

## **Oakland Bicycle Pedestrian Advisory Committee**

### **Minutes- May 16<sup>th</sup>, 2013**

In attendance:

Brian Toy, Carol Levine, Chris Andree, Chris Hwang, Chris Kidd, Daniel Schulman, Jason Patton, Jennifer Stanley, Midori Tabata, Ryan Chan, Tom Willging, Mike Jones, Brian Geiser, Jamie Parks, Jessica Nguyen

Minutes of April Meeting were approved.

### **Complete Streets Policy (CSP) Action Plan**

Like other Bay Area cities, Oakland now has a Complete Streets Plan. Complete Streets Coordinator Jaime Parks has about ½ of his staff time to focus on implementation of the policy. Parks asked for feedback regarding his potential work items. He noted that the City has an established Bicycle Facilities Program, and pedestrian connections may receive more focus with the CSP.

CalTrans grants are pending for 3 CSP work items, grant results will be known in a few months. If applications were unsuccessful, Parks will have to seek other funding for consultants to work on these items.

Parks sees sidewalk/pedestrian space allocation as part of CSP. The CSP can make headway with design guidelines to reinforce Oakland's Pedestrian Master Plan so space issues are addressed on the front (design) end. He is focusing on overarching policy prior to individual projects.

#### **Attendee comments:**

- Prioritize multimodal street classification and street design guidelines so that structure is in place for planners
- Policy very important, but also need public visibility of individual projects enabled by the policy for political support
- Update light signal timing
- Emphasize stop signs and not signals.
- Need enforcement of rules of the road for bikers.
- Please consider guidelines for mitigation when construction plans impact bikeways.
- Be open with other public commission employees because Area Specific Plans don't necessarily coordinate
- Build to context, prioritize mode based on realities, as every street can't be 100% complete. Staff response: we have a street classification system to follow with bike plan and pedestrian plan.

Bicycle & Pedestrian Facilities Program Manager Jason Patton saw work items in 5 groups: policy, monitoring, data, funding, and individual projects. Policy and monitoring are key to Patton, as single projects can take surprisingly long if controversial. The City is implementing a benchmarking report it created last year. This will lay an internal structure for future reports. For example, it will streamline data collection for inquiries such the number of retimed stoplights. Design guideline models are out there such as SF Better Streets Plan. Oakland needs a single set for internal users of guidelines, facilitating incorporation of contractor work after projects are finished.

The CSP will provide accountability within Public Works' Departments of Transportation Services, Engineering and Construction, and Planning. It can be a tool for thoroughness for Economic Development permits, as there are pressures to approve new projects quickly.

#### CSP Performance measures

Staff would like to focus on action-oriented measures as opposed to those secondary or external effects. I.E.: number of curb ramps installed versus number of pedestrian collisions. Prefer less than 10 measures. Patton will follow up with the BPAC about performance measures.

#### Comments:

- Performance measures don't always ask for the right numbers or right qualitative questions. Robert Prinz mentioned a shift to qualitative community polls in EBBC's work.

### **Embarcadero/E 7<sup>th</sup> St Striping Plan (16<sup>th</sup> Ave to Kennedy St)**

Bikeway installed in 2004 from Oak-Kennedy. This is an example of revisiting existing bikeways for improvement, as many of original routes have opportunities for improvement and need restriping (not painted with thermoplastic). Options: improve bikeway spacing, or restripe with status quo.

City is finishing the 16<sup>th</sup> St connection up to Macarthur. Staff plans expand bike lane spacing. Lane along Dennison is badly offset from the sidewalk and plan straightens based on the road. Staff is choosing to keep alter back-in parking because it is a very wide road. This is partially a timesaving decision to not deliberate with area merchants a change from head-in to back-in parking. The decision also avoids signpost relocations, as different spacing is required for back-in parking. 16<sup>th</sup> St overpass design involves striped bulbouts and painted bike lane for northwest bound travel.

Staff wants to complete this before the closure of Embarcadero between Oak and 5<sup>th</sup> streets for 1-2 years for an Embarcadero Bridge improvement. Oak-16<sup>th</sup> Ave will also be closed for seismic retrofit project prior to the Oak to 9<sup>th</sup> project starting.

Comment:

- We don't know if back-in parking is controversial until we ask.

## **Citywide Bike/Ped Collision Analysis**

Staff intern Jessica Nguyen presented the collision analysis powerpoint. Starting in 2011, BFP has collected produced an annual bike/pedestrian crash analysis at 30 intersections. This report is a follow up, as 2012 data was delayed. Staff used the Statewide Integrated Traffic Records System (SWITRS) database for numbers since 2002, and highlighted 2007-2011 data. The Traffic Injury Monitoring System (TIMS) UC Berkeley website and web-based application were also used.

Bike share from 2007-2012 has increased 3 times but crashes only have gone up 22%. The majority of bike crashes were non-serious injuries. Most pedestrian crashes occurred by crossing outside of crosswalks, though drivers are usually responsible for bike/ped crashes.

Corridors with high rates of bike/ped crashes were Telegraph, Broadway, and International Blvd.

- 2012 highest bike crash intersection: Telegraph and 42<sup>nd</sup> St, 9 crashes.
  - 2012 highest pedestrian crash intersection: International and 8<sup>th</sup> Ave, 3 crashes.
- The Bus Rapid Transit designs on International Blvd are considering this data.

One way to address problems is via Caltrans' Highway Safety Improvement Program (HSIP) grants, available for local roads. Oakland had about \$2 million in HSIP funding last year for 3 projects and is narrowing applications this year.

