# City of Cupertino

## Collection of Multimodal Use Data for Monitoring and Project Evaluation

David Stillman
Transportation Manager
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CITY OF CUPERTINO

# Current State of Data Collection

**As-needed or as-requested basis:**

- Speeding complaints (vehicles)
- Stop sign and crosswalk warrant analyses (vehicles and/or peds)

**Regular intervals:**

- Crossing guard warrant studies (biannual, ped crossings and vehicles)
- VTA Congestion Management Program (biannual, vehicle turning movements)
- Engineering & Traffic Surveys (7-10 years, vehicle speeds)

**Other intermittent sources**

- Developer Traffic Impact Studies (vehicles)
- Occasional citywide link counts (vehicles, bicycles)

**Ongoing**

- Collisions (compiled by State)
- Intersection approach volumes (select signalized intersections)

# Methods of Data Collection

**Method used to collect data varies by type of data, detail needed, cost:**

**Vehicle speeds:**

- Pneumatic hoses (24 hrs-7 days)
    - 24 hrs-7days
    - Moderate accuracy
    - Subject to vandalism
    - Low cost
- Radar
    - 1-2 hrs
    - Good accuracy
    - Resource intensive

# Methods of Data Collection

**Vehicle volumes:**

- Pneumatic hoses
  - Link volumes only
  - 24 hrs-7days
  - Moderate accuracy
  - Subject to vandalism

- Video/Lidar
  - Can be temp or permanent installation
  - Good accuracy
  - Can be resource intensive

- Direct observation
  - 1-2 hours
  - Good accuracy
  - Very resource intensive

# Methods of Data Collection

**Bike/ped volumes:**

- *Possible* pneumatic hoses
  - 24 hrs-7days
  - Moderate accuracy
  - Subject to vandalism


- Video/Lidar
  - Can be temp or permanent installation
  - Good accuracy
  - Can be resource intensive

- Direct observation
  - 1-2 hours
  - Good accuracy
  - Resource intensive

# Methods of Data Collection

**Conflict studies, occupancy, compliance:**

- Video
  - Can be temp or permanent installation
  - Good accuracy
  - Can be resource intensive

- Direct observation
  - 1-2 hours
  - Good accuracy
  - Resource intensive

**Travel time studies**

- Vehicle runs
  - 2-3 hours
  - Results can vary
  - Resource intensive

# Project Evaluation

**The previous methods can be leveraged to inform a Project Evaluation program, whereby project effectiveness can be evaluated with respect to the following goals:**

- *Improvements in safety*
  - *Collision reduction*
  - *Reduction of near-miss events*
- *Reduction in vehicle speeds*
- *Increase in bike or ped activity*
- *Improvements in travel time*
- *Improvements in transit speed*
- *Compliance with traffic laws*
- Reduction in cut-through traffic

# Project Evaluation

**Before- and after-data would be gathered, varying by project and would depend on project goals and available resources.**

**Example:** San Francisco Safe Streets Evaluation Program

*Staff Resource: 1.0 FTE*
*Annual Budget: $250,000*

## Golden Gate Avenue Safety Project

Addressing safety needs on Golden Gate Avenue

SFMTA

Golden Gate Avenue historically has some of the highest pedestrian and bicycle collision rates in San Francisco. To help address safety issues, this project implemented a transition from three to two vehicle travel lanes and a new buffered bike lane on Golden Gate Avenue from Polk Street to Jones Street. We found some improvements after the project, but also issues with blockage of the bike lane. **The Golden Gate Avenue Safety Project findings suggest implementing physically protected bike lanes where possible are beneficial in preventing blockage and improper use of bike lanes.**

"Before" Conditions

\+ The average vehicle speed **decreased by 10%** (by 2-2.5 mph) in both the AM and PM peak hours.

\- **More people are double parking, but for less time on average.** Instances of double parked vehicles increased by 27% after the bike lane was installed, though the duration of loading instances decreased by an average of 11 minutes.

\+ The number of cyclists **increased by 67%** in the PM peak period and remained steady in AM peak period.

# Project Evaluation

## SOUTH VAN NESS AVENUE QUICK-BUILD PROJECT

SFMTA

The South Van Ness Avenue Quick-Build Project was installed in the Mission neighborhood on Van Ness Avenue from US-101 freeway on-ramp (south of 13th Street) to Cesar Chavez Street.

These safety improvements aim to increase visibility, safety and access to those who walk, bike, and drive on the corridor.

### PROJECT FINDINGS - AT A GLANCE

**Vehicle Speeds**

85th Percentile vehicle speeds on South Van Ness Avenue from 16th to 17th streets decreased by **4 mph** (from 27 to 23 mph) and decreased by **4 mph** (from 28 to 24 mph) from 22nd to 23rd streets.

**Vehicle Volumes**

Vehicle volumes per day decreased by **28%** (from 14,500 to 10,389) within 16th to 17th streets and decreased by **12%** (from 12,531 to 11,021) within 22nd to 23rd streets.

**Pedestrian Volumes**

Pedestrian counts increased by **12%** (from 5,741 to 6,450 pedestrians) during the two hour AM and PM peak period observations following the installation of the project.

**Bike Volumes**

Bicycle counts increased by **10%** (from 138 to 152 bicycles) during the two hour AM and PM peak period observations following the installation of the project.

**Vehicle Travel Time**

Vehicle travel times have remained consistent after installation of the project.

**Traffic Diversion Impacts**

Some traffic volume increases were observed along the side streets. Yet, vehicle volumes and speeds show that traffic flow/access have not been significantly impacted.

On Shotwell and Capp streets, 85th Percentile vehicle speeds generally remained unchanged with the exception of a slight increase on northbound Shotwell Street between 22nd and 23rd streets. However, all vehicles speeds remained under 25 mph.

Results indicate that traffic volumes that have shifted to adjacent streets have the capacity to absorb diverted trips as indicated by vehicle speeds remaining relatively unaffected.

**Project Location**
Van Ness Avenue from US-101 freeway on-ramp (south of 13th Street) to Cesar Chavez Street.

**Date of Implementation**
Late January 2022.

**Project Elements**
- Road diet (reduced from four travel lanes to three with a center turn lane)
- Left turn pockets installed at intersections
- Signal timing changes on South Van Ness Avenue between 14th Street and Cesar Chavez

**Key Evaluation Metrics**
- Vehicle speeds and volumes
- Traffic Diversion Impacts
- Vehicle Travel Time
- Pedestrian and bicyclist volumes

### NEXT STEPS

The Northeast Mission Parking Management Project is proposing curb management changes along South Van Ness Avenue. Implementation is estimated to occur in 2024. Visit SFMTA.com/MissionParking to learn more.

# Cupertino Considerations

**Resource and budgetary constraints**

- Limited ability to absorb workload
- City Council budget approval required

**Effectiveness Horizon**

- Many metrics may require years to adequately evaluate

**Information Utility**

- Purpose of effort must be clearly articulated – benefits must outweigh costs. After data is collected, then what?

# Questions?