

# THE IMPACT OF PARKING PRICING AND TRANSIT FARES ON MODE CHOICE TO A MAJOR UNIVERSITY CAMPUS

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# Overview

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- Problem statement
- Current scenario
- Data set characteristics
- Model Development
- Policy Scenario Tests
- Limitations
- Conclusions



# Problem Statement

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How will parking pricing and transit fare subsidies impact mode share of UC Berkeley commuters?



- Developed Mode & Parking Choice Model for UC Berkeley commuters

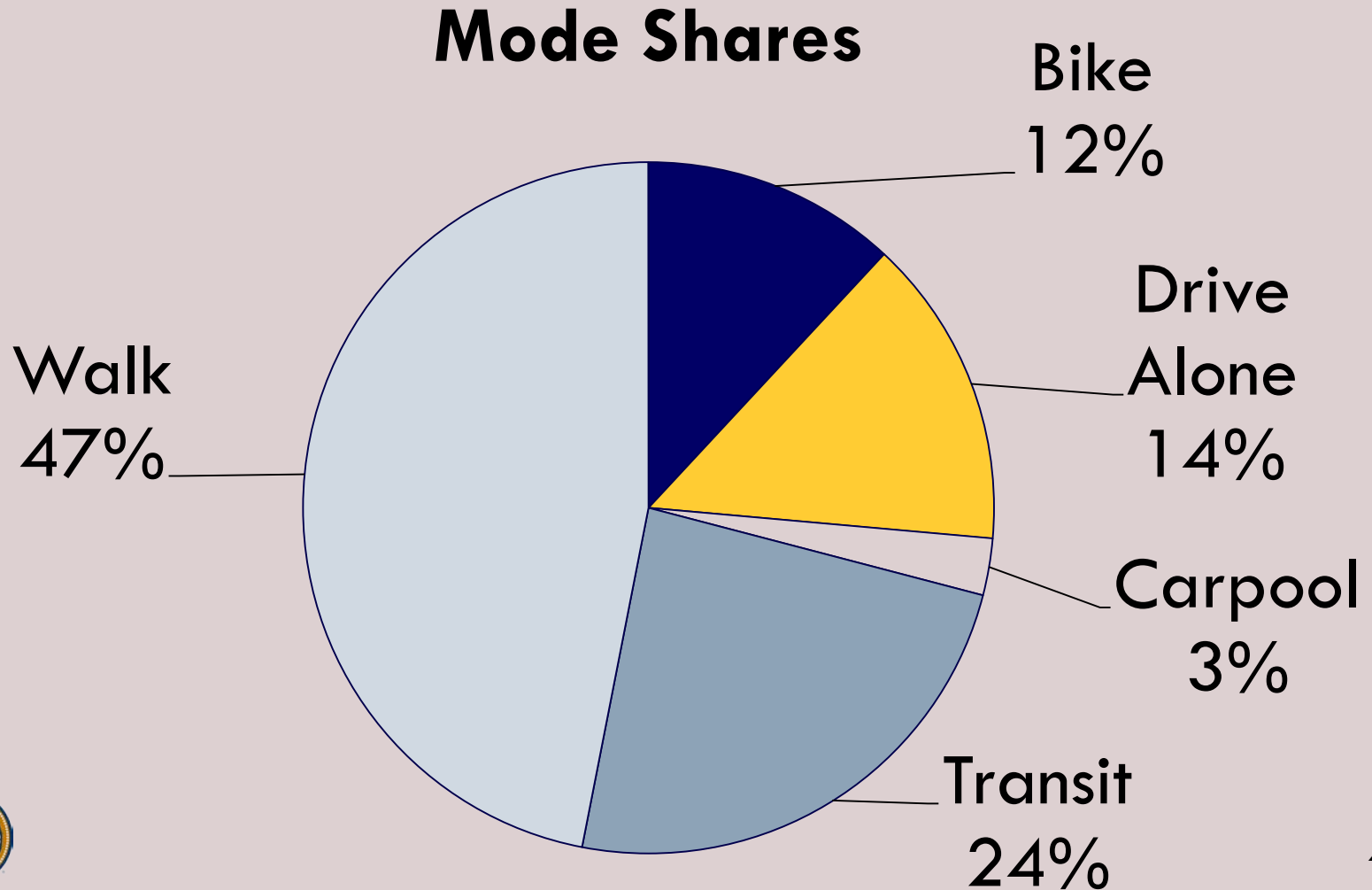


- Tested pricing policy scenarios



# The Current Scenario

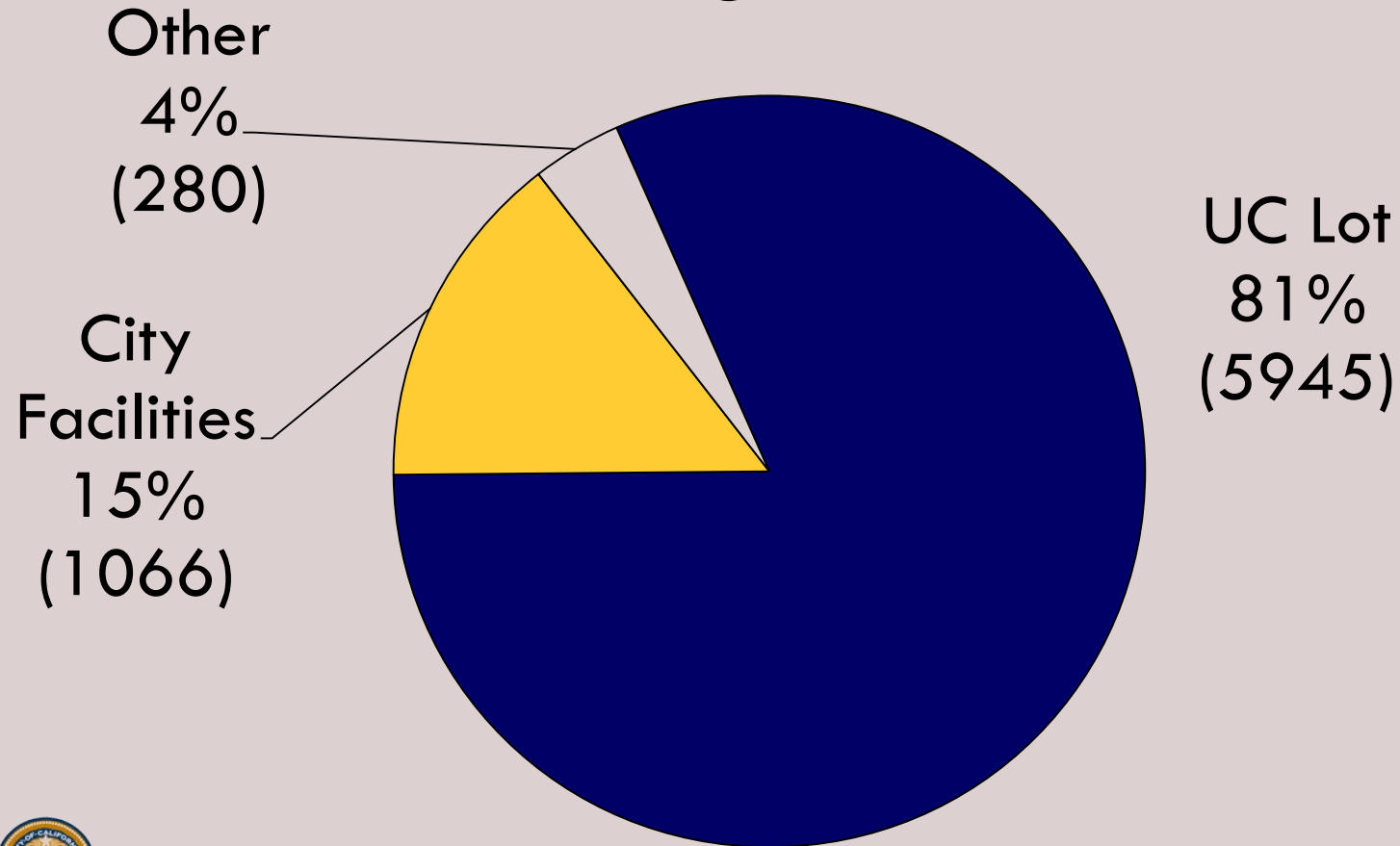
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# The Current Scenario