## **Chairs Report**

Chris Hwang reported on her 2nd of 3 years as BPAC Board Chair. Achievements of the community include:

- Progress on BART bicycle policies. Commute-hour pilots with Oakland downtown stations open for bikes. BPAC members gave input of new BART car designs.
- Great support for Measure B, though it's defeat showed how much we rely on these funds and must seek others.
- The 40<sup>th</sup> St project was an opportunity to have community dialogue and permitted BFP/BPAC to try out new treatments
- Oakland started to crowdsource via SeeClickFix

- Unfurling of Complete Streets Plan
- Latham Square Pilot Project approved and hopefully in early July implementation begins
- 2 Parklets installed and 6 on-street bike corrals
- 2012 was 40<sup>th</sup> year of EBBC and 5<sup>th</sup> year of WOB0
- Oakland's set a goal to jump from Bike Friendly Communities Bronze to Gold status for 2014.

Hwang reminded attendees to bring neighborhood concerns to the BPAC chairs, who may arrange speakers on the subject.

## **Bike To Work Day Report**

Jennifer Stanley stated that the cyclist numbers were down by on May 9<sup>th</sup> a third from last year, perhaps due to the cloudy weather. Energizer stations nonetheless counted 4,180 cyclists! Mayor Quan and 4 City Council Members rode to work, 37 agencies and businesses participated with tabling and raffle items at City Hall. In Oakland, 3 new Energizer Stations occurred.

Regionally, the East Bay was up. Richmond's counts grew 19%, and Tri-valley growth. There were 110 Energizer Stations in the East Bay, while SF had 30. 14,500 riders were counted in the 2 eastern counties.

## **Announcements**

- California Bicycle Coalition Bike Summit is coming to Oakland. Christopher Kidd on Steering Committee- they are seeking discussion topics from local affiliate groups.

## **Attachments**

- Potential Complete Streets Work Items
- Complete Streets Policy of the City of Oakland
- Striping plan: Embarcadero (16<sup>th</sup> Ave to Dennison St)
- Handout: Citywide bike/ped collision analysis
- PowerPoint: Bicycle and Pedestrian Crash Analysis

## Potential Complete Streets Work Items

Item	Description	Status
Latham Square	Manage implementation activities associated with installation of pilot project.	In-process
Multimodal Traffic Count Database	Develop web-based tool for housing and disseminating multimodal traffic data collection.	In-process
Develop Safety Performance Report	Use TIMS database to assess crash data and trends citywide using quantitative methods (eg, Highway Safety Manual). Identify highest-priority locations to target funding. Develop safety prioritization system for annual use. Include results in complete streets report.	In-process
Telegraph Ave. Corridor Study	Synthesize past corridor planning and engineering to develop a coordinated implementation plan for multimodal improvements.	Consultant funding secured
Develop Street Design Guidelines	Develop unified set of design guidelines to ensure that all travel modes are routinely accommodated throughout the wide range of City activities that impact street design (e.g., development review, streetscape design, traffic signal upgrades, bicycle and pedestrian facilities design, etc.)	Grant application submitted
Multimodal Street Classification	Develop multimodal street classification/typology for use in planning, prioritization, and eventually for design guidelines.	Grant application submitted
Complete Streets Action Agenda	Provide direction to staff in establishing city-wide Complete Street priorities, performance targets, and specific action items to ensure timely progress on implementing Complete Streets	Grant application submitted
Complete Streets Benchmarking Report	Overarching framework document to develop specific measures for complete streets, set targets, and measure progress. Synthesize all work already being done, identify areas for improvement, and document progress toward meeting goals of complete streets resolution.	No action to date
Pedestrian programming	Develop and apply consistent approach to programming pedestrian funding for pedestrian safety.	No action to date
Signal timing policy	Develop multimodal signal timing policies for use in re-timing arterial corridors	No action to date
Transportation Impact Fee	Establish fee-based system for development review to (1) increase efficiency; (2) remove LOS barriers to new development and (3) provide a funding source for multimodal transportation improvements.	No action to date
Annual Performance Measures Report	Develop annual report to document progress toward meeting transportation system objectives	No action to date
Data Collection	Refine existing multimodal data collection program to address data needs and support performance measurement	No action to date
Specific Planning	Define and implement best practices for incorporating transportation into Specific Plans	No action to date

Exhibit A

This Complete Streets Policy was adopted by Resolution No. \_\_\_\_\_ C.M.S. by the City Council of the City of Oakland on \_\_\_\_\_, 2013.

**COMPLETE STREETS POLICY OF THE CITY OF OAKLAND**

*The City of Oakland recognizes the necessity of providing safe and convenient pedestrian, bicycle and public transportation travel options in order to protect all road users, reduce negative environmental impacts, promote healthy living, and advance the well-being of Oakland citizens. As such, the City of Oakland will plan, design, construct, operate, and maintain appropriate facilities for pedestrians, bicyclists, transit users of all abilities, children, the elderly, and people with disabilities as a routine component of new construction, reconstruction, retrofit, and maintenance projects subject to the exceptions contained herein.*

**A. Complete Streets Principles**

**1. Complete Streets Serving All Users and Modes.** The City of Oakland expresses its commitment to creating and maintaining Complete Streets that provide safe, comfortable, and convenient travel along and across streets (including streets, roads, highways, bridges, and other portions of the transportation system) through a comprehensive, integrated transportation network that serves all categories of users, including pedestrians, bicyclists, persons with disabilities, motorists, movers of commercial goods, users and operators of public transportation, emergency responders, seniors, children, youth, and families.

**2. Context Sensitivity.** In planning and implementing street projects, all departments and agencies of the City of Oakland will maintain sensitivity to local conditions in both residential and business districts as well as urban, suburban, and rural areas, and will work with residents, merchants, and other stakeholders to ensure that a strong sense of place ensues. Improvements that will be considered include sidewalks, shared use paths, traffic control signals, exclusive bicycle paths, bicycle lanes, bicycle routes, paved shoulders, street trees and landscaping, planting strips, accessible curb ramps, crosswalks, refuge islands, pedestrian signals, signs, street furniture, bicycle parking facilities, public transportation stops and facilities, transit signal prioritization, and other features assisting in the provision of safe travel for all users, particularly those features identified in the City of Oakland Bicycle Master Plan and Pedestrian Master Plan.

