

TRANSPORTATION IMPACT ANALYSIS GUIDELINES UPDATE

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Kick-off Meeting: July 27, 2017

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**San Francisco
Planning**

AGENDA

Welcome/Introduction

8:10 to 8:20

Transportation topics overview

8:20 to 8:55

Walking

Bicycling

Transit

Loading

Emergency access

VMT

Traffic hazards

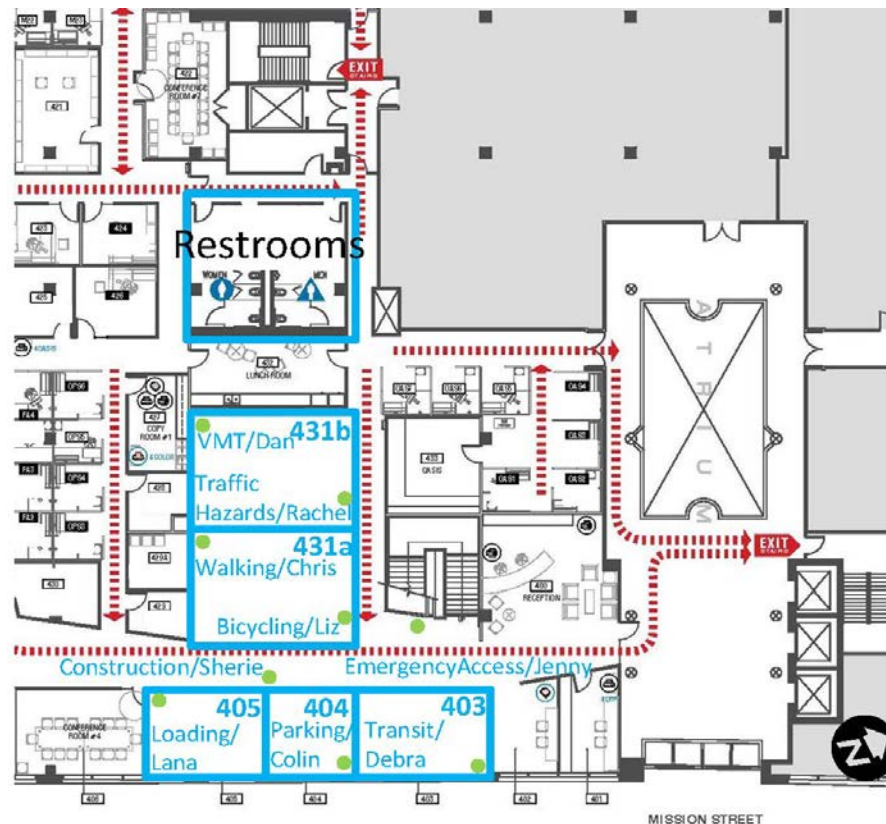
Construction

Parking

AGENDA

Breakout sessions

8:55 to 9:30



Report out

9:30 to 9:45

Close out/next steps

9:45 to 10:00

Association of Environmental Professionals

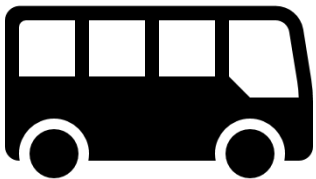
2017 CEQA

California Environmental Quality Act

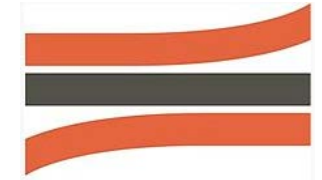


Statute and Guidelines

CURRENT GUIDELINES (2002)



WHAT HAS CHANGED SINCE 2002 — TRENDS



BETWEEN 1/1/2003 AND 1/1/2017	
SF Population	+92k
Bay Area Population	+900k

Source: California Dept. of Finance

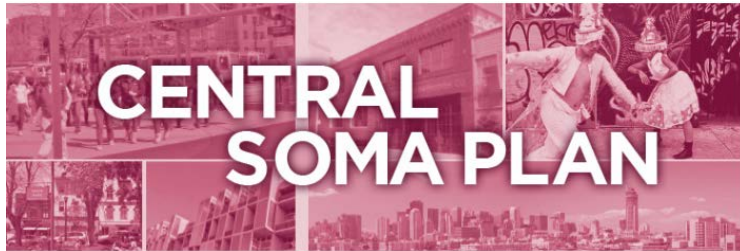


BETWEEN 10/2002 AND 9/2016	
SF Jobs	+149k
Professional/ Business	+75k
Education/ Health	+35k
Leisure/ Hospitality	+27k

Source: SF City Scorecard



WHAT HAS CHANGED SINCE 2002 — PLANNING/POLICY



ConnectSF



WHAT HAS CHANGED SINCE 2002 — CEQA



VOLUME 4

SAN FRANCISCO BICYCLE PLAN

San Francisco Planning Department

City and County of San Francisco



VISION ZERO SF



(Sort of)

WHAT HAS CHANGED SINCE 2002 — ME



WHAT HAS NOT CHANGED SINCE 2002

Roads are deadly

WHAT HAS NOT CHANGED SINCE 2002



WHAT HAS NOT CHANGED SINCE 2002



SCHEDULE FOR UPDATES

Series of memos

Each of nine topics discussed today

Other topics (e.g., special situations)

Travel demand

fall 2017





winter/spring 2018

Web page





<http://sf-planning.org/transportation-impact-analysis-guidelines-environmental-review-update>

