

Riding the Electric Wave: Incorporating E-bikes and Micromobility into Our New Transportation Landscape

Active Transportation Program
Symposium
October 22, 2025





Kendra Ramsey
Executive Director
California Bicycle Coalition



Jeff Bruchez
Active Modalities Manager
UC Davis Transportation
Services



Matt Miller
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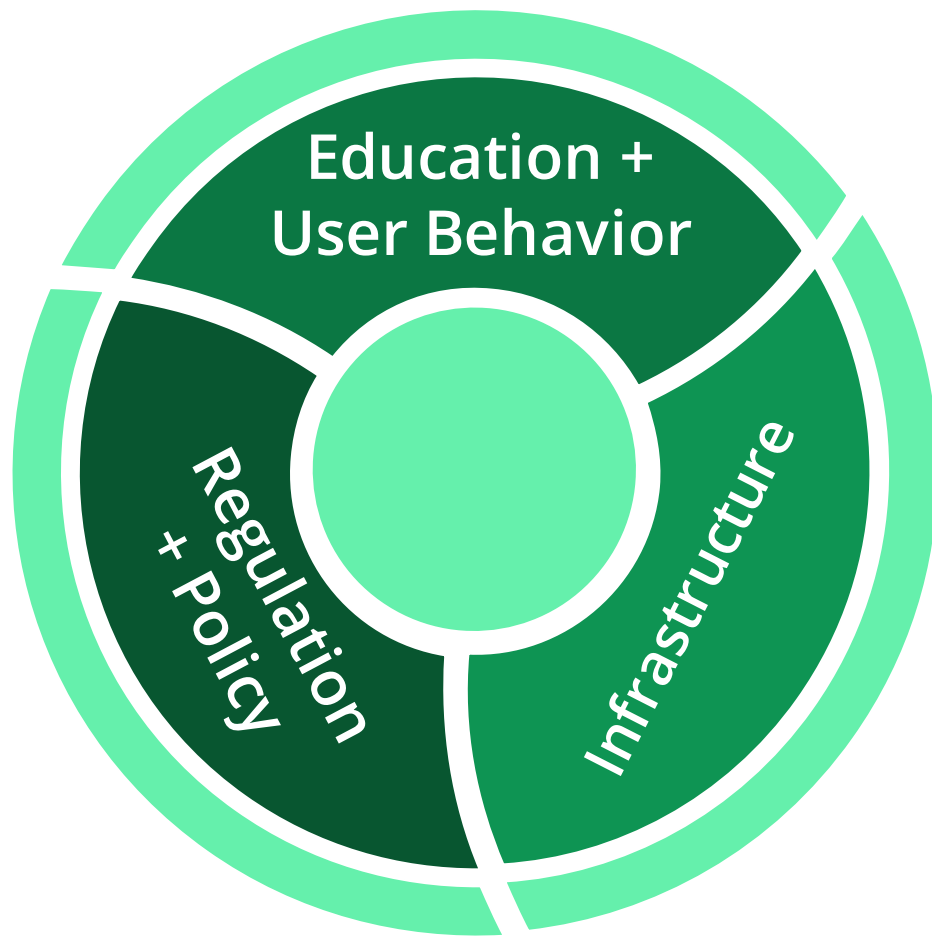
*CalBike advocates for equitable,
inclusive, and prosperous
communities where bicycling helps
to enable all Californians to lead
healthy and joyful lives.*



Electric Devices Enter the Chat

- As technology advances, it often outpaces policy
- New devices create opportunities for increasing mobility and access
- Incorporating those devices into the existing transportation system can feel haphazard, disruptive, and unsafe
- Policy and regulation often lag behind technology





Types of Devices

- E-bikes
 - 3 classes defined in CA law
- E-scooters
- “Bicycle-shaped devices” (E-motos/out-of-class devices)
- Other personal devices
 - One wheel
 - E-skateboard

These can be
privately-owned
or shared



Regulatory Landscape: Defining What is Legal

Regulations

- E-bike classification (3 classes)
- E-bike Class 3 age (16) and helmet requirement
- E-scooters speed limitation, helmet requirement, no sidewalk riding
- Bicycle registration, bicyclist licensing not required