**3. Complete Streets Routinely Addressed by All Departments.** All relevant departments and agencies of the City of Oakland will work towards making Complete Streets practices a routine part of everyday operations, approach every relevant project, program, and practice as an opportunity to improve streets and the transportation network for all categories of users, and work in coordination with other departments, agencies, and jurisdictions to maximize opportunities for Complete Streets, connectivity, and cooperation.

**4. All Projects and Phases.** Complete Streets infrastructure sufficient to enable reasonably safe travel along and across the right of way for each category of users will be incorporated into all planning, funding, design, approval, and implementation processes for any construction, reconstruction, retrofit, maintenance, operations, alteration, or repair of streets (including streets, roads, highways, bridges, and other portions of the transportation system), except that specific infrastructure for a given category of users may be excluded if an exception is approved via the

process set forth in section C.1 of this policy.

## **B. Implementation**

1. **Design.** The City of Oakland will generally follow its own accepted or adopted design standards as prescribed in the Oakland Municipal Code (OMC). In particular, the Director of Public Works or his/her designee is responsible for developing and publishing Complete Street standards for the design and construction of the Street System with a goal of balancing user needs, and for updating the standards from time to time to reflect emerging best practices and innovative design options as appropriate for City of Oakland context. Such standards shall apply to all streets regardless of whether they are private streets or public streets.

2. **Network/Connectivity.** The City of Oakland will incorporate Complete Streets infrastructure into existing streets to improve the safety and convenience of all users, with the particular goal of creating a connected network of facilities accommodating each category of users, and increasing connectivity across jurisdictional boundaries and for anticipated future transportation investments.

3. **Implementation Next Steps.** The City of Oakland will take the following specific next steps to implement this Complete Streets Policy:

- A. *Plan Consultation and Consistency:* Maintenance, planning, and design of projects affecting the transportation system will be consistent with local bicycle, pedestrian, transit, multimodal, and other relevant plans, to the extent these local plans reflect complete street principles.
- B. *Stakeholder Consultation:* Develop and/or clearly define a process to allow for stakeholder involvement on projects and plans including, to the extent possible relying upon and refining existing advisory groups and stakeholder engagement channels. In particular, the Bicycle and Pedestrian Advisory Committee (BPAC) and Mayor's Commission on Persons with Disabilities will play important roles to support implementation of this Complete Streets policy within the City of Oakland.
- C. *Complete Streets Design Standards and Guidelines:* Develop and maintain a comprehensive set of Street Design Standards and Guidelines to promote complete streets principles in all types and phases of projects within the City of Oakland. The Design Guidelines will be developed by the Director of Public Works or his/her designee in accordance with the Public Works Agency authority over street standards.

4. **Performance Measures.** The Director of Public Works or his/her designee will compile the performance evaluations of well the streets and transportation network of Oakland are serving each category of user by (1) establishing specific performance measures pertaining to Complete Streets; (2) collecting and updating data to evaluate measures on a regular basis; and (3) making the results of Complete Streets performance analyses available publicly as completed. All relevant agencies or departments will contribute available data and other information to these performance evaluations by collecting baseline data and collecting follow-up data on a regular basis to ensure that the City of Oakland serves each category of roadway user.

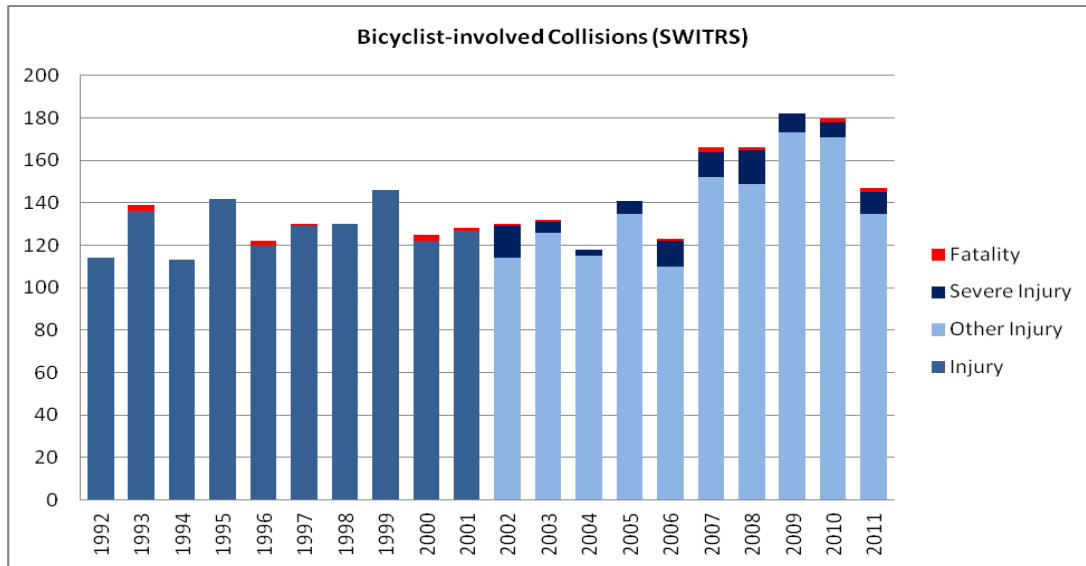
### **C. Exceptions**

1. **Exception Approvals.** Exceptions to the Complete Street standards will require written findings explaining accommodations for all users and modes were not included in the plan or project. The exception must be approved by the Public Works Director or his/her designee, and will be made publicly available. Exceptions must explain why accommodations for all users and modes were not included in the plan or project.



