

# 1st European Conference on Sustainable Mobility at Universities

Universitat Autònoma de Barcelona

**UAB**

Universitat Autònoma  
de Barcelona

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UNIVERSITAT AUTÒNOMA DE BARCELONA

Speaker: Renée A. Fortier

Topic: UCLA: Changing the  
Mobility Paradigm



The conference is in the  
Framework of the European  
Project about Sustainable  
Mobility: U-MOB LIFE.



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## About UCLA

CAMPUS POPULATION	
Students	44,947
Undergraduate	30,873
On-Campus	12,805
Off-Campus	18,068
Graduate	14,074
On-Campus	1,855
Off-Campus	12,219
Faculty & Academic Staff	5,432
Staff	25,801
Total Campus Population	76,180



419 acres: 18 million square feet of buildings



Major teaching hospital and clinics



# Located Adjacent To Very Busy Streets And Freeways

- 3 of Los Angeles' busiest streets are adjacent to campus
- 6 of the 7 worst freeway stretches in the U.S. are in Los Angeles



# How Did We Get This Way?

Most European cities were developed in an era of walking and horses and subsequently expanded from this core with street cars or trains toward adjacent towns. Los Angeles, like many American cities, saw most of its growth in the time of automobiles and highways.



Barcelona 1800's



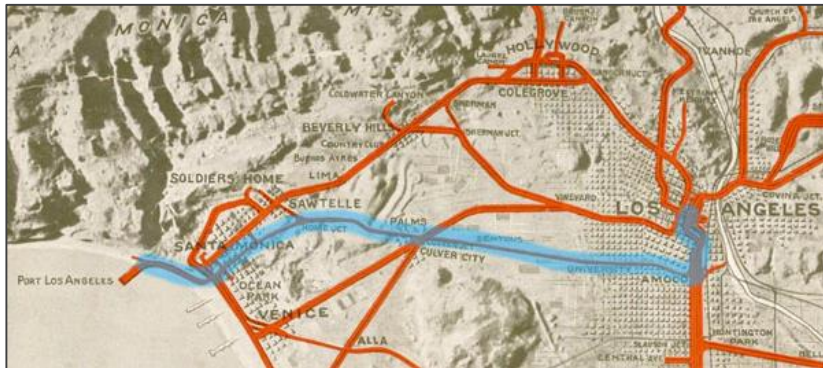
Los Angeles 1928

# The UCLA Westwood Campus Was Developed In The 1920's As The Motoring Age Took Off



- By 1930 there were already > 800,000 cars in Los Angeles!

While briefly UCLA benefited from a tram system, in 1938, in order to facilitate diffusion of roads and automobiles, General Motors and Standard Oil bought the Pacific Electric Railway of Los Angeles, dismantled it, replacing it with buses and cars. This was the period when European and North American urban development started to diverge.



Detail of a circa 1920 relief map of the Pacific Electric interurban rail system. The Santa Monica Air Line is highlighted in aqua. Courtesy of the Special Collections, Young Research Library, UCLA.



A Red Car traveling on the Santa Monica Air Line crosses over Motor Avenue. Photo by Alan Weeks, courtesy of the Metro Transportation Library and Archive.



# L.A. is Huge: 33,954 mi<sup>2</sup>/87,490 km<sup>2</sup>



Post WW II, highways proliferated and the number of automobiles grew. In turn the highways favored residential and employment decentralization. This was the period when European and North American urban development started to diverge.



