RUC west

Addressing Out-of-State Drivers in a RUC System Phase 2: Costs, Revenues, International Travel, and Implementation Issues

D'ARTAGNAN CONSULTING

NEW PATHS TO ROAD FUNDING

Participating States

- Arizona
- California
- Colorado
- Idaho
- Montana
- Nevada
- Oregon
- Texas
- Washington

Work Plan -- Tasks

- **Task 1:** Kickoff meeting – 2/3/2016
  - Selected three policy bases from Phase 1 to examine in Task 2
  - Selected five jurisdictions to include in Task 2 analysis
- **Task 2 –** Costs and Revenues Associated with Multi-Jurisdictional Road Use Charges
- **Task 3 – International RUC Concepts for North America**
  - Address reporting, paying, and reconciling RUC across international borders (U.S.-Mexico and/or U.S.-Canada) for the 3 policy bases selected for Task 2.
- **Task 4 – Characteristics of an Inter-Jurisdictional RUC Demonstration**
  - Identify characteristics of an inter-jurisdictional RUC demonstration
- **Task 5 – Final Report and Presentation**


Task 1
Task 2
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States included in the Analysis

Policy Bases Included in the Analysis

- Shadow Charge
- Distance-Based Charge
- Combination of Distance-Based and Fuel-Based Charge


Task 1
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Task 2 Objectives

- How much cross-border traffic exists in the various jurisdictions?
- What are the revenue implications of multi-jurisdictional RUC, i.e. how much revenue do individual jurisdictions stand to gain or lose if they do not have agreements with their neighboring jurisdictions?
- What are the costs associated with setting up and operating any of the alternatives for multi-jurisdictional RUC reporting and reconciliation?
- How effective and costly will the enforcement be in a multi-jurisdictional environment?

Task 2 – estimating revenue, costs

- Estimating Visitor Travel
  - Focused on passenger vehicles and light/medium trucks
    - Heavy trucks crossing state lines already report (nearly universally) mileage by jurisdiction to IFTA
    - FAF already produces good data on truck movements (internal and external)
- Assumed passenger travel is focused on the following facility types:
  - Interstate Highway
  - Principal Arterials -- Other Freeway and Expressway (includes most U.S. Highways)
  - Principal Arterial – Other (includes most State routes and other divided facilities)

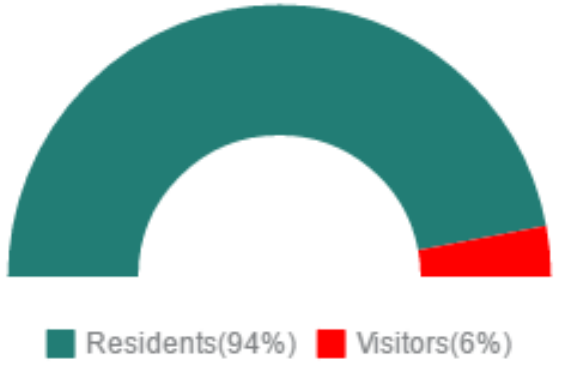
Methodology – assumptions about facility types

- Tested against traffic volumes on lower-type facilities
  - Very low-volume routes
  - Poor connectivity to other facilities

Task 2 – estimating revenue, costs

- none of the states participating in this study have formally established per-mile rates for a road user charge
  - the evaluation of revenue implications of charging or not charging out-of-state drivers is done in terms of revenue that can be expected to be gained or lost *relative to a state's in-state* RUC revenue
  - Same for estimated cost of collection, and estimated cost of enforcement – expressed as marginal increases over what a state would expect to spend for in-state RUC

- the outputs of this portion of the model are *dimensionless*



How Much Cross-Border Travel Exists?

