation of Issues

The pilot tested and improved program components over the life of the project. Lessons learned and issues to continue to consider include:

- A need for visual intuitiveness for enrollment and other interfaces;
- Anticipate information needs and ensure information is clear and concise to avoid confusion;
- Minimize user time by streamlining processes and consolidating potentially duplicative steps;
- Delineation between public and private roads;
- Use of a single per-mile rate vs varied rate structure;
- Limitations on the use of multiple reporting options under a single account;
- Competition for in-vehicle plug-in devices may limit easy participation;
- Accommodation of different fuel types; and
- Refine the mobile devise application option.

Mileage Options

Three mileage reporting options were made available to participants: Odometer reading, non-GPS-enabled mileage reporting device, and GPS-enabled mileage reporting device. Of the three options the odometer reading was the least chosen option with 17%, while the non-GPS technology option and GPS option totaled 87%.



Pilot Participants and Reporting Options, Colorado RUCPP

Participant Experience

- Satisfaction with information security and privacy protections increased over the course of the pilot.
- Participants grew more confident in the accuracy of mileage reporting and the estimated fuel tax over the course of the pilot.
- Participants identified the biggest benefit of a PPM program is that it provides a sustainable revenue source, and all drivers pay their fair share.

NEXT STEPS[92]

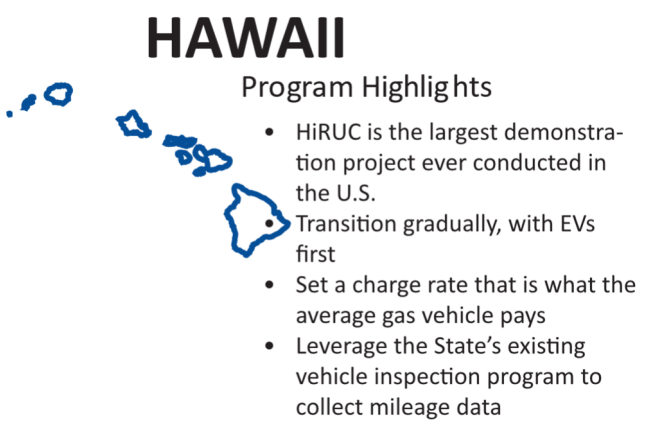
- Continued education and outreach.
- Further study key issues identified by the public, including rural/urban equity, non-public roads, and out-of-state drivers.
- Measure administrative costs and other key issues identified during the pilot.

[92] Colorado Road Usage Charge Pilot Program Executive Summary, 2017, https://www.codot.gov/programs/ruc/documents/executive-summary

- Continued collaboration through involvement with other states.

HAWAII - HIRUC

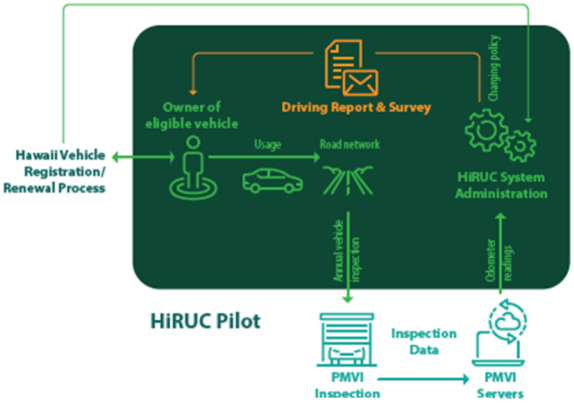
Using a Federal STSFA Grant, in 2018, the Hawaii Department of Transportation (HDOT) conducted a three-year Hawaii Road Usage Charge demonstration project (HiRUC) to explore the viability of replacing the gas tax with a pay-per-mile (PPM) approach. The success of this program to expand to all users is critical for Hawaii, given their statewide goal of being 100% fueled by clean energy by 2045.



Hawaii's program is built on their existing vehicle inspection program and the odometer mileage data that is collected on an annual basis. With this approach, HDOT was able to reach hundreds of thousands of vehicle owners with specific outreach and communication methods. HiRUC also provided participants opportunities to gain actual experience in enrolling, reporting mileage, and obtaining mock invoices and other informational material.

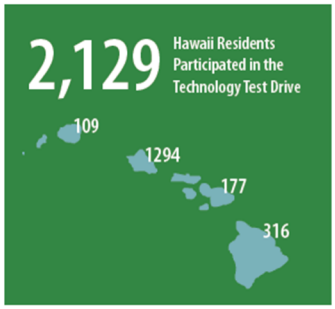
The HiRUC program focused on two public participation-based efforts – a Driving Report and a Technology Test Drive.

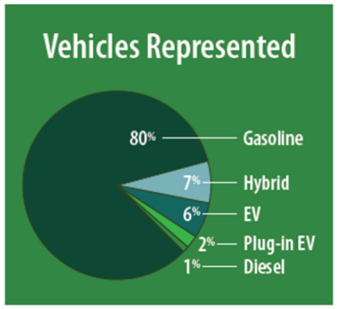
- **Driving Test:** Between October 2019 and September 2020, HDOT printed and mailed over 360,000 custom Driving Reports to Hawaii vehicle owners. The reports showed miles driven and what it would cost under a PPM program compared to a traditional gas tax. HDOT asked recipients to complete a survey about their reactions and to enroll in the Technology Test Drive.

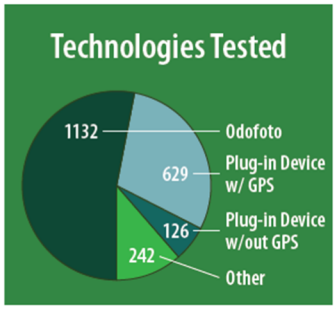


HiRUC Driving Survey Pilot Workflow

- **Technology Test Drive:** Over 2,000 participating vehicles enrolled and selected one technology-based mileage reporting method from these three options: a vehicle plug-in device with GPS, a plug-in devise without GPS, or a smartphone app to capture odometer images. Participants set up their chosen reporting method and drove like normal for eight months. They were given access to an online dashboard to review their driving data. The test drive provided participants with a first-hand experience and a chance to inform HDOT on the data.







HiRUC Technology Test Drive Pilot

PROGRAM FINDINGS[93]

Key Findings

- Hawaii drivers understand and accept the concept of a PPM program, with more support than opposition.
- Support for the program grew when funds are shown to be dedicated to road and bridge improvements.
- Support grew when rental cars are charged at a higher rate than residents.
- Support for a program that grows gradually over time, starting with EVs.
- Most drivers (87%) prefer to report miles at their annual vehicle inspection period.
- Roughly half of drivers prefer to pay their charge either on a monthly or quarterly period.

General feedback

- Road users should contribute a fair share for their road usage.
- Design an approach that is simple and easy – any changes to the way transportation is funded should consider taxpayers' needs and circumstances first.
- Transparency between funds collected and how they are spent to maintain and improve the state's roads and bridges would help build confidence and transparency.

Policy Areas of Interest

Community input led HDOT to prioritize and organize a list of policy-related concerns for research alongside their PPM demonstration efforts.

- Understanding and mitigating impacts on clean vehicle adoption, low-income residents, and rural residents.
- Address options for county versus state of program administration.
- Research ways to effectively enforce the program.
- Cost-efficiency in program administering.
- Explore options for how to remove the gas tax.
- Ensure visitors pay for road use.
- Consider heavy vehicles (trucks/freight).

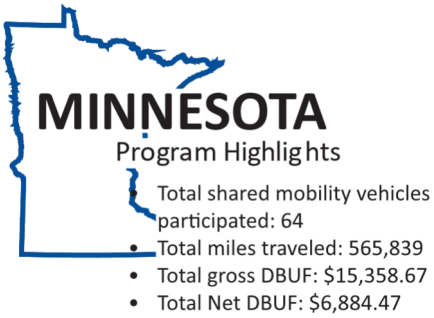
NEXT STEPS

In 2023, SB 1534 established a mileage-based RUC to replace state motor fuel taxes beginning on July 1, 2025, for EVs. The bill eliminates the $50 annual state vehicle registration surcharge for EVs and allows for EV owners to pay a registration surcharge or a per-mile road usage fee until June 30, 2028. The HDOT will be required to plan for the deployment of a state mileage-based RUC program by 2033 and submit a report to the Legislature.

MINNESOTA – DISTANCE BASED USER FEE

[93] Hawaii Road Usage Charge Demonstration Final Report, 2022, https://hiruc.org/hiruc-final-report-flipbook/

In 2016, the Minnesota Department of Transportation (MnDOT) developed a demonstration project to test the feasibility of assessing a distance-based user fee (DBUF) on Shared Mobility (SM) vehicle fleets. The project focused on SM vehicles first due their advanced technologies, and MnDOT's desire to utilize embedded vehicle technology for program operations. The project was divided into two testing phases.[94]



Phase 1

Phase 1 focused on pre-deployment planning and a short, focused test to verify that DBUF-related data can be accurately and securely transferred between a shared mobility provider, an Automated Vehicle, and state agencies like MnDOT and Revenue.[95]

Activities under Phase 1 included:

- Recruiting MaaS providers.
- Modeling pricing strategies and exploring multi-modal pricing options.
- Engaging in stakeholder outreach and developing and executing legislative strategies.
- Gauging public interest and acceptance of a distance-based fee approach.
- Researching DBUF collection methods.
- Developing a design for Phase 2's deployment.

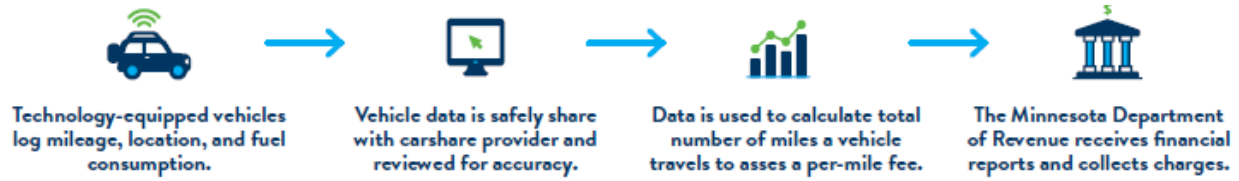
Phase 2

Phase 2 focused on a larger-scale deployment of DBUF to demonstrate feasibility on a broader scale, capture public opinion, educate Minnesota residents, identify organizational and administrative gaps, and find key considerations to address moving forward.[96]

Activities under Phase 2 included:

- A 12-month demonstration, which concluded at the end of March 2021.
- Two roundtables with transportation leaders and policymakers on the national landscape for transportation financing, which evaluated preliminary demonstration results.
- Test connected and automated vehicles (C/AV).
- Develop the business case and revenue model for potential DBUF deployment.
- Develop a rate-setting framework to consider how charges should be levied fairly.

MnDOT determined that only HOURCAR and Zipcar met their program criteria, due to these companies typically having embedded telematics in-vehicle, more accurately reflecting the equipment that Original Equipment Manufacturers (OEMs) are now installing in most manufactured vehicles.

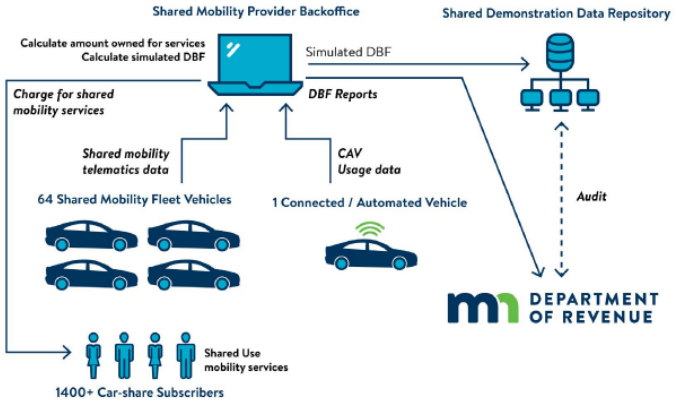


Distance-Based Fees Collection Process, Minnesota DBUF

[94] "About the Pilot," Minnesota Distance-Based Fees (DBF), https://dbf.dot.state.mn.us/pilot
[95] State Road Usage Charge Toolkit, https://www.ncsl.org/research/transportation/state-road-user-charge-pilot-results-and-legislative-action.aspx#
[96] Ibid.

PROGRAM FINDINGS[97]

The results from Phase 1 validated MnDOT's ability to download and store mileage data in a secure data repository across MaaS providers, automated vehicles, MnDOT and MnDOR. By testing a MaaS model, MnDOT anticipates better data security and system reliability than with personally owned vehicles not involved in commercial transportation services because MaaS relies on a private third-party repository and a mileage tracking technology already embedded in the vehicles.



Minnesota Distance-Based Fees Demonstration: Functional Architecture

CAV Technology Viability

CAV technology is likely a viable user-based fee technology, as future model cars are increasingly likely to have the necessary technology as a standard feature, as well as next-generation traffic management applications. A DBUF that incorporates CAV elements will be well positioned for the future as in-vehicle technologies continue to advance.

Leveraging Fleet-based Telematics

Fleet telematics systems offer an easier and more reliable method of assessing and collecting fees, by eliminating an aftermarket plug-in device, such as those used in usage-based insurance programs.

Statewide DBUF to Support other Revenue and Pricing Systems

A statewide DBUF program could serve as an example for other transportation-related fees, such as congestion pricing, high-occupancy lanes, and others. A single platform could be used for multiple programs operated by the State.

Embedded Telematics to Deploy DBUF

Embedded telematics on board vehicles has become commonplace on many vehicles. This technology monitors vehicle performance and maintenance and updates software. Data derived from the onboard telematics could be used to generate reports on vehicle miles of travel.

Fleet-Based DBF Implementation Challenges

Challenges with fleet-based DBUF implementation include developing a more complete understanding of the administrative costs and efficiencies with vehicle-embedded technology, as well was how this technology platform might deploy with individual vehicle ownership models.

NEXT STEPS

The next step in Minnesota's DBUF efforts is to develop a larger-scale demonstration with a more diverse range of vehicles and fleets. To achieve a full-scale demonstration, MnDOT will need to do the following:[98]

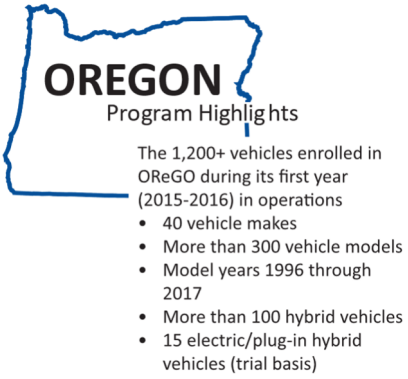
- Share the results of the project locally and nationally to educate and build community support with relevant stakeholders.

[97] Minnesota Distance-Based Fees Project Final Report, 2022, https://dbf.dot.state.mn.us/media/final_report_2022/Minnesota Distance-Based Fees Project Final Report August 2022.pdf
[98] Minnesota Distance-Based Fees Project Final Report, 2022, https://dbf.dot.state.mn.us/media/final_report_2022/Minnesota Distance-Based Fees Project Final Report August 2022.pdf

- Develop a technical plan that outlines procurement processes, concept of operations, a scope of work, and funding sources.
- Educate legislators to build a network of legislative support and funding for the DBUF effort in Minnesota.
- Build broad DBUF support across local government agencies, nonprofits, academia, and other stakeholders.
- Develop and maintain partnerships with existing and emerging vehicle fleet owners that operate in Minnesota and other organizations that would participate in a large DBUF program.

OREGON - OREGO

In 2001, the Oregon Legislature enacted HB 3946, which created the Road User Fee Task Force (RUFTF) to lead in the development of new funding sources for road maintenance and repair. The RUFTF, working with the Oregon Department of Transportation (ODOT), oversaw two RUC pilot projects in 2006 and 2012. In 2013 SB 810 was passed, mandating the creation of an operational RUC program. The first in the country.[99]



The system, operating in perpetuity since 2015, is functioning with roughly 700 volunteer drivers and 2,100 vehicles enrolled to date, with new volunteers on an ongoing basis. OReGO volunteers pay a per-mile charge for the miles they drive and receive a credit for the fuels tax paid at the pump.[100]

KEY PROGRAM FINDINGS

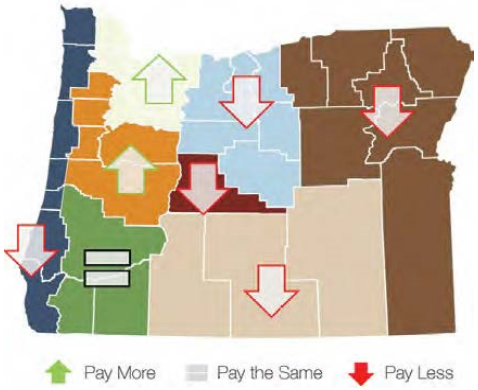
The OReGO Final Report detailed the program objectives and outcomes.[101] Key findings are listed below.

Partnerships

A successful pay-per-mile (PPM) program relies heavily on effective business partnerships. The private sector can implement new technologies and innovate, leading to a program that is viable long-term even as the market changes.

Equity for Rural Oregonians and Low-Income Household

While rural drivers often drive more than people living in more urban areas, a PPM program would not negatively impact them. Drivers of high-efficiency vehicles and those in urban areas would be required to pay more per mile, while a rural drive would pay about the same as they do in gas tax. Additionally, an Oregon State University study found that higher income households would pay more than lower income households, because they typically drive more. Further, a PPM program would not disadvantage low-income individuals compared to the current system



2016 Oregon State University study on households

[99] State Road Usage Charge Toolkit, https://www.ncsl.org/research/transportation/state-road-user-charge-pilot-results-and-legislative-action.aspx#
[100] OReGO: Oregon's Road Usage Charge Program, https://www.oregon.gov/odot/Programs/Pages/OReGO.aspx
[101] Oregon's Road Usage Charge Final Report, 2017, https://www.oregon.gov/ODOT/Programs/RUF/IP-Road%20Usage%20Evaluation%20Book%20WEB_4-26.pdf

because fuel efficiency does not vary significantly by income level.

Administrative Costs

Current administrative costs are high and will need to be reduced for a large-scale program roll out. Ways to lower the administrative costs include:

- Offer a flat annual usage charge as an option
- Create effective compliance mechanisms
- Partner with other states to realize economies of scale

Public Opinion

Most Oregonians surveyed in 2016 indicated that a mileage-based system for transportation funding is fairer than other options. The most convincing message about a PPM program is that it ensures all people pay their fair share for use of the roads.

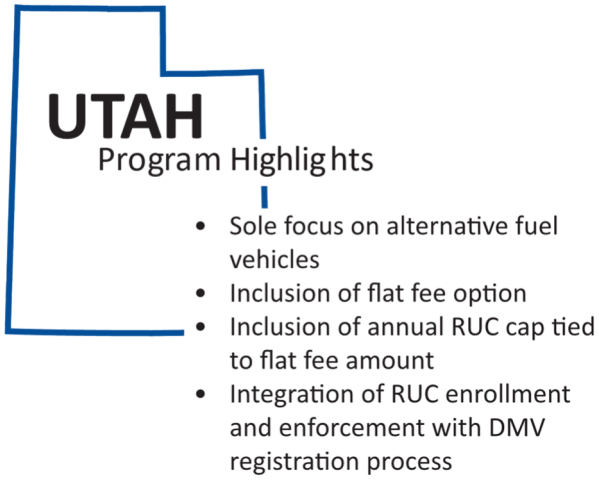
NEXT STEPS

New federal grant funding will be used to:

- Study new technologies;
- Compliance and enforcement;
- Interoperability;
- Local or regional RUC as an overlay to the statewide change; and
- Connected vehicles (Part of Connected Vehicle Ecosystem).

UTAH – ROAD USAGE CHARGE PROGRAM

In 2018, through SB 136, the state legislature directed the Utah Department of Transportation (UDOT) to implement a pay-per-mile (PPM) program on a demonstration basis by 2020 to address declining fuel tax revenues. An amendment in 2019 authorized UDOT to make the demonstration a permanent program, creating rules regarding enrollment, withdrawal and removal, mileage reporting, account management, enforcement, and privacy. Unique to UDOT, the program focuses only on alternative fuel vehicles that use little or no gas.[102]



Utah's PPM program went live on January 1, 2020, allowing fully electric vehicles, plug-in hybrid vehicles, and gasoline hybrid vehicles to enroll in the program. UDOT reported 3,895 vehicles enrolled in the summer of 2021. The initial PPM rate was set at 1.5 cents per mile but has since increased to 1.52 cents per mile. A registered owner can choose not to enroll in the program but is then required to pay a flat annual registration fee of $123 for electric vehicles, $53.25 for plug-in hybrids, and $20.50 for gasoline hybrids.[103]

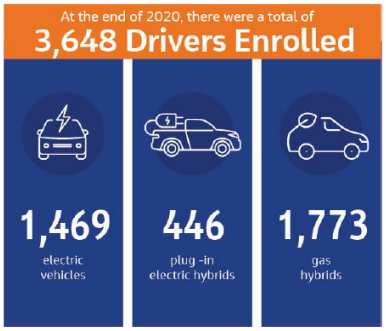
There are five key steps to how Utah's program works:

[102] Utah Road Usage Charge Report, 2021, https://drive.google.com/file/d/1ZbeymVjg5d9gemPYMpIPcVwZAgkI5rf_/view
[103] State Road Usage Charge Toolkit, https://www.ncsl.org/research/transportation/state-road-user-charge-pilot-results-and-legislative-action.aspx#

- Participants sign up with a third-party account manager (Emovis) who collects, and reports miles driven, via embedded telematics or in-vehicle technology provided by the account manager
- A pre-paid wallet is created from which mileage fees are deducted periodically
- Payment of the per-mile fee stops once the accumulated total for the year is equal to the annual flat fee
- The account manager provides a phone app for submission of an odometer reading
- Privacy concerns may lead some participants to use the short-term data retention option or a flat fee option

PROGRAM FINDINGS

Utah's program evaluated their PPM program expansion under two scenarios. Both scenarios assume maximum enrollment of eligible, qualified vehicles by the end of 2031. Four key evaluation elements are summarized below.[104]



Road Usage Charge Program Team, 2021

Pace of Program Expansion

As part of the Legislature's request to explore expansion possibilities, two distinct expansion scenarios were considered and evaluated against a set of criteria and policy options for future implementation consideration:

- Scenario A – Mass Implementation with Manual Odometer Reading Only. Under Scenario A, implementation of an expanded program would start in 2024, and initially include all qualified vehicles with an average fuel economy greater than Utah's average of 20 MPG, leading to 2 million qualified vehicles initially. Manual odometer readings to track mileage would occur at the time of annual registration renewal each year. Between 2025 and 2030, this scenario projects that around 109,000 vehicles would join the program each year during that five-year period.
- Scenario B – Phased Implementation with Technology-Reliant Mileage Reporting. Under Scenario B, the program would also begin in 2024 to allow time to prepare for additional vehicles and mileage reporting methods. This scenario would expand every two years and adjust the MPG rating as well. Initial eligibility would include all qualified vehicles with an average fuel economy greater than 30 MPG, totaling around 570,000 vehicles in the first two years. Scenario analysis revealed that the largest single-year increase would occur in 2026, with an estimated 1 million vehicles added to the program under the "25 or greater" MPG rating.

Pace of Revenue Generation

- Scenario A – Revenue collection occurs more quickly compared to Scenario B during initial implementation, due to a high number of enrolled vehicles in the first year. This scenario generates $7 billion in total revenue between 2024 and 2031.
- Scenario B – Scenario B Revenue collections occur less quickly in Scenario B than Scenario A, due to a slower rate of registered vehicle. Between 2024 and 2031, Scenario B generates $6.85 billion in revenues, only 2.6% less revenue over the 8 years compared to Scenario A. By 2030, Scenario B is operating at an equal pace of revenue generation; thereafter, it is collecting the same annual revenue as Scenario A.

Public Acceptance

Public outreach and communication strategies will need to be targeted toward eligible vehicles, to ensure a successful enrollment effort. Extensive engagement would be required to educate and enroll the 2 million vehicles by 2024 under Scenario A. Scenario B gives more time to educate and engage due to its slower expansion rate over the 8-year period.

[104] Utah Road Usage Charge Report, 2021, https://drive.google.com/file/d/1ZbeymVjg5d9gemPYMpIPcVwZAgkI5rf_/view

Policy Flexibility and Adaptability

A lack of technology options under Scenario A will require an overhaul of the current program and policy direction for a PPM program. Offering a wider array of technology options and building on existing policy direction, Scenario B can provide the long-term flexibility that UDOT needs for a permanent PPM program.

NEXT STEPS

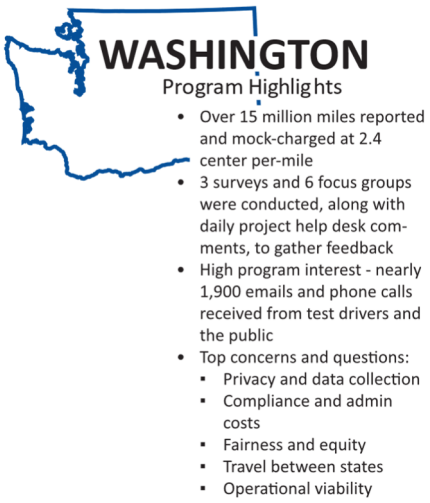
In 2019 UDOT applied for two STSFA grants for local RUC and Express Lane Tolling, and one 2020 grant to develop and validate PPM specific customer experience improvements. In 2021, UDOT coordinated with four local governments to participate as part of a local PPM effort. As of January 1, 2023, UDOT introduced changes to its program so that only fully electric vehicles are eligible. Gasoline Hybrid and Plug-in Hybrid vehicles that are already in the program can remain, but new hybrid vehicles are not eligible to join.[105]

WASHINGTON – ROAD USAGE CHARGE PILOT PROJECT & ASSESSMENT

The Washington State Legislature enacted HB 2190 in 2012 which directed the Washington State Transportation Commission (WSTC) to create a committee to study the feasibility of transitioning from a gas tax to a pay-per-mile (PPM) program. In 2014, a work plan and concept of operations was developed, as well as a business case to seek federal funding for a statewide pilot project.

The WSTC initiated a pilot project in 2018 to test a pay-per-mile program using a mock-charge of 2.4 cents per-mile, and provided five reporting options, using electronic invoicing for all options. The five reporting options included:

- A mileage permit, where participants pre-selected a block of miles (1,000, 5,000, or 10,000). Odometer readings were reported with a photo or in-person every three months. Drivers could obtain additional miles as need to keep mileage the permit valid.
- A post-pay approach, where drivers paid for their milage after driving over a three-month period. Odometer readings were reported with a photo or in-person every three months.
- Automated distance charge, using one of the three methods:
    - A plug-in telematics device with GPS
    - A plug-in telematics device without GPS
    - A smartphone app to record and report mileage (only for iPhone iOS)



Federal funding paid for the pilot project over a 12-month period, and included surveying pilot participants, conducting focus groups across the state and developing an evaluation report. In collaboration with the University of Washington, a smartphone app was designed for the pilot project. More than 5,000 drivers volunteered with 2,000 being selected for the pilot, and a mock payment system was used[106].