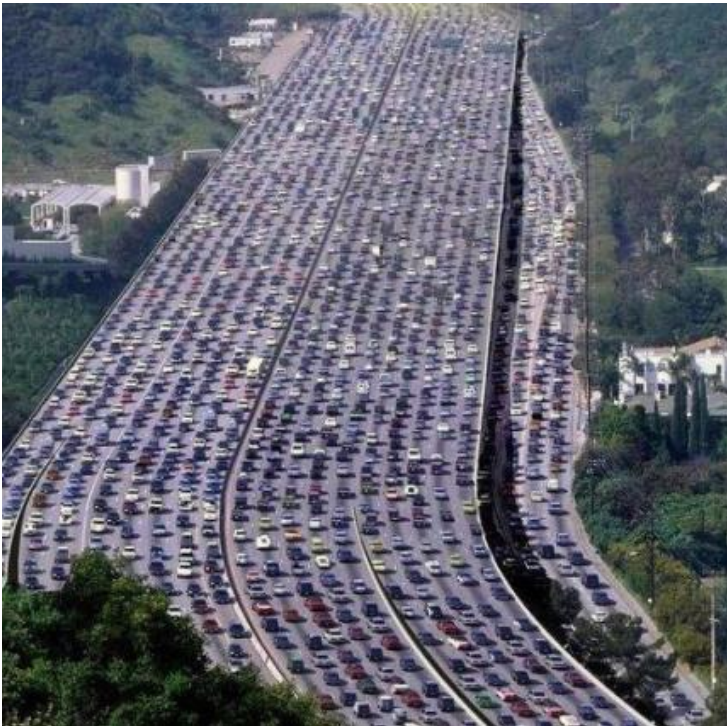
Los Angeles, CA, Today

# Los Angeles Today Has 19 Million Parking Spaces For Its 6 Million Automobiles!





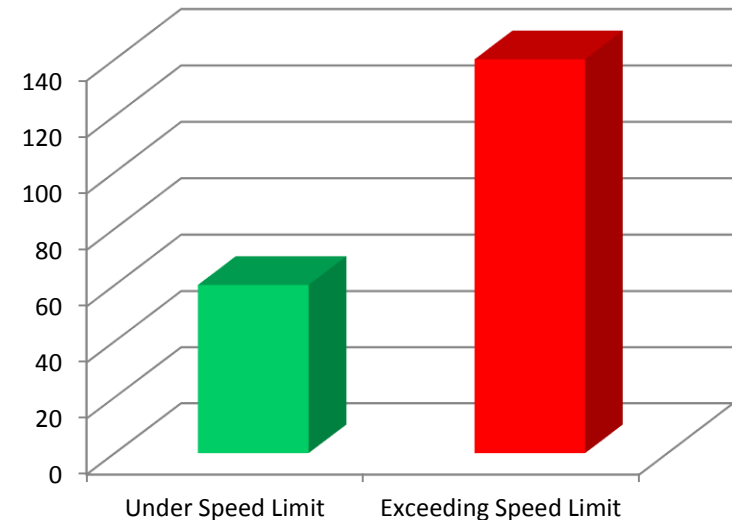
# L.A. Tops Congestion Ranking for U.S., Global Cities



The average Angelino spends 104 hours per year stuck in traffic, often commuting to work from far-flung suburbs

# The Symptoms Of Malaise

- Despite implementation of a campus vehicle trip cap and a parking cap in the 1990's and subsidies for public transit, carpool and vanpool
  - ❑ By the early 2000's the campus was generating 125,000 vehicle trips per day
  - ❑ Even with 24,000 parking spaces there was a 5,000 person waitlist for parking permits
  - ❑ Vehicle speeds were up to 40 mph on some campus streets



# The Cure??

- A Paradigm Shift was needed - away from parking cars to providing access for people

*Mission Statement: UCLA Transportation supports the campus community by providing for safe and efficient access and mobility in an environmentally responsible manner.*

- Cost of a new parking space >\$50,000 (\$3,600/year/space, amortized over 30 yrs.)
  - ❑ Costs \$300/month vs. parking permit fee of \$79/month
- Cost to the university per commuter allows comparison of parking vs. other modes
  - ❑ What is the cost to provide a vanpool seat? Currently, \$85/month, while a subsidized transit pass is just \$25/month. Bike Program? \$5/month.



# UCLA's Shift from Parking to Access



1990

2001

2002

2006

2008

2013

Long Range  
Development  
Plan caps on  
campus-  
generated trips

Parking policy  
change  
eliminates  
resident student  
parking

Introduction of  
transit passes  
(subsidized from  
parking  
revenues)

Bicycle Master  
Plan

UCLA Climate  
Action Plan

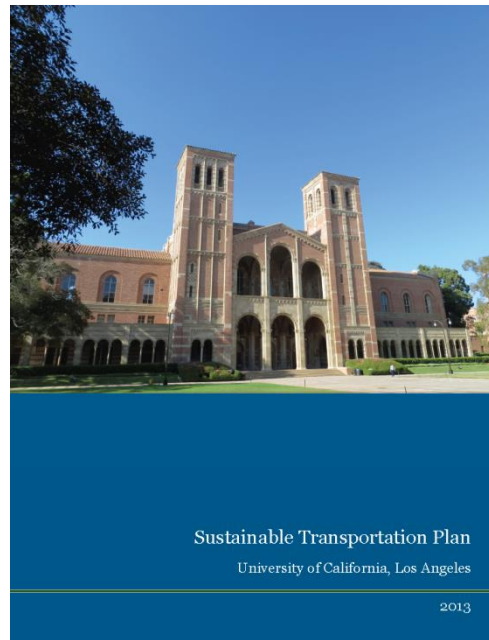
UCLA  
Sustainable  
Transportation  
Plan