Studies and Pilots

- E-Bike Study Bill (SB 381, 2023)
- San Diego County age restriction 12 & up for Class 1 & 2 (AB 2234, 2024)
- Marin County age restriction 16 & up Class 2 (AB 1778, 2024)



Regulatory Landscape: Bicycle-Shaped Devices

Devices with pedals

- Class labelling requirement (CVC 312.5)
- Modification to operate outside 3 classes is prohibited (CVC 312.5)
- Apps to allow operation outside of 3 classes prohibited (AB 545, 2025)

Devices without pedals

- E-Motos defined as off-highway vehicles (SB 586, 2025)



Education/Behavior



- No universal rules of the road education
- Many adults do not currently ride bicycles, lack skills
- Youth with parents who don't ride bikes may not get good safety/handling education
- New riders may not understand etiquette

Infrastructure

- Facilities not designed to accommodate speed differential
- Facilities often don't meet demand (increase in users)
- Storage/charging options don't meet demand/safety needs





Thanks!

Kendra Ramsey
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The background of the slide is a photograph of a campus scene. It features large, leafy trees in the upper half and a large number of bicycles parked in racks in the lower half. The overall lighting is somewhat dim, suggesting an overcast day or shaded area. A semi-transparent teal rectangle is overlaid on the right side of the image, containing the text.

UC DAVIS

Transportation Services

Electric Device Growth on Campus:

Adoption, pivots in policy, enforcement, and more...

Presenting:

Jeffrey Bruchez | Active Modalities Manager

Agenda

Quick Overview

Quick History of Biking in Davis

New and Evolving Mode-Share on Campus

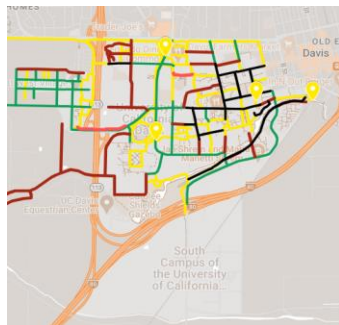
Today's Campus / Horizons Ahead

Moving Forward Together

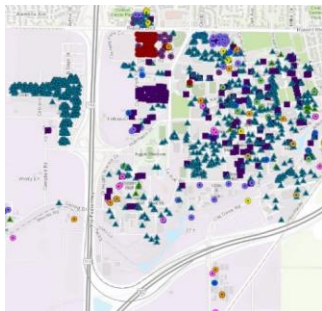
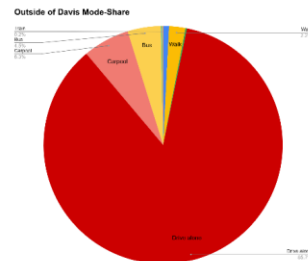


Quick Overview

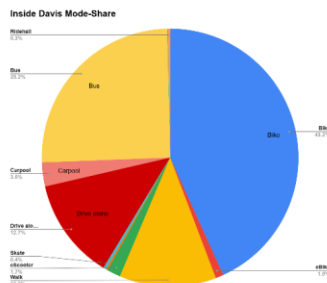
**>34,000
Bike Racks**



34.9%
Bike Share
Overall



27 miles Class 1 Trail



Inside Davis vs Outside Davis



History of Davis and our Bicycling

The Use of Bicycle Signal Heads at Signalized Intersections



Comprehensive system of bicycle routes

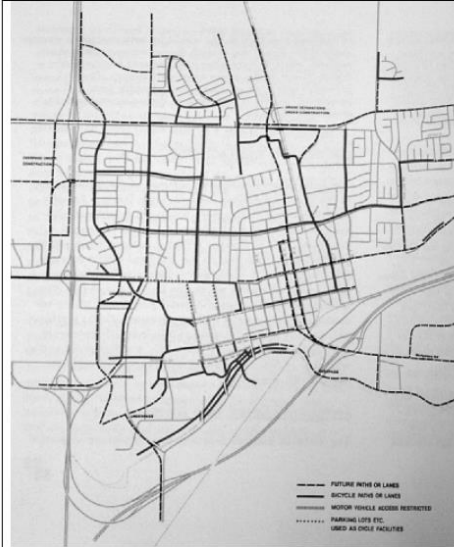


Figure 15 In 1972, Davis had a nearly complete network of bike routes, with ambitions plans for expansion (De Leuw and Cather 1972)

Buehler, Theodore & Handy, Susan. (2008). "Fifty Years of Bicycle Policy in Davis, California." *Transportation Research Record*. 2074. 52-57. 10.3141/2074-07.