KEY PROGRAM FINDINGS[107]

[105] UDOT, Road Usage Charge FAQ, https://roadusagecharge.utah.gov/faq.php

[106] State Road Usage Charge Toolkit, https://www.ncsl.org/research/transportation/state-road-user-charge-pilot-results-and-legislative-action.aspx#

[107] Road Usage Charge Assessment Final Report, 2020, https://waroadusagecharge.org/final-report/

Participant Acceptance

Over the 12-month pilot, three surveys were conducted to gauge participant feedback, understanding, and feelings about the pilot. Surveys were conducted at the beginning, middle and end, and as the project moved along participants were able to form an opinion of the program and became more in-favor of a PPM system over a traditional gas tax – 68% acceptance. The positive reaction toward a PPM program led to 90% (nine out of ten) of drivers supporting a transition away from the traditional gas tax method. One-third support a gradual phase-in and almost 30% support implementing a PPM program as soon as it is ready. 10% recommend taking no further action on a new system.

Privacy

Privacy was rated the most important guiding principle across all surveys. Most participants indicated concerns about location and movement tracking and the amount of information collected under a new program. Survey respondents often linked privacy with data security, indicated concern about their private information.

Simplicity

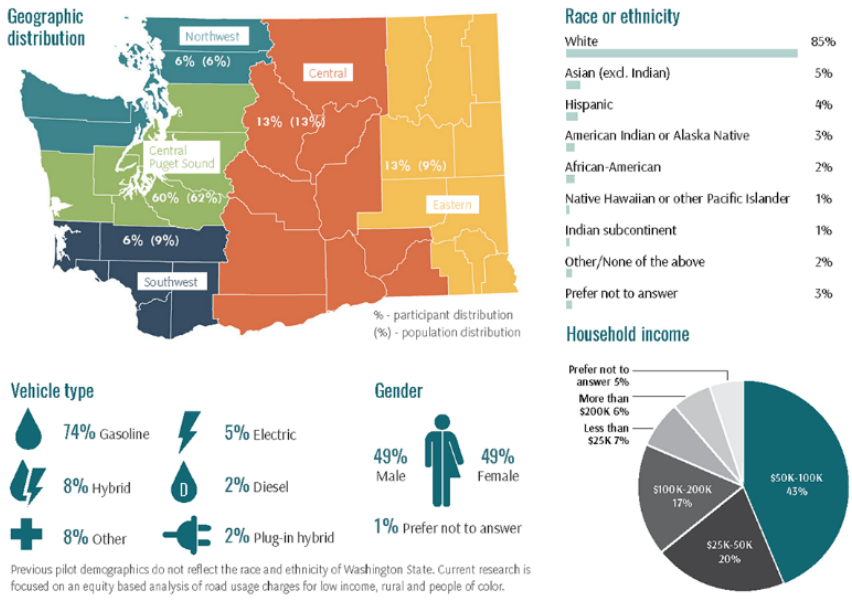
Simplicity was identified as the most important guiding principle, behind privacy. As such, a simple program leads to a higher acceptance and satisfactory rate among participants. Participants who selected the plug-in devices as their reporting method were more likely to identify a simple program as most important, whereas other methods did not indicate that this principle was as important.

Consumer Choice

Within the context of the pilot program, participants not only valued choice, but they also demonstrated it – 37% opted for a plug-in device with GPS, 19% for a plug-in device without GPS, 14% for a smartphone app, 28% for a manual odometer reading, and 1% for a mileage permit. Allowing participants to choose their reporting method increased trust in the program and addressed concerns around privacy and simplicity.

Equity

When asked which approach participants thought was fairer for funding roads, 44% of participants chose a PPM, 8% chose a gas tax, and 13% said both are equally fair. While most participants indicated that a PPM program as a fairer method of funding roadways, other aspects of equity, such as vehicle type, weight, and emissions need more research.



Demographic, geographic, gender, household income, and vehicle type breakdown of participants, Washington MBUF

NEXT STEPS

To build on the pilot project, a next phase was implemented in October 2020 called Forward Drive, which will develop a robust tool to assess how RUC will perform long-term as a revenue source, test new mileage reporting methods, and analyze potential impacts to communities of color, low-income households, displaces communities, and vulnerable populations.[108] Forward Drive spanned three years and is scheduled to wrap up in 2023.[109]

ADDITIONAL STATE SUMMARIES

This section provides short, high-level, PPM summaries for states that are in earlier stages of their research of pilot activities.

KANSAS

The Kansas Department of Transportation (KDOT) is developing a PPM pilot program, the Midwest Road User Charge Study, scheduled to begin testing in June 2023 and will last for 12 months. The study is being supported by the Federal Highway Administration (FHWA) and coordinated with the Minnesota DOT to expand the pilot's reach. The study is being conducted in three phases.[110]

- **Outreach Phase (September 2021 – June 2022)** – Focused on rural communities, agricultural and freight industries through advisory committees, workshops, and one-on-one conversations with stakeholders
- **Design Phase (July 2022 – June 2023)** – Volunteer-driven research that will explore mileage reporting options, summarize research findings, and recruit pilot participants
- **Test Phase (June 2023 – June 2024)** – Demonstration pilots to test ways to report miles driven and partner with Minnesota DOT to expand the study reach

NEVADA

The Nevada Legislature passed two legislative bills (2019 and 2021) that directed the Nevada Department of Motor Vehicle (DMV) to gather odometer readings at the time of any original vehicle registration, registration renewal or vehicle sale.

The collection of odometer readings will assist the legislature in evaluating highway construction and maintenance needs for Nevadans. Legislation requires that the DMV reports results every six months. The Pilot began in October 2019 and runs through the end of 2026 and will direct DMV officials.[111]

OKLAHOMA

Oklahoma enacted HB 1712 in 2021, creating the Oklahoma Road User Charge Program and establishing the Road User Charge Task Force. The piece of legislation outlined Task Force membership, which includes the state Department of Transportation, metropolitan planning organizations, state Tax Commission, Oklahoma Municipal League, Tribal representation, and state legislators. A report of findings and

[108] Road Usage Charge Assessment Final Report, 2020, https://waroadusagecharge.org/forward-drive/
[109] Road Usage Charge Assessment Final Report, 2020, https://waroadusagecharge.org/forward-drive/
[110] Midwest Road Usage Charge (RUC) Study, https://www.ksdotike.org/RUC-study
[111] Odometer Reading Pilot Program, https://dmv.nv.gov/odometer.htm

recommendations on implementation of the Oklahoma Road User Charge Program shall be submitted to the Legislature by Dec. 31, 2023.[112]

The Oklahoma Department of Transportation (ODOT) developed Fair Miles Oklahoma, a pilot project that invited participants from across the state to test a PPM program. The Fair Miles Oklahoma pilot will run from February to December 2023.

VERMONT

In 2021, Vermont completed a Road Usage Charge Study that evaluated the feasibility of a variety of PPM programs for owners and driver of all-electric vehicles (AEVs) and plug-in hybrid electric vehicles (PHEVs) who pay little or no fuel taxes, to recoup lost revenues typically provided through per gallon fuel taxes. The study was led by the Vermont Agency of Transportation's RUC Advisory Committee and evaluated a mileage-based user fee (MBUF), an annual flat fee, and a per-kilowatt hour fee (per-kWh fee).[113]

Mileage-Based User Fee

A mileage-based user fee (MBUF) is a per-mile fee based on the actual miles driven. The advisory committee, through the analysis, concluded that Vermont can feasibly implement a basic MBUF on AEVs and PHEVs by using odometer readings captured at annual vehicle inspections. More research is needed to explore implementation.

Per-kilowatt Hour Fee

A per kWh fee is a fee based on the amount of electricity charged into an EV and was considered as a method for collecting fees from out-of-state EV owners driving in Vermont. The advisory committee, through the analysis, concluded that there is not enough clarity about the benefits and implications of a per kWh charge to move forward with this fee at this time. More research is needed.[114]

VIRGINIA

The 2020 Virginia General Assembly passed HB 1414 which established the Highway Use Fee (HUF) to capture unpaid fuel tax revenues for fuel efficient vehicles. Fees are collected at the time of vehicle registration. Vehicles with a mpg of 25 or greater are required to pay and the fees range from $6.06 to $116.49. HUF collections totaled $41.7 million in 2021 and over $53 million in 2022.[115]

HB 1414 also created the Mileage Choice Program (MCP), which is a voluntary option for drivers of eligible vehicles to pay their highway use fee on a per-mile basis in lieu of an annual highway use fee at the time of registration renewal. Under the MCP, drivers only pay for the miles they drive, but never more than the annual highway use fee.

[112] Road User Charge Task Force, https://oklahoma.gov/odot/about/boards-and-task-forces0/road-user-charge.html
[113] Electric and Highly Fuel-Efficient Vehicle Road Usage Charge Study, Electric and Highly Fuel-Efficient Vehicle Road Usage Charge Study | Agency of Transportation (vermont.gov)
[114] Vermont Road Usage Charge Study Final Report, 2022, https://vtrans.vermont.gov/sites/aot/files/planning/documents/planning/Final Report of VT RUC_vfinal.pdf
[115] Virginia Mileage Choice Program, https://www.ncsl.org/Portals/1/Documents/transportation/Scott-Cummings-Virginia-Mileage-Choice-Program.pdf

Mileage reports and payments are collected from customers who choose to participate in the program. The program relies on OBD II devises and in-car telematics for mileage reporting.[116]

WYOMING

In 2021, the Wyoming State Legislature filed HB 37[117] (failed) which would have created a tiered system for charging vehicles by the mile, to make up lost revenues from fuel taxes. The bill outlines six tiers of vehicles from level of road wear and tear, and charges more for larger vehicles.

[116] Virginia Mileage Choice Program, https://www.dmv.virginia.gov/general/#va_mileage_choice.asp
[117] HB0037 - Road usage charge, https://wyoleg.gov/Legislation/2021/HB0037

APPENDIX C: SELECTIVE PPM COALTION ACTIVITES

RUC AMERICA

RUC AMERICA (FORMERLY RUC WEST)

RUC America is a consortium of 20member states that pool resources to study the viability of per-mile vehicle charging. State members include: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Minnesota, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, Pennsylvania, South Dakota, Texas, Utah, Washington, and Wyoming. To date, the group has produced over 24 RUC-related research projects[118].

STSFA AWARDED PROJECTS

RUC America has received $5.4 million through five grant awards under the Surface Transportation System Funding Alternatives (STSFA) Program since 2016[119].

Regional RUC System Definition and Pilot Planning Project – 2016 – $1,500,000
The pilot in 2016 created a concept of operations that all participating states agreed upon, established a set of principles of how a regional RUC system would function, and created a system and business requirements for the Oregon-California pilot to make the RUC concept functional.

Regional RUC (OR/CA) Pilot Project – 2017 – $2,590,000
The 2017 pilot built a case for interoperability by demonstrating how a clearinghouse could aggregate and distribute RUC data. The pilot project showed how each state could maintain their own sets of requirements and rates, while the clearinghouse is responsible for consolidating and disseminating information back to states. The findings from this pilot revealed the importance of data standardization, being able to address challenges that may come with large sets of data within an interoperable multi-state RUC system and establishing protocols for releasing Personally Identifiable Information.

Exploration of RUC and Automated Vehicles at both the state and in a regional interoperable system – 2018 – $950,000
This pilot project focused on the capabilities and operational constraints of autonomous vehicle stakeholders. The project revealed that because autonomous vehicles operate within complex regulatory constraints, asking for new data exchange policies may be difficult. Further, this effort revealed the need for RUC systems to be intuitive and adaptable for all vehicles.

Road usage charge blockchain – 2019 – $250,000
The blockchain demonstration was designed to test blockchain technology to share transactional information between jurisdictions. The project has not yet started, but if successful, this might reveal blockchain's utility to reduce administrative costs association with data sharing across jurisdictions.

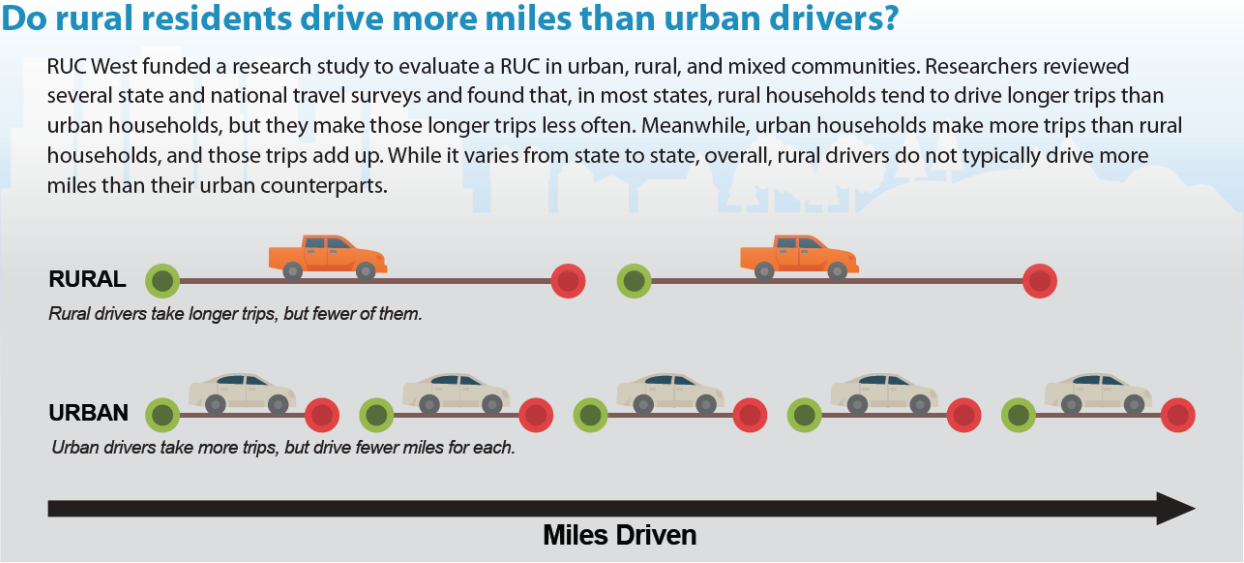
Road usage charge summit – 2020 – $134,875

[118] State Road Usage Charge Toolkit, https://www.ncsl.org/research/transportation/state-road-user-charge-pilot-results-and-legislative-action.aspx#
[119] Surface Transportation System Funding Alternatives (STSFA) Program Recipients and Partners, https://ops.fhwa.dot.gov/stsfa/recipients_partners.htm

Road Usage Charge Summit occurred in June 2022 in collaboration with the National Conference of State Legislatures (NCSL), and brought together state DOT representatives, state lawmakers, and others to explore opportunities and barriers related to interoperability, expand knowledge about RUC, and foster new partnerships.

RURAL DRIVERS

RUC America conducted a research project in 2016 to understand equity impact perceptions of rural drivers within a RUC concept. The findings determined that rural drivers would save money under a RUC system because they drive longer but fewer trips and tend to drive less fuel-efficient vehicles, making the gas tax more expensive than a per-mile fee.[120]



NEXT STEPS

RUC America began an update to their 2016 rural study. The study will include more geographic classes to better understand differences in travel behaviors between more groups of people.

THE EASTERN TRANSPORTATION COALITION

I-95 CORRIDOR COALTION MILEAGE-BASED USER FEE STUDY

The I-95 Coalition, now known as The Eastern Transportation Coalition (TETC), is a partnership of 17 states and Washington, D.C. focused on connecting public agencies across modes of travel to increase safety and efficiency along the I-95 corridor[121]. In the Spring of 2018, the I-95 Corridor Coalition began a multi-year pilot study to explore the feasibility of replacing the state fuel tax with a mileage-based user fee (MBUF) approach in a multi-state environment.

[120] "Rural Drivers & Communities," RUC West, https://www.rucwest.org/wp-content/uploads/2018/07/RUC_RuralDrivers_folio_final-LTR.pdf
[121] The Eastern Transportation Coalition, https://tetcoalition.org/

Phase 1 of the pilot commenced on May 1, 2018 and ran for three months ending on July 31, 2018, and was the first-ever MBUF pilot on the East Coast, gaining real-world experience to better understand how a user fee might work in a multi-state environment. The Phase 1 pilot vehicles were all light-duty and were either gasoline-powered or hybrid vehicles, and included three mileage reporting options:

- Plug-In Device with Location;
- Plug-In Device without Location; and
- Smartphone with Location (Android phones only),

Eighty-four percent of the participants chose location-based technology utilizing GPS.

Mileage Recording

- For vehicles that used a location-based approach, all mileage was differentiated by the state where the mileage occurred, with each state's MBUF rate (derived from each state' fuel tax) applied to the mileage driven in each state.
- For vehicles that used a non-location-based approach, a specified percentage of mileage and fuel tax payments were assumed to have occurred in the vehicle's home state, and the MBUF was calculated using that state's per-mile rate and state fuel tax. The remaining percentage of the vehicle's mileage was assumed to have occurred out of the home state, with an average per mile charge and average fuel tax for all out-of-state mileage based on the per-mile rates and state fuel taxes in nearby states.

Participant Feedback

- Participant survey results showed very high satisfaction (90 percent) with the pilot and how it was conducted. The level of satisfaction increased over the course of the pilot (i.e., pre-pilot vs. post-pilot).
- Participants who chose plug-in device options – with and without location – had the highest levels of satisfaction in all categories.
    - Over 90 percent of participants who chose the plug-in device with location would not switch mileage reporting options, compared to 57 percent who chose the smartphone app.
- Concern with the "security of data" lessened as a result of the pilot experience but remained a one of the top three.

Privacy Protections[122]

- **Consent and Control.** A key consideration for providing users with control of information is providing choice as to the approaches by which mileage information is collected. As a minimum, states might consider offering the following:
    - A prepaid time approach involving no mileage reporting such as a flat annual fee—an "optout" approach offering the greatest level of privacy for drivers who are concerned with providing any sort of information beyond that required for registering a vehicle.
    - A location-based approach offered by private entity account managers as part of their other in-vehicle services. This choice would be for users with less privacy concerns.
    - One or more additional approaches involving mileage collection and reporting, but with no location information—an approach that could be accomplished using automated or manual methods. A challenge with no location information is that it is not possible to differentiate mileage by state or by roadway to collect fees.

- **Information to be Collected.** To mitigate privacy concerns, it is important to notify users beforehand that only data necessary to fulfill a RUC program will be collected. At a minimum, this would include vehicle identification number (VIN), number of miles driven during a specified period, and quantity of fuel used by the vehicle for calculating any fuel tax credits or refunds. In addition to the mileage and related data, vehicle owner's/lessee's

[122] I-95 Corridor Coalition, Privacy Considerations in a Mileage Based User Fee System, 2019 https://tetcoalitionmbuf.org/wp-content/uploads/2020/07/Coalition-MBUF-Privacy-Tech-Memo_2019.pdf

name, address, and contact information (email and telephone numbers); vehicle license plate number; driver license information, and payment information would be required. Other than the payment information, this data is the same as what is typically provided to a DMV when registering a vehicle.

- **Data Retention.** A Pew Research Center survey[123] indicates that most Americans want limits on the length of time that records of their activity can be retained. As a result of discussions with the ACLU, the legislation for Oregon's OReGO requires an account manager to destroy records of location and daily metered use of subject vehicles "not later than 30 days after completion of payment processing, dispute resolution for a single payment period, or a noncompliance investigation, whichever is latest."

- **Other use of Data/Sharing.** Most of the information collected as part of a RUC system falls under the category of "personal information." As such, rules would need to be established defining the specific circumstances under which this information can be shared with others.

- **Transparency.** Implement a usage and privacy policy to ensure that collecting, using, maintaining, sharing, and disseminating information is consistent with respect for individuals' privacy and civil liberties. The usage and privacy policy is available to the public in writing, and if the operator has a website, the usage and privacy policy is posted conspicuously.

- **Integrity and Security.** Security considerations include secure websites and servers, e-commerce transaction technologies, and encryption of communications.

Pilot Tolling Proof of Concept (POC)

The Phase 1 Pilot fully demonstrated why it is so critical to address out-of-state mileage in any MBUF system along the eastern seaboard – of the 459,448 total miles driven during the pilot, more than 20 percent were outside the participant's home state. The Phase 1 Pilot did demonstrate that such an approach for distributing MBUF between states for drivers who do not use a location-based approach is valid. What is necessary are more accurate percentages reflecting out-of-state mileage – information that could be obtained and regularly updated using MBUF data from a significantly large (and statistically representative) number of participants in a mandated system.

MULTI-STATE TRUCK PILOT

The TECT conducted the nation's first multi-state MBUF truck pilot, providing insight and needs from the trucking industry on alternative transporting funding policies. The truck pilot was conducted from October 2018 to March 2019 and included 55 class 8 tractor-trailers traveling more than 1.43 million miles across 27 states.

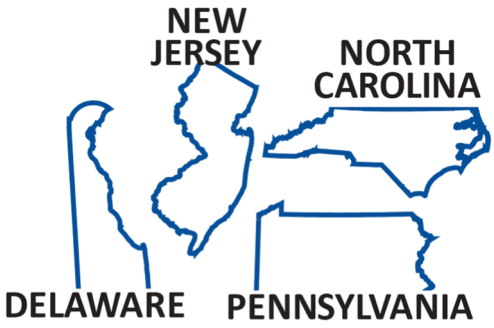
- Bringing the trucking industry voice to the table is critical to policy decisions (i.e., trucking associations, companies, manufacturers, and the public sector).
- Trucks cannot be treated as big cars. Trucks travel substantially more miles than individual passenger cars, have higher fuel costs, and contribute significantly more in fuel taxes.
- Existing regulation provides guidance for PPPM implementation. International Fuel Tax Agreement (IFTA) and International Registration Plan (IRP) were created because a state-by-state approach was burdensome for carriers.
- One rate for all trucks doesn't work due to the vast differences in vehicle operations, types, ages, performance, and mileage travelled. Further education and outreach to the trucking industry is needed.

[123] "Privacy and Information Sharing;" Pew Research Center; January 14, 2016

2020-2021 STATE PASSENGER VEHICLE PILOT

With support from The Eastern Transportation Coalition (TETC), Delaware, New Jersey, North Carolina, and Pennsylvania implemented a passenger vehicle pilot project simultaneously. A pilot was conducted across the four states under one STSFA grant which provided useful cross-state knowledge sharing and cost savings.

Delaware focused on rural and privacy advocates, New Jersey and North Carolina focused on recruiting stakeholders that could engage in understanding the pay-per-mile (PPM) subject matter but also provide opinions on funding mechanisms, and lastly, Pennsylvania focused on rural drivers. Together, the pilot resulted in 383 vehicles and over 1.4 million miles traveled across 27 states.[124]



Delaware
- 51 rural and privacy stakeholders
- 14% out of state travel across 12 states

New Jersey
- 100 key stakeholders
- 12% out of state travel across 19 states

North Carolina
- 149 key stakeholders
- 8% out of state travel across 21 states

Pennsylvania
- 70 rural stakeholders
- 8% out of state travel across 14 states

KEY PROGRAM FINDINGS[125]

Mileage Reporting Options

Two mileage reporting options were offered to pilot participants – a plug-in device with GPS and without GPS. Both options utilized a vehicle's on-board diagnostic port. 80% of pilot participants chose the device with GPS.

Devices without GPS address concerns around privacy but are a challenge because they do not differentiate between in or out of state travel, causing some states to lose out on their share of a PPM fee.

Rate Setting and Participant Statements

The per-mile rate was set based on the national average of 23 mpg and divided by the state fuel tax.

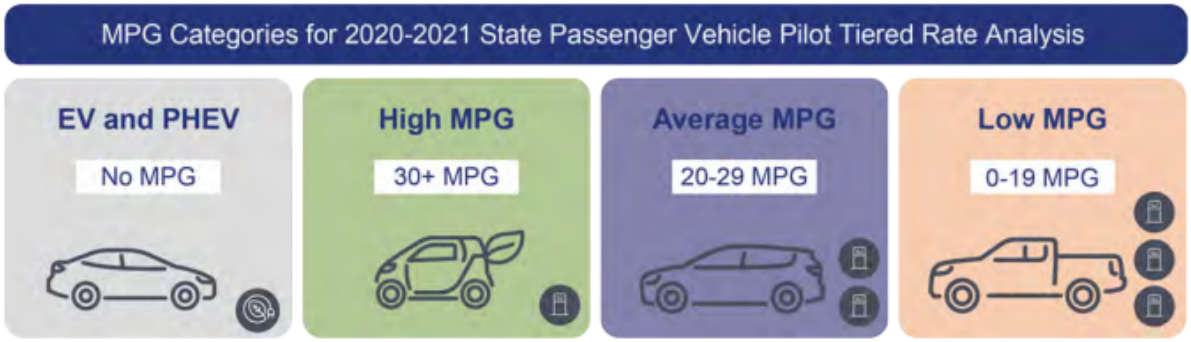
Participant statements were sent out each month that included a driving summary, estimated fuel costs, and a comparison between fuel taxes and the PPM fee. The statements also included a daily activity log, monthly mileage trends, and an explanation of terms and fee calculations.

Tiered Rate Analysis

Participants indicated that while they supported a PPM charge to ensure everyone is paying their share of roadway use, feedback also indicated that this fee may unfairly penalize drivers who purchase fuel-efficient vehicles. To measure this, the project team conducted a tiered rate analysis by utilizing four categories based on fuel efficiency

[124] Exploration of Mileage-Based User Fee Approaches for All Users, 2022, https://tetcoalitionmbuf.org/wp-content/uploads/2022/02/Exploration-of-Mileage-Based-User-Fee-Approaches-for-All-Users_Condensed-1.pdf
[125] Ibid.

– EV and PHEV (no mpg), High MPG (30+ mpg), Average MPG (20-29 mpg), and Low MPG (0-19 mpg). Under this structure, the most fuel-efficient vehicles would pay a lower rate, to incentivize environmentally friendly vehicles.



MPG Categories for 2020-2021 State Passenger Vehicle Pilot Tiered Rate Analysis

Feedback

88% of participants were satisfied with the pilot project, and most found that the monthly statements communicated the amount billed, the difference between the per-mile charge as opposed to a fuel tax and provided useful information about transportation funding and costs. In addition to pre and post pilot surveys, the TCET conducted online focus groups with participants from each pilot project state. This provided an additional opportunity to better understand attitudes and opinions from participants about the PPM program and concept.

Fuel Location Study

The TCET tested the PPM technology's ability to identify fuel purchase location and amount to better measure where drivers are purchasing fuel. The fuel location study involved ten volunteers and revealed that a plug-in device could identify the location of fuel purchase 100% of the time and the amount of fuel 94% of the time.

