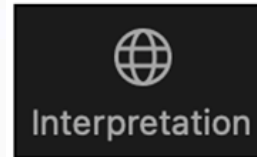


Welcome! ¡Bienvenidos!

Simultaneous interpretation is being provided – English speakers may need to select English as their language.

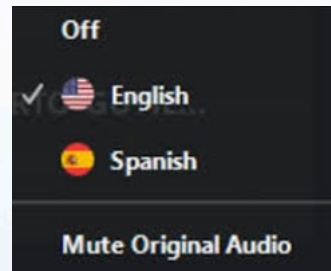
Accessing Zoom from a computer

- Click the globe icon located at the bottom of the screen
- Choose **English**



Accessing Zoom from a smart phone

- Click the **3 dots (more)** on the bottom right side of the screen
- Choose **Language Interpretation**
- Choose **English**
- Press **Done** on the top right side of the screen



Interpretación simultánea al español disponible – los hispanohablantes deben seleccionar su idioma.

Entrando a Zoom por computadora

- Haga clic en el símbolo del globo terráqueo en la parte inferior de la pantalla
- Selecciona **Español**
- Apague el **Audio Original** (para solo escuchar una voz)

Entrando a Zoom por un teléfono inteligente

- Haga clic en los **3 puntos** encima de la palabra **more o más** en la parte inferior derecha de la pantalla
- Selecciona **Interpretación**
- Selecciona **Español**
- Haga clic en **Done** o **Finalizar** arriba y de lado derecho de la pantalla



Clean Transportation Equity and Light-Duty Vehicle Investments

Public Work Group: August 6, 2024

Today's Agenda

Time	Session
9:00 - 9:20 a.m.	Introduction and Overview
9:20 - 10:10 a.m.	Light-Duty Vehicle Purchase Incentive Projects
10:10 - 10:25 a.m.	Break
10:25 - 10:50 a.m.	Sustainable Community-Based Transportation Equity Projects
10:50 - 11:15 a.m.	Program Evaluation
11:15 - 11:25 a.m.	Next Steps

Introductions



Link: <https://www.menti.com/blr5mqnn8ece>

Access Code:

Clean Transportation Incentives Funding Plan Purpose

- Annual detailed guide
- CARB Staff recommend how to allocate funds appropriated through State Budget for current Fiscal Year
- Outlines policy drivers and vision for investments
- Develops plan that meets community needs and agency goals

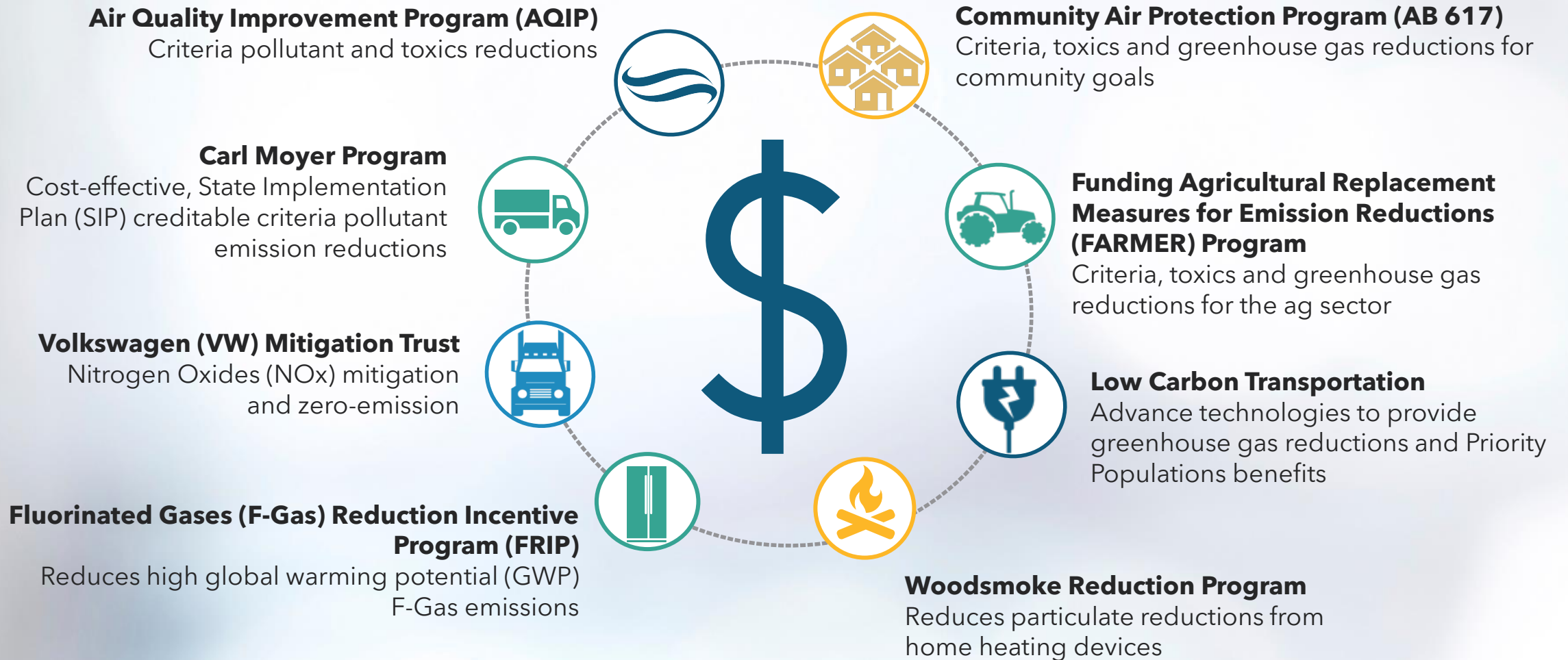


State Budget & Funding Plan Process Overview

General Timeline



CARB Incentive Programs



Comments and Questions on the Introduction



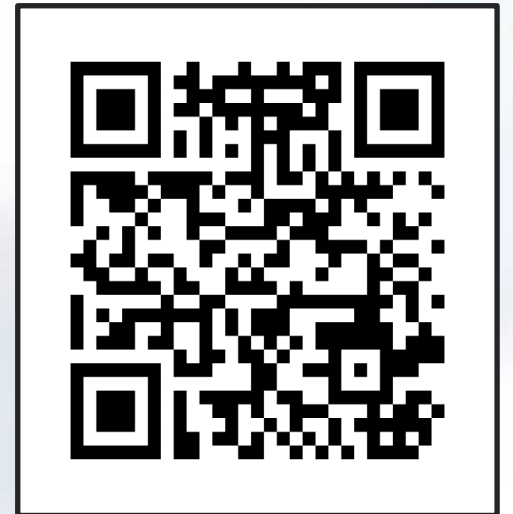
Raise your hand or use the raised hand function (#2 if calling in by phone)



Please state your name and affiliation, if any, before asking a question or making a comment



You may also email questions to CleanTransportationIncentives@arb.ca.gov



Mentimeter Access Code:

Zero-Emission Assurance Project (ZAP)

Background on ZAP

Established by
Assembly Bill 193

Helps lower-
income
Californians
reduce risk of
buying an
unreliable used
zero-emission
vehicle

Rebate for
replacement of
battery or fuel cell
component

Mentimeter



Link: <https://www.menti.com/blr5mqnn8ece>

Access Code:

Initial ZAP Research: Battery Replacement

New research
on battery
replacement¹

- Replacement rate for vehicles older than 2015: **13%**
- Replacement rate for vehicles 2016 and newer: **less than 1%**

Financing
Assistance
Pilot and
Clean Cars 4
All provided
10,500 used
vehicles

- ~**3,700** used vehicles are model year 2015 and older
 - 485 vehicles estimated to need battery replacement
- ~**6,800** used vehicles are model year 2016 and newer
 - 70 vehicles estimated to need a battery replacement

