TRANSPORTATION IMPACT ANALYSIS GUIDELINES

APPENDIX K
LOADING

UPDATED OCTOBER 2019

San Francisco Planning

SAN FRANCISCO
PLANNING DEPARTMENT

MEMO

Appendix K
Loading Memorandum

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RE:	**Transportation Impact Analysis Guidelines Update, Loading**

INTRODUCTION

This memorandum updates the prior guidance provided in the Transportation Impact Analysis Guidelines for the loading topic. The department considers "loading" as a topic for purposes of environmental review to include loading and unloading of goods, services, and passengers. The department prepared this memorandum in consultation with stakeholders (e.g., city and county agencies, consultants). The department will issue memoranda that provide updates to other topics (e.g., public transit, people bicycling) within the guidelines. When the department issues a memorandum about a topic, it will supersede existing guidance regarding that topic.

This memorandum provides specific guidance on the methodology and impact analysis required for the loading transportation topic. Overall guidance on conducting transportation analysis for environmental review, including developing the project description, how to address the significance criteria, methodology, and impact analysis, is in the Transportation Impact Analysis Guidelines.

The guidance provided herein assumes a land use development project located outside of an area plan that requires a transportation study. Guidance on other types of projects, such as projects located in an area plan or infrastructure projects, is discussed below under the "Other" subsection. The department may use this guidance for multiple projects, but the department has discretion on applying the guidance on a project-by-project basis.

The organization of the memorandum is as follows:

1) Project Description
2) Significance Criteria
3) Existing and Existing plus Project
   a) Methodology
   b) Existing Baseline
   c) Impact Analysis
4) Cumulative
   a) Methodology
   b) Impact Analysis
5) Other (covers different types of projects)

Attachments to this memorandum are under separate cover and are attached to the end of this memorandum. The department may update the attachments to the memoranda more frequently than the body of the memoranda.

PROJECT DESCRIPTION

Refer to the Transportation Impact Analysis Guidelines Appendix A, Tables 1-3, for a list of the typical physical, additional physical, and programmatic features for existing and existing plus project conditions, as applicable. The geographic extent of these features must, at a minimum, include the project's frontage and may include the entirety of the project's block. Appendix A, Table 4 of the guidelines provides a non-exhaustive list of approvals from agencies other than the planning department that a project sponsor may need to obtain for the project description features described in the guidelines. Attachment A of this memorandum includes examples of figures that illustrate how to graphically represent loading conditions.

SIGNIFICANCE CRITERION

San Francisco Administrative Code chapter 31 directs the department to identify environmental effects of a project using as its base the environmental checklist form set forth in Appendix G of the California Environmental Quality Act (CEQA) Guidelines. As it relates to loading, Appendix G states: "would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?" The department uses the following significance criterion to evaluate that question: A project would have a significant impact if:

> 1A) it would result in a loading deficit, and
> 1B) the secondary effects would:
> create potentially hazardous conditions for people walking, bicycling, or driving; or
> substantially delay public transit.

EXISTING AND EXISTING PLUS PROJECT

Methodology

This section describes the typical methodology required to address the significance criteria. The methodology section identifies the collection, generation, and approach to analyze data. The department will determine whether to adjust the methodology as necessary to inform the analysis.

The guidelines provide direction on the typical geographical area and period required for analysis. Additional guidance on the appropriate period of study for loading demand and the typical methodology for evaluating existing and existing plus project conditions for this topic, including data collection, is provided below. This section also indicates in bracketed text [ ] whether the presentation of typical methodological elements in other sections of a transportation study (e.g., baseline, impact analysis) could occur in text, a figure, and/or a table (see Appendix A of the guidelines for examples of typical tables and Attachment A of this memorandum for examples of loading-related figures).

Period

For loading demand, the period will differ depending upon the land use and type of loading activity. The following periods assume residential, office, and commercial land uses and commercial or passenger loading. For other land uses and other loading activities, the department will determine the appropriate period. For example, tourist and entertainment uses may require a period during different hours for passenger loading.

For commercial vehicle loading, such as freight and delivery service vehicles[1], the weekday mid-day is the average peak period (Tuesday, Wednesday, or Thursday from 11 a.m. to 2 p.m.).

For passenger vehicle loading[2], consisting of private and for-hire vehicles, the weekday average peak period is (Wednesday, Thursday, or Friday, p.m. peak period is from 5 p.m. to 8 p.m.[3]) However, for child care facilities and schools, the weekday average peak period is the (Tuesday, Wednesday, or Thursday) a.m. peak period and p.m. peak period of the use.[4]

For shuttle loading, the department will determine the period on a project-by-project basis based on the project's proposal (e.g., hours of operation and frequency of the route).