Fifty Years of Bicycle Policy in Davis, CA



UC Davis campus, 1966, Ansel Adams

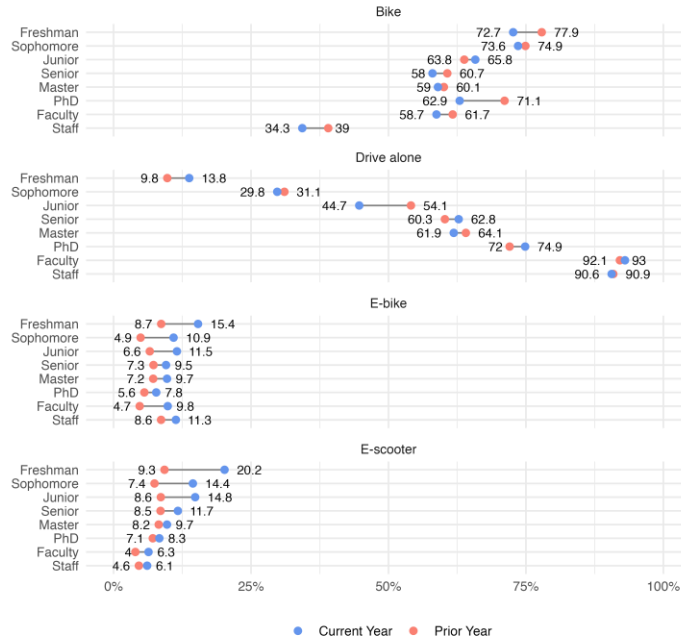


Figure 12 Bike lanes opened in Davis in 1967. Experimentation and refinement led to testing of different designs.

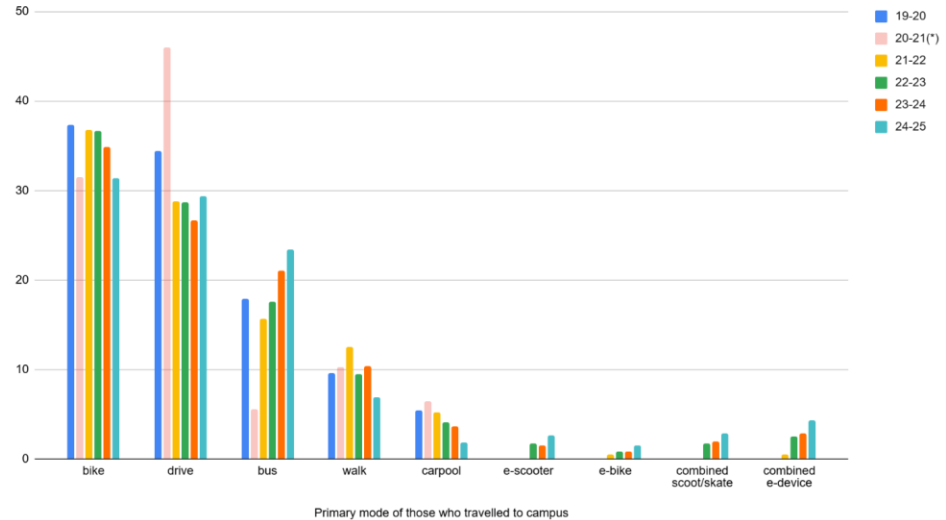
(Bob Sommer photos)

New and evolving trends in transportation

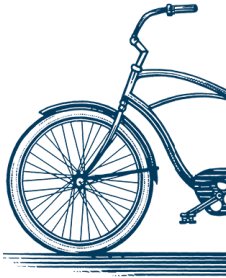
Change in Mode Access by Role



Campus Mode Share from Annual Campus Travel Survey



Preliminary Results of the 2024-2025 Campus Travel Survey, Justain Darr, Institute of Transportation Studies, University of California, Davis.



