California Road Charge

Tab 6

October 29, 2021

Demonstration & Public Opinion Polling Results

California
Road Charge

Demonstration Results

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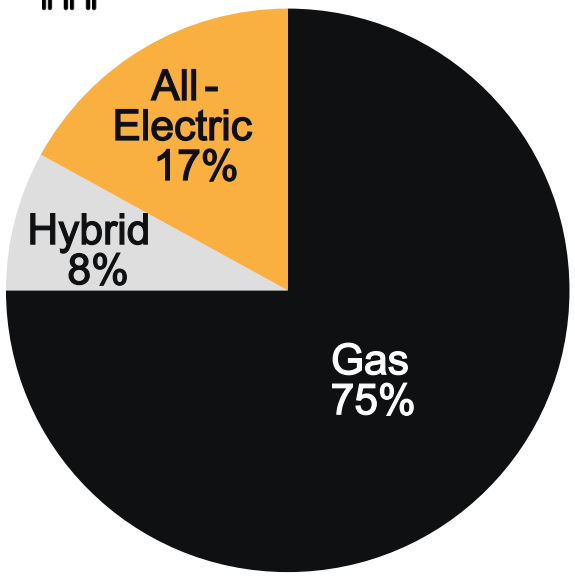
Phased Demonstration

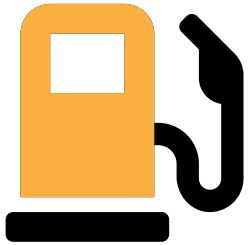
	PHASE 1A: Pay at the Pump	PHASE 1B: Pay at the Charge Point	PHASE 2: Usage - Based Insurance	Phase 3: Rideshare Company	Phase 4: Automated Vehicle	PRIME: Data Warehouse and Analytics Engine
Timeline	January – June 2021 6 Months	January – June 2021 6 Months	February – June 2021 5 Months	March – June 2021 4 Months	April – June 2021 3 Months	January – June 2021 6 Months
Reporting Method	Plug-in device and mobile app	Plug-in device and mobile app	Odometer photo upload to website	Mobile app	In-vehicle technology	N/A
Reporting Frequency	Weekly	Weekly	Monthly	Every Ride	No participants	Every Report

Demonstration Results

83 participants
(6 TAC members)



169,928 miles reported



4,460 gallons of fuel reported

$1,475.62 in theoretical road charge

Key Takeaways

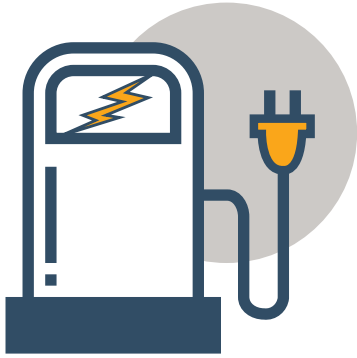
- Leveraging existing business models benefits the road charge model
  - Promotes participant comfort and ease of use
  - Reduces administrative burden and costs
  - Supports ease of market entry for business partners

- All of the business partners expressed interest in a market share under an operational program

Phase 1A Pay-at-the-Pump Lessons Learned

- The current business model for Pay-at-the-Pump does not collect mileage data directly from a vehicle
- Multiple providers and agreements will be needed for a statewide program
- Further investments in pump technologies and backoffice systems will still be necessary
- Third-party Apps do not accurately capture mileage and location information
- If all fueling sessions can be captured, this model can support accurate calculation of fuels tax credits

Phase 1B Pay-at-the-Charge-Point Lessons Learned



- At this time, electric vehicles do not directly transfer mileage data through a charging station
  - A secondary method (e.g. In - vehicle telematics or a plug - in device) will be needed
- Many electric vehicles do not have an OBD - II port, making plug - in devices obsolete
- A pay - at - the - charging - station model may work well for EV drivers that regularly use a provider's EV charging station network or purchase their home - charging station

Phase 2 **Usage - Based Insurance** Lessons Learned

- The UBI business model aligns well with road charge
  - Mileage data is reported as part of insurance policy
- UBI method used (Odometer Photo Upload) was widely supported
- Risk for fraudulent odometer uploads is minimal
- The odometer upload can assess road charge without using location determining technology
- Participants were extremely pleased with their participation in this phase
  - They were most impressed with how this method protected their privacy over other methods

Phase 3 **Ridesharing** Lessons Learned

- The Ridesharing model aligns well with road charge
  - Mileage collection mechanisms (rider's phone to call ride, driver's phone to track ride) must be working properly to use the ridesharing service
- Ridesharing vehicle systems can support road charge assessment
- Potential Ridesharing policy considerations for the TAC to consider:
  - Should rates vary for Ridesharing vehicles in standby, business, and personal modes?
  - Should road charges be able to be subdivided between multiple occupants?
  - Should rate discounts be offered for multiple riders?
  - Who pays the road charge for private - owned Rideshare vehicles?
  - What impacts are there to taxi companies?

Phase 4 **Automated Vehicle** Lessons Learned

- ***First ever project to successfully collect road charge data from a Level 4 Automated Vehicle***
- Data collection exceeds what would be needed for a road charge
- AV providers may have varying levels of data that they are willing to share
- The Automated, Connected, Electric, and Shared business model supports a road charge as long as vehicles are integrated with fleet management business model and systems

PRIME Lessons Learned

Platform for Road charge Innovation and Mobility Evolution

- Business partners did not have to adjust their systems to accommodate unfamiliar protocols ***(First of its kind!)***
- PRIME adjusted data interfaces and formats to a common, interoperable platform
- PRIME demonstrated ease of program administration
- Business partners integrated seamlessly with PRIME data warehouse
- Demonstration data was integrated with other data sources to create new use-cases for how data can be used

California Road Charge

California Road Charge Demonstration

Public Opinion Research Results
Overview to Date

EMC Research, Inc.

October 2021

Research Methodologies

Three Public Polls

July 2020, April 2021, January 2022

- Representative sample of 600 California adult residents in each wave
- Mixed-mode methodology (telephone and online interviewing)
- Interviews in English and Spanish
- Results representative of general population; margin of error ± 3.9 percentage points (95% confidence interval)

Twelve Focus Groups

February and April 2021

Conducted among California drivers

Online discussion group led by professional moderators

Seven regional groups (including targeted rural communities)

Two in-language groups (Spanish and Mandarin)

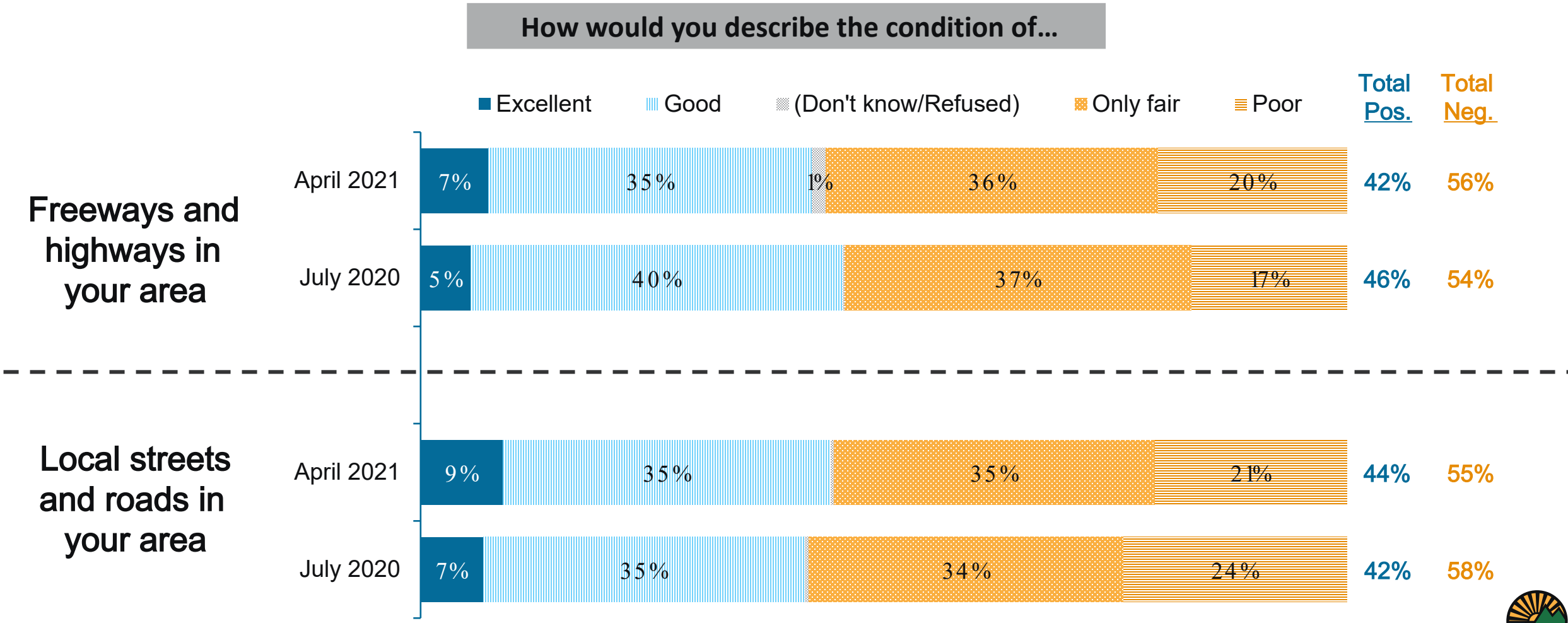
Three targeted groups (super commuters, EV drivers, TNC drivers)

Research Findings Highlights

- There is general awareness of the need for additional funding for road maintenance in California, but few know where revenues currently come from.
- Most know they pay a gas tax as part of the cost of fuel, but don't know how the costs break down between taxes and fuel costs.
- The challenges of the current gas tax model are not immediately apparent, but information about declining revenues and equity imbalances is effective at convincing many that a change is needed.
- However, Road Charge is not initially perceived as a better model – many raise concerns about equity, privacy, costs, and complexity and reliability of implementing a completely new system. Education can help.