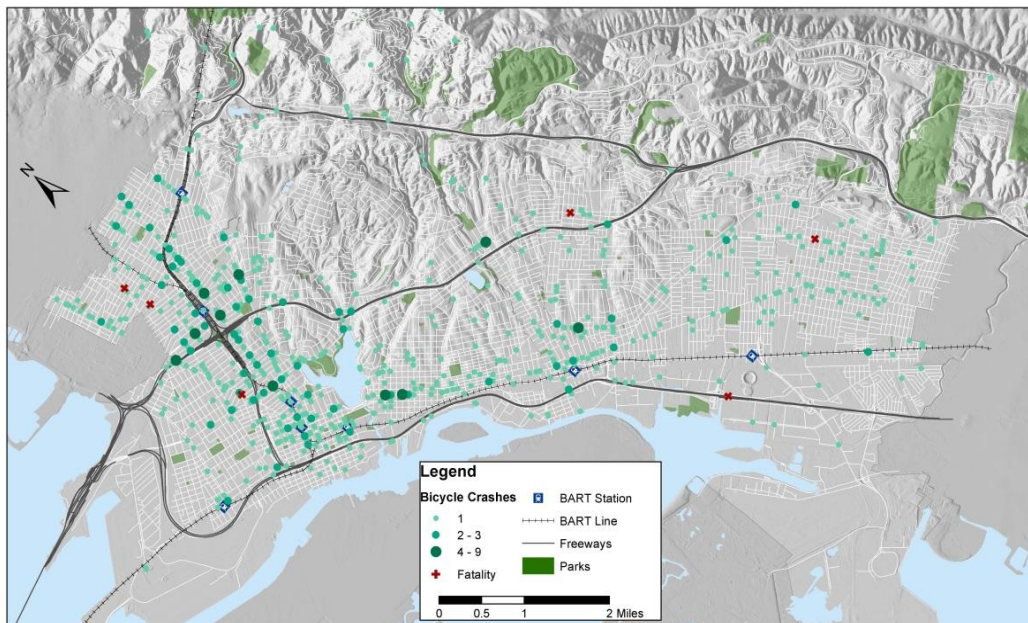
# Oakland Bicycle Crash Analysis

BPAC Meeting  
May 16, 2013



Year	Fatality	Injury	Other Injury	Severe Injury	Total
1992	0	114	-	-	173
1993	3	136	-	-	192
1994	0	113	-	-	175
1995	0	142	-	-	214
1996	2	120	-	-	190
1997	1	129	-	-	214
1998	0	130	-	-	213
1999	0	146	-	-	233
2000	3	122	-	-	176
2001	1	127	-	-	133
2002	1	-	114	15	130
2003	1	-	126	5	132
2004	0	-	115	3	118
2005	0	-	135	6	141
2006	1	-	110	12	123
2007	2	-	152	12	166
2008	1	-	149	16	166
2009	0	-	173	9	182
2010	2	-	171	7	180
2011	2	-	135	10	147
<b>Total</b>	<b>20</b>	<b>1279</b>	<b>1380</b>	<b>95</b>	<b>3398</b>
<b>Average</b>	<b>1</b>	<b>127.9</b>	<b>138</b>	<b>9.5</b>	<b>169.9</b>
<b>% Total</b>	<b>0.6%</b>	<b>37.6%</b>	<b>40.6%</b>	<b>2.8%</b>	<b>100.0%</b>

Bicycle Crashes, 2007-2011

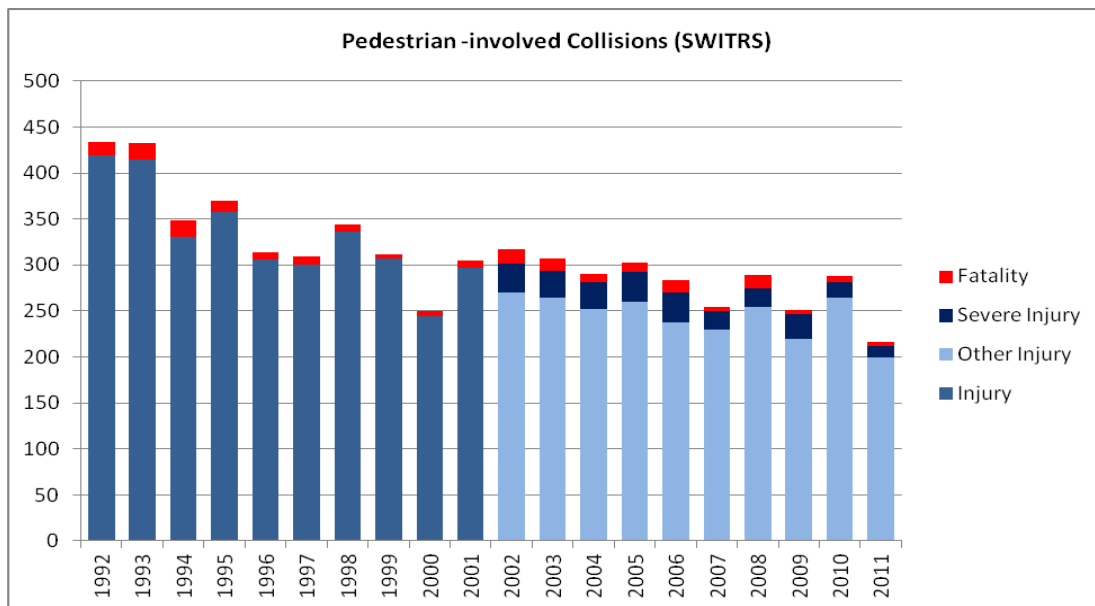


## 2007-2011 Oakland Crashes

	Number	Percentage
Total crashes	10,081	
Crashes near traffic signal	2,963	29.4%
Bicycle involved	841	
Bicycle involved near traffic signal	328	39.0%