NEXT STEPS

The next pilot project builds on the Coalition's previous work with Delaware and Pennsylvania and adds both North Carolina and New Jersey to provide a clearer picture of how a PPM program would impact drivers in Eastern states.

Overview of the Coalition's Phase 4 MBUF Work

The next phase of the Coalition's work explored geographic equity analysis, testing other mileage reporting options, expanded fleet type for commercial vehicles, cross-border travel for commercial vehicles, MBUF rate setting, and educational outreach about MBUF. A final report has not been produced for this phase.

APPENDIX D: PPM RESEARCH

D.2 FUNDING ANALYSIS

OKLAHOMA

fair miles OKLAHOMA

OKLAHOMA

FUNDING ANALYSIS

DECEMBER 2023

fair miles OKLAHOMA

TABLE OF CONTENTS

SECTION 1. INTRODUCTION

The motor fuel tax is a significant generator of revenue to fund the transportation needs of the state of Oklahoma. In fiscal year (FY) 2022, Oklahoma's state motor fuel tax generated nearly $600 million. This revenue provided essential support to state, county, and local transportation projects throughout Oklahoma.

However, fuel tax revenue is facing headwinds that threaten its likelihood of growth in the years to come. The combined impacts of new and more stringent fuel efficiency standards and a growing share of electric vehicles will provide a drag on fuel consumption. This in turn will directly impact fuel tax revenue. Moreover, inflation is constantly eroding the purchasing power of the dollar. Apart from some significant and frequent increases in the fuel tax, it is unlikely that the fuel tax will keep pace with inflation and with the funding requirements of Oklahoma's transportation system.

This report will consider the likely trajectory of future fuel tax revenues, and it will consider alternative ways to generate revenue that might replace the fuel tax or other revenue streams that support transportation. The report will take a detailed look at how a road user charge (RUC) program could be an effective means of overcoming the headwinds facing the fuel tax and replacing its revenue stream. For comparison purposes, the report will also take a high-level look at some other ways to leverage existing tax programs to replace the fuel tax.

The analysis will proceed in the following manner:

- Section 2 reviews the current motor fuel tax program. It examines how the program is structured today, how much revenue it has generated in recent years, and what programs the revenue supports.
- Section 3 looks at trends in fuel *consumption* in Oklahoma. It examines growth in both gasoline consumption and diesel consumption. As this section illustrates, growth has been positive but very gradual.
- Section 4 summarizes trends in vehicle-miles traveled (VMT) in Oklahoma. As with fuel consumption, the trend has been upward but not dramatic. This section also considers how VMT is distributed on various components of Oklahoma's roadway network (interstates, arterials, collectors, and local roadways).
- Section 5 examines the fuel efficiency of Oklahoma's vehicle fleet. It shows that the trend over the last dozen years has been slightly downward, in the direction of *lower* overall fuel efficiency. This is likely the result of a changing mix of vehicles, with larger vehicles forming a greater share of the fleet now as compared to 2010.
- Section 6 presents the results of a model analysis of projected revenue under the existing paradigm of a per-gallon fuel tax. This section shows that the next dozen years are likely, at best, to see minimal growth in fuel tax revenue. If projections hold true, fuel tax revenue will likely be declining by the mid-to-late 2030s.
- Section 7 examines how a road user charge or pay-per mile fee could deal with the shortcomings of the per-gallon fuel tax. It will identify options for pricing a road user charge such that it matches fuel tax revenue in the short term while sustaining growth in the long term.
- Section 8 considers some alternative approaches to replacing the fuel tax. It takes a high-level look at such options as increasing the income tax, increasing the sales tax, and increasing a host of other motor vehicle fees. These approaches are examined for comparison purposes and would have to be developed further to support any policy proposal.
- Finally, Section 9 summarizes the key findings of the analysis.

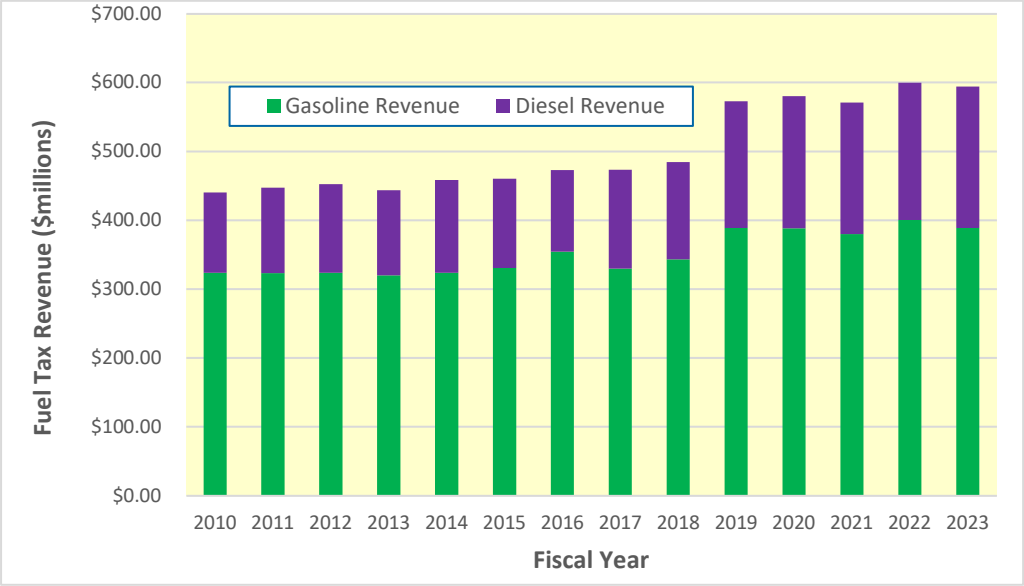
SECTION 2. FUEL TAX REVENUE SUMMARY

Oklahoma's motor fuel tax consists of two components—a 19.0¢ per gallon tax on gasoline and a 19.0¢ per gallon tax on diesel fuel. This tax rate is augmented by a "motor fuel special assessment fee" of 1.0¢ per gallon dedicated to funding the removal and/or replacement of leaking underground storage tanks. This brings the total state collection rate up to 20.0¢ per gallon for both gasoline and diesel fuel. These current rates have been in effect since July 1, 2018; prior to that date, the fuel tax was 13.0¢ per gallon for gasoline and 16.0¢ per gallon for diesel (in addition to the motor fuel special assessment fee). The state fuel tax in Oklahoma, which began back in 1933, has only been increased once over the past three decades.

Currently, only three states (Alaska at 15.13¢ per gallon, Mississippi at 18.79¢ per gallon, and New Mexico at 18.88¢ per gallon) have a gasoline tax that is lower than Oklahoma's, and only two states (Alaska and Mississippi) have a *diesel* tax that is lower than Oklahoma's.[1] The fuel tax is collected by the Oklahoma Tax Commission (OTC) from wholesale fuel vendors. The tax is then rolled into the price posted at the pump. Unlike some states, local governments in Oklahoma (including tribes who have entered into compact agreements with the state) are not permitted to tack on an additional fuel tax.[2]

The Oklahoma Tax Commission annually publishes its *Revenue & Apportionment Report*.[3] This report documents the amount of fuel tax revenue collected each fiscal year, which for the state of Oklahoma runs from July through June. Figure 1 summarizes the annual fuel tax revenue collected by the state of Oklahoma from FY2010 through FY2023, including the 1.0¢ per gallon special assessment fee. The abrupt jump from FY2018 to FY2019 is the result of the aforementioned fuel tax increase that was implemented at the start of FY2019.

Figure 1 – Annual Oklahoma Fuel Tax Revenue, FY10 thru FY23 (in millions of dollars)

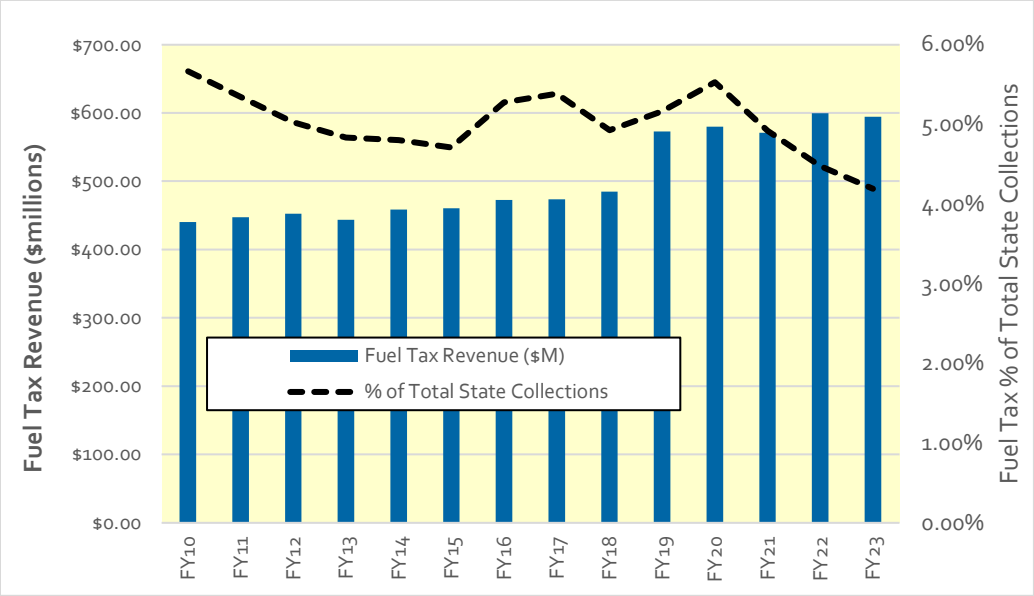


[1] https://www.api.org/-/media/files/statistics/state-motor-fuel-taxes-charts-january-2022.pdf
[2] https://okpolicy.org/resources/online-budget-guide/revenues/an-overview-of-our-tax-system/oklahomas-major-taxes/motor-fuel-tax/#:~:text=Oklahoma%20first%20levied%20a%20gas,cents%20per%20gallon%20of%20diesel
[3] The most recent report can be found here: https://oklahoma.gov/content/dam/ok/en/tax/documents/resources/reports/annual-reports/otc/AR-2023.pdf

As Figure 1 illustrates, fuel tax revenue in FY2023 was roughly 35% higher than it was in FY2010. About two-thirds of the increase is attributable to the increase in the fuel tax rates, while the other one-third of the increase is attributable to an increase in fuel consumption.[4]

The fuel tax is just one component of Oklahoma's state revenue base. Figure 2 summarizes annual fuel tax revenue (Y-axis on left) and reveals its share of Oklahoma's total collection of taxes and fees (Y-Axis on right).

Figure 2 – Fuel Tax Revenue vs. Share of Total State Collections, FY10 thru FY23

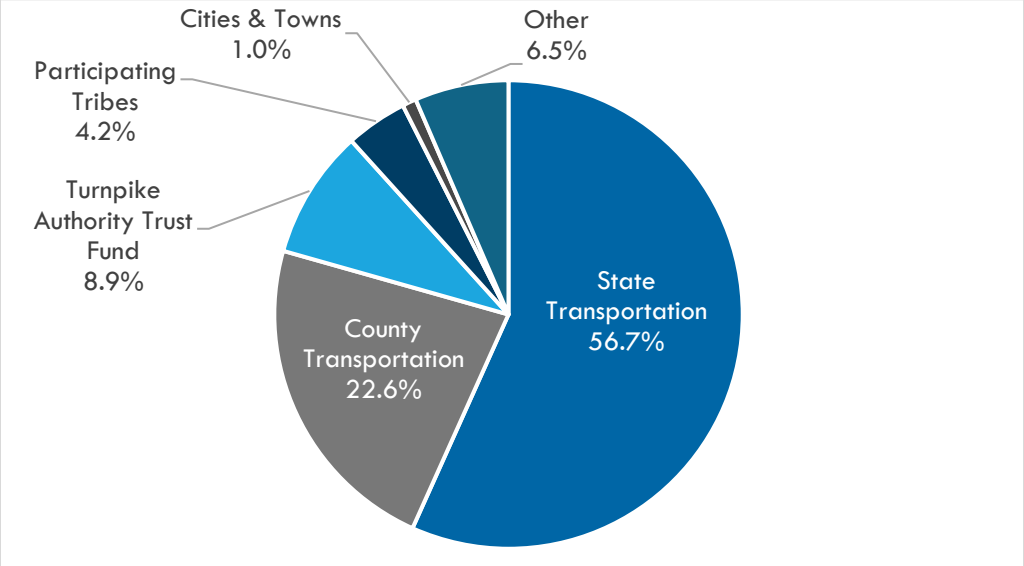


As Figure 2 illustrates, even though fuel tax revenue has gradually increased from FY2009 to FY2022, its share of total state collections has declined. In FY10, fuel tax revenue accounted for nearly 6% of total state collections; by FY23, this share had declined to just over 4%. In fact, in the 14-year period reviewed for this report, FY2023 produced the lowest share of total state collections (4.2%) while simultaneously generating a near-record level of fuel tax revenue ($594 million). The graphic reveals that the fuel tax increase of FY2019 has not yielded a sustained increase in the fuel tax's share of overall state revenue.

Oklahoma's fuel tax revenue provides funding for transportation-related projects throughout the state. Figure 3 summarizes how fuel tax revenue (gasoline and diesel combined) was distributed to various entities in FY23.

[4] In FY2018, the average fuel tax was 15.0¢ per gallon (a weighted average of 16¢ for gasoline and 13¢ for diesel). In FY2019, this increased to 19.0¢ per gallon – an increase of 26.7%.

Figure 3 – Distribution of Fuel Tax Revenue, FY23



As Figure 3 indicates, nearly 80% of fuel tax revenue is distributed to support transportation projects at the state and county level. The remaining 20% is split between the Oklahoma Turnpike Authority, participating tribes, various municipalities, and a host of smaller transportation related projects (such as transit).

SECTION 3. FUEL CONSUMPTION TRENDS IN OKLAHOMA

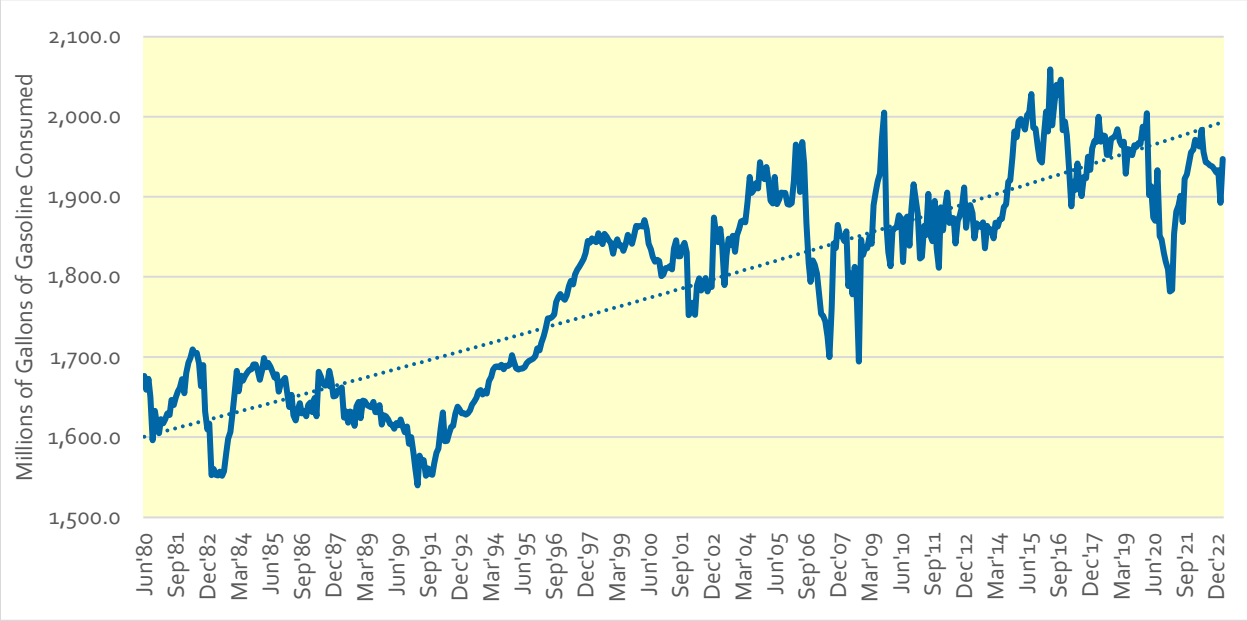
Three sources of data were available to provide an estimate of the amount of motor fuel consumed in Oklahoma since 2010.

- For gasoline, Oklahoma DOT provided most of the data directly. The dataset from Oklahoma DOT provided a summary of gasoline consumption, broken out by month, for the 43-year period starting in July 1979 and extending through June 2022.
- For the most recent period (through March 2023), data was gathered from FHWA's Office of Highway Policy Information.[5]
- The estimates of diesel consumption were based on the fuel tax revenue (as documented in Figure 1) divided by the per-gallon diesel tax in place at the time.

Figure 4 provides a detailed review of **gasoline** consumption in Oklahoma over the past 40+ years. Data is presented monthly on a rolling 12-month basis.

[5] A detailed summary of gasoline consumption, broken out by month and by state, is available at https://www.fhwa.dot.gov/policyinformation/motorfuelhwy_trustfund.cfm

Figure 4 – Annual Gasoline Consumption in Oklahoma, Rolling 12-month Basis, 1980-2023

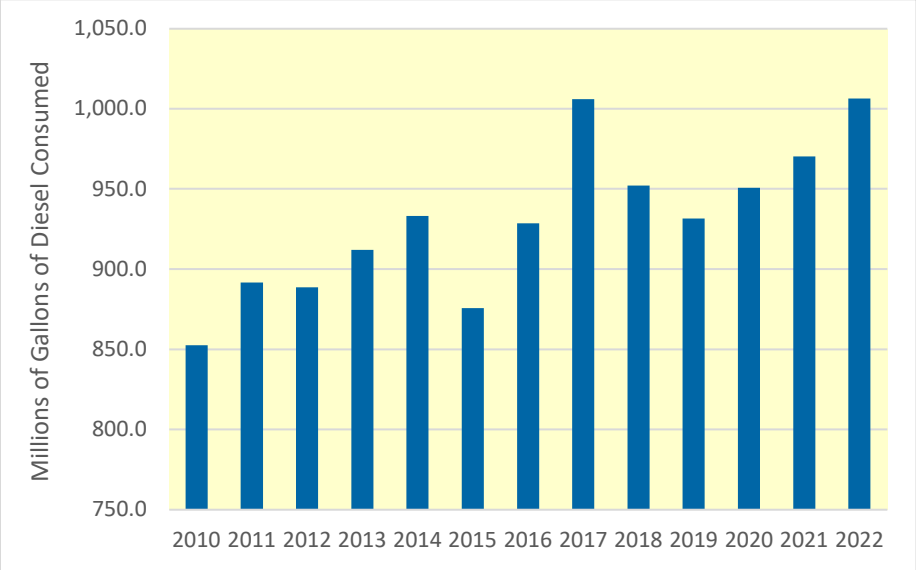


As Figure 4 illustrates, gasoline consumption in Oklahoma is closely related to economic conditions. Consumption dipped significantly in each of the 4 major recessions of the past 40+ years—the recessions of the early 80s, the early 90s, during the financial crisis of the late 00s, and the Covid-related recession of 2020. These declines were related to economic conditions, and usage rebounded as the economy rebounded. In most cases, sharp declines in gasoline consumption were soon followed by rapid and robust periods of growth.

Over the 43-year analysis period in Figure 4, the average rate of growth in gasoline consumption was 0.52% annually.

Figure 5 summarizes the quantity of diesel fuel consumed since 2010. Since no monthly figures were available for diesel, the estimates are summarized on an annual basis.

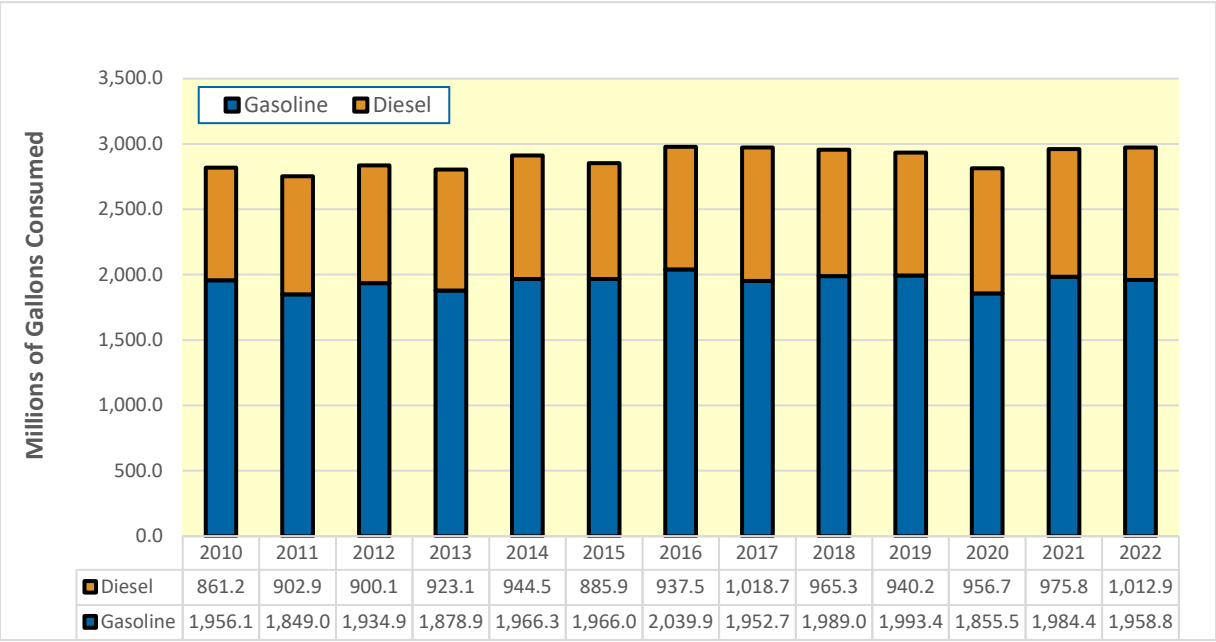
Figure 5 – Annual Diesel Consumption in Oklahoma, 2010-2022



It is worth noting that the Covid-dominated year of 2020 did not represent the low point of diesel consumption. Truck traffic was much less impacted by Covid-related shutdowns than passenger car traffic. Consequently, diesel consumption (virtually all of which is associated with commercial vehicles) *increased* slightly from 2019 to 2020.

Figure 6 summarizes both gasoline and diesel fuel consumption in Oklahoma from 2010 through 2022.

Figure 6 – Gasoline & Diesel Fuel Consumption in Oklahoma, 2010-2022



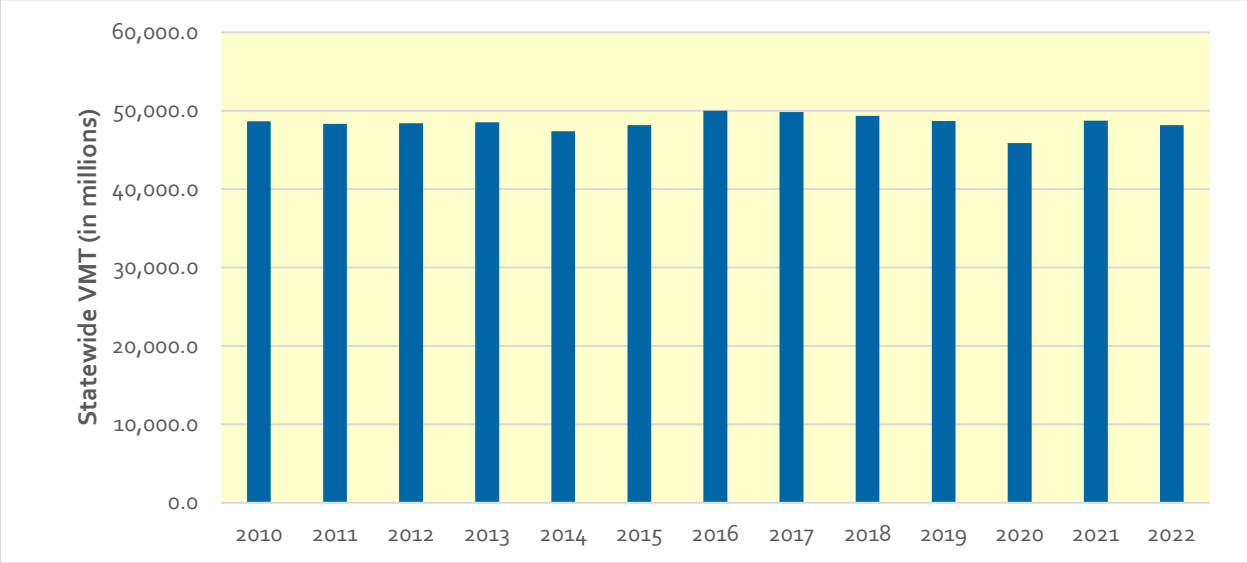
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Diesel	861.2	902.9	900.1	923.1	944.5	885.9	937.5	1,018.7	965.3	940.2	956.7	975.8	1,012.9
Gasoline	1,956.1	1,849.0	1,934.9	1,878.9	1,966.3	1,966.0	2,039.9	1,952.7	1,989.0	1,993.4	1,855.5	1,984.4	1,958.8

As Figure 6 illustrates, fuel consumption has remained steady over the past thirteen years. Except for the year 2011, total consumption has been in the range of 2,750-2,950 million gallons per year. Overall fuel consumption in 2023 (2,943 million gallons) was about 6% higher than overall fuel consumption in 2010 (2,777 million gallons). While fuel usage has ebbed and flowed over the years, the overall trend has been upward.

SECTION 4. VMT TRENDS IN OKLAHOMA

In each state, the Federal Highway Administration (FHWA) monitors vehicle-miles traveled (VMT) on a monthly basis. The FHWA then compiles the monthly data to estimate statewide annual VMT.[6] Figure 7 summarizes statewide VMT on Oklahoma's roadways over the past 12 years, from 2010 through 2022.

Figure 7 – Oklahoma Statewide VMT (in millions), 2010-2022[7]



As expected, in the wake of the Covid-related shutdowns, VMT in 2020 was the lowest observed through the entire study period. VMT in 2020 was down over 6% from the previous year, and down nearly 9% from its previous peak in 2017. However, VMT rebounded strongly in 2021, approaching levels that were observed during the pre-pandemic period of 2016-2019. VMT leveled off in 2022, largely due to record fuel prices and elevated inflation.