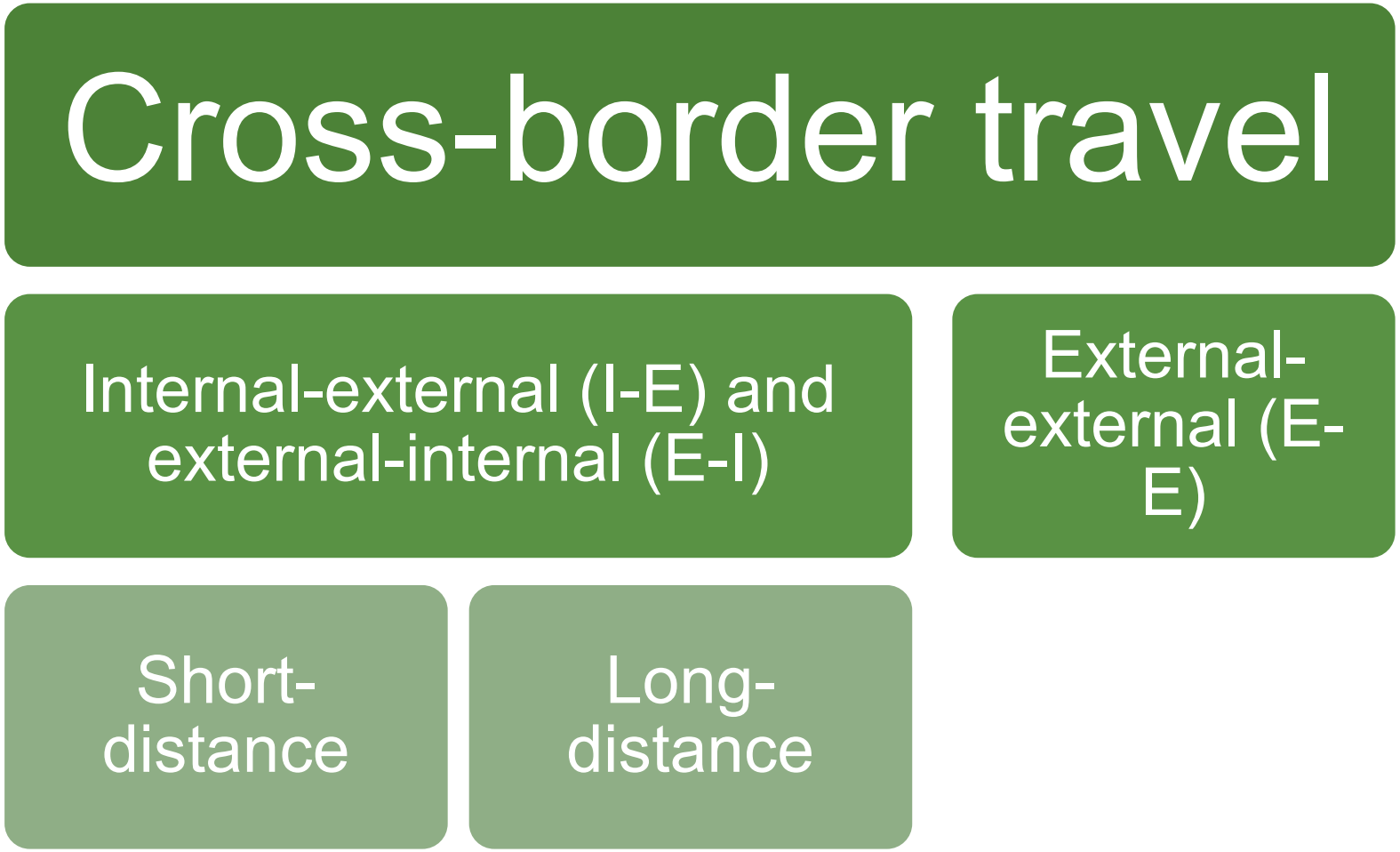
State	Daily Crossings (passenger vehicles only, both directions)
Arizona	~215,000
California	~385,000
Colorado	~75,000
Idaho	~179,000
Washington	~469,000

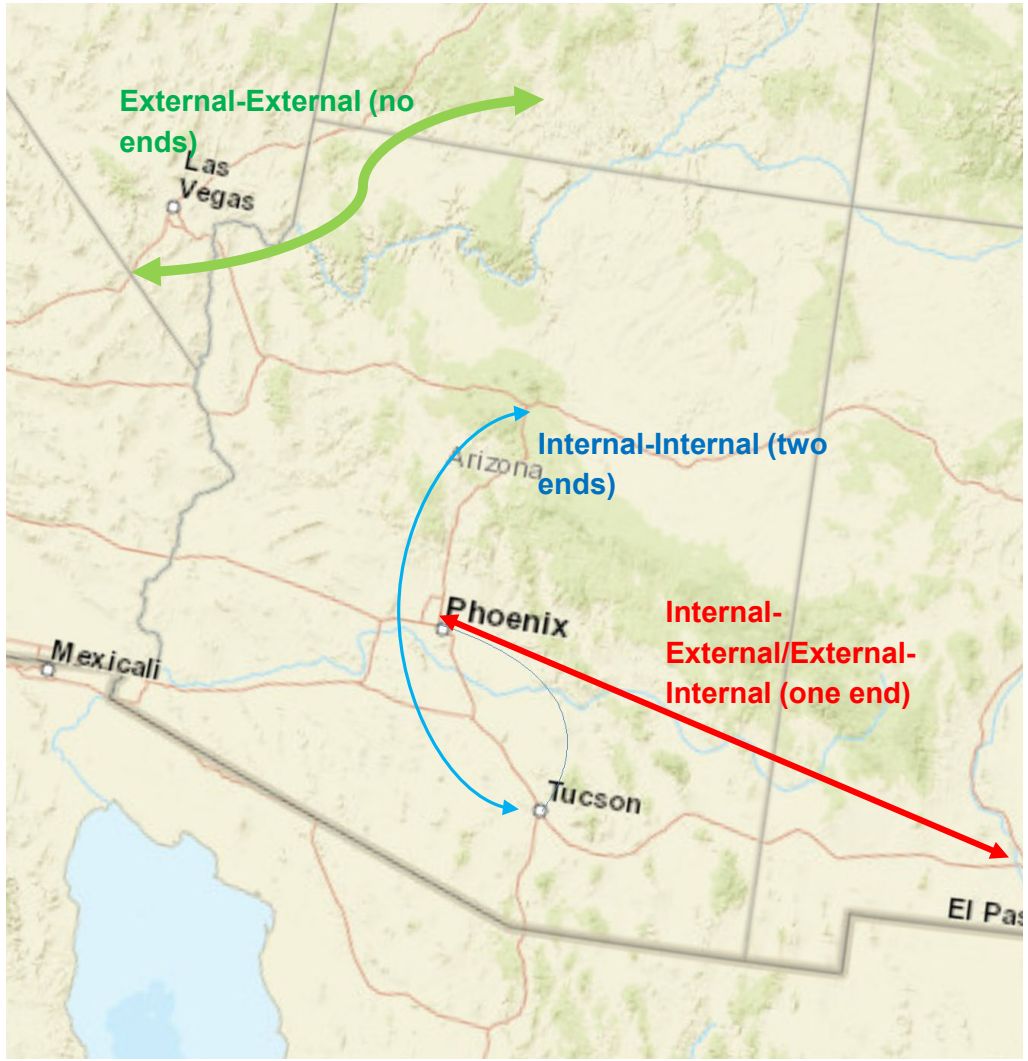
How Much Cross-Border Travel Exists?