Initial ZAP Research: Manufacturer Warranty

Average vehicle manufacturer warranty for battery and fuel cell components: 10 years or 100,000 miles



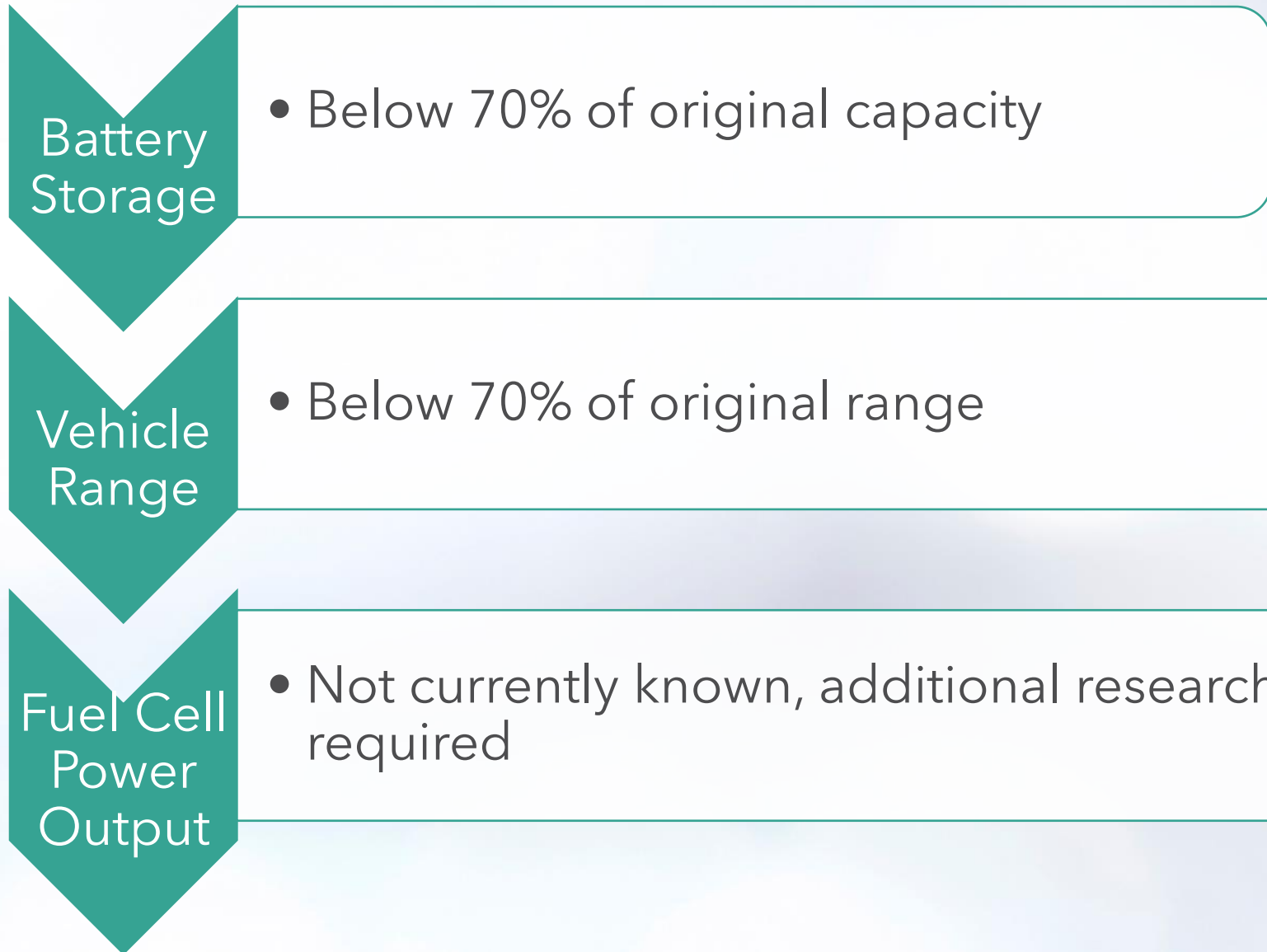
Ranges from 8 years/100,000miles to 10 years/150,000 miles



Not all manufacturer warranties are transferrable to the secondary buyer

Initial ZAP Research: Battery or Fuel Cell Failure Thresholds

**Decreases
noted in:**

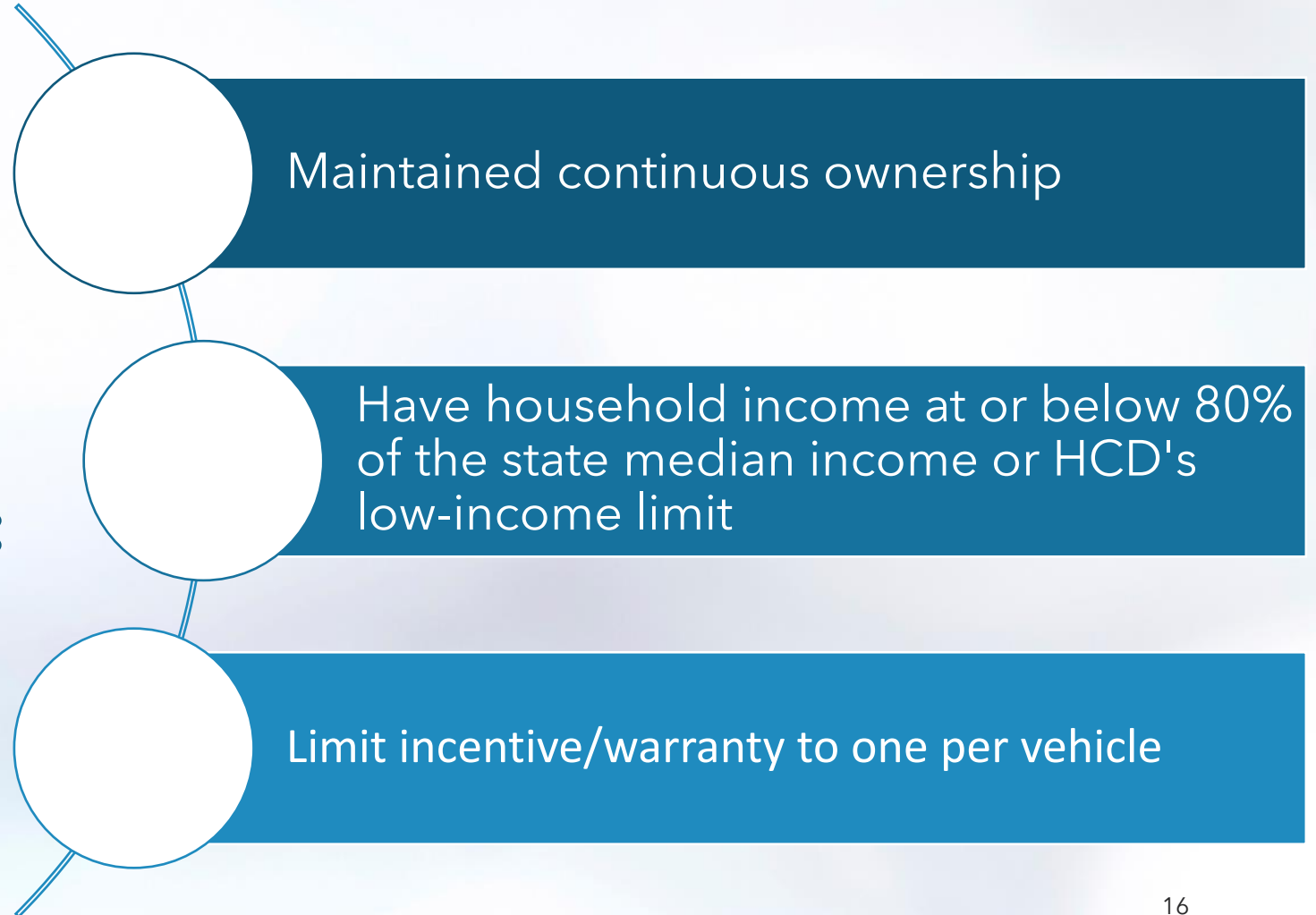


ZAP Data Collection Pilot Findings & Recommendations

- Collected data from 12 plug-in hybrid and 12 battery electric vehicles over a 9-month period
- 7 vehicles were identified with a State of Health (SoH) value below 80% (all plug-in hybrid vehicles)
- Recommendations:
 - Adopting a standard methodology for calculating SoH is paramount
 - Repurposing Replaced Batteries
 - Equitable Workforce Development