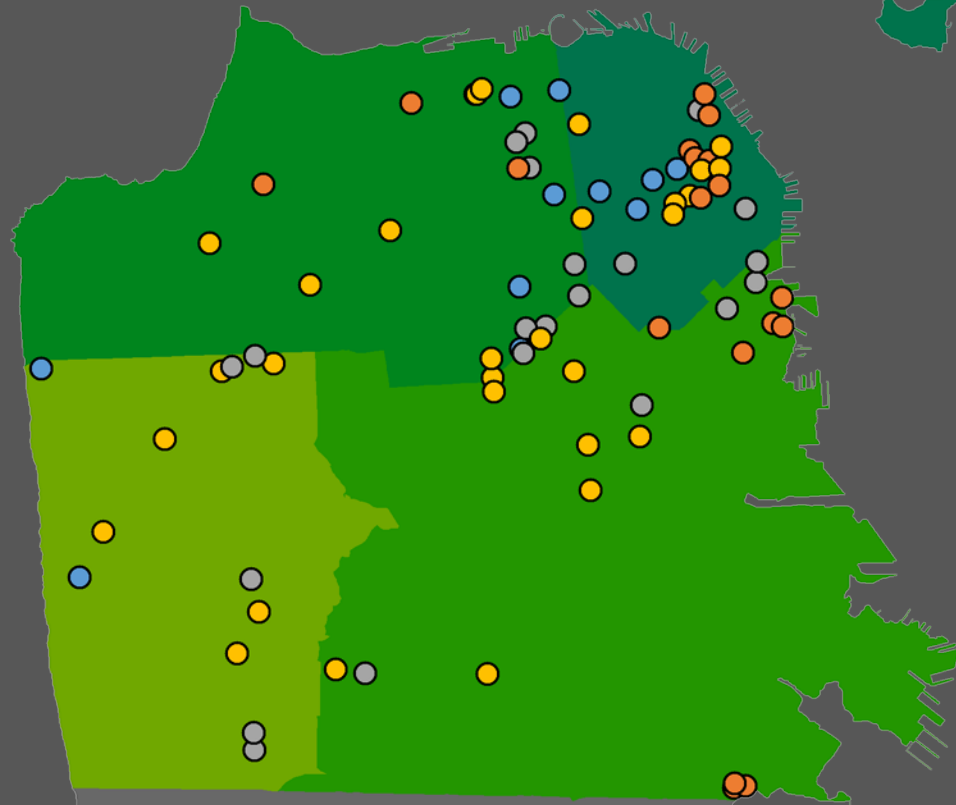
TRAVEL DEMAND

Data Collection Sites

-  Hotel (11)
-  Office (19)
-  Residential (22)
-  Retail (30)

Superdistricts

-  SD1
-  SD2
-  SD3
-  SD4



NEXT UP

Nine Topics

Walking

Bicycling

Transit

Loading

Emergency access

VMT

Traffic hazards

Construction

Parking

Key Questions

Significance criterion(a)

Methodology

Other feedback

WALKING



WALKING: THE WAY IT IS NOW

Significance Criteria

a project would have a significant effect on the environment if it would:

- result in substantial overcrowding on public sidewalks**
- create potentially hazardous conditions for pedestrians**
- otherwise interfere with pedestrian accessibility to the site and adjoining areas**

WALKING: THE WAY IT IS NOW

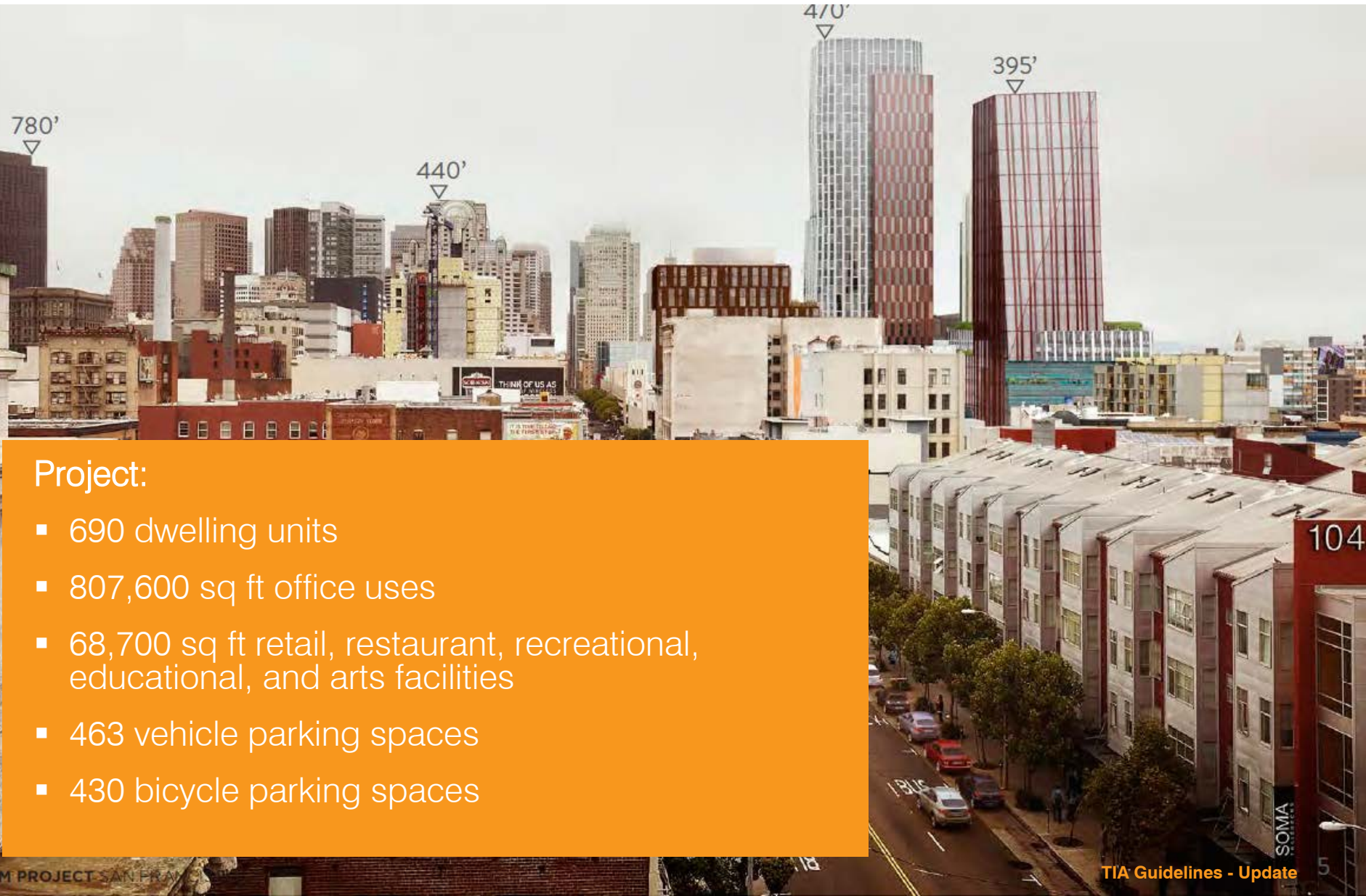
Methodology (Existing)

- *Quantitative:*
 - Pedestrian Counts
 - Pedestrian Level of Service (LOS)
- *Qualitative:*
 - Visual observations of pedestrian environment
 - Existing conditions
 - Sidewalk widths
 - Crosswalks
 - Curb cuts
 - Intersection stop control (type)

Methodology (Existing plus Project)

- *Quantitative:*
 - Trip Generation estimates
- *Qualitative:*
 - Proposed conditions
 - Locations of proposed curb cuts, garage entrances/exits, pedestrian entrances/exits
 - Project-related modifications to the existing pedestrian environment

DEVELOPMENT EXAMPLE: 5M PROJECT



Project:

- 690 dwelling units
- 807,600 sq ft office uses
- 68,700 sq ft retail, restaurant, recreational, educational, and arts facilities
- 463 vehicle parking spaces
- 430 bicycle parking spaces

WALKING: THE WAY IT IS NOW

- It is rare to identify significant pedestrian access / walking impacts
 - 5M Project identified a pedestrian capacity impact

Mitigation and Improvement Measures

- Project sponsor to financially compensate the SFMTA for the cost of service to design and implement the following:
 - (1) sidewalk extension of the east sidewalk on Fifth Street between Minna and Mission Streets by 10 to 15 feet.
 - (2) Restriping and widening of the east crosswalk at the intersection of Fifth/Mission Streets to 25 feet.
 - (3) Traffic and pedestrian signal upgrades at the intersection of Fifth/Mission Streets.
 - (4) Restriping of the Minna Street travel lanes between Fifth Street and the garage entrances to provide for additional vehicle queuing on Minna Street.
- New and more visible “MINNA STREET GARAGE ENTRANCE” and “GARAGE FULL” signs at the Fifth and Mission Garage.