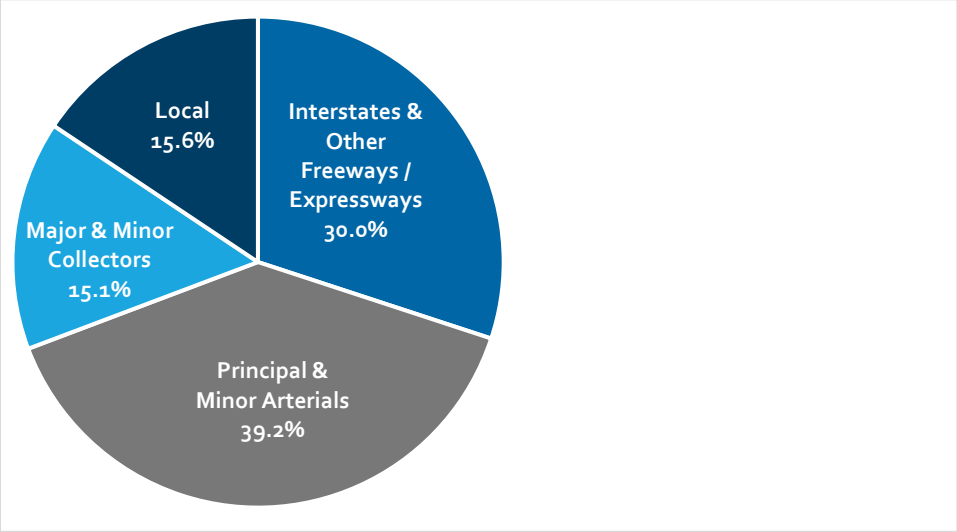
The VMT data provided by FHWA breaks down mileage into seven categories of roadways: interstate, other freeway and expressways, other principal arterials, minor arterial, major collector, minor collector, and local. To simplify the presentation, these were combined these into four broad categories of roadways:

(1) interstates and other freeways & expressways,
(2) principal and minor arterials,
(3) major and minor collectors, and
(4) local.

[6] See VMT data available from FHWA at https://www.fhwa.dot.gov/policyinformation/statistics/2010/vm2.cfm. The "year" designator in the URL can be adjusted to get data from different years.
[7] The data in the graphic below represents data extracted from FHWA, as described in footnote 6. However, for years 2018 through 2022, it was necessary to make adjustments to the "local" component of the VMT data due to obvious internal inconsistencies in the year-over-year trends.

Figure 8 summarizes how VMT in 2021 in the state of Oklahoma was divided into each of these four categories.

Figure 8 – VMT Breakout by Road Type, 2021



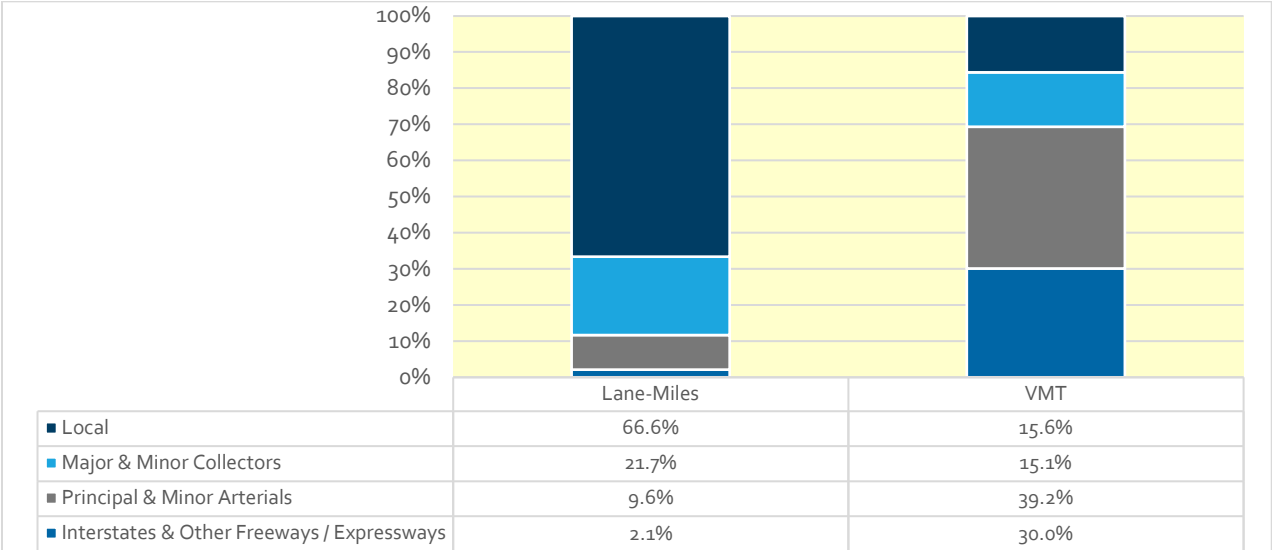
To provide context for the data provided in Figure 8, it is helpful to compare the share of vehicle-miles traveled with the share of lane-miles associated with each category of roadway. Based on data documented by FHWA, the number of lane-miles in Oklahoma in 2021 could be broken down as follows:[8]

- Interstates & Other Freeway / Expressways - 4,982.3 lane-miles
- Principal & Minor Arterials - 22,980.2 lane-miles
- Major & Minor Collectors - 52,037.6 lane-miles
- Local - 159,687.2 lane-miles

Figure 9 compares the share of vehicle-miles traveled in 2021 with the share of lane-miles associated with each category of roadway.

[8] Lane-mile data available at https://www.fhwa.dot.gov/policyinformation/statistics/2021/hm60.cfm.

Figure 9 – Comparison of VMT with Lane-Miles across all Roadway Types



	Lane-Miles	VMT
Local	66.6%	15.6%
Major & Minor Collectors	21.7%	15.1%
Principal & Minor Arterials	9.6%	39.2%
Interstates & Other Freeways / Expressways	2.1%	30.0%

As Figure 9 illustrates, the category of "interstates & other freeway / expressways" carries a disproportionately high share of traffic. Even though the category accounts for a mere 2% of lane miles, it carries nearly 30% of all VMT recorded in Oklahoma. Conversely, "local" roadways account for two-thirds of all lane-miles in the state, yet they serve only one-sixth of statewide VMT.

SECTION 5. FUEL EFFICIENCY OF THE VEHICLE FLEET

The preceding two sections identified, on an annual basis, the number of vehicle-miles driven as well as the quantity of fuel consumed. These data points provide the foundation for calculating the average fuel efficiency of the fleet (in miles per gallon).

An estimate of fleetwide fuel efficiency was based on the following assumptions:

- Vehicles powered by gasoline are, on average, 3.52 times more fuel efficient than vehicles powered by diesel. In other words, if the average diesel-powered vehicle (typically a 5-axle tractor-trailer) operates at 6.5 miles per gallon, then the average gasoline-powered vehicle operates at 3.52 x 6.5 = 22.9 miles per gallon.[9]
- Some of the VMT reported by FHWA are generated by electric vehicles (EVs) which consume no motor fuel. Therefore, estimates of fleetwide fuel efficiency must extract VMT generated by EVs.
- Electric vehicles have been slowly but steadily gaining in their share of the vehicle fleet. The most recent generation of EVs was introduced to the fleet around 2010 with the release of the Chevy Volt and the

[9] Some helpful data relating to typical fuel efficiency for various vehicle types may be found from the Department of Energy at https://www.eia.gov/totalenergy/data/annual/pdf/aer.pdf

Nissan Leaf.[10] Currently, a little over 1% of all vehicles on US roadways are fully-electric vehicles.[11] This percentage has been increasing in recent months, with new-vehicle sales in 2023 running at approximately 6-8% EVs.[12]

- Based on these high-level numbers, we estimated that the share of EVs on Oklahoma roadways was 0.01% in 2010, rising gradually to 0.4% in 2021.[13]

Table 1 summarizes calculations with respect to fuel consumption and VMT as allocated to both gasoline-powered vehicles and diesel-powered vehicles. The right-most column summarizes the fuel efficiency of the entire fleet, including the impact of EVs .

Table 1 – VMT, Fuel Consumption, and Fuel Efficiency on Oklahoma Roads, 2010-2021

Year	Gasoline-Powered Vehicles			Diesel-Powered Vehicles			EVs	Combined: Gasoline & Diesel & EV		
	VMT (M)	Gallons of Fuel (M)	Fuel Eff. (mpg)	VMT (M)	Gallons of Fuel (M)	Fuel Eff. (mpg)	VMT (M)	VMT (M)	Gallons of Fuel (M)	Fuel Eff. (mpg)
2010	42,438	1,956	21.69	5,304	861	6.16	4	47,746	2,817	16.95
2011	41,678	1,849	22.54	5,777	903	6.40	8	47,464	2,752	17.25
2012	42,276	1,935	21.85	5,583	900	6.20	13	47,872	2,835	16.89
2013	42,786	1,879	22.77	5,195	923	5.63	17	47,999	2,802	17.13
2014	41,526	1,966	21.12	6,152	945	6.51	21	47,699	2,911	16.39
2015	42,279	1,966	21.51	5,408	886	6.10	25	47,713	2,852	16.73
2016	43,330	2,040	21.24	5,653	937	6.03	30	49,013	2,977	16.46
2017	43,000	1,953	22.02	6,368	1,019	6.25	34	49,402	2,971	16.63
2018	43,099	1,989	21.67	5,938	965	6.15	43	49,079	2,954	16.61
2019	42,348	1,993	21.24	5,670	940	6.03	64	48,081	2,934	16.39
2020	39,236	1,856	21.15	5,743	957	6.00	98	45,077	2,812	16.03
2021	42,066	1,984	21.20	5,872	976	6.02	168	48,107	2,960	16.25
2022	41,184	1,959	21.03	6,046	1,013	5.97	332	47,562	2,972	16.01

The following observations may be drawn from Table 1:

- Overall, the fuel efficiency of the fleet has declined slightly over the past 12 years. From 2010 through 2013, average fuel efficiency was approximately 17 miles per gallon. However, it hasn't reached as high as 17 mpg for the past nine years.
- Diesel has increased its share of overall fuel consumed. In 2010, diesel accounted for 30.6% of all fuel purchased in Oklahoma; by 2022, that share had grown to 34.1%. This change reflects a modest increase in the share of truck traffic, which in turn serves to slightly pull down the average fuel efficiency.

[10] See https://www.energy.gov/timeline/timeline-history-electric-car for a more detailed timeline of the introduction of EVs in the US.

[11] Estimates from different sources vary, but 1% is a number that is representative of conditions in late 2022/early 2023. See https://getjerry.com/questions/what-percent-of-us-car-sales-are-electric and https://www.caranddriver.com/news/a39998609/electric-car-sales-usa/ for a sampling of current estimates.

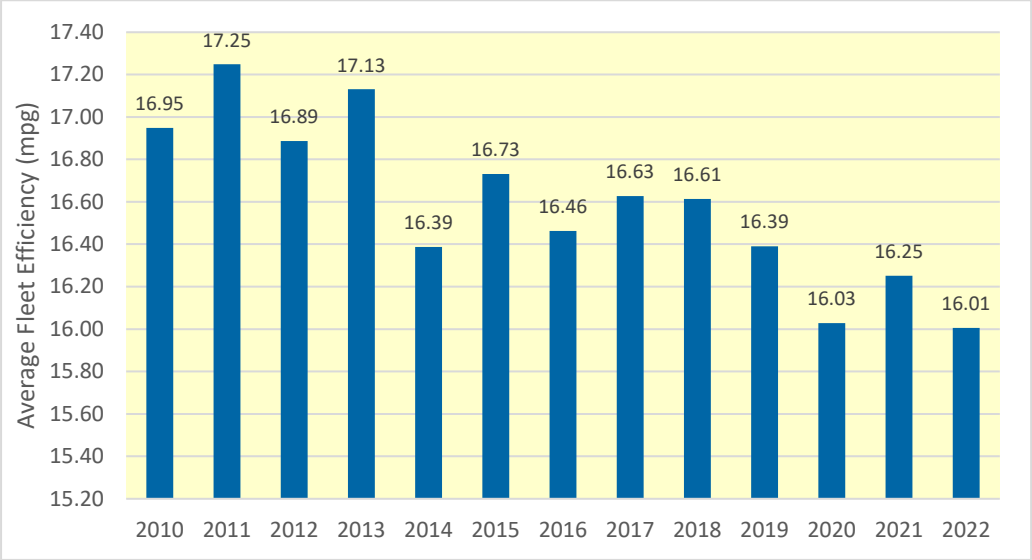
[12] Consistent data on new car sales for recent months is difficult to find, and EV sales are very dynamic. But most sources converge in the range of 6-8%. The EV share in some European countries is much higher.

[13] Data from the Department of Energy (https://afdc.energy.gov/vehicle-registration) indicates that, in 2022, about 0.65% of light-duty vehicles registered in Oklahoma were either electric vehicles (EVs) or plug-in hybrid electric vehicles (PHEVs). This percentage is consistent with the assumptions embedded in this analysis.

- The fuel efficiency of the fleet in 2022 (16.01 mpg) was the lowest observed over the past 12 years. The presence of EVs as part of the fleet is still small and hasn't yet a notable impact on overall fuel efficiency.

This last observation seems counterintuitive, given the increase in fuel efficiency of individual vehicles over the years. Figure 10 depicts the gentle but real decline in the fuel efficiency of the overall vehicle fleet. A regression analysis of the data suggests that the fleet's efficiency has **declined an average of 0.5% annually** since 2010.

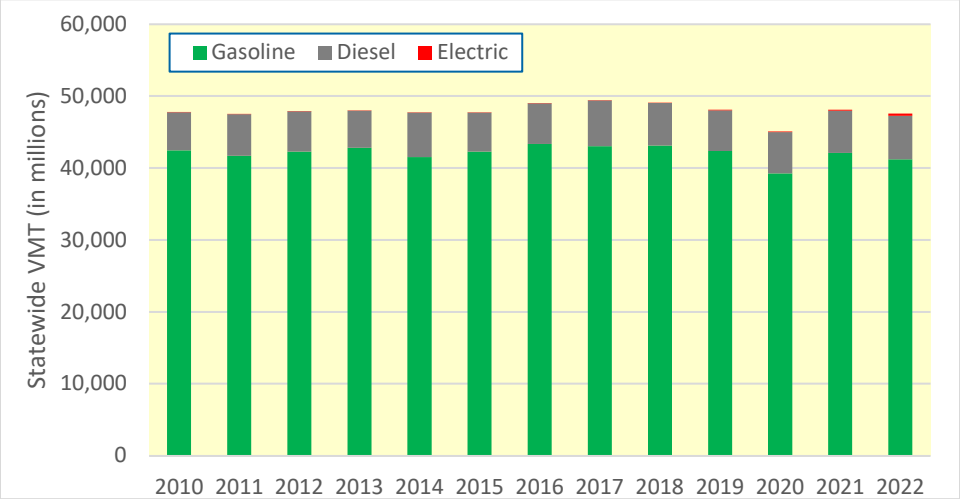
Figure 10 – Change in Fuel Efficiency of the Vehicle Fleet in Oklahoma, 2010-2022



A key takeaway of this analysis is that government-mandated increases in fuel efficiency of specific vehicle types do not necessarily translate into increased fuel efficiency of the fleet. The fuel efficiency of the fleet is a function not only of the efficiency of individual vehicles, but also of the mix of vehicle types. As the vehicle fleet trends toward larger vehicles, this will tend to pull the mileage of the fleet downward, even if the individual vehicles themselves are becoming more fuel efficient.

Figure 11 depicts the relative contribution of gasoline, diesel, and electric vehicles to VMT. As noted earlier, this assumes that EVs make 0.01% of all autos in 2010, escalating to 0.8% of auto traffic in 2022.

Figure 11 – Relative Contribution of Gasoline, Diesel, and Electric Vehicles to Statewide VMT



SECTION 6. FUEL TAX REVENUE PROJECTIONS – CURRENT PARADIGM

Clearly, as Figure 11 illustrated, electric vehicles have contributed very little to statewide VMT in the past. Therefore, fuel tax revenue has not been greatly impacted by their presence. However, as EVs grow in popularity and sales, they will increasingly erode at fuel tax revenue. This impact to fuel tax revenue is likely to be compounded by the new fuel economy standards announced by the US Department of Transportation in April 2022. These new standards mandate an industry-wide average of approximately 49 miles per gallon (mpg) for new-car sales of passenger cars and light trucks in model year 2026. Over time, as these vehicles comprise a growing share of the vehicle fleet, the average fuel economy of the vehicle fleet will likely increase. This will in turn reduce fuel consumption, with an accompanying impact on collections of the fuel tax.

For this report, a model was developed to forecast fuel tax revenue through 2050. The model was based on the following assumptions:

- New car sales infuse an additional 5.5% of vehicles into the fleet each year[14]
- Roughly 4.5% of the vehicle fleet is retired each year[15]
- The median age of a vehicle retiring from the fleet is about 15.5 years[16]
- Electric vehicles will comprise about 1% of Oklahoma's vehicle fleet in 2023, escalating to roughly 50% by 2050[17]

[14] See https://www.economy.com/united-states/new-vehicle-sales-total/not-seasonally-adjusted. The link labeled "Vehicle Sales – BEA" connects to detailed data from the Bureau of Economic Analysis on new vehicle sales.
[15] See https://www.fhwa.dot.gov/policyinformation/statistics/2021/mv1.cfm for data on total vehicle registrations. The "retirement rate" was calculated by comparing vehicle registrations in any given year with the number of vehicle registrations plus the number of new car sales in the previous year. The difference is the number of vehicles retired from the fleet.
[16] Data supporting this calculation was drawn from Figure 1 of the article entitled *Vehicle Fleet Turnover and the Future of Fuel Economy*, available at https://iopscience.iop.org/article/10.1088/1748-9326/aaf4d2/pdf.
[17] See https://www.statista.com/statistics/744946/us-electric-vehicle-market-growth/, which estimates that EVs will account for 45% of **new car sales** by 2035. This represents a growth in market share of 3.1% per year. If this rate of growth continues, then EVs will account for 50% of the entire US **fleet** by 2050.

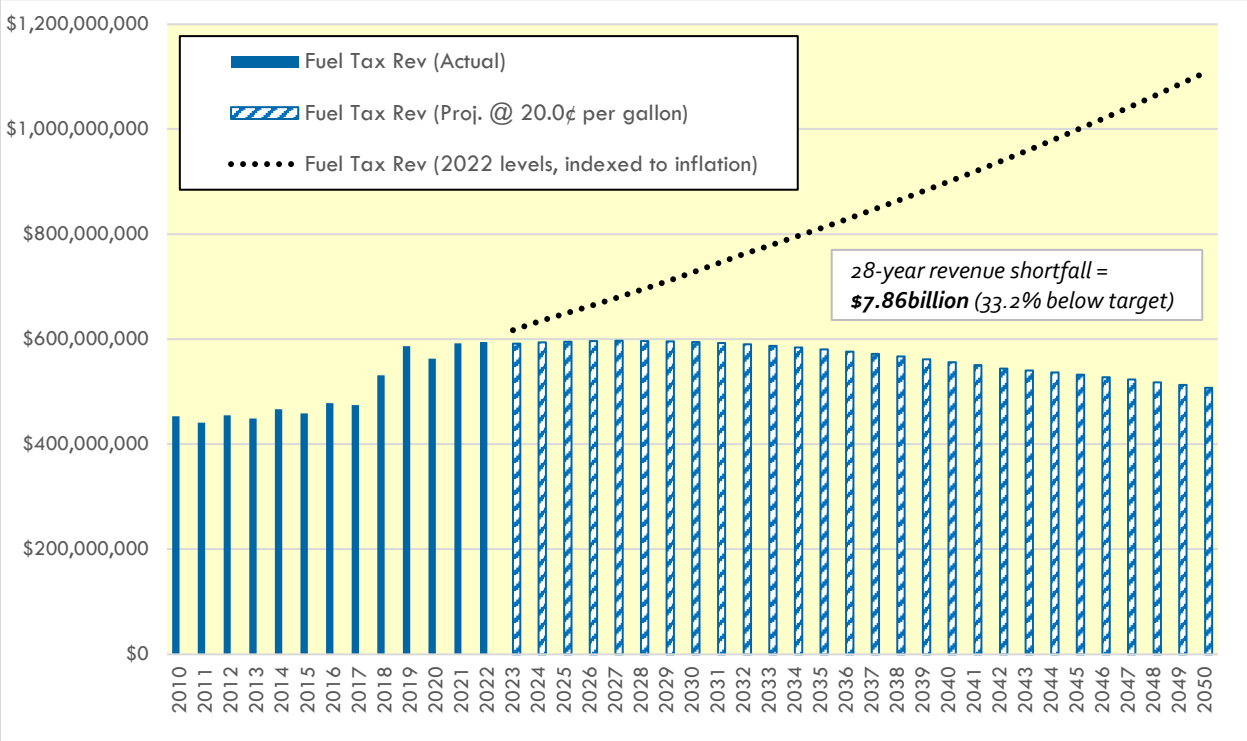
- The fuel efficiency of gasoline- and diesel-powered vehicles will improve by 0.5% annually for the twenty-year period from 2023 through 2042. After that point, motor fuel efficiency will hold steady.[18]
- Statewide VMT will increase at a rate of 1.25% annually.[19]
- The fuel tax rate will remain at 19.0¢ per gallon for both gasoline and diesel throughout the analysis period (through 2050).

Figure 12 summarizes the outcomes of the model. In reviewing the graphic, please note the following:

- The solid blue bars depict *actual* fuel tax revenue for 2010 through 2021.
- The hatched blue bars depict *projected* fuel tax revenue through 2050, based on the assumptions noted above.
- The dotted line represents current fuel tax revenue projected forward if the fuel tax rate was indexed at the assumed rate of inflation shown below. Data is projected forward from 2021, the most recent full year for which fuel tax revenue data is available. The assumed rate of inflation was drawn from a survey of multiple inflation forecasts, including the USDA, the IMF, the OECD, and the European Commission.[20] The specific rates assumed for this analysis are as follows:
    - 2022 – 8.10%
    - 2023 – 3.89%
    - 2024 – 2.57%
    - 2025 thru 2029 – 2.30%
    - 2030 thru 2032 – 2.40%
    - 2033 and beyond – 2.10%

[18] The fuel efficiency standards proposed by the Biden Administration in July 2023 would increase fuel efficiency year-over-year by 2% for passenger cars, by 4% for light trucks, and by 10% for heavy-duty pickup trucks and vans. This increase in fuel efficiency would extend from model year 2027 through 2032. As of 10/17/23, these standards have not yet been approved by Congress. The analysis in this paper assumes that some level of increased efficiency will ultimately be mandated. But as experience has shown, improved efficiency of specific vehicle types doesn't necessarily translate into improved fleet efficiency.
[19] See https://tripnet.org/wp-content/uploads/2018/08/OK_Transportation_by_the_Numbers_TRIP_Report_May_2017.pdf, a pre-Covid assessment of traffic trends in Oklahoma. The analysis (pg. 5) projected that traffic would grow by 15% from 2018 through 2030, yielding an average growth rate of 1.25% per year.
[20] See https://knoema.com/kyaewad/us-inflation-forecast-2022-2023-and-long-term-to-2030-data-and-charts for more details on the various inflation forecasts.

Figure 12 – Fuel Tax Revenue (Actual & Projected) vs. Fuel Tax Revenue (If Indexed to Inflation), 2010-2050



A close look at the model's outputs reveals the following:

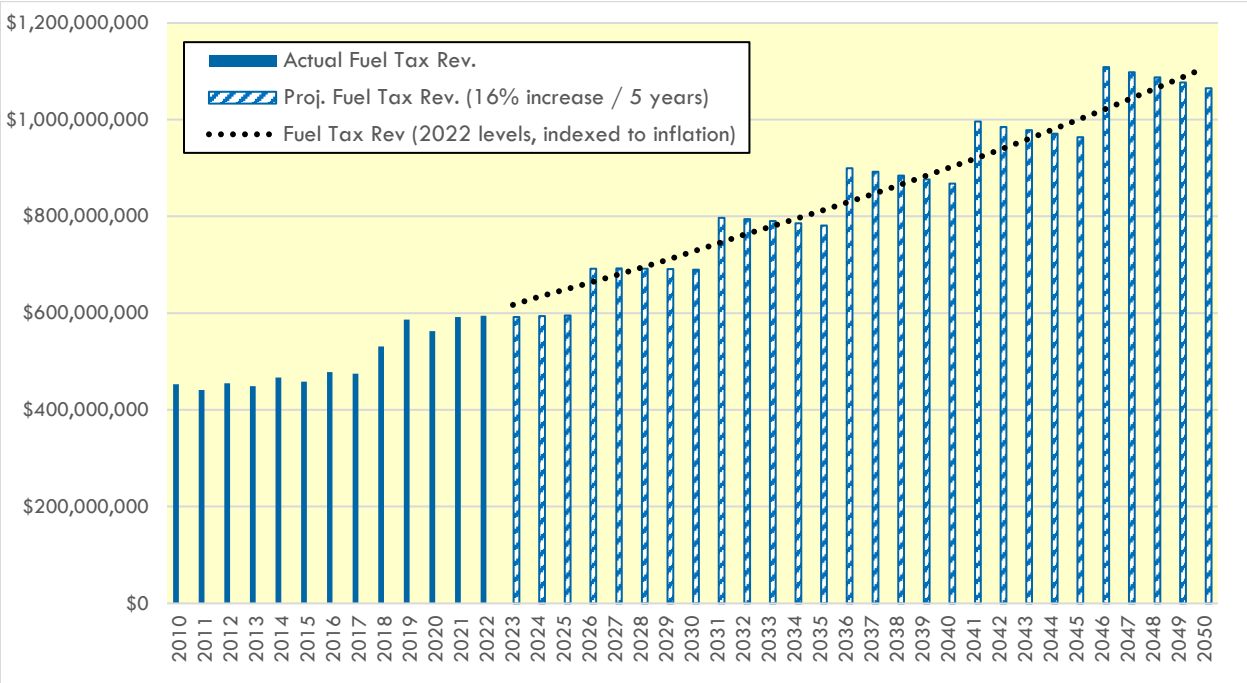
- Even though VMT is expected to grow at a rate of 1.25% annually, fuel tax revenue growth is expected to be negligible. Fuel tax revenue in current year dollars is expected to grow at the meager rate of 0.2% for the next five years, at which point it is expected to begin declining.
- If no fuel tax policies are changed, then fuel tax revenue in 2035 (and beyond) will be lower than it is today.
- Current policies do not begin to keep pace with inflation as indicated by the gap between the black line and the hatched blue bars. By 2050, actual fuel tax revenue ($507 million) will be over 50% lower than today's level of revenue adjusted for inflation ($1.11 billion in 2050).
- Over the full 29-year period from 2022 through 2050, actual fuel tax revenue (totaling $15.8 billion) is expected to be 33% lower than the amount of revenue that *would be collected* if the fuel tax were adjusted for inflation (totaling $23.7 billion).