State and Local Road Conditions

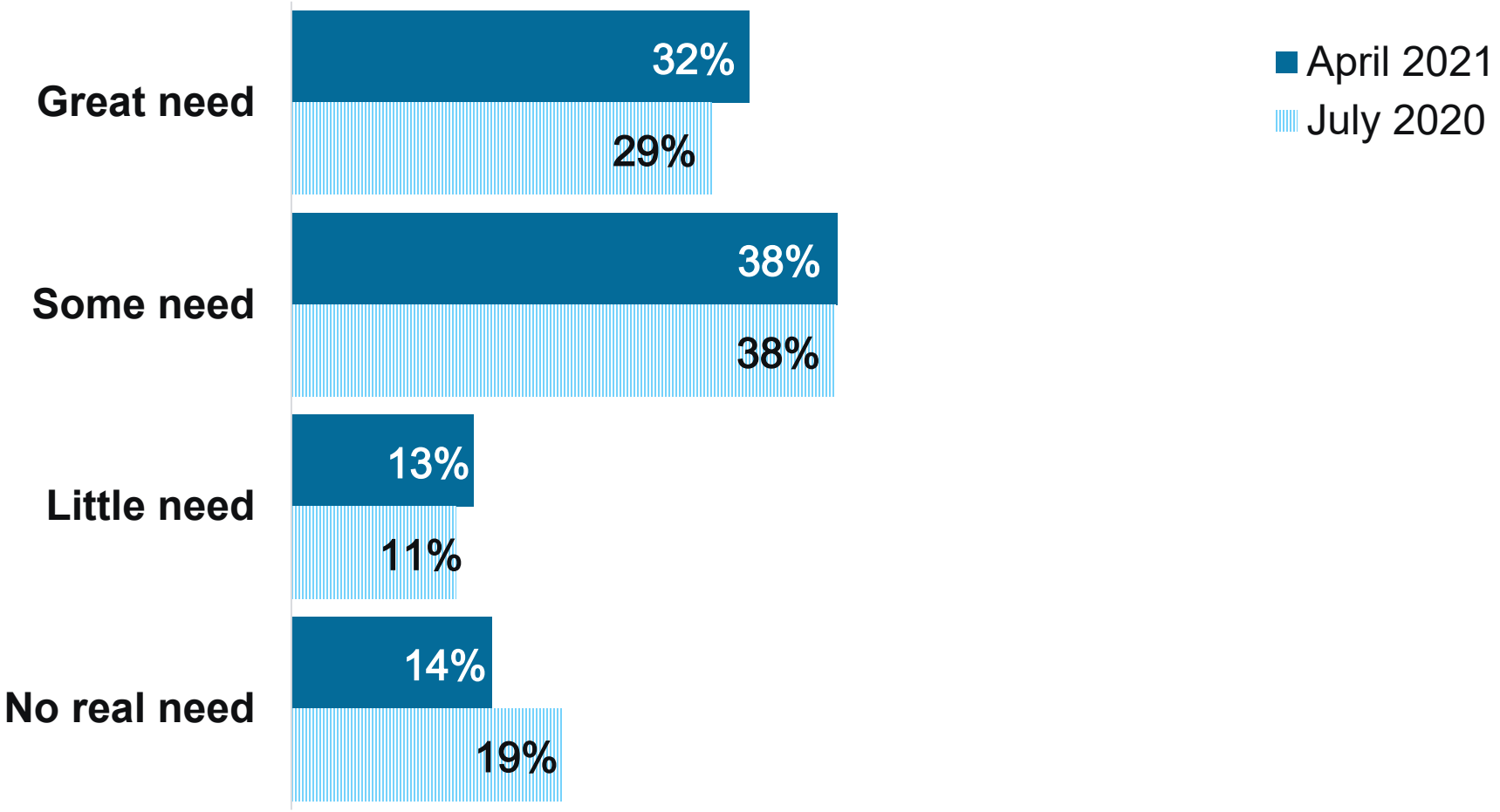
A majority of Californians feel the state's road and highways are in only fair or poor condition.



How would you describe… (2020 & 2021 public polls)

Perceived Need for Additional Funding

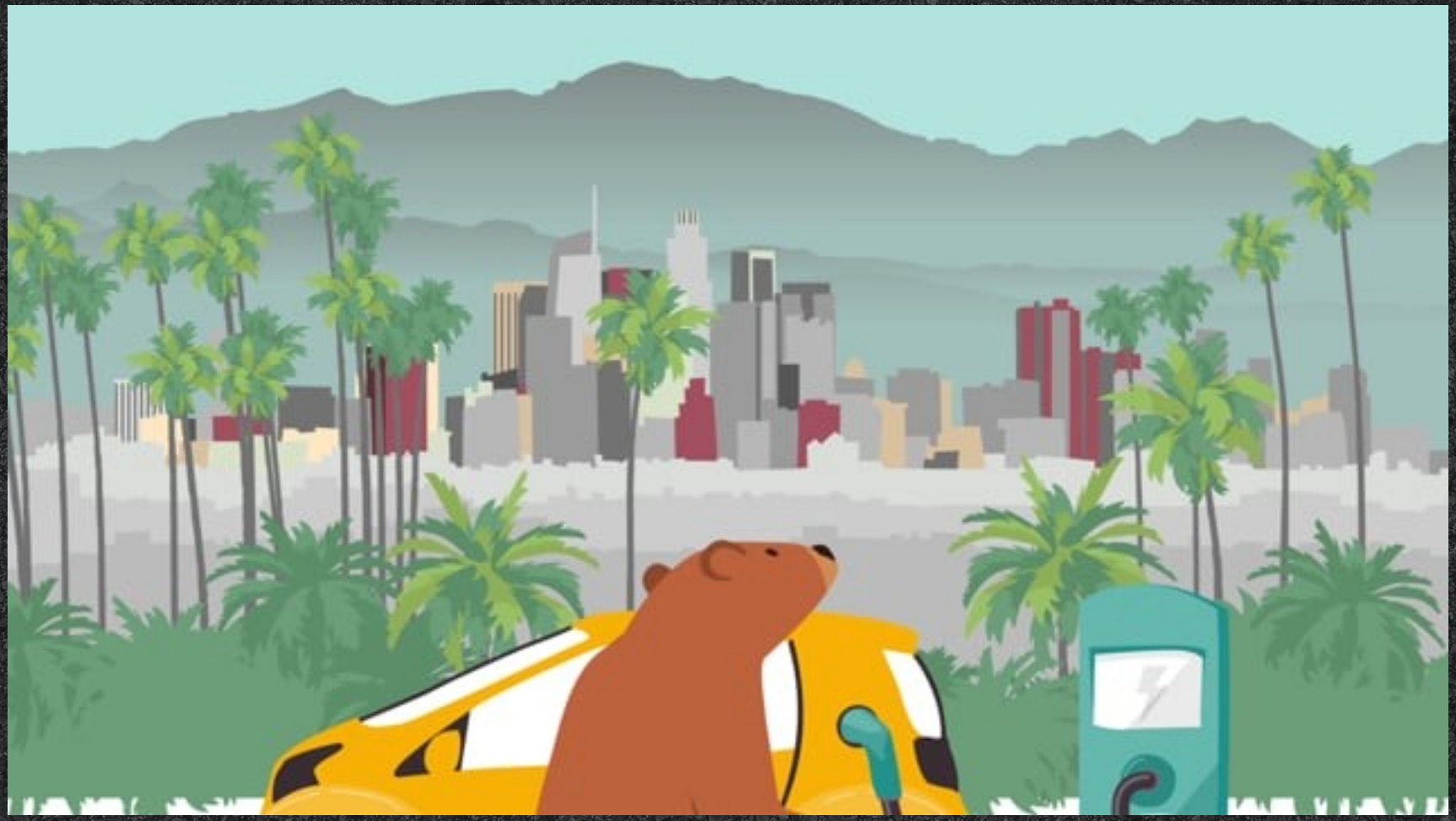
Seven in ten feel the state has at least some need for additional funding for road and freeway maintenance.



When it comes to repairing and maintaining roads and freeways, would you say that California has a great need for more money, some need for more money, little need for more money, or no real need for more money? (2020 & 2021 public polls)