# Have A Plan

➤ “Make no little plans.” – Daniel Burnham, Architect

➤ The Sustainable Transportation Plan:

- ❑ Describes UCLA’s efforts to maintain sustainable programs and reduce greenhouse gas emissions from mobile sources
- ❑ Provides performance measures to track progress towards goals, and delves into the strategies and initiatives to aid their achievement



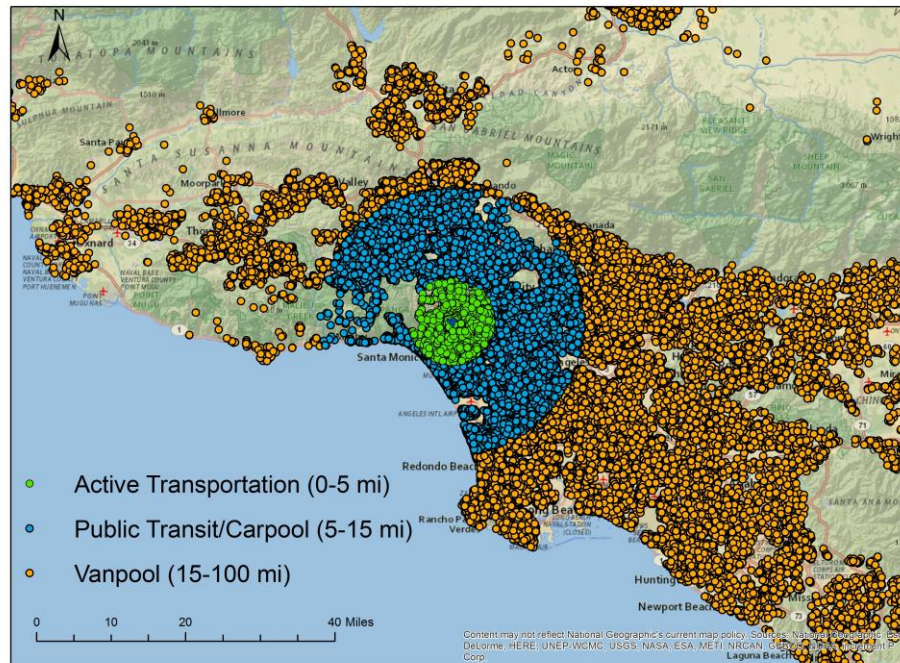
➤ The Plan’s goal categories include:

- ❑ Commutes & Trips – reducing GHG emissions from commuters and Fleet
- ❑ Sustainable Operations – greening daily operations
- ❑ Advocacy & Partnerships – working with regional partners and advocating for transport improvements to better serve UCLA faculty, staff and students

# Provide Options To Solo Driving (But What Options?)

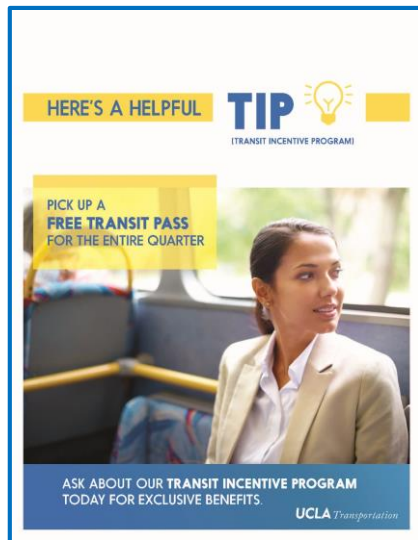
- Using geocoded employee and student addresses to target options for our demographic

Alternative Commute Options Based on Distance from UCLA



# Provide Incentives To Reduce Solo Driving Trips On And To Campus

- Self-fund as much as possible
  - ❑ Those who drive alone and park are surcharged to fund subsidies for more sustainable modes
  - ❑ \$7.5 M/year supporting incentives comes from parking user fees