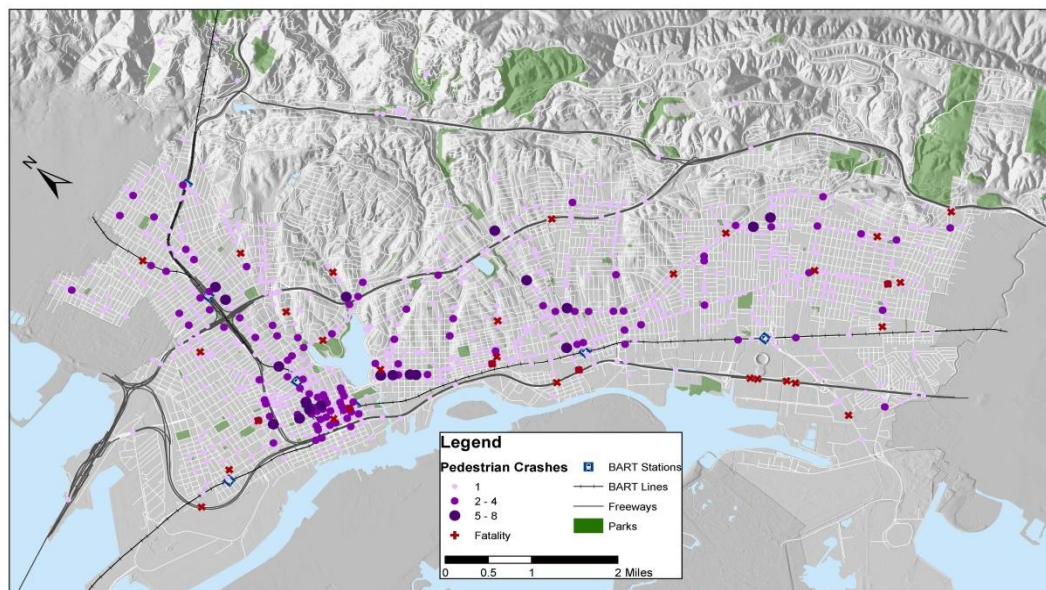
# Oakland Pedestrian Crash Analysis

BPAC Meeting  
May 16, 2013



Year	Fatality	Injury	Other Injury	Severe Injury	Total
1992	15	419	-	-	445
1993	18	415	-	-	446
1994	17	331	-	-	388
1995	13	357	-	-	405
1996	8	306	-	-	353
1997	9	300	-	-	359
1998	8	336	-	-	402
1999	5	307	-	-	381
2000	6	244	-	-	308
2001	8	297	-	-	306
2002	15	-	270	32	317
2003	13	-	265	29	307
2004	9	-	252	29	290
2005	10	-	260	33	303
2006	14	-	238	32	284
2007	4	-	230	20	254
2008	14	-	254	21	289
2009	5	-	220	26	251
2010	7	-	265	16	288
2011	4	-	200	12	216
<b>Total</b>	<b>202</b>	<b>3312</b>	<b>2454</b>	<b>250</b>	<b>6592</b>
<b>Average</b>	<b>10.1</b>	<b>331.2</b>	<b>245.4</b>	<b>25</b>	<b>329.6</b>
<b>% Total</b>	<b>3.1%</b>	<b>50.2%</b>	<b>37.2%</b>	<b>3.8%</b>	<b>100.0%</b>

Pedestrian Crashes, 2007-2011



2007-2011 Oakland Crashes

	Number	Percentage
Total crashes	10,081	
Crashes near traffic signal	2,963	29.4%
Pedestrian involved	1,298	
Pedestrian involved near traffic signal	530	40.8%

# Bicycle and Pedestrian Crash Analysis

BPAC May 16, 2013

Jessica Nguyen & Jamie Parks

Bicycle and Pedestrian Crash Analysis

5/16/2013

## Overview

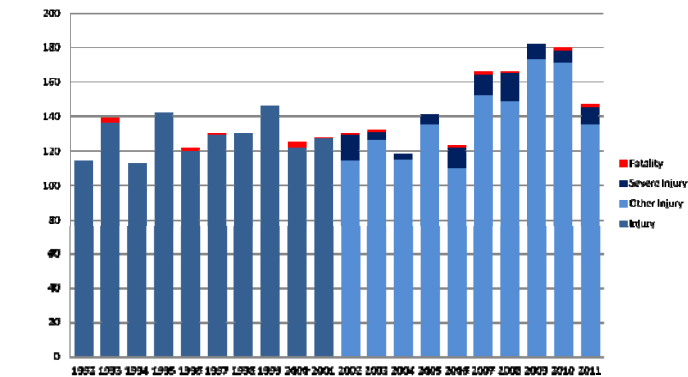
- Statewide Integrated Traffic Records System (SWITRS) data from 1992-2011, focusing on 2007-2011
- In GIS, analyzed crashes within 100 ft of traffic signals
  1. Citywide trends in Oakland
  2. Primary collision factors
  3. Maps: bike/ped involved & severity
  4. Highest crash locations