WALKING: THE WAY IT COULD BE/POTENTIAL CHANGES

- Re-assessing pedestrian capacity analysis
- Better define hazards and accessibility



NORTH MARY STREET

PROJECT SAN FRANCISCO

BICYCLING



BICYCLING: THE WAY IT IS NOW

- A project would have a significant effect on the environment if it would create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas.
- Transportation Impact Analysis Guidelines (2002) Considerations for Bicycles
 - Examine potential conflicts between auto, truck, and bus traffic serving the project during loading and unloading.
 - Examine potential conflicts due to turning movements across bicycle lanes or routes.
 - Examine potential barriers or hazards to safe bicycle operations near that project.
 - Examine conditions that may negatively or positively impact bicycle use, including bicycle parking, or provision of shower facilities.

DEVELOPMENT EXAMPLE: 1500 MISSION STREET (EXISTING)



DEVELOPMENT EXAMPLE: 1500 MISSION STREET (PROPOSED)



RESIDENTIAL	560 UNITS
OFFICE	450,000 SF
RETAIL	38,000 SF
PARKING	420 SPACES
LOADING	6 FULL SIZE SPACES

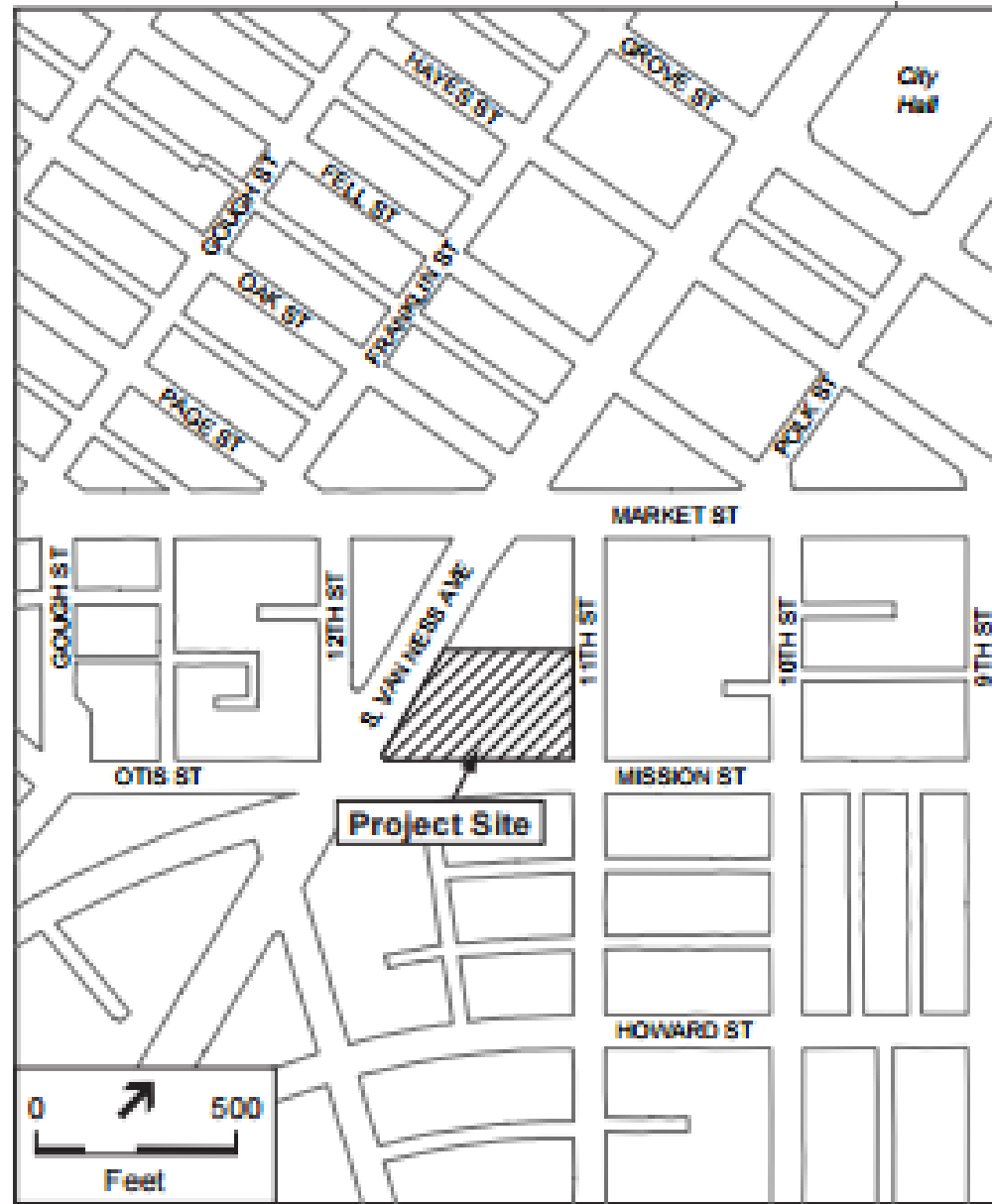
OFF-STREET LOADING

DEVELOPMENT EXAMPLE: IMPACT STATEMENT AND MITIGATION FOR 1500 MISSION STREET

Impact TR-5: The proposed project could result in potentially hazardous conditions for bicyclists, or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas.

M-TR-3 – Avoidance of Conflicts Associated with On-Site Loading Operations.

The project sponsor shall design and operate the mid-block alley with access from Mission Street in a way that shall not result in ongoing conflicts between project-related loading activities and people riding transit, bicyclist, walking, or driving adjacent and near the project site.



BICYCLE: THE WAY IT COULD BE/POTENTIAL CHANGES

- Effects of bicycle sharing systems (e.g. Ford Go Bike) and increased bicycle infrastructure on the transportation network
- Better define hazards and accessibility

TRANSIT



TRANSIT IMPACTS - THE WAY IT IS NOW



A project would have a significant effect on the environment if:

- it would cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity, resulting in unacceptable levels of transit service (Capacity Utilization);
- or cause a substantial increase in delays or operating costs such that significant adverse impacts in transit service levels could result (Transit Delay or Operations).

