

# Stanford Transportation Demand Management: Current and Future

Sustainable Transportation Spring Seminar Series  
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**STANFORD UNIVERSITY**  
**P&TS**  
Parking & Transportation Services

Stanford University

# Overview

Stanford TDM motivations

Current programs

Metrics

Future directions

# Motivations: Community Relations

## **General Use Permit (GUP)**

- Agreement with Santa Clara County
- Limits campus development and traffic
  - No net new commute(peak hour) trips

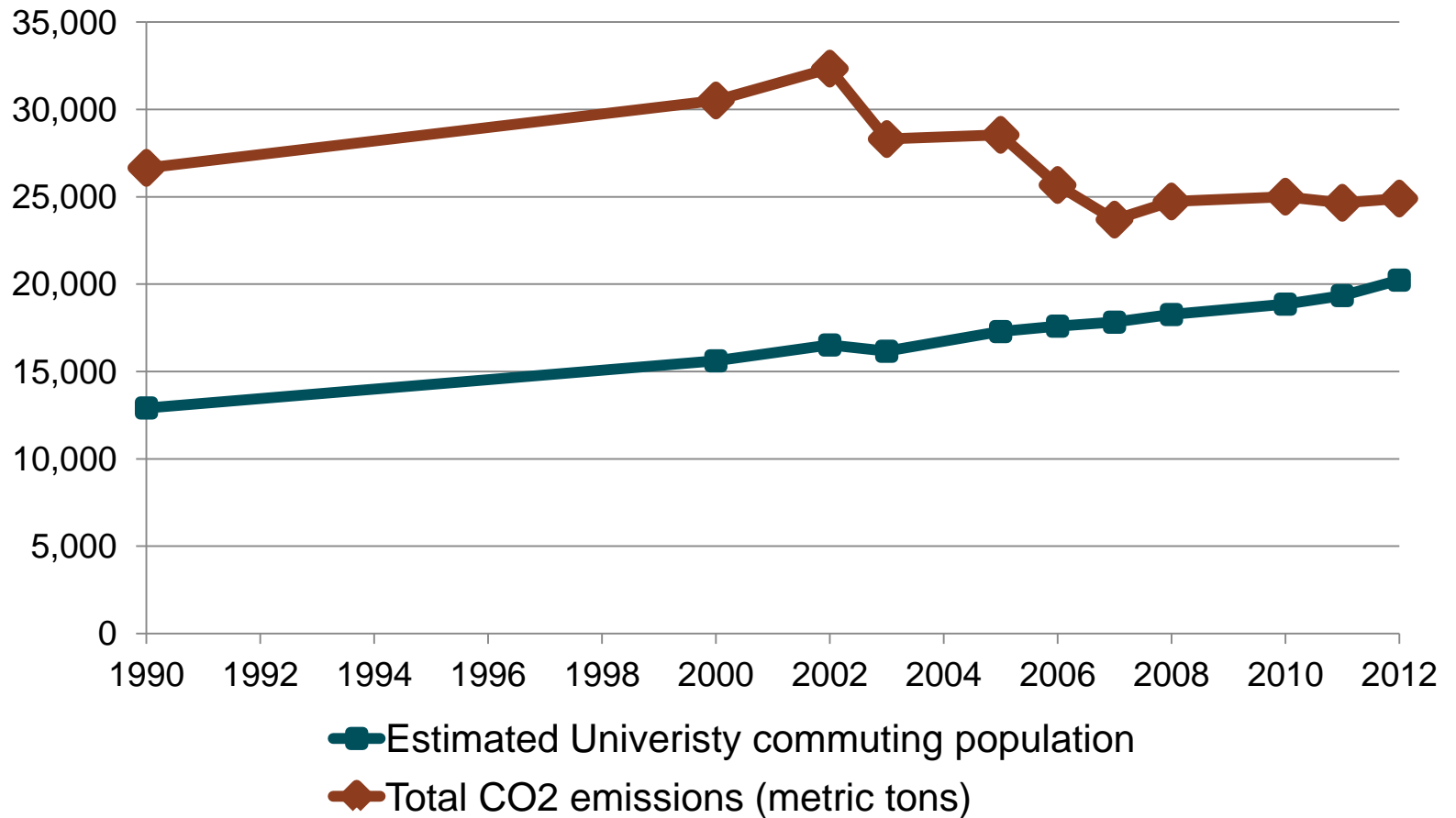
## **Public Service**

- Marguerite

# Motivations: Environmental Sustainability

## Climate Change, Air Quality and Resource Conservation

### Commuting population & emissions



# Motivations: Employee Well Being and Retention

- Google
- Financial rewards
- Stress reduction
- Increased exercise

# Current Programs: Transportation Demand Management (TDM)

- Guiding principle - Alter the economy of transportation choices to encourage more efficient use of transportation infrastructure

