

Improving safety  
and walking  
conditions in  
San Francisco



## Prioritizing Walking Improvements

PSAC | June 14, 2011



San Francisco  
Department of Public Health

SAN FRANCISCO  
PLANNING DEPARTMENT



SFMTA | Municipal Transportation Agency

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5. Pedestrian safety
  - Revised criteria for scoring ped safety needs
6. Case Studies

## Project Purpose

The project's goal is to improve walking conditions in San Francisco, and encourage walking as a way of getting around the city.

The WalkFirst project will **identify** where people walk, and **prioritize** how to make safety improvements to best serve pedestrians. This is important in order to best make use of limited funding.





## Project Deliverables

- Map of key walking streets in San Francisco
- Method for prioritizing the most important safety improvements
- Preliminary list of pedestrian safety upgrades
- Draft policies to guide City decisions about pedestrian safety and walking conditions
- Examples of street designs to improve the walking environment



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# Focus Groups

## Independent Living Resource Center: 6/3/11

### ■ General Comments

- Like streets with wide and smooth sidewalks, places to sit, and “new” yellow curb ramps, and with enough time to cross.
- Dislike streets that with narrow and/or uneven sidewalks, limited and/or no curb ramps, obstructions in the path of travel (trees, parked cars, etc).

### ■ Priorities

- Widen sidewalks on shopping streets and on key streets to create more space for people.
- Increase crossing times
- Install new curb ramps that are not steep and allow a direct path of travel

## Additional focus groups

- Chinatown Youth –  
June 15, 2011
- Lighthouse for the Blind and Visually Disabled –  
June 30, 2011



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# Prioritizing Locations for Walking Improvements





Category	Pedestrian Activity	Pedestrian Safety	Street and Sidewalk Characteristics	Project Readiness
<b>Goal</b>	Identify places where people walk	Identify most important locations for safety improvements	Identify street and sidewalk infrastructure/ conditions	Identify opportunities to fund and construct pedestrian improvements
<b>Product</b>	Map of key walking streets in SF	Map of identified areas of improvement for pedestrian safety	Preliminary project list	Preliminary project list

## Prioritizing locations for walking improvements

**Ped Safety:** # of collisions and collision rate/crossing

<b>Ped Activity: Key walking streets and areas</b>	<i>High:</i> ranks in top 1/3 of ped safety needs	<i>Medium:</i> ranks in next 1/3	<i>Low:</i> ranks in last 1/3
<i>High:</i> identified as key walking street or area (primary)	<b>HIGHEST</b>	High	Medium
<i>Medium:</i> identified as key walking street or area (secondary)	High	Medium	Low
<i>Low:</i> not identified	High	Low	Low

## Prioritizing locations for walking improvements

- In priority locations, we will also consider the following factors to determine appropriate types of improvements:
  - Street type and function
  - Street and sidewalk characteristics
  - Project readiness
  - Equity (geographic distribution, vulnerable populations)

## Preliminary Capital Improvements List

- For high priority locations:
  - Pedestrian activity and safety factors
  - Street physical characteristics
  - Recommended physical improvements
- To be refined in later phases (if funded) by:
  - Filling in data gaps
  - Community and policy maker involvement
  - Greater coordination with other projects
  - Expanding list

## Improvement Types to Include for WalkFirst Recommendations: Preliminary List

- Curb and Bus Bulb-outs
- Continental Crosswalks\*
- Flashing Beacons
- Sidewalk Widening
- Pedestrian-Friendly Signal Changes
  - Scramble Signal Phasing
  - Protected Left Turns
- Pedestrian Refuge Islands
- Pedestrian-Scale and Roadway Safety Lighting

\* Being considered as routine crosswalk marking, but conversion and new locations could still be prioritized

## Additional Improvement Types to Include for WalkFirst Recommendations: Preliminary List

- Street Trees (*block level only*)
- Pedestrian Countdown Signals
- Opening Closed Crosswalks
- Speed Control Measures, such as:
  - Radar speed display signs
  - Roadway narrowing
  - Rumble strips

### Already Prioritized by Other Processes

- Curb Ramps
- Neighborhood Traffic Calming Measures
- Accessible (Audible) Pedestrian Signals



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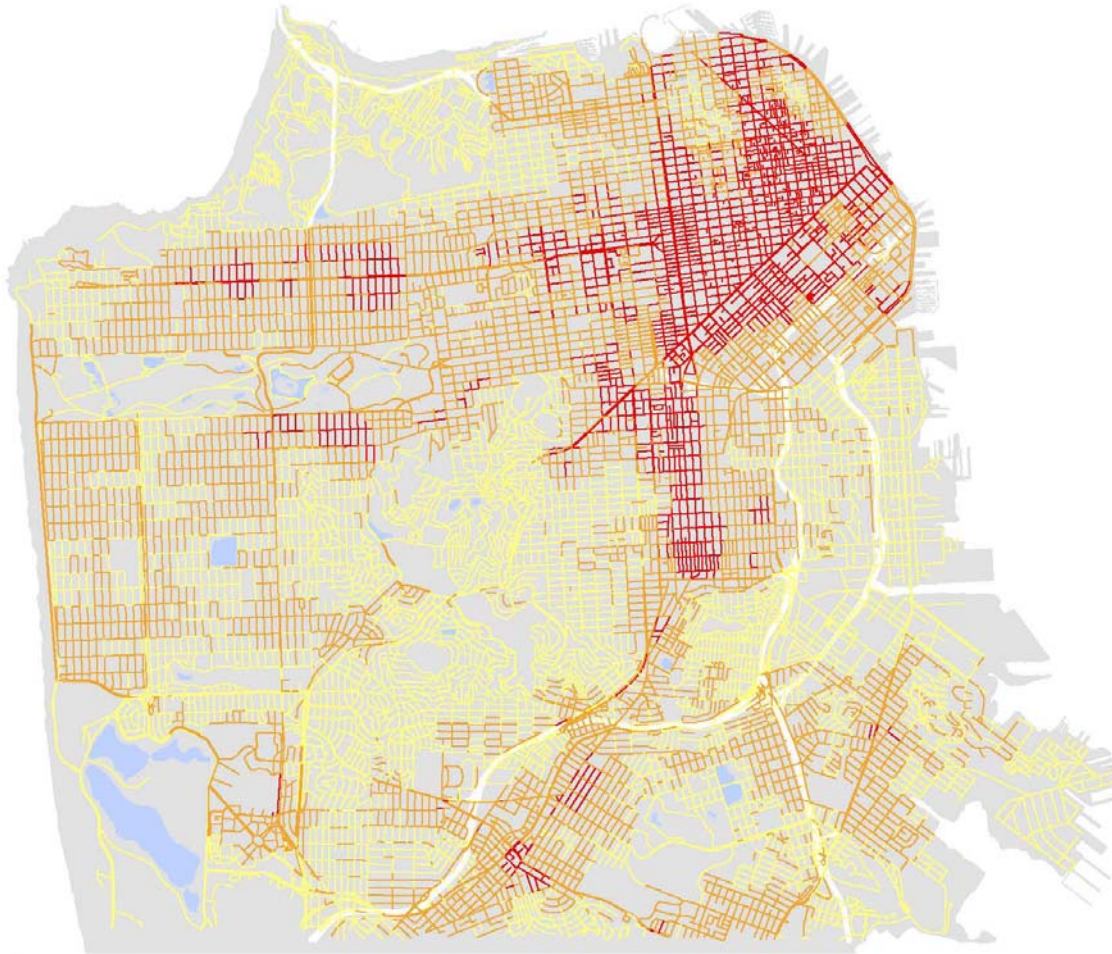
# Pedestrian Activity: Where Walking is Important

