Story-Keyes Bus Lane and Associated Improvements

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Description

An exclusive bus lane running 2.75 miles along Story Road

- 2.75 miles of exclusive bus lane for VTA Route 25, which has the third-highest ridership of any bus corridor in the VTA system
- Aggressive transit signal prioritization to improve bus travel time and reliability through the corridor
- Transit amenities and associated improvements (bus stops, shelters, lighting, pedestrian access and crossings)
- Intersection geometry improvements
- Cost ~$20.7 million

The addition of a bus-only lane on this segment of Story Road was studied at a conceptual level in the recently-completed Story-Keyes Corridor Complete Streets Study, which was a collaborative effort between VTA and the City of San José.

Projected VMT reduction

In the short time frame and with the limited data available, the City of San Jose and VTA made a preliminary attempt to develop order-of-magnitude VMT reduction figures for this case study. A summary of the approach is described in the next section on Evidentiary Basis. If this project were to move forward and become a candidate for a VMT reduction exchange or similar arrangement, the City and VTA would develop a more refined estimate with a fuller set of data.

Evidentiary basis for proposed reduction

1. **Travel Time Analysis**: The proposed dedicated bus lanes do not cover the entire #25 route; therefore, the potential travel time savings due to the dedicated bus lanes on Story Road are not expected to result in significant mode shift for intercity origin-destination groups with long trip length. To understand the types of trips that would likely be benefited from the expected travel time savings on a #25 bus, a comparison of the existing travel time between driving and riding a #25 bus is conducted.

There are X traffic analysis zones (TAZ) that are within walking distance to the #25 bus stops. For the analysis, each TAZ is used to represent an origin and a destination; hence, a total of X origin-destination pairs are formed. Any portions of a TAZ that are outside of a walking distance to a #25 bus stop is disregarded from the travel time analysis.

The following assumptions are made about a rider's trip:

- Average walk time from an origin to a boarding stop is five (5) minutes, or ¼ miles;
- Average wait time at the bus stop is half of the headway;
- Average walk time from a lighting stop to a destination is also five (5) minutes, or ¼ miles;
- Average dwell time and travel time between stops are based on the official bus schedule
- If buses and automobile share the same travel lane on Story Road, the average total bus delay is equal to the average total vehicle delay;
- If buses run on a dedicated bus lane on Story Road, the average total bus delay is already included in the dwell time and travel time from the official bus schedule

The following assumptions are made about an automobile trip:

- Average walk time from an origin to an automobile is negligible;
- Average time to park an automobile and walk to a destination is five (5) minutes;
- Uncongested travel time between an origin and a destination is based on Google Map;
- Average total vehicle delay on Story Road is estimated using HCM 2000
- Average total vehicle delay from an origin to Story Road and from Story Road to a destination is negligible.

A matrix of travel time by origin-destination pairs is then developed for automobile trips and bus trips. The origin-destination pairs that have shorter bus trips in travel time than automobile trips are highlighted.

2. **Origin-Destination Analysis**: Estimate the existing number of person-trips of each origin-destination pair by mode and time of day. Among the existing number of person-trips made by automobile (and vehicle-trips), estimate the percent of such trips made primarily via Story Road versus other parallel corridors. Using results from the travel time analysis, estimate the existing number of person-trips made by automobile that would be benefited from reduced travel time should they choose to ride on a #25 bus traveling on a dedicated bus lane on Story Road.

3. **Mode Shift Analysis**: Based on the estimated number of person-trips made by automobile to be benefited from the Project, estimate how much would make the mode shift. Empirical research is used to perform this estimation. If appropriate, the mode shift estimation can be represented in a range.

4. **Vehicle-Miles Traveled (VMT) Analysis**: Using results from the mode shift analysis, estimate the amount and percent of VMT reduction due to the Project. The estimated number of person-trips currently made by automobile to be shifted to #25 buses is first converted to vehicle-trips. Multiply the number of vehicle-trips by the travel distance of the origin-destination pairs to estimate amount and percent of VMT reduction due to the Project.

Payment, exchange, or inducement required to execute project/program

The addition of an exclusive bus lane on the Story Road section of the VTA Route 25 corridor will cost around $21.7 Million. Projects can either pay into a fund to support the project, or build portions of the project themselves. If funds are given to support the project those funds will be used as seed money for grant and other funding opportunities.

Contributions or improvements to support the project could be implemented in several ways:

- A local jurisdiction could require funding or construction of a portion of the bus-only lane as a mitigation measure for a VMT impact in a CEQA document
- Funding to support the bus-only lane could be offered by an applicant as a Community Benefit or Voluntary Contribution, to offset an identified VMT increase or address other community concerns (potentially formalized in a Development Agreement)
- A local jurisdiction could require the construction of a portion of the bus-only lane directly on a development project's frontage, where there is a nexus (similar to how jurisdictions may require applicants to construct or widen sidewalks or bike lanes on development frontages)

Type of entity interested in buying or providing an exchange for this VMT mitigation.

1. **Developments**
    - ***a. Within the City***
        i. On the corridor and need to reduce their VMT
        ii. On the corridor and need to address community concerns beyond the CEQA obligations
        iii. Served by the transit routes that would benefit from the project
    - ***b. Outside the City***
        i. Have substantial VMT impacts and are near San José City limits
        ii. Have substantial VMT impacts and don't have a way to reduce their project VMT
        iii. Served by the transit routes that would benefit from the project
2. **Cities**

    San Jose or neighboring jurisdictions with area plans that have VMT impacts or transit impacts may opt to mitigate through this project.