Transform, a Bay Area based, smart-growth transportation advocacy non-profit, asked us to examine how the International Boulevard Bus Rapid Transit (BRT) Plan will impact bicyclists and pedestrians. We evaluated intersections along the corridor to identify three hotspots and made recommendations to enhance safety and accessibility.

How Will the BRT Plan Impact Cyclists and Pedestrians?

**Bus Rapid Transit (BRT)**

is coming to International Boulevard in 2015. AC Transit’s BRT system will provide dedicated bus lanes that connect Downtown Oakland to San Leandro. As part of a Transit Oriented Development (TOD), BRT will provide efficient and reliable service to revitalize East Oakland.

**Plan Benefits**

- New rapid transit line for all
- Single general-use lane calms traffic
- Improves pedestrian safety
- Proposed bike lane

**Plan Limitations**

- Greater conflict using the shared road
- BRT lane and median take away space
- Safe access to BRT could be improved
- No continuous bike lane
Disconnected Plans

Three development plans for the area make different proposals for bike and pedestrian improvements. There is a lack of coherence in the plans to integrate bikes and pedestrians fully in the new BRT system.

**BRT Plan (AC Transit, 2011)**

- **Impact on Bicycles**
  - Continous Bike lane from 54th to 81th Ave
  - Bike sharrow 81th - 85th Ave
  - Only bike parking on median stations
  - Bike racks in buses

- **Impact on Pedestrians**
  - Upgrade curb ramps and crosswalks
  - Provide median and curb stations
  - New lighting and signal system

**TOD Plan (City of Oakland, 2011)**

- **Impact on Bicycles**
  - Bike lane on Intl’ from 54th to 81st
  - 85th to San Leandro shared bike road
  - Only bike parking on median stations
  - Bike racks in buses

- **Impact on Pedestrians**
  - Pedestrian bulb outs
  - High-Intensity Activated Crosswalks
  - High-visibility crosswalks
  - Set back parking improves pedestrian visibility

**Master Bicycle Plan (City of Oakland, 2007)**

- **Impact on Bicycles**
  - Green way bike path along San Leandro & 12th to Downtown Oakland
  - Bike boulevard along Arsenal, Artur, Plymouth
  - Proposed north-south bikeways across International: 4th, 14th, 16th, Fruitvale, 38th, Heavenscourt, Hegenburger, 85th, 94th, 105th
  - Aligned with Alameda County Bike Plan

**TAKE AWAY:** The BRT and TOD plans provide valuable improvements on key intersections, but does not maximize safety for pedestrians. The plans have some recommendations to improve bicycle infrastructure but these routes have gaps. The City of Oakland is aware of the disconnect between the plans and is in conversation with AC Transit.
To guarantee the success of BRT we recommend incorporating the plans in order to make sure bikes and pedestrians are fully integrated. The goal is to create a ‘Complete Street’. They are designed to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities.

**Complete Street Model = Car, Bus, Bike, and Pedestrians**

- Protected bike lane
- Pedestrian islands
- 15 to 18% speed improvement

Since 2010 and BRT introduction:

- 177% more cycling
- 21% fewer collisions

**1st & 2nd Ave, New York City**
- Protected bike lane
- Pedestrian islands
- 15 to 18% speed improvement

Since 2010 and BRT introduction:

- 177% more cycling
- 21% fewer collisions

**Guangzhou - China**
- Bike network with parking
- Pedestrian plazas, urban design
- Debit card for transit, bikes, food

27,400 passengers use BRT per hour, bike commuting is back and improves public health.

**Twin Cities - MN**
- On highway and suburban areas
- Integrated with regional rail
- Low income bike lending program

City estimates savings of $6.9 million in health costs with the increase in biking & walking in one year.
International Boulevard is one of the most dangerous streets for bikes and pedestrians in Oakland. Today the corridor ranks as the number one street for vehicle/ped collisions, with 26 per road mile. There is no bike lane and little pedestrian infrastructure.

**Hot Spot Criteria:**
- TIMS/SWITRS state collision databases
- BRT & BART Stations & locations
- Case study to apply to other intersections
- Site Visit
- Traffic Counts

**Case Study:**
**Narrow Street / High Collision**
**Similar Streets:** 7th, 50th, 64th, 65th, 81st, 85th

**Case Study:**
**Transit Hub / Destination District**
**Similar Streets:** 12th, Coliseum

**Case Study:**
**Hwy Connector / High Speed**
**Similar Streets:** 58th, High St, 42nd

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**Bicycle and Pedestrian Collision Hot Spots**

**Top Bike Collision Intersections Over 10 yrs.**

<table>
<thead>
<tr>
<th># of Collisions</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>4th Ave.</td>
</tr>
<tr>
<td>7</td>
<td>73rd Ave. / Hegenberger Expw.</td>
</tr>
<tr>
<td>5</td>
<td>7th Ave.</td>
</tr>
<tr>
<td>4</td>
<td>22nd, Fruitvale Ave., 42nd, 64th, 78th, 50th, 81st, 100th</td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Top Ped Collision Intersections Over 10 yrs.**