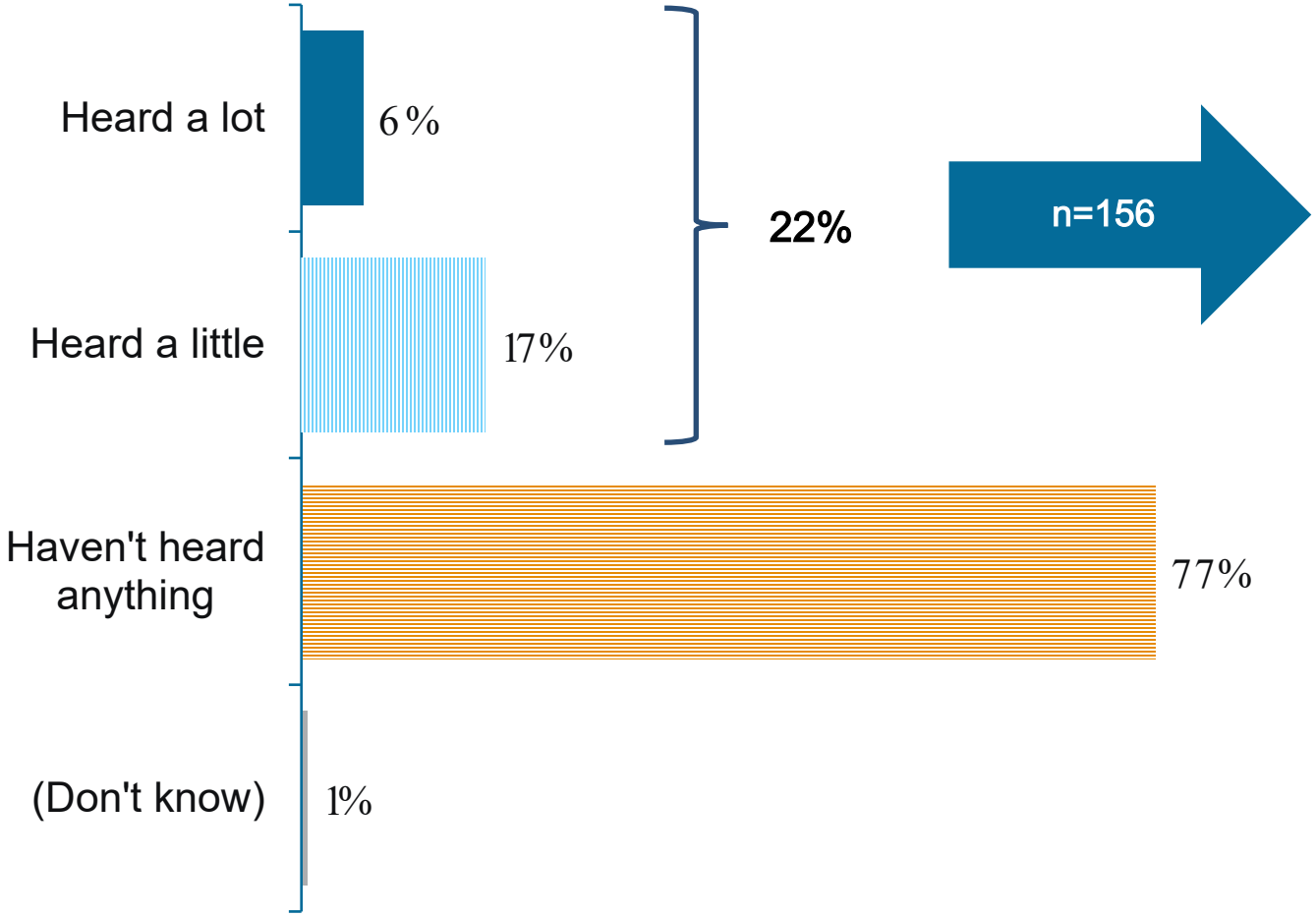
Focus Groups Spotlight: Issue Environment

- Awareness of road maintenance funding and the gas tax was limited among focus group participants.
- Most felt the cost burden of road maintenance should be shared by everyone who uses the roads, including businesses.
- While many agreed in principle that those who drive more should pay more towards road maintenance, they were worried about the impact on people with long commutes.
- Watching a video that described the growing revenue gap ("The Issue") was compelling, and led to discussion about potential solutions.



Road Charge Awareness

One - fifth of residents report hearing something about a road charge, but only 21% of that group specifically say that it is a charge per mile, rather than a general tax or a toll road.



What have you heard about a road charge for California?	%
Toll roads/Road tax/Charging to use roads	34%
Mileage tax/Charge by mileage	**21%**
Mismanagement of funds	12%
Tax is in consideration	10%
General Negative	3%
Other	13%
Nothing/Don't know	8%

Have you heard anything about a road charge for California? Have you heard a lot about it or just a little?

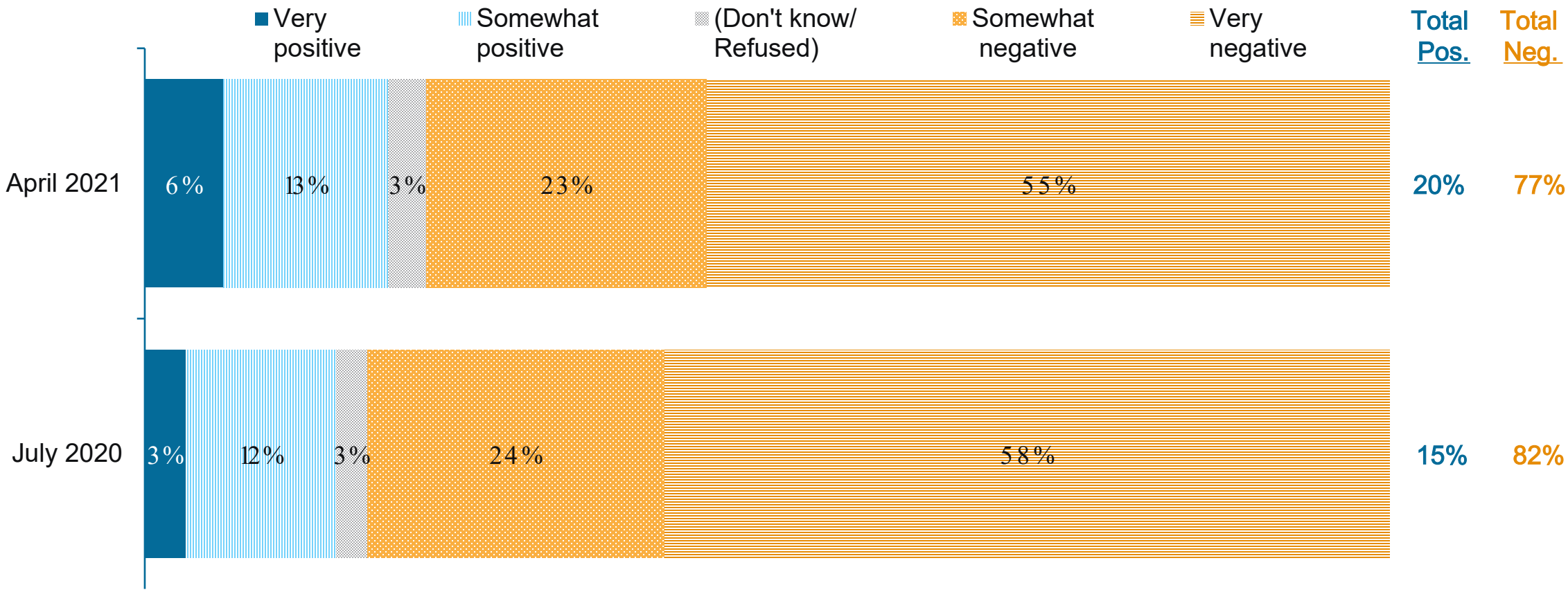
What have you heard about a road charge for California?

(2021 public poll)

Road Charge Initial Impression

Just one in five Californians react positively to the general concept of a Road Charge for California.

As you may know, a road charge is a per mile charge for driving on public roads. After hearing that description, please tell me if you have a positive or a negative impression of a road charge for California.



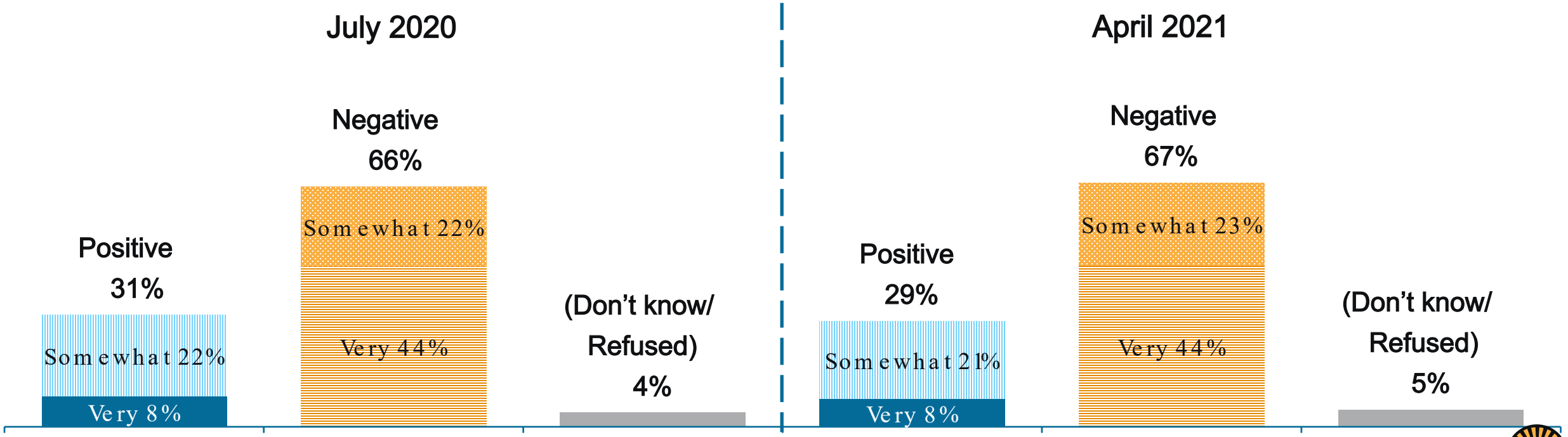
(2020 & 2021 public polls)

Road Charge Informed Impression

When presented as a replacement for the gas tax to fund road and freeway maintenance in California, about three in ten have a positive impression, while two - thirds feel negatively (and nearly half are strongly negative).

Currently, much of the money for repairing and maintaining California's roads and freeways comes from the state gas tax, which the state is considering replacing with a road charge instead. The gas tax is based on the number of gallons of fuel purchased, while a road charge is based on the number of miles driven. Nobody would pay both, since a road charge would replace the state gas tax.

