

Making the Most of Your Transportation Demand Program Investment

Directors' Video-conference

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Reasons to support Transportation Demand Management (TDM) Investment

- **Reduces GHG emissions**
- **Reduces parking demand and need to use campus land and \$ for parking**
- **Reduces obligation to pay for off-campus intersection improvements**
- **Improves community relations**

TDM Reduces Obligation for Mitigation of Off-campus Intersections

- **LRDP projects enrollment and square footage**
- **LRDP EIR analyzes traffic impact**
 - **LRDP EIRs use or generate mode split and trip generation rate – info source**

TDM Reduces Obligation for Mitigation of Off-campus Intersections

- **Determine impact of campus trips on off-campus intersections and proportional share of impact and improvements (UC contributes 10% of impact on intersection; UC pays 10% of cost of improvement)**
- **Local jurisdictions/legislators equate impact with payment**

TDM Reduces Obligation for Mitigation of Off-campus Intersections

- **TDM reduces impact, thus reduces obligation to pay**
- **UC monitors to determine whether and when impact occurs**

Systemwide, UC spent \$35.7 million on TDM in 2007/08 (up \$6M from 2006/07)

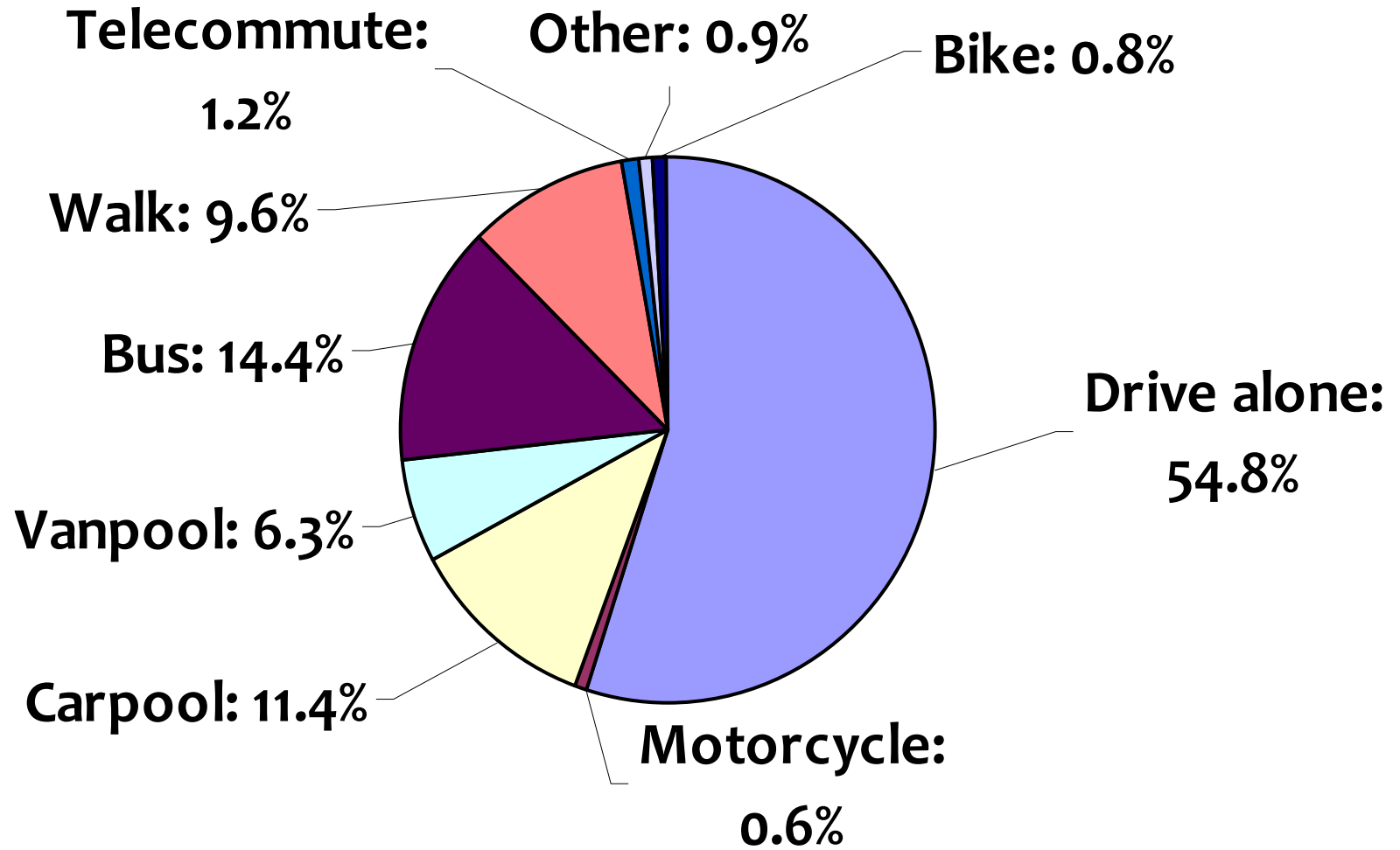
Cost of MT of CO₂ reduced from TDM vs. other projects/programs to reduce GHG emissions?