Existing Conditions

The following identifies the typical methodology for projects. The department will determine the appropriate methodology as necessary to inform the impact determination:

Counts

The methodology should include counts of vehicles associated with people loading (e.g., commercial (freight and delivery service), passenger, and shuttle loading instances[5]). The methodology may include prior counts collected from other studies or sources combined with (e.g., an average of three different dates with counts at the same intersection, global positioning system user data) or in isolation from the counts collected for the project. The use of prior counts must be justified, in consultation with the department. Typically, the use of prior counts may occur if these counts have not changed substantially under existing conditions (e.g., due to lack of new development, circulation changes, or travel patterns). [text, table]

Visual Analysis

Data collection for the project should include a site visit for a visual analysis, with recorded observations of the absence, discontinuity, or presence of the features listed in the project description, and a description of the weather conditions. The site visit should also include commercial (freight and delivery service) loading, passenger loading, and shuttle bus loading instances within the study area, including observations of loading instances in the travel lane. This observation should associate to the extent feasible, existing instances of loading with the land uses or buildings in the study area. In addition, the site visit must record any existing potential or observed hazards at locations in the study area between loading vehicles and other modes of travel and delays to public transit as a result of loading activity.

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[1] Delivery service typically refers to pick-up trucks, light trucks or vans such as box trucks, moving trucks, or vans, etc. (e.g., SU-30 i.e. a wheel base between 22 to 30 feet). The larger end of the light truck vehicle type may occupy approximately 30-40 linear feet, which includes the space for loading and maneuvering. Large freight trucks refers to heavy trucks with wheelbases length of 40 feet or more, whose total length may approach 65 feet, 14 feet in height and 8.5 feet in width (e.g., WB-40 and larger up to WB-65).

[2] Passenger vehicle may typically occupy 22 linear feet, which includes the space for loading and maneuvering. When observing passenger vehicles in the field it shall be noted in cases where deliveries are made via passenger vehicles.

[3] SFCTA, *TNCs Today*, June 2017, Figures 5 and 6 show Friday as the peak day of the entire week for for-hire vehicles.

[4] San Francisco Planning Department, *Transportation Review of Childcare and Schools Memorandum,* June 2018

[5] If an observed passenger loading instance is over 10 minutes, the methodology shall consider it as short term parking.

In addition to a site visit, the methodology may also include a recorded (e.g., camera) observation of loading zones or spaces for particular locations in the study area. The methodology may record snapshot observations at various increments (e.g., every few minutes) for commercial vehicle loading or continuously during the study period for commercial and passenger vehicle loading. For large projects and atypical land uses, the methodology may also include 24-hour observations. These recorded observations could capture the following:

- Number of loading instances by loading activity type and vehicle type
- Loading activity and occupancy of loading zones, including by vehicle type
- Loading activity outside of loading zones, including vehicle type
- Average loading activity duration by activity type
- Potential or observed hazards at locations in the study area between loading vehicles and other modes of travel or delays to public transit as a result of loading activity

See Attachment A for a sample loading observation form.

Street Design Characteristics

Obtain the following general characteristics of streets within the study area:

- Number and directionality of travel lanes by type (e.g., mixed-flow, parking, bicycle, transit-only, one-way, two-way, etc.) [text, figure]
- Location of and type of traffic control devices at intersections (e.g., stop signs, signals, crosswalk, countdown signals, audible warning devices) [text, figure]

Obtain the following additional characteristics of streets within the study area to the extent applicable:

- Width of travel lanes [text, figure]
- Size of blocks [text, figure]
- Data regarding the location and causes of collisions within past five years [text, figure]
- Nearby public transit stations/stops, amenities (e.g., shelters), and service information (e.g., frequency) [text, figure, table]
- Day and time restrictions [text, figure]
- Parking or loading restrictions (e.g., tow away zones, parking and loading hour restrictions, signs restricting double-parking in commercial areas) [text]
- Parking pricing rates (e.g., hourly, daily, weekly, monthly, including ranges)

Existing plus Project Conditions

The following identifies the typical methodology for assessing existing plus project conditions.

Loading Demand and Travel Demand Analysis

Estimate[6] the number of commercial (freight and delivery service), passenger, and shuttle loading demand from the project. [text, table] In addition, distribute and assign the project's vehicle trips to roadways, intersections, loading zones, and driveways to the extent applicable. [text, figure]

For most projects, calculate the peak hour throughout the average peak period. However, if the project site is located along a non-center running public transit rapid network route or unprotected bicycle facility (e.g., no safe-hit post, parking/loading in between, or raised sidewalk), then calculate demand for the peak 15 minutes of the average peak period.

Refer to the travel demand memorandum for additional guidance on calculating freight and delivery loading and passenger loading demand.

[6] Refer to Travel Demand memo for estimating commercial (freight and delivery service), and passenger loading demand.

Turning Movement and Off-Street Loading Facility Dimensions

Provide turning movement(s) of vehicles entering and exiting on- and off-street loading facilities, as applicable, to assess the ability of the loading facilities to accommodate the loading demand. The turning movements will use the vehicle type anticipated to access the loading facility (e.g., WB-40, SU-30) [text, figure]. In addition, assess whether the loading facility can physically accommodate the anticipated vehicle type (i.e., length, height, width) [text, figure].