## Pedestrian Activity: Where Walking is Important

- Access/need to walk
  - Transit mode share, walking mode share
- Transit ridership
  - Daily transit boardings
- Density of people
  - Residential density, job density
- Pedestrian generators
  - Colleges, public & private schools, hospitals and clinics, shopping districts, parks, tourist destinations, senior centers, service providers to persons with disabilities
- Vulnerable populations
  - Seniors, youth, persons with disabilities
- Income
- Street slope



# Composite Map



SAN FRANCISCO  
Composite Map, Natural Breaks 3 Classes  
April 27, 2011



Treasure Island

**Composite Map 1:**  
Raw Score, Equal Weights

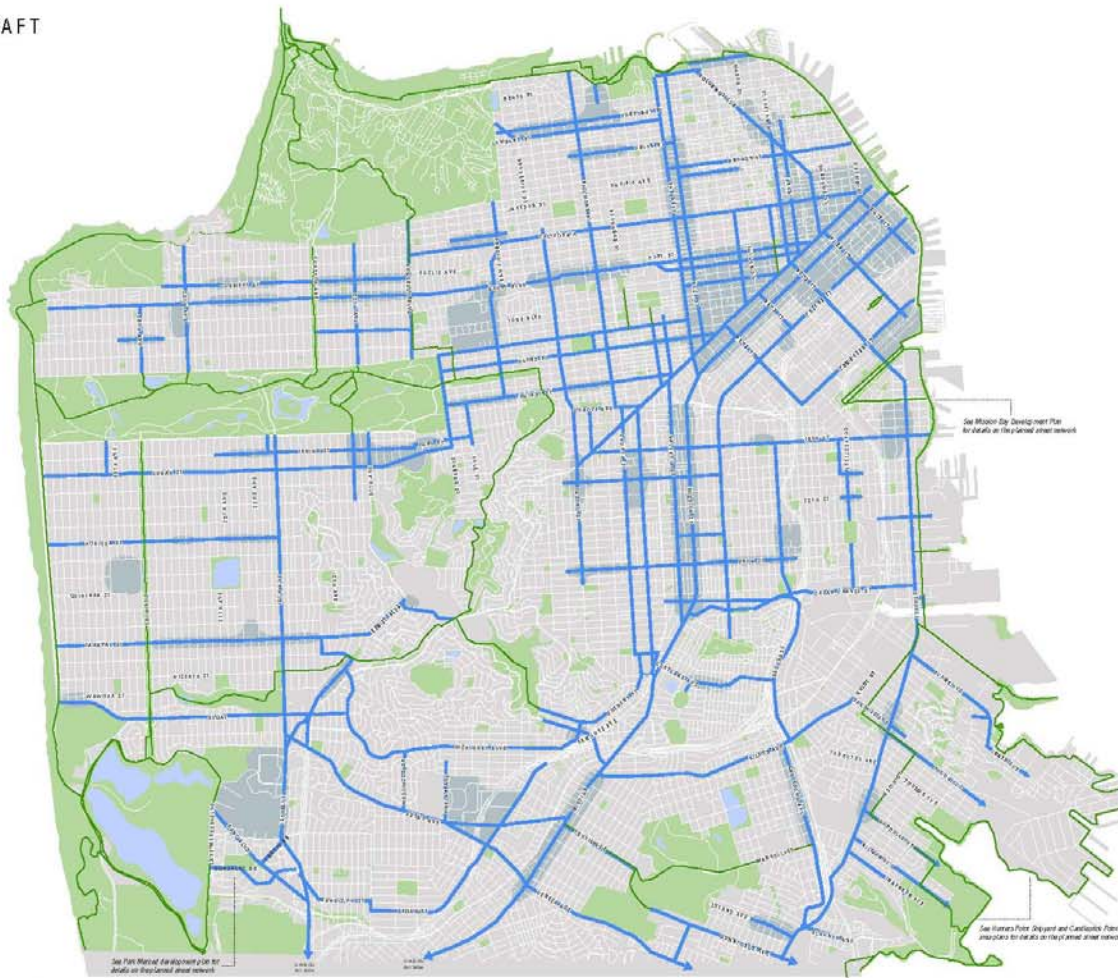
- Category 1: Access / Need to Walk
- Category 2: Transit Ridership
- Category 3: Density of People
- Category 4: Pedestrian Generators
- Category 5: Vulnerable Populations
- Category 6: Income
- Category 7: Street Slope

Street Segment Score

- Low: 7 - 29
- Medium: 30 - 43
- High: 44 - 68

# Preliminary Map of Key Walking Streets and Areas

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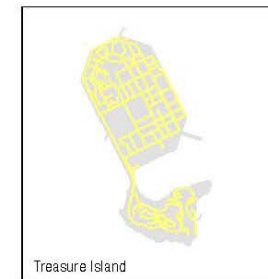
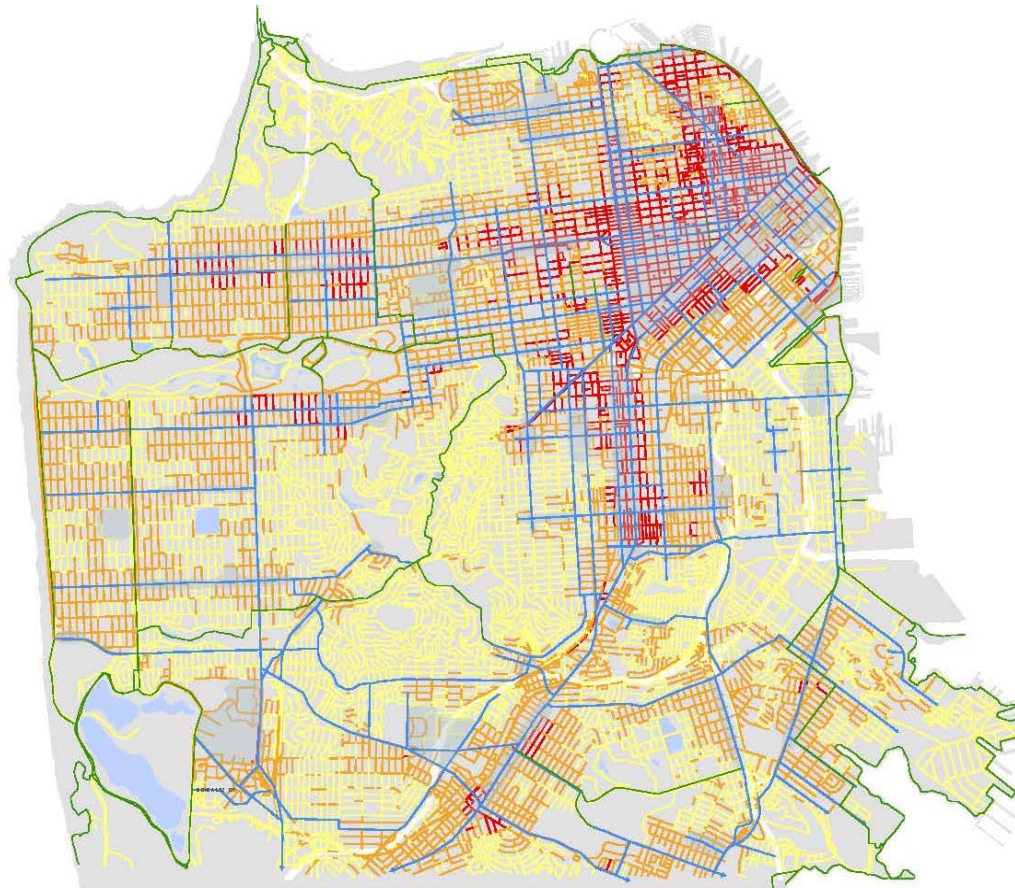