- **Climate Action Plans should include a menu of projects and programs the campus proposes to achieve GHG reduction goals**
- **Transportation GHG emission projects/programs will be analyzed in comparison with other GHG reduction projects/programs**

UCLA TDM Programs

- **UCLA parking fees/citation revenues support a growing Alternative Transportation program**
 - **Budgeted at over \$7M for FY 2009-10**

2007* UCLA Employee Mode Split

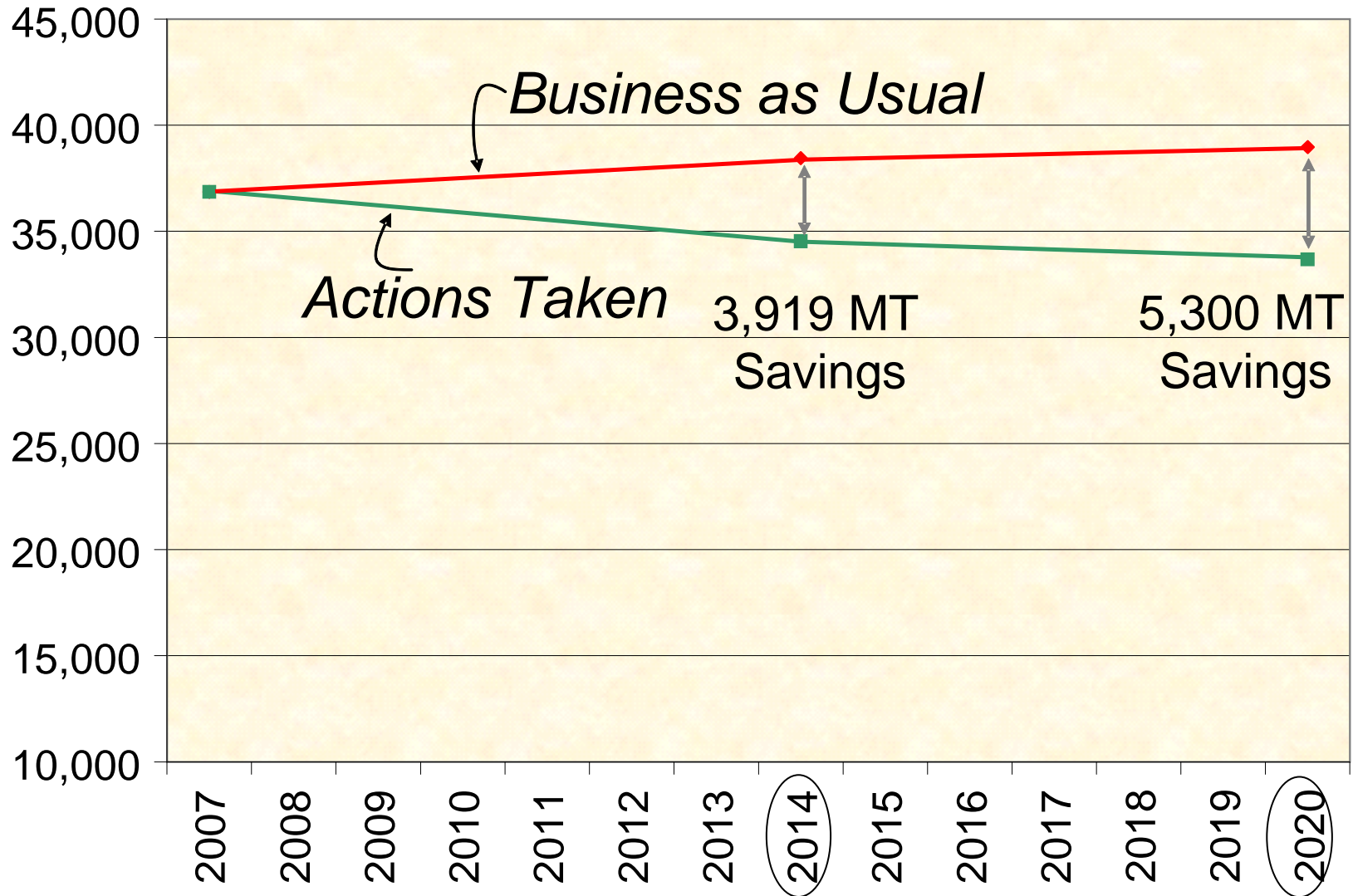


* Includes student employees; AVR = 1.6

TDM Goals

- **Optimize expenditures on TDM and develop new strategies with the goal of reducing single occupancy vehicle trips from current 55% to no more than 50%**
- **Both GHG emissions and cost to be considered in optimization calculations**

GHG Emissions: Business as Usual vs. Actions Taken



How to Get There from Here

Developing Cost-Effective Strategies

Leverage Someone Else's Investment

- **On-campus housing reduces parking demand and vehicle trips**
- **Create new partnerships with public transit providers to reduce trips**
 - **FlyAway Bus**
 - **Amtrak Bus to Rail**
 - **New rapid and commuter bus routes to campus**
 - **Subway to the Sea**

Parking Policies Can Reduce Demand and Reduce Trips

- **Eliminate most on-campus parking for residents**
- **Restrict mobility to reduce mid-day trips**
- **Utilize pricing to manage demand**