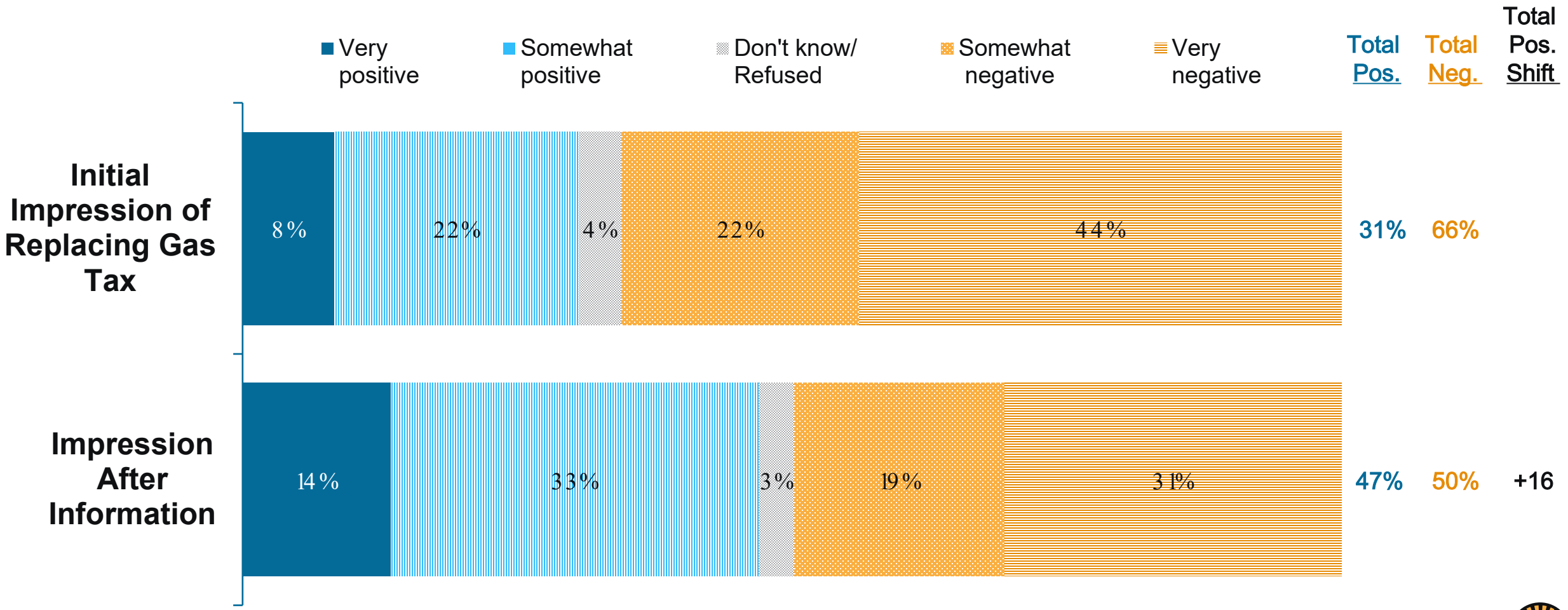
Having heard this, would you say you have a positive or a negative impression of replacing the gas tax with a road charge for the repair and maintenance of California's roads and freeways?



(2020 & 2021 public polls)

Road Charge After Information

Additional information about Road Charge increases support for the idea to nearly half of Californians, but about half still have a negative impression.



Now that you've heard a little more, would you now say you have a positive or a negative impression of replacing the gas tax with a road charge for the repair and maintenance of California's roads and freeways? (2020 public poll)

Road Charge Impressions

The most - cited reasons in support of replacing the gas tax with a road charge are cheaper gas, tax aversion, and that it's more fair/has EVs paying into the system. The most - cited concerns are the cost/that it's another tax, equity concerns, and implementation details.

Whether you think it's a good idea or not, **what do you like** about the idea of replacing the state gas tax with a road charge?

	%
Nothing/Don't like the idea	34%
Cheaper gas/Cheaper costs	8%
Against taxes	8%
More fair/Makes EV taxable	7%
Only road users will pay/Tax in proportion to use	6%
Need more information	4%
General positive	4%
Revenue needed/Money for repairs	2%
Funds will be mismanaged/misappropriated	2%
Reduce traffic/Encourages alternative transportation	2%
Other	11%
No opinion/Don't know	14%

Whether you think it's a good idea or not, **what are you most concerned about** when you think of replacing the state gas tax with a road charge?

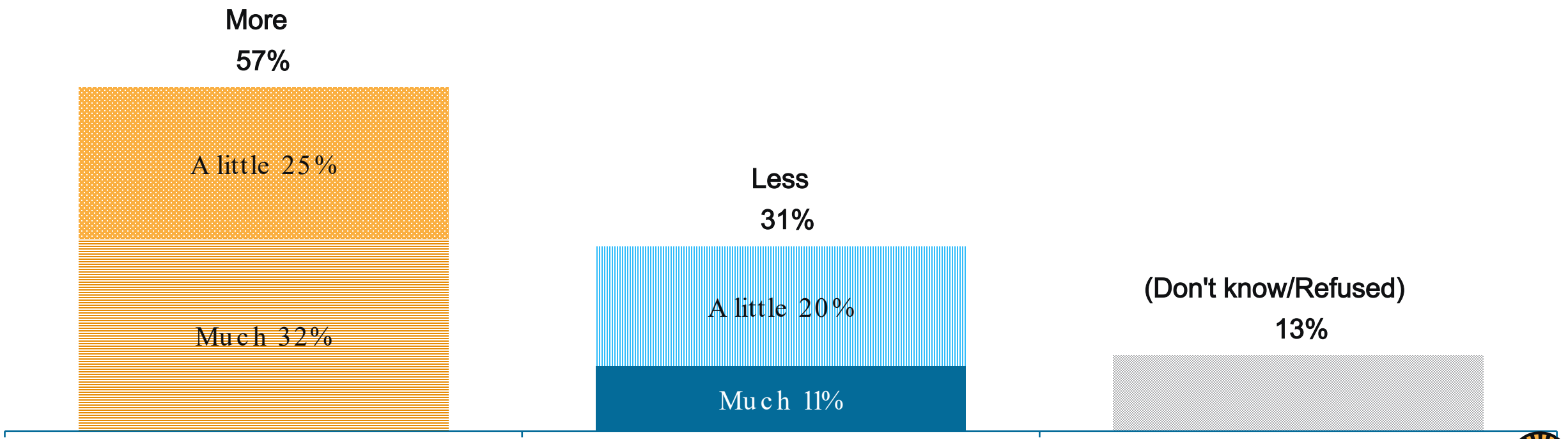
	%
Cost/Expensive/Against taxes	24%
Hurts low - income communities/Creates inequality	14%
How miles will be tracked/Implementation	12%
Mismanagement of funds	8%
General negative	4%
Adding tax instead of replacing/Gas tax will remain	4%
Don't trust government	3%
General positive	2%
Benefits larger polluting vehicles	2%
Other	11%
No opinion/Don't know	16%

(2021 public poll)

Personal Cost Perception

More than half think they would pay more under a road charge than they do now under the gas tax, with a third saying that they think they would pay much more.

Do you think you personally would pay more with a road charge than you do now with the state gas tax, or less with a road charge than you do now with the state gas tax?



(2021 public poll)

Focus Groups Spotlight: Personal Cost Perception

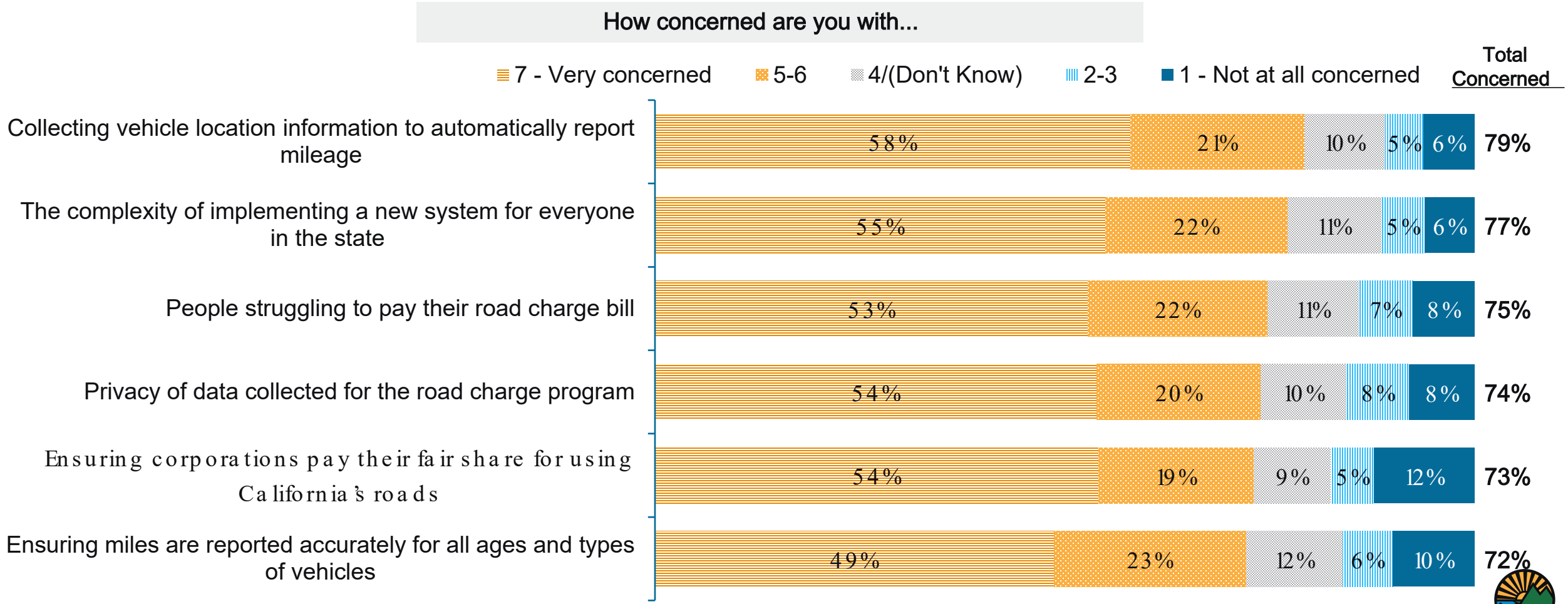
- Most assume they, along with nearly every other individual driver, would pay more under a road charge.
  - They were skeptical that the gas tax would be rescinded once a road charge was implemented.
  - Lack of acknowledgement of the role of large corporations in the solution led them to assume the burden was going to be increased only on individual drivers like themselves.
- Providing a set rate led to the assumption that it would increase over time, as they feel all tax rates do.