Discussion of Potential ZAP Policies: Participant Eligibility

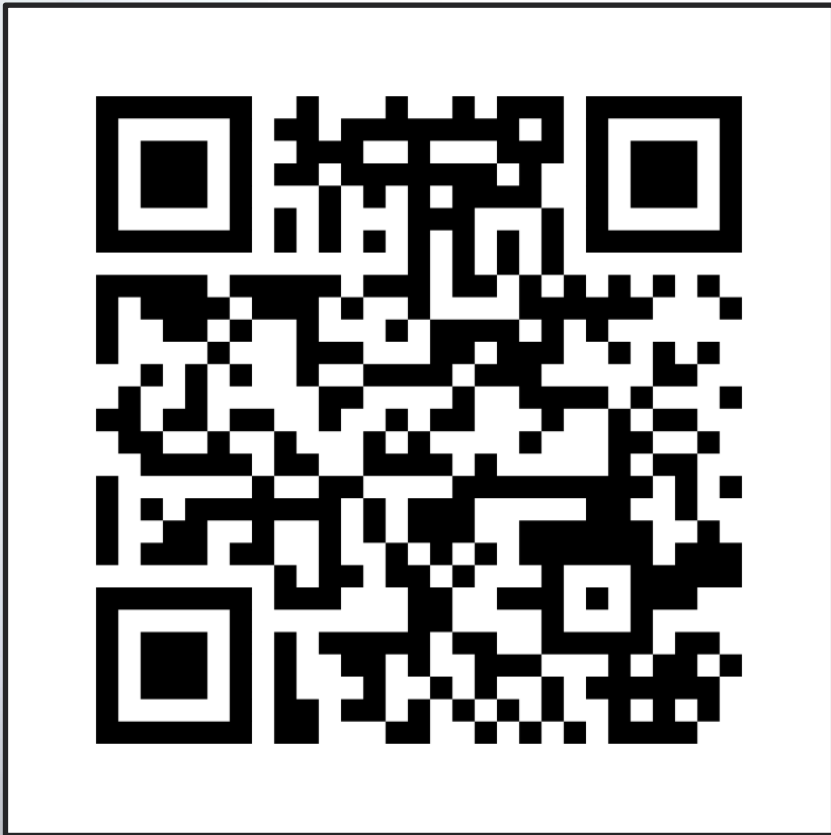
Anyone who has participated in CARB's Clean Cars 4 for All or Financing Assistance programs are eligible if:



Discussion of Potential ZAP Policies: Vehicle Coverage and Rebate Amount

- Fifteen years after the date of manufacture or up to 200,000 miles, whichever comes last.
- Rebate up to \$7,500 to replace premature failure of batteries or fuel cell components, including labor, OR
- Grant equivalent up to \$7,500 to purchase a new or used clean vehicle.
 - Stackable with any other local or federal incentive programs. Not stackable with CARB vehicle purchase incentive programs.
 - Older vehicle donated to community college automotive technician programs to assist with workforce training.

Mentimeter



Link: <https://www.menti.com/blr5mqnn8ece>

Access Code:

Discussion of Potential ZAP Policies: Battery Component Recycling and Disposal

- Following recommendations from the [Lithium-Ion Car Battery Recycling Advisory Group Final Report](#)
 - Advises on policies pertaining to the recovery and recycling of lithium-ion vehicle batteries for vehicles sold in the state
 - Coalition of representatives from state agencies, the auto industry, environmental community, auto dismantlers, those involved in the manufacturing, collection, processing and recycling of electric vehicle batteries, and others
- Exploring options for re-use, refurbishment, or repurposing before recycling battery and fuel cell components
- Ensuring proper disposal of battery and fuel cell components

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Link: <https://www.menti.com/blr5mqnn8ece>

Access Code:

Initial Thinking on How ZAP Would Work

Route 1: Battery Repair/Replacement



*Participant responsible for repair costs exceeding \$7,500

Initial Thinking on How ZAP Would Work

Route 2: Vehicle Replacement

Participant suspects battery issues. Checks eligibility and begins app with ZAP



Participant goes through ZAP-approved repair shop or FCCC auto tech program for vehicle diagnosis



Participant decides to replace vehicle instead of repairing it

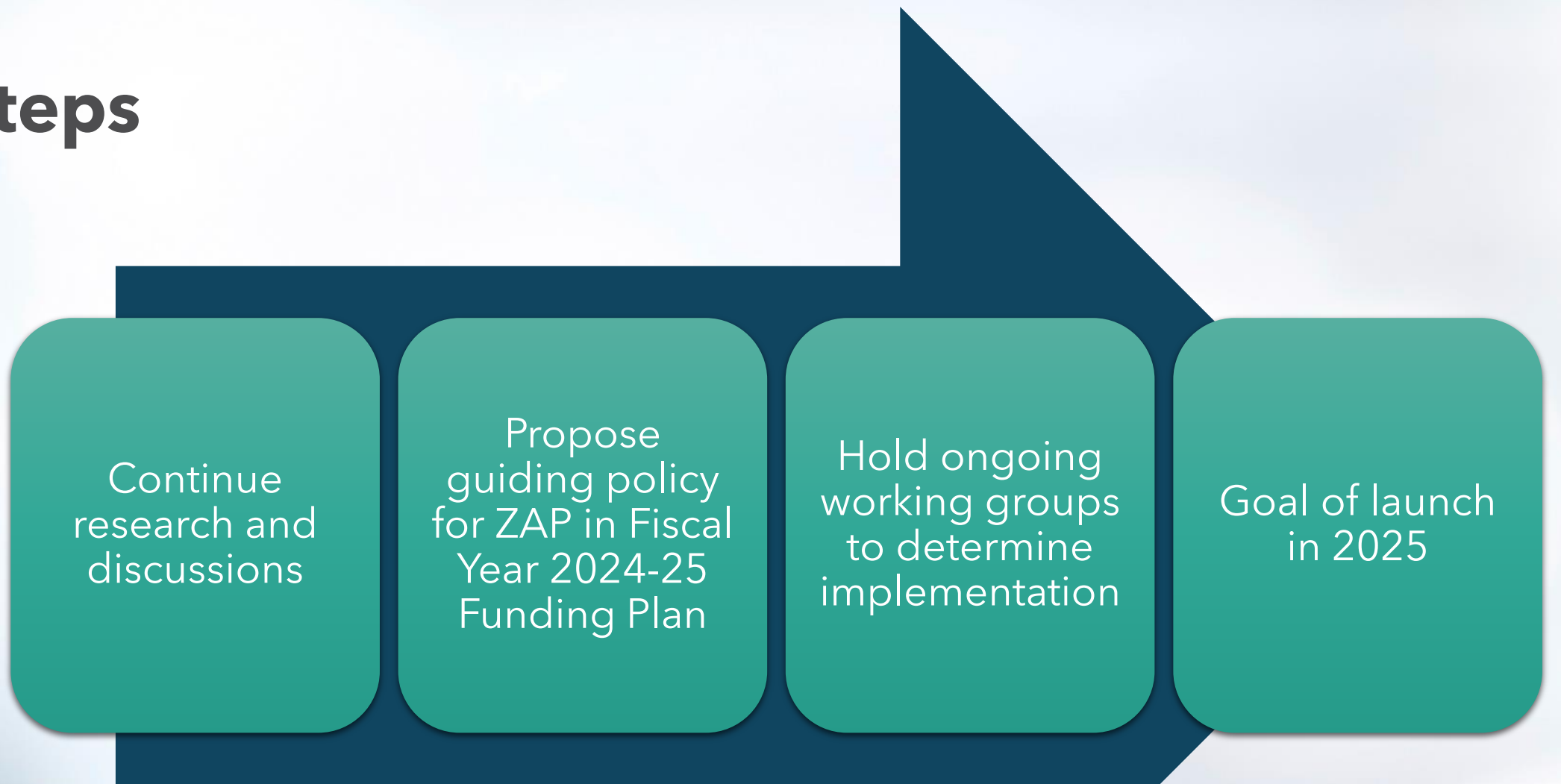


Upon application approval, Participant goes through DCAP dealer network to purchase replacement vehicle (purchase grant up to \$7,500)