- **Establish cap on number of spaces**
- **Build parking as a last resort**

How to Determine the Cost-Effectiveness of Your TDM Programs

■ Different approaches:

□ Focus on *cost per commuter*

- Allows comparison with cost of parking construction

□ Focus on *cost per trip saved*

- How many trips did we avoid with each program, and at what cost?

How to Determine the Cost-Effectiveness of Your TDM Programs

- Focus on *cost per metric ton of CO₂ reduced*
 - How many metric tons of CO₂ would be emitted if we didn't have each program

Cost/Benefit Model Using Cost Per Commuter

Average Cost per Commuter per Year

<i>Mode</i>	<i>Over 20 Years</i>
Biking	\$93
Carpool	\$111
Public Transit	\$190
Parking	\$386
Vanpool	\$2,038

Calculating Cost/Benefit Based on Mode Splits Without TDM Programs

- **Value of campus TDM Programs is based on what commuters would do otherwise**
 - **Would all vanpoolers drive alone to campus?**
 - **Would public transit patrons do the same?**

Calculating Cost/Benefit Based on Mode Splits Without TDM Programs

- **A set of assumptions based on real data and travel survey results was formed**
 - **TDM program participation numbers were used when available**
 - **Pre-program mode splits were compared to mode splits today**
 - **For GHG calculations, network distances were used in GIS to calculate vehicle miles traveled (VMT)**

