

# Accommodating Buses and Bicycles Together on the Streets of L.A. County

**Lia Yim**

*L.A. Metro, Transportation Planning Manager  
Los Angeles, CA*

**Andy Kosinski**

*Fehr & Peers,  
Senior Transportation Engineer/Planner  
San Francisco, CA*

Bus & Paratransit Conference





# **Metro Bike/Bus Interface Study**

# Agenda

1. **Study Background** (*Lia*)
2. **Study Metrics** (*Andy*)
3. **Example Corridor** (*Andy*)
4. **Questions**



# Audience Survey

- Who comes from an agency where bus Operators encounter bicyclists on their route?
- How many are seeing more people riding bikes on those routes?
- How many feel there is no uncertainty, confusion, or frustration with these encounters between bicyclists and buses?
- Who here feels there is room for improvement with bike and bus interactions?



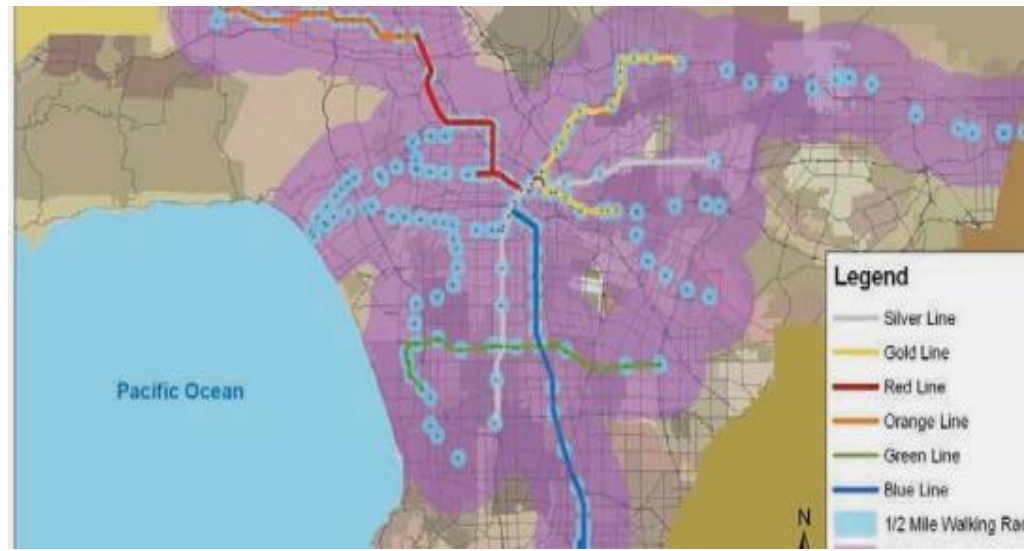
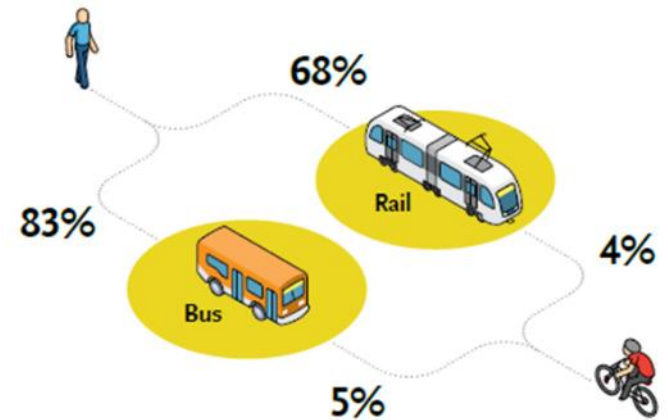
# L.A. County Bus Service

- LA Metro
  - 1,433 sq miles of service area
  - 170 bus routes
  - 2,248 buses in fleet
  - 15,967 bus stops
- 22 Additional Municipal Operators