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## Parking Choices



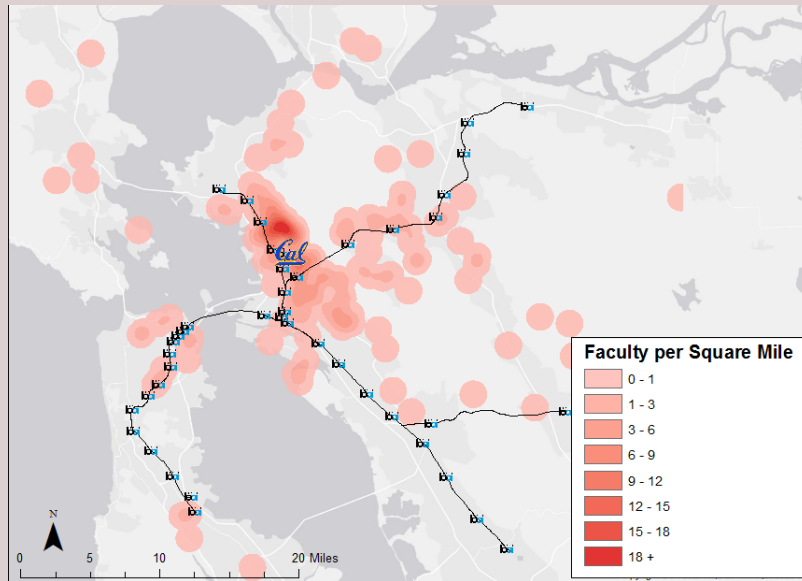
# Dataset Characteristics

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Online survey of UC Berkeley affiliates

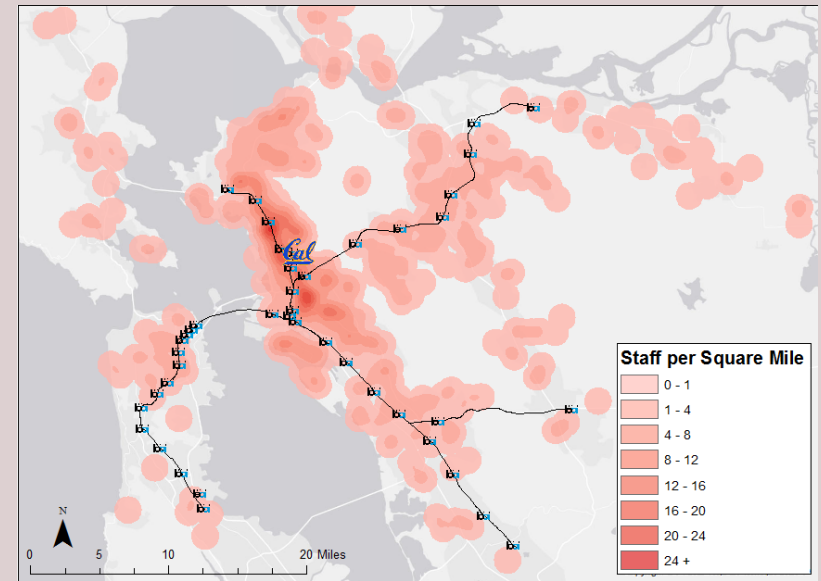
- Population = 50,300; ~10% response rate

## Drive-Along Faculty Household Distribution



25% of drive-alone faculty households in our sample are within 1 mile of a BART station.

## Drive-Along Staff Household Distribution



35% of drive-alone staff households in our sample are within 1 mile of a BART station.