Campus today is...

- **Complex!**
 - **Not Just Bikes**
 - **Indoor Storage**
 - **Charging Issues**
 - **Storage**
 - **Novel Devices**
 - **Speeds and behavior**
 - **Crashes**



Fig. 12 Locations



The Horizons Ahead

- **Shared Micromobility as a Solution (SMAAS)**
 - Geofence control on speed and access
- **Changes in Legislation**
 - 2024 Law: SB712 (Storage and Charging), AB 1909 (Bike on Walk Signal), AB413 (Daylighting)
 - 2025 Law: SB1271 (eBike Definition and Battery Requirements)
- **Campus Policies In Consideration:**
 - Adjust Campus Wide Speed Limit (15-mph)?
 - Enforcement?
 - Expand Pedestrian Only Areas?
 - Expand Campus Core?

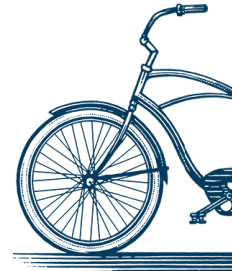


Transportation Devices Indoors

- No charging electric transportation devices
- No riding transportation devices
- No storing transportation devices



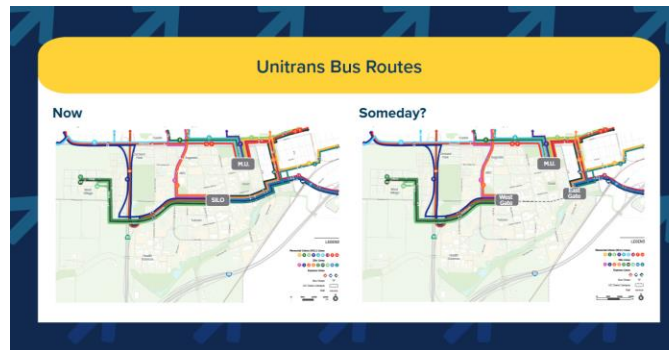
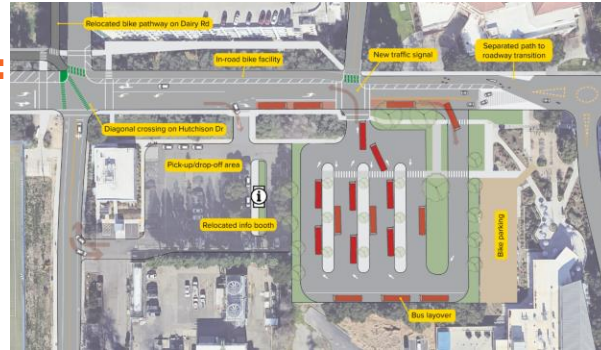
✓ Assistive Devices are Always Allowed



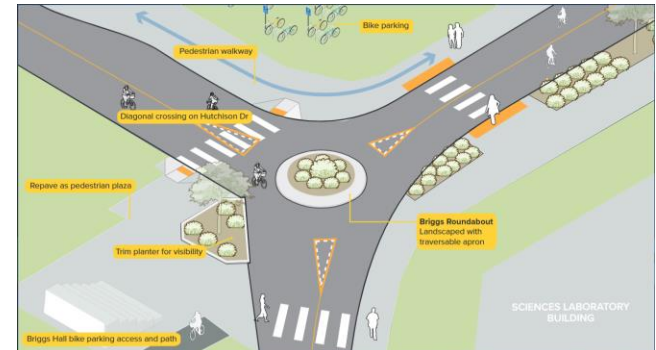
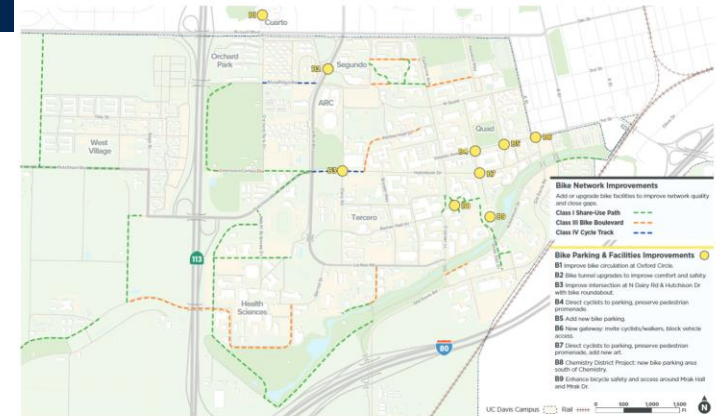
Moving Forward Together

