



Memorandum

Date: 08.30.08 **RE:** Van Ness Citizens Advisory Committee
September 2, 2008

To: Van Ness Avenue Citizens Advisory Committee

From: Rachel Hiatt – Senior Transportation Planner

Subject: **INFORMATION** – Van Ness Avenue BRT Draft 10% Engineering Designs

Summary

Following the Scoping period for Van Ness Avenue BRT EIR/EIS, the Authority Board approved the Description of Alternatives Report, which identified three Van Ness Avenue BRT alternatives to be analyzed: Side Lane BRT; Center Lane BRT with Right Side Loading / Dual Medians; and Center Lane BRT with Left Side Loading / Center Median). Study team engineers developed Van Ness Avenue BRT Design Criteria based on federal, state, and local standards, and drafted 10% engineering designs consistent with the Design Criteria. The draft 10% engineering designs will be reviewed by and revised based on partner agency input, CAC comments, and additional technical analyses, particularly further analysis of truck turning radii. In addition, the design team will continue to work with Caltrans to develop Design Exception Fact Sheets for all design features that do not meet Caltrans design standards. **We are seeking review and input on the Draft 10% Engineering Designs.**

BACKGROUND

Following the Scoping period for Van Ness Avenue BRT EIR/EIS, the Van Ness Avenue BRT Citizens Advisory Committee and the Authority Board approved the Description of Alternatives Report, which identified three alternatives to be analyzed and set out general project features. The three BRT design alternatives to be developed and analyzed are:

- Side Lane BRT;
- Center Lane BRT with right side loading / dual medians;
- Center lane BRT with left side loading / center median.

We have developed 10% engineering designs to support continued engineering of the project as well as to inform the environmental impacts analysis. We are seeking the Committee's review of and input on the draft 10% engineering designs.

DESIGN CRITERIA

Study team engineers developed Van Ness Avenue BRT Design Criteria based on federal, state, and local standards, provided as Attachment A. The Design Criteria have been reviewed the by the project multiagency Technical Advisory Committee (TAC), which includes representatives from all participating and responsible agencies, including federal, state, and local agencies with an interest in the project.

Transit Design Standards: Selected transit design standards include:

Criterion	Design Standard (Reference)	Proposed Guideline (If Other than Standard)
Station Platforms		120 ft
Platform width Curbside/right-side boarding	10-12 ft	8 ft min.
Center Platform/left-side boarding	20-25 ft (TCRP Report 90)	8 ft min.
BRT Platform Height		12-15 in, or as necessary for level boarding

Each BRT station will accommodate two articulated (60') bus vehicles. Ideal design guidelines for station platform width will not be achieved at all platforms, especially in Alternative 3 (right side loading / dual medians). However, SFMTA's minimum standard for an 8ft width will be met, and exceeded wherever possible; station design may be modified based on subsequent station platform capacity analysis. The height of the BRT platform will be set to achieve level boarding, and the final specifications will depend upon the actual BRT vehicle selected.

Roadway Design Standards: Selected roadway design standards include:

Criterion	Design Standard (Reference)	Proposed Guideline (If Other than Standard)
Intersection Delays (Level of Service)	D (Caltrans)	E (CMA and City standard)
Lane Width Through Lane	12 ft	10 ft (mixed flow)
Turn Lane	12 ft	10 ft (left); 9 ft (right) (min.)
BRT Lane	12 ft (Caltrans)	12 ft desirable, 10.5 ft min
Design Speed	30 mph (Caltrans)	
Design Vehicle (Mixed flow lanes) Arterial to Arterial	STAA Truck w/ 50 ft turn radius	
Arterial to Local Street	SU w/ 42 ft turn radius (Caltrans)	

Roadway geometry, including turn pocket placement, will be designed to achieve the local and state (CMA) guidelines for intersection delays of Level of Service E. Subsequent traffic operations analysis will determine whether this standard is not met at any intersection. Lane widths will not meet Caltrans standards for 12 ft mixed flow lanes (see discussion below regarding Caltrans design exceptions). Further analysis will be conducted, and refinements made to the designs, to accommodate truck turning radii as appropriate.

Pedestrians Design Standards: Selected design standards for pedestrian features include:

Criterion	Design Guideline (Reference)	Proposed Guideline(If Other than Standard)
Sidewalk Width		16 ft (Unchanged) (SFMTA)
Median Width	12 ft (Caltrans)	4 ft
Lanes between pedestrian refuges		4 lanes

Van Ness Avenue BRT design guidelines include no reductions to the existing 16ft sidewalk width. Median widths will in some cases not meet as 12' Caltrans design guideline; existing median widths on Van Ness Avenue do not meet this standard (see discussion below under Caltrans design exceptions). Finally, design guidelines call for a maximum of four lanes (including parking lane) between pedestrian refuges (a station platform or a median refuge).