- 4-step travel demand “gravity model” type assignment
  - Assigned entry-point to a gateway zone
  - Assigned typology to each gateway
    - Short-distance
    - Long-distance
  - AADT at each gateway
  - Distance(s) to major travel generators
  - Relative “pull” of travel generators across state lines
  - Estimated decay rate of passenger vehicle travel

Methodology – Estimating Travel

Descriptions of travel-types

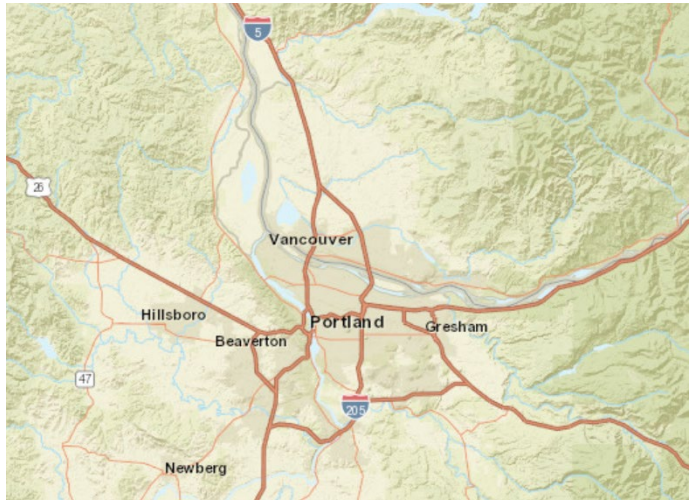


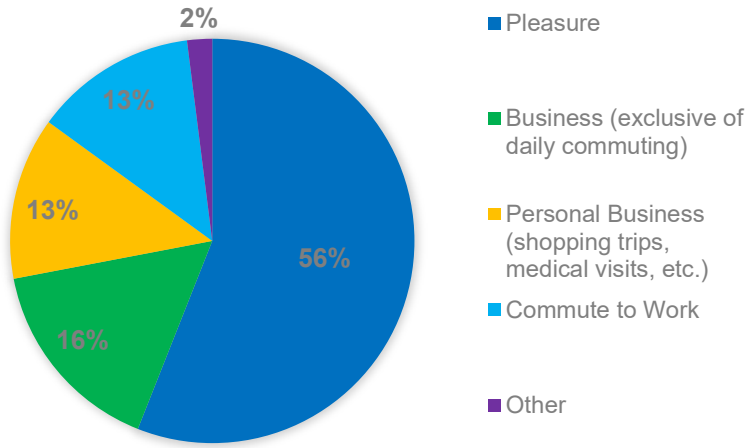


NEW PATHS TO ROAD FUNDING

I-E and E-I

- Short Distance
  - Typifies travel at Portland-Vancouver, Lake Tahoe Basin, San Diego-Tijuana, Coeur d'Alene-Spokane, etc.
    - Predominately commuter or daily personal trips
    - Border volumes from these regions are weighted heavily to local traffic
- Long Distance
  - Tourism, personal business, and business generators
    - Destinations farther than 50 miles from home
    - Frequently have an overnight component



