

MEMORANDUM

Date: November 12, 2009

To: Bruce Williams and Jason Patton, City of Oakland

From: Sam Tabibnia and Rob Rees

Subject: East Lake Merritt Bicycle Facilities and BRT

WC09-2645

Currently AC Transit is proposing to implement Bus Rapid Transit (BRT) service in Oakland from Berkeley to San Leandro. The proposed alignment for BRT southeast of Lake Merritt is an East 12th Street/International Boulevard BRT couplet between 1st Avenue and 14th Avenue with a northbound BRT lane on International Boulevard and a southbound BRT lane on East 12th Street. The BRT lanes would be side running. Bike lanes would be provided on East 12th Street.

International Boulevard and East 12th Street are both arterials connecting downtown Oakland with East Oakland. The City of Oakland *Bicycle Master Plan 2007 Update* (BMP) identifies East 12th Street to provide future Class 2 bicycle lanes; however, potential installation of BRT lanes on East 12th Street may preclude the installation of planned bicycle lanes. This memorandum presents the characteristics and suitability of bicycle use along East 12th Street and two parallel corridors.

Considering the grid pattern within this area of Oakland, the distance traveled along East 12th Street is similar to that of International Boulevard and other parallel corridors. The directness of each route varies depending on the origin and destination of bicyclists. The corridor along East 12th Street was compared with two alternate parallel corridors to the northeast along International Boulevard and East 15th Street/Foothill Boulevard. For this analysis, all three corridors are defined as between 12th Street intersections with 1st Avenue and 14th Avenue.

The three corridors are shown on Figure 1 and described below.

- **East 12th Street** – Currently, no bicycle facilities are provided along East 12th Street within the study area. Two vehicle lanes are provided in each direction, on-street parking is provided, and the posted speed limit is 30 miles per hour. Consistent with the Oakland BMP, preliminary design drawings have been prepared to stripe bicycle lanes along East 12th Street between 6th Avenue and 14th Street and provide sharrow bicycle stencils (Class 3A arterial bicycle routes) on the remainder of the corridor. The proposed bicycle facilities along this segment of East 12th Street would link with planned bicycle facilities along 14th Street to the north and East 12th Street to the south.
- **International Boulevard** – No bicycle facilities are currently provided along this portion of International Boulevard, and the Oakland BMP proposes no future bicycle facilities for this segment. Two vehicle lanes are provided in each direction, on-street parking is provided, and the posted speed limit is 30 miles per hour.

- **East 15th Street/Foothill Boulevard Couplet** – No bicycle facilities are currently provided on either roadway. Each roadway provides two one-way lanes with East 15th Street accommodating southbound travel and Foothill Boulevard accommodating northbound travel. Both streets provide on-street parking on both sides of the roadway and the posted speed limit along both roadways within the study area is 30 miles per hour. The Oakland BMP identifies both roadways as providing future Class 2 bicycle lanes. However, based on additional analysis, neither roadway provides adequate width to accommodate a bicycle lane. Thus, preliminary design drawings for Foothill Boulevard show sharrow bicycle stencils (Class 3A arterial bicycle routes) in the far right lane. Similar treatment is expected for East 15th Street. These proposed bicycle facilities would link with planned bicycle facilities along Foothill Boulevard to the south.

Various aspects of these three corridors are discussed below.

Key Characteristics

Table 1 compares key characteristics of these three corridors. East 12th Street and International Boulevard are essentially the same length, while the East 15th Street and Foothill Boulevard Couplet is somewhat longer (approximately 15 percent). Bicyclists along the three corridors would travel in a straight line for the majority of the route, with turns required only at either end of the route to navigate to/from the start and end points. Since the three corridors are on arterial streets, all traffic control devices along the three corridors are signals and there are no stop signs or traffic calming devices.