In short, the fuel tax program as currently structured is expected to produce a relatively flat stream of revenue that will decline by as much as 50% in real (inflation-adjusted) value over the next 28 years.

Figure 13 illustrates projected fuel tax revenue if the fuel tax were increased by 16% every 5 years, starting in 2026. In this scenario, total fuel tax revenue over the 29-year period from 2022 through 2050 is projected to be $23.9 billion, which nearly matches the fuel tax revenue required to keep pace with inflation ($23.7 billion). The fuel tax would need to more than double over the course of time, rising from its current level of 20.0¢ per gallon

(which includes the 1.0¢ per gallon special assessment fee) to a future level of 42.0¢ in 2046. In other words, regular and substantial increases to the fuel tax will be required for fuel tax revenue to keep up with inflation in the years to come.

Figure 13 – Projected Fuel Tax Revenue with 16% Increase every 5 Years



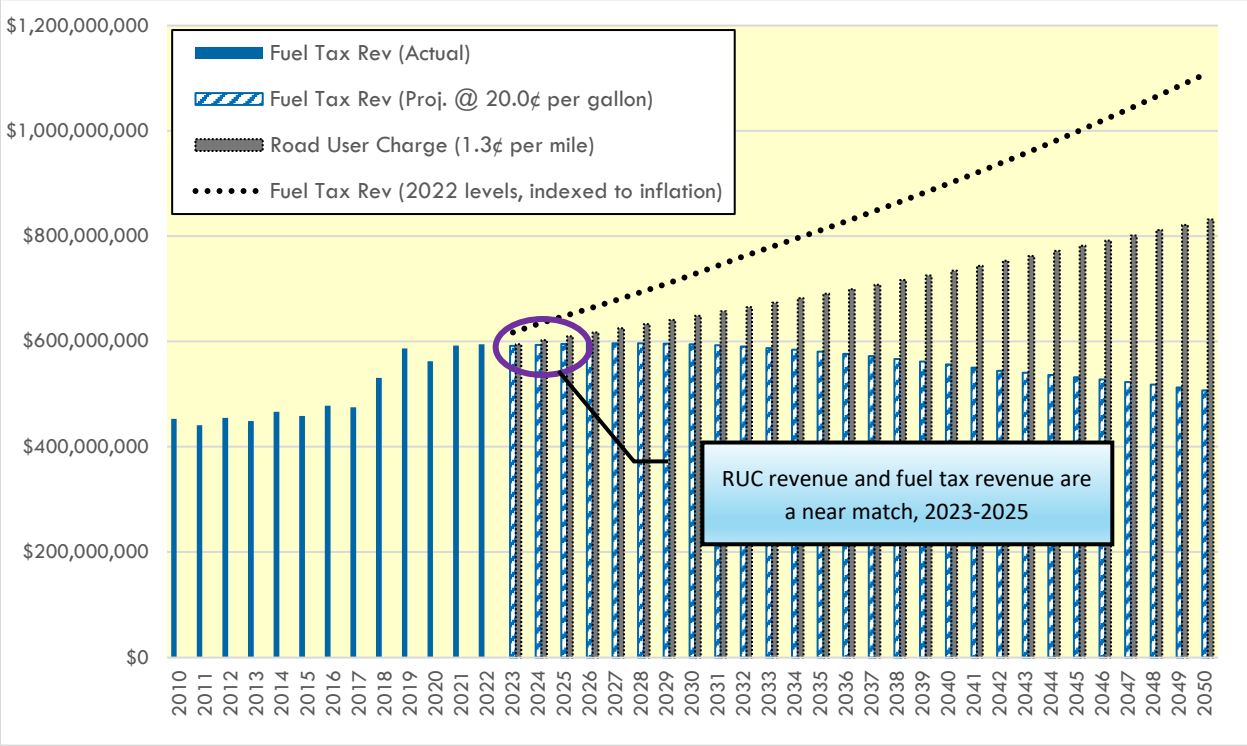
SECTION 7. ROAD USER CHARGING – A FUNDING ALTERNATIVE

One approach to replacing the fuel tax is to implement a "road user charge." This would typically take the form of a per-mile fee to be levied on all users of public roadways. The strength of a road user charge (or RUC) is that it applies equally to all users of the roadways. If a person benefits from the provision of the roadway, then he or she pays for using it, and in proportion to the benefit received If you drive twice as much, you pay twice as much etc. This approach provides one fare structure for all drivers, ensuring that all vehicles contribute to the revenue required to build, operate, and maintain public roads in proportion to their use of the roads.

Figure 14 illustrates the impact of a basic RUC program on funding. The graphic is based on the implementation of a RUC of 1.3¢ per mile for all vehicles on all roadways in the state of Oklahoma. The graphic builds on Figure 12 by introducing a set of gray bars (running from 2023 through 2050), which depict projected revenue under a road user charge pricing framework.[21]

[21] The analysis depicted in Figure 14 assumes that a RUC program would not be as efficient as the existing fuel tax program. A RUC program would likely involve some losses, either by failing to capture all vehicle-miles traveled in the state or by failing to collect revenue from all who owe the tax. To help account for this likely impact, this analysis assumed an annual 5% loss in RUC revenue due to leakage. This value will need to be better understood and more accurately estimated in future analysis.

Figure 14 – Projected Revenue with Road User Charge (RUC) of 1.3¢ per Mile (All Vehicles)

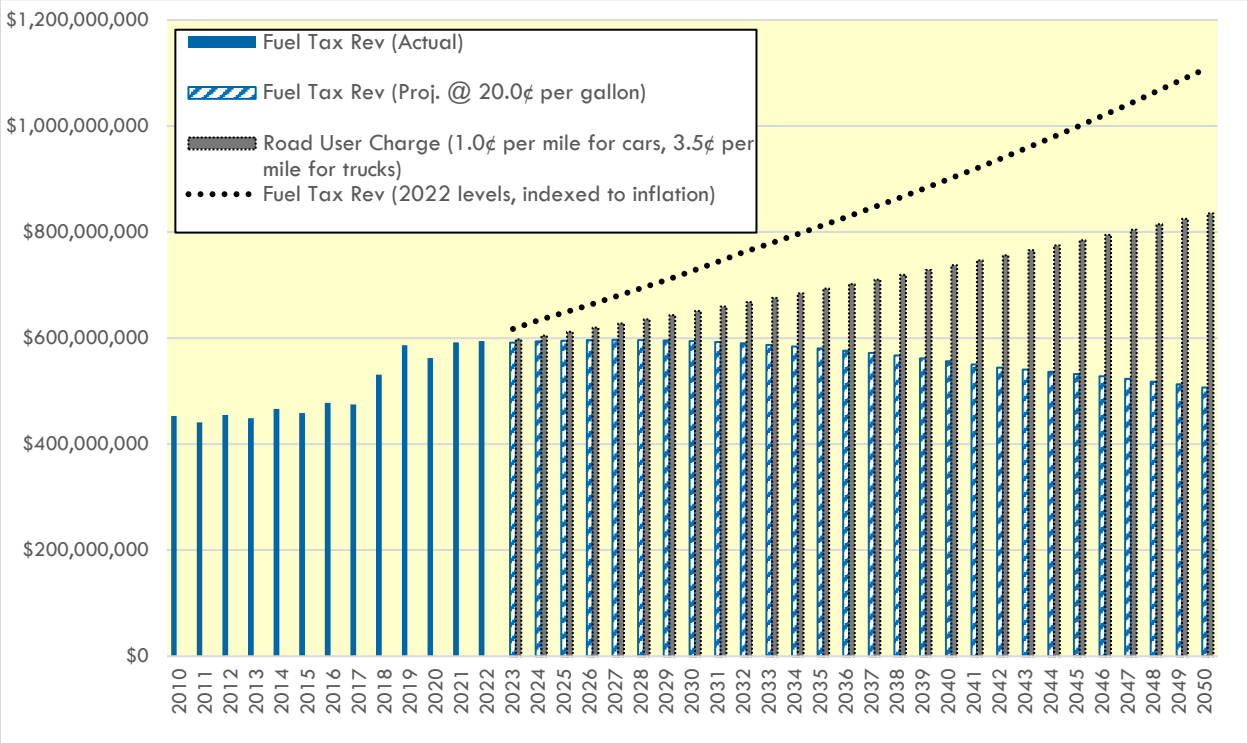


The following observations may be drawn from Figure 14:

- In the early years (2023-2025), this approach yields a very close match to revenue associated with the fuel tax.
- Revenue escalates over time, at a rate consistent with growth in overall VMT.
- RUC revenue is not impacted by the dual phenomena of growth in EVs (which do not pay fuel tax but would pay the per-mile fee) and the increase in fuel efficiency of internal combustion vehicles in the fleet (which is a drag on fuel tax revenue).
- The RUC approach closes about half of the revenue gap between projected fuel tax revenue (represented by the hatched bars) and the level of revenue required to keep pace with inflation (represented by the dotted line).

An alternative RUC approach would be to apply a higher per mile rate to heavy vehicles, given that they cause greater damage to the roadway and thus put a greater strain on maintenance budgets. Figure 15 illustrates the revenue stream associated with a road user charge of 1.0¢ per mile for passenger cars and of 3.5¢ per mile for heavy trucks. The revenue generated over the 29-year window is virtually identical to the revenue associated with a straight fee of 1.3¢ per mile for all vehicles.

Figure 15 – Projected Revenue with RUC of 1.0¢ per mile (passenger cars) and 3.5¢ per mile (heavy trucks)



To fully close the revenue gap, periodic increases of the road user charge per mile rate will be needed. Figure 16 illustrates what the revenue stream from a road user charge would look like if the base fee of 1.30¢ per mile were escalated by 6% every 5 years, starting in 2026. By the end of the analysis period in 2050, the per-mile rate would be a still-modest 1.74¢ per mile.

Figure 16 – Projected Revenue with RUC of 1.3¢ per Mile, Escalated by 6% every 5 Years

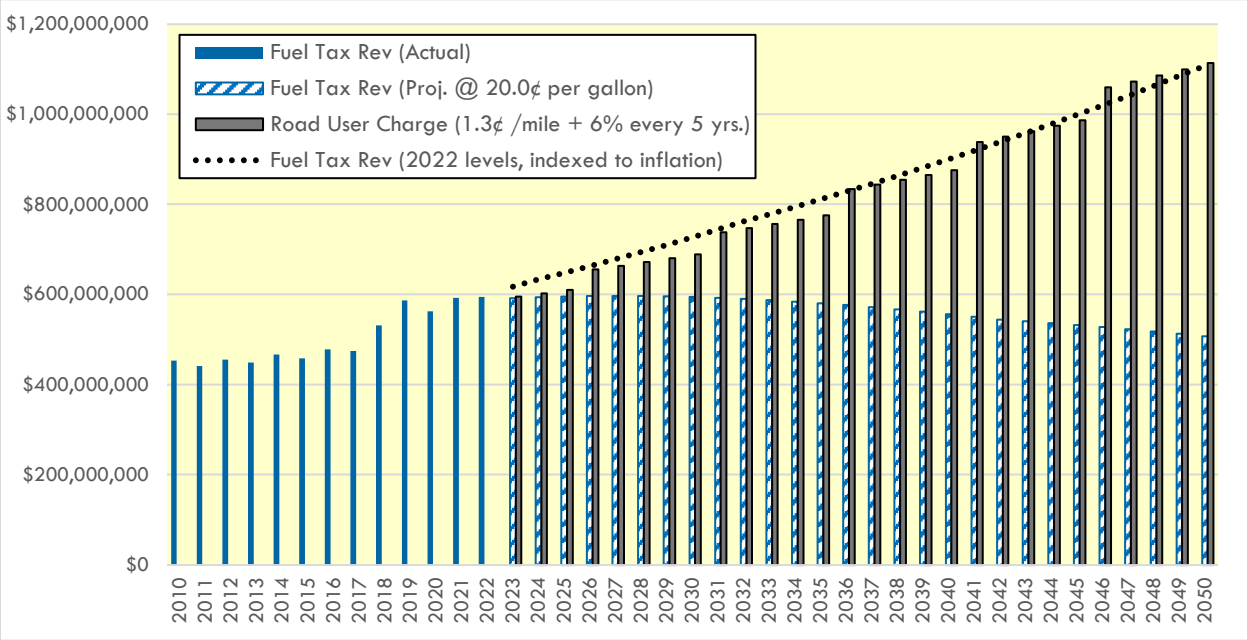
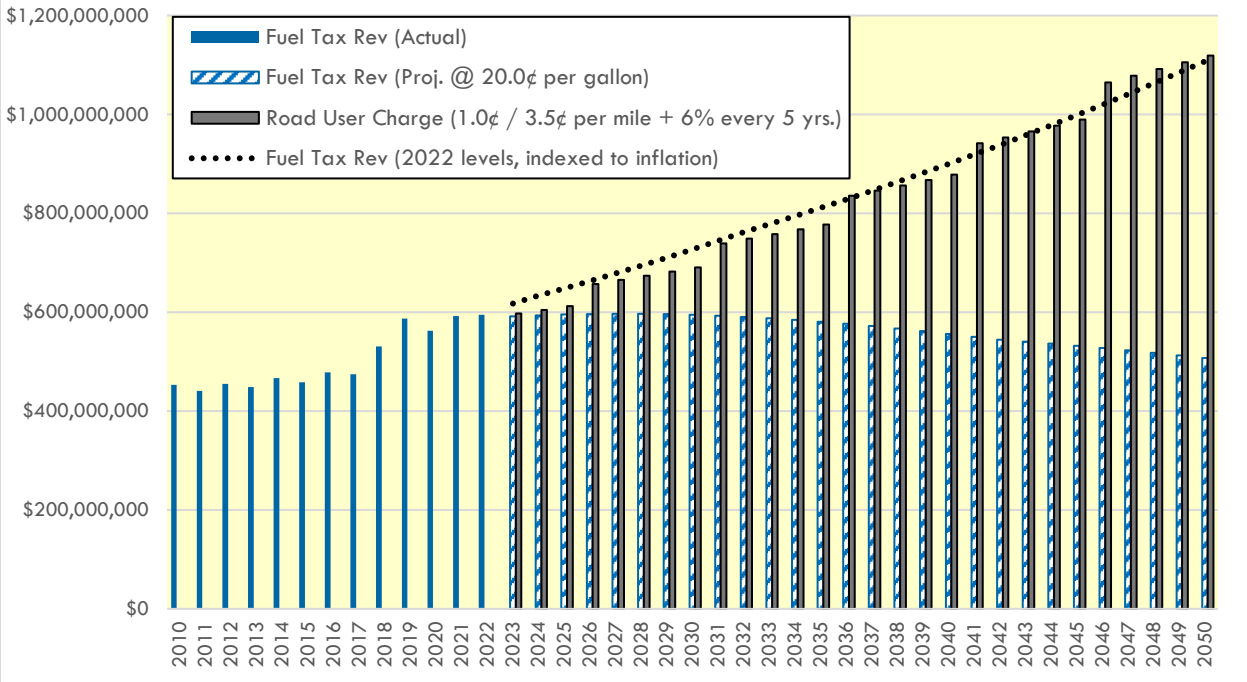


Figure 17 provides the same information for the scenario in which a passenger car rate of 1.0¢ per mile and a heavy truck rate of 3.5¢ per mile are escalated at 6% every five years.

Figure 17 - Projected Revenue with per-mile RUC of 1.0¢ (cars) & 3.5¢ (trucks), Escalated by 6% every 5 Years



In short, this analysis has indicated the following:

- Two current trends will cause fuel tax revenue growth to lag traffic growth. These trends are:
  - Growth in the market share of electric vehicles, which do not pay fuel tax; and,
  - An increase in overall fuel efficiency, which means that those who pay fuel taxes will eventually pay less.
- A road user charge is a means of more directly correlating tax revenue with road usage. In a well-implemented RUC program, revenue growth will directly tie to traffic growth.
- The annual cost to drivers will be modest. Consider the scenario in which a road user charge of 1.0¢ per mile is charged to passenger cars and 3.5¢ per mile is charged to trucks. For the average Oklahoman who drives 17,700 miles annually,[22] the fee would be about $177 per year, or roughly $3.40 per week.
- However, the annual growth in traffic (estimated at 1.25%) is not sufficient to keep up with inflation (estimated to level out at 2.1% to 2.4% in the future). To ensure that revenue growth keeps up with inflation, modest and periodic increases to the per-mile rate must be implemented.

SECTION 8. OTHER ALTERNATIVES TO REPLACING THE FUEL TAX

Section 6 established that the fuel tax, as currently implemented, is not adequate to provide a sustained level of funding that keeps up with inflation. Section 7 then examined how a road user charge, if priced properly and increased incrementally over time, is a potential means of replacing the fuel tax and providing sustained funding.

This section will take a high-level look at alternative methods for replacing the fuel tax. The calculations in this section are approximate and do not reflect a detailed analysis. Rather, these calculations are simply intended to illustrate the relative impact of replacing the fuel tax with some other means of generating revenue.

8.1. INCREASE THE INCOME TAX

The state income tax is the single largest source of revenue for the State of Oklahoma. Oklahoma took in a total of $13.33 billion in revenue in FY2023 (after tax refunds were granted). About 39% of this net revenue, totaling $5.17 billion, was from state income taxes. This revenue stream was comprised of $4.39 billion in individual income tax and $0.77 billion in corporate income tax.

By comparison, Oklahoma collected $0.59 billion in fuel tax revenue in FY2023. This was comprised of $0.39 billion in gasoline fuel tax and $0.20 billion in diesel fuel tax.

For the income tax revenue stream to replace the fuel tax, income tax revenue (combined individual would need to increase by about 10%.[23] As a high-level estimate, this would involve the following changes:

- For a married couple, the individual income tax level is currently set at 4.75% for all income over $12,200. This tax rate would need to increase to approximately 5.30% to 5.40%.

[22] https://www.thezebra.com/resources/driving/average-miles-driven-per-year/#average-miles-driven-per-year-by-state
[23] This is simply calculated by taking the fuel tax revenue of $0.59 billion and dividing it by income tax revenue of $5.17 billion.

- The state corporate income tax rate for 2022 was set at 4%. This tax rate would need to increase to approximately 4.45% to 4.60%.[24]

The median household income in Oklahoma in 2022 was $63,440. If the personal income tax rate were to increase from 4.75% to 5.30%, the median household would pay additional **$280** annually.

This approach would shift the fuel tax burden from drivers alone to all individual and corporate income earners within Oklahoma. The amount paid by these income earners would not correspond in any way to the amount of road use benefit received.

8.2. INCREASE THE STATE SALES TAX

Oklahoma has a state sales tax rate of 4.50%. The tax is applied to most items, including clothing, groceries, and over-the-counter medications. The tax code does provide for some limited exceptions, including periodicals, newspapers, medical services, and motor vehicles.

Oklahoma's state sales tax is the second largest source of revenue for the State of Oklahoma. The sales tax generated $3.01 billion in revenue for the state in FY2023, accounting for about 22% of Oklahoma's net income.

Total sales tax revenue would need to increase by about 20% if it were to replace the fuel tax. This means the sales tax rate would need to increase to approximately 5.40% to 5.50%.

The population of Oklahoma is just over 4 million, about 76% of which are adults.[25] If we assume that the sales tax primarily impacts the adult population, then a sales tax increase (designed to replace the motor fuel tax) would cost the average adult an additional **$175-$200** per year, depending on the percentage of Oklahoma sales tax that is paid by non-residents.

This approach would shift the fuel tax burden from drivers alone to all purchasers of goods within Oklahoma, and the amount paid would not correspond in any way to the amount of road use benefit received.

8.3. INCREASE OTHER MOTOR VEHICLE FEES

Each year, the Oklahoma Tax Commission publishes its *Annual Vehicle Registration Report*.[26] This report summarizes the amount of revenue generated by miscellaneous charges associated with motor vehicles. The report provides information on four basic types of charges:

1. Motor vehicle sales taxes
2. Excise taxes
3. Registrations
4. Fees (including titles, permits, and receipts)

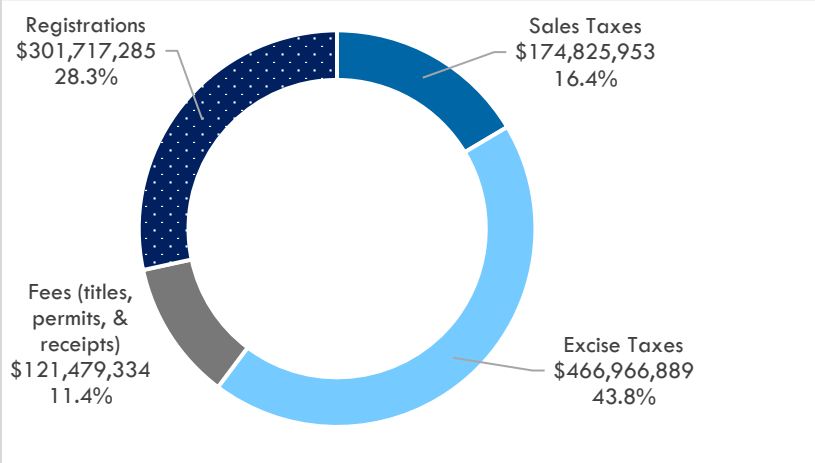
Figure 18 summarizes the relative contribution of each element of "miscellaneous motor vehicle collections."

[24] The figures cited in Section 8.1 were drawn from the *FY2023 Revenue & Apportionment Report*, available on-line at https://oklahoma.gov/content/dam/ok/en/tax/documents/resources/reports/annual-reports/otc/AR-2023.pdf

[25] https://www.census.gov/quickfacts/fact/table/OK/PST045222

[26] For FY2022, this report can be found here: https://oklahoma.gov/content/dam/service-oklahoma/Documents/annual-vehicle-reg-report/MVAR-2022.pdf

Figure 18 – Components of Miscellaneous Motor Vehicle Collections, FY 2022



Overall, these four components of motor vehicle revenue contributed $1,065.0 million in revenue in FY2022, accounting for 8.5% of the state's net revenue. Although this revenue source is all drawn entirely from motor vehicles, only about half is dedicated to transportation funding.

To replace the fuel tax, these taxes and fees would need to increase by about 55-60%. In other words, all motor vehicle sales taxes, excise taxes, registrations, permits, and any other fees would need to increase significantly. This would be a particularly onerous tax for individuals making a vehicle purchase. At present, individuals pay a tax of 4.50% on vehicle purchases, meaning that a new vehicle sold for $25,000 would entail a sales tax of $1,125. If this tax were to increase by 55% (increasing the tax rate to 6.97%), the resultant tax would rise to $1,744—an increase of **$619** at the time of purchase.

8.4. COST TO COLLECT

One significant concern with replacing the motor fuel tax is the *cost to collect*. The process of collecting the motor fuel tax is extremely efficient. Preliminary estimates from the Oklahoma Tax Commission suggest that it costs about **$1.75 million** annually to collect the motor fuel tax. Given that Oklahoma collects roughly $600 million in fuel taxes per year, this equates to a cost-to-collect of approximately **0.3¢ per dollar collected**. In other words, for every $100 collected in fuel tax revenue, only 30¢ is consumed in the process of collecting the revenue; the remaining $99.70 is available for transportation funding.

The alternatives to the fuel tax identified in this section (increasing the income tax, increasing the sales tax, and increasing other motor vehicle fees) could likely be implemented very efficiently as well. None of these alternatives require introducing new processes; they simply involve adjusting fees associated with existing processes. Though these adjustments would require increased staffing to handle the additional revenue, the cost to collect would likely be modest.

By contrast, implementing a RUC program requires the introduction of an entirely new set of processes. It will involve the development and deployment of technology, the management of extensive data, and of course the processing and handling of revenue. Preliminary estimates for the RUC program suggest that the cost-to-collect will range from 6.4¢ to 27.3¢ per dollar collected. This means that, for the RUC program to generate

the same net revenue as the motor fuel tax, the per-mile charge would need to increase by 6.1% to 27.0%.[27] The actual percentage will depend on many factors, including the types of technologies that will be used to collect and report the mileage data. If the program relies heavily on GPS telematics and on-board devices, the cost-to-collect will be on the high end of the range. On the other hand, if the RUC program relies more heavily on odometer readings, non-GPS telematics, and smartphones, then the cost-to-collect will be lower.

The analysis in Section 7 identified the per-mile charges required to match the gross revenue collected via the motor fuel tax. However, based on the cost-to-collect information discussed above, these RUC charges will need to increase to ensure that the net revenue (that is, gross revenue less the cost-to-collect) remains consistent.

Table 2 summarizes the extent to which the RUC fees identified in Section 7 would need to be adjusted to match the net revenue generated by the motor fuel tax.

Table 2 – Adjustments to RUC Charges required by Cost-to-Collect

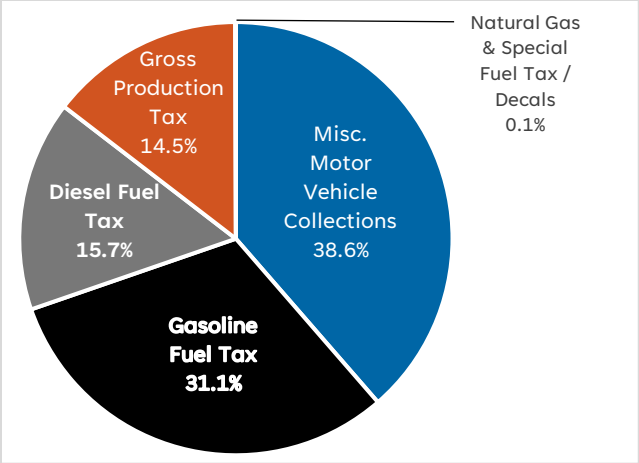
Scenario	Initial Proposed RUC Charge	Revised RUC Charge	
		Low-End (6.1% increase)	***High-End (27.0% increase)***
All vehicles pay same RUC fee	1.30¢ / mile	1.38¢ / mile	1.65¢ / mile
Differential between Cars & Trucks	1.00¢ / mile cars 3.50¢ / mile trucks	1.06¢ / mile cars 3.71¢ / mile trucks	1.27¢ / mile cars 4.45¢ / mile trucks

8.5. TOTAL TRANSPORTATION FUNDING

Though virtually all of the revenue from the motor fuel tax is devoted to transportation, it is not the *only* source of revenue that is devoted to transportation. In FY2023, the state of Oklahoma invested approximately $1.22 billion in transportation. The funding sources are summarized in Figure 19.

Figure 19 – Oklahoma Transportation Funding Sources, FY2023

[27] Recall that the cost to collect the motor fuel tax is 0.3¢ per dollar collected. Therefore, if the cost to collect RUC is 6.4¢ per dollar collected, this equates to an increase of 6.1¢ per dollar collected. Therefore, the fee itself must increase by 6.1¢ per dollar to make up for the additional cost. An increase of 6.1¢ per dollar is identical to a 6.1% increase.