# Bicycling is on the Rise

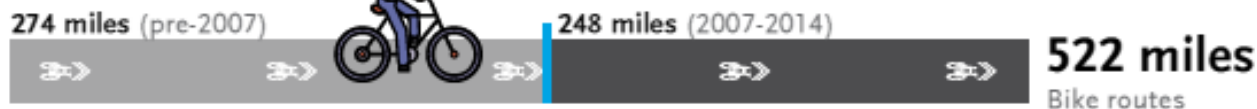
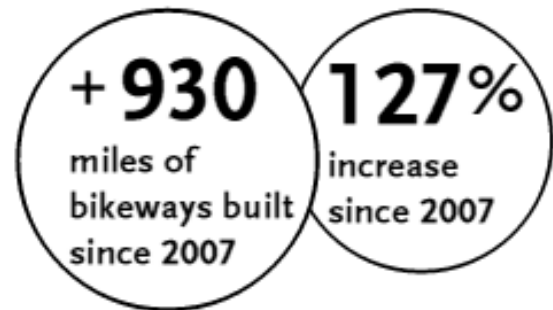
- 5% of patrons access Metro bus by bike
- 80% of LA residents live within 3 miles of high frequency bus or rail
- Between 2006 – 2014, bike commuting increased 81%





# Bicycling Infrastructure is on the Rise

## Miles of bicycle facilities in LA County

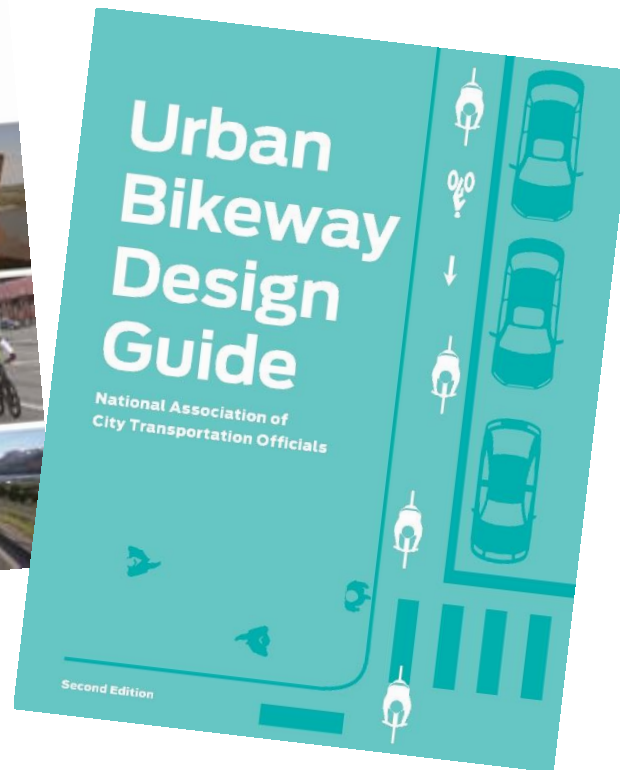
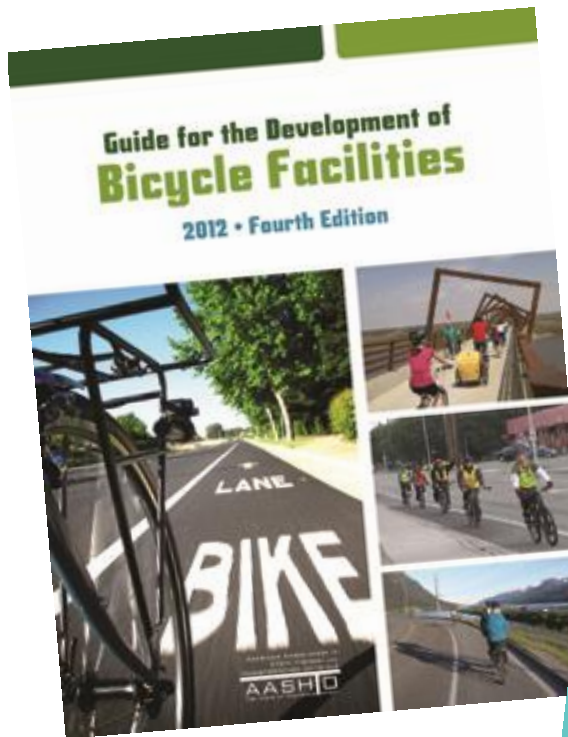