### Key Walking Streets

- key walking street
- recreation street
- key areas

# Composite Map

## Preliminary Map of Key Walking Streets & Areas



**Composite Map 1:**  
Raw Score, Equal Weights

- Category 1: Access / Need to Walk
- Category 2: Transit Ridership
- Category 3: Density of People
- Category 4: Pedestrian Generators
- Category 5: Vulnerable Populations
- Category 6: Income
- Category 7: Street Slope

**Street Segment Score**

- Low: 7 - 29
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**Key Walking Streets**

- key walking street
- recreation street
- key areas

# Public & Private Schools

## Preliminary Map of Key Walking Streets and Areas



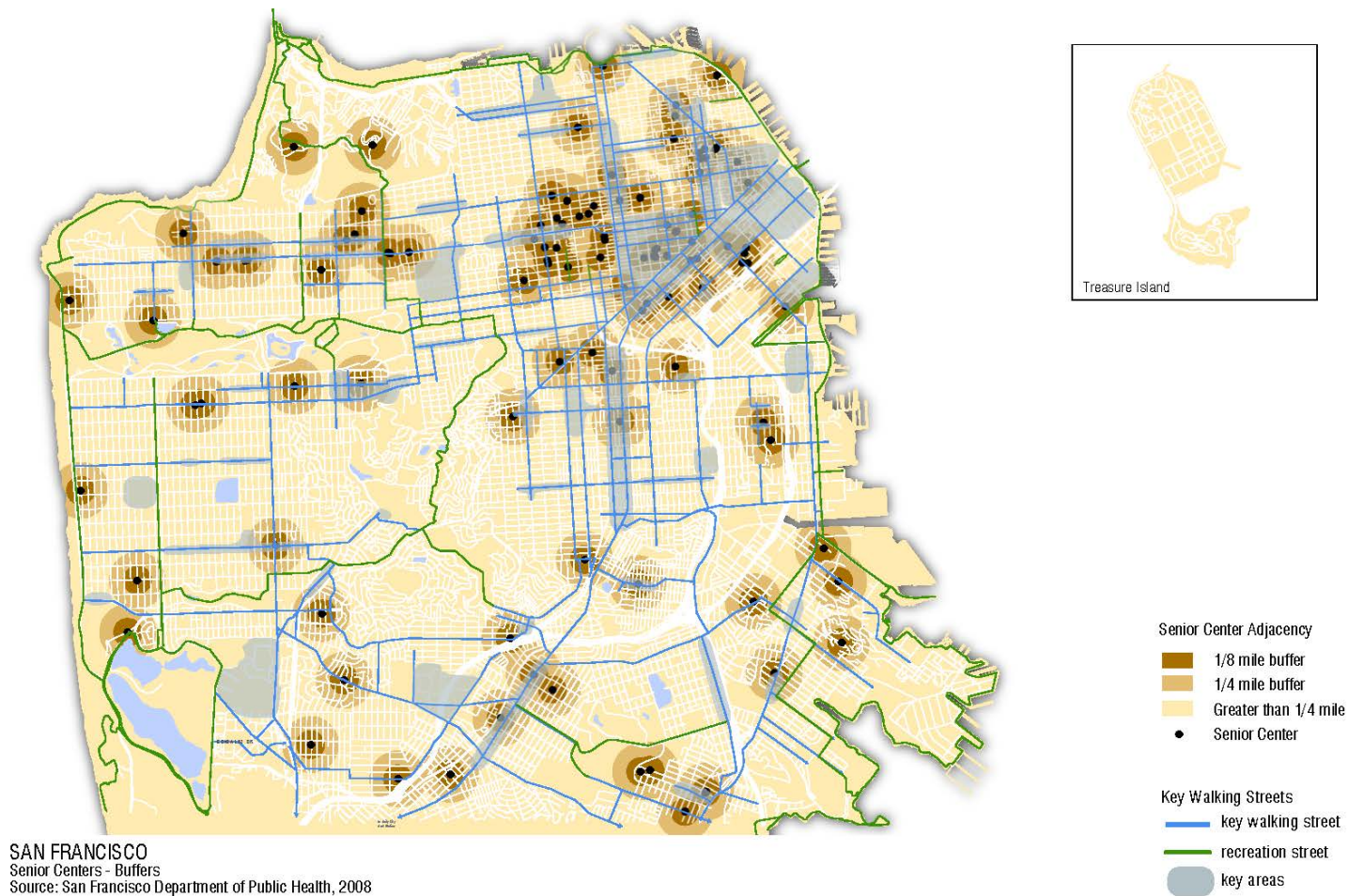
Treasure Island

Public School Adjacency  
■ 1/8 mile buffer  
■ 1/4 mile buffer  
■ Greater than 1/4 mile  
■ School Parcels