## Current Programs: Transit

- Go and Eco passes
- Marguerite shuttles
- East Bay shuttles
- Transit information
- Commute planning service
- Pretax transit passes and commuter checks

## Current Programs: Parking Pricing

- Parking permits
- Parking permit buy backs
- No cars for Freshman



## Current Programs: Commute Club

- Clean air cash
  - \$300/yr
- Carpool credit
  - \$300/yr toward permit costs
  - One free parking pass per member per month
  - Preferred parking
- Vanpool
  - \$300/month per vanpool
  - Reserved parking
- Ride Matching services
- Refer-A-Friend
- Emergency ride home
- Zip car and Enterprise credits
- Purchase eight daily permits per month
- Prizes and drawings
- Members only gifts

## Current Programs: Other Support Programs

- Bicycle program
- Zip Car
- Charter services

# Metrics: Parking Construction Avoided

<u>Group Drivers</u>	<u>Drive alone rates</u>		<u>Estimated Delta in</u>
Employees	2002 = 72.0%	2014 = 49.4%	3,022
Grad Students	2003 = 50.5%	2014 = 39.3%	539
Postdocs	2003 = 46%	2014 = 33.5%	249

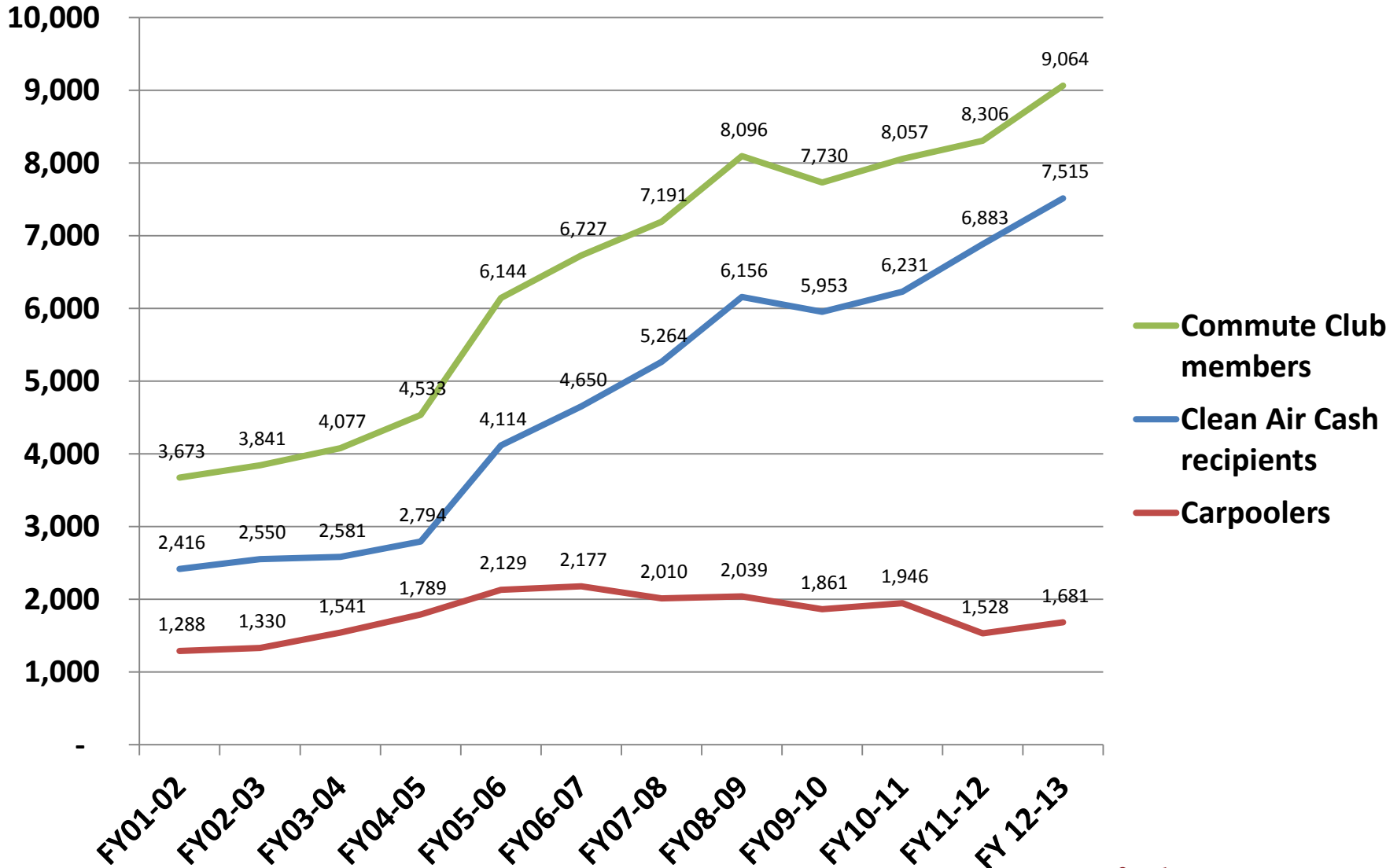
Parking spaces not constructed due to drop in parking demand