As Figure 19 illustrates, the motor fuel taxes on gasoline and diesel combined to generated 46.8% of all transportation-related funding in FY2023. The miscellaneous motor vehicle charges discussed in Section 8.3 supplemented this with a comparable (38.6%) contribution to transportation funding.

One question that has been raised in RUC-related discussion is: What would it take for RUC to replace all transportation funding in Oklahoma? Based on funding levels in FY2023, it appears that the proposed RUC charges would need to increase by 114% to fully fund transportation. Table 3 summarizes the extent to which the RUC fees identified in Section 7 would need to be adjusted to replace all transportation funding. Please note that the numbers in Table 3 do not reflect the additional increase that would be necessary to address the cost-to-collect issue discussed in Section 8.4.

Table 3 – Adjustments to RUC Charges to Replace All Transportation Funding

Scenario	**Initial Proposed RUC Charge**	**Revised RUC Charge** *to replace all transportation funding*
All vehicles pay same RUC fee	1.30¢ / mile	2.78¢ / mile
Differential between Cars & Trucks	1.00¢ / mile cars 3.50¢ / mile trucks	2.14¢ / mile cars 7.48¢ / mile trucks

8.6. SUMMARY

This section has examined three alternatives (besides a road user charge) for replacing the 20.0¢ per gallon state fuel tax. Table 4 summarizes this preliminary analysis regarding the changes that would be required to replace the annual revenue currently generated by the motor fuel tax.

Table 4 – Summary of Alternative Approaches to Replacing the Fuel Tax

Replacing the fuel tax with this revenue stream…	Would roughly require the following changes…
State Income Tax	• Increase top marginal individual tax rate from current level of 4.75% to approximately 5.30%-5.40% • Increase the state corporate tax rate from current level of 4.0% to approximately 4.45%-4.60%.
State Sales Tax *(not applicable to motor vehicles)*	Increase the sales tax from its current level of 4.50% up to approximately 5.40%-5.50%
All Motor Vehicle Revenue Sources	Increase all tax assessments identified in the *Annual Vehicle Registration Report* by about 55-60%. This applies to all motor vehicle sales taxes, excise taxes, registration fees, and permit costs.

Clearly, the motor fuel tax generates a significant level of revenue. Recovering this revenue via a different revenue stream will necessitate some large increases in costs. And some of the people bearing these cost increases may not be heavy users of the roadway. Therefore, it seems more reasonable to replace the motor fuel tax with a revenue stream that (1) is directly related to road usage, (2) does not result in a huge change for most individuals, and (3) can be paid in multiple small increments rather than in one large increment. A properly configured road user charge (RUC) program can satisfy all three of these criteria.

SECTION 9. CONCLUSIONS

From this report, the following conclusions can be drawn:

1. The motor fuel tax in Oklahoma has a long history, having first been introduced in 1933. In FY2023, the motor fuel tax—assessed at 19.0¢ per gallon for both gasoline and diesel fuels, with an additional 1.0¢ per gallon fee dedicated to underground storage tanks—generated $591 million in revenue.
2. However, two trends are gradually combining to minimize revenue growth with the fuel tax:
    a. The first trend is government-mandated fuel efficiency standards. Such standards will tend to decrease the amount of fuel consumed, which in turn will provide a drag on fuel tax revenue.
    b. The second trend is the advent of electric vehicles (Evs). As the market share of Evs grows, the share of vehicles that pay no fuel tax also grows.

3. This analysis estimates that these trends will combine to keep fuel tax revenue essentially flat for the next 10 years. Thereafter, as fuel efficiency standards take hold and electric vehicles grow in their market share, we expect that fuel tax revenue will begin a steady decline.
4. Meanwhile, the demands of the transportation system and the eroding impacts of inflation mean that fuel tax revenue will need to grow. Every year that fuel tax revenue stays flat is a year that transportation *needs* further diverge from transportation *income*.
5. By tethering the tax to roadway usage rather than fuel consumption, a road user charge program is a way to overcome the dual trends of fuel efficiency improvements and EV growth. Properly configured, a RUC program should yield revenues that track closely with growth in vehicle-miles traveled.
6. A road user charge of 1.3¢ per mile for all vehicles will, in the short term, yield a very close match to the current gross revenue stream of fuel tax revenue. An alternative approach would be to assess a fee of 1.0¢ per mile for passenger cars and of 3.5¢ per mile for heavy trucks.
7. Collecting revenue via the proposed RUC program will be more costly than collecting revenue via the motor fuel tax program. As a result, the rates identified above will need to be increased to cover the cost-to-collect. The increase will need to be in the range of 6-27%. More research will be required in the future to refine this estimate.
8. To keep pace with inflation, the RUC per-mile rates should be increased by about 6% every 5 years. If VMT growth is less robust than 1.25% annually, then the rate increase will need to be slightly greater.

Transportation facilities are costly to build, operate, and maintain. Any program that closely connects transportation *funding* with all transportation *users* is both fair and effective. A road user charge provides this connection in a way that is stronger and more direct than the current motor fuel tax.

APPENDIX D: PPM RESEARCH

D.3 OUT-OF-STATE PPM IMPLEMENTATION ASSESSMENT

OKLAHOMA

fair miles OKLAHOMA

OKLAHOMA

OUT-OF-STATE PAY-PER-MILE IMPLEMENTATION ASSESSMENT

DECEMBER 2023

fair miles OKLAHOMA

Abstract

The creation of a Road Usage Charging (RUC) program requires solutions to a range of technical, legal, cultural, and financial issues. However challenging it may be to overcome these challenges and create an effective in state program, the scope of the challenge expands significantly when considering the coordination with out of state travel and user fee programs. For a state's RUC program to deliver on the goal of a sustainable, equitable, and efficient solution, the question of out of state collections must be considered. The reality is that a considerable proportion of the Vehicle Miles Travelled within a state may be accrued by vehicles registered in other jurisdictions. The ability for a state to collect from these out of state drivers who are impacting the infrastructure in an equivalent way to in-state drivers will be a critical to any RUC program success. This paper presents several potential models for handling out of state user fee coordination and evaluates the relative merits of each.

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Introduction

RUC and OOS Vehicles

Many states have conducted pilots of collecting RUC for miles travelled within state boundaries. Currently passenger vehicles pay gas tax in the state where they purchased gas. States do not make attempts to determine in which states passenger vehicles drove using that tank of gas. In contrast, the International Fuel Tax Agreement (IFTA) ensures that fuel taxes paid by qualified motor vehicles, which are interstate 3 axle vehicles and/or interstate vehicles over 26,000 pounds, are shared among associated tax jurisdictions (the 48 contiguous states and Canadian provinces) according to miles traveled. Qualified motor vehicles make up approximately 6% of vehicle miles traveled nationwide.[1]

This paper addresses the challenges and potential solutions for collecting RUC across state boundaries. This paper starts with the assumption that Oklahoma and all other states have implemented RUC and it is in production and collecting revenue. Implementing RUC means that states have each:

- Implemented one or more technologies to track vehicle miles travelled,
- Set a policy for user fees based on one or more rates per mile,
- Implemented a method for vehicle owners to find out the amount owed and make payments,
- Ensured that all vehicles registered in that state make RUC payments in that state, and
- Implemented a RUC fraud prevention program and,
- Passed legislation or equivalent authorization to allow for coordination with other states for the purposes of exchanging user fee revenues based on interstate travel and ability to coordinate enforcement programs.

This paper further assumes that all states are actively interested in cooperating to apportion RUC payments.

Proposed methods of determining RUC

Methods for tracking vehicle miles traveled vary widely from simple odometer readings to technologies that can also report (with varying accuracy) on the location of the vehicle including OBDII, in vehicle telematics and mobile apps. Detecting and reporting on the location of the vehicle means that the state authorities do not need to depend on self-reporting to apportion the vehicle miles traveled among states. Other work for this project describes these data collection methods in more detail.

When vehicles cross state borders, or in more challenging situations with national borders, the complexity of collection user fees, enforcement, and equity for RUC increases. The paper takes a high-level look at all the challenges that arise from the complexity of Interstate RUC including:

- Models for interstate clearinghouses
- Applicability of currently existing interstate clearinghouses for Interstate RUC
- Enforcement concepts for Interstate RUC

[1] USDOT, Bureau of Transportation Statistics, Share of Highway Vehicle Miles Traveled by Vehicle Type, accessed 27 September 2023, < https://www.bts.gov/browse-statistical-products-and-data/freight-facts-and-figures/share-highway-vehicle-miles-traveled>.

Models for Interstate RUC

Keep all revenue from vehicles registered in your state - Traditionally states are responsible for setting their own tax rates and collecting their own tax revenue. RUC could follow a form of this traditional approach and have each state collect and keep RUC payments from vehicles registered in that state for all vehicle miles traveled regardless of the location of travel. This is the simplest model, needing no cooperation among states and leaves each state to determine how it will collect and enforce RUC payment. However, this model does not apportion RUC revenue fairly, in accordance with road usage across state borders. The following are two examples of unfair distribution of revenues:

- Large trucks do more damage to roads than other types of vehicles and drive many of their miles outside the borders of their state of registration.
- Cities with large populations of commuters from other states have no way to recover the costs of their road use.

Each state is responsible to collect revenue from vehicles travelling in that state - An example of this method, is state Income Taxes. States collect Income Taxes from their residents. However, if a person performs substantial amount of work in a state other than that of their main residence, the state in which the person performed the work may collect income tax for that work. In this model, each state is responsible for enforcing and collecting taxes on its own. The state of residence does not have any responsibility towards another state in which its resident performs work. A robust set of Federal and state reporting requirements for both the payer and the payee of income taxes makes this model feasible.

For RUC, this model requires that each state knows how many miles any visiting vehicle travelled on its roads. In addition, each state needs a way to directly collect the revenue from out of state vehicles that travelled in-state. To do so, each state would need to have a customer account or link to every possible in and out of state customer and the duplication and inefficiencies for all states would be cost prohibitive. Another major problem is enforcement across state lines – what power will Oklahoma have to make vehicle owners in other states make their RUC payments?

Clearinghouse – IFTA follows a third model in which all fuel taxes are collected by the state in which a licensee purchases fuel, and that state remits an apportioned share of those funds to other state through the IFTA clearinghouse based on the fuel consumption in those states. The toll industry also follows a similar model for registered customers, but among toll agencies rather than among state tax authorities. This model has the benefits of fair distribution of RUC revenue and payment enforcement being the responsibility of the state where a vehicle is registered. This gives states tools such as vehicle registration hold to enforce payment. On the downside, the Clearinghouse model requires the implementation of a clearinghouse system and cooperation on paying for and operating the system.

Under the Clearinghouse model, one state is responsible for collecting revenue from its registered vehicle owners and remitting that revenue to the other states. Does the collecting state follow its own business rules or is it responsible for knowing and following the business rules of each state to which it will remit RUC payments? The Clearinghouse model needs policy and supporting technical solutions to this issue.

The table below summarizes the differences among the models for Interstate RUC discussed in this section. As the table shows, all the models have some benefits and challenges.

Model	Fair Distribution	Enforcement	Simplicity	Independence
Keep Revenue	-	√	+	+
Collect Revenue	√	-	-	√
Clearinghouse	√	√	-	-

Interstate RUC will work best if states agree on a single mode for Interstate RUC. Having different states following different models will make Interstate RUC extremely confusing for vehicle owners and could lead to some vehicle owners paying twice or not at all for some vehicle miles traveled.

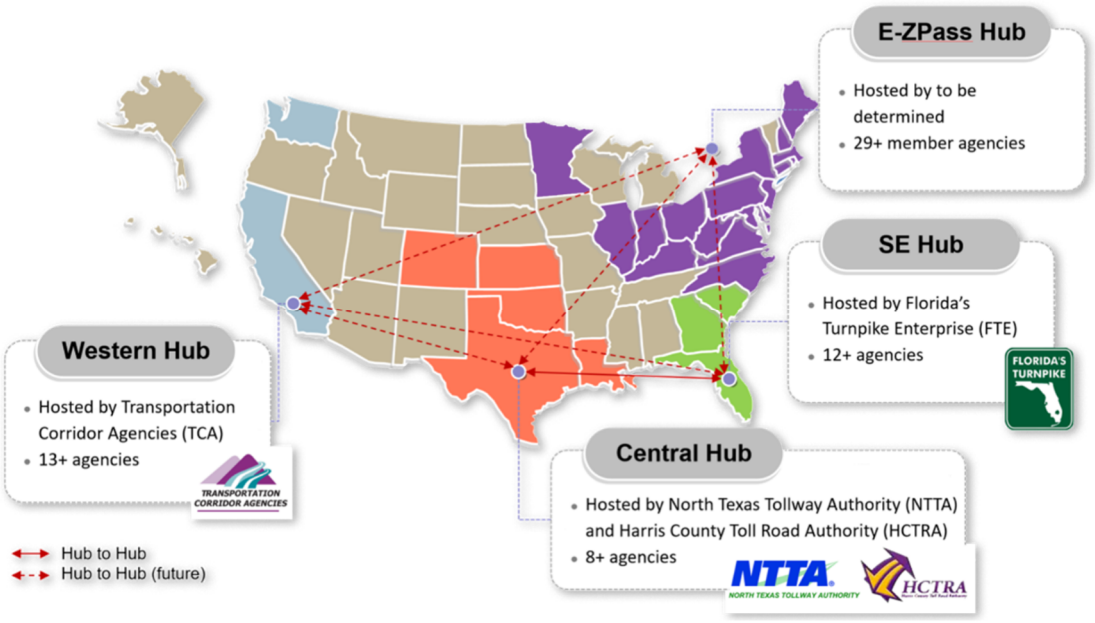
Existing Clearinghouses and Interstate RUC

Tolling interoperability

Throughout the nation, every toll facility receives services from a Customer Service Center (CSC) which holds customer accounts and charges customers for use of the toll facility. Electronic toll facilities identify vehicles using the facility with transponders or license plate images. The CSC associates the transponder IDs or license plate numbers with a customer account to collect the tolls.

From the beginning of electronic toll collection via interoperable RFID transponders, toll authorities have faced the issue of collecting revenue from out of state toll facility users. To overcome this challenge, toll authorities have formed regional agreements regarding toll technology use and the exchange of customer data and payments. The US map below shows the latest configuration of tolling interoperability (IOP) regions as follows:

- Central region with toll authorities in Oklahoma, Kansas, Texas, and Colorado
- Southeast region with toll authorities in Florida, North Carolina, and Georgia
- E-ZPass Group with toll authorities in 19 states in the Northeast and mid-West.
- Western region plans to extend interoperability beyond California to Washington State and Oregon



Each IOP region creates both a legal and a technology basis for addressing several challenges:

- Identifying the "home" toll agency which holds the account for a customer-using a toll facility.
- Relaying a request for payment to the home agency for the toll facility use with sufficient information for the home agency to charge the customer.
- Settling payment between the agencies

So, each region has agreed on a technology for identifying customers that all regional toll facilities use, an interface control document (ICD) for the exchange of information and legal agreements about the settlement of funds, including any reimbursement for cost of collecting payment. This system applies only to registered customers – that is customers that have an account at an agency within the region. Some IOP regions are using a "hub and spoke" model to coordinate data through a single point connecting all the applicable agencies while others use a "peer to peer" model to exchange information directly between each other. All use a peer-to-peer model for settlement of payments. Toll authorities have been working towards a system of National Interoperability (NIOP) for many years but state legislation, disagreements on underlying technology and changing priorities have delayed progress. This history shows the magnitude of the challenge of coordinating many independent agencies to establish a common way of managing user fees across boundaries.

Enforcement

Registration Enforcement

Toll authorities have no power to require vehicle owners to register for tolling accounts to use toll facilities. If an unregistered vehicle uses a toll facility, in most modern tolling operations, the associated toll authority uses license plate information to look up the name and address of the vehicle owner through the relevant state department of motor vehicles and sends a violation notice.

For out of state vehicles, toll authorities have little leverage to enforce payment of a violation notice except when reciprocal enforcement agreements are in place between states. While all toll authorities

are generally able to make agreements to get name and address information from out of state departments of motor vehicles, fewer can reach across state lines to engage enforcement. The limited examples in the tolling industry include a series of states in the Northeast U.S. that do have agreements across borders to request vehicle registration holds or suspensions (depending on the laws) to enforce payment of tolls due in other states. These states pass laws within their own states to enable enforcement of their own drivers and the ability to enter into agreements with other states. Once two states have this arrangement internally, they then enter into agreements with each other such that when one state has a customer from the other state that owes tolls and has not responded to a mutually agreed set of attempts to gather the money, then that state can request the out of state registration to be suspended by the issuing state. Once the money is paid or otherwise terms met, the state can request the registration suspension be lifted by the other.

Registered customer payment enforcement

To open an account with most toll CSCs, a vehicle owner must supply a form of payment such as ACH or credit card information. When the vehicle is identified at a toll facility, the CSC uses the form of payment to pay the toll. The payment can occur in one of two ways. In the first instance the payment on file is used to maintain – via regular recuring replenishments – a pre-paid balance that is debited for the payment. In a second variation, the payment information is charged on a pay as you go system of charging the payment method at the time and for the current charge. If the account does not have a valid form of payment when the associated vehicle uses a toll facility, the toll authority must follow the same approach as for non-customers to collect the amount due. Thus, they end up with the same issues for collecting amounts due from owners of vehicles registered in other states.

Enforcement among toll authorities

Enforcement of the terms of agreement between toll authorities rely on the good faith of the signers. Although the agreements allow for audits between authorities, this is rarely if ever done in practice. The only penalty for lack of meeting the group standards is removal from participating in the group. Since joining is voluntary and collecting tolls is the goal of every authority, little time is spent on monitoring or enforcing the terms of the agreement.

Challenges with extending to RUC

Data size and data flows

In the toll model, the facility on which the vehicle travels tracks usage on that facility and transmits usage information to an account holding CSC to collect payment. For tolling IOP, the “home” facility transmits the usage information for “away” account holders to the matching “away” agency in the appropriate state for payment. In contrast, RUC models are based on the idea that the base jurisdiction (“home” state) will collect all vehicle miles traveled information for the “home” accounts no matter the location of that travel, in or out of the base jurisdiction. So, the “away” state does not have any information on the amount of taxes owed to it independent of the “home” jurisdiction’s report.

IOP toll authorities currently exchange detailed files listing information on all customers and all individual transactions. The size of such file exchanges for RUC would be enormous compared to any existing tolling IOP exchange because of the total number of vehicles in the contiguous United States is much larger than the number of vehicles registered with toll agencies. As of December 2021, the United States had more than 282 million registered vehicles with updates to more than 92 million vehicle records per year. In Contrast, the E-ZPass Program – one of the largest interoperable toll collection

programs -- serves 32 million accounts and 49 million transponders[2]. RUC would require different technical approaches to data exchanges such as moving to summary level data exchanges or to a form of a decentralized, distributed, and public digital ledger such as blockchain.

Enforcement

The tolling IOP model relies on the "away" jurisdiction to enforce payment by non-registered vehicles and places no onus on the "home" jurisdiction to ensure registration of all vehicles with the toll authority CSC. If the "away" jurisdiction has no method to collect information on road usage for out of state vehicles, then a whole new enforcement structure would need to be considered for RUC. Out of state enforcement will be required at two levels. The first is that all the drivers in the 'away' state must be registered for that state's RUC program. One of the premises for this analysis is that all the states have functioning state level RUC programs – meaning all the states drivers are registered. The second level of enforcement would be required to make sure that the registered drivers do in fact pay their RUC fees. Since the home state has no jurisdiction to enforce payment from out of state drivers, it must rely on the strength of the agreements between the states and the good faith enforcement efforts of the away state.

International Fuel Tax Agreement (IFTA) model

The International Fuel Tax Agreement (IFTA) clearinghouse distributes fuel taxes paid by qualified motor vehicles (QMV), that is interstate 3 axle vehicles and/or interstate vehicles over 26,000 pounds, among tax jurisdictions (the 48 contiguous states and Canadian provinces) according to fuel consumed in each jurisdiction.

Each QMV obtains an IFTA license in its base (registration) jurisdiction and then reports and pays taxes to that jurisdiction. The QMV licensee files a report quarterly that includes information on fuel taxes paid by state, truck mileage by state, average miles per gallon. The licensee uses charts to calculate taxes owed or refunds due. The licensee can file and pay online, by mail or in person. Vehicle licensees may purchase a variety of third-party products and services that automate the collection of the necessary data, complete and upload the required reports, and make payments.

IFTA jurisdictions may participate in the Clearinghouse or use a peer-to-peer approach. The following paragraphs describe the different methods for jurisdictions to participate in IFTA.

Clearinghouse IFTA Clearinghouse provides for the monthly electronic exchange of mileage and fuel information and reconciliation of tax payments among participating jurisdictions. Over $607 million in 2022. The Clearinghouse uses the uploaded data to calculate net payments between all jurisdictions so that each jurisdiction makes a single payment or receives a single refund. The Clearinghouse uses JP Morgan Chase as the mechanism for payment settlement. Each base jurisdiction makes any refunds owed to vehicle owners registered in the jurisdiction and issues assessments for any taxes outstanding.

Peer to Peer - Jurisdictions may choose not to or not qualify to use the Clearinghouse. Without the Clearinghouse, Jurisdictions must use a peer-to-peer approach to sending and receiving reports and payments. The Clearinghouse was designed to solve the problems of this more manual approach.

[2] E-ZPass Interagency Group, About Us - Overview, accessed 27 September 2023 < https://www.e-zpassiag.com/about-us/overview>.

Enforcement

Registration Enforcement

When a licensee registers a QMV, the licensee receives two decals per vehicle, one to mount on each side of the power unit. Jurisdictions regularly check for these decals on QMV registered in other states. Jurisdictions report unlicensed vehicles to their base jurisdiction for enforcement.

Reporting and Payment Enforcement

IFTA membership requires that base jurisdictions conduct audits of 3% of their licensees each year. The rules prescribe how such audits must be distributed across licensees with different amounts of miles traveled. Audits are by licensees' fleets, not by individual vehicles. Audit reports are transmitted with monthly reports.

Consequences

Consequences for failure to report, failure to pay, or failing an audit include fines and fees that increase over time. If payment is not brought up to date, licensees face suspension and then revocation of their IFTA license. Failure to pay taxes or registrations can ultimately lead to impoundment of the vehicle, although that is rare. States regularly exchange information on enforcement steps, audit results, and status of licenses. This serves to prevent licensees from moving their vehicle registrations between states to avoid payment.

Enforcement of Compliance among Jurisdictions

IFTA has official dispute settlement processes for disputes between jurisdictions and between a licensee and its base jurisdiction.

Challenges for extending to RUC

Because the IFTA model is a functioning system for trucks, it may be well suited to be expanded for the interstate RUC needs as applied to trucks. Expanding the model to all vehicles is likely to pose some additional challenges.

Volume

The IFTA clearinghouse would need to be extended to handle the massive number of vehicles in addition to trucks. Since the clearinghouse handles mostly summary level information, this would not be the most significant challenge.

Enforcement

Decals - The base assumption for RUC is that each state has a way to enroll all registered vehicles in RUC. However, not all vehicle owners pay tolls and renew vehicle registrations. This means that not all vehicle owners may keep current with RUC payments. Since it is difficult to remove decals to indicate non-payment, this enforcement mechanism will not work well for RUC in general, let alone Interstate RUC.

Audits - States may choose different fraud detection structures depending on the technology each state chooses for data collection and reporting for their RUC programs. States which allow several technologies may have multiple fraud detection measures. Since 'away' jurisdictions are completely dependent on base jurisdictions for out of state RUC funds, states will place high importance on the fraud detection choices of other states. Getting states to agree on fraud detection mechanisms may be a significant challenge for following the IFTA model for interstate RUC.

Consequences – IFTA's main consequence is the loss of a license permitting a specific QMV to cross state borders. For a QMV whose core business is interstate trucking, this is a serious consequence. The consequences for RUC non-payment whether for in state or out of state mileage will need to be different.

Vehicle OEMs as Mobility Service Providers

Vehicle OEMs are moving or considering moving beyond the simple manufacture and sale of vehicles to being Mobility Service Providers. As with many early-stage innovations, the Vehicle OEMs are experimenting in hopes of finding the combination of Mobility Services that will win market position and future profit streams.

Vehicle OEMs control the data that their vehicles produce. RUC pilots including Oklahoma's pilot leverage vehicle telematic systems to track vehicle mileage and location. In current pilots, vehicle telematic systems convey this information for customers who have opted into the OEM telematics account program (often for a monthly fee that covers a range of services associated with telematics) to the RUC account management platform to calculate and collect RUC payments from vehicle owners. One path for increased Mobility Services would be for Vehicle OEMs to perform account management rather than simply passing on data to the RUC account manager for the state.

Most RUC approaches hinge on private ownership of vehicles that are registered in specific jurisdictions. Some Vehicle OEMs are currently offering Mobility as a Service (MaaS) models of vehicle use. The driver signs up with a Vehicle OEM, which supplies a vehicle according to customer need day by day. In other words, the customer drives a small electric vehicle on weekdays then switches it out for a 4-wheel drive vehicle for skiing on the weekend, not owning one specific vehicle. This MaaS model could replace or work beside current notions of vehicle ownership. In this Vehicle OEM vehicle ownership model, the tax relationship would be with the Vehicle OEM rather than individual vehicle users. It is not clear whether the Vehicle OEMs would then interact with an interstate clearinghouse or would have direct peer to peer relationships with each state for the payment of RUC.

Enforcement

Without more clarity on how the Vehicle OEMs would interact with states, it is difficult to predict what enforcement mechanisms might exist. Would signing up with a Vehicle OEM automatically require the funding of an account for RUC? Would a Vehicle OEM have the capacity to enforce non-payment of RUC or even want to be part of such an enforcement process?

Challenges for extending to Interstate RUC

Universal participation

One basic assumption for RUC is that states will ensure that every registered vehicle has a RUC account. If Vehicle OEMs serve as the data gathering and account payment mechanism, how will states ensure universal participation? All Vehicle OEMs would need to participate in the program and set up accounts for every new vehicle. How would Vehicle OEMs register already sold vehicles including older models without telematics?

Enforcement

Would the Vehicle OEM be responsible for payment enforcement? Would the Vehicle OEM be responsible for fraud detection? It is not clear what tools that Vehicle OEMs would have or would be

willing to use to force vehicle owners to make RUC payments. Vehicle OEMs will be more interested in delighted customers that purchase services than enforcing RUC payments, even if the states are willing to pay Vehicle OEMs for this service.

OEM Reluctance

The OEMs are in the business of marketing MaaS as a feature rich enhancement to the driving experience. The inclusion of RUC to the MaaS model adds a potentially less desirable element to the relationship between the OEM and their customers since the OEMs would rather not be viewed as a tax collector as part of the value proposition to perspective customers. The OEMs have made it known that unless RUC can be shown to add value to the MaaS experience that customers will want, it will be an impediment to further RUC exploration.