Pursuant to the CPC Transportation Impact Analysis Guidelines (2002), the methodology for transit impact analysis varies based upon

- ** *Project Location*: availability and level of transit service + specific transit corridors that serve the project vicinity
- ** *Character of the project*: distribution and direction of trips to and from the project site
- ** Also consider access to transit.

Often transit impact analysis is a qualitative discussion, but quantitative analysis may be requested.

CURRENT METHODOLOGY CAPACITY UTILIZATION AT THE MLP



Screenlines

Identifiable transit corridors or direction of travel served by groupings of transit lines (Screenline). A passenger traveling in that direction will choose one of the transit lines that serve the corridor. An overcrowded route results in the transit user shifting to another in the same general direction.

Directional Link Analysis

Project transit trips are assigned to a limited number of transit lines in close proximity to the project site based on direction of travel and the need to link to other transit carriers.



TABLE A-1
EXISTING PEAK HOUR¹

Muni Screenline Sub-corridor	AM Peak Hour (Inbound)		
	Ridership	Capacity	Utilization
Northeast			
Kearny/Stockton ²	2,211	3,050	72.5%
Other Lines ³	538	1,141	47.2%
<i>Screenline Total</i>	<i>2,749</i>	<i>4,191</i>	<i>65.6%</i>
Northwest			
Geary ⁴	1,821	2,490	73.2%
California ⁵	1,610	2,010	80.1%
Sutter/Clement ⁶	480	630	76.2%
Fulton/Hayes ⁷	1,277	1,680	76.0%
Balboa ⁸	758	1,019	74.4%
<i>Screenline Total</i>	<i>5,946</i>	<i>7,828</i>	<i>76.0%</i>

Thresholds of Significance

Local – SF Muni 85% at Maximum Load Point (MLP)

Regional – Other regional carriers 100% at MLP

CURRENT METHODOLOGY **TRANSIT DELAY OR OPERATIONS**



Transit Delay is the sum of

Transit Travel Delay - Additional time experienced by a transit vehicle as it travels between stops along the corridor due to congestion caused by other vehicular traffic traveling parallel or perpendicular to the transit flow. Uses LOS of the transit approach.

Reentry Delay - Reentry delay represents the wait for a sufficient gap in traffic flow to allow a bus to pull back into the travel lane.

Above calculated separately for each direction of transit travel (i.e., eastbound and westbound, or northbound and southbound) and summed.

Boarding delay – included on a case-by-case basis



Threshold of Significance:

A significant impact would occur if the project were to cause delays to transit routes such that an additional transit vehicle would be required to maintain headways. An additional transit vehicle would be needed to maintain adequate service if project-associated transit delays would increase travel times by more than half of the service frequency.

For example, the 12 Folsom-Pacific has a headway of 20 minutes. Therefore, a delay exceeding 10 minutes would be considered a significant transit delay impact.



THE WAY IT IS NOW **TRANSIT MITIGATION/IMPROVEMENT MEASURES**

Transit Access

Fund fair share of pedestrian improvements adjacent to project site

If non-residential: Allow pre-tax transit pass/Clipper card purchases for employees

Residential – Offer Clipper through HOA

Hotel - pre-loaded Clipper Cards for guests

Transit Capacity

Fund fair share of transit vehicle purchase to adequately address capacity needs.

Fund provision of transit service by SFMTA or other carrier.

Provide peak hour shuttle service to major transit connections.

Transit Stop Amenities

Fund installation of a shelter

Fund Next Muni infrastructure

Fund provision of adequate light and seating at nearby transit stops

Transit Delay

Fund fair share of transit-only lane or other transit preferential street toolkit elements such as: bus bulb, queue jump, etc.

Fund transit signal priority treatments along certain streets to extend major-street traffic phases or preempt side-street traffic phases to reduce signal delay .

Rail track loops, crossovers and/or pockets (From SFMTA 2016)



TRANSIT: THE WAY IT COULD BE/ POTENTIAL CHANGES

- Revisit capacity utilization
 - S.B. 743
 - SF adoption of the Transportation Sustainability Fee (TSF)
- Likely retain transit delay or operations criterion, but consider:
 - Delay methodology
 - Threshold
- Planning considerations regarding provision of transit vs. CEQA transit impacts
- Other considerations for regional carrier analysis
- Character of the project: Distribution and direction of project trips to and from the project site still important



LOADING



LOADING: THE WAY IT IS NOW

- **Significance Criteria** – a project would have a significant effect on the environment if it would result in:
 - loading demand during the peak hour of loading activities that could not be accommodated within proposed on-site loading facilities or within convenient on-street loading zones, **and**
 - if it would create potentially hazardous conditions affecting traffic, transit, bicycles, or pedestrians or significant delays affecting transit.
- **Two Criterion Questions**
 1. What is the peak hour loading demand?
 2. Can this peak hour loading be accommodated by the proposed off-street loading supply or within convenient on-street loading zones?
 - If YES – no significant impacts
 - If NO – does this create potentially hazardous conditions for traffic, transit, bicycles, or pedestrians or significant delays affecting transit?
 - If yes, then significant impacts, mitigation measures are required
 - If no, no significant impacts

LOADING: THE WAY IT IS NOW

Methodology (Existing)

- Qualitative:
 - Visual observations of loading
 - Existing loading zone locations
 - Loading zone type (passenger or freight)
 - Loading zone usage (occupancy and duration of use)

Methodology (Existing + Project)

- Qualitative:
 - Proposed conditions
 - Locations of proposed loading zones (on-street or off-street)
 - Loading zone type and capacity
- Quantitative:
 - Trip generation estimates
 - Freight loading demand estimates
 - Passenger loading demand estimates (for hotel and school uses typically)

LOADING: MITIGATION/ IMPROVEMENT MEASURES

- It is uncommon to identify significant and unavoidable loading impacts
 - Area Plans – Central SoMa and Transit Center District Plan
 - Infrastructure Projects

- It is common to identify mitigation and improvement measures for loading impacts
 - Schools: Staggered drop-off/pick-up times and loading zone management
 - Residential/ Non-Residential Land Uses: Garage/loading dock attendant, loading dock management plans, coordinated delivery schedules, valets, flaggers, audible warning signals, signage, and move-in/move-out plans
 - Event Centers: Loading operation plans and parking control officers

DEVELOPMENT EXAMPLE: MOSCONE CENTER EXPANSION

Proposed Project:

- Increase the size of the Moscone Center by 20 percent.
- Renovate the existing facility.
- Reconfigure access to existing taxi and off-street freight loading facilities.



DEVELOPMENT EXAMPLE: IMPACTS AND MITIGATIONS

FOR MOSCONE CENTER EXPANSION



Freight Loading

- Freight demand would increase up to 120 truck trips during large events as such the existing loading docks are likely to be full during these events resulting in the frequency of trucks queuing along Third Street.