**3,809**

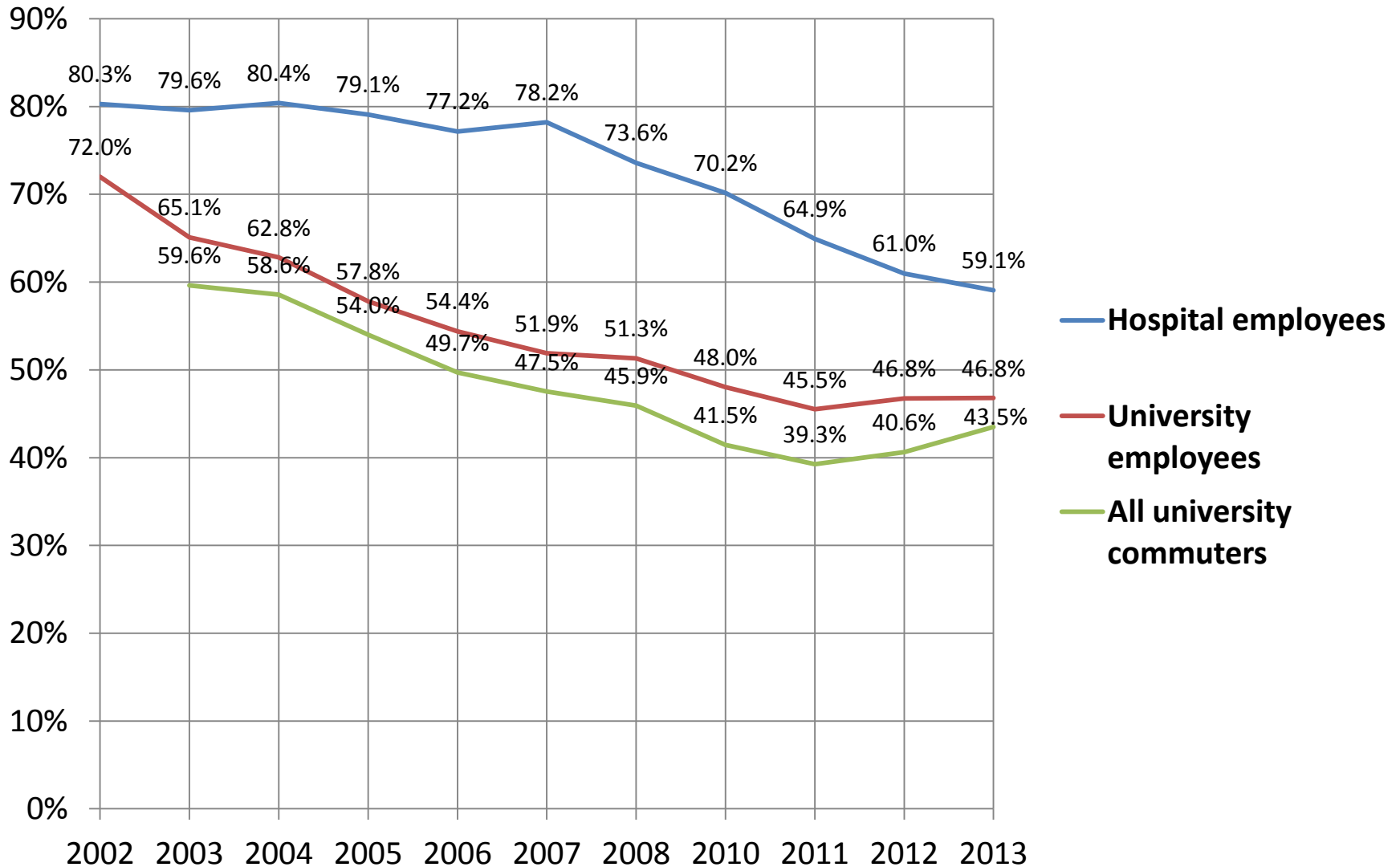
Construction cost avoided:  $3,809 \times \$40,000/\text{space} =$