DCAP donates replaced vehicle to FCCC auto tech programs for zero-emission vehicle workforce training

Next Steps



Comments and Questions



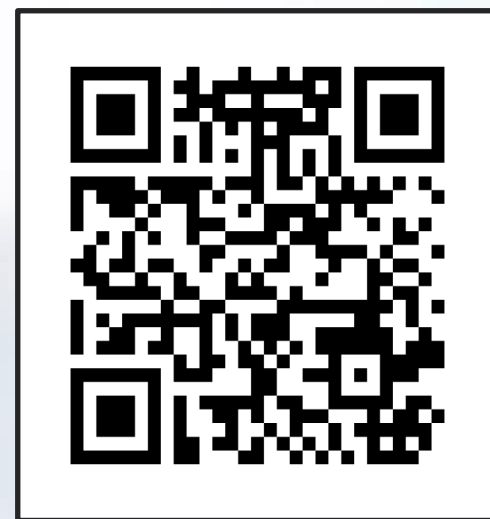
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Mentimeter Access Code:

Electric Vehicle Affordability and Incentive Amounts: 2024 Update

CARB Workshop for Funding Plan for Clean Transportation Incentives
August 8, 2024

John Anderson, Transparency and Insights, Center for Sustainable Energy
With thanks to Christian Sheja, Regina McCormack, Janet Bowers, Keir Havel, Stephanie Wilson, Ben MacNeille, and others at CSE



Affordability calculation purposes

Does a given incentive mix enable meaningful affordable vehicle choice for consumers?



Outline



Cost Calculations



Affordability calculations overview



Results



Cost assumptions, inputs, and sensitivities

Vehicle costs for 2024



Vehicle Costs

Average cost of new EVs: \$50,798

Average cost of used EVs: \$30,000 to \$35,000

Source: [Find My Electric](#)

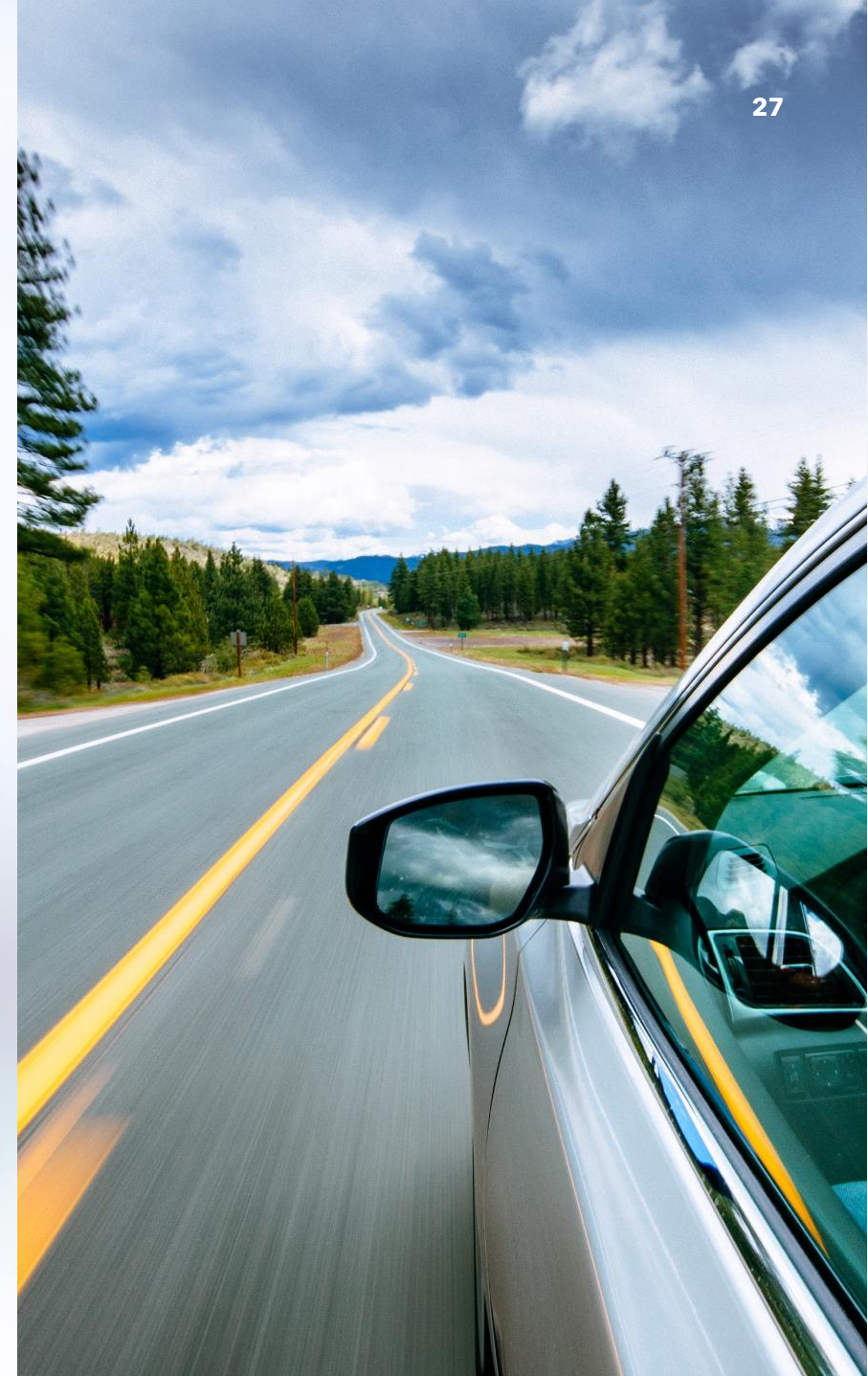
Market context important to affordability conversation

- New vehicle prices have stabilized during past year*
- Used vehicle prices have fallen
- EVs generally remain more expensive than conventional vehicles
 - Average new vehicle: \$48,644*
 - Average used vehicle listing price: \$25,670‡
- New EV incentive programs aimed at lower-income consumers must overcome EV cost premium AND higher new vehicle costs to make vehicles affordable

* <https://www.coxautoinc.com/market-insights/june-2024-atp-report/>

† <https://www.coxautoinc.com/market-insights/mid-july-2024-muvvi/>

‡ <https://www.coxautoinc.com/market-insights/used-vehicle-inventory-may-2024/>



What do we mean by “affordable”?