Evaluation

Should Interstate RUC adopt a Clearinghouse Model?

Before evaluating the use of existing Clearinghouse approaches or infrastructure for Interstate RUC, the states need to evaluate whether they want to base Interstate RUC on a Clearinghouse approach. Section 3 delineates several potential approaches to Interstate RUC with some factors that states may consider in determining an approach. If so, can/should Interstate RUC leverage what currently exists?

Existing infrastructure

Home Accounts

IFTA, tolling or vehicle OEMs all could provide the CSC and Back Office Systems for home accounts. All would need to change their systems to handle collection of RUC data and calculation of amounts due to various states. IFTA and tolling systems would need to expand to handle the volume of accounts for RUC.

Summary Data Exchange and Financial Settlement

The IFTA Clearinghouse covers all states and has operating functionality that exactly matches the needs of Interstate RUC at the state-to-state data and funds exchange level for larger commercial vehicles. Since uploads are at the summary level and financial settlements are done on a net basis, the amount of expansion required should be less than needed at the home account level.

Enforcement

For any model of RUC, each state will need to ensure that owners of all registered vehicles have accounts, accurately report vehicle miles traveled and make RUC payments. That also means that each state will be responsible for fraud detection and enforcement activities against those who do not register or register but choose not to pay. Because these same requirements exist when creating an in-state system, the Interstate RUC and the Clearinghouse approach to Interstate RUC does not create any new challenges in these areas.

Following the IFTA model, states will need to report vehicles and owners who are not current with RUC payments to prevent those owners from registering those vehicles in other jurisdictions without paying the amounts due. This step would require significant cooperation among states. tolling IOP has shown that states are reluctant to use tools like registration hold to enforce payment to other states.

A significant concern for the Clearinghouse model is detecting and penalizing states that do not perform enforcement activities, especially for the amounts owed to other jurisdictions. IFTA has the start of such a model with its dispute resolution process. However, more work needs to be done on addressing the discovery and penalties for states that do not perform enforcement activities on the behalf of other jurisdictions.

Conclusion

Many states, including Oklahoma, are conducting pilots of RUC programs. Increasingly states see RUC as one of few if not the only viable solution to falling fuel tax revenues and aging transportation infrastructure. This paper clearly demonstrates that a vital step for the successful implementation of RUC is agreement among states on plans for implementing RUC interoperability across state borders. In October 2022, the National Conference of State Legislatures RUC Summit identified cost of collection, interoperability, and public communications as major challenges to the implementation of RUC.

The ongoing extended challenges and delays to implement national toll interoperability demonstrates the difficulty of getting many jurisdictions to move forward with projects requiring agreement about complex business rules and technology. The magnitude of the RUC challenge is much greater than the tolling interoperability given tolling is limited to toll road users and RUC potentially involves every vehicle in every state. Even at the more limited customer base of a major toll agency, it is common for the agency to report that license plates on their roadway have been identified from every state in the United States and often portions of Canada and sometimes Mexico. The most crucial point from this paper is that Oklahoma and the rest of the states must advance discussions on interstate RUC rapidly in concert with other technical, policy, financial and outreach efforts as this item is likely to be a longer lead item to resolve. On the positive side, if the states agree on a Clearinghouse approach to interstate RUC, IFTA and tolling provide a good launching pad for moving forward.

APPENDIX D: PPM RESEARCH

D.4 TOLLING BACK-OFFICE SYNERGIES

OKLAHOMA

fair miles OKLAHOMA

OKLAHOMA

TOLLING BACK-OFFICE SYNERGIES

DECEMBER 2023

fair miles OKLAHOMA

Abstract

For the implementation and ongoing administration of customer account management for a statewide Road User Charge (RUC) Program, Oklahoma Department of Transportation (ODOT) will require customer account management as one of the key functions of the program to on-board, manage and collect payments from customers. As part of the initial pilot program, ODOT has worked closely with the Oklahoma Turnpike Authority (OTA) to identify possible synergies between the established investments and ongoing operation of tolling customer account management and future needs of ODOT under a RUC program. This paper covers the scope of work anticipated by ODOT for the role of an account manager to fulfill these services and the commonality or possible "synergy" with current tolling account management work by OTA.

While transponder-based tolling conducted by the OTA is not the same functionally on road as mileage-based Road User Charging, there are significant similarities in the handling of data and the customer account management work that happens off road in the "back office". In both cases, data is captured in the roadway environment and transmitted to a back office for posting of charges to a customer account.

The creation and maintenance of a tolling customer account is similar in many respects to the creation and maintenance of a RUC Program account. The methods and reasons for communications with the driving public are similar. The need to collect payments, and the methods and channels for doing so are common to both types of system. Both types of systems require the management of a substantial quantity of onboard devices.

The OTA has a 76-year history of providing services to the citizens of Oklahoma. Over the years the program and operations has adapted to major changes in technology and products for customers. OTA was an early adopter of electronic toll collection, modifying systems and operations to provide customers with transponder devices and online account management as an alternative to paying cash tolls. More recently, OTA has expanded customer products to provide postpaid toll invoicing via license plate images matched to registered owner accounts, further demonstrating the ability to provide recurring billing. This experience demonstrates a proven history of both adapting to changes and providing similar functionality of that which would be required for the RUC Program.

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Introduction

The Oklahoma Department of Transportation (ODOT) has conducted a 6-month Road Usage Charge (RUC) Pilot Project (Project) to evaluate the feasibility of using RUC as a supplement and/or replacement for the current state gasoline tax. For the purposes of ease of implementation and to support the minimal schedule for start-up for the pilot project, ODOT procured an outside Contractor to act as the account manager and to provide Systems and Services for the Project. One of the Project goals is to provide lessons learned and suggestions for future implementation of RUC. One such suggestion for future implementation is that the role of providing the System and Services for the RUC be assigned to the Oklahoma Turnpike Authority (OTA). This whitepaper reviews the possible synergies to be realized by ODOT if the RUC Program can be brought in-house and operated in conjunction with the existing OTA tolling operations.

To look for possible synergies means to find opportunities to combine the requirements for operating a RUC program with leveraging the existing core competencies of the OTA. When this combination results in a whole that is greater than the sum of its parts, then the result is an example of synergy. The desirable effects of this interaction include economies of scale, standardization of policies and procedures, and the reduction of duplicated effort.

Approach

To determine the possible synergies to be realized, the scope of the System and Services required was determined by reference to the Oklahoma Department of Transportation Solicitation #3450005005 'Project Manager Services for Road User Charge (RUC) Pilot'. Attachment A 'Statement of Work' of the procurement document defines the specific Services to be provided by the RUC account manager.

The assumption is that synergies are recognized when there are existing OTA systems and processes that can be expanded, adjusted, or upgraded to meet the new additional requirements for the management of a RUC Program. Each RUC Program System and Service requirement is evaluated for how readily the item can be incorporated into existing or modified OTA systems and operations.

Discussion

Mileage Reporting Options

There are several Mileage Reporting Options (MRO) available to collect and report mileage data. Each of these options and their supporting systems and operating procedures are to varying degrees like the functions currently supported by OTA. They include:

- OBDII plug in devices,
- Telematics,
- Manual odometer reporting, and
- mobile application.

OBD II Plug in Devices

OBDII (Onboard Diagnostics II) is an onboard diagnostic tool that monitors many important parameters of vehicle operation and performance. The OBDII is required in all vehicles manufactured after 1996. The OBDII port is an interface to access the data from the vehicle's onboard computer systems. Plugging

a device into this port provides access to the information that is tracked and stored in the vehicle's computer systems, including mileage and fuel consumption.

Using readings from the OBDII system via a customer installed, agency provided device is the mileage reporting option that is the most like the OTA's tolling operations via transponder devices and therefore provide the greatest degree of synergy. The management of the plug-in devices used to interface with the OBDII are in many respects identical to that of the activities around the use of tolling transponders. In each case, the customer would be queued up for receipt of a device (or devices) upon opening an account and selecting this MRO method. Existing OTA systems are designed to manage the full life cycle of an in-vehicle device. The devices are first ordered and maintained in inventory. Upon account opening or for adding vehicles to an established account, the device is delivered to the customer and includes instructions for mounting, use, return and steps to follow if the device is lost or stolen. Once a device is in the hands of the customer, customer behavior is critical to success of use. The proper installation, keeping it installed whenever driving and response to any health messages are all key to successful use, like portable transponders. If the customer needs to remove the device for vehicle maintenance activities, reinstallation of the device is critical for continued function. In the unlikely event the device stops working or otherwise has a health issue that is reported to the customer by the account manager, the customer will need to be proactive in response. In even less frequent situations, the device may be damaged, lost, or stolen. The device may stop functioning or reach the end of its useful life. The systems and processes used by OTA for handling these additional life cycle events for transponders can be adapted to include the management of the OBDII plug in device.

Telematics

Telematics involves more advanced onboard systems, generally in newer vehicles, which combines the vehicle specific data from the OBDII system with GPS location data. The vehicle and GPS data is transmitted via General Packet Radio Service (GPRS), 4G/5G and cellular networks, or satellite communications to a central server for storage and use. This early form of "connected" vehicle allows for customers to have accounts with their vehicle manufacturer (Original Equipment Manufacturer or OEM) who controls the access and data from the combined onboard system that functions as the equivalent of the combination of vehicle and OBDII plug in device noted above but without the requirement for a separate device and the installation and maintenance aspects also noted. The customer typically pays a recurring fee to have this account and data access which can serve many other purposes, such as remote vehicle start and unlocking, anti-theft services, emergency response services and vehicle comfort and convenience options.

Telematics will also likely involve a third-party that would act as the intermediary between the OEM account and the RUC account manager. The third-party vendor would receive the mileage data directly from the vehicle via the OEM, and after correlating the data to an individual customer's vehicle, pass it along to the account manager. Additional functions are also typically employed to reduce the amount of sensitive or personal data in the original feeds from devices as part of the handoff from the third-party to the account manager to minimize data security risks to only what is needed to calculate the user charge. For example, if the user charge is purely based on miles driven in the jurisdiction, precise location data is not needed to be transmitted to the account manager and therefore fewer points of potential data breach for the most sensitive data points.

Telematics is nearly like tolling in the way that OBDII is also, expect that the data is handled more through a third party in the way not unlike how tolling agencies work with other ("away") toll agencies that provide transponders to their customers and those customers use the roadway. The away agency issues the devices (like the OEM issues a vehicle with telematics) and the two agencies exchange data to collect the user fee.

Manual Odometer

Manual odometer readings may be made by drivers and reported to the RUC Account Manager. In this scenario the customer records the odometer readings and submits the mileage directly to the account manager or via an account with a third-party vendor. Multiple options exist for the reporting of the manual mileage readings and include websites and mobile applications.

While a direct equivalent of mileage reporting to pay tolls is not typical, the concepts of a customer reporting travel for the purposes of toll payment is present for many toll agencies who allow so called "missed a toll" or similar functions whereby customers who accidentally use a transponder only lane or facility on a toll road and they do not have a transponder or license plate account, can declare where they traveled and pay the toll. Similar functionality would be transferable to a manual odometer MRO. Program and system modifications are likely required to handle images of odometers (if part of the program) and mapping this to an account (where current functions are typically one time use).

Mobile Application

Customers may select the option of a mobile application to collect and provide mileage reporting. The application runs on the customer's mobile device which must be in the car and connected to the car when driving. The customer creates and account with the application vendor. The application when properly used tracks the mileage and reports it to the third-party application vendor. The application vendor then interfaces with the RUC account manager to report that a specific vehicle (identified either by name or by an account identifier) has driven XX miles.

Mobile applications using GPS have had mixed success in tolling with a handful of third-party vendors entering the market and some leaving the market or relying less on the GPS functionality. These market shifts have been primarily due to the higher accuracy requirements of tolling that need to pinpoint an exact vehicle location relative to other vehicles around it to not miss a toll charge or double charge. This level of location accuracy is not required for RUC since the program typically only needs to know the mileage traveled in a widely established jurisdiction (such as boundaries of a state). Since the tolling use of mobile applications is gaining maturity and RUC does not require as stringent a technology, mobile applications in tolling from a mileage recording and third-party account interface with the account manager are directly transferable to RUC as an MRO.

MRO Summary

Of the four MROs described, only the OBDII plug in would require the fulfillment of devices to the customers (with the attendant need for managing the life cycle of these devices). However, since the handling of an inventory of OBDII devices is so like the requirements for managing tolling transponders, the OTA is well suited to achieve synergy in this scenario. It is likely that in the case of all for options, there would be a third-party vendor option to provide the actual reporting of the mileage if OTA did not decide to provide these directly.

It is probably un-realistic to expect all driving customers to adopt the same mileage reporting option. The general trend in tolling and other user fee-based systems is to provide a wide and wider range of options for customers to provide choices for a wide range of preferences. It would also be complex and inefficient to expect the OTA as RUC account manager to interface with all the possible MROs. The availability of third-party vendors provides options for OTA either way. In situations that engage third parties for MROs, OTA can establish a clear and simple ICD to define the data elements it needs to assess mileage charges, like how they engage third parties today for direct service to customers and through interoperability connections.

The overall synergy here is that OTA continues to focus on its core competencies of account management, and payment processing, third party interfaces and –if necessary --device life cycle management, regardless of MROs offered.

Customer Accounts

Account Creation

The RUC account manager has the responsibility to provide secure channels to allow users to create / open a new account. The customer should be able to use all typical channels, such as website, mail in an application, walk-in to a service center or to call and speak to a Customer Service Representative. Requirements very much like these are currently being met by the OTA's outreach and connection to customers regarding its tolling operations. The OTA's website provides a prominent link for the PikePass program. Following this link brings the customer to a new page with the options to log into an existing account, to create a new account online, download an application for mail or walk in, or to speak to a CSR for assistance in creating the account.

Account Data

An integral part of the OTA's tolling operations is the collection and secure storage of the information that is collected to establish PikePass accounts. Given this expertise, the OTA has the experience necessary to collect the required contact, vehicle, and payment information from participants in the RUC program. Security of this information is enhanced if collected directly by the OTA because there is no need to transfer it from a third-party Contractor.

Mileage Collection

From a summary perspective, the OTA tolling operation involves receiving transaction information from activity on the roadways sent to the back office and processing those transactions against the balances maintained by their PikePass account holders. In the RUC program, the OTA would receive mileage information either direct from the devices or a third-party (as was the case in the pilot project) and then process those mileage values into charges to be applied to the RUC accounts. In both cases there are four components to the data; who, where, when, and how much. OTA's systems are already set up for classifying transactions based on who, where and when. The tolling host and back-office receive a record of transaction data aggregated by computer systems at the roadside processing information created by sensors at the roadway. The information in that transaction is used first by the system to record the particulars of the transaction. If the lane or host system has not already assigned the appropriate toll (based on factors such as tolling location, time of day, and vehicle classification) then the back office assigns the toll rate. The back-office system then determines the account that owns the transponder (based on its transponder number). Finally, the toll amount is posted against the account's

balance. The difference will be in the calculation of 'how much'. While the nature of the calculation is different in the RUC Program, the result is very similar. i.e. -what is the amount to charge. The synergy here is that it is not much of a change in mindset to switch from posting a toll transaction to an account to posting a mileage charge to an account. The difference is in the need to consider other vehicle characteristics that are used to calculate the road use charge. Depending on the data required to calculate the user fee, this calculation may need to be sensitive to the specifics of the make, model, and year of the vehicle as these characteristics will be related to the expected fuel consumption (miles per gallon). Other factors such as location of travel and time of day could also play a role, all like the way toll transactions are formed.

Device Status Monitoring and Communication

The RUC account manager must track device status and coordinate with participants when there are issues related to device performance or incorrect usage. When a device fails, the account manager must provide for its replacement. To facilitate management of the devices, an effective inventory control program is necessary. At the end of life, the device must be properly disposed of. All these requirements for the management of the RUC devices have direct equivalents in the existing management of the OTA's PikePass transponders. It is likely that the same systems currently in place for transponders can be modified to include the management of the RUC devices or OTA could opt for a third party to handle these device management activities, like having a third-party handle fulfillment and raw data collection.

The ability of the current tolling system would need to be evaluated in terms of its ability to scale up to manage the volume of devices that would be expected from the RUC Program. The number of devices in use would potentially be several orders of magnitude greater than the existing transponder count.

Participant Account Management

The primary functionality of the RUC account manager is to create participant accounts and then record and manage RUC charges generated by each participant. It is with this functionality that the greatest opportunity for synergy presents itself. The primary functionality provided by the OTA's existing tolling back office is to create accounts and then record and manage toll charges generated by each participant.

Account Creation

As previously identified in the section on account data intake, the OTA is well versed in the collecting of account holder data to include contact (name, address, phone, and email), vehicle (make, model, year, and color), license plate (number, jurisdiction, and type), and payment information (method, and account particulars for the payment method(s) on file. The collection and use of payment information would likely be different in RUC where the billing is more likely to be post-paid. In the case of vehicle information, the RUC account will have need for additional information not normally required for a tolling account. The additional information could include the vehicle identification number (VIN), fuel economy, engine type (gas, hybrid, electric), weight, and other factors if applicable based on the policy to be established to determine the rate for use charging. This collected data is used to create the RUC accounts in the same way as the existing tolling accounts. It may be possible for the existing tolling system to be configured to allow a new account type for the RUC participants. Existing tolling account data, give the appropriate permissions of the account holders, could be used to seed the new RUC accounts.

Calculations of Charges

The current OTA toll charges are based on PikePass vehicle classes based on axle counts for most facilities, with some vehicle size/shape-based tolling in limited applications. The toll for travel on one of the OTA turnpikes is based on the entry and exit points for the travel and the vehicle's class. The system receives either transponder reads or license plate images from both the entry and the exit and applies the correct toll base on the Authority's published toll rates. The data for RUC isn't defined by an event (like passing a tolling point). Instead, the data will be the total mileage traveled for a period (likely 1 calendar day) and general location (such as in or out of the state). In addition to the mileage figure, the account manager will need a unique ID that ties to an existing account, and the date for which the mileage was accrued. To support interstate RUC, the data will also need to include location (which state). It is likely that a range of third-party vendors by each state will also function to collect the mileage data from a variety of Mileage Reporting Options (MRO) and then forward to the account managers in a previously agreed format.

The RUC account manager will calculate the mileage charge to be applied to each account on a recurring billing period. The RUC accounts are anticipated to be post-paid. While most OTA tolling accounts are pre-paid, the Authority does process a volume of post-paid transactions, and is therefore already suited to apply and bill the RUC charges in this way.

Customer Support

Just like the OTA currently does with its tolling account holders, the RUC account manager provides ongoing support to the customer account holders. The OTA currently utilizes multiple communications channels (website, mail, email, phone, SMS, and mobile app) to provide account holder self-service and agent-based support. The RUC account manager could readily adapt these same channels to provide support related to clarifying RUC account charges, handling payments, resolving disputes, updating account information, updating participant vehicle information, updating contact information, troubleshooting device issues, and answering general RUC questions.

The primary metric for evaluating the effectiveness of participant support is call handle time. The substantial increase in the number of accounts, the number of payments, and the number of billing cycles would likely drive a large increase in the number of Customer Service Representatives (CSRs) needed to maintain a reasonable call handle time. Managing the increased number of customers would fall within the OTA's existing experience and proficiency with customer contact management. The OTA Customer Service Center is handling "real-time and near-real-time" contacts by phone, chat, mobile app, email, and walk-in (incoming SMS test will likely be added in the near future…) as well as USPS mail (which is decreasing). The Authority will need to manage their handle time for all these channels and work to actively encourage customers to self-service channels such the IVR and web. The existing back-office customer contact management can scale to a point, but at a certain volume, there would arise the need for more facility square footage to enable any continued growth in head count. Rather than expanding the existing service center, the department might choose to expand via additional locations. This sort of expansion can have the added benefit of making the program more resilient to any sort of natural or man-made disasters or disruptions. By expanding to multiple sites, the department can also provide employment opportunities to a large area of the state if conditions supported this.

Account Notifications

The RUC account manager must send various types of outgoing notifications. These include invoices, statements, participant correspondence, and program updates. The sending of these types of notification is already a key competency of the OTA back office. The back office utilizes the set of outbound correspondence channels to send these communications and can customize the delivery channel based on the preference of the account holder. Having this functionality in place for existing tolling related correspondence would likely lead to economies of scale when the RUC notifications are added. Handling the much larger volume of outgoing correspondence could present a challenge. However, there are ways to mitigate this impact to operations. One way is to utilize a third-party mailing service provider. By sending electronic versions of the notifications to this service provider, the OTA can benefit from the efficient operations that such a vendor will employ to process large volumes of outgoing mail. Additionally, the use of a third-party allows the Authority to scale its mailing requirements over time. Another way is to implement strategies that work to reduce the amount of physical correspondence (mail) that needs to be sent. Customers can be incentivized to opt into electronic forms of notifications (email).

Payment Processing

The RUC account manager receives and processes the RUC charge payments from the participants. The OTA is well versed in this fulfilling this requirement. The existing back office currently support the following payment methods:

- Cash;
- Credit Card;
- Debit Card;
- Automated Clearing House (ACH);
- Check;
- Money Order, and mobile payments (Apple Pay, PayPal, Venmo, etc..).

The above payment methods are in turn accept via several payment channels --depending on the payment type:

- Telephone - (Credit/Debit Card & ACH only) The customer can call and give the credit card or ACH information to a CSR who will complete the payment transaction;
- PikePass stores - (all payment methods accepted) The customer may walk into one of the PikePass store locations, and obtain assistance from a CSR in making the payment;
- Mail – (all payment methods except cash) The customer can mail in a check, money order, credit card or bank account information and a CSR will process the payment;
- Website - The customer can process a payment without the need for CSR involvement by entering credit card information at the PikePass website;
- Mobile App - (Credit/Debit Card & ACH only, Mobile Payments) There is a mobile application that runs on mobile devices that allows the customer to submit a payment, and
- Cash Payment Network –Cash only. The Cash Payment Network (CPN) is provided by a third-party vendor and allows cash payments at common retail locations. The CPN receives the cash and issues a receipt. On a periodic basis the CPN vendor remits the collected funds electronically to the Authority with the identifying information that allows the Authority to post the funds to the appropriate account(s).

These methods and channels would be suitable for collecting the RUC charge payments. It will be expected that the volume of payments to be processed would be much greater than the current tolling payment volume. There will be trade-offs involved with this volume increase. The larger volume would likely enable the negotiation of a lower cost per transaction. However, that same increase in volume may trigger in increase in the cost to maintain PCI compliance.

The continued ability to accept cash payments will likely be crucial to the RUC program success. OTA turnpike users are not a random cross section of Oklahoma drivers. Instead, this population self-selects as persons willing to pay tolls for the use of the state's turnpikes. The management of the RUC program will require providing services to all the state's drivers. This broader community of users may include a larger proportion of persons who are underbanked/unbanked or otherwise cash preferred. The OTA would be prudent to conduct community outreach and surveys to understand the needs of the populations who may not be historical users of the OTA's services. The OTA may need to consider expanded offerings for available payment channels based on these surveys.

Financial Management

When receiving payments there are several issues that arise related to the responsible handling of these funds. The OTA is well versed in these issues and has well-crafted business rules and time tested standard operating procedures in place to deal with them. The following is a non-exhaustive list of the procedures and business rules that OTA already has in place that can be utilized (with or without modification) to support the RUC program:

- Procedure for dealing with unidentified payments.
- Write-Off Bad Debt (Bankruptcy)
- Refund Processing
- Escheatment of undeliverable refunds
- Escalation of unpaid charges to Collections
- Customer Contests (Disputes)
- Administrative Hearings

These financial procedures have all been developed with the approval of ODOT. Utilizing the OTA to fill the role of RUC account manager allows the department to know that these critical financial processes are being handled in the approved fashion.

For its tolling operations OTA collects funds for their own accounts and subsequent use. If OTA were to collect RUC fees, these monies would be collected for ODOT and will need to be transferred. Typically, in such a scenario the funds collected by OTA would be reported as fiduciary funds / activities. Rather than being reported as OTA revenue, the collected revenue is reflected as payable to the agency that earned the revenue -- ODOT. The transfer of the funds would need to be defined in an agreement that covers:

- Flow of funds,
- Reconciliation (frequency, responsibility, format, and evidence),
- Remittance (frequency and flow) and,
- Float (if any).

Once the agreement has been established and the items above have been agreed upon, the back office will need to have a new agency established for these funds and transactions. Use cases will need to be

developed to ensure proper financial processing, including use cases for collected revenue, as well as accounts receivable, and prepaid revenue, if applicable. Reports will also need to be modified/developed to meet the requirements for reconciliation and remittance.

Reporting

The account manager must provide reports to ODOT, ODOT designated representatives, and to itself to aid in management of oversight of the program. In the two general areas of Revenue Reporting and Reconciliation Reporting, the expertise of the OTA can be relied on to aid in the development and use of these two reporting categories. The need to provide comprehensive reporting that is responsive to the needs of all the stakeholders in the RUC program will be expanded from the current scope of OTA's reporting. Within the state, there will likely be multiple third-party mileage reporting vendors in addition to the responsible state agencies. Interstate cooperation with other states (either peer-to-peer or via hub / clearinghouse agreements) will bring their own sets of reporting needs. Additional planning including stakeholder engagement early in the design process will be necessary to capture the larger scope of reporting under a RUC program. While the reporting of mileage charges may be quite different and at a much larger volume than the reporting of toll transactions, there will be similarities in the requirements to allow the realization of synergy in this area.

Culture

By building on the established user fee collection operation by OTA for tolling, ODOT can ensure that the RUC Program is operated in accordance with the same long-standing culture of customer service excellence provided by the Oklahoma Turnpike Authority. Since its establishment in 1947, the OTA has developed a culture devoted to serving the people of Oklahoma. Throughout its 76-year history, the OTA has been formed and guided by a range of laws, regulations, administrative rules, and policies that have refined this service over the years with transparency and locally based operation.

The Oklahoma Open Meeting Act and the Oklahoma Open Records Act are two examples of legislation affecting the operation of the OTA. The OTA goes above and beyond compliance with these laws by making available on its website the meeting minutes from all Authority board meetings. This is evidence of a culture of openness and transparency. Having this same commitment to openness would be invaluable for the RUC Program.

The culture of the OTA is also defined in its operational policies and procedures. Employment policies including Attendance, Dress Code, Security Identification System Access to OTA Facilities, Transactions and Adjustments on Family or Friends Account, Personal Computer Equipment, Individual Document Security and Destruction, Social Media, and others are long standing policies that form the basis for employee expectations that have translated to a culture of service in Oklahoma.