Key Walking Streets  
■ key walking street  
■ recreation street  
■ key areas

# Senior Centers

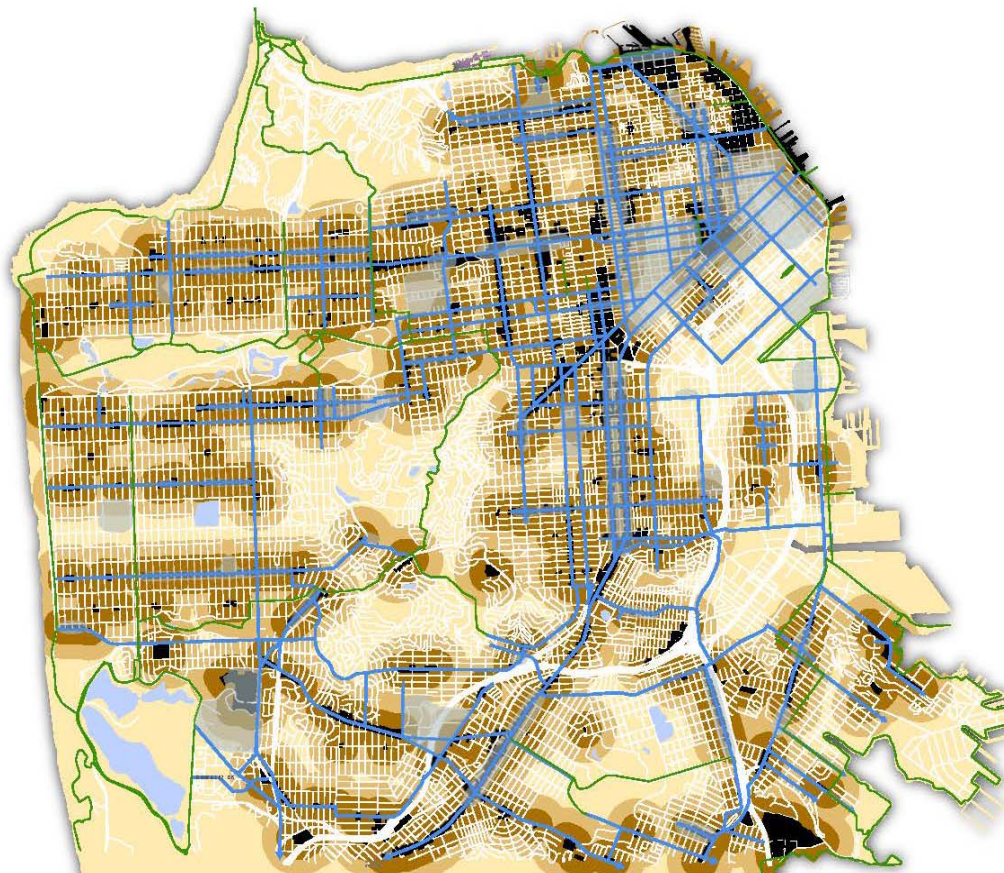
## Preliminary Map of Key Walking Streets and Areas



SAN FRANCISCO  
Senior Centers - Buffers  
Source: San Francisco Department of Public Health, 2008

# Shopping Districts

## Preliminary Map of Key Walking Streets and Areas



### Commercial Zoning Adjacency

- 1/8 mile buffer
- 1/4 mile buffer
- Greater than 1/4 mile
- Parcel Zoned for Commercial Land Uses (NC, C-2, C-3-R, CGB or CVR)

recreation street

key areas



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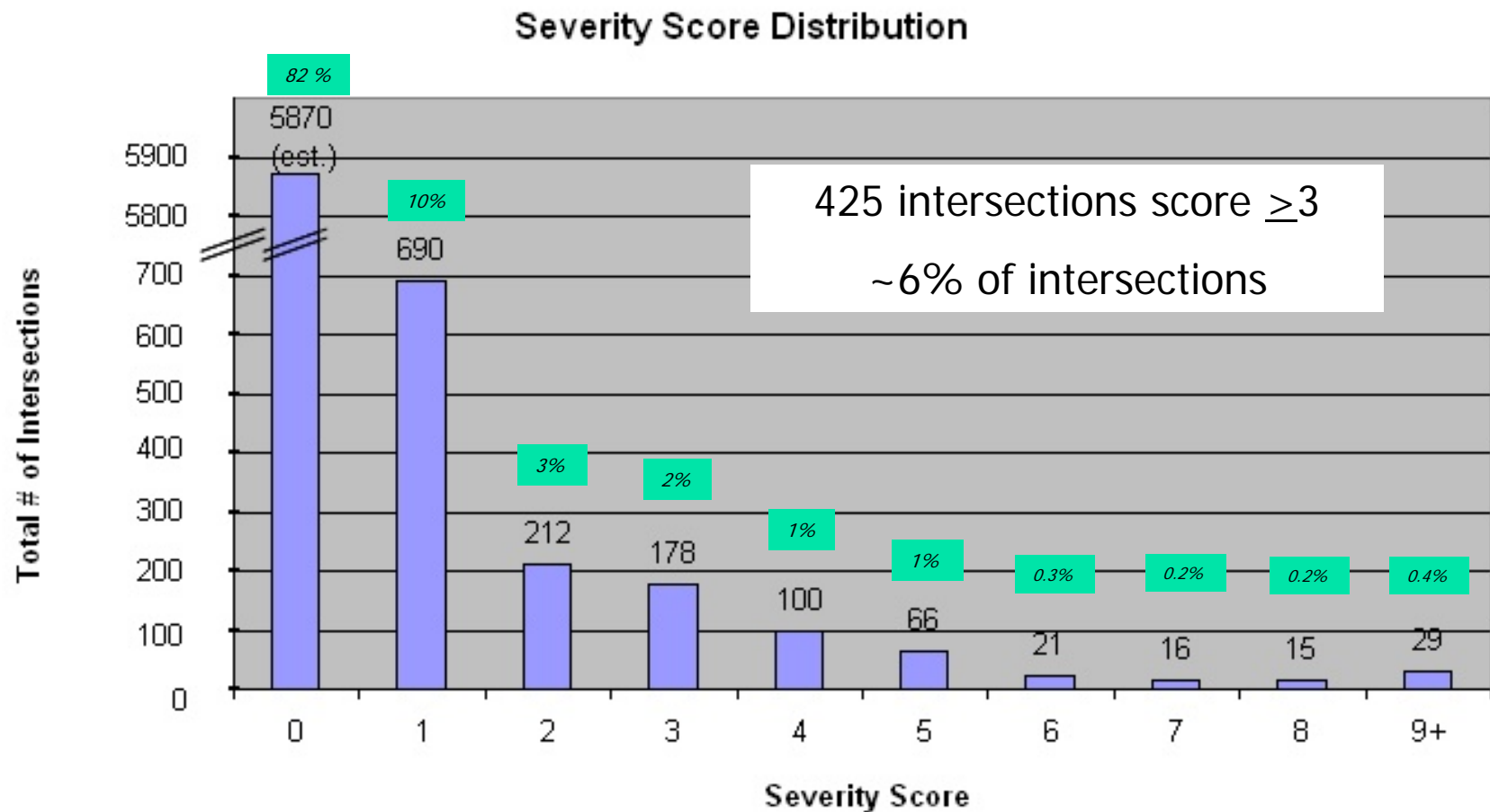
# Pedestrian Safety: The Conditions Pedestrians Face

## Pedestrian Safety Score

- Will Include:
  - Using SWITRS data 2005-2009
  - Pedestrian injuries and fatalities at intersections and corridors
  - Severity weighted
    - Fatal and severe injuries weighted 3X
    - Exclude pedestrian collisions with no injuries
  - Primarily based on absolute # of injuries
  - Rate (per walk trip) only used to help order intersections within broader priority groups
- To Be Overlaid on Key Pedestrian Streets to Select Priority Locations
- Can Be Refined and Expanded in Later Phases