Passenger Loading

- Project would increase the number of events resulting in more loading/unloading in on-street zones.
- Due to increased frequency and use of available curbside spaces during large events loading activities would likely result in vehicles stopping within the travel lanes and bicycle lanes on Howard Street creating hazards for bicyclists and traffic.

Mitigation Measures

- *M-TR-6a: Moscone Center Transportation Operations Master Plan*
 - Required that each Moscone Center event have its own unique Transportation Operations Event Plan (TOEP), tailored to the size, duration and characteristics of the individual event trip generation estimates
- *M-TR-6b: Fund Additional Parking Control Officers*
 - The project shall fund additional PCOs to perform active patrol and enforcement of on-street loading conditions around the Moscone area.

LOADING: THE WAY IT COULD BE/POTENTIAL CHANGES

- Reassess policies and processes in the Planning Code, TIA Guidelines, and SFMTA requirements
- Reassess quantification methods for freight and passenger loading demand estimates
- Consider how to manage curb space more effectively

EMERGENCY ACCESS



EMERGENCY ACCESS: THE WAY IT IS NOW

Significance Criterion

A project would have a significant effect on the environment if it would result in inadequate emergency access.

Methodology (Existing)

- Qualitative:
 - Locations of existing emergency services providers (Police, Fire, Hospitals) and proximity to the project site

Methodology (Existing plus Project)

- Quantitative:
 - Trip Generation estimates

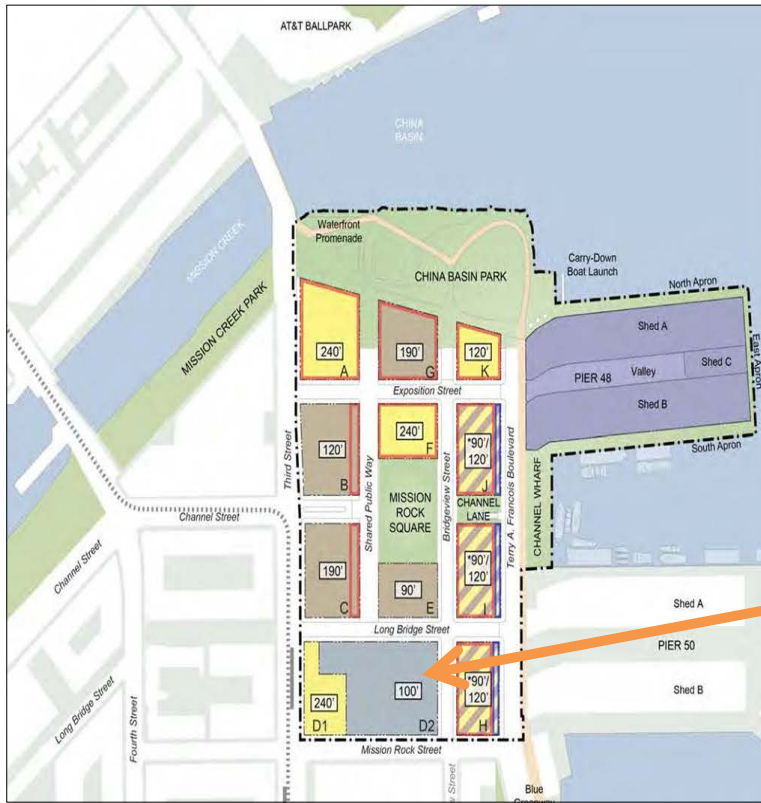
- Qualitative:

- Proposed conditions

- Proximity to emergency services providers
 - Locations of proposed curb cuts, garage entrances/exits, pedestrian entrances/exits
 - Project-related modifications to existing roadway configurations (including bulb-outs, sidewalk widths, 'keep clear' zones)

EMERGENCY ACCESS: MISSION ROCK PROJECT

The Seawall Lot 337 and Pier 48 (Mission Rock) project would introduce up to 2.8 million gross square feet of mixed-use development across 28 acres in the Mission Bay neighborhood.

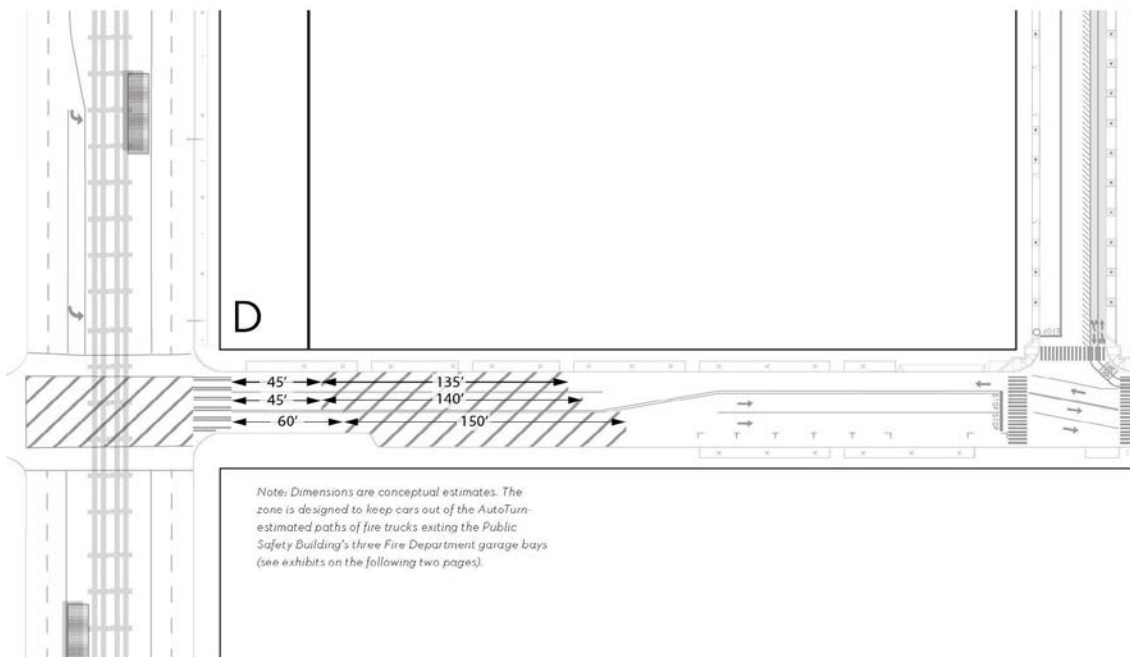


EMERGENCY ACCESS: MITIGATION/IMPROVEMENT MEASURES

While it is rare to identify a significant emergency access impact, one was identified for the Mission Rock Street Project

MISSION ROCK VEHICULAR CIRCULATION

Keep Clear Zone Dimensions



- M-TR-12: Coordinate final design of the "Keep Clear" Zone on Mission Rock Street with the Fire and Police departments