- **Planning For Future:**

- **Infrastructure**
- **Policy**
- **Programs**
- **Education**
- **Enforcement**
- **Security**
- **Funding**



Recommended Bike Improvements



The logo for UC Davis Transportation Services, featuring the text "UC DAVIS" in a bold, yellow, sans-serif font. The background of the slide is a dark, out-of-focus photograph of trees and a path, with a semi-transparent teal rectangle containing the text.

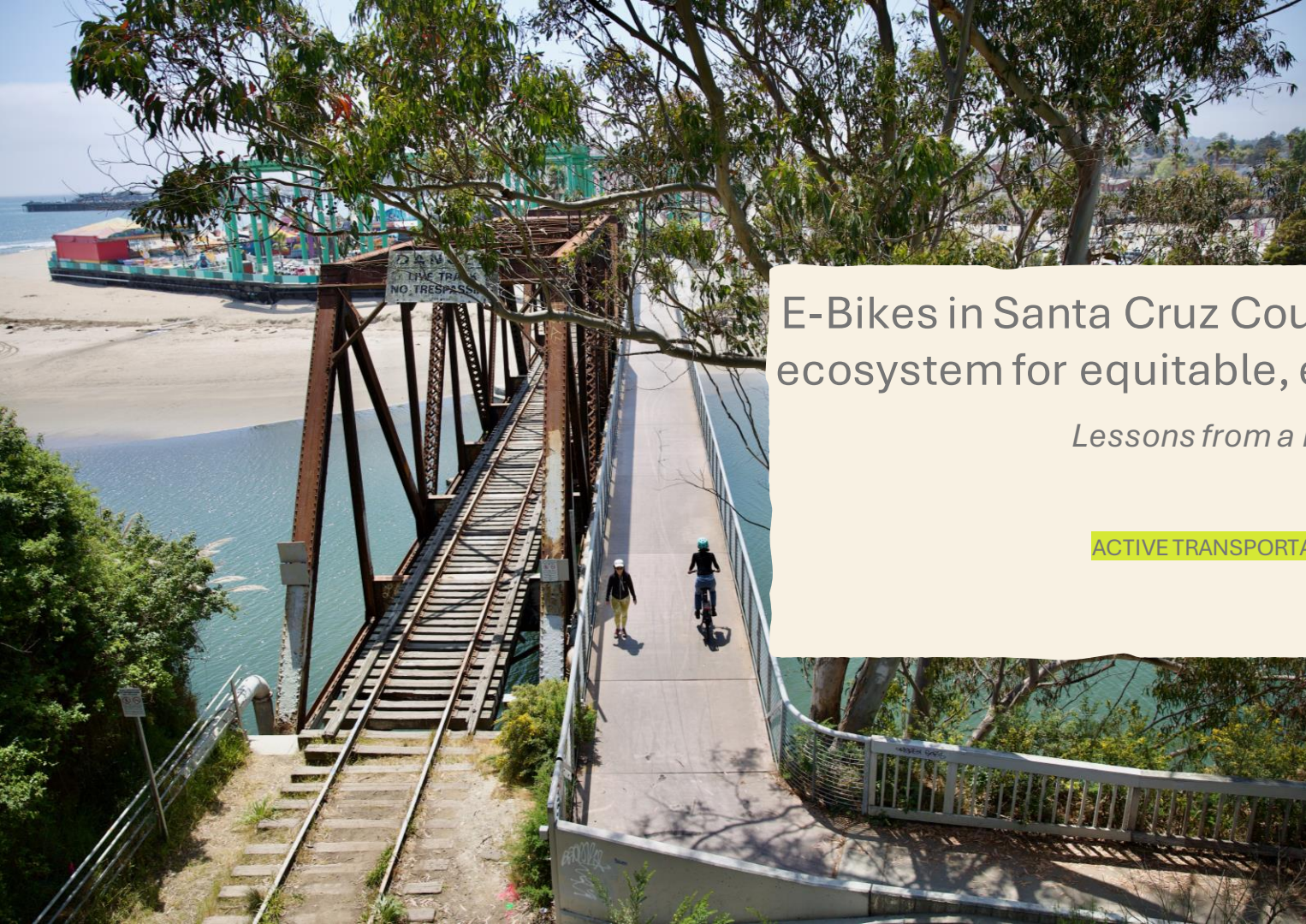
UC DAVIS

Transportation Services

Electric Device Growth on Campus: **Adoption, pivots in policy, enforcement, and more...**