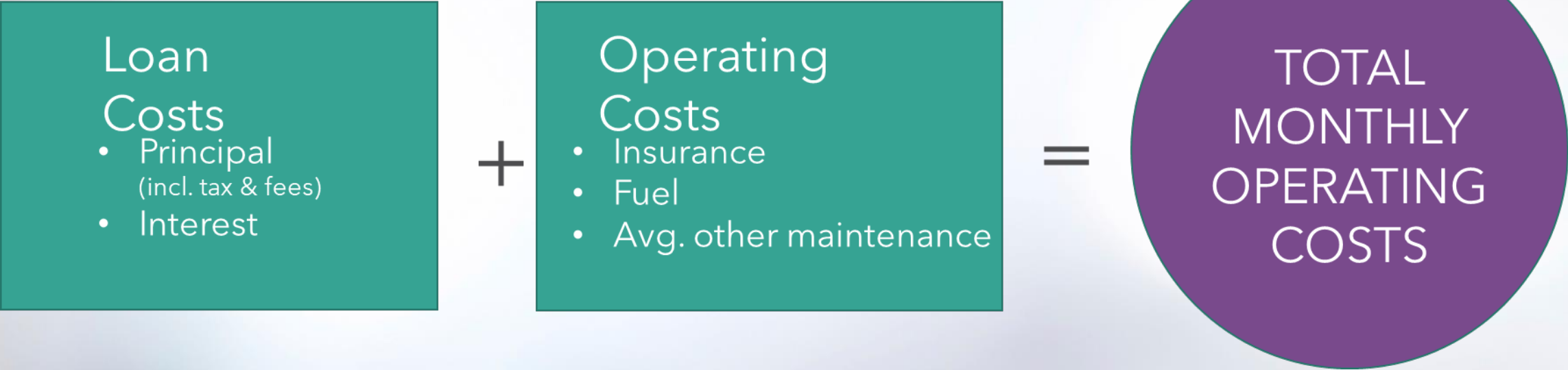
Affordability calculations

TOTAL
MONTHLY
OPERATING
COSTS

$$< \left(\frac{15\% \text{ of monthly income}}{\text{household purchase power adjustment}} \right)$$

- 10% down payment
- 5-year (60-month) loan

Cost calculations



Maximum monthly cost

Including interest, insurance, fuel, and lifetime-average maintenance costs for a four-person household:

Income Level	Income	Max Monthly Cost
225% of FPL	\$70,200	\$439
300% of FPL	\$93,600	\$585
400% of FPL	\$124,800	\$780
600% of FPL	\$187,200	\$1,170

Vehicle inputs

New

- 2024 model year vehicles from FuelEconomy.gov
- Make, model, and trim combinations where trim is related to electric range
- Where price information is available

Used

- 2021 and earlier model year vehicles
- Where vehicle is present in the fueleconomy.gov database
- Model year, make, model, and trim combinations where trim is related to electric range
- Where price information is available



Photos from Kelley Blue Book

Vehicle cost assumptions

- Vehicle cost: MSRP or KBB Fair Purchase Price without options
- Interest rates: new - 7.1% and used - 11.7%
- Insurance premium: \$337/month
- Maintenance: \$74/month (lifetime average)
- Registration fees: new - \$641 and used -\$75
- Sales tax rate: 8.75% (average via CA Department of Tax and Fee Administration)
- Fuel costs: varies by vehicle, based on FuelEconomy.gov (electricity and gas)
- Purchasing power adjustment for larger households



Not accounted for

- Cost of installing vehicle charging infrastructure at home, if applicable
- Financial flexibility to make a cash down payment or sufficient trade value from other vehicles
- Access to credit assumed regardless of credit score



Affordable New Vehicles

CC4A + Interest Cap + FTC does not enable affordable options for new EVs

- Four-person household
- \$93,600 income (300% FPL)
- \$9,500 PHEV and \$10,000 BEV CC4A incentive applied to down payment
- 8% interest rate cap applied through Finance Assistance
- Up to \$7,500 FTC applied to down payment

New 2024 Model Year Options = 0

	Vehicle Technology	
Vehicle Size	BEV	PHEV
Small	0	0
Large	0	0

Affordable Used Vehicles

There are six affordable used EV options without incentives

- Four-person household
- \$93,600 income (300% FPL)

Used EV Options = 6 (4 models)

	Vehicle Technology	
Vehicle Size	BEV	PHEV
Small	6	0
Large	0	0

Addition of CC4A incentive adds 60 options

- Four-person household
- \$93,600 income (300% FPL)
- \$9,500 PHEV and \$10,000 BEV
CC4A incentive applied to down payment

Used EV Options = 66 (19 models)

	Vehicle Technology	
Vehicle Size	BEV	PHEV
Small	53	10
Large	3	0

Interest rate cap adds one option

- Four-person household
- \$93,600 income (300% FPL)
- \$9,500 PHEV and \$10,000 BEV CC4A incentive applied to down payment
- Interest capped at 8% through Finance Assistance

Used EV Options = 67 (19 models)

	Vehicle Technology	
Vehicle Size	BEV	PHEV
Small	55	11
Large	1	0

Additional \$4,000 FTC enables 21 more options

- Four-person household
- \$93,600 income (300% FPL)
- \$9,500 PHEV and \$10,000 BEV CC4A incentive applied to down payment
- Interest capped at 8% through Finance Assistance
- \$4,000 FTC applied to down payment

Used EV Options = 88 (21 models)

	Vehicle Technology	
Vehicle Size	BEV	PHEV
Small	62	23
Large	3	0

Combined incentives provide some brand diversity, but large vehicle options remain limited

- Four-person household
- \$93,600 income (300% FPL)
- \$9,500 PHEV and \$10,000 BEV CC4A incentive applied to down payment
- Interest capped at 8% through Finance Assistance
- \$4,000 FTC applied to down payment

	Vehicle Technology	
Vehicle Size	Small	Large
BMW	7	0
Chevrolet	9	0
FIAT	7	0
Ford	16	0
Honda	1	0
Hyundai	4	0
Kia	4	0
Mercedes-Benz	4	0
Mitsubishi	4	0
Nissan	9	0
Toyota	3	3
Volkswagen	4	0
Smart	13	0

Comments and Questions



Raise your hand or use the raised hand function (#2 if calling in by phone)



Please state your name and affiliation, if any, before asking a question or making a comment



You may also email questions to CleanTransportationIncentives@arb.ca.gov




Mentimeter Access Code:

Updates to Driving Clean Assistance Program

Prior Funding Plans have established a financing loan cap of \$35,000.



In response to market analysis and comments in other workgroups, staff proposes to increase the financing loan cap to \$45,000.



Enables DCAP to be responsive to market conditions and will provide participants with greater opportunities to find a vehicle.

Comments and Questions



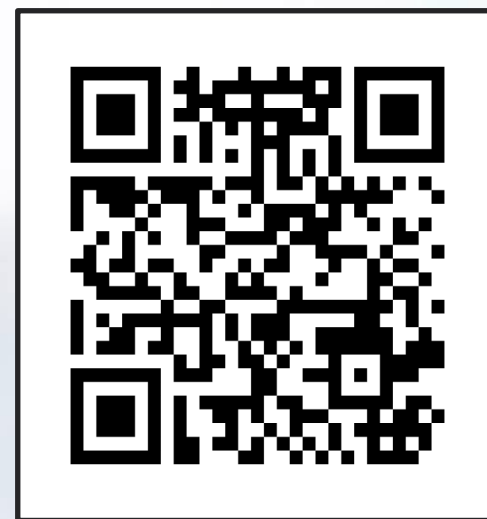
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Mentimeter Access Code:

Sustainable Community-Based Transportation Equity Projects

Statewide Clean Mobility Options Voucher Pilot Program (CMO)

Small-scale, shared-mobility projects and community transportation needs assessments



Regional Clean Mobility Options Pilot Projects

Early pilots to provide shared mobility services



Sustainable Transportation Equity Project (STEP)

Holistic, equity-focused projects to address community mobility needs and reduce vehicle miles traveled



Planning and Capacity-Building (Planning)

Community-led planning and capacity building projects



Clean Mobility in Schools (CMIS)

Clean transportation and education projects at K-12 public schools



Clean Mobility Options (CMO)

Two Types of CMO Projects

- Regional Clean Mobility Pilot Projects:
 - Seven early pilots providing shared mobility services
- Statewide CMO Voucher Pilot Program:
 - Vouchers for community needs assessments and clean, shared, zero-emission mobility projects
 - Includes the Clean Mobility Equity Alliance (CMEA) network