Bicycle and Pedestrian Crash Analysis

5/16/2013

## Bicycle-involved crashes

Bicycle share: 1.1% in 1990; 3.1% in 2011

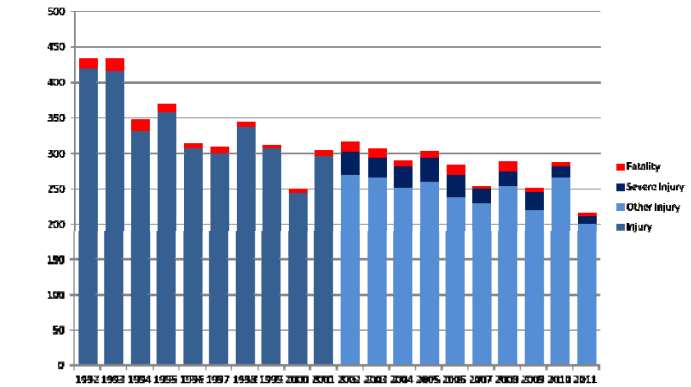


Bicycle and Pedestrian Crash Analysis

5/16/2013

## Pedestrian-involved Crashes

Walking share: 4.9% in 1990; 4.4% in 2011



Bicycle and Pedestrian Crash Analysis

5/16/2013

## Primary collision factors for vehicle-bicycle crashes, 2007-2011

Primary Collision Factor	Number	% of Total
<b>Bicyclist</b>		
Automobile Right of Way	23	16.5%
<b>Subtotal</b>	<b>23</b>	<b>16.5%</b>
<b>Driver</b>		
Unsafe Speed	10	7.2%
Unsafe Starting or Backing	2	1.4%
Improper Turning	26	18.7%
Driving or Bicycling Under the Influence of Alcohol or Drug	0	0.0%
Improper Passing	2	1.4%
Other Hazardous Violation	14	10.1%
Wrong Side of Road	22	15.8%
Other Improper Driving	4	2.9%
Hazardous Parking	0	0.0%
Impeding Traffic	0	0.0%
Lights	1	0.7%
Brakes	1	0.7%
<b>Subtotal</b>	<b>82</b>	<b>59.0%</b>
<b>Other</b>		
Unknown	7	5.0%
Traffic Signals and Signs	25	18.0%
Other Than Driver (or Pedestrian)	0	0.0%
Not Stated	2	1.4%
<b>Subtotal</b>	<b>34</b>	<b>24.5%</b>

Bicycle and Pedestrian Crash Analysis

5/16/2013

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Bicycle and Pedestrian Crash Analysis

5/16/2013

## Primary collision factors for vehicle-pedestrian crashes

Primary Collision Factor	Number 2007- 2011	% of Total 2007- 2011
<b>Pedestrian</b>		
Pedestrian Violation	297	24.9%
Pedestrian or "Other" Under the Influence of Alcohol or Drug	0	0.0%
Automobile Right of Way	8	0.7%
<b>Subtotal</b>	<b>305</b>	<b>25.6%</b>
<b>Driver</b>		
Pedestrian Right of Way	568	47.3%
Unsafe Speed	66	5.5%
Unsafe Starting or Backing	49	4.1%
Improper Turning	47	3.9%
Driving or Bicycling Under the Influence of Alcohol or Drug	8	0.7%
Improper Passing	3	0.3%
Other Hazardous Violation	9	0.8%
Wrong Side of Road	4	0.3%
Other Improper Driving	4	0.3%
Hazardous Parking	1	0.1%
Impeding Traffic	0	0.0%
Brakes	1	0.1%
<b>Subtotal</b>	<b>760</b>	<b>63.8%</b>
<b>Other</b>		
Unknown	57	4.8%

Bicycle and Pedestrian Crash Analysis

5/16/2013

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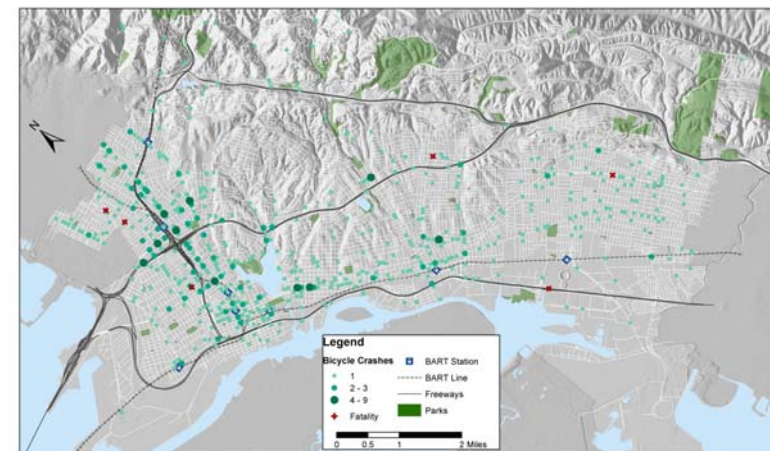
## Pedestrian action in vehicle-pedestrian crashes, 2007-2011

Pedestrian Action	Number	% of Total
No Pedestrian Involved	2	0.2%
Crossing in Crosswalk at Intersection	696	58.4%
Crossing in Crosswalk Not At Intersection	36	3.0%
Crossing Not in Crosswalk	250	21.0%
*Similar information for bicycle crashes not available		
In Road, including shoulder	133	11.2%
Not In Road	72	6.0%
Approaching/Leaving School Bus	0	0.0%

Bicycle and Pedestrian Crash Analysis

5/16/2013

Bicycle Crashes, 2007-2011



Bicycle and Pedestrian Crash Analysis

5/16/2013



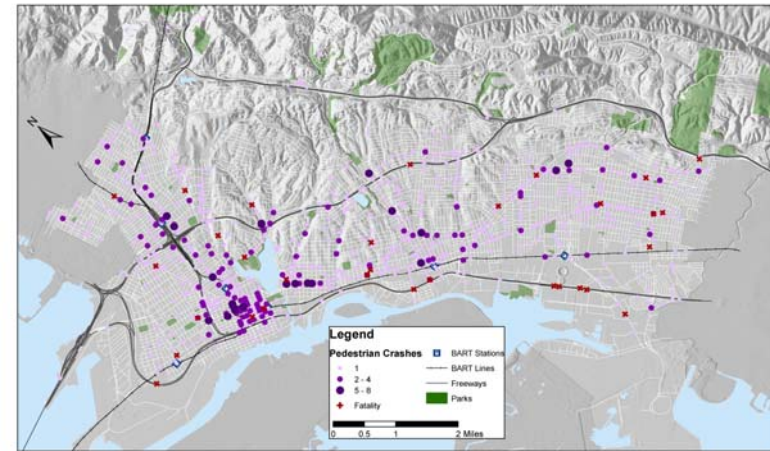
## Highest bicycle crash intersections

<u>Rank</u>	<u>Intersection</u>	<u>Total Collisions within 100 ft.</u>
1	Telegraph Ave & 42nd St	9
2	MacArthur Blvd & Fruitvale Ave	5
2	Foothill Blvd & 38th Ave	5
2	Telegraph Ave & W. Grand Ave	5
2	International Blvd & 4th Ave	5
2	International Blvd & 7th Ave	5
7	MacArthur Blvd & West St	4
7	Broadway & 41st St	4
7	San Pablo Ave & 36th St	4