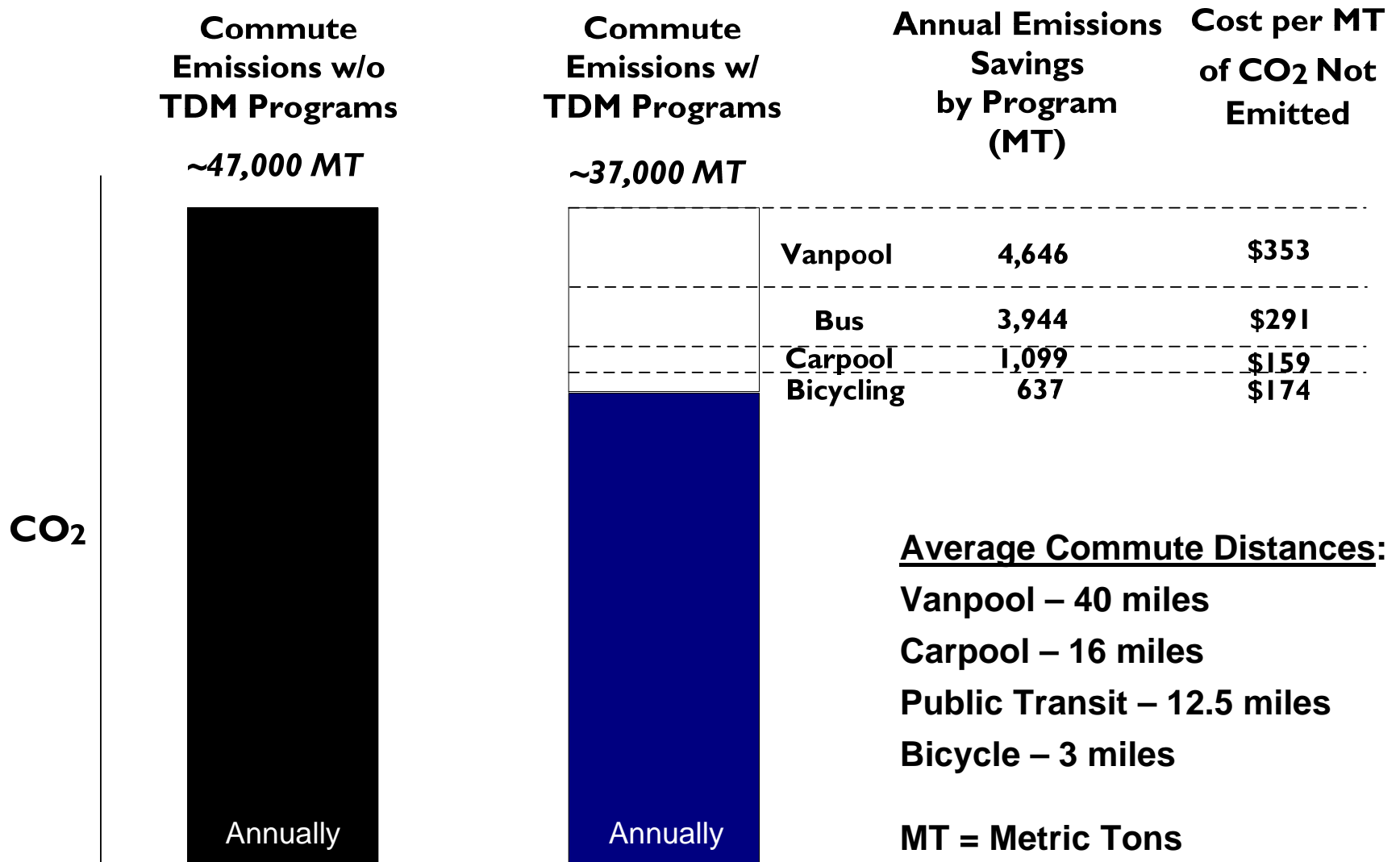
Cost/Benefit Model Using Cost Per Trip Saved

Program	Number of Daily Participants in 2007	Program Costs/Year	Total Trips Saved	Cost/Trip Saved
Vanpool	1,329	1,637,905	263,701	6.21
Carpool	2,107	174,690	161,130	1.08
Transit Subsidy	8,131	1,147,288	716,390	1.60
Bicycle	1,599	111,000	481,740	0.23

Cost/Benefit Model Using Cost Per Metric Ton of CO₂ Not Emitted

- **The results are threefold:**
 - **A commute maximum value (all-solo-drive if no TDM):**
 - **~62,000 MT of CO₂**
 - **A “without TDM programs” value based on probable mode splits without TDM Program expenditures:**
 - **~47,000 MT of CO₂**
 - **The current state, as-is value:**
 - **~37,000 MT of CO₂**

Cost/Benefit Model Using Cost Per Metric Ton of CO₂ Not Emitted



Parking: Amount Paid to Emit GHGs

- Marginal cost of a parking space =
~\$50,000
 - Amortized over 30 years = \$3,219/year
- Vehicle trips per parking space = 4/day
- What does this mean for GHG emissions?

Parking: Amount Paid to Emit GHGs

- Each of the 4 trips the new parking space attracts results in GHG emissions
 - This would result in approximately 3.9 MT of CO₂ emissions/year/new space
- At \$3,219/year/space, the 3.9 MT equates to *paying* \$825 per MT of CO₂ emitted!

Questions & Answers