EMERGENCY ACCESS: THE WAY IT COULD BE/ POTENTIAL CHANGES

- Significance Criteria
 - Not likely change to significance criteria
 - Better define “inadequate emergency access”

VEHICLE MILES TRAVELED (VMT)

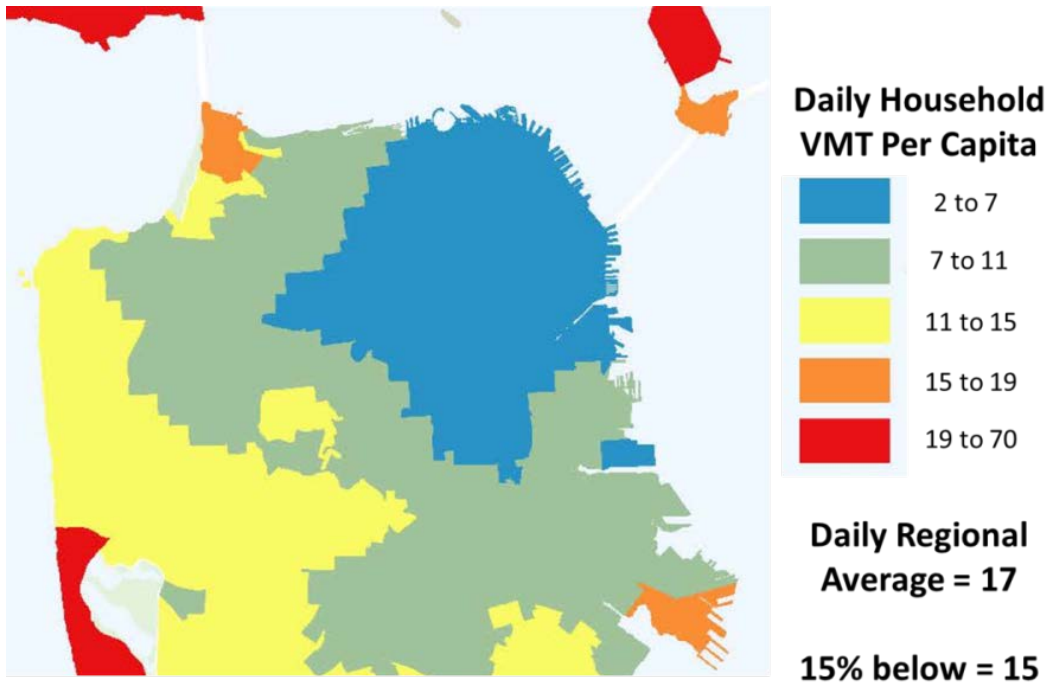


VMT: THE WAY IT IS NOW

■ Transportation Projects

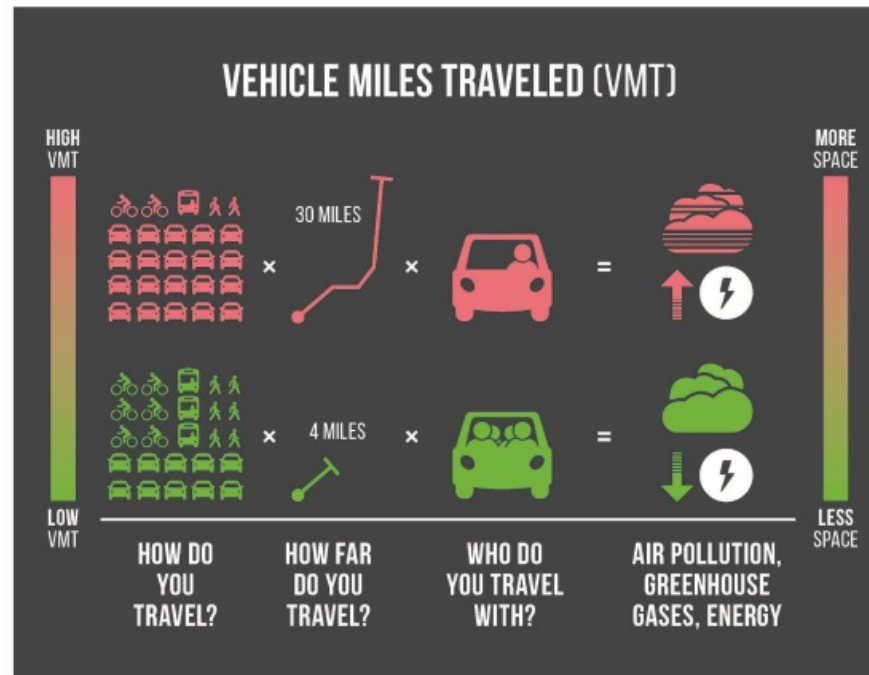
- Impact = Substantially Induce Additional Automobile Travel
 - Example: Expansion or Creation of New Highways
- Presumed Less than Significant = Sustainable Travel
 - Examples: Safety Changes for People Walking & Bicycling, Transit Lanes

■ Land Use Projects

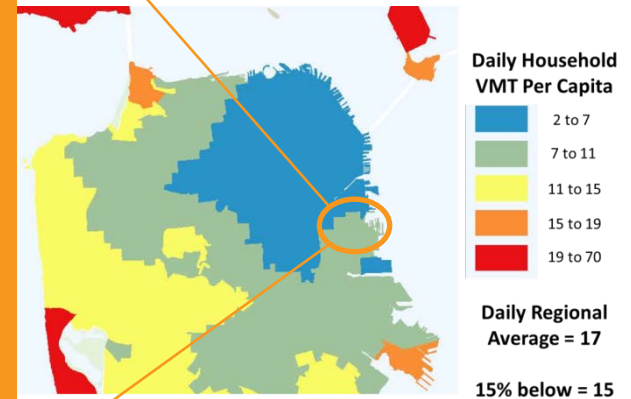


VMT: THE WAY IT IS NOW

- VMT ≠ Traffic
 - VMT captures the amount of vehicles at a particular location and the distance those vehicles travel and the associated impacts.
 - Traffic relates to traffic hazard and is a separate topic
- Trip distribution (in the travel demand section) is still needed to analyze other transportation topics.