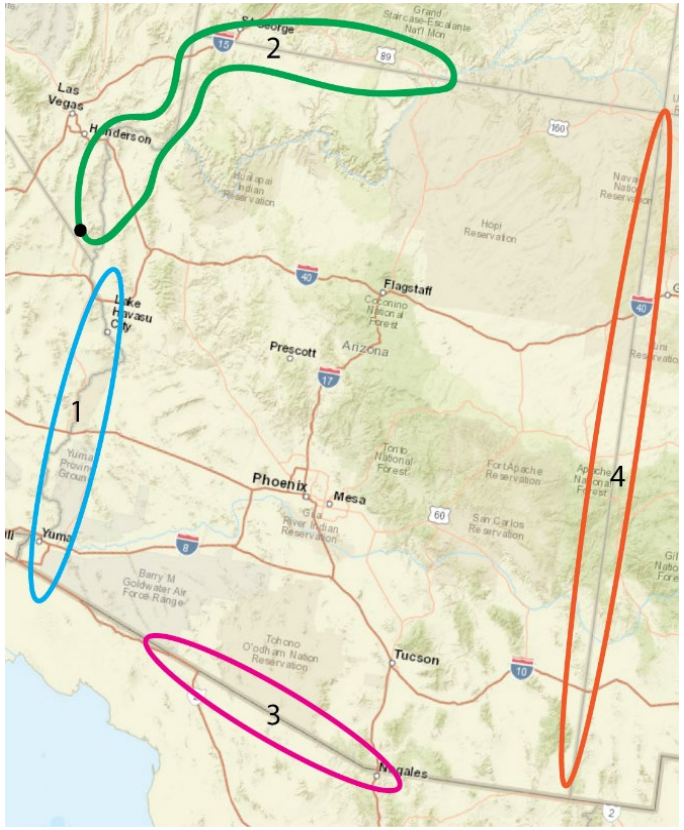


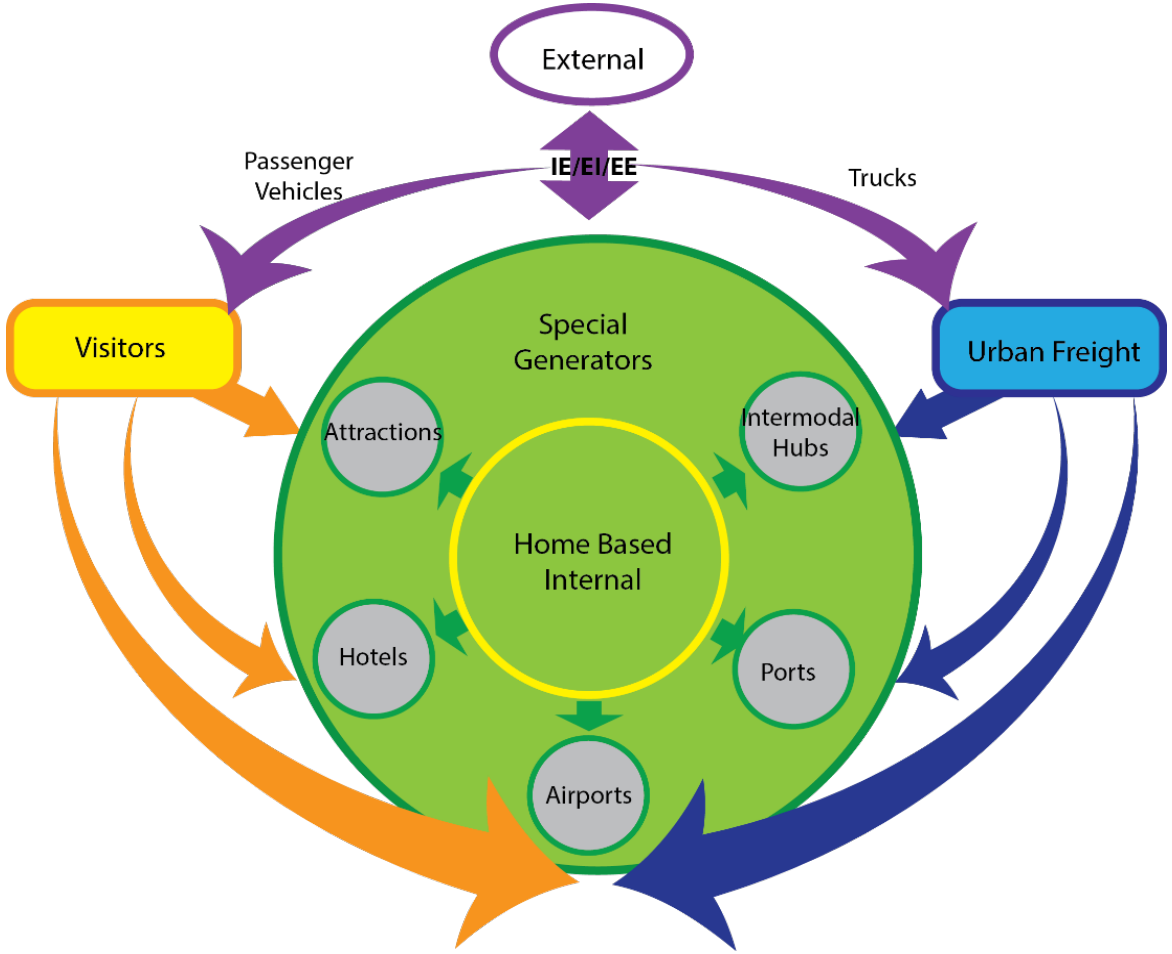
How Much Cross-Border Travel Exists?