# Pedestrian Injuries at Intersections: Statistical Distribution



# Pedestrian Safety: High-Risk Corridors and Area Methods

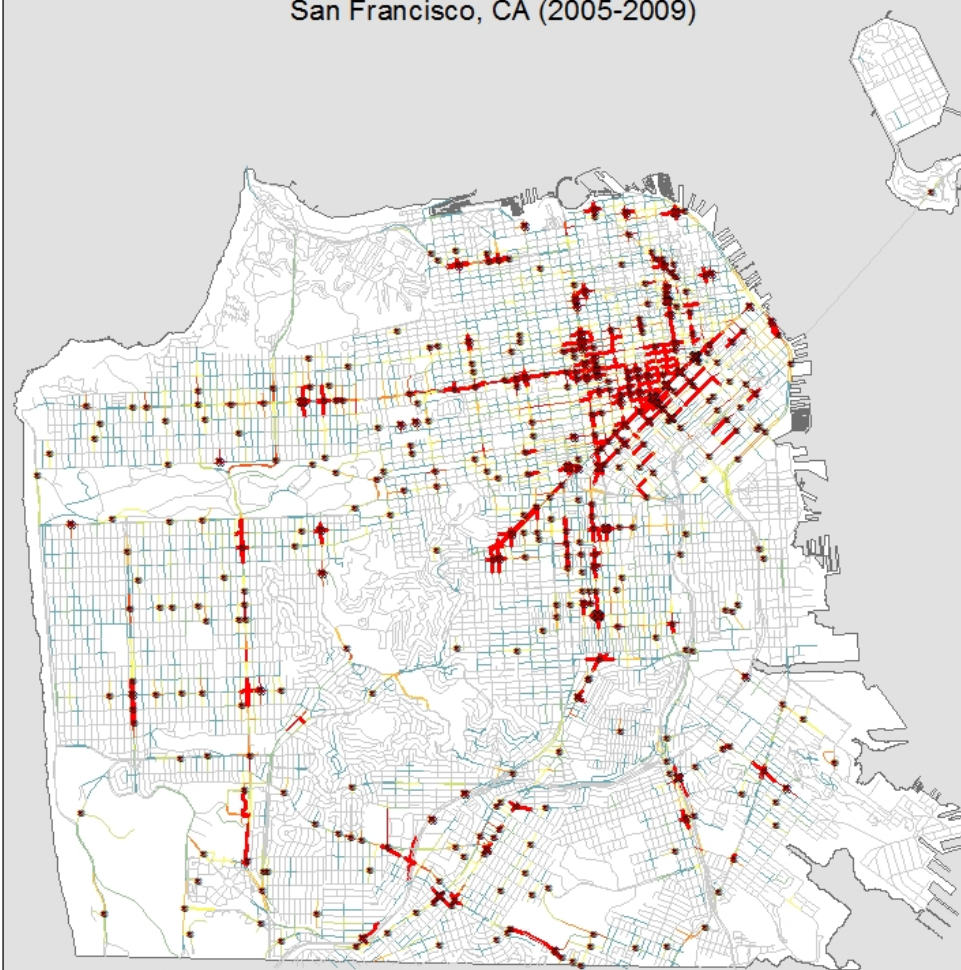
## **1) Map pedestrian injury counts (SWITRS Data, 2005-2009) to street segments.**

- Aggregate injury counts to adjoining street segments (based on primary and secondary street of injury occurrence)
- Weight severe and fatal injuries (multiply counts times 3)
- Note injuries are *being "double counted" on the streets with which they intersect.*

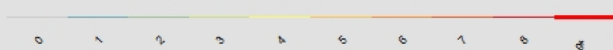
*Methodology developed by SFDPH as a part of the Citywide Pedestrian Safety Task Force Data Subcommittee Deliverables.*

# Vehicle-Pedestrian Injuries

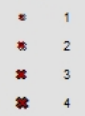
Weighted Count Aggregated and Assigned to Street Segments  
 San Francisco, CA (2005-2009)



Street Segment Weighted Injury Count (Severe Injuries and Fatalities X3)



Severe Injuries and Fatalities



Source: California Highway Patrol, Statewide Integrated Traffic Records System (SWITRS)  
 City and County of San Francisco, Department of Public Health, Environmental Health Section  
 For more information regarding this map please contact Megan Wier at [megan.wier@sfdph.org](mailto:megan.wier@sfdph.org)

## Pedestrian Safety: High-Risk Corridors and Area Methods

### 2) Identify candidate high-risk street corridors.

- With contiguous/closely spaced-high risk street segments (weighted injury count  $\geq 9$ )
- Based on distribution, inclusion of segments with 3+ severe/fatal injuries
- Cross reference with SFMTA-defined high ranking intersections and segments to ensure included in corridor selection

### Methodology identifies (“blue” corridors):

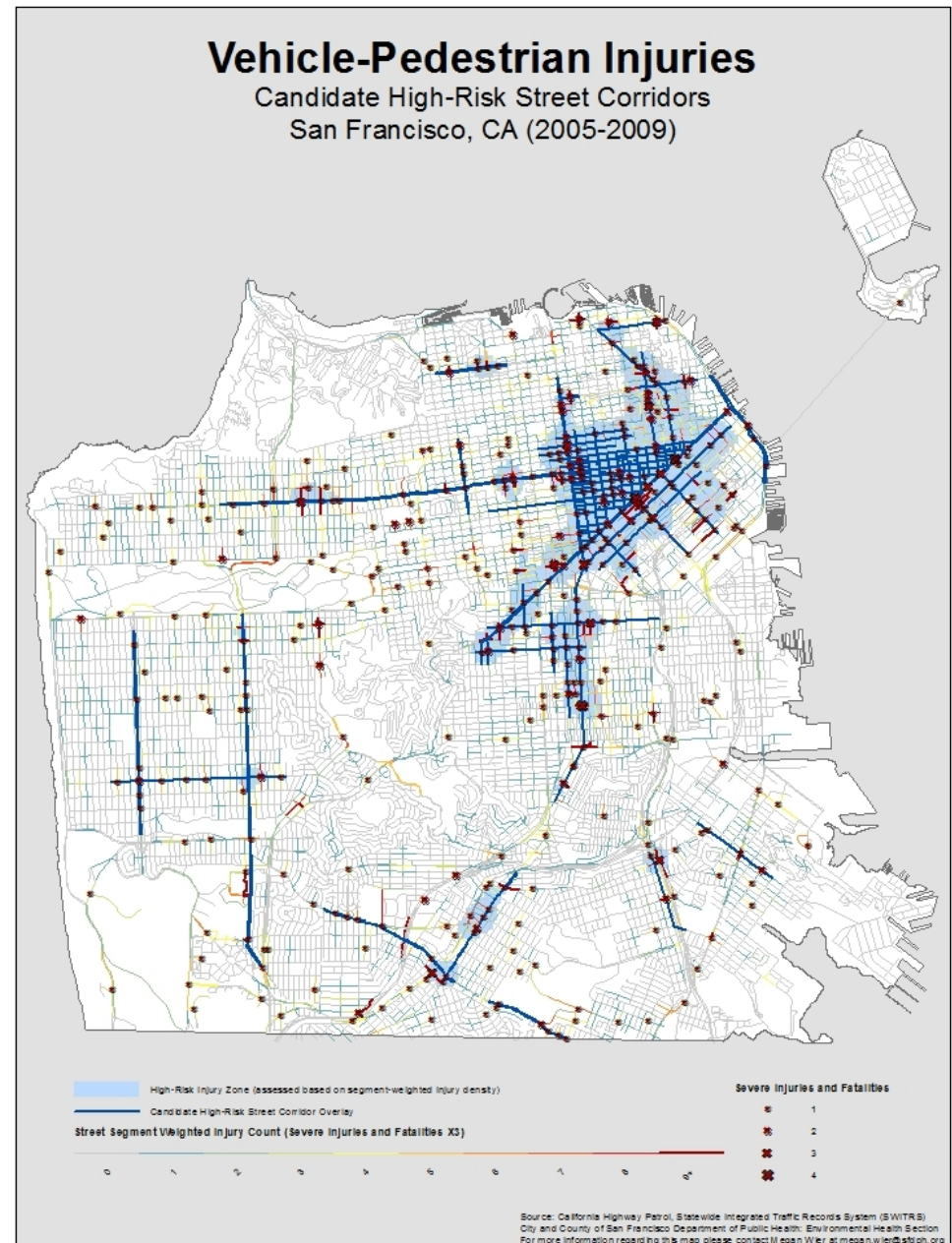
- 6.7% of city street length in miles
- 55% of severe and fatal pedestrian injuries
- 51% of total pedestrian injuries
- **Next Steps: Ranking corridors based on injury count /mile (total and severe/fatal)**