<table>
<thead>
<tr>
<th># of Collisions</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>7th Ave.</td>
</tr>
<tr>
<td>12</td>
<td>4th Ave, 98th Ave</td>
</tr>
<tr>
<td>10</td>
<td>High St</td>
</tr>
<tr>
<td>9</td>
<td>73rd Ave/Hegenberger Expw</td>
</tr>
<tr>
<td>8</td>
<td>Fruitvale Ave, 10th, 50th, 65th</td>
</tr>
</tbody>
</table>

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**1 4th Ave and International Blvd.**
- Collision Data: 12 ped, 8 bike
- Major collision intersection
- Near downtown Oakland
- Narrow streets

**2 Fruitvale Ave and International Blvd.**
- Collision Data: 6 ped, 4 bike
- Fruitvale BART & Bike Station
- Existing business corridor
- Transit-Oriented Development

**3 Hegenberger/73rd Ave. and International Blvd.**
- Collision Data: 9 ped, 2 bike
- Fast traffic off Hwy 880
- School nearby
- Airport connector
**Existing Issues**

- Bike Boulevard
- Cars Make Sharp Turns
- Narrow Sidewalk
- Dangerous Crosswalk
- Bikes on Sidewalk

**Collisions in past 10 years (SWITRS)**
- 12 ped 8 bike

**BRT Plan Changes**

- BRT Lane
- No left Turn
- Setback Crosswalk
- Extend Sidewalk 3'
- Cars Merge For Right Turn
- BRT Station
- Green paint through intersection
- Signage Directing Bicyclist to 12th/15th St.
- Pedestrian Bulb-outs

**Our Improvements**

- Advisory Bike Lane
- High Visibility Crosswalk

**TAKE-AWAY:** The BRT Plan will alleviate many of these existing issues for pedestrians but not for bicyclists. 4th Ave. is an important bike corridor near bikeways: 12th, 15th. To enhance the connection, we recommend an ‘advisory bike lane’, which is an innovative facility that gives priority to bikes, but allows cars to use the lane.
Existing Issues

Jay-Walkers
Heavy Ped Traffic
Unclear Bicycle Lines
No Bike Access to BART Station

Collisions in past 10 years (SWITRS)
8 Ped, 4 bike

Traffic counts per hour (FEIR)
536 Ped, 34 Bike

BRT Plan Changes

Curb Ramp and Bulb Out
BRT Lane
No left turn
High Visibility Crosswalks

Our Improvement

Pedestrian Bulb-outs
Bike box for left turn priority
High Visibility Crosswalk
Advisory bike route connect to BRT station and BART

paint for advisory bike lane

TAKE AWAY: An additional crosswalk and advisory bike lane will improve safe access for ped/bikes to transfer between BRT stations, Fruitvale BART station, Bike Station, and the business district.
**Existing Issues**

1 hour Official Traffic Count:
- 248 Pedestrians
- 30 Bikes

Collisions in 10 years:
- 9 ped
- 7 bike

**BRT Plan Improvements**

Dedicated BRT lane slows down traffic on Intl’ Blvd but not on Hegenberger

**Our Improvements**

Advisory Bike Lane

Ped Island

High Visability Treatment

Start Bike Lane at Intersection

Bike Boxes, Detection, & Advanced Stop Bars

Signage to key amenities and Bike Boulevards

Remove lane

Bike Lane to Collisium Bart

Nudge crosswalks in and away from intersection

ADA compliant detectable corners

Sharrows for shared bike lane

**CASE STUDY: Highway Connector/High Speed**

- **TAKE AWAY:** The BRT plan should reduce traffic speed overall to ensure safety in the school zone. It should add bike lanes or advisory bikes, sharrows are not enough.
Gaps in the Bike Route Network

AC Transit’s BRT
The plan foresees valuable improvements for pedestrians. However, considering the amount of investment and the key role BRT is playing in East Oakland’s Transit Oriented Development (TOD) project, improvements for ALL travel modes should be maximized including cycling.

Next Steps and Further Recommendations

- Share the findings with AC Transit and the City of Oakland
- Advocate improvements in the next design proposals 65% & 95%
- Facilitate alignments of the different plans
- Learn from best practices around the world
- Guarantee access and clear signage for existing bike infrastructure
- Provide sufficient and secure bike parking
- Install parking meters and use income for ped bike infrastructure

[In] City 2013: UC Berkeley College of Environmental Design
Instructors: Warren Logan, H. Fernando Burga
Advisors: Eric Anderson (Associate Planner Bike/Ped, City of Berkeley), Dave Campbell (Advocacy Director, East Bay Bike Coalition)
Students: Lisa Ratner, Jay Williams, Katie Shepard, Sophie Larpenter, Tianhui Yang