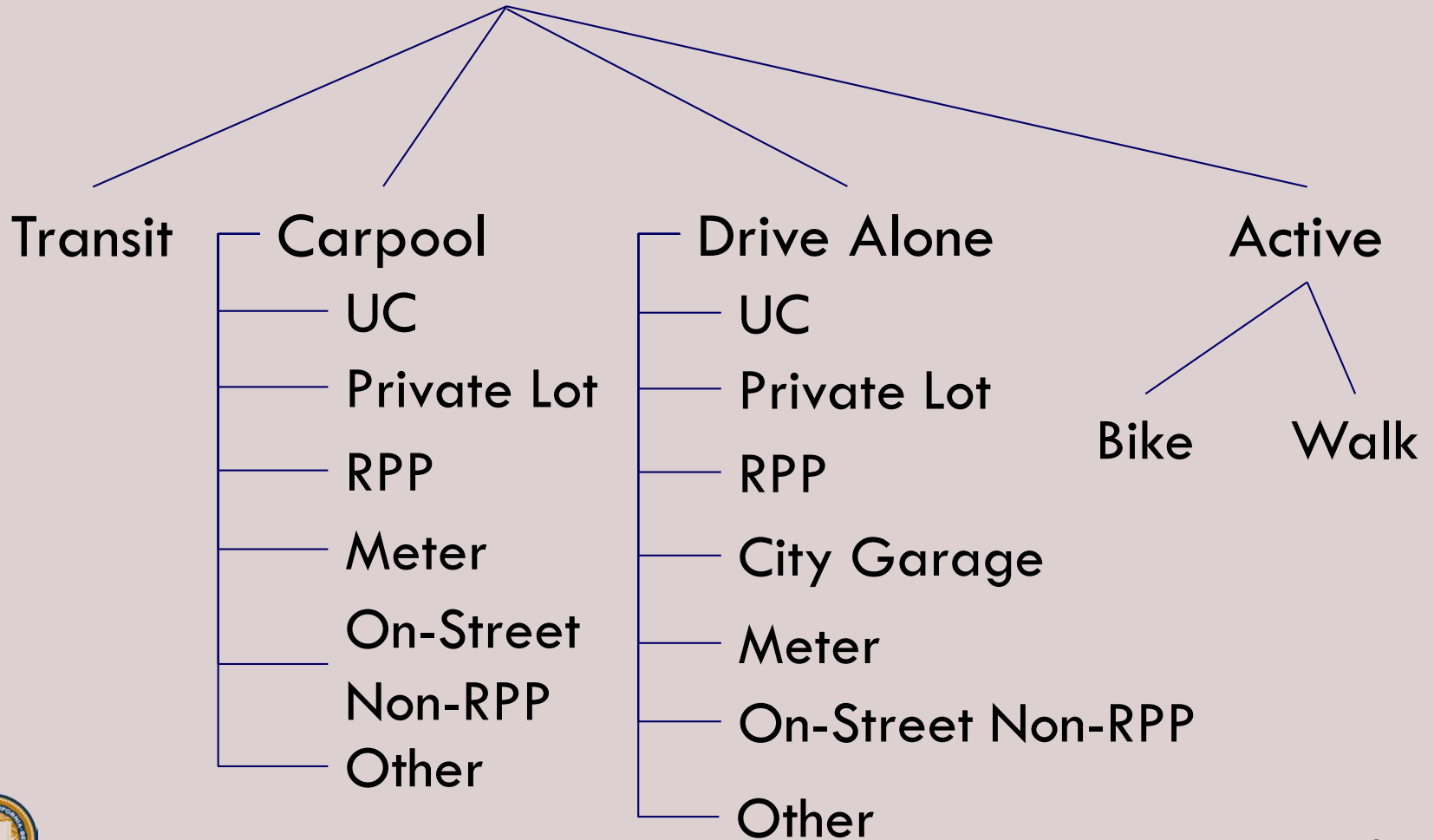
# Model Development and Assumptions

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- All trips to campus end at the West Gate
- Most frequent mode is linked to most frequent arrival time
- Transit riders always choose the fastest trip