"I just kind of doubt that the fuel tax is going to go away. I can see it on the ballot now, should we replace the fuel tax or should we redirect these funds to something else. I feel like it would just be another way to get more taxes, but we would probably end up still paying a fuel tax." – Super commuter

"Rural people would pay more as well. And people who have hybrids, even not all electric ones, but people who have hybrids…My husband has a Honda Civic hybrid that gets 40 to 45 still miles to the gallon. He would pay more." – Northern CA rural driver

Road Charge Concerns

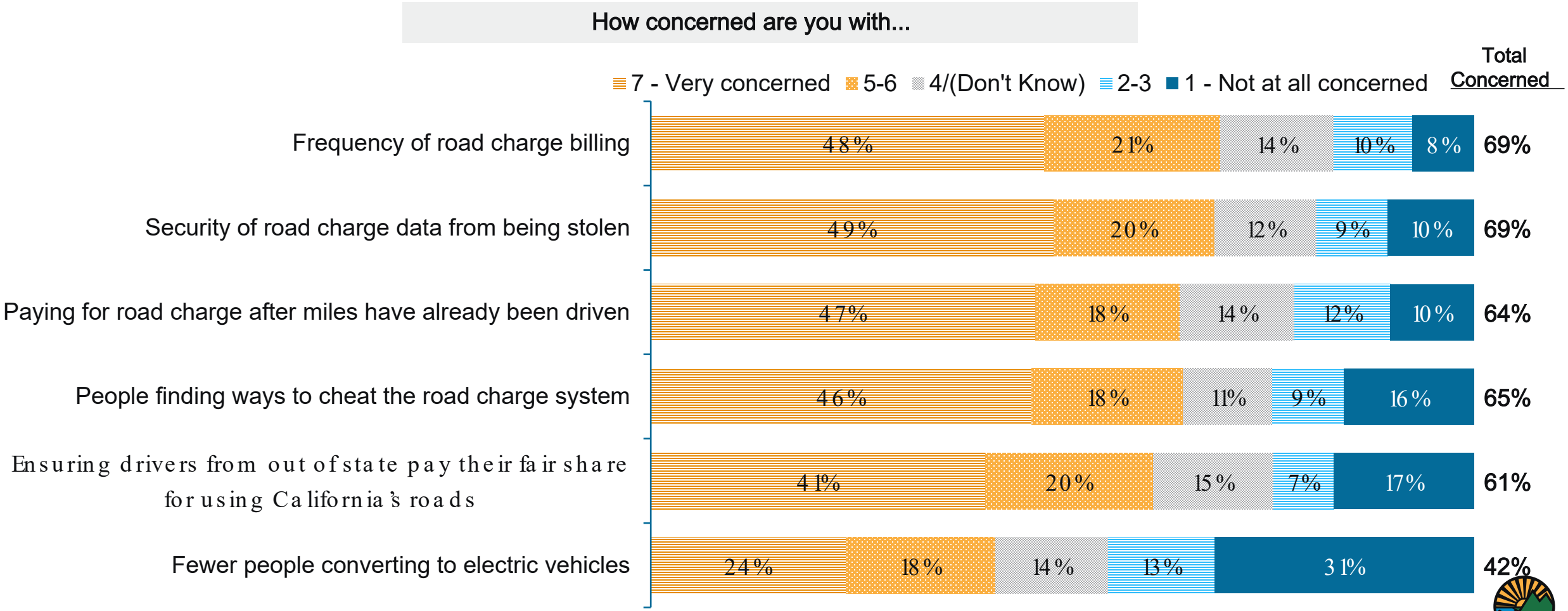
Privacy, complexity, equity, and accuracy, are all significant concerns about Road Charge.



When thinking about a Road Charge program for California, how concerned are you personally with each of the following items? (2021 public poll)

Road Charge Concerns

While some are concerned about slowing the rate of EV conversion, it is lower - level than other issues presented.



When thinking about a Road Charge program for California, how concerned are you personally with each of the following items? (2021 public poll)

Focus Groups Spotlight: Implementation Concerns

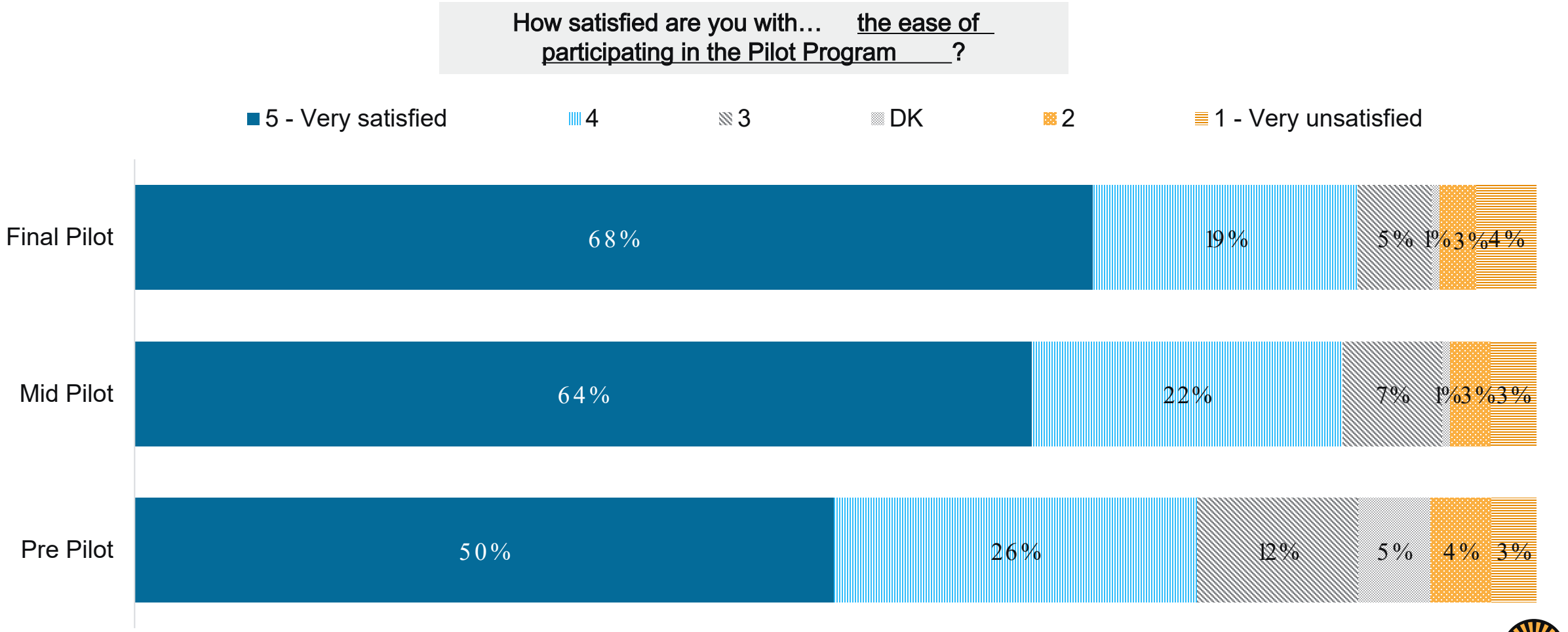
- Many focus group participants were concerned about the implementation details, particularly because many details were not available. These included:
  - Accuracy of data recording and reporting
  - Privacy of driver and location information
  - Potential for cheating or underreporting miles
  - What happens when drivers cross state lines (in either direction)
  - The timing and frequency of payments
- Additionally, participants were not confident this system could be implemented smoothly by the state, and it felt risky to move away from the mostly - functioning gas tax.

"I say bad idea because, only because there's no fair and good way to report these numbers. Then people from out of state, won't be paying. I don't see a way that they're paying money at all for the roads. I think it's a good idea in concept, but a bad idea overall, if you can't make those things work." – Northern California Driver

"Part of me wants to say it's a good idea, but part of me says that there's so many unanswered questions. I'm leaning more towards it's a bad idea. There's so much that we don't know. It's hard to make an informed decision at this point." – Northern California Driver

Satisfaction Ratings: 2017 Pilot Program

Among the participants in the 2017 pilot program, many shared some of the same concerns we see in this current work about complexity of implementation, but the experience helped assuage many of those concerns.

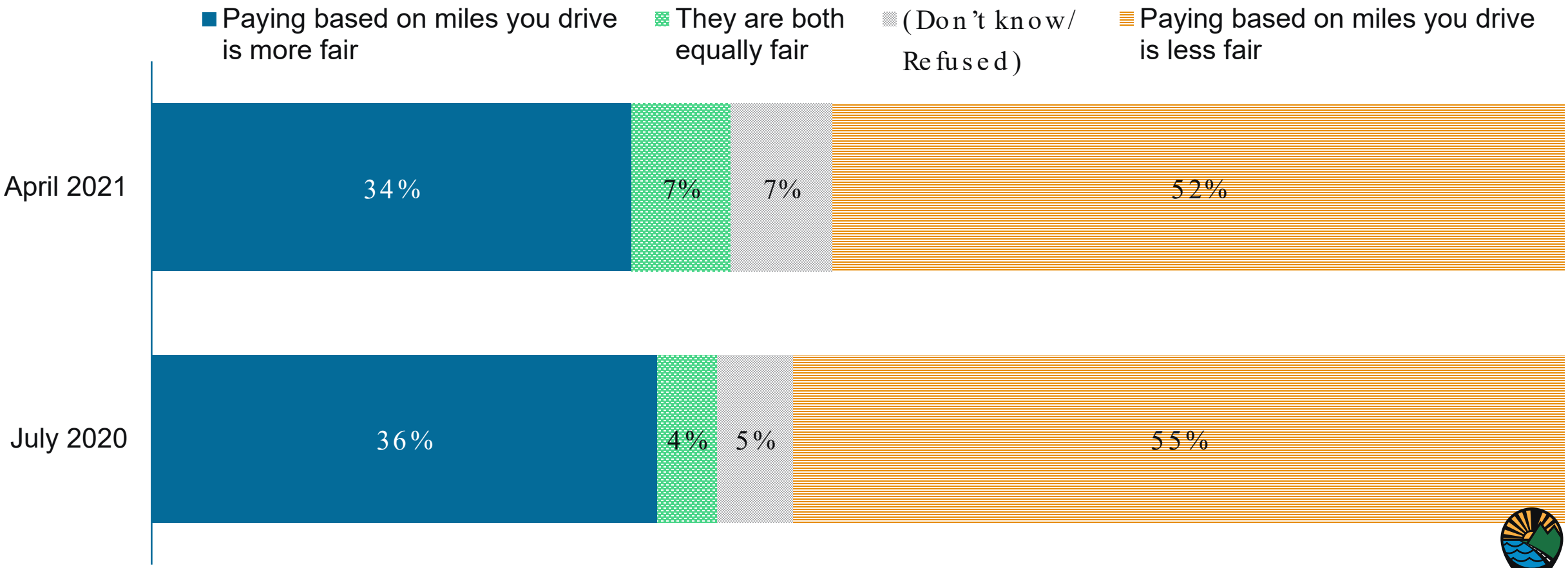


How satisfied are you with the following? (2017 pilot participant polls)

Fairness

About one - third of Californians feel a system based on miles driven is more fair than paying based on amount of gas purchased; about half feel the opposite.