# Vanpool: UCLA's First Alternative Mode Program, Aimed At Long-Distance Commuters (>15 miles)

- Vanpool was UCLA's first foray into alternative mode programs, circa 1984 and the Olympics
- Reaches far-flung L.A. communities not well-served by public transit
- Now has 1,500 full-time riders and 150 routes serving >80 communities across Southern California
- Employee recruitment and retention tool with high local housing costs
- UCLA Transportation provides a 50% subsidy for each commuter's monthly vanpool fee





# Public Transit Pass Subsidy Programs: Aimed At Mid-Distance Commuters (5-15 miles)

- Introduced in early 2000's, 50% of pass cost subsidized from parking fees
- Agreements with six public transit agencies, providing direct service to UCLA
- More than 6,100 UCLA transit pass holders and several thousand additional casual riders via cash copays



# Carpool Program: Serves Primarily Mid-Distance Commuters

- 2,400 UCLA staff, faculty and student participants
- Reduced parking permit fees as an incentive to carpool
  - ❑ 2-person carpool = \$65/month (\$32.50 each)
  - ❑ 3-person carpool = \$39/month (\$13 each)
  - ❑ 4-person carpool = \$25/month (\$6.25 each)
  - ❑ Drive alone = \$79/month
- Carpooling students guaranteed a parking pass



# The Last 5 Miles: Active Transportation

- 2006 Bicycle Master Plan focused on growing the bicycle community
- Bicycling has tripled to over 3,000 commuters since Plan creation



# UC Davis Provided a Model Bicycle Program



UC Davis Bicycle Highways



UC Davis Bike Barn

(But UCLA does not have the land area of UC Davis...)

# Road Diets Make Room For Cyclists at UCLA

- Removed motor vehicle lanes
- Added high visibility bike lanes and bike boxes

Before

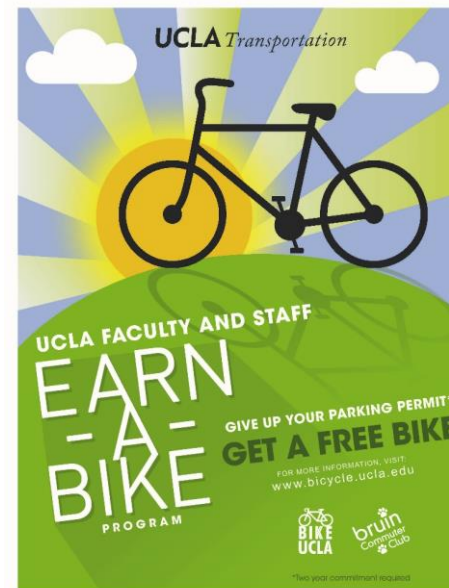


After



# UCLA Bike Programs

- “Earn-A-Bike” by giving up parking permit
- Bike “Library” loaner bikes for students
- Commuter Loaner Bikes for faculty/staff
- Bike-share consortium with Los Angeles Westside Cities launching in August 2017 (130 bikes @ UCLA)



# Commute Support Services

- UCLA Transportation provides four hours of subsidized carshare use/month for alternative mode program users
- Emergency Ride Home to alleviate stress if an alternative mode user needs to get home quickly in an emergency



ZipCar



# For Those Who Must Drive To Campus, Encourage Zero Emission Vehicles And Encourage Less Driving

- Network of EV chargers for commuters
  - ❑ Level 1 and Level 2
  - ❑ Goal to provide 4.5% of all commute vehicles



- Limit midday trips by restricting mobility of parking patrons between areas
- Encourage multi-modal commuting
  - ❑ Discount daily parking for alternative mode users



# Student Safe Rides At Night

- Parking Fees Fund Evening Vans @ UCLA
  - ❑ Operates 7pm – Midnight
  - ❑ Provides service on campus to residence halls and in adjacent area where additional 5,000 students live
- At the University of Southern California (USC), a large private University in Los Angeles, safe rides are provided via a contract with UBER
  - ❑ Nightly 7:00 pm through 2:00 am
  - ❑ Boundaries extend 1 mile around campus

Service	Total Rides	Average Cost per Ride	Total Cost of Program
UBER FY 2016	751,928	\$4.46	\$3.4 Million
UBER FY 2017 Projections	1,068,147	\$4.87	\$5.2 Million

- ❑ Benefits:
  1. Campus nighttime safety
  2. 31% of USC students surveyed said they are less likely to bring a car to campus

# Supporting On And Near Campus Mobility

- California Universities Are Moving Towards Zero Emission Campus Shuttle Buses
- Stanford University: 23 100% Electric Buses
  - ❑ 34-passenger = 13 total
  - ❑ 22-passenger = 10 total