- AADT at each point of entry

State	Daily Crossings (passenger vehicles only, both directions)
Arizona	~215,000
California	~385,000
Colorado	~75,000
Idaho	~179,000
Washington	~469,000

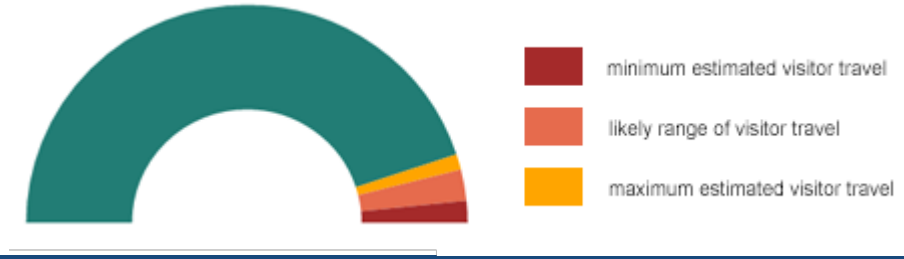
Example Gateway Zone Definitions




External
IE/EI/EE
Passenger Vehicles
Trucks
Visitors
Special Generators
Urban Freight
Attractions
Intermodal Hubs
Home Based Internal
Hotels
Ports
Airports

What are the Revenue Implications?

Arizona	
Non-resident driving	5%-8% of total VMT
Unique circumstances	Very little short-distance IE travel
	Strength of “car-trip” based tourist draws (California, Nevada, New Mexico, Texas)

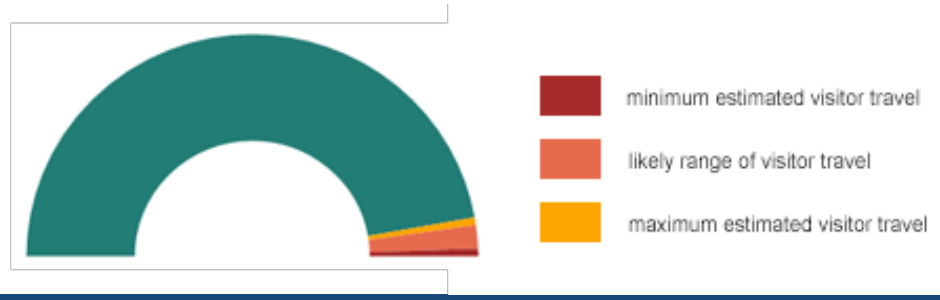


What are the Revenue Implications?

California	
Non-resident driving	1.2%-2.6% of total VMT
Unique circumstances	San Diego/Tijuana urban agglomeration

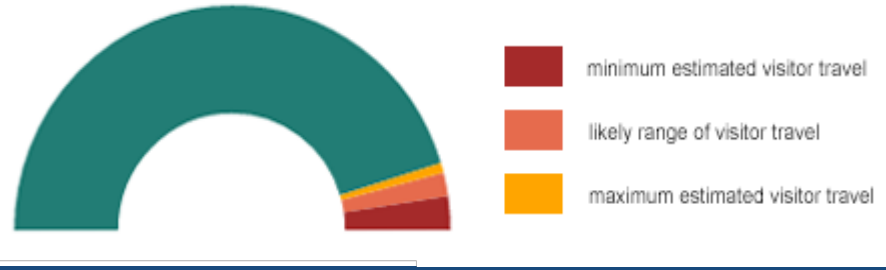
What are the Revenue Implications?

Colorado	
Non-resident driving	1.1%-4.4% of total VMT
Unique circumstances	Relatively little short-distance IE travel
	Air travel dramatically out-performs highway travel to most recreation areas. But… it is difficult to ascertain the amount of “through” traffic.



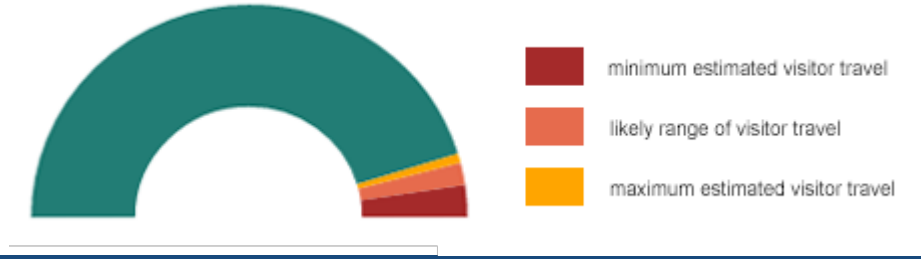
What are the Revenue Implications?

Idaho	
Non-resident driving	Up to 10% of total VMT
Unique circumstances	Long-distance travel ~5%-7%
	Short-distance travel ~1.5%-2.5%