Characteristic	East 12 th Street ¹	International Boulevard ¹	East 15th Street/Foothill Boulevard Couplet ¹	
			East 15th Street (Southbound)	Foothill Blvd (Northbound)
Length (miles)	1.00	1.10	1.19	1.37
Typical Distance from East 12 th Street (miles)	-	0.07	0.14	0.21
Number of Intersections	13	13	16	19
Number of Turns on Corridor	1	1	3	2
Number of Signals	4	5	7	7
Number of Stop Signs	0	0	0	0
Number of Traffic Circles	0	0	0	0
Number of Speed Humps	0	0	0	0
Consistency with BMP Proposed Bikeway Network	Corridor proposed as a Class 2 bikeway	Corridor not designated as a bikeway	Corridor proposed as a Class 2 bikeway	

1. Characteristics for all three corridors between 12th Street/1st Avenue and East 12th Street/14th Avenue intersections.
Source: City of Oakland, Fehr & Peers, 2009

East 12th Street is the main commercial corridor in the East Lake area. Many services and destinations are also provided along International Boulevard. Thus, bikeways on East 12th Street or International Boulevard would provide more direct access for bicyclists than the East 15th Street/Foothill Boulevard couplet.

In addition, bicyclists on International Boulevard or the East 15th Street/Foothill Boulevard couplet would need to use 14th Avenue to access East 12th Street, which is the designated bikeway to Fruitvale and other neighborhoods to the south. However, accommodating bicycles on this segment of 14th Avenue may not be feasible due to the narrow travel lanes, high traffic volumes, and layout and curvature of the street.

The BMP designates East 12th Street and the East 15th Street/Foothill Boulevard couplet in the study areas as Class 2 bikeways. The BMP does not designate any bikeways along International Boulevard in the study area.

Bicycle Collisions

Figure 2 shows bicycle collisions along the three corridors and the surrounding areas by intersection based on data collected between October 2002 and September 2007 in Oakland. As shown in Table 2, during this period, no collisions involving bicycles were reported along East 12th Street. By comparison, five collisions along International Boulevard and four combined collisions along the East 15th Street/Foothill Boulevard couplet were reported during the same time period.

The East 15th Street/Foothill Boulevard couplet had a higher rate of collisions resulting in injuries than the citywide average, while International Boulevard had a lower injury rate than the citywide average. The low sample size along the three corridors makes it difficult to compare injury and fatality rates to citywide averages. No bicycle-related fatalities were reported along the three study corridors. No intersection along the study corridors had more than one reported collision.

Table 3 summarizes the bicycle collisions along the three corridors by type and provides a comparison to citywide averages. All bicycle collisions along the three study corridors involve bicyclists and moving vehicles, which is consistent with citywide statistics.

Please contact us with questions or comments.

**TABLE 2
BICYCLE COLLISION SUMMARY**

Corridor	Total Bicycle Collisions	Injury	Fatality	Percent Injury	Percent Fatality
East 12 th Street ¹	0	0	0	0%	0%
International Boulevard ¹	5	3	0	60%	0%
East 15th Street / Foothill Boulevard Couplet ¹	4	3	0	75%	0%
Oakland Average ²				67%	0.5%

1. Based on collision data from October 2002 to September 2007 as provided by City of Oakland.
2. Based on collision data from 1995 to 2004 as summarized in City of Oakland Bicycle Master Plan 2007 Update.
Source: Fehr & Peers, 2009

**TABLE 3
BICYCLE COLLISION SUMMARY BY TYPE**

Collision Type	East 12 th Street ¹	International Boulevard ¹	East 15th Street / Foothill Boulevard Couplet ¹	Oakland Average ²
Bicyclist/Driver	0 (0.0%)	5 (100%)	4 (100%)	791 (92.8%)
Bicyclist/Parked Car	0 (0.0%)	0 (0.0%)	0 (0.0%)	28 (3.3%)
Bicyclist Only	0 (0.0%)	0 (0.0%)	0 (0.0%)	16 (1.9%)
Bicyclist and Pedestrian	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.6%)
Other	0 (0.0%)	0 (0.0%)	0 (0.0%)	12 (1.4%)
Total	0 (100%)	5 (100%)	4 (100%)	852 (100%)

1. Based on collision data from October 2002 to September 2007 as provided by City of Oakland.
2. Based on collision data from 2000 to 2004 as summarized in City of Oakland Bicycle Master Plan 2007 Update.
Source: Fehr & Peers, 2009

**FIGURE 1
BICYCLE CORRIDOR LOCATION**



**FIGURE 2
BICYCLE COLLISIONS ALONG BRT STUDY CORRIDORS**