Would you say that paying for road and freeway maintenance and repair based on the miles you drive is more fair or less fair than paying based on the amount of gas you buy?

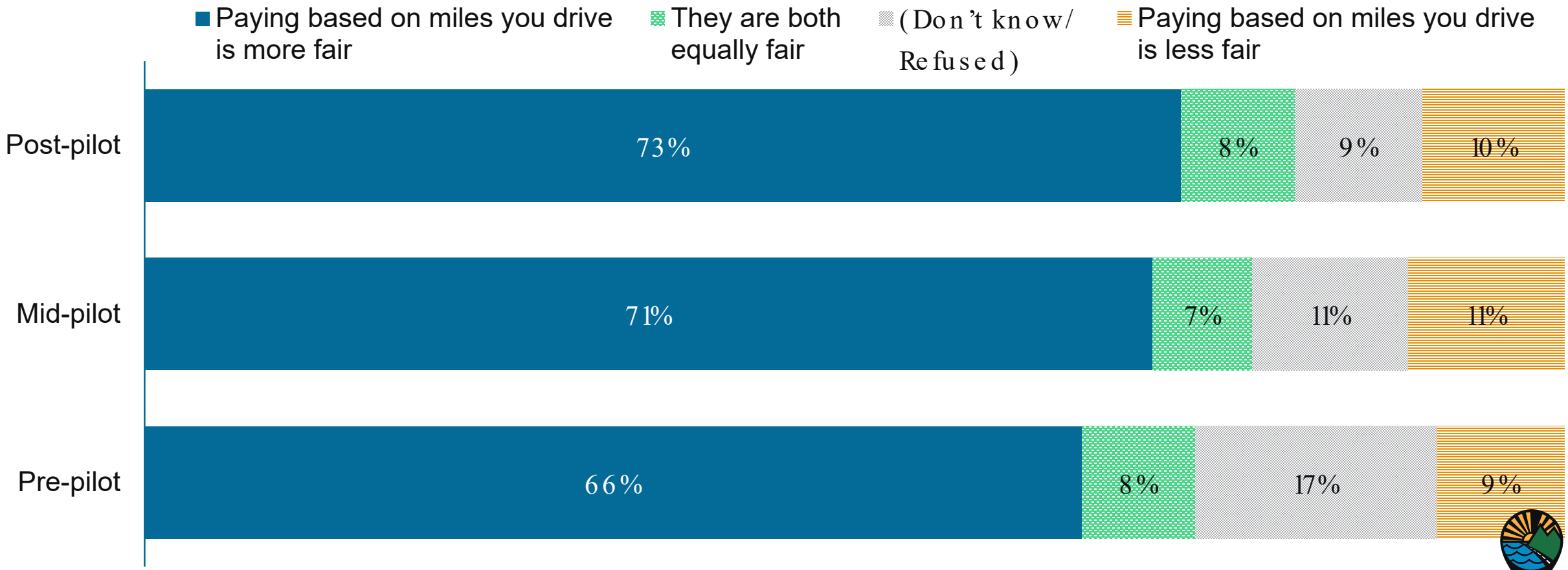


(2020 & 2021 public polls)

Fairness: 2017 Pilot Program Research

When asked the same question, most of the approximately 5,000 pilot program participants felt a mileage based model was more fair, and that attitude strengthened over the course of the pilot program.

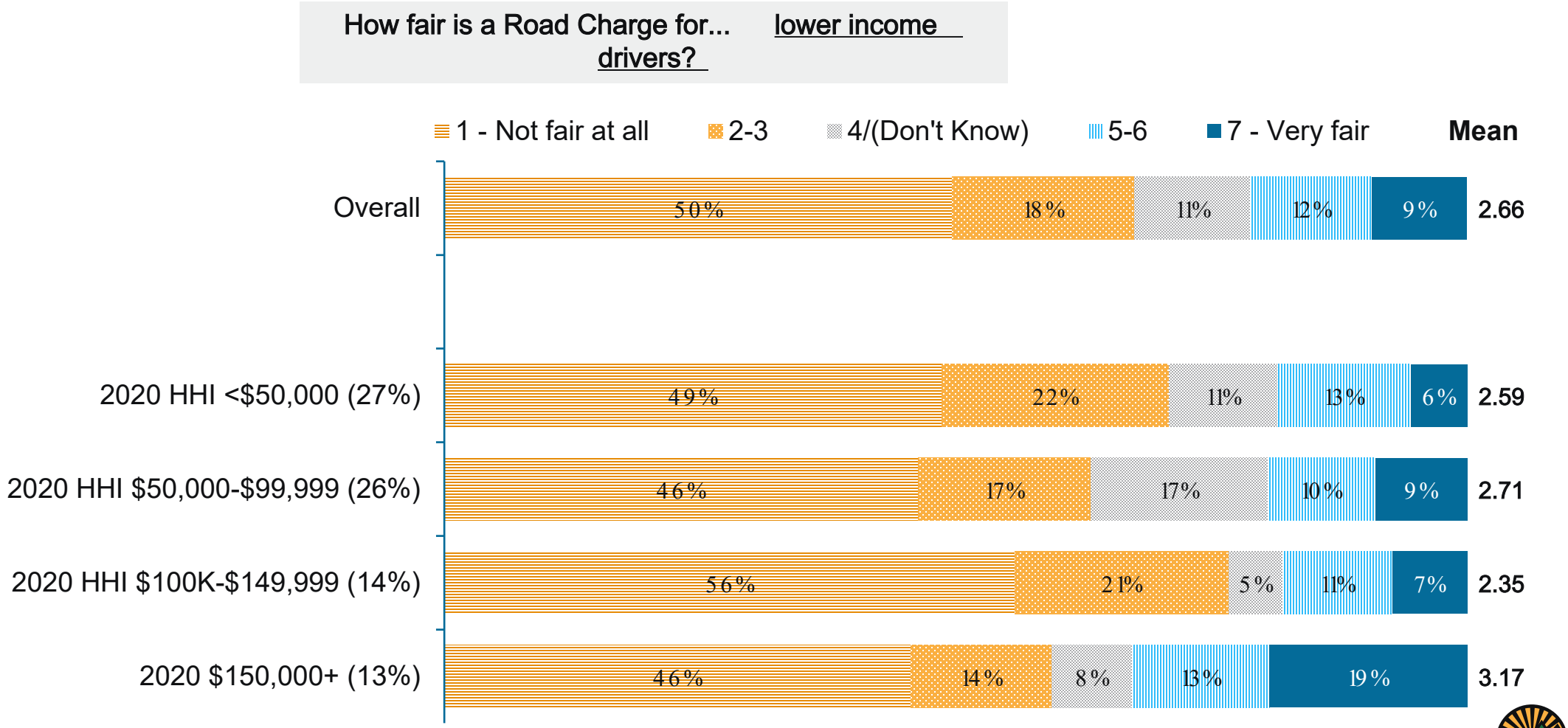
Would you say that paying for road maintenance and repair based on the miles you drive is more fair or less fair than paying based on the amount of gas you buy?



(2017 pilot participant polls)

Fairness for Lower-Income Drivers: Subgroups

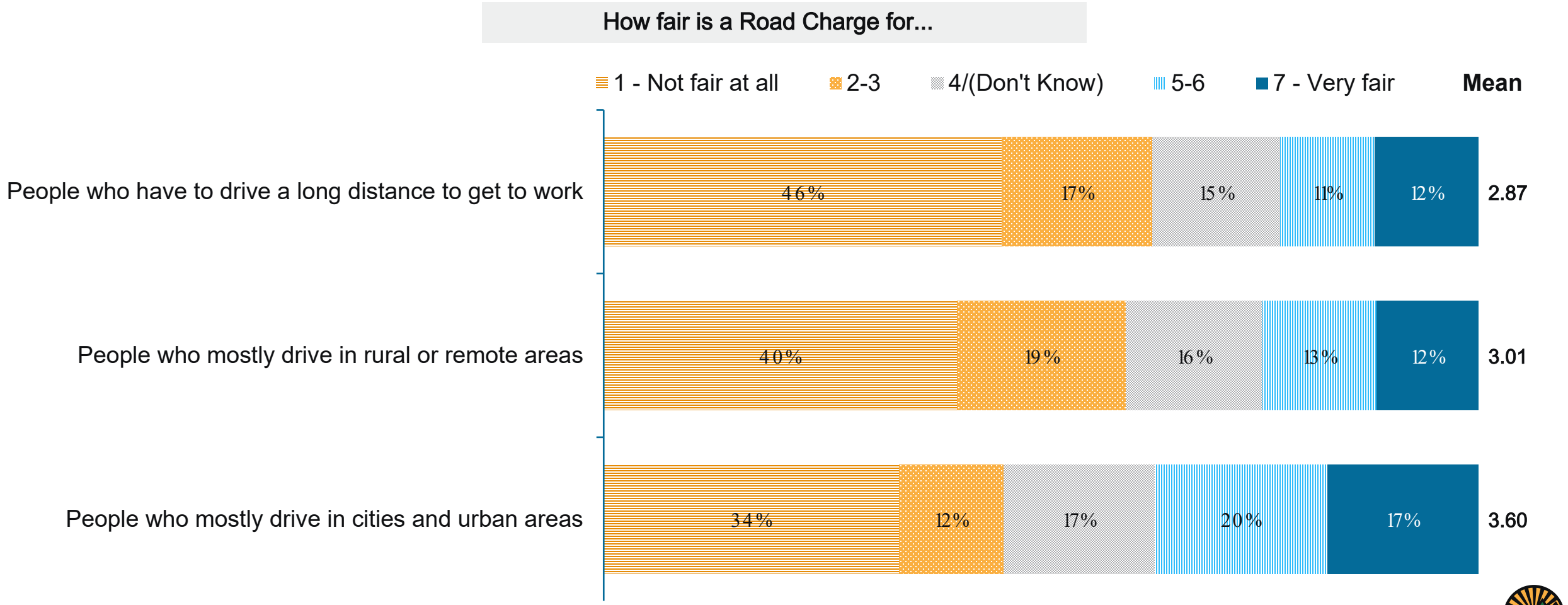
All drivers are concerned about the fairness of a Road Charge for lower-income drivers, regardless of their own income level.