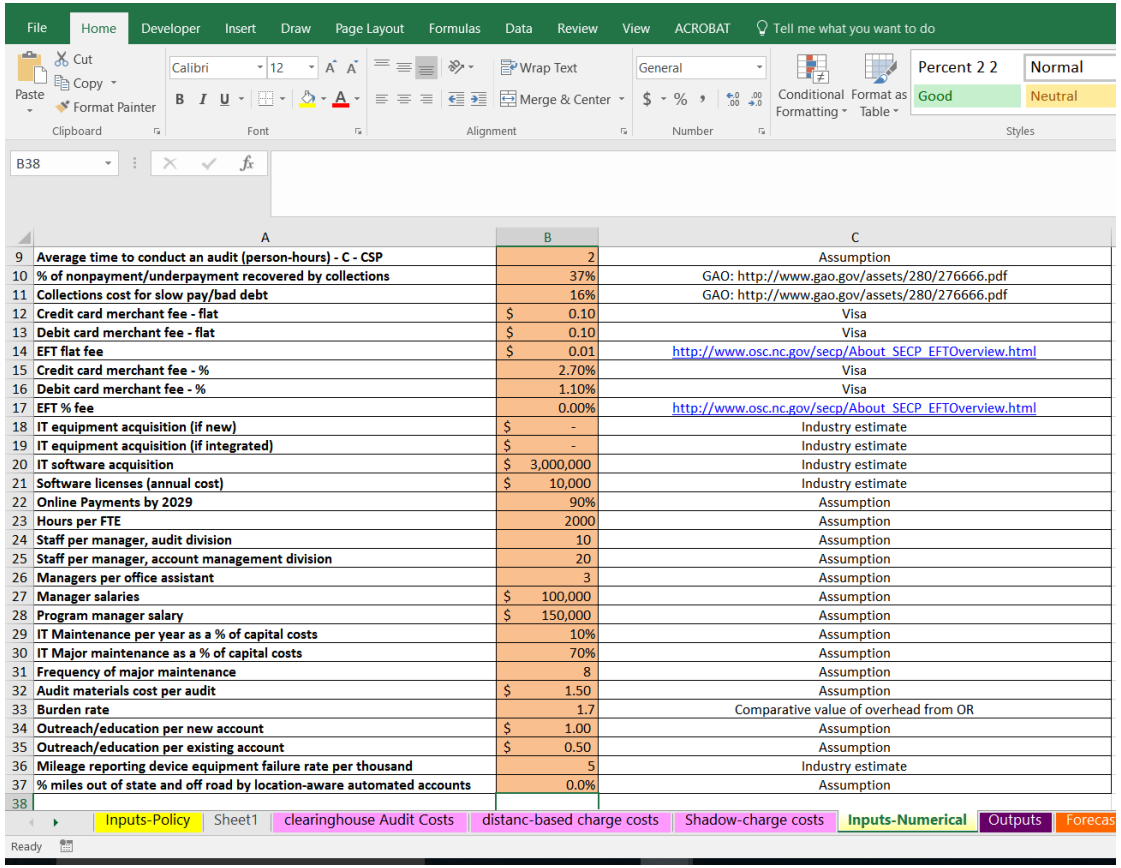


What are the Revenue Implications?

Washington	
Non-resident driving	5%-8.6% of total VMT
Unique circumstances	Up to 50% of “out of state” travelers may be short-distance commuters
	• Vancouver, BC -- Bellingham, WA • Portland, OR -- Vancouver, WA • Spokane, Washington – Coeur D’Alene, Idaho • Lewiston, Idaho – Clarkson, Washington • Moscow, Idaho – Pullman, Washington



Estimate costs associated with setting up and operating any of the alternatives for multi-jurisdictional RUC reporting and reconciliation



	A	B	C
9	Average time to conduct an audit (person-hours) - C - CSP	2	Assumption
10	% of nonpayment/underpayment recovered by collections	37%	GAO: http://www.gao.gov/assets/280/276666.pdf
11	Collections cost for slow pay/bad debt	16%	GAO: http://www.gao.gov/assets/280/276666.pdf
12	Credit card merchant fee - flat	$ 0.10	Visa
13	Debit card merchant fee - flat	$ 0.10	Visa
14	EFT flat fee	$ 0.01	http://www.osc.nc.gov/secp/About_SECP_EFTOverview.html
15	Credit card merchant fee - %	2.70%	Visa
16	Debit card merchant fee - %	1.10%	Visa
17	EFT % fee	0.00%	http://www.osc.nc.gov/secp/About_SECP_EFTOverview.html
18	IT equipment acquisition (if new)	$ -	Industry estimate
19	IT equipment acquisition (if integrated)	$ -	Industry estimate
20	IT software acquisition	$ 3,000,000	Industry estimate
21	Software licenses (annual cost)	$ 10,000	Industry estimate
22	Online Payments by 2029	90%	Assumption
23	Hours per FTE	2000	Assumption
24	Staff per manager, audit division	10	Assumption
25	Staff per manager, account management division	20	Assumption
26	Managers per office assistant	3	Assumption
27	Manager salaries	$ 100,000	Assumption
28	Program manager salary	$ 150,000	Assumption
29	IT Maintenance per year as a % of capital costs	10%	Assumption
30	IT Major maintenance as a % of capital costs	70%	Assumption
31	Frequency of major maintenance	8	Assumption
32	Audit materials cost per audit	$ 1.50	Assumption
33	Burden rate	1.7	Comparative value of overhead from OR
34	Outreach/education per new account	$ 1.00	Assumption
35	Outreach/education per existing account	$ 0.50	Assumption
36	Mileage reporting device equipment failure rate per thousand	5	Industry estimate
37	% miles out of state and off road by location-aware automated accounts	0.0%	Assumption
38			