*Methodology developed by SFDPH as a part of the Citywide Pedestrian Safety Task Force Data Subcommittee Deliverables.*

## High Risk Injury Corridors and Areas

- 6.7% of city street length in miles
- 55% of severe and fatal pedestrian injuries
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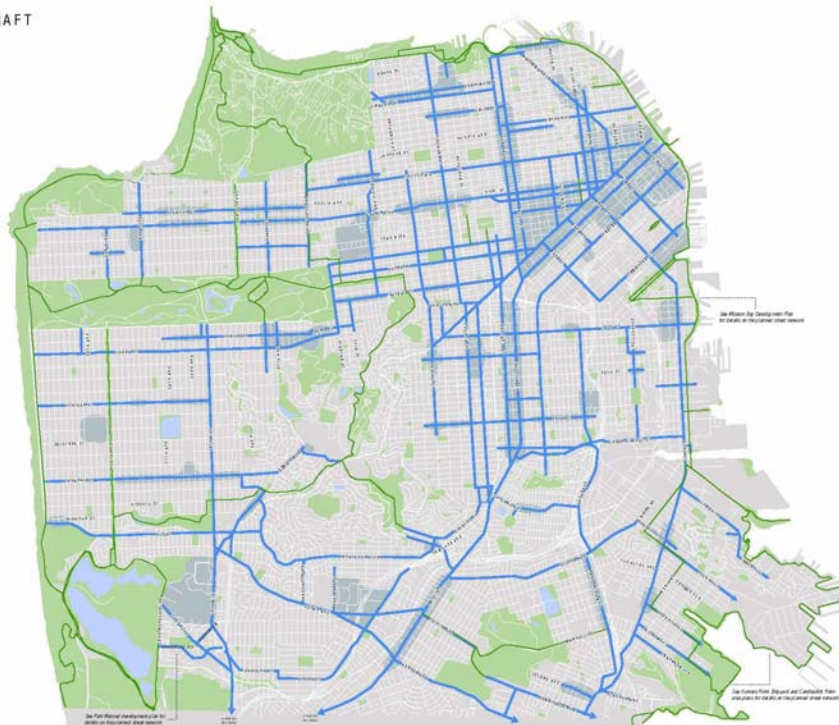
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## High Priority Streets

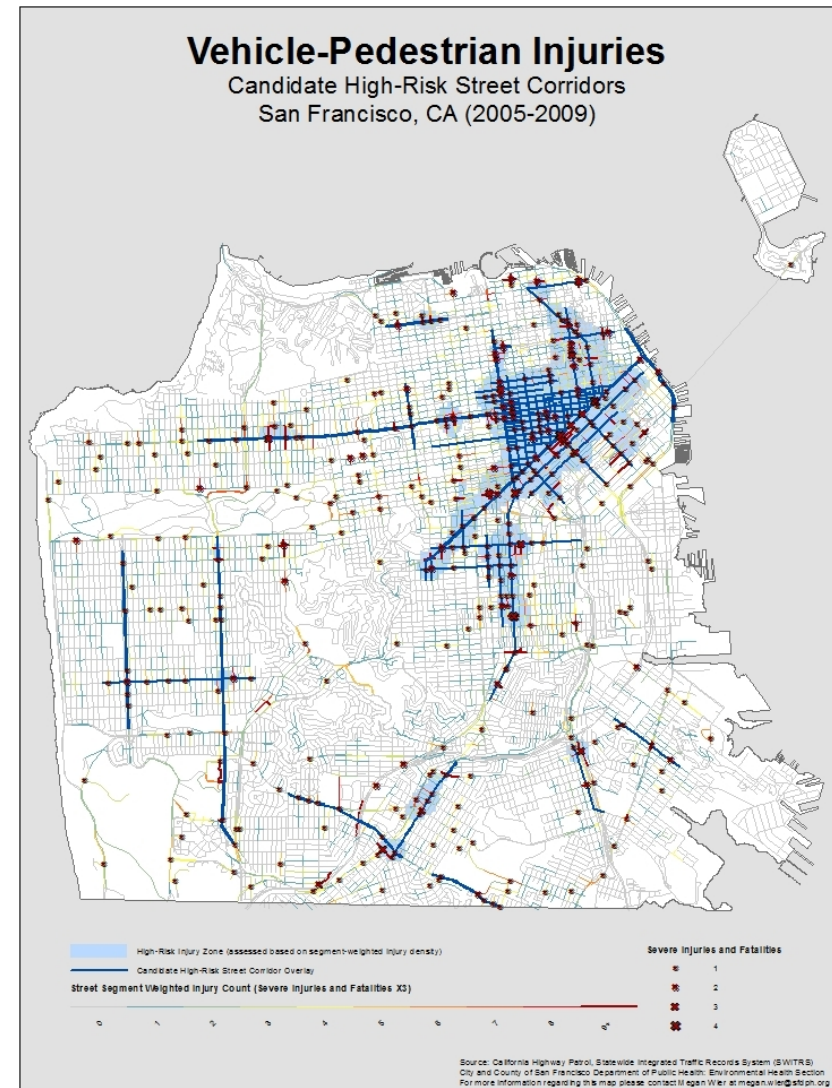
# High Priority Streets

- Overlay Key Walking Streets & Areas and High Risk Injury Corridors
- Will only consider capital projects on streets and sidewalks where there is overlap between two
- Streets under development should refer to development plan (e.g., Treasure Island, Hope SF)

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WalkFirst: Key Walking Streets  
Source: San Francisco Planning Department, June 8 2011



## Prioritizing locations for walking improvements

- In priority locations, we will also consider the following factors to determine appropriate types of improvements:
  - Street type and function
  - Street and sidewalk characteristics
  - Project readiness
  - Equity



## Preliminary Capital Improvements List

- Preliminary Capital Improvements List locations will be based primarily on the high-priority corridors shown earlier
  - Supplemented by higher-injury intersections not on the high-priority corridors
- Later phases (if funded) to refine the approach and expand the locations covered by recommendations