# BruinBus: UCLA's Shuttle System

- BruinBus, 17 bus campus shuttle system, enables mobility around campus for those who don't bring a car, provides commutes for >2,000 students living ~ 1 mile south of campus and >250 students in university housing ~ 4-5 miles from campus



Two New Electric Buses Added In 2016



Renewable CNG Buses

# The Fruits Of Our Efforts

- Reduced drive alone rate and reduced vehicle trips
- Greater active transportation participation
- More cost effective use of transportation dollars
- Greenhouse Gas (GHG) emission reductions
- Healthier campus environment



# Parking Construction Costs Avoided

## Drive Alone Rates

	1990	2016
Employees	69%	53%
Students	36%	25%

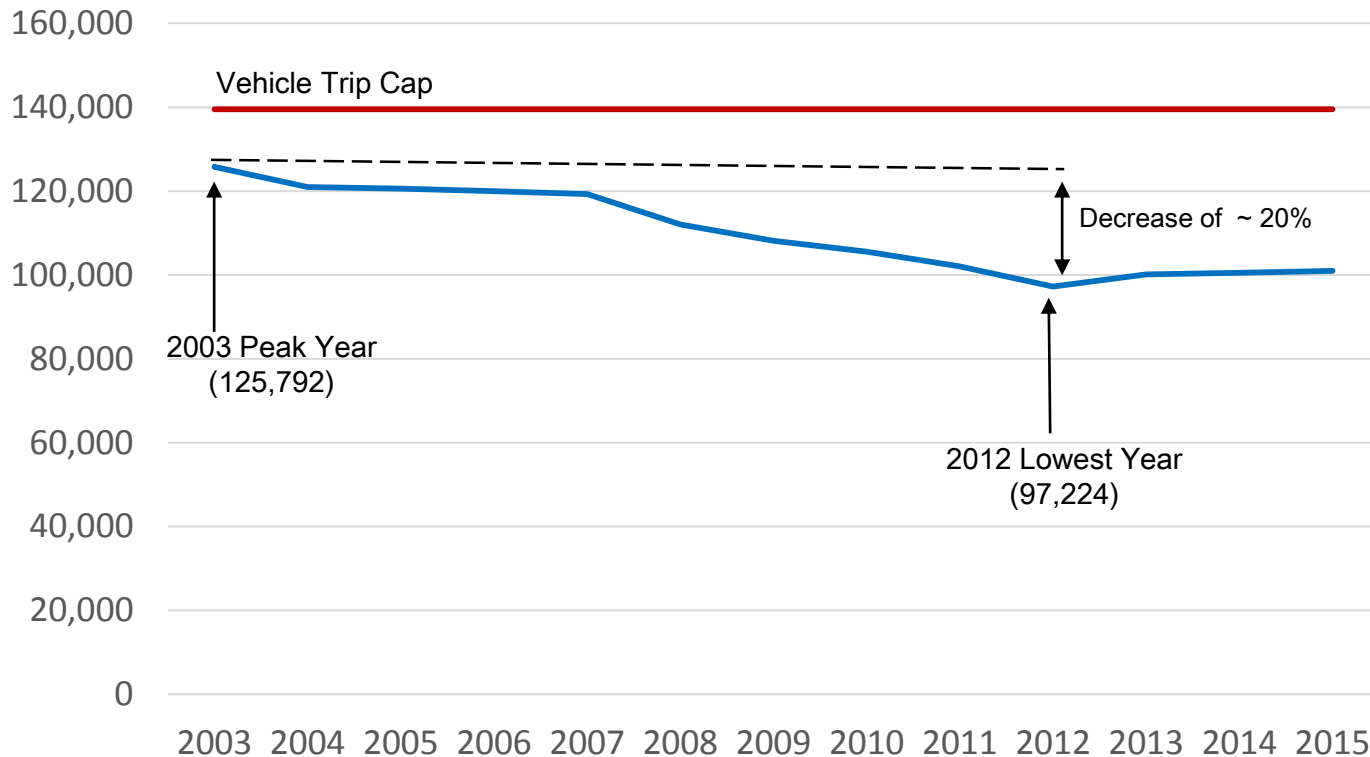


Parking not built due to drop in demand = 6,970 spaces  
 Construction cost avoided:  $6,970 \times \$30\text{K}/\text{space} = \$209.1\text{M}$