Estimate costs associated with setting up and operating any of the alternatives for multi-jurisdictional RUC reporting and reconciliation

- Costs Associated with Assessing a Distance-based Charge
- Costs Associated with Assessing a Shadow Charge
  - Statewide and regional model development
  - Periodic external long-distance travel surveys
- Costs Associated with Assessing Combination Distance-based and Fuel-based Charge
- Costs associated with a Clearinghouse
  - Operational costs for the clearinghouse (external to state costs)
    - Transactional costs
    - Database/IT maintenance
    - Administrative staffing
  - Audit costs for the clearinghouse (external to state costs)
  - Administrative support costs within each state
  - Audit function costs within each state

Estimate costs associated with setting up and operating any of the alternatives for multi-jurisdictional RUC reporting and reconciliation

- Start-up and Operations Costs associated with a Distance-Based charge examined 4 scenarios:
  - Odometer reporting on entering/exiting state
  - Pre-paid mileage permits
  - Combination of location-aware mileage meters and pre-paid mileage permit
  - Location-aware mileage meters

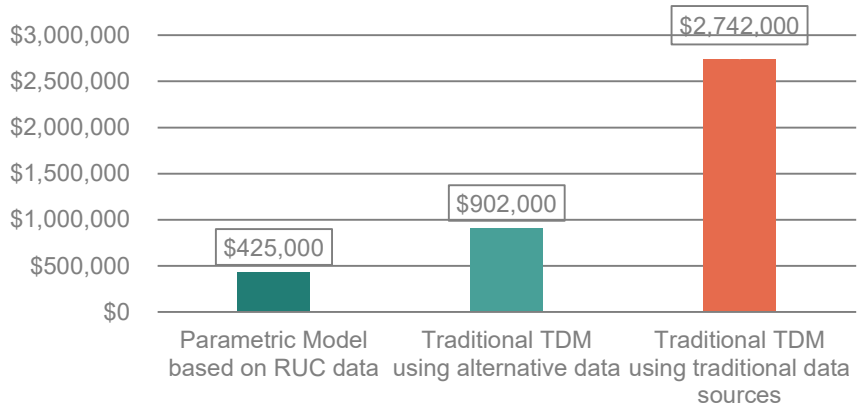
  - ***Distance-based charges alone (except for Scenario 4) were the most expensive to administer***

Cost Estimates for Multijurisdictional RUC using Mileage Permits

CATEGORY	START-UP COSTS (CAPEX)	OPERATIONAL EXPENSES (ANNUALIZED)
IT	$2,000,000 to 25,750,000	$ 5,266,000
Administrative Staffing		$ 1,400,000
Account Management		$ 8,075,000
Enforcement	$9,984,000	$ 220,520
Audit		$ 450,000
Totals	up to $35,734,000	$ 15,411,520

Estimate costs associated with setting up and operating any of the alternatives for multi-jurisdictional RUC reporting and reconciliation

- Summary of start-up and operational costs associated with assessing a shadow charge
  - Start-up costs are estimated to be between $425,000 and $2.74 million
    - depends on the type of model used to assign external travel to both home and host jurisdictions



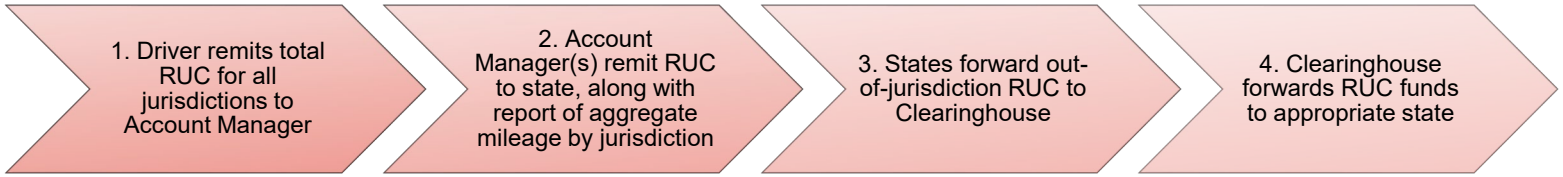
    - also includes the costs incurred by a state to develop agreed standards and specifications with other states
  - On-going operations $175,000 to $544,000 annually

Estimate costs associated with setting up and operating any of the alternatives for multi-jurisdictional RUC reporting and reconciliation

- Summary of start-up and operational costs associated with assessing a combination location-aware distance charge and gas tax
  - Same as cost of operating a clearinghouse

Estimate costs associated with setting up and operating any of the alternatives for multi-jurisdictional RUC reporting and reconciliatio

- Summary of start-up and operational costs associated with a RUC Clearinghouse
  - Operational costs for the clearinghouse (external to state costs)
    - Office rent or mortgage costs
    - Transactional costs
    - Database/IT maintenance
    - Administrative staffing
  - Audit costs for the clearinghouse (external to state costs)
  - Administrative support costs within each state
  - Audit function costs within each state