(2021 public poll)

Fairness by Driving Patterns

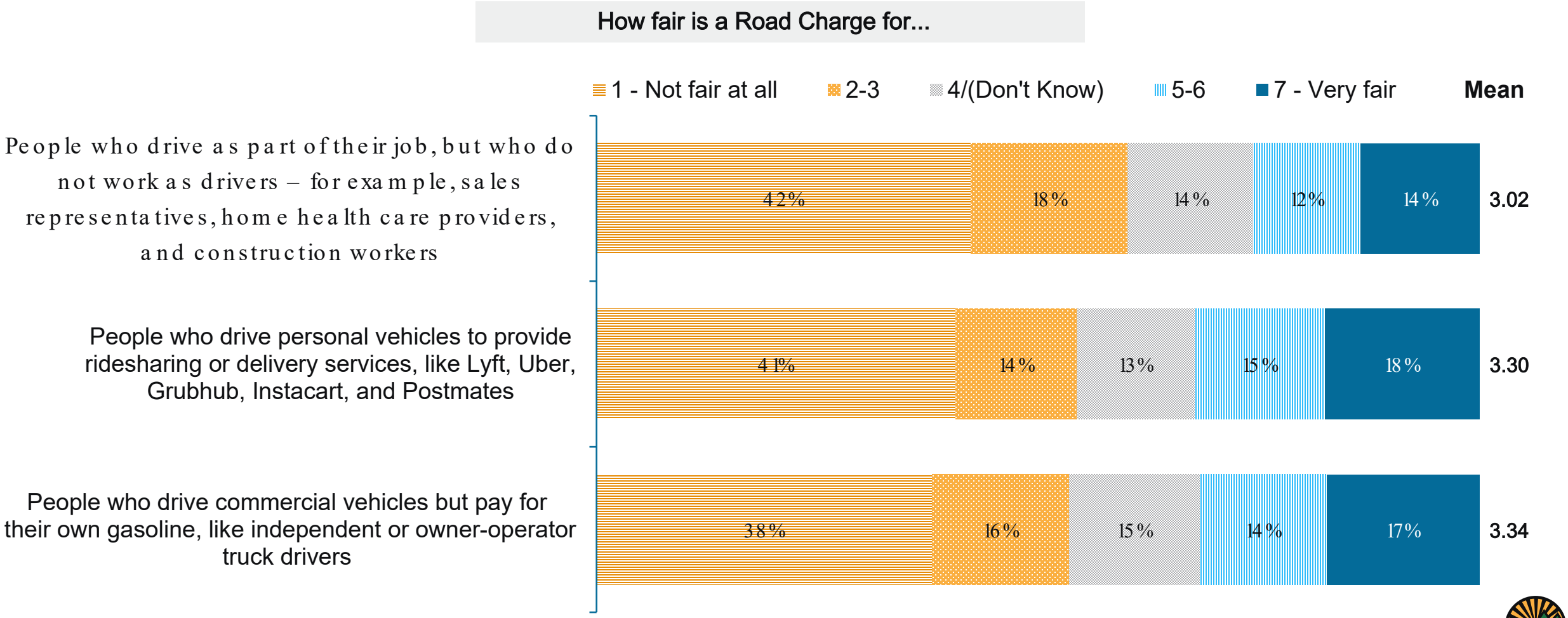
Concerns about fairness for people who drive long distances or in rural areas are higher than concerns about people who drive in urban areas



(2021 public poll)

Fairness by Driving Purpose

Residents are particularly concerned about fairness for people who have to drive as part of their job.



(2021 public poll)

Focus Groups Spotlight: Equity

- Equity in distribution of costs was a key concern in the focus group conversations, especially for lower-income workers who have longer commutes.
  - It was not immediately obvious that the gas tax already means those who drive more pay more, but once that was established many were concerned about create a new system that they felt would carry over that same inequity.
  - Most participants concluded that for a road charge to be fair, it needed to find a way to relieve the burden on those who they felt had the fewest choices (such as lower income residents, long-distance commuters, and those who had to have multiple jobs to get by).
- Key to the equity conversation was acknowledging the role and responsibility of commercial interests that make money by using public roads – without that acknowledgement, focus group participants had a hard time accepting a Road Charge as a more equitable solution than the status quo.

"Oftentimes you have to live way further out from the city because it's cheaper and you have to drive all the way to the city or to the main area because you cannot live closer to where you want. And then it would be a double punishment in the sense that you cannot live closer to your work because it's more expensive to afford living there. And in addition to that, you have to commute two, three hours, whatnot." – SF Bay Area Driver

"I feel it's going to contribute more to the economic divide, the wealth inequality. I think corporations are going to find loopholes and the little guy's going to end up stuck with the bill." – Northern California Driver

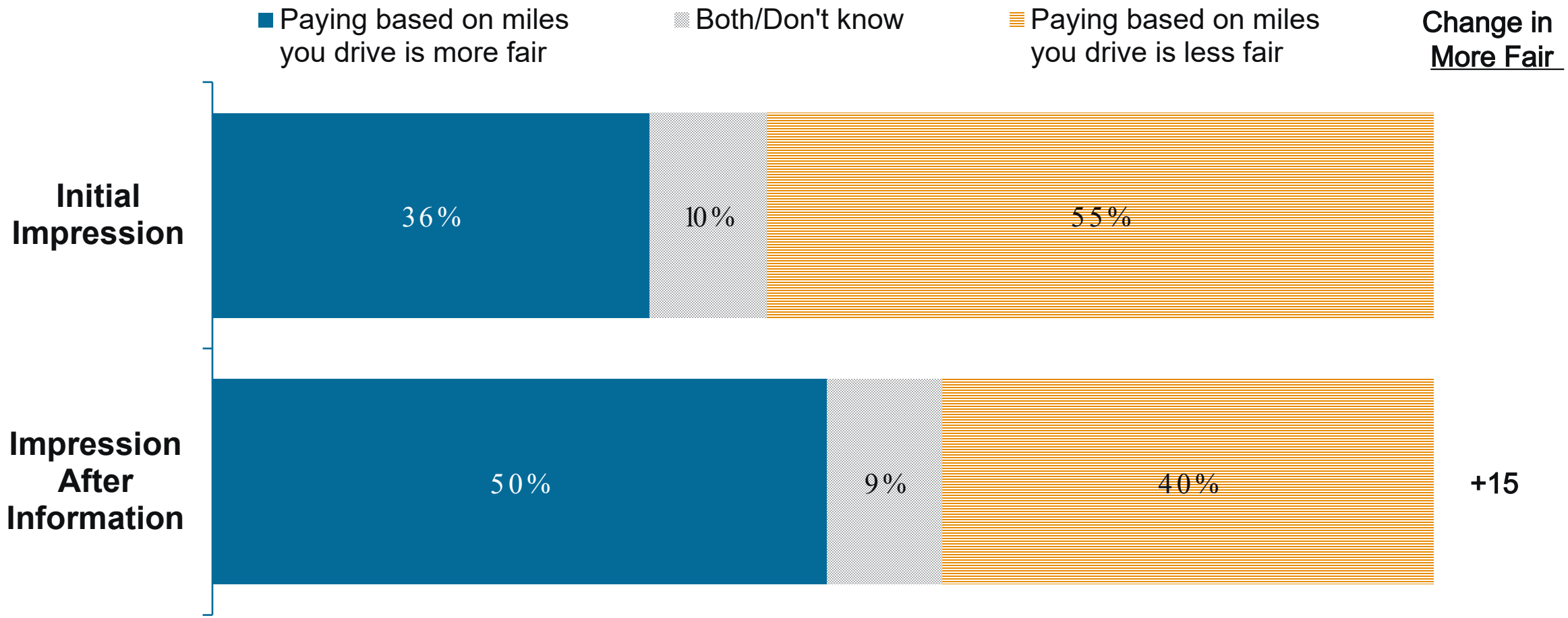
Focus Groups Spotlight: EVs and EV Drivers

- EV drivers in the focus groups did feel that they should be paying into road maintenance in California in some way, and some expressed frustration there was no mechanism for them to do so.
- There was concern in some of the focus group (not just among EV drivers) that imposing the same level of fee on EVs as gas/diesel vehicles would be seen as a "punishment' for the very people who had purchased a more costly vehicle for the benefit of the environment and the collective good.
- However, they also recognized the need for EVs to contribute to the maintenance of the transportation system.
- Many incorrectly assumed that lower fuel and fuel tax costs were the most powerful incentive for people to switch to EVs, and were worried about a Road Charge slowing the adoption of EVs.