Follow up at:

Jeffrey Bruchez
Active Modalities Manager
UC Davis Transportation Services
jpbbruchez@ucdavis.edu



E-Bikes in Santa Cruz County: Building an ecosystem for equitable, electric mobility

Lessons from a non-profit perspective

ACTIVE TRANSPORTATION SYMPOSIUM UC DAVIS
OCTOBER 22, 2025



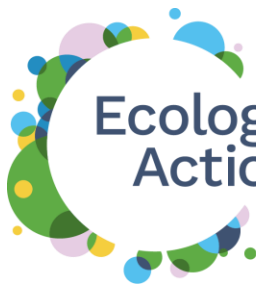
Hello!

I'm Matt Miller,

Director of Mobility Transformation, Ecology Action

Today's Topics

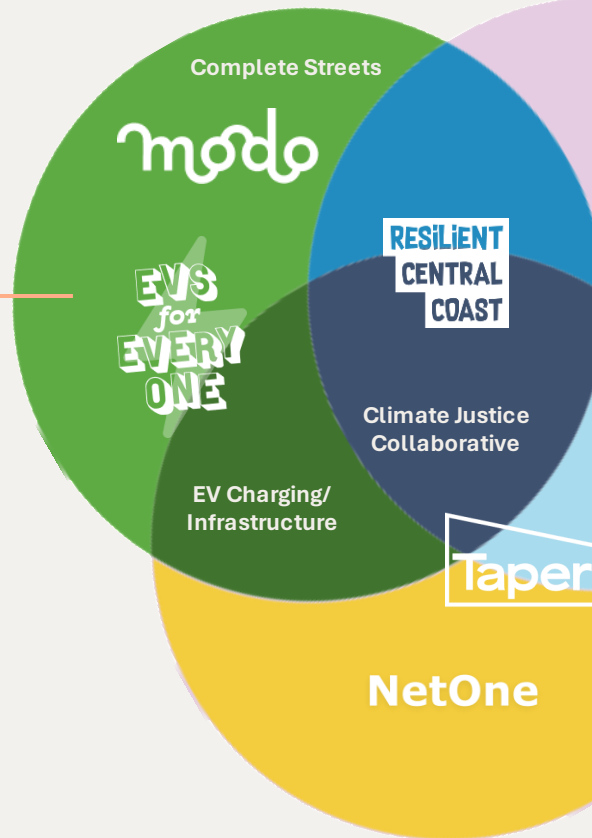
- Introducing Ecology Action
- Mapping the e-bike ecosystem in Santa Cruz County
- Gaps in the ecosystem