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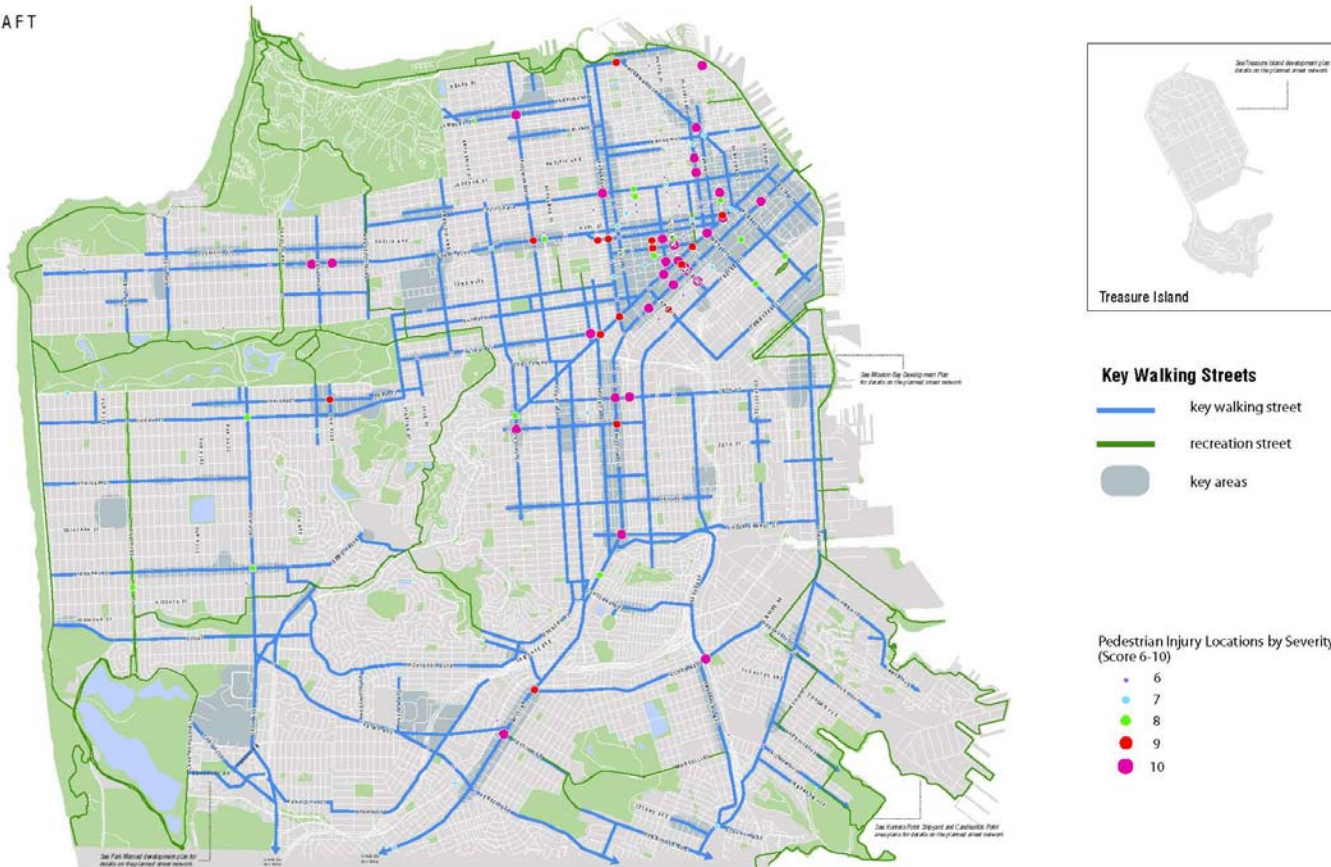
## Case Studies

## Case Studies

- Illustrate how the prioritization recommendations can be translated into physical improvements
- Locations selected with significant pedestrian safety problems and high levels of pedestrian activity
- Illustrate typical conditions
- Concepts could be broadly applied to similar street conditions across the city
- Build on earlier community and agency planning efforts

# Preliminary Map of Key Walking Streets & Areas Pedestrian Injury Locations

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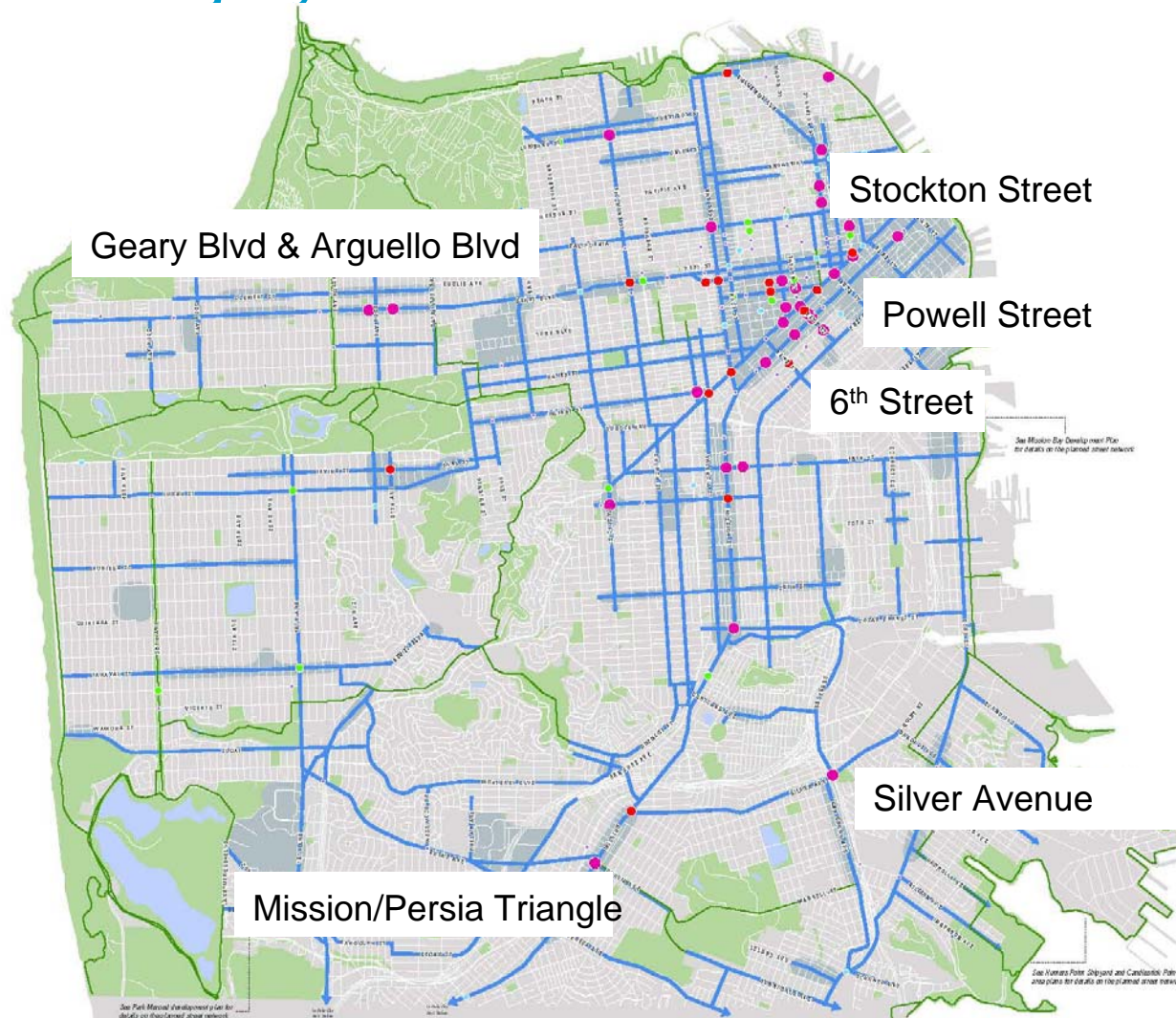