Regional Clean Mobility Pilot Projects

Project Name	Funding Years	Total Awarded (approx.)	Status
BlueLA Car Share (Los Angeles)	2014-15 2017-18	\$4.6 million	Active
Our Community CarShare (Sacramento)	2014-15 2016-17 2017-18 2019-20	\$5.8 million	Active
Lift Line Paratransit (Santa Cruz)	2016-17 2019-20	\$516,000	Active
Car Sharing and Mobility Hubs (Bay Area)	2016-17 2019-20	\$3 million	Active
Valley Air Zero Emission Vehicle Mobility (San Joaquin Valley)	2016-17	\$749,000	Inactive
Ecosystem of Shared Mobility (San Joaquin Valley)	2016-17 2019-20	\$3 million	Inactive
Agricultural Worker Vanpools (San Joaquin Valley)	2016-17	\$6 million	Inactive

Statewide Clean Mobility Options Voucher Pilot Program

Project Status

- ~\$91 million allocated to date
- Application Window 1 (2020):
 - 24 community transportation needs assessments completed
 - 20 mobility projects awarded: 13 have launched services and 7 in planning and construction phase
- Application Window 2 (2023):
 - 12 community transportation needs assessments awarded
 - 18 mobility projects awarded

Clean Mobility in Schools (CMIS)

Project Overview

- Funds pilots for zero-emission mobility, planning, education and workforce projects to schools and surrounding communities

Project Status

- \$34.4 million implemented at four school districts
- \$27.8 million allocated for four new grant projects that will launch this year



Sustainable Transportation Equity Project (STEP)

Project Overview

- Funds community-identified clean transportation needs, such as public transit, active transportation infrastructure, land use planning and housing policy activities, and workforce development

Project Status

- \$44.5 million of ongoing grants in 13 communities:
 - \$42.8 million for 8 Planning and Capacity Building Grants - now administered under the new Planning and Capacity Building (PCB) Project
 - \$1.7 million for 5 Implementation Grants
- \$35 million for new implementation grants in six communities

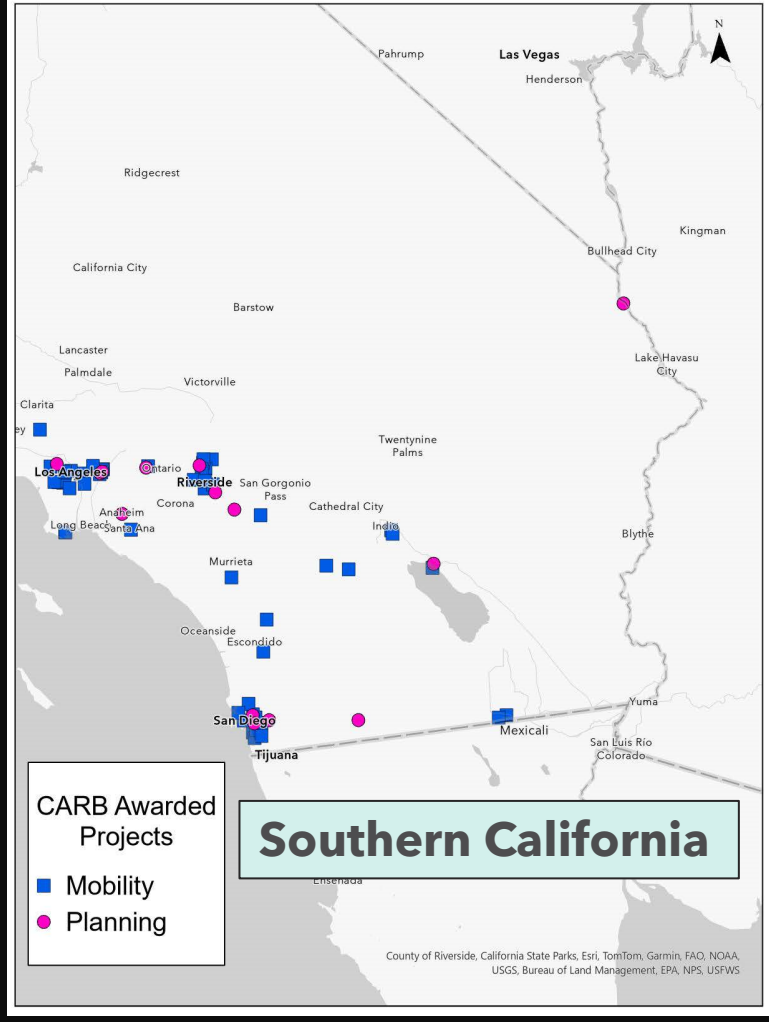
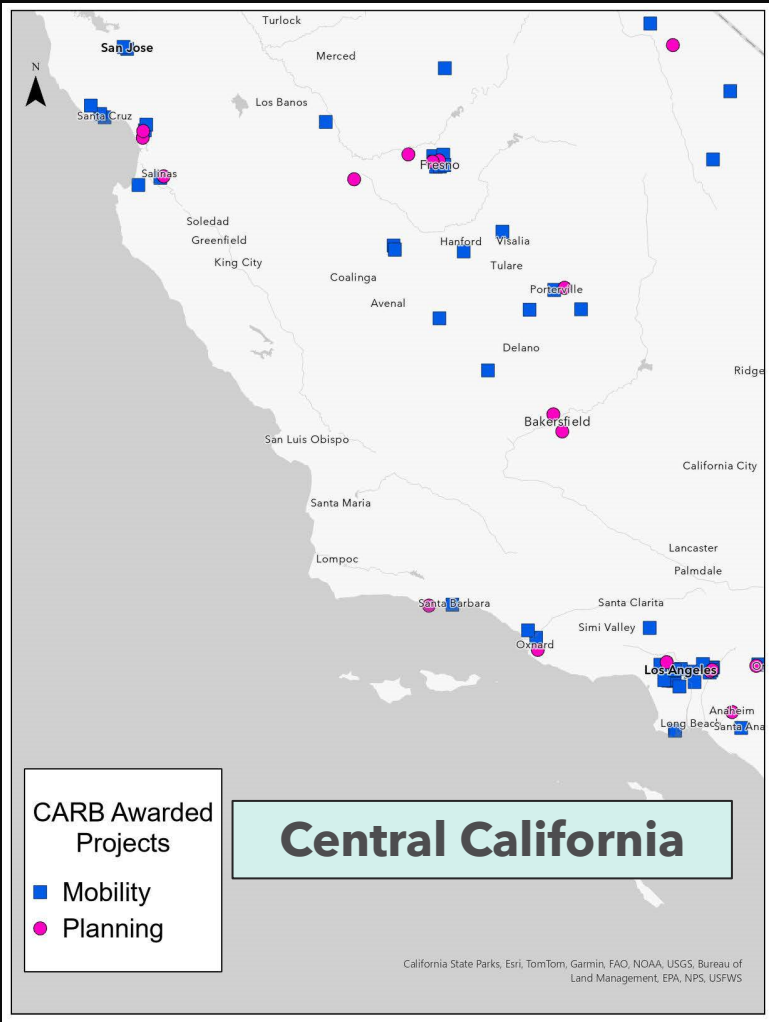
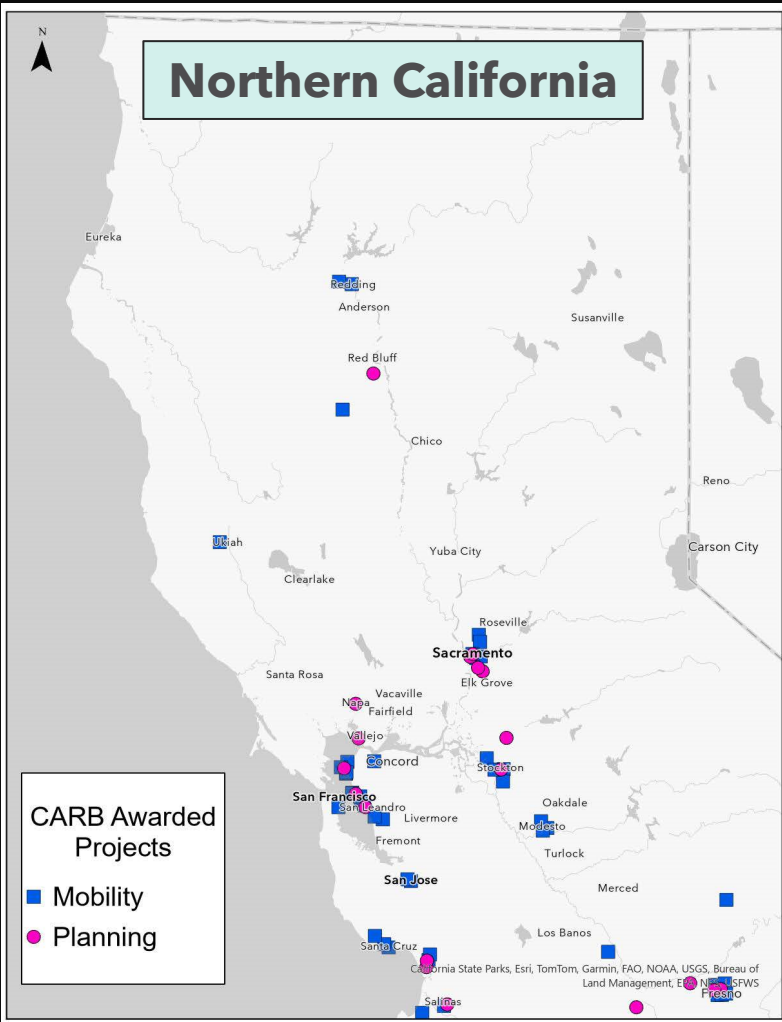
Planning and Capacity Building (PCB)