**\$152,372,120**

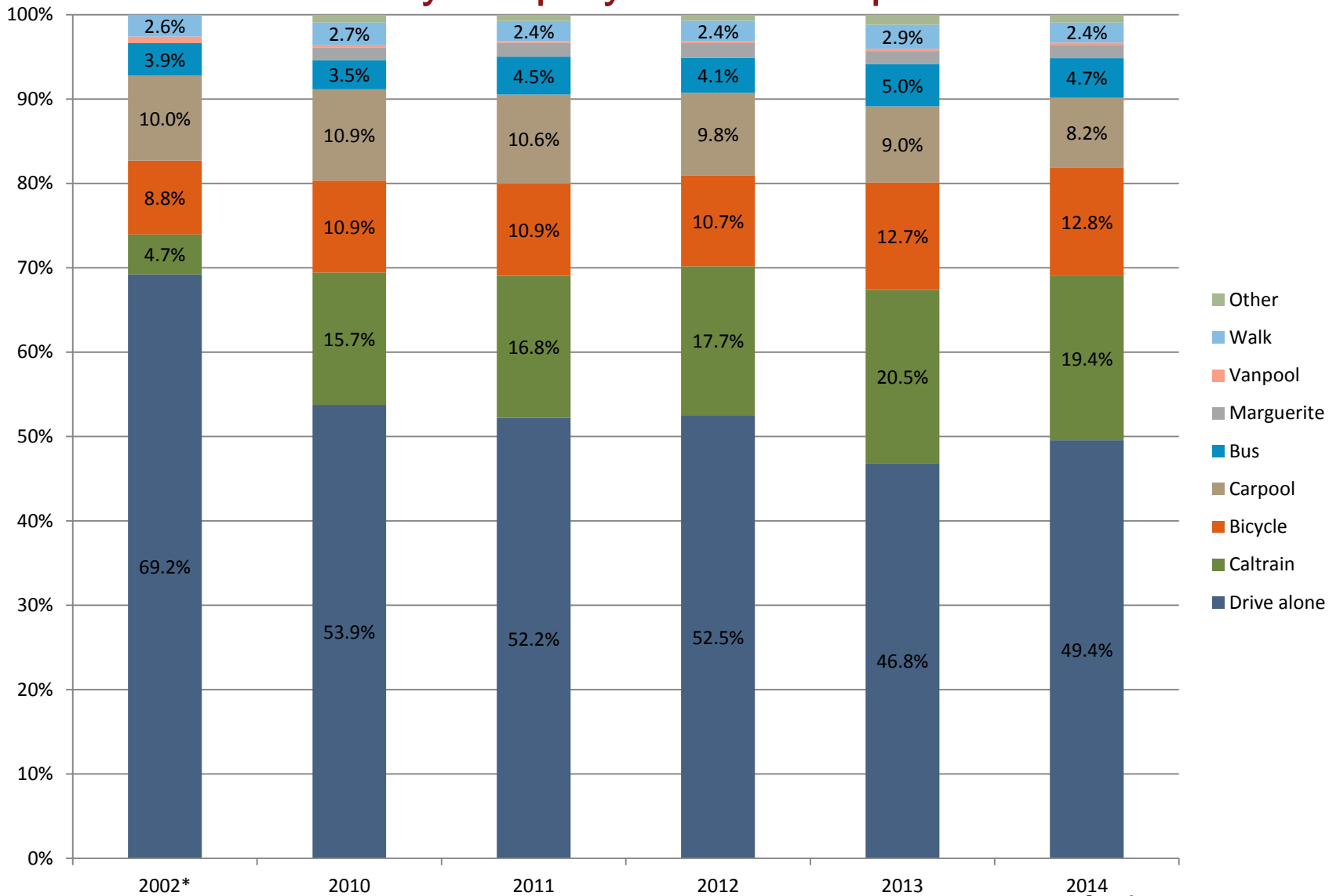
# Metrics: Commute Club Membership



# Metrics: Drive Alone Rates\*



# Metrics: University Employee Mode Split



## Future Directions: Parking guidance

- Guiding ideas – Making parking easier, reduce search traffic
- License Plate Recognition
- Live parking information availability

## Future Directions: Electric Vehicle Plugin Network

- Guiding ideas – Reduce emissions, motivate market place to convert to EV, staff retention
- Phase one add 50 ports -> project scope 500 on campus charging ports



## Future Directions: Gamification

- Guiding ideas - Allow for marginal decision making, reward *all* positive mode choices
- Daily mode choice data
- Encouragement system for positive behavior
- Allows for daily mode choice change
- Capri as platform?

## Future Directions: Commute Shed Modeling

- Guiding ideas – Find deeper insight into commute behaviors, building a data driven office model
- →Data Driven TDM
- Mapping the commute shed (Stanford Geospatial Center)
- Mode choice model
- Mode change model
- Price elasticity of parking permits and Clean Air Cash
- Environmental learning study (Dept. of Education Social Ecology Lab)

## Future Directions: Local Area

- Guiding ideas – Alter the economy of transportation choices to encourage more efficient use of transportation infrastructure
- MetroBee - Small area on demand ride service