# How Can Buses and Bikes Play Well Together?

#### California Bicycle Summit

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#### **Panelists:**

Lauren Ledbetter, Senior Transportation Planner, VTA Lola Torney, Senior Transportation Planner, VTA Tamiko Percell, Senior Transportation Planner, VTA Jason Hu, P.E., Senior Engineer, DOT, San José







Photo: Sergio Ruiz

## Learning Goals

- Why & when cities and transit agencies need to talk to each other when planning and designing bikeways.
- How transit operations informs bikeway design.
- How bikeway design affects transit operations.
- Examples of successes and learning experiences.





#### **Our Panelists**



Lola Torney Sr. Transportation Planner Land Use Program, VTA



Jason Hu, P.E. Senior Engineer City of San José



Tamiko Percell Sr. Transportation Planner Transit Capital Planning, VTA



Lauren Ledbetter Sr. Transportation Planner Ped/Bike Program, VTA





# Today's Agenda

- Introduction
- City transit agency coordination (Lola)
- Design experiments and examples (Jason)
- Bikeway impacts on transit operations (Tamiko)
- Moderated discussion
- Audience question & answer







Santa Clara County, California 16 municipalities 1.9 million people 346 square miles

68% people of color **19%** below poverty level

13% seniors **25%** students

**20%** Limited English

**5%** car-free households

# Santa Clara Valley Transportation Authority

- Transit & Paratransit
  - 286 square mile service area
  - 2,200 employees
  - 47 bus routes
  - 3 light rail lines
  - 177,000 Paratransit trips
- Congestion Management Agency/ County Transportation Agency
- Planning & Funding
- Construction
- Sales Tax Authority







#### VTA Riders On-Board Survey, 2017



**76%** non-white or Hispanic/Latino



**30%** below poverty level



5% seniors



**27%** car-free households



11% Limited English Proficiency

Within ¼ mile of a stop, VTA's network serves





**1.18 million** people (61% of the County) **622,000** jobs (59% of the County)



# San José – VTA Collaboration



Photo: Sergio Ruiz





#### GOVERNANCE

- San José councilmembers on VTA Board
- San José reps on VTA advisory committees
- San José reps in monthly working groups

#### PROJECT COORDINATION

- VTA leads selected highway, transit, complete street projects in San José
- VTA reviews & comments on developments
- Coordination on grant applications, funding
- Advisory role in plans, capital projects
- Ad-hoc meetings as needed

# **Bike/Pedestrian Planning Considering Transit**

- Until recently, it wasn't really done...
- When developing projects for Bicycle Master Plans, transit is/was rarely considered
- Ten-foot lanes are great for bicycle and pedestrian planning, but don't work for buses
  - VTA buses are 10.5 feet mirror to mirror







## San Jose's Evolution in Bikeway Design





## Challenge – From Class II to Class IV



Common practices before 2015





# Exploring Ideas



Modular, green, and reusable





# Making The Grading Work



To achieve 2% grade for the waiting areas





# Solving For The Ramps



Grade was as much as 14% between platform and sidewalk in some areas





## Installing The Temporary Platforms







## **Final Pilot Product**









## Permanent Boarding Island Installation







## **Final Permanent Product**









#### **Coordination Meetings**



#### How Bike Infrastructure Impacts Transit Operations





#### **Bus Concerns**

- Reduced speeds
- Increased variability
- Increased operating costs
- Flexibility

#### **Bike Concerns**

- Need for more and better infrastructure
- Legitimate mode of travel

### Mutual Concerns

- Safer roadway design
- Need the same ROW space
- Cyclists ride transit
- Minimize conflict



# **Slowing Routes Require More Buses**

## Buses needed for 15-minute service on Route 22







## Allocation of Travel Time of Frequent Buses



# How do transit speeds impact service?



**Near- & Long-Term Service** | Brings us closer to vision for transit service

• Operating Budget & Resources | Maximizes amount of service



Routing & Scheduling | better transfers, longer hours

#### 

Bus Stop Placement | Effective spacing/bus stop balancing





# Speeding Up Transit – Why It Matters















# Permanent Boarding Islands 10<sup>th</sup> & 11<sup>th</sup> Streets

- One-way streets
- 11ft bus lane
- Close coordination internally and externally
- Bus driver involvement
- Improved speed and reliability







# Quick Build Bike Lanes on Senter Road



- Vision Zero Safety project
- 10 bus stops impacted
- 6-8 min increase in bus trip times
- Transit grants filled project funding gap for permanent installation



# Moving Toward Better Bus and Bike Interactions



- Joint project teams
- Design bike and bus projects together
- Strategic funding









Image Credit: Matt Johnson, Montgomery County DQT



# Lessons Learned So Far

- Communicate early and often; plan together
- Test your investment: buses need flexibility
- Be ready to pivot
- Preemptive mitigation and fixing problem spots
- Include engineers
- Consider complementary modes in standards and guidelines
- Consult bus drivers
- Include transit to expand funding opportunities
- Next challenge: signals





#### Discussion

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