Project Overview

- Funds community-led planning and capacity building projects that improve transportation equity, including:
 - Clean mobility planning
 - Community transportation needs assessments
 - Workforce training and development

Project Status

- \$15 million allocated to date
- 7 community-based projects launching mid-2024
- New request for applications expected in late 2024 to fund up to 15 more projects



Mapping CARB's Community-Based, Equity-driven, Transportation Projects

Mentimeter



Link: <https://www.menti.com/blr5mqnn8ece>

Access Code:

Evaluating Needs-Based Models

Background

- Received feedback to implement a needs-based model across all investment projects
- Implementing a need-based model with launch of the Driving Clean Assistance Program (DCAP)
- Sustainable Community-Based Transportation Equity (Mobility) Projects currently implement needs-based models

Next Steps

- Discuss alternatives to needs-based models for Mobility Projects through future public workgroups
- Evaluate current application processes across the Mobility Projects
- Evaluate findings from FY 2022-23 STEP/CMIS/PCB technical assistance survey for project improvements
- Collect data and lessons learned from DCAP

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Link: <https://www.menti.com/blr5mqnn8ece>

Access Code:

Comments and Questions



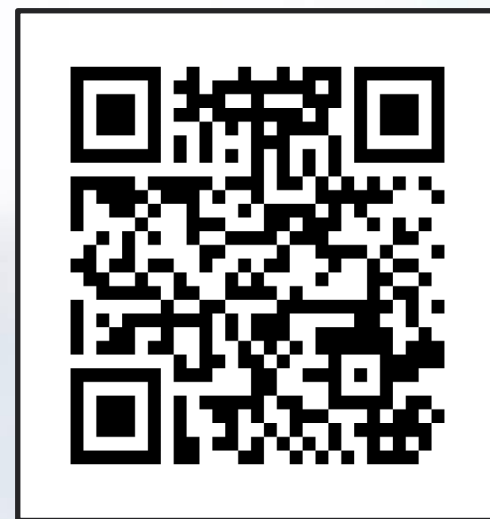
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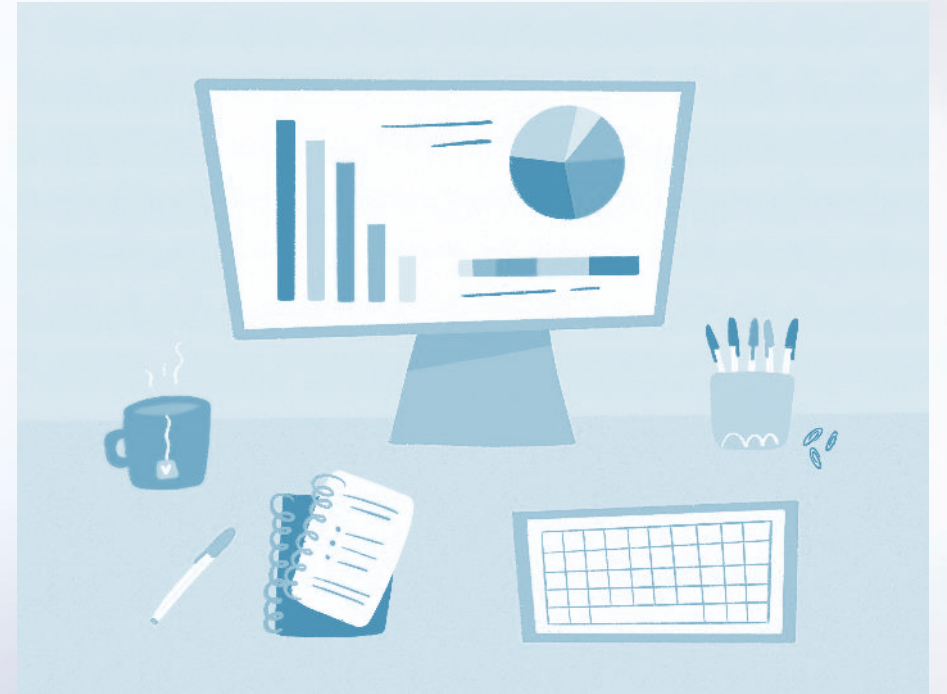
Metrics and Evaluation

Part I. Overview of:

- CARB's metrics and evaluation goals
- Data and metrics currently collected
- Measuring socioeconomic benefits
- Challenges and opportunities

• Part II. Discussion:

- What other metrics or data collection methods should CARB be considering?



CARB's Metrics and Evaluation Goals



- Use metrics to evaluate program and project effectiveness
- Measure socioeconomic benefits in response to California State Auditor
- Standardize data collection
- Identify data/metrics gaps and needs
- Develop a system for sharing data and metrics

Data and Metrics Currently Collected



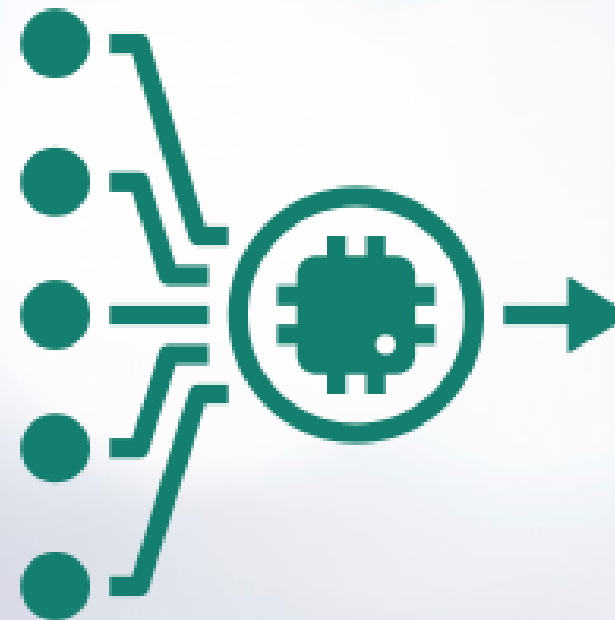
Categories of Metrics



1. Estimated (modeled) benefits
2. Participant information
3. Project- and program-level information
4. Outreach and engagement data

1. Estimated (Modeled) Benefits

- Outputs from California Climate Investments (CCI) Benefit Calculator Tools
- Example metrics:
 - Emission reductions, vehicle miles traveled reductions, fuel use avoided, travel cost savings, jobs directly and indirectly supported, etc.
- Takeaway:
 - Metrics defined by CCI Benefit Calculator tools, based on expected project/program scope and performance. Updated when project information changes. Publicly available via CCI website.