Ecology
Action

Community
Climate
Solutions

Transportation



Water



Energy

OUR MISSION

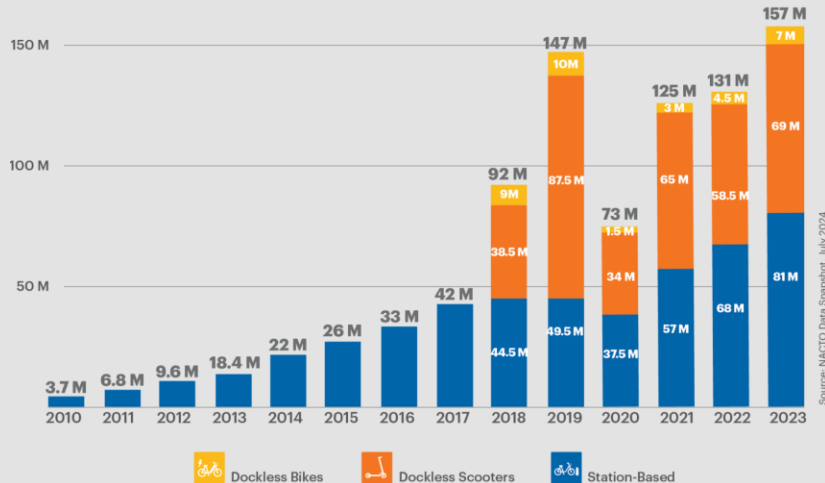
To advance equitable community climate solutions in high-GHG-emitting sectors.

Why E-Bikes, Why Now?

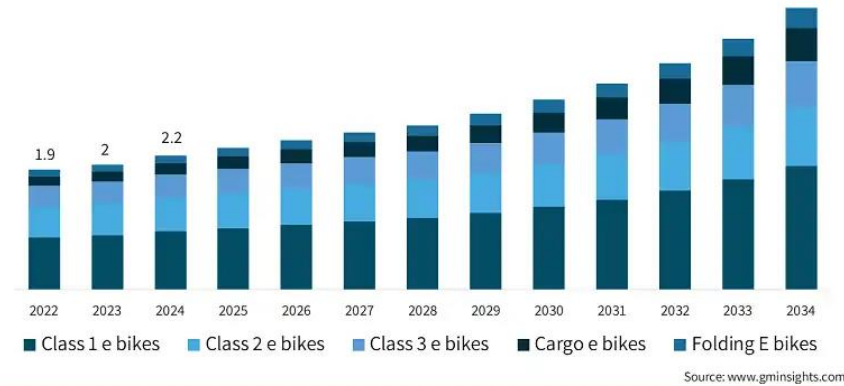
- E-bike use is growing every year
- Affordable relative to car ownership
- Expands bike travel shed, opens up more trip types
- Incentives are helping grow ownership
- Bike share is working, despite funding



Shared Micromobility Ridership in the U.S. and Canada, 2010-2023



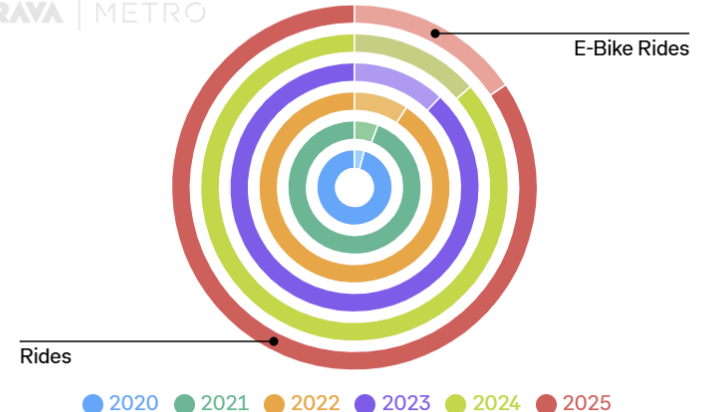
US E-Bikes Market, By Product, 2022 - 2034 (USD Billion)