SAN FRANCISCO  
WalkFirst: Key Walking Streets  
Source: San Francisco Planning Department, June 8 2011

## Case Studies

- 6<sup>th</sup> Street (Market Street to Howard Street)
- Geary Blvd & Arguello Blvd
- Mission/Persia Triangle
- Powell Street (Eddy Street to Geary Blvd)
- Silver Avenue (San Bruno Avenue to Bayshore Boulevard)
- Stockton Street & Sacramento

# Preliminary Map of Key Walking Streets & Areas Pedestrian Injury Locations



## Case Study Example

Case Study	Pedestrian Safety	Pedestrian Activity	Street & Sidewalk Characteristics	Project Readiness
Mission/ Persia Triangle	<p><b>Mission/Persia:</b></p> <ul style="list-style-type: none"> <li>•10 pedestrian collisions in 5 years</li> <li>•Ranks 3<sup>rd</sup> citywide in both pedestrian collisions and pedestrian injury severity score</li> </ul> <p><b>Mission/Ocean:</b></p> <ul style="list-style-type: none"> <li>•3 pedestrian collisions</li> </ul> <p><b>On Persia, south of Ocean:</b></p> <ul style="list-style-type: none"> <li>•2 midblock pedestrian collisions</li> </ul>	<ul style="list-style-type: none"> <li>▪ 2 neighborhood commercial streets</li> <li>▪ High transit volumes and pedestrian activity</li> <li>▪ ½ mile of five schools</li> <li>▪ ½ mile from three senior centers</li> <li>▪ ½ mile of five parks.</li> </ul>	<p><b>Mission/Ocean and Mission/Persia:</b></p> <ul style="list-style-type: none"> <li>•Pedestrian countdown signals</li> </ul> <p><b>Ocean/Persia:</b></p> <ul style="list-style-type: none"> <li>•Persia approach stop-controlled</li> <li>•Ocean uncontrolled, with ped refuge island</li> </ul> <p><b>All streets:</b> 25 mph speeds limits</p> <p>Mission has 2 lanes each direction, Ocean and Persia 1 lane</p> <p>Some curb ramps, but not full coverage</p>	<ul style="list-style-type: none"> <li>•Adopted neighborhood plan</li> <li>•Lifeline/Prop K funds awarded to SFMTA to implement</li> <li>•Planning &amp; design started</li> <li>•Seeking construction funding</li> </ul>

# Case Study Format

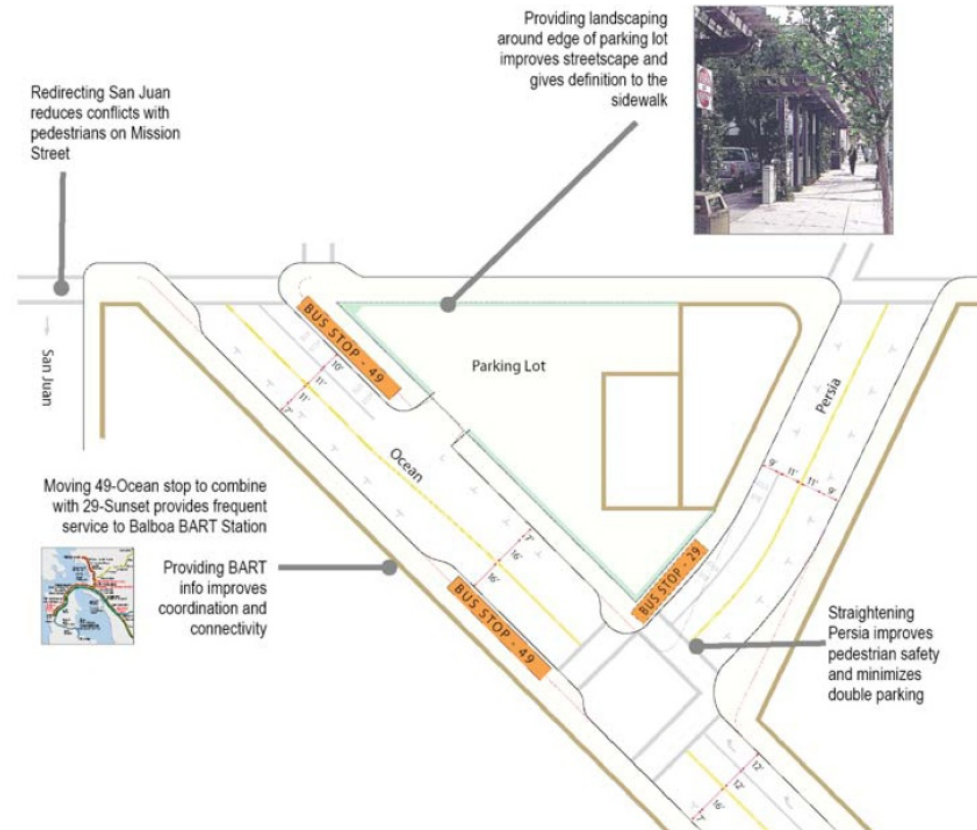


Figure 5.1 - Proposed Improvements to Persia Triangle

- Illustration of format of concept drawing. From SFCTA, *Mission-Geneva Neighborhood Transportation Plan Final Report*, 2007.



# Upcoming PSAC presentations

## **July**

- No presentation

## **August**

- DRAFT policies and objectives
- DRAFT case study concepts

## **September**

- DRAFT Preliminary capital project list

## Stay involved!

- **Monthly presentations at PSAC**
- **Focus groups/stakeholder meetings**
- **Join the mailing list for updates:** send an email to [walkfirst@sfgov.org](mailto:walkfirst@sfgov.org)



For more information visit:  
[\*\*http://walkfirst.sfplanning.org\*\*](http://walkfirst.sfplanning.org)



Email us at:  
[\*\*walkfirst@sfgov.org\*\*](mailto:walkfirst@sfgov.org)

The text "Thank you!" is centered in the middle of the image in a large, white, sans-serif font. The background is a blue-tinted photograph of a busy sidewalk with people walking, some carrying shopping bags.

Thank you!



For more information visit:  
<http://walkfirst.sfplanning.org>



Email us at:  
[walkfirst@sfgov.org](mailto:walkfirst@sfgov.org)