# 2003-2015 Campus Vehicle Trips

UCLA Traffic Cordon Count



Vehicle Trip Cap: 139,500

— Trip Cap — Daily Trips



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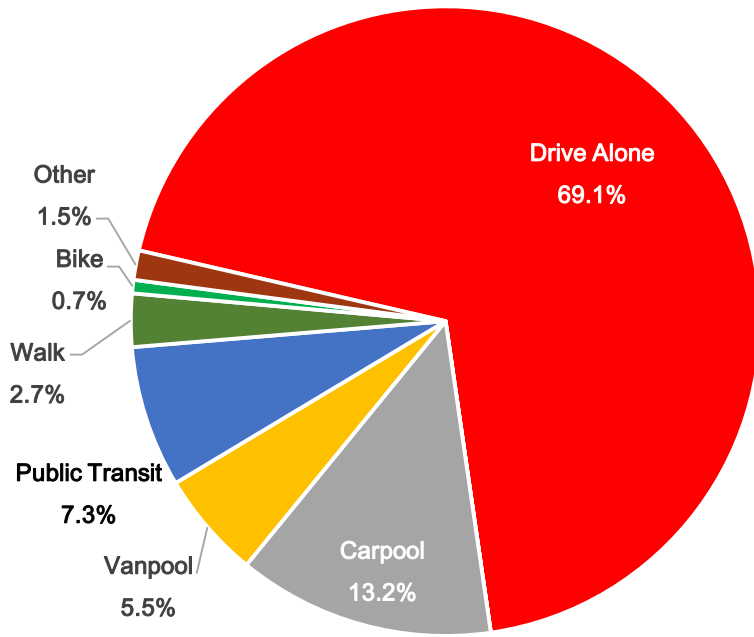


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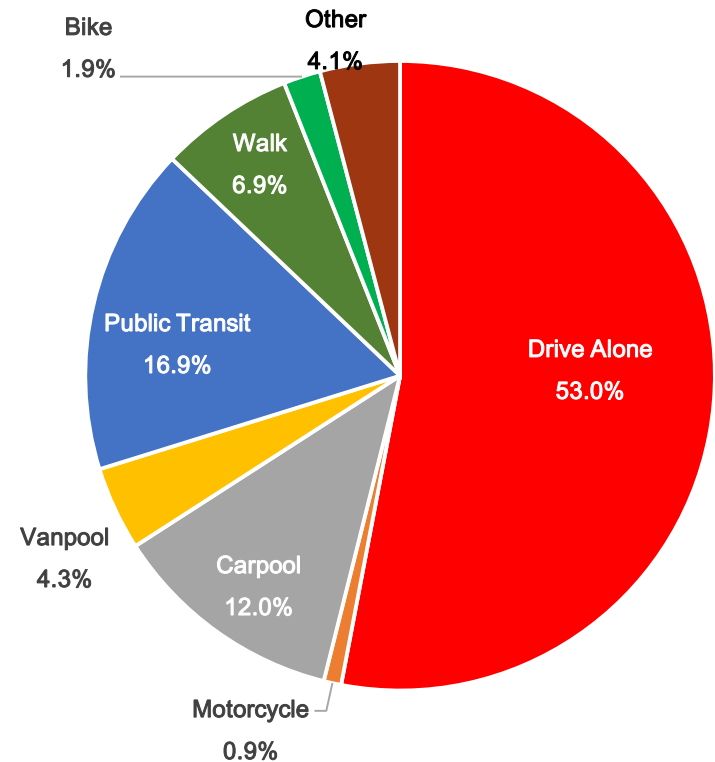
# Change In Mode Split Over Time (1990 vs 2016)