PROJECT EXAMPLE: PIER 70



RESIDENTIAL	3,025 UNITS
COMMERCIAL	2 MILLION SF
RETAIL	275K SF
RESTAURANT	69K SF
ARTS/LIGHT INDUSTRIAL	143K SF
PARKING	3,496 SPACES

TRANSPORTATION DEMAND MANAGEMENT (TDM) ORDINANCE



- Part of project description \neq improvement/mitigation
- Requires developments to implement on-site TDM measures (sustainable transportation options)
- Requires monitoring, site visit and documentation of implemented measures

VMT: THE WAY IT COULD BE/POTENTIAL CHANGES

- Quantify the relationship of parking supply to induce automobile travel

TRAFFIC HAZARDS



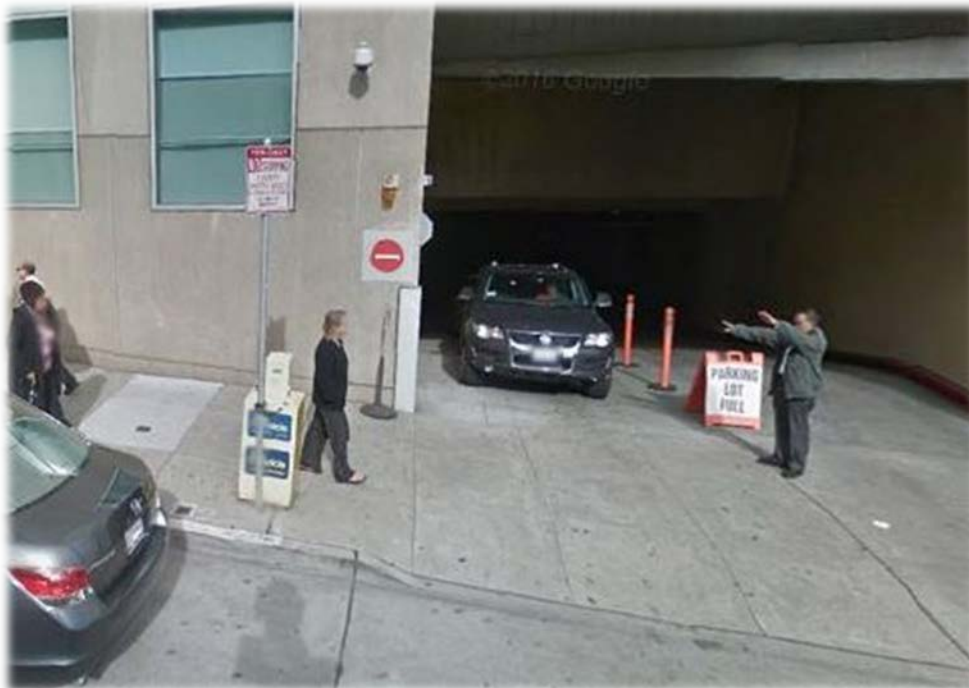
TRAFFIC HAZARDS: THE WAY IT IS NOW

- **Significance Criterion:** A project would have a significant adverse impact if it would cause major traffic hazards.
- **Definition:** “Traffic hazards” are potential hazards to vehicular traffic resulting from poor design, typically at intersections and driveway locations.



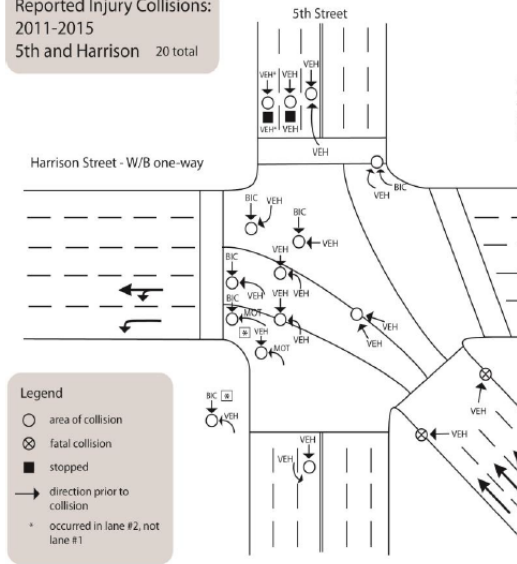
TRAFFIC HAZARDS: THE WAY IT IS NOW - METHODOLOGY

- **Quantitative:** Peak hour trips are calculated and distributed to determine the number of vehicles that would access a driveway or intersection.



Collision Pattern

Reported Injury Collisions:
2011-2015
5th and Harrison 20 total



- **Qualitative:** Observations of existing hazardous conditions/potential for hazards. Design review by the Street Design Advisory Team (SDAT). High-injury corridor