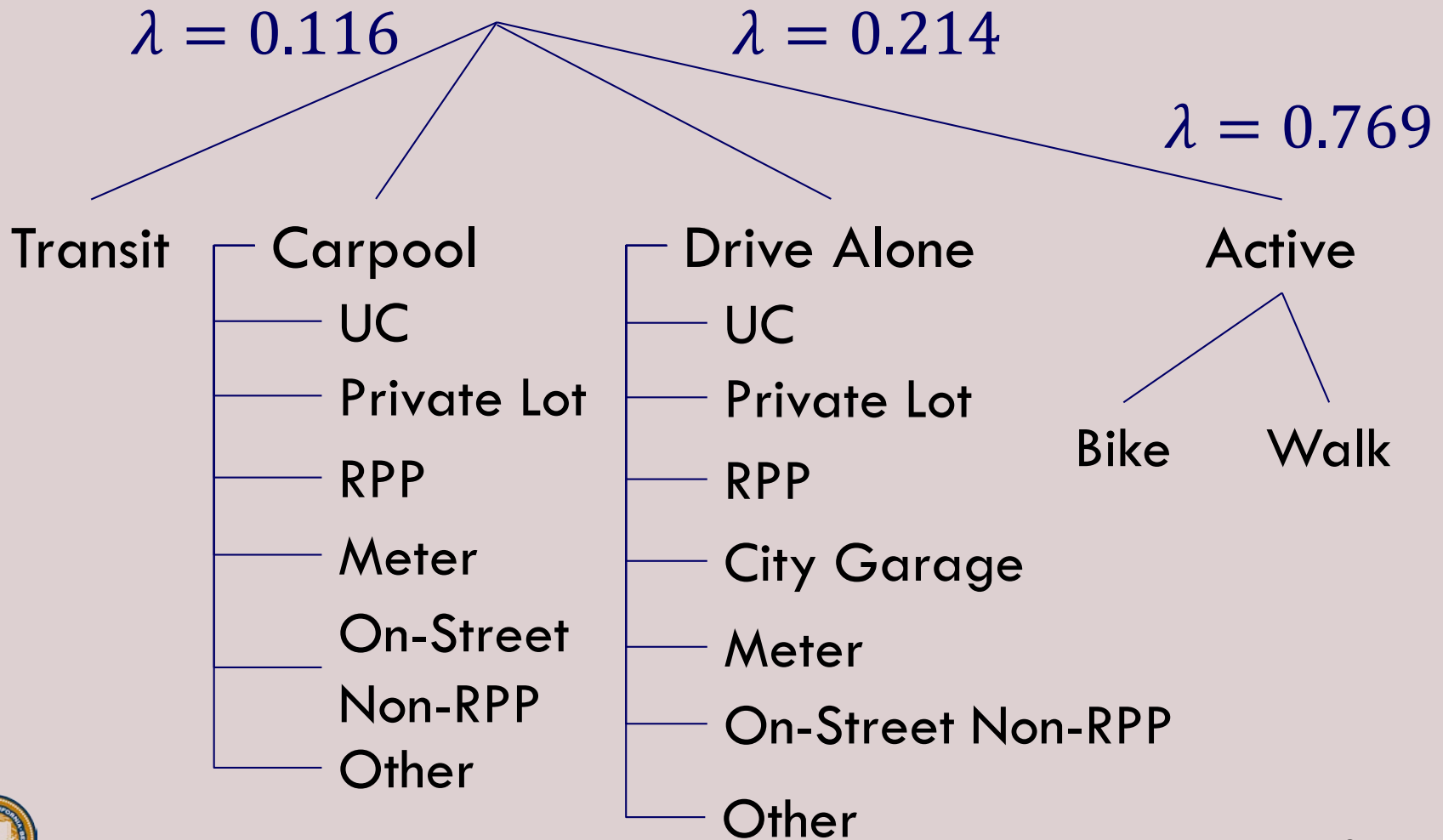
# Models Tested





# Models Tested

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# Findings

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- Commuters are more likely to drive if:
  - > 70 yrs. Old (~1%)
  - Live in hills surrounding campus
  
- Females are less likely to bike
  
- In general, campus commuters:
  - Favor walking, biking, and transit over carpool and driving
  - Prefer driving alone to carpooling



Image: Wikimedia Commons

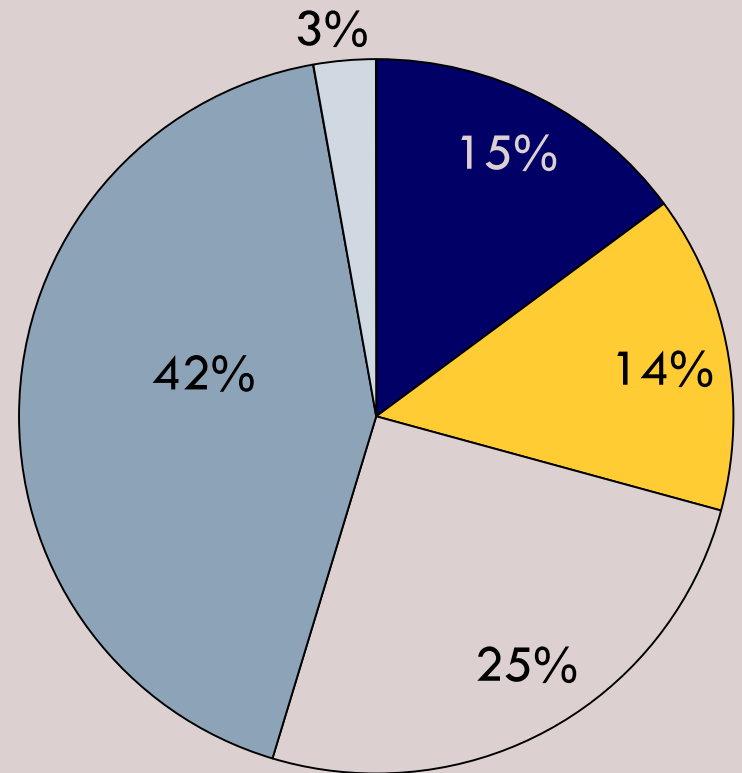


# Policy Scenario Tests

Tests:

- Parking Restrictions
- Transit Subsidies
- Composite Scenarios

**Baseline Scenario**



■ Bike ■ Drive Alone □ Transit ■ Walk □ Carpool



# Parking Restrictions

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Scenario Description	Net Cost to U.C. (millions)*	Drive Share Change
<b>Parking restrictions</b>		
<b>Increase U.C. Permit Prices by 10%</b>	(\$0.5)	-0.2%
<b>Double U.C. Permit Prices</b>	(\$4.4)	-1.8%
<b>Price RPP as meters; double all parking prices</b>	\$5.6	-4.0%
<b>Travel Time Tiered Permit Structure</b>	\$0.8	-1.2%
<b>Income Tiered Permit Structure</b>	\$0.6	-0.9%
<b>Larger Student Permit Exclusion Zone</b>	\$0.7	-1.2%



# Transit Subsidies

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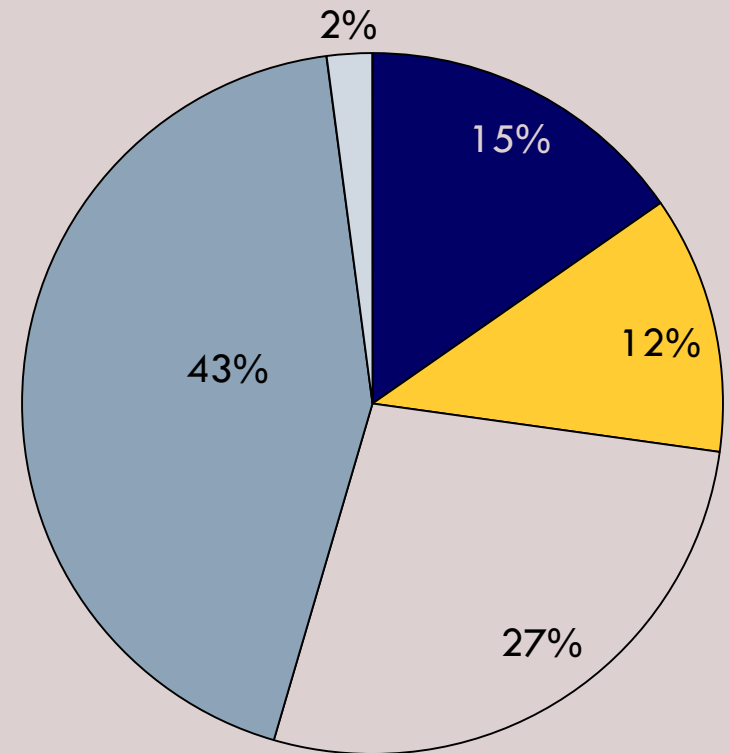
Scenario Description	Net Cost to U.C. (millions)*	Drive Share Change
<b>Transit subsidies</b>		
<b>100% BART subsidy</b>	\$9.9	-1.1%
<b>10% transit subsidy</b>	\$1.6	-0.3%
<b>100% transit subsidy</b>	\$19.9	-2.8%



# Composite Scenarios

Scenario Description	Net Cost to U.C. (millions)	Drive Share Change
<b>Composite scenarios</b>		
<b>↑ U.C. Permit Price 50%; 25% Transit subsidy</b>	\$1.9	-1.6%
<b>Double parking prices, 100% Transit subsidy</b>	\$18.3	-5.2%
<b>Break even</b>	\$0	-2.5%

**Preferred Scenario**



■ Bike ■ Drive Alone □ Transit ■ Walk □ Carpool

# Limitations

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- Survey design
- No parking supply model
- Novel modes?



Bay Area Bike Share



# Conclusions

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- Mode choice analyses could inform TDM strategies
- Limitations to reducing drive-alone share
- Parking price increases should be paired with transit subsidies





# THE IMPACT OF PARKING PRICING AND TRANSIT FARES ON MODE CHOICE IN BERKELEY, CA