# Bike/Bus Interactions





# Existing Design Guidance



# Bike/Bus Interface Study

- Best Practices & Literature Review
- Before/After Analysis
- Training Guidance for Operators & People on Bicycles
- Bike/Bus Roadway Design Guidebook



# Study Metrics

- 1. Corridor volumes (ADT, bus frequency, bikes)**
- 2. Daily ridership**
- 3. Behavior**
  - **Vehicle speeding**
  - **Bicyclists riding the wrong way**
  - **Sidewalk riding**



# Study Metrics

## 4. Bus operations

- Change in bus speed
- Change in reliability

## 5. Bicycle Traffic Stress

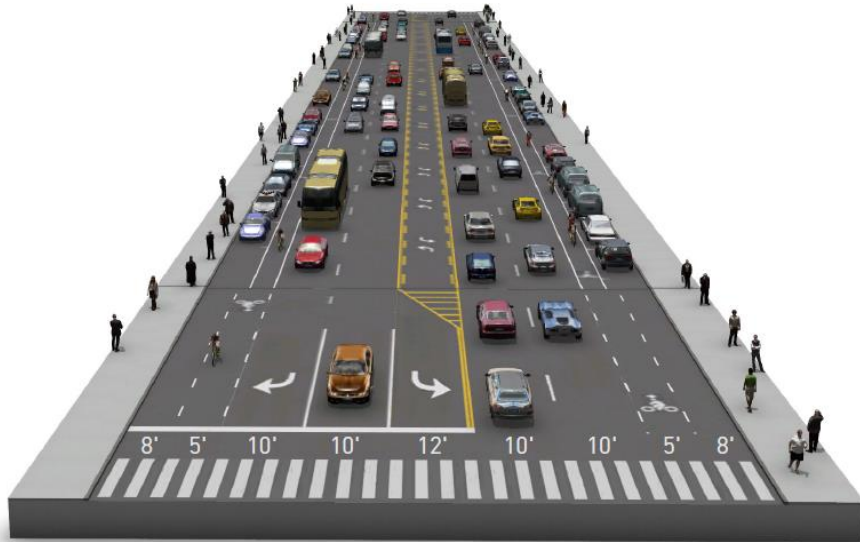
## 6. Collisions by mode



# Sample Corridor: Reseda Boulevard

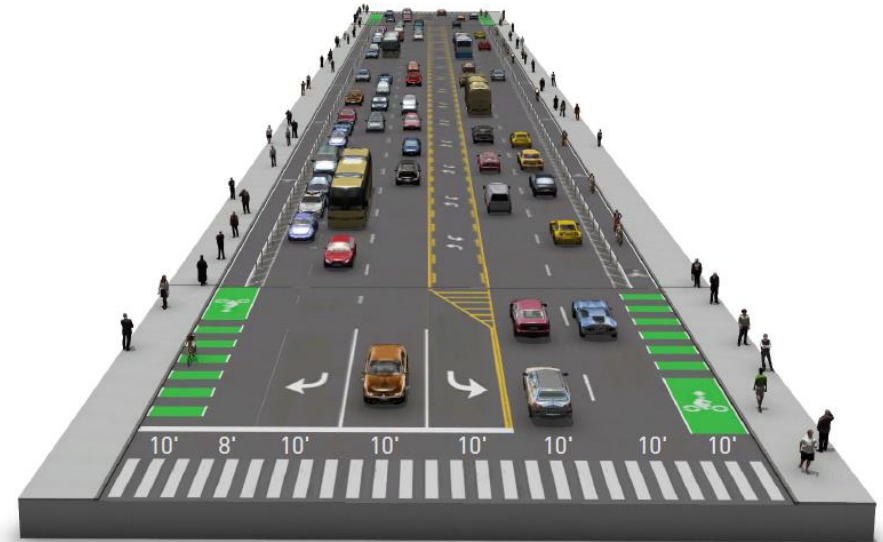
BEFORE

Standard bike lanes



AFTER

Separated bikeways





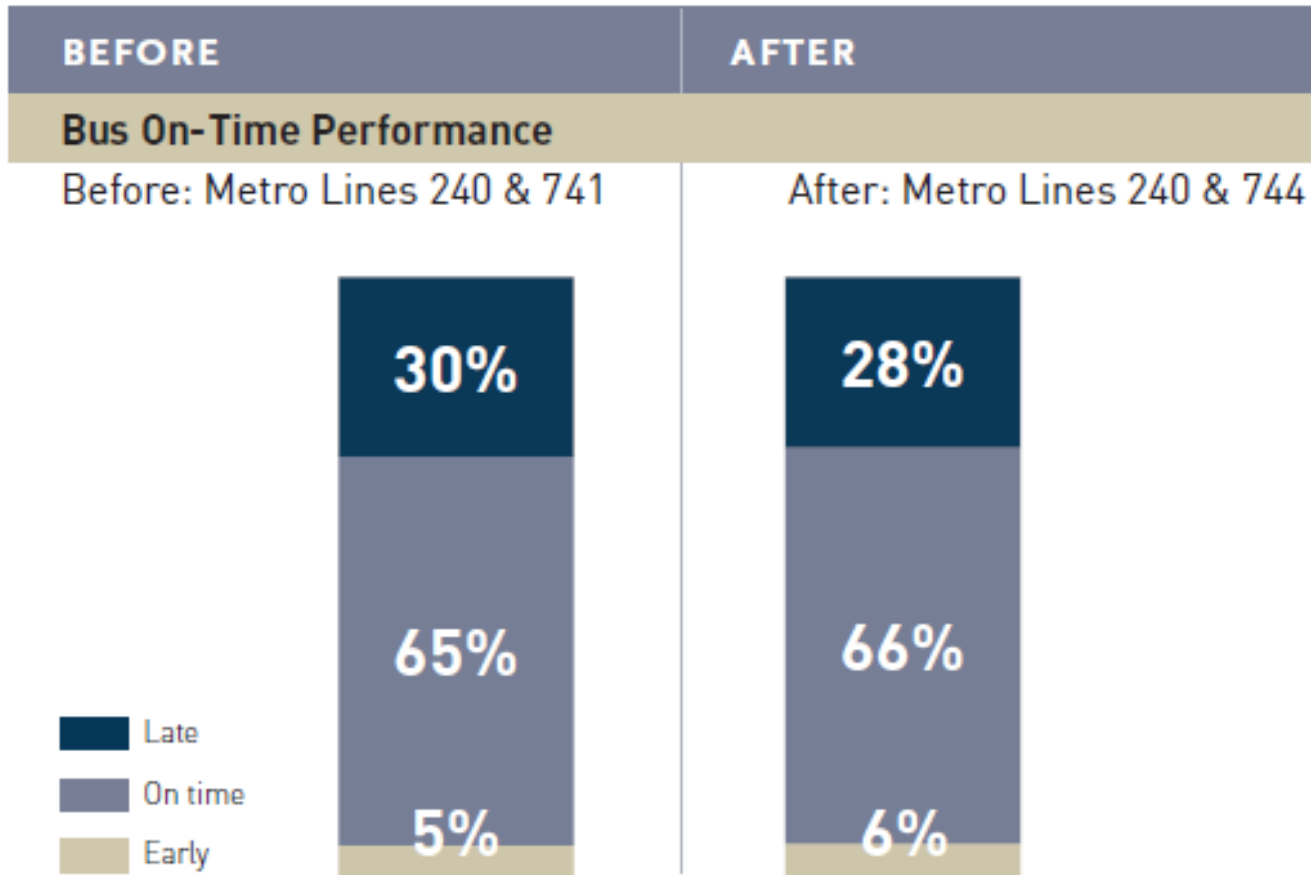
# Travel Metrics

BEFORE SNAPSHOT	AFTER SHAPSHOT
Average Daily Traffic	
33,010	33,740
Above Speed Limit (Posted Speed Limit: 35 MPH)	
14%	15%
Daily Bus On & Offs	
2,210	2,050
Buses Per Hour	
7 NB	6 SB
6 NB	6 SB