## UCLA Employee Mode Split

1990



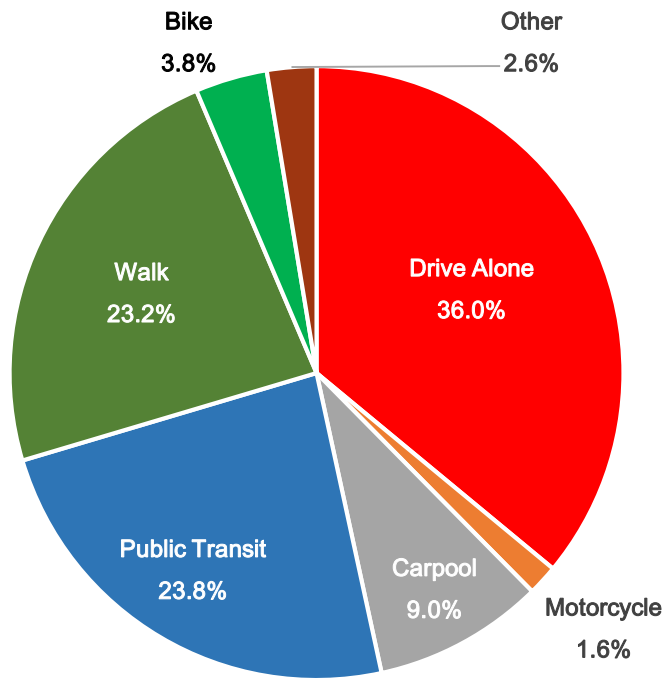
2016



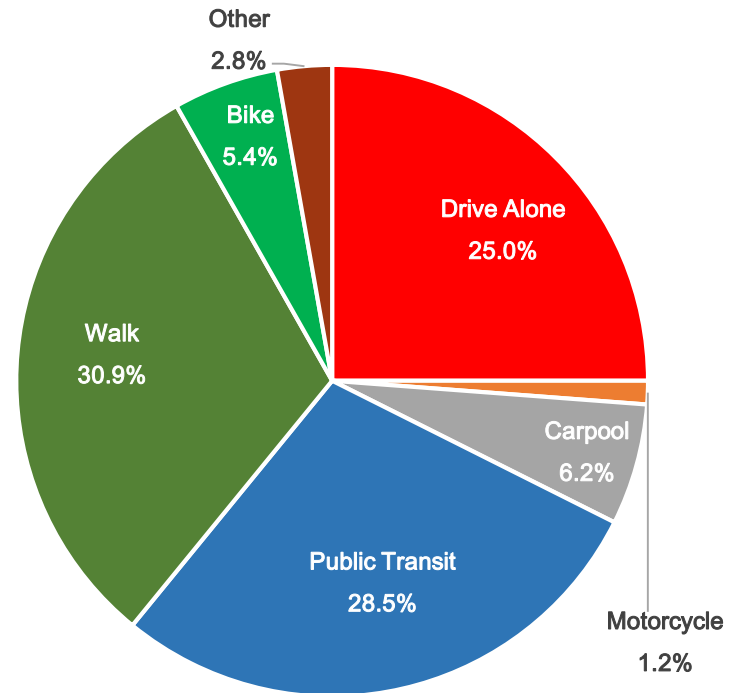
# Change In Mode Split Over Time (2000 vs 2016)