Bicycle and Pedestrian Crash Analysis

5/16/2013

Pedestrian Crashes, 2007-2011



Bicycle and Pedestrian Crash Analysis

5/16/2013

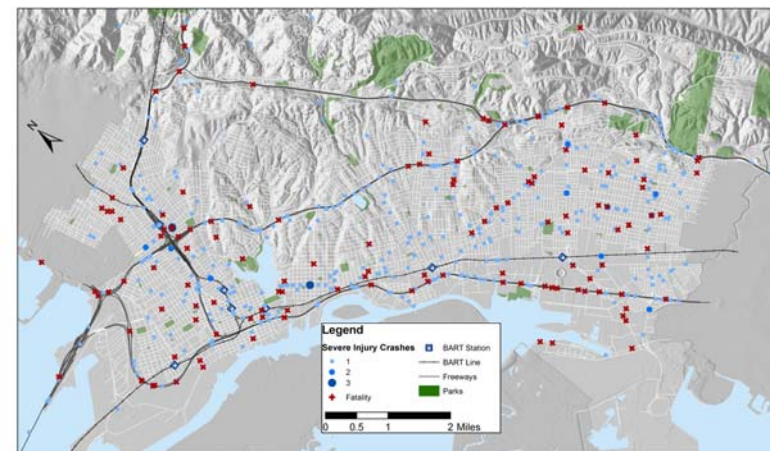
## Highest pedestrian crash intersections

<u>Rank</u>	<u>Intersection</u>	<u>Total Collisions within 100 ft.</u>
1	International Blvd & 4th Ave	9
2	MacArthur Blvd & Fruitvale Ave	8
2	International Blvd & 7th Ave	8
4	Foothill Blvd & 35th Ave	7
4	Fruitvale Ave & E. 27th St	7
4	Brush & 12th St	7
7	International Blvd & 8th Ave	6
7	Broadway & 14th St	6
9	73rd Ave & Garfield St	5
9	Bancroft Ave & Church St	5
9	Grand Ave & Lake Park_Mandana_Midblock	5
9	Telegraph Ave & 40th St	5
9	MacArthur Blvd & Telegraph Ave	5
9	Telegraph Ave & W. Grand Ave	5
9	Broadway & 12th St	5

Bicycle and Pedestrian Crash Analysis

5/16/2013

Severe Injuries and Fatalities for All Modes, 2007-2011



Bicycle and Pedestrian Crash Analysis

5/16/2013

## Intersections with most severe crashes

<u>Rank</u>	<u>Intersection</u>	<u>Total Collisions within 100 ft.</u>
1	International Blvd & 8th Ave	3
1	MacArthur Blvd & Telegraph Ave	3
3	98th Ave & Birch St	2
3	73rd Ave & Ney Ave	2
3	International Blvd & 98th Ave	2
3	International Blvd & 85th Ave	2
3	73rd Ave & Weld St	2
3	San Leandro St & 85th Ave	2
3	98th Ave & Empire Rd	2
3	Telegraph Ave & W. Grand Ave	2
3	MLK Jr. Way & 34th St	2

Bicycle and Pedestrian Crash Analysis

5/16/2013

## Severe injuries and fatalities, 2007-2011

Bicyclists and pedestrians over-represented in severe crashes

	<b>Number</b>	<b>% Total</b>
<b>Total Severe Crashes</b>	460	
<b>Pedestrian injured</b>	95	20.7%
<b>Bicyclist injured</b>	54	11.7%
<b>Total Fatalities</b>	141	

Bicycle and Pedestrian Crash Analysis

5/16/2013

## Summary

- More crashes involve pedestrians than cyclists
- Pedestrians experience more severe injuries
- From 1992-2011: modest increase in bike, but decrease in pedestrian crashes
- Drivers are usually the responsible party
- Some intersections have high bicycle and pedestrian crashes
  - International Blvd at 4<sup>th</sup> & 7<sup>th</sup>
  - MacArthur & Fruitvale
  - Telegraph & W. Grand

Bicycle and Pedestrian Crash Analysis

5/16/2013

## Next steps

- Identify high crash corridors
- Look at individual intersections and corridors in depth to identify specific causes and solutions
- Compare crash frequency to traffic volume
- Inform the City's HSIP application and other project programming