Scaling

Many of the synergies to be expected by bringing the RUC program under OTA control are based on the **types** of services currently provided for tolling being like those needed for RUC. However, what is not similar is the **scale** of these services. In 2020 there were 828,560 active PikePass accounts, and 2,705,813 active PikePass transponders.[1] In that same year, there were approximately 3,700,000

[1] Oklahoma Turnpike Authority, *OTA Annual Comprehensive Financial Report 2022*, accessed 27 September 2023,< https://oklahoma.gov/ota/investor-relations/annual-financial-report.html>.

registered vehicles in Oklahoma.[2] If the OTA is to take on RUC account manager responsibilities, it will have to scale up its operations substantially.

The need to scale up the operations of the OTA to provide this new area of service will impact all areas of its system and operations. The need for device life-cycle management –if not provided by a third-party and if all customers were to choose the OBDII MRO—would grow from 2.7 million transponders to potentially 3.7million mileage reporting devices. The number of calls handled by OTA in 2022 was 948,749 on 972,914 active PIKEPASS accounts. If OTA is handling calls from RUC participants, the number of calls handled would likely be at least doubled or more, subject to the average number of vehicles per registered owner that would translate into the scaling of the number of accounts handled.

The computer systems and storage would require substantial sizing upgrades, not only to handle the additional account management but also the different amounts of MRO data compared to typical toll transaction data. The system components that handle customer self-service access – IVR, website, and mobile application would require increased capacity and bandwidth to efficiently handle the increased volume.

Information Security

Requirements related to Information Security are of prime importance. The RUC Account Manager is responsible for the security of all Program data, to include Data-at-rest and Data-in-transit. The OTA is well versed in data security. The OTA Back Office System is compliant with the Payment Card Industry Data Security Standard (PCI DSS). The handling of customer account data involves the proper safeguarding of Personally Identifiable Information (PII). The systems employed by OTA manage access permissions, limit physical access to its assets, and implements protections against data leaks. Placing the RUC data under the control of the OTA would result in a smaller surface area of data vulnerabilities to defend. By keeping the data in a ODOT facility, the need to safeguard transfers between the account manager and the ODOT would be eliminated.

Conclusion

There are many synergies to be realized by placing the administration of the RUC Program within the Oklahoma Turnpike Authority. The similarities between the tolling functions currently provided and the RUC function to be added are many. These similarities exist in both the systems utilized (account management, device inventory) and the process employed (customer support, financial management).

The value in these synergies range from economies of scale to reduction in duplication of functionalities to serve customers. A customer having a single ‘account’ (for both tolling and RUC) is a clear efficiency advantage over having the same customer in two different systems. Utilizing a single warehouse for the inventory of transponders and RUC devices is a better alternative than two separate facilities. The co-location of Customer Service Representatives will result in cost savings as well. The increased volume to be expected because of adding the RUC program to the OTA will necessitate a scaling up of both operational and system capacity. However, since OTA already has similar operations and systems, there

[2] Federal Highway Administration, Office of Highway Policy Information, Highway Statistics 2020 , accessed 27 September 2023, < https://www.fhwa.dot.gov/policyinformation/statistics/2020/mv1.cfm>.

are synergies to be gained by scaling up existing systems, as opposed to creating a separate RUC system from the ground up.

The inclusion of the RUC Program function into the OTA will allow a continuity of culture that would not otherwise be possible with the Program being operated by a third-party.

APPENDIX D: PPM RESEARCH

D.5 TRIBAL ASSESSMENT

OKLAHOMA

TRIBAL ASSESSMENT

DECEMBER 2023

fair miles OKLAHOMA

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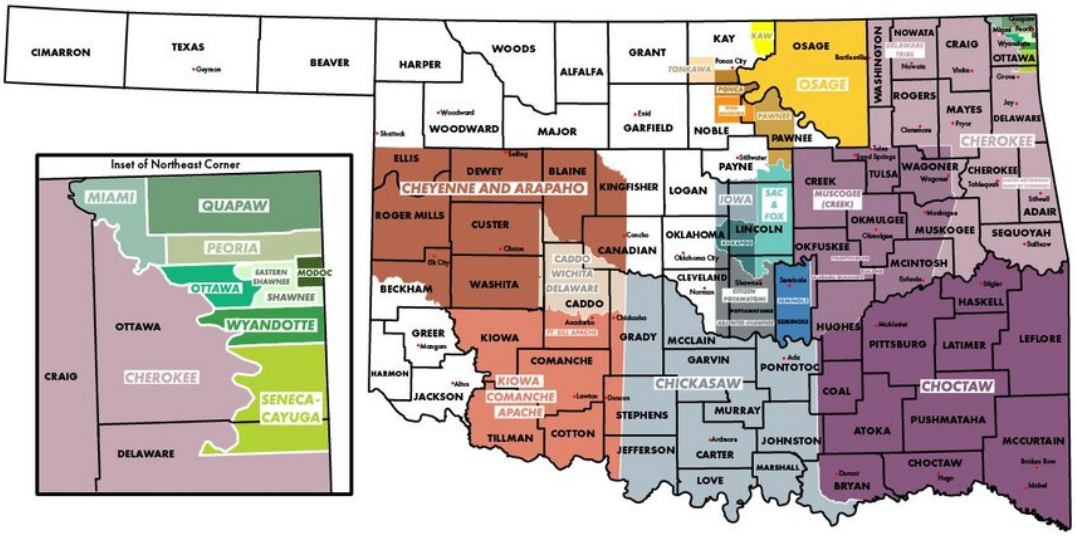
INTRODUCTION

In 1995, the U.S. Supreme Court ruled in the case "Oklahoma Tax Commission v. Chickasaw Nation", which supported the practice that the State of Oklahoma does not have the ability to collect state motor fuel taxes on sales made by Indian tribes. During the 1996 legislative session, HB2208 was signed into law that, among other items, created authorization for the State of Oklahoma to enter compacts (agreements) regarding the collection, remittance, and distribution in collaboration with Oklahoma Tribes. To date, 34 of the 39 Oklahoma Tribes (identified below) have entered motor fuel tax compacts with the State of Oklahoma.

TRIBAL JURISDICTIONS IN OKLAHOMA



REGION 1
Apache Tribe
Caddo Nation
Cheyenne and Arapaho Tribes
Comanche Nation
Delaware Nation
Fort Sill Apache Tribe
Kiowa Indian Tribe
Wichita & Affiliated Tribes

REGION 2
Absentee-Shawnee Tribe
The Chickasaw Nation
Citizen Potawatomi Nation
Iowa Tribe
Kickapoo Tribe
Sac and Fox Nation
The Seminole Nation

REGION 3
Delaware Tribe
Kaw Nation
The Osage Nation
Otoe-Missouria Tribe
Pawnee Nation
Ponca Tribe
Tonkawa Tribe

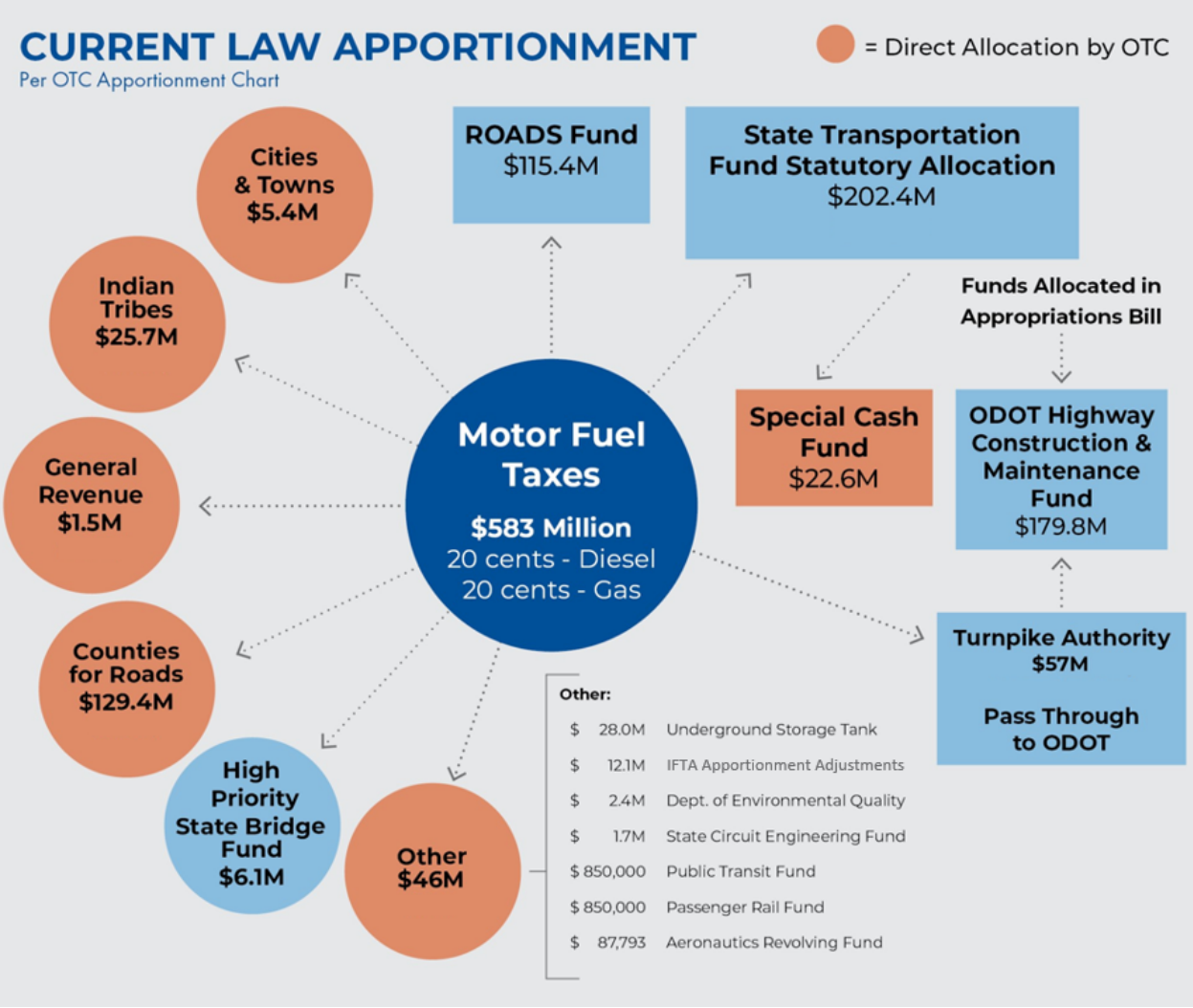
REGION 4
Alabama-Quassarte Tribal Town
Cherokee Nation
The Choctaw Nation
Kialegee Tribal Town
The Muscogee (Creek) Nation
Thlopthocco Tribal Town
United Keetowah Band

REGION 5 (NE Corner)
Eastern Shawnee Tribe
Miami Tribe
The Modoc Tribe
Ottawa Tribe
Quapaw Nation
Peoria Tribe
Seneca-Cayuga Nation
Shawnee Tribe
Wyandotte Nation

CURRENT STATE OF GAS TAX FOR TRIBAL NATIONS

EXISTING CONDITIONS

The figure below shows the overall motor fuel tax allocation including the apportionment for the tribal nations.



In the early years after the passage of HB2208, the various provisions related to collection amounts and percentages were statutorily adjusted until 2000. As identified in the statute, 4 ½% of the motor fuel tax collected by the State is distributed quarterly to those tribes participating in the compacts. The quarterly distribution of the 4 ½% allocation is as follows:

1. each participating Tribe will receive $6,250.
2. an amount equal to two cents ($0.02) per gallon of motor fuels sold by such tribe during the fourth calendar quarter of 1996.

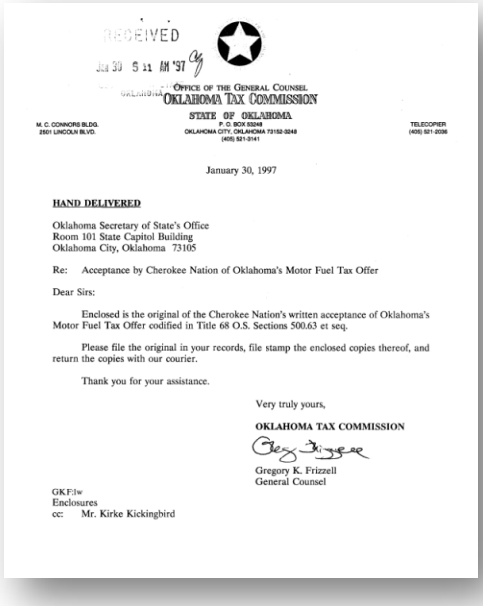
3. the remainder of the 4 ½% allocation is apportioned according to the proportion the accepting Indian tribe's total Oklahoma resident membership bears to the total Oklahoma tribal resident membership of all participating Tribes.

The use of this funding is required to be used by the Tribes exclusively for tribal government programs limited to highway and bridge construction, health, education, corrections, and law enforcement. In the previous ten (10) year period ending June 30, 2023, the distribution of fuel tax to tribal nations is below:

Motor Fuel Tax Payments to 34 Tribal Nations	
Fiscal Year	Total Motor Fuel Tax Distribution
2014	$20,287,775
2015	$20,481,503
2016	$20,879,830
2017	$20,821,574
2018	$21,391,872
2019	$25,269,311
2020	$25,540,560
2021	$24,191,439
2022	$26,204,547
2023	$25,753,284

Source: Oklahoma Tax Commission

Compacts were signed with the tribes to dedicate the motor fuel tax distributions. Excerpts from those compacts are shown below.



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JAN 30 9 11 AM '97

OFFICE OF THE GENERAL COUNSEL
OKLAHOMA TAX COMMISSION
STATE OF OKLAHOMA

M. C. CONNORS BLDG.
2501 LINCOLN BLVD.

P. O. BOX 53248
OKLAHOMA CITY, OKLAHOMA 73152-3248
(405) 521-3141

TELECOPIER
(405) 521-3086

January 30, 1997

HAND DELIVERED

Oklahoma Secretary of State's Office
Room 101 State Capitol Building
Oklahoma City, Oklahoma 73105

Re: Acceptance by Cherokee Nation of Oklahoma's Motor Fuel Tax Offer

Dear Sirs:

Enclosed is the original of the Cherokee Nation's written acceptance of Oklahoma's Motor Fuel Tax Offer codified in Title 68 O.S. Sections 500.63 et seq.

Please file the original in your records, file stamp the enclosed copies thereof, and return the copies with our courier.

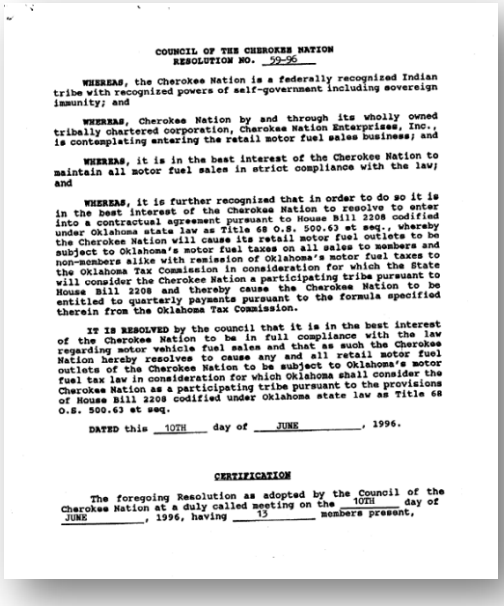
Thank you for your assistance.

Very truly yours,

OKLAHOMA TAX COMMISSION

Gregory K. Frizzell
General Counsel

GKF:lw
Enclosures
cc: Mr. Kirke Kickingbird



COUNCIL OF THE CHEROKEE NATION
RESOLUTION NO. 59-96

WHEREAS, the Cherokee Nation is a federally recognized Indian tribe with recognized powers of self-government including sovereign immunity; and

WHEREAS, Cherokee Nation by and through its wholly owned tribally chartered corporation, Cherokee Nation Enterprises, Inc., is contemplating entering the retail motor fuel sales business; and

WHEREAS, it is in the best interest of the Cherokee Nation to maintain all motor fuel sales in strict compliance with the law; and

WHEREAS, it is further recognized that in order to do so it is in the best interest of the Cherokee Nation to resolve to enter into a contractual agreement pursuant to House Bill 2208 codified under Oklahoma state law as Title 68 O.S. 500.63 et seq., whereby the Cherokee Nation will cause its retail motor fuel outlets to be subject to Oklahoma's motor fuel taxes on all sales to members and non-members alike with remission of Oklahoma's motor fuel taxes to the Oklahoma Tax Commission in consideration for which the State will consider the Cherokee Nation a participating tribe pursuant to House Bill 2208 and thereby cause the Cherokee Nation to be entitled to quarterly payments pursuant to the formula specified therein from the Oklahoma Tax Commission.

IT IS RESOLVED by the council that it is in the best interest of the Cherokee Nation to be in full compliance with the law regarding motor vehicle fuel sales and that as such the Cherokee Nation hereby resolves to cause any and all retail motor fuel outlets of the Cherokee Nation to be subject to Oklahoma's motor fuel tax law in consideration for which Oklahoma shall consider the Cherokee Nation as a participating tribe pursuant to the provisions of House Bill 2208 codified under Oklahoma state law as Title 68 O.S. 500.63 et seq.

DATED this 10TH day of JUNE, 1996.

CERTIFICATION

The foregoing Resolution as adopted by the Council of the Cherokee Nation at a duly called meeting on the 10TH day of JUNE, 1996, having 13 members present,

CURRENT EVENTS

A review of the compact agreements for each participating tribal government indicates different dates for the initial expiration were used. Other than that item, the remainder of the agreements are the same including the provision that every agreement is automatically extended for a ten-year term unless either the State or the Tribe notifies the other party of its intent to no longer participate. To date, all compact agreements for Motor Fuel have continued.

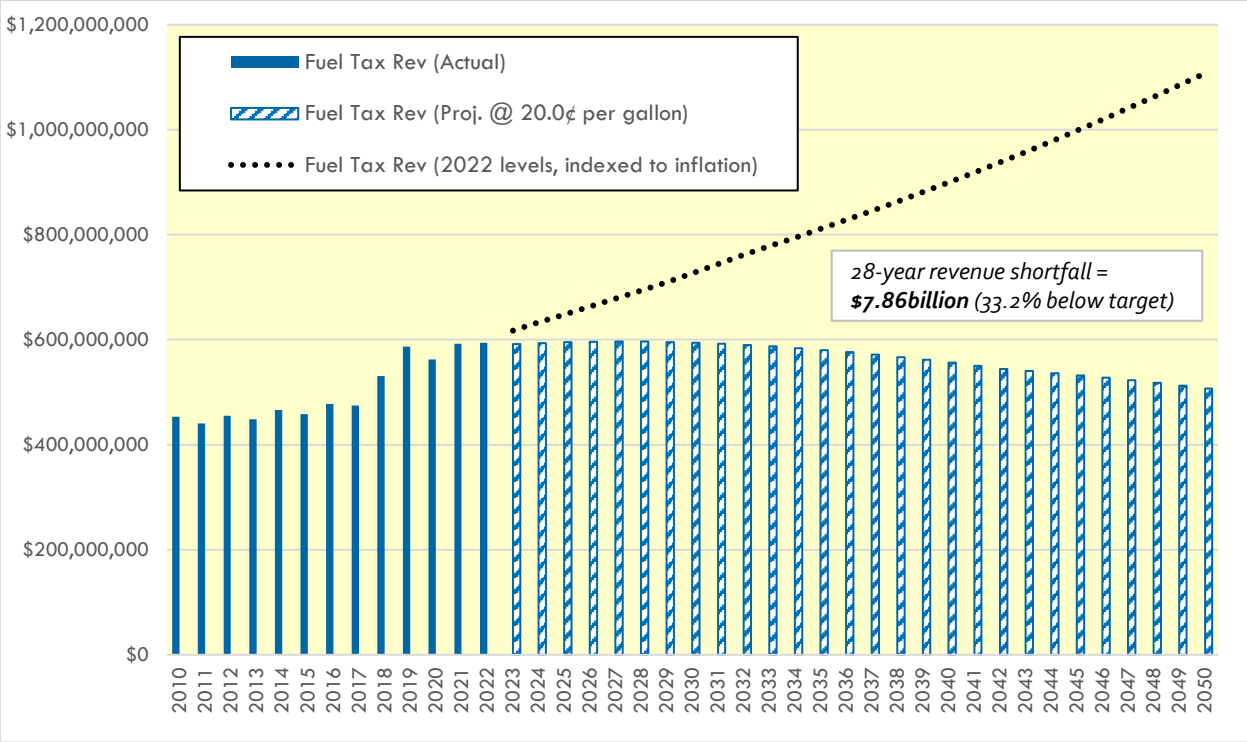
The State of Oklahoma recently extended the Motor Vehicle Licensing/registration and Tobacco Products Excise Tax compacts until December 31, 2024. Governor Stitt opposed the extension and vetoed the legislation that provided the needed authorization. Subsequent to that veto, the legislation overrode the veto which then authorized the extension effort.

TRIBAL ENGAGEMENT

Throughout the project, tribal nations were engaged and educated. Brand visioning workshops were held throughout the state and the Chickasaw Nation participated and provided feedback. Tribal national transportation officials were contacted individually throughout the project and encouraged to attend and participate in the pilot. Members from the Fair Miles Oklahoma team presented at the ODOT Tribal Transportation Council meeting where tribal leaders were asked to encourage tribal engagement in the RUC pilot. Tribal transportation officials or their representatives were engaged through RUC Task Force meetings and ongoing conversations before and after meetings.

FUTURE OPTIONS

Due to the increase in motor fuel efficiency and electric/hybrid vehicles entering the fleet. Motor fuel tax payments to the tribal nations will decrease. Below is a figure showing the anticipated decrease in motor fuel tax indexed to inflation.



POTENTIAL COMPACT UPDATES

As the State transitions to a source of revenue to replace the current Motor Fuel taxes, it is imperative that certain and relevant updates be made to State Statutes to maintain continuity of revenue to the Tribal Governments.

APPENDIX E: STSFA GRANT AWARD

OKLAHOMA

fair miles OKLAHOMA

Surface Transportation System Funding Alternatives Program (STSFA) - January 2023				
State	**Award Recipient**	**Congressional District**	**Project Name and Description**	**Amount**
California	California Department of Transportation (Caltrans)	1,2,3,4,5,6,7,8,9,10,11, 12,13,14,15,16,17,18,19,20,2 1,22,23,24,25,26, 27,28,29,30,31,32,33, 34,35,36,37,38,39,40,41,42,4 3,44+C13,45,46,47,48, 49,50,51,52,53 (Statewide)	Road Charge Pilots Program: The California legislature passed a bill requiring the State to test the revenue collection process of a road charge program and more broadly to introduce the road charge concept to the public. The pilot will also include a study of the potential behavioral changes caused by applying two different rate structures. The behavioral research could provide insights on drivers' choices. The learnings captured in the interim and final pilot reports will guide future endeavors for a successful road charge program for California and all states.	$3,000,000
Delaware	Delaware Department of Transportation/Easte rn Transportation Corridor Coalition (formerly I-95 CC)	1 (Multi-State: Delaware, Georgia, Maryland, Maine, North Carolina, New Jersey, and Pennsylvania)	Using Multi-State Pilots, Real-World Data, and Engaging Passenger and Truck Drivers to Test Mileage-Based User Fees Solutions: This work will continue to build upon previous efforts to determine the feasibility of mileage-based user fees in a multi-state environment by using demonstration pilots, real-world data analysis, and engagement with passenger and truck drivers to identify solutions to implementation barriers (e.g., equity concerns, compliance and enforcement, privacy issues, harmonization across states). Participating States include Delaware, Georgia, Maryland, North Carolina, New Jersey, and Pennsylvania.	$4,503,485
Hawaii	Hawaii Department of Transportation (HiDOT)	1,2 (Statewide)	Hawaii Road Usage Charge Demonstration: Based on the success of the Hawaii Road Usage Charge (HiRUC) demonstration research that was funded in part by STSFA, HDOT will work with state law and other policy makers beginning in 2022 to examine possible next steps for RUC in Hawaii that leverage the existing infrastructure and data from the state vehicle inspection and registration systems. HDOT will continue research on policy, administrative, and implementation issues identified in HiRUC. The agency will provide actionable information to state legislators to consider in refining road funding policy, including any road usage charging elements.	$1,000,000
Michigan	Michigan Department of Transportation (MDOT)	1,2,3,4,5,6,7,8,9,10,11, 12,13,14 (Statewide)	Perceptions and Implications of Road Use Charges: This project has two parts. First, it will seek to understand Michiganders' perceptions of RUC via a large-scale, statistically representative statewide survey. Second, it will assess the impact of charging for roads on raising revenue, reducing vehicular congestion, and mitigating environmental damage, via a RUC demonstration designed to provide a reliable source of revenue, smooth the demand for roadways thus mitigating peak-time congestion, and offer participants information about, and alternatives to their single occupancy vehicle trips.	$2,588,542
Minnesota	Minnesota Department of Transportation (MnDOT)	1,2,3,4,5,6,7,8 (Statewide)	Demonstrating the Potential of OEM Telematics Data for Calculation of Distance-Based Fees: The main challenge in exploring telematics-based fee approaches thus far has been accessing individual vehicle owners at scale in an asset-light fashion, without the need to install cumbersome onboard devices or require expensive reporting. This strategy would use technology that is preinstalled in all vehicles by a major auto manufacturer. This project will demonstrate the potential of using telematics data directly sourced from a leading automobile manufacturer for the purposes of computing distance-based fees. By using the advanced technology embedded within all newer model vehicles from the brands involved, data can be directly captured to assess distance-based fees without relying on aftermarket systems, plug-in devices, or third-party apps. In this application, project partner Via will generate hypothetical invoices with a mileage-based fee for each vehicle using an identifier provided by the telematics supplier.	$1,640,000
Oklahoma	Oklahoma Department of Transportation (ODOT)	1,2,3,4,5 (Statewide)	Oklahoma Road User Charge Pilot Program: This project will develop and conduct a voluntary pilot program involving a small number of participants to aid in the development and future deployment of a RUC Program that addresses potential challenges and opportunities that might be unique to Oklahoma. The project will evaluate and test strategies that will ensure that the RUC Program developed for Oklahoma is fair, equitable, and sustainable. ODOT will evaluate new strategies to leverage an existing tolling back office, partner with Tribal nations on policy development and examine methods to collect road user charge revenue from out-of-state drivers.	$1,905,000
Virginia	Virginia Department of Transportation (VDOT)	1,2,3,4,5,6,7,8,9,10,11 (Statewide)	Virginia's Mileage-Based User Fee Program: The funding from this STSFA grant application will be used to support a mileage-based user fee program that would allow owners of vehicles subject to the state's existing highway user fee to pay the fee on a per-mile basis rather than as a fixed fee, as is currently the case.	$3,314,800
			TOTAL	**$17,951,827**