
Pilot Participant Matrix Parameters

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Agenda Item #12

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Sacramento, CA



Pilot Volunteer Recruitment Approaches

- ◆ TAC and Work Group constituencies
- ◆ Web and social media outreach
- ◆ Targeted outreach to communities of interest
- ◆ Print and TV news and public service announcements
- ◆ Existing customers of commercial account managers



Sampling of Volunteer Participants

- ◆ **Proportional sampling:** select participants in proportion to statewide demographics
- ◆ **Simple random sampling:** select participants at random.
- ◆ **Judgmental sampling (recommended):** select participants in a way that guarantees “meaningful” representation by sub-groups of interest by setting minima or targets for each.



Quantitative vs. Qualitative Analysis

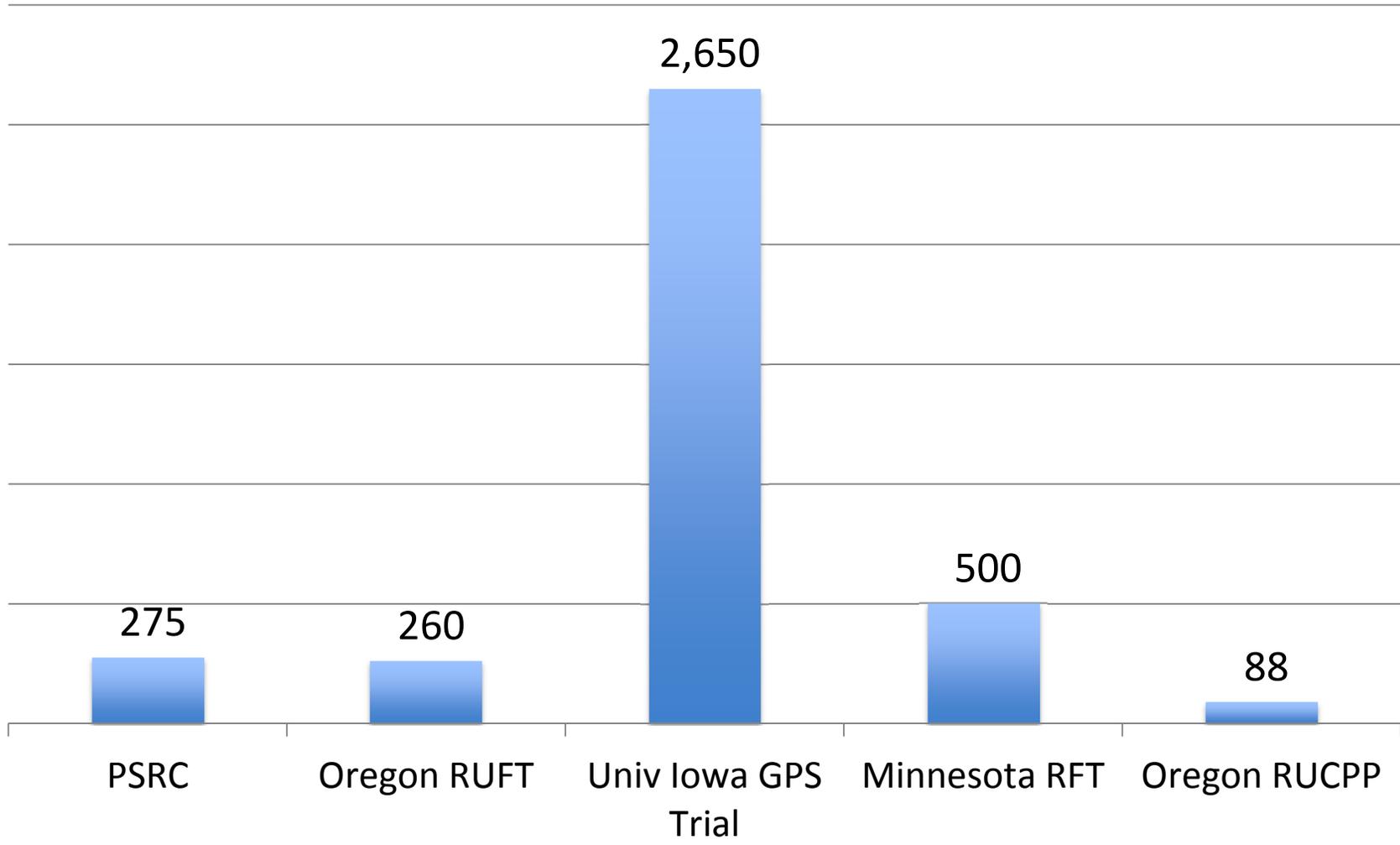
- ◆ For evaluation questions that lend themselves to quantitative analysis, some statistical hypothesis testing will be possible



- ◆ The majority of the pilot evaluation will be qualitative, in which case “meaningful” feedback from diverse sub-groups of interest is most important



Size of Other Road Charge Pilots



How Many Participants to Recruit?