## UCLA Commuting Student Mode Split

2000



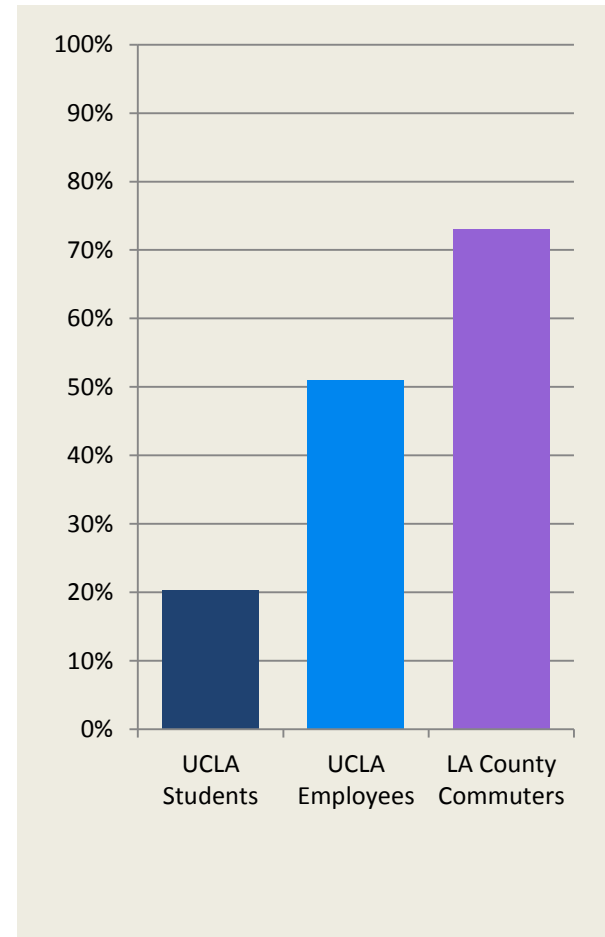
2016





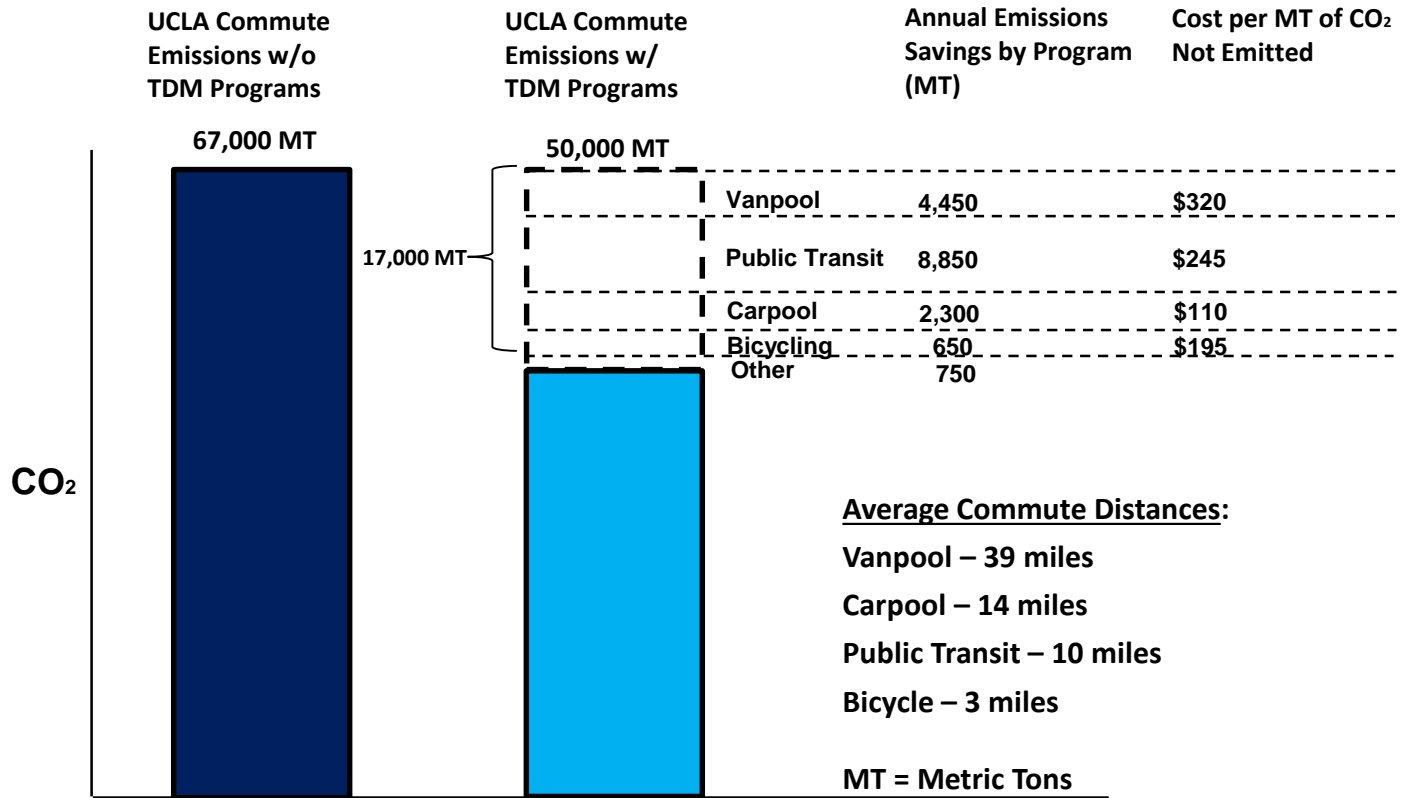
# Drive-alone Rate Comparison

- LA County: 73%
- UCLA Employees: 53%
- UCLA Students: 25%



# GHGs Saved

Cost/Benefit Model Using Cost Per Metric Ton of CO<sub>2</sub> Not Emitted



# And A More Livable Campus!



# But We Still Have More To Do!!

- New Goal of further 10% reduction in Drive Alone to 48%

## How We Will Get There:

- New incentives and outreach to new UCLA students and employees
  - ❑ Free First Quarter transit and carpool passes
- L.A. voted to tax itself to fund transportation
  - ❑ Subway coming to UCLA as soon as 2024!



# Questions or Comments?

# Thank you



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