Activity Types ①

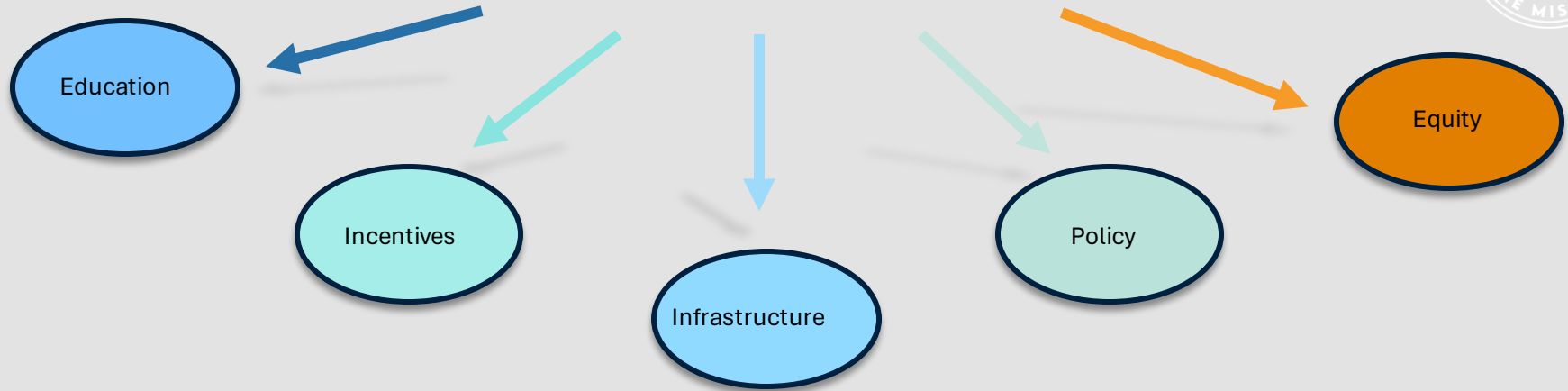
2025, 2024, 2023, 2022, 2021, 2020 ▾

STRAVA | METRO





The E-Bike Ecosystem



No single intervention is enough, systems thinking is key



Ecology Action E-Bike Incentive Programs

GO BIKE! Downtown Santa Cruz E-Bike Rebate Program

Launched October 2021

\$800 income qualified, \$400 baseline rebate

- Required e-bike safety training
- Point of sale voucher at participating retailers

GO BIKE! Santa Cruz County E-Bike/Bike Incentive Program

Launched June 2025

\$300 analog, \$800 standard e-bike, \$1200 adaptive/cargo, or annual bike

- share membership (\$245)
- Required e-bike safety training
- Point of sale voucher at participating retailers
- 100% income qualified individuals who live/work in county



Ecology Action E-Bike Education + Encouragement Programs

Slug Bike Life

- UC Santa Cruz based ATP project
- E-bike demo events with manufacturers + bike share
- Group rides
- Workshops - Intro to E-bikes + E-bike Safety

Go Santa Cruz

- Downtown Santa Cruz based program
- E-bike demo events w/ bike shops + bike share
- Lunch + learn workshops – Intro to E-bikes + E-bike Safety

Bike Live Oak

- ATP project
- Multi week program
- Bike safety class
- On bike skills
- E-bike demos
- Group rides
- Annual bike share passes offered

Modo Youth Programs

- ATP + OTS projects
- Assemblies
- Group Rides
- Bike/E-Bike Repair Events
- Parent Presentations

What local agencies are doing

- ✓ Funding + partnering on equity-based e-bike incentive programs
- ✓ Funding education + encouragement work
- ✓ Participating in an e-bike safety committee with cities, public health, university, county, NGOs
- ✓ Advancing bike infrastructure and complete streets is a work in progress
- ✓ Supporting regional e-bike share is a work in progress
- ✓ Examining local e-bike ordinances + statewide policy platforms
- ✓ Grappling with significant increases in e-bike ridership, inadequate infrastructure



Gaps + Questions

- ☐ Safe and complete bike networks
- ☐ Speed differential and appropriate facilities
- ☐ In class e-bike vs. e-moto enforcement
- ☐ Data gaps from law enforcement + public health on e-bike specific incidents
- ☐ Complete regional e-bike share
- ☐ Interjurisdictional approach to programming + infrastructure

Are we designing for the future we want to see or reacting to the present?



On the horizon



- ❑ Earn-a-bike program for e-bikes/bikes in Watsonville
- ❑ New partnerships with local police departments for proactive education and encouragement programs with Office of Traffic Safety funding
- ❑ Safe Streets For All - Safety Action Plan in Santa Cruz
- ❑ Active Transportation Plan in Capitola, hot spot for e-bike use (especially with youth)



Questions? Let's connect!



Matt Miller

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Ecology Action

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