- ◆ Judgment call by the TAC
 - ◇ Sample likely large enough (>300) for overall statistical significance
 - ◇ Qualitative aspects require other considerations of sample size, such as “saturation”
- ◆ Bottom-up sizing based on:
 - ◇ Identifying sub-groups of interest
 - ◇ Determining adequate sample size for each sub-group



There are 13,824 Sub-Groups

... In Theory

Decisions Made January – May				Decisions Scheduled for June		
Vehicle Weight	Vehicle Status	Participant Status	Operational Concept	Location	Income	Region
<ul style="list-style-type: none"> • Passenger Cars • Class 2 Trucks • Class 3 Trucks • Class 4 Trucks • Class 5 Trucks • Class 6 Trucks • Class 7 Trucks • Class 8 Trucks 	<ul style="list-style-type: none"> • Private • Commercial 	<ul style="list-style-type: none"> • Individual • Household • Business • Agency 	<ul style="list-style-type: none"> • Time Permit • Mileage Permit • Odometer Pre-pay • Odometer Post-pay • Non-location Mileage Meter • Non-location Smartphone • Non-location Telematics • Non-location Other • Location-based Mileage Meter • Location-based Smartphone • Location-based Telematics • Location-based Other 	<ul style="list-style-type: none"> • Urban and Suburban • Rural and Agricultural 	<ul style="list-style-type: none"> • Low • Middle • High 	<ul style="list-style-type: none"> • Northern • Central • Southern
8	2	4	12	2	3	3



Making It Manageable

- ◆ Simplify weight classification
 - ✧ From 8 classes to 3
- ◆ Down-select to sub-groups that exist, are common, and are meaningful
 - ✧ Nonexistent: commercial agency vehicles, private heavy trucks, etc.
 - ✧ Rare: heavy trucks that belong to individuals, etc.
 - ✧ Provide little meaning for comparative purposes: Northern vs. Central California large truck long-haul operations, individual vs. household private passenger cars
- ◆ Allow participants to select operational concepts
 - ✧ Do not constrain volunteers – let them choose
- ◆ Result: 32 sub-groups of interest



Matrix of 32 Sub-Groups & Example Sample Size Ranges

		North	Central	South	North	Central	South	Small Fleet	Med. Fleet	Large Fleet
Commercial Vehicles (Businesses)		 100 - 150	 50 - 100	 100 - 150	 100 - 150	 50 - 100	 100 - 150	 50 - 100	 50 - 150	 100 - 200
Private Vehicles (Individuals & Households)					Out-of-state vehicles			Agency vehicles		Tribal
Urban and Suburban	 \$	300 - 400	100 - 150	300 - 400	 50 - 100	 50 - 100	 50 - 100	 100 - 200	 25 - 100	
	 \$\$	300 - 400	100 - 150	300 - 400						
	 \$\$\$	300 - 400	100 - 150	300 - 400						
Rural and Agricultural	 \$	150 - 200	50 - 100	150 - 200	100	100	100	200	100	
	 \$\$	150 - 200	50 - 100	150 - 200						
	 \$\$\$	150 - 200	50 - 100	150 - 200						

Questions for TAC Members

- ◆ For each **sub-group** of private passenger car participants (e.g., urban middle income in Northern California) :
 - ✧ Range of total participants in each sub-group?
 - ✧ Minimum number of each operational concept chosen?
 - ✧ Minimum number of complete households participating?
- ◆ For the **entire group** of private passenger car participants, does the TAC wish to specify minimum values or target ranges for any of the following:
 - ✧ Age group representation?
 - ✧ Ethnic representation?
 - ✧ Gender balance?
 - ✧ Special classes of vehicles?
- ◆ Are there any other high priority sub-groups that should be identified and considered?