Caltrans Design Exceptions: The proposed Van Ness Avenue BRT Design Guidelines do not achieve Caltrans minimum design standards in all locations. The following are existing features that have been identified as not meeting Caltrans standards outlined above, and which are likely to remain under all proposed project alternatives. It should be noted that most non-standard features identified are typical of the city street conditions on the Hwy 101 corridor as a whole, which extends through downtown San Francisco on Van Ness Avenue, Lombard Street and Richardson Avenue.

- Lane Width: Existing through, left and right turn lane widths on Van Ness Avenue are 10 ft, as opposed to standard 12 ft. It is not proposed to increase the lane width under any of the project alternatives.
- Shoulder Width: No shoulders are currently provided on Van Ness Avenue. For a 4 or 6-lane conventional highway, standard right shoulder width is 8 ft. Shoulders are not proposed under any of the project alternatives.

Design Exception Fact Sheets will be prepared for all nonstandard features for Caltrans approval.

DRAFT 10% ENGINEERING DESIGNS

Draft 10% engineering designs are provided as Attachment B for initial review and input from the CAC. These designs have been reviewed by the project TAC; we will revise the designs based on this input.

Transit Features: For all BRT alternatives, the dedicated BRT lanes are distinguished from mixed-traffic lanes by colored pavement or other special markings. A curb or other means of separation from the mixed-traffic lanes may also be proposed. Bus lanes are intended accommodate both Muni and Golden Gate Transit vehicles.

Each Alternative shares a common stop profile:

Figure 1 - Existing and Proposed Stop Locations

Cross Street	Existing Stop Locations	Proposed Stop Locations
Mission	SB / NB	SB / NB
Market	SB / NB	SB / NB
Fell		
Hayes		NB
Grove	SB / NB	SB
McAllister	SB / NB	SB / NB
Golden Gate		
Turk	NB	
Eddy	SB / NB	SB / NB
Ellis		
O'Farrell	SB / NB	Combined – Full Block Length Stop
Geary	SB / NB	
Post		
Sutter	SB / NB	SB / NB
Bush		
Pine	SB	
California	NB	
Sacramento	SB	SB / NB
Clay	NB	
Washington		
Jackson	SB / NB	NB
Pacific	SB	SB
Broadway	NB	
Vallejo	SB	SB / NB
Green		
Union	SB / NB	SB / NB
Filbert		
Greenwich	SB / NB	
Lombard		
Totals	15 (SB) / 15 (NB)	11 (SB) / 11 (NB)
Stop Spacing	~ 700'	~ 940'

Roadway Design: Each BRT alternative shares a common profile for left and right turn pockets. Left turn pocket locations are reduced from the existing to reduce transit conflicts and provide added green signal time for the Van Ness through movement. The left turn pocket profile is as follows:

Figure 1 - Existing and Proposed Left Turn Pocket Locations

Cross Street	Existing Left Turn Pocket Locations	Proposed Left Turn Pocket Locations
Mission	SB (transit only) / NB	SB (transit only) / NB
Market		
Fell	SB	SB
Hayes	NB	NB
Grove	SB / NB	
McAllister	NB	
Golden Gate	SB	SB
Turk	NB	NB
Eddy	SB	
Ellis	NB	
O'Farrell	SB	
Geary	NB	
Post		
Sutter		
Bush	SB	SB
Pine	NB	NB
California		
Sacramento	NB	
Clay	SB	
Washington	SB	
Jackson	NB	
Pacific	NB	
Broadway	SB	SB
Vallejo		
Green	NB	
Union	NB	NB
Filbert	SB	
Greenwich		
Lombard	NB	NB
Totals	10 (SB) / 14 (NB)	4 (SB) / 6 (NB)

NEXT STEPS

The draft 10% engineering designs will be revised based on TAC input, CAC comments, and additional technical analyses, particularly further analysis of truck turning radii. The design of a prototypical transit station platform will be developed, and additional designs for signature station platforms at Market, McAllister, and Geary/O'Farrell will be developed. Finally, the design team will continue to work with Caltrans to develop Design Exception Fact Sheets for all nonstandard features for Caltrans approval.

We are seeking review and input on the Draft 10% Engineering Designs.

Attachments:

- A. Design Criteria
- B. Draft 10% Engineering Designs