Bicycle and Pedestrian Crash Analysis

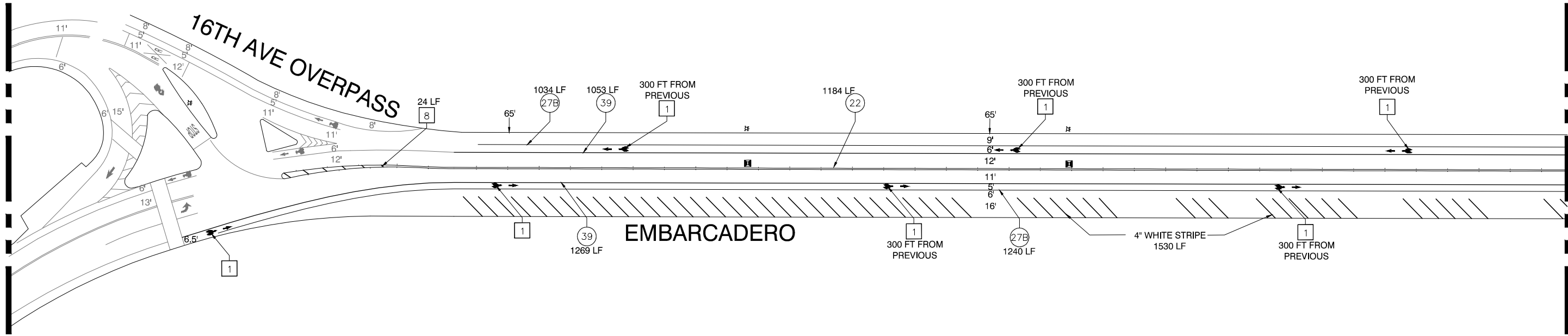
5/16/2013

## Thank you

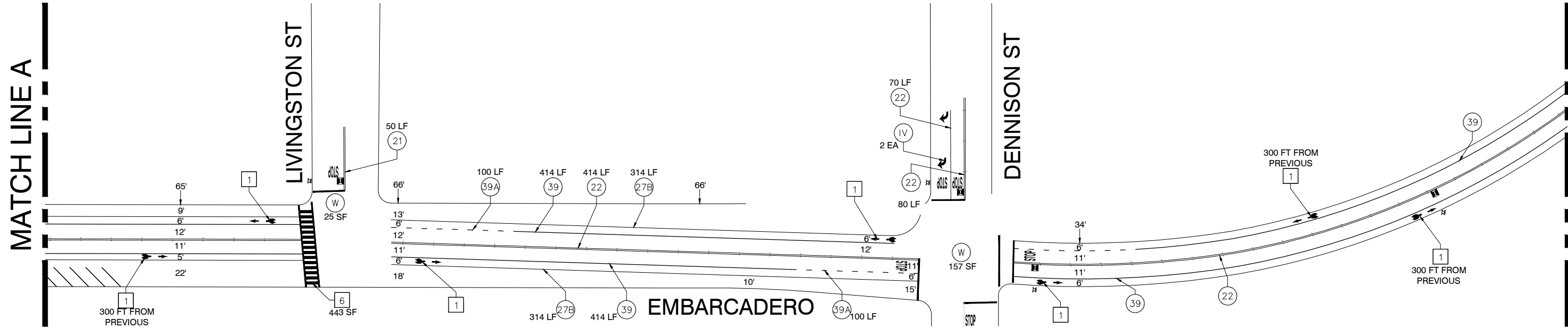
- Jamie Parks  
[jparks@oaklandnet.com](mailto:jparks@oaklandnet.com)
- Jessica Nguyen  
[ippdintern3@oaklandnet.com](mailto:ippdintern3@oaklandnet.com)



MATCH LINE A



MATCH LINE A



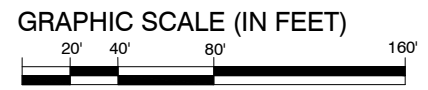
MATCH LINE B

LEGEND

- |    |   |     |                          |
|----|---|-----|--------------------------|
| #  | STRIPING CONSTRUCTION NOTE NUMBER                 |     | FIRE HYDRANT             |
| #  | DETAIL NUMBER PER CALTRANS STD PLANS              |     | BLUE FIRE HYDRANT MARKER |
|    | Traffic lines as cardinal number                  | ETR | EXISTING TO REMAIN       |
|    | Arrows as roman numeral                           | LF  | LINEAR FEET              |
| TS | TRAFFIC SIGNAL                                    | SF  | SQUARE FEET              |
| W  | CROSSWALK/LIMIT LINE (SOLID ONE FOOT WHITE LINE)  | CR  | CURB RETURN              |
| Y  | CROSSWALK/LIMIT LINE (SOLID ONE FOOT YELLOW LINE) | FC  | FACE OF CURB             |

CONSTRUCTION NOTES

- |   |   |    |   |
|---|---|----|---|
| 1 | BIKE LANE SYMBOL & ARROW<br>Install bike lane symbol and bike lane arrow markings 20 feet after curb return (as measured from base of symbol) and/or as noted. Space symbol and arrow 6 feet apart. See Detail. | 7  | WHITE BUFFER STRIPING<br>Install 6 inch white striping every 8 feet at 45 degree angle, or as noted.    |
| 2 | SHARROW<br>Install first sharrow marking 20 feet after curb return or as noted. Install other sharrow markings as noted. See Detail.  | 8  | YELLOW BUFFER STRIPING<br>Install 6 inch yellow striping every 15 feet at 45 degree angle, or as noted. |
| 3 | PARKING TEE<br>Install short stem toward curb, distance measured from center of cross. Spacing between tees to be determined by engineer. See Detail.   | 9  | REMOVE CONFLICTING STRIPING   |
| 4 | BIKE DETECTOR SYMBOL<br>Install bike detector pavement marking 6 feet from lane line and 1 foot from limit line or as noted. See Detail.  | 10 | REMOVE CONFLICTING MARKINGS   |
| 5 | SPEED HUMP STRIPING<br>Install 1 foot white stripes on speed humps, 5 feet apart, on center. See Detail.  |    |   |
| 6 | LADDER CROSSWALK<br>Install 2 foot stripes spaced 2 feet apart, bounded by standard 1 foot crosswalk stripes, white unless otherwise noted. See Detail.   |    |   |



**CITY OF OAKLAND**  
DEPARTMENT OF ENGINEERING AND CONSTRUCTION  
250 FRANK H. OGAWA PLAZA, SUITE 4344 • OAKLAND CA, 94612  
(510) 238-3466 • FAX (510) 238-7415

**EMBARCADERO - KENNEDY ST.**  
**16TH AVE. OVERPASS - 23RD AVE**

REVIEWED BY	No.	DATE	BY	REFERENCE
PETER CHUN				
DESIGNED BY				
JASON PATTON				
DRAWN BY				
ARS				

**STRIPING PLAN**

PROJECT NO.  
**TBD**

SCALE: 1" = 80'	SHEET NO.
DATE: DATE	1 OF 3