BEFORE SNAPSHOT	AFTER SHAPSHOT
Bikes Per Hour	
0 - 5	10 - 15
Wrong Way Riders	
52%	29%
Sidewalk Riders	
34%	16%



# On-Time Performance

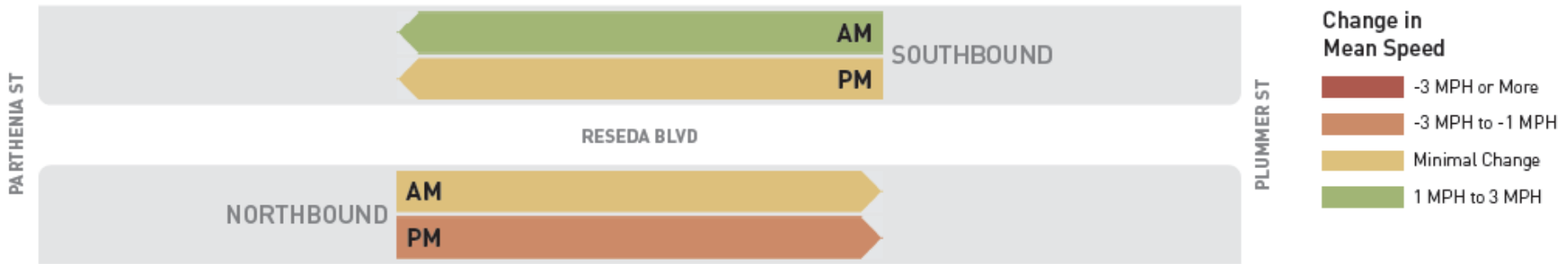


# Speed/Reliability

## Change in Bus Speed

Before: Metro Lines 240 & 741 / After: Metro Lines 240 & 744

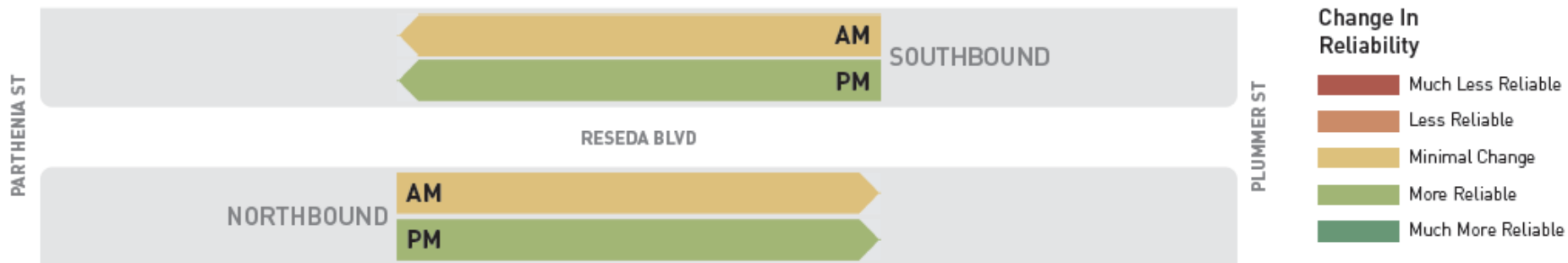
Slight increase in average speed southbound in the AM; decreased northbound speed in the PM peak period



## Bus Reliability

Before: Metro Lines 240 & 741 / After: Metro Lines 240 & 744

Reliability improved somewhat in both directions during the PM peak period



# Collision Analysis

BEFORE: 30 TOTAL | 5  | 2  | 0 

AFTER: 35 TOTAL | 4  | 0  | 1  | 0  | 1 



# Example Corridor: On the Ground





# Key Takeaways

- > Add at least conventional bike lanes
- > Transit agencies have valuable input for road design



# Thank You

Lia Yim, LA Metro

[yimb@metro.net](mailto:yimb@metro.net)

Andy Kosinski, Fehr & Peers

[A.Kosinski@fehrandpeers.com](mailto:A.Kosinski@fehrandpeers.com)



# Bus boarding island





# Lane reconfigurations – 4 to 3



# Green conflict zone markings





# Left-sided separated bikeway