"Why are we punishing those people for trying to make it economical and improving the environment so we can be equal because we're all using the road? Well, you can make the choice too, you could have made the choice to drive an electric car. You didn't because you can't afford it or whatever other reasons." – Central Valley Driver

Fairness After Additional Information

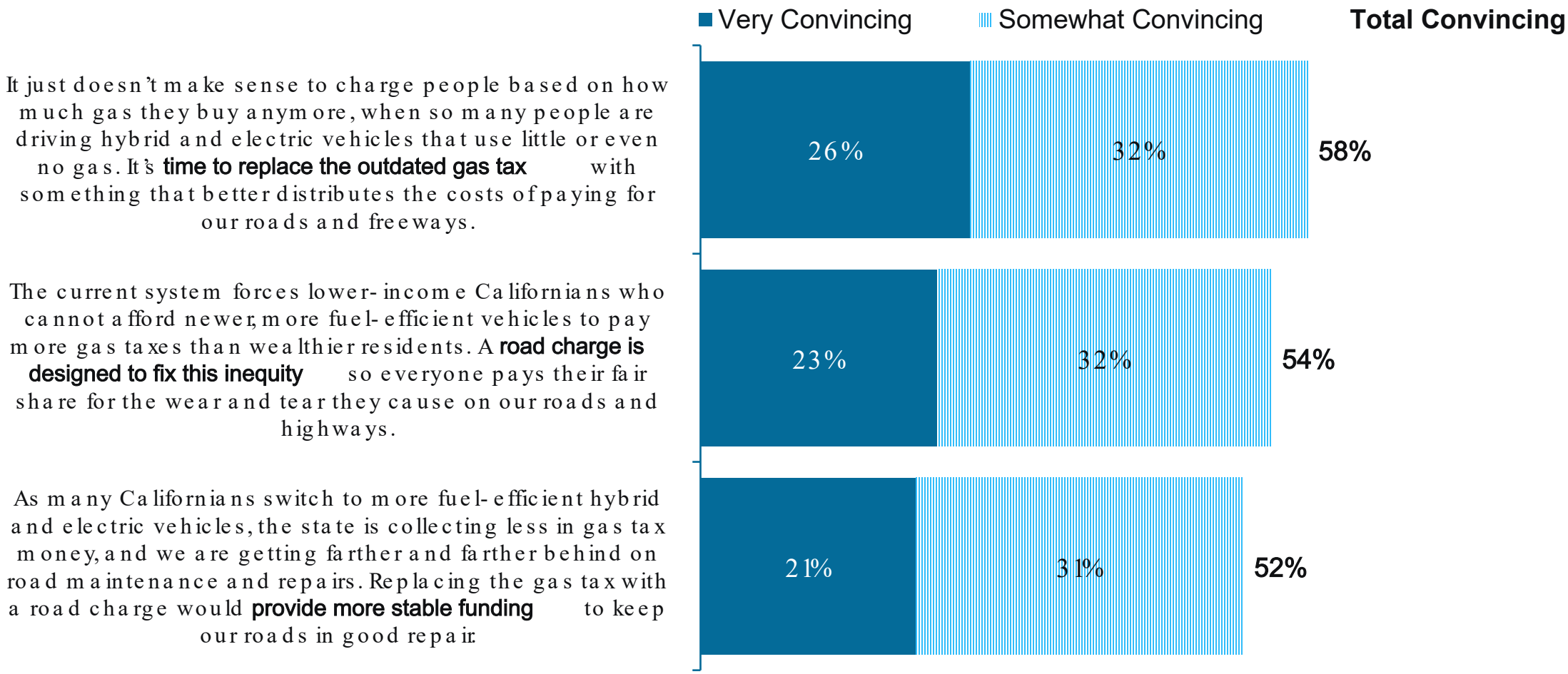
Information also helps shift perception that a mileage - based charge is more fair than a charge based on fuel purchased.



And would you now say that paying for road and freeway maintenance and repair based on the miles you drive is more fair or less fair than paying based on the amount of gas you buy? (2020 public poll)

Additional Information

The idea that the gas tax is outdated is the most convincing reason to support replacing it with a road charge; discussing equity and stable funding are also compelling to more than half of Californians.

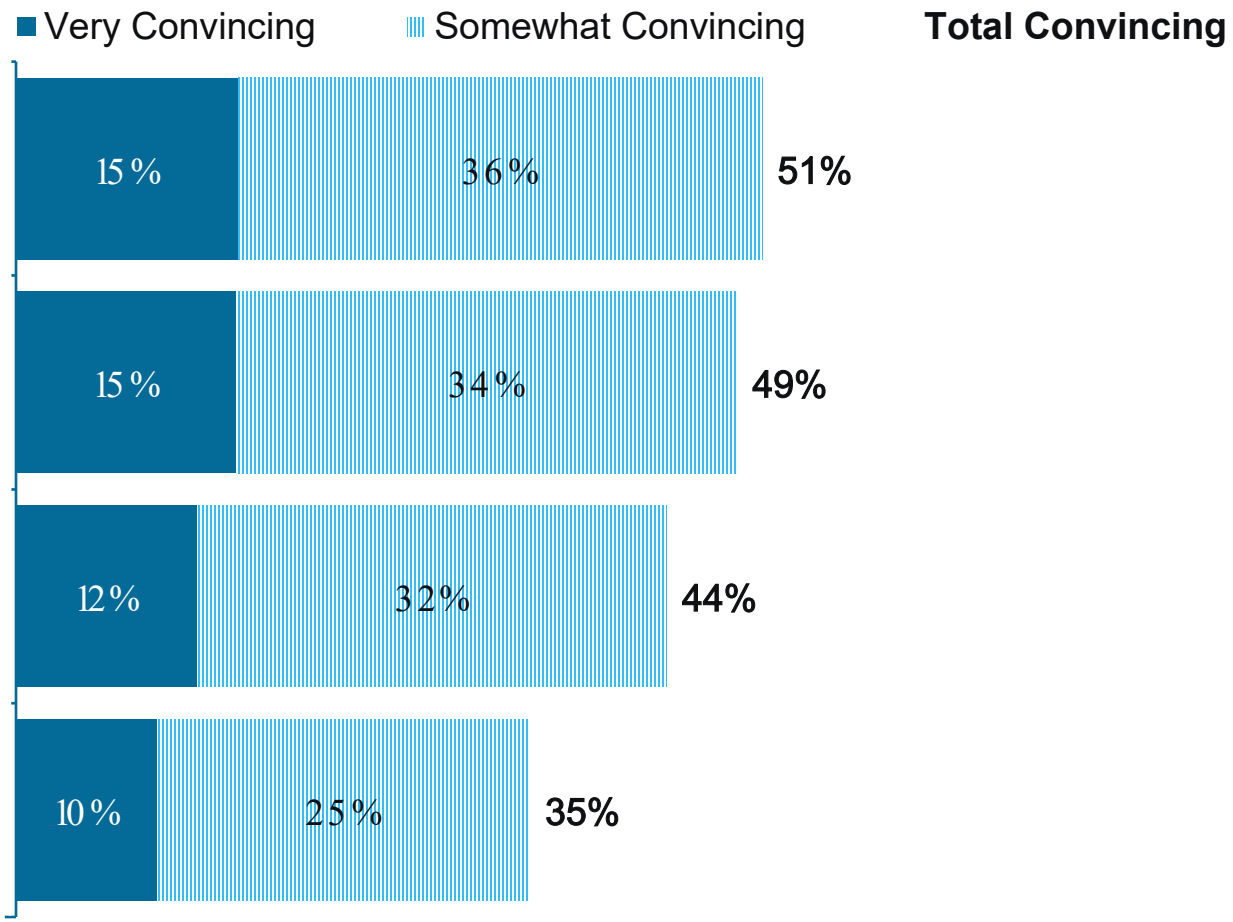


How convincing is that information is as a reason to support replacing the gas tax with a road charge? (2020 public poll)

Additional Information *(cont.)*

Other information is less compelling, such as likening the data security to the banking industry, and talking about rideshare and taxi drivers being able to pass costs on to their fares.

California is leading the way on developing **new and innovative** ways to move around the state. We need a way to fund road and highway improvements that can adapt to our ever-changing transportation patterns, choices, and technology.



How convincing is that information is as a reason to support replacing the gas tax with a road charge? (2020 public poll)

Research Conclusions To Date

- **There is not a perceived need to replace the gas tax among the general public**. There is a need to continue and improve funding for road and highway maintenance, but most accept the gas tax model as the way to do that, and are not aware of the revenue shortfalls or inequitable distribution of burden the gas tax model presents.
- With information, **the public can accept that the gas tax is outdated, inadequate, and unsustainable**, and be ready to consider solutions.
- However, **Road Charge as a replacement for the state gas tax is not immediately embraced** as the solution to the challenges presented by the gas tax. There are many concerns about cost impacts, equitable distribution of cost burden, and implementation details.

Summary of Road Charge Concerns

The public's concerns about Road Charge are wide-ranging, with many based on incorrect assumptions where information is not provided:

- Most **assume it will cost everyone more**, and will have the most significant cost impacts on lower income residents, rural residents, and those with longer commutes.
- Drive more/pay more brings **equity concerns**; the groups perceived to drive the most are generally assumed to be those who can least afford a significant increase in the cost of driving, like gig economy drivers, long-haul commuters who cannot afford to live close to their jobs, rural residents in areas not well-served by transit, people who need to work multiple jobs to get by.
- Without a clear story on implementation details, many **assume the worst** (large and infrequent Road Charge bills that are hard to plan for, intrusive technology that compromises privacy, policy gaps that allow people to evade the charge, residents getting charged for miles driven outside the state, non-residents **not** getting charged for miles driven inside the state, and so on).
- Only discussing individual drivers and vehicles leads many to assume **businesses are not considered part of the solution**, and that undermines the perception that this is a "fair" approach.

Communications Considerations

- Emphasizing the shortcomings in the existing gas tax model is a critical first step toward helping the public see the need for a replacement system.
- However, the public's concerns about Road Charge are wide-ranging, with many based on assumptions where information is not provided.
- Given the desire to be as open as possible to future Road Charge policy and implementation options, communications around the following principles can be effective:
  - Emphasizing the need to replace an outdated revenue model that is not meeting the state's needs.
  - Elevating the state's commitment to a solution that addresses perceptions about equity for lower income residents, implementation concerns about complexity and privacy, and how it will support continued shift to EVs.
  - Acknowledging that passenger vehicles are only part of the problem and solution, and the state is also working with other road users (business/corporations, TNCs, delivery trucks), to support a shared solution.

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