TRAFFIC HAZARDS: THE WAY IT IS NOW – IMPACTS/MITIGATION

Vehicle Queuing



Driveway Design

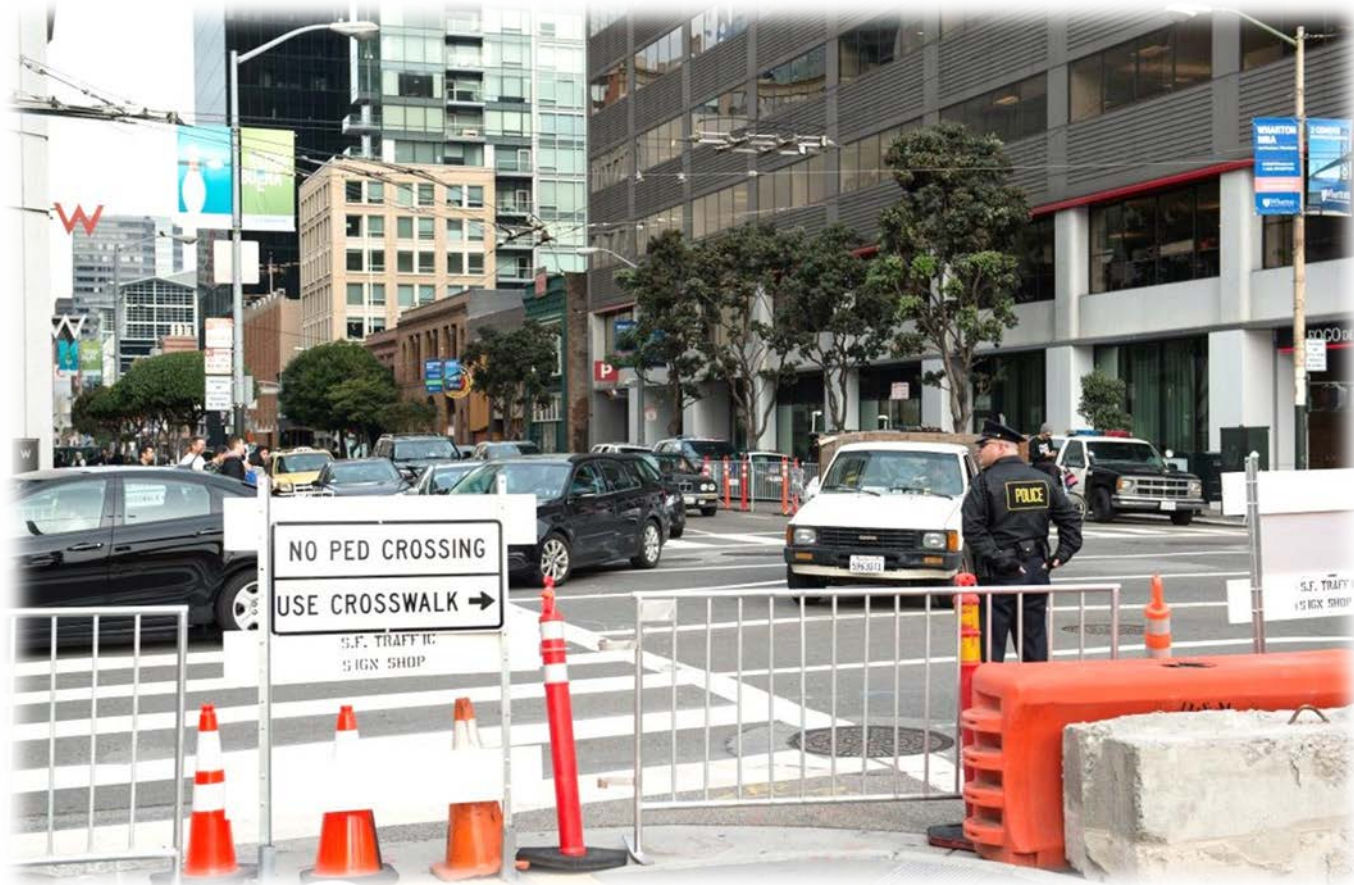


TRAFFIC HAZARDS: THE WAY IT COULD BE/POTENTIAL CHANGES

- Definitions
- Driveway design standards
- Tool-kit of design solutions for driveways and intersections



CONSTRUCTION



CONSTRUCTION: THE WAY IT IS NOW

- Significance Criteria (is there an impact?)

Would **construction** of the project have a **significant effect** on the environment in consideration of the project site location and other relevant project characteristics, the temporary construction activities' duration and magnitude that would result in **substantial interference** with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas thereby resulting in potentially hazardous conditions.

- Common Construction Mitigation Measures Beyond City Regulations

Construction Coordination via Construction Management Plan and Interagency Review
Carpool and Transit Access for Construction Workers
Construction Truck Traffic Management

- Construction Impact Analysis Methodology

Quantitative: the number of daily and peak period construction truck trips by construction phase should be cited, with proposed truck routings and operating hours indicated.

Qualitative: Potential short-term and temporary construction impacts related to transportation are assessed qualitatively.

DEVELOPMENT EXAMPLE: 5M PROJECT



BUILDINGS	3 BUILDINGS
RESIDENTIAL	~690 UNITS
OFFICE	807,600 SF
ACTIVE GDFL	68,700 SF
OPEN SPACE	59,500 SF
PARKING	463 SPACES

Construction Activity Details:

- Eight year construction period. Approximately 24 months per building. An average of 200 construction workers per day at project site.
- Cited to comply with the Blue Book and San Francisco Noise Ordinance and meet with DPW, SFMTA, etc.
- Concurrent construction of 5M would overlap with construction activity of other projects in the area (Moscone Center Expansion, Central Subway, SFMOMA expansion).

Construction Would Require:

- Staging on surface parking lots, closures of adjacent sidewalks and curb lanes, temporary pedestrian walkways, temporary street closures, required signage for detours, support poles for Muni's overhead wires, and bus stop relocations.

DEVELOPMENT EXAMPLE: 5M PROJECT

■ Why was there a transportation-related construction impact?

Due to the concurrent construction of multiple buildings on the project site, expected intensity, the prolonged construction period, and likely impacts to traffic, transit, and pedestrian circulation, construction of the project was determined to result in significant construction-related transportation impacts.

■ Construction Mitigation Measures

- Construction Coordination. Construction Management Plan required and meeting with DPW, SFMTA, Fire, and other City Agencies.
- Carpool and Transit Access for Construction Workers in Construction Management Plan
- Construction Truck Traffic Management via traffic control officers during peak construction periods to minimize impacts on pedestrians, transit, bicycle, and traffic operations.
- Project Construction Updates for Adjacent Businesses and Residents



CONSTRUCTION: THE WAY IT COULD BE/POTENTIAL CHANGES

- Consider the effects of excavation on overall project construction and the resulting duration/intensity of construction phases.
- Standard construction information included within project descriptions (i.e. known temporary closures)
- Updates to the *City of San Francisco's Regulations for Working in SF* (the Blue Book)



PARKING



PARKING: THE WAY IT IS NOW



Significance Criterion

1) Would the project result in a substantial **parking deficit**?

If no, an impact would not occur.

Skip 2nd question below.

If yes to 1), impact may occur. Proceed to 2nd question.

2) Would that substantial parking deficit create: **potentially hazardous conditions** affecting traffic, transit, cyclists, or pedestrians

or significant delays affecting transit

or would particular characteristics of the project or its site also demonstrably **render** use of **other modes infeasible**?

If no, an impact would not occur (even if yes to #1).

If yes, an impact would occur; **mitigation** measures required.



Discussion required even if project:

meets SB 743 checklist, or

doesn't include parking

PARKING: THE WAY IT IS NOW

Methodology (Existing)

- Qualitative:
 - Visual observations of parking
 - Existing parking locations in study area
 - Parking type(s) and capacity
 - Parking use (duration of use / turnover rates; occupancy survey required for some projects)

Mitigation and Improvement Measures

- Various TDM measures
- Reconfiguration of parking

Methodology (Existing + Project)

- Qualitative:
 - Locations of proposed parking locations (off-street vs. off-site)
 - Proposed parking type(s) and capacity
- Quantitative:
 - Parking demand formula(s)
 - Proposed commercial, hotel/motel, and residential uses
 - Proposed on-site parking
 - Removal of off-street parking
 - Creation of on-street parking
 - Considered: short-term, long-term, turnover rates, employee shift changes

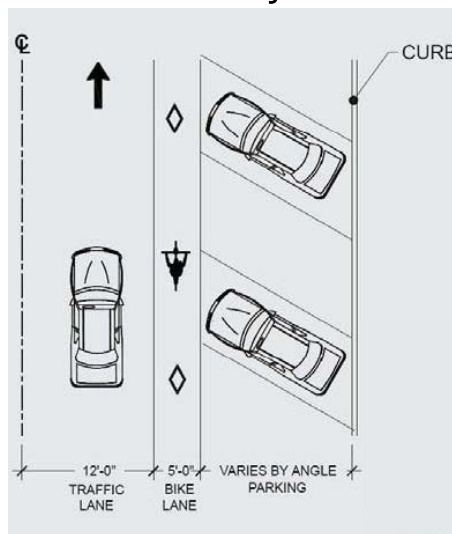
PARKING: THE WAY IT COULD BE / POTENTIAL CHANGES

Significance Criterion

- Necessity for this question
- If kept, improved definitions

Methodology

- Definition of and understanding of factors affecting “parking demand”
- Effects of travel behavior and technologies on parking demand
- Understanding of parking durations and turnover rates
- Potential for “netting out” parking trips
- Quantify relationship of parking supply and vehicle trips



THANK YOU



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