Estimate costs associated with setting up and operating any of the alternatives for multi-jurisdictional RUC reporting and reconciliation

- Summary of start-up and operational costs associated with a RUC Clearinghouse

Category	Startup Expenses	Ongoing Operating Expenses (annualized)
Clearinghouse Expenses		
Office Rent or Mortgage costs	$45,000	$62,000
Transactional costs		$139 per transaction per state
Database/IT maintenance	$ 8,000,000	$148,000
Administrative staffing		$700,000
Audit costs for the clearinghouse (external to state costs)		$10,000
Participating State Expenses (expenses apply to each participating jurisdiction)		
Administrative support costs within each state		$59,317
Database/IT maintenance within each state	$500,000 - $1,500,000	$8,400
Audit function costs within each state		$11,863

Effectiveness and Costliness of Enforcement

- Likely methods of RUC evasion fall into four prominent categories:
  - Failure to report miles driven
  - Reporting false information
  - Claiming improper exemptions, credits, or refunds
  - Failing to pay assessed RUC
- Examined multiple scenarios:
  - Universal retention of gas tax (credited against RUC)
  - State-by-state enforcement
  - Multi-jurisdiction compact
    - Similar to the current Driver License Compact –"an interstate compact used by States of the United States to exchange information concerning license suspensions and traffic violations of non-residents and forward them to the state where they are licensed known as the home state".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Task 3: International Considerations

- New laws, policies and operations are probably required to assess RUCs on motorists from outside the US
- Numerous Canadian provinces and US states have been party to both International Registration Plan (IRP) and International Fuel Tax Agreement (IFTA)
- International agreements with Mexico have proven difficult to implement and sustain
  - For example, IFTA and IRP do not include Mexico


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Task 4 --Characteristics of an Interjurisdictional Road Usage Charge Demonstration

- Motivating Factors for Interjurisdictional RUC Pilot
  - assess the feasibility and performance of interoperable RUC reporting, payment, and reconciliation methods from the perspective of motorists and participating agencies
  - develop the governance model, standards (for products and services that are used across borders), procurement, and other operational issues of common or shared RUC systems versus individual state RUC systems
  - evaluate potential for economies of scale as adoption of products and services grows

Task 4 Overview

- Success Factors in an Interjurisdictional RUC Pilot
  - Ability to identify shared policy questions across participating states and funding agencies
  - Ability to clearly translate policy objectives into pilot objectives shared by all participants

Task 4 Overview: Example Interjurisdictional Pilot Objectives

- Work across state borders to highlight key issues not already resolved in single-state pilots:
  - Interoperability of RUC measurement methods across state boundaries, including improved functionality operational concepts such as automated mileage reporting with location-aware technologies and public acceptance of such options
  - Reconciliation of funds among jurisdictions
    - assess feasibility of different methods of financial clearing or reconciliation
    - develop of business rules that govern the exchange of funds

Task 4 Overview: Example Interjurisdictional Pilot Objectives

- Work across state borders to highlight key issues not already resolved in single-state pilots, such as:
  - Interoperability of RUC measurement methods across state boundaries, including improved functionality operational concepts such as automated mileage reporting with location-aware technologies and public acceptance of such options
  - Reconciliation of funds among jurisdictions
    - assess feasibility of different methods of financial clearing or reconciliation
    - develop of business rules that govern the exchange of funds
  - Establishing standards for technology or operational elements to support shared procurement or certification.
  - Test the application of common specifications and standards in an operational environment
  - Test the flexibility of pre-existing “open” platforms and their ability to address local design preferences
  - Test the use and functionality of interoperable RUC in the presence of varied rate structures
- Amplify issues already being addressed in single-state pilots:
  - Jointly conduct outreach with key stakeholders and policy makers to raise awareness about the need to study and test funding alternatives
  - Increase public awareness of the challenges that surround declining gas tax revenues
  - Clearly position the gas tax as a user fee for road funding

Task 4 Overview: Possible Configurations of an Interjurisdictional Pilot

- Extend current RUC systems and pilots to additional states
- Extend the specification of the current “open architecture” used by some WRUCC states to develop a pilot that uses commercial account managers to manage revenue reconciliation activities
- Layer the collection of federal motor fuel tax to test reconciliation models that correctly allocate state and federal taxes to the correct jurisdiction, based on federal funding allocation formulas for the federal portion of the taxes collected
- Something else…

Task 4 Overview: Considerations for an International Demonstration Project

- potential revenue to be gained by assessing RUC on these vehicles should be balanced against the challenges of the following:
  - Informing international visitors of RUC rules and requirements
  - Gaining international cooperation and motorist compliance with each state's RUC
  - Enforcing RUC across international borders

Lingering Questions /Issues

- Current data sources and travel models do not adequately identify where external travel originates, or (really) how much of it there is.
- To be effective, multi-state enforcement efforts will likely require formation of an Interstate Compact. Congressional action could be required.
- Congressional action will be required to enable international enforcement efforts, along with negotiation of enforcement terms with Canada/Mexico.
- Can current revenue-sharing agreements in place with multi-state MPOs be expanded to accommodate RUC?

Questions? Contact:

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