2. Participant Information



- Data from incentive applications, surveys, and telematics
- Example metrics:
 - Participant demographics, location of participant or service, travel behavior (before and after incentive), vehicle information, participant experience, trip information, etc.
- Takeaway: Data reporting varies across programs.
 - Purchase incentives have data dashboards and maps¹, but demographic data is limited.
 - Mobility projects are early in the process of compiling and analyzing data.

¹<https://www.calzevinsights.org/>

3. Project- and Program-Level Information

- Collected by grantees or project administrators
- Example metrics:
 - Aggregated participation information (number of grants, enrollments, partners), monetary values (total and individual grant/incentive/voucher values), number of vehicles/equipment, etc.
- Takeaway:
 - Data is publicly available, but not in a single, centralized location. Some metrics are reported in the annual Funding Plan and on the California Climate Investments Data Dashboard.



Above: People participate in a CicLAvia event in South Los Angeles on December 5, 2021. CicLAvia, which is an element of a Sustainable Transportation and Equity Project, occasionally closes selected streets to automobile traffic in order to make them more accessible to cyclists and pedestrians.

4. Outreach and Engagement Data

- Data tracked by grantees and program administrators or collected via surveys
- Example metrics:
 - Number and type of outreach events and partners, number and type of engagement interactions, community member feedback, etc.
- Takeaway:
 - Data is challenging to track and report but helps to illustrate successes and gaps in CARB's and partners' outreach efforts.



Above: People participate in an electric vehicle charging focus group hosted by Redeemer Community Project as part of the Access Clean California project.

Mentimeter



Link: <https://www.menti.com/blr5mqnn8ece>

Access Code:

Measuring Socioeconomic Benefits



Above: Shasta Living Streets hosts a celebration to mark the opening of the Shasta Bike Depot and Redding Bikeshare in downtown Redding, California, on Friday, May 12, 2023. The bikeshare project is funded by Clean Mobility Options.

Measuring Socioeconomic Benefits

Purpose: Ensure that projects and programs are delivering intended socioeconomic benefits to project participants and communities.



• **Step 1:** Identify metrics indicative of socioeconomic benefits:

- *Status:* Completed and identified in FY 2022-23 Funding Plan
- *Metric categories:* Estimated benefits and participant information
- *Example metrics:* role of incentive program in facilitating a clean vehicle purchase; improved access to jobs, schools, goods and services, etc.

Measuring Socioeconomic Benefits (cont.)

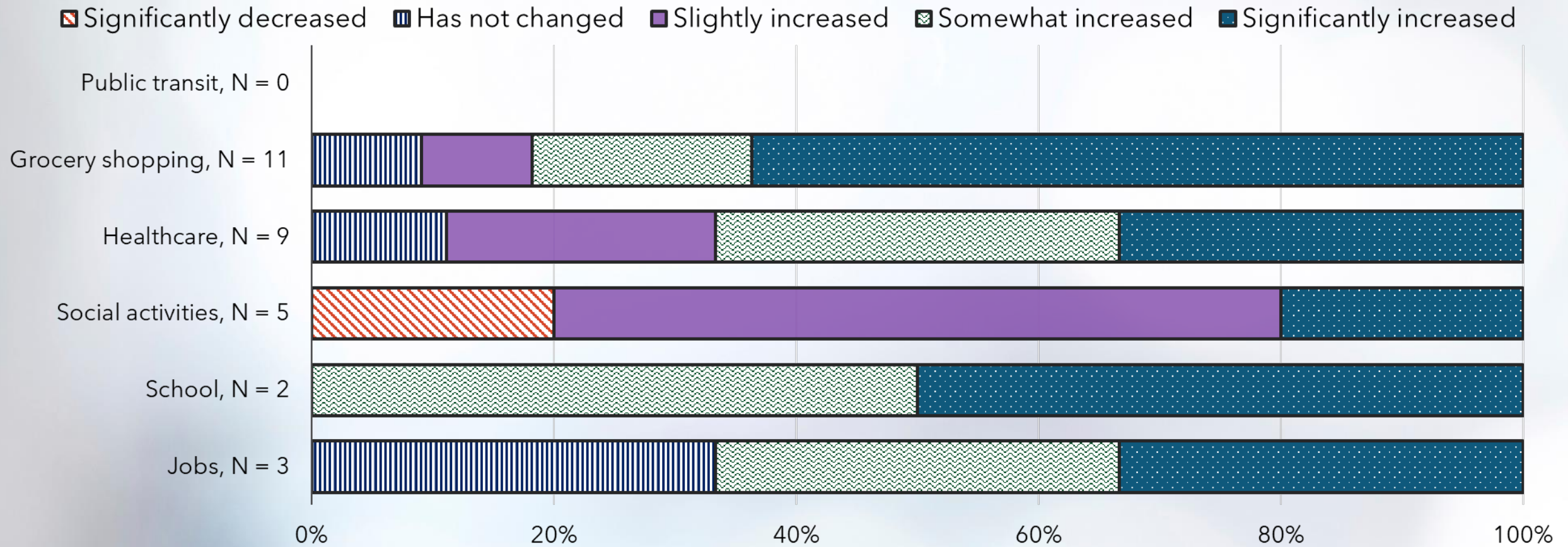
- **Step 2:** Develop a process to collect data
 - *Status:* Completed by fall 2023 and documented on CARB's website
 - *Data collection methods:* Surveys, project and incentive applications, and telematics
- **Step 3:** Evaluate program/project effectiveness by analyzing metrics
 - *Status:* Differs from program to program; in progress.



Above: Marie Deer, on Oakland resident, poses with the 2015 Honda Insight that she was able to purchase with the help of the Financing Assistance for Lower-Income Consumers Program.

The Our Community Carshare Sacramento Pilot Project is increasing access to essential goods and services.

OVERALL, AS A RESULT OF HAVING ZIPCAR AVAILABLE, MY ACCESS TO...



Source: University of California, Berkeley Transportation Sustainability Research Center, *Draft Evaluation Report: Our Community Car Share Sacramento Pilot Project*. Publication forthcoming.

Challenges and Opportunities

- Challenges:
 - Demographic data collection and reporting
 - Standardizing and systematizing metrics collection
 - Capacity to perform robust data/metrics analysis
- Opportunities:
 - Standardized user survey
 - Utilize available data to update policies



Mentimeter



Link: <https://www.menti.com/blr5mqnn8ece>

Access Code:

Comments and Questions



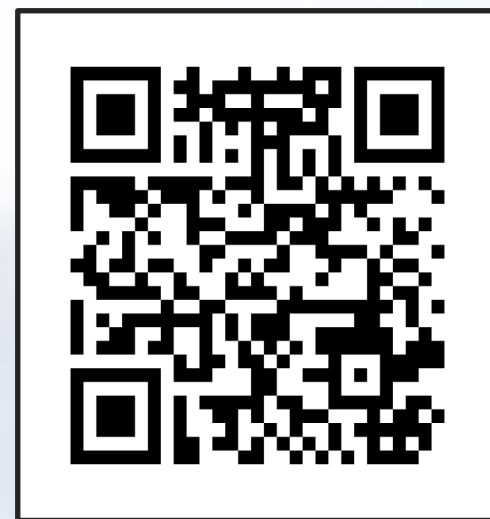
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Mentimeter Access Code:

Next Steps