Demand versus Supply

Assess to the extent applicable, including accounting for time-of-day restrictions, demand-responsive pricing, directionality of the project frontage roadways, distance and type of intersections in relation to the project site, parking and loading restrictions, and overlap of demand for mixed uses:

- The ability of off-street or on-street facilities to accommodate the average peak period of loading demand for commercial (freight and delivery service), passenger, and shuttle loading, including accounting for turning movement and dimension methodology [text, table]
- The location of the project in relation to on-street loading facilities, alleys, and ADA curb ramps [text, figure]
- For unmet on-site loading demand, the ability of on-street or off-street (if shared) loading facilities in the study area to conveniently accommodate the average peak period of loading demand for commercial (freight and delivery service), passenger, and shuttle loading [text, figure, table]

Potentially Hazardous Conditions

Use the existing conditions, including of geographic areas with characteristics as that would exist with implementation of the project, travel demand analysis, and demand versus supply analysis to determine if the project would cause secondary loading impacts related to potentially hazardous conditions. The methodology should assess to the extent applicable:

- The potential for unmet loading demand to occur within sidewalks or crosswalks, bicycle, transit facilities, or travel lanes [text]
- The number of people walking, bicycling, or driving in the respective facilities [text, figure]
- The sightlines and speed of vehicle trips in relation to the travel lanes [text]

Potential Public Transit Delays

Use the existing conditions, including of geographic areas with characteristics as that would exist with implementation of the project, travel demand analysis and demand versus supply analysis to determine if the project would cause potential delays to public transit. The methodology should assess to the extent applicable:

- The potential for unmet loading demand to occur within travel lanes used by public transit [text]
- The location of the project in relation to public transit facilities and amount of public transit service at those facilities [text, figure]

Existing Baseline

Refer to the guidelines for direction on including existing baseline in transportation studies.

Impact Analysis

This section ties the project description, methodology, and existing baseline together to address the significance criteria for existing plus project conditions. This section addresses the typical approach for the impact analysis and provides more details related to loading impacts. The impact analysis section should present a format [[text, figure, or table]] consistent with earlier sections of this memorandum for easy comparison.

The impact analysis must address whether the project would result in loading impacts. Too many factors mentioned in the methodology affect loading conditions. Instead, the department will determine significance on a project-by-project basis. Refer to the guidelines for direction on what to typically consider when conducting the existing plus project impact analysis and how to present the findings.

Demand versus Supply

The first step in the analysis is to determine whether the project would accommodate the anticipated loading demand during the peak periods and, if not, whether study area loading facilities can accommodate the anticipated loading demand. Calculate average loading demand throughout the average peak period. In some cases, peak period of loading activity types may overlap. The supply shall consider simultaneous loading of different types. The following examples are some of the circumstances that may result in a project not accommodating the anticipated loading demand. This is not an exhaustive list of circumstances, under which, a project would not meet its loading demand:

- A project would include no loading facilities and no existing convenient loading facilities exist
- A project would include loading facilities, but the anticipated loading demand exceeds the supply
- A project would include loading facilities to meet the anticipated loading demand, but the loading facilities are inconveniently located for the intended user (e.g., person driving a commercial vehicle to a project land use) and thus those people would likely not use those loading facilities
- A project would include an off-street loading facility, but the design of the facility would not accommodate the intended user (e.g., person driving a truck cannot physically make the turn or fit the truck within the facility) and thus those people cannot use those loading facilities
- A project would include an off-street turntable[7] for vehicles using the off-street loading facility, but the project does not include a operation and maintenance plan, and thus the turntable could become inoperable
- A project would propose on-street loading facilities to meet the anticipated loading demand, but the permitting agency would be inclined not to grant the on-street loading facility

If the project accommodates the anticipated loading demand during the peak period, then the analysis is complete.

If the project does not meet the anticipated loading demand, then the impact analysis must address whether the project would create potentially hazardous loading conditions for people walking, bicycling, or driving (e.g., as a result of loading vehicles blocking facilities used by people) or would create potential delays to public transit. The subsections below provide specific examples of the types of circumstances that could potentially result in a hazardous condition impact or public transit delay impact under existing plus project conditions.

[7] A turntable typically allows vehicles to enter the off-street facility forward facing and exit the off-street facility forward facing because the turntables rotates the vehicle.

Potentially Hazardous Conditions

The department provides examples of some of the circumstances that may result in potentially hazardous conditions associated with different ways people travel (e.g., people walking, bicycling, or driving) in the applicable transportation topic memorandum of these guidelines. The following examples are some of the additional non-exhaustive list of circumstances that could result in potentially hazardous conditions that the department did not list in the other memorandums:

- A project would result in a substantial amount of loading activity in sidewalks or crosswalks, or bicycle facilities used by a substantial number of people walking or bicycling (e.g., based on counts or projections), respectively
- A project would result in a substantial amount of loading activity in travel lanes on a slope that may obstruct sightlines used by a substantial number of people driving (e.g., based on counts or projections)

Public Transit Delay

The department provides examples of some of the circumstances that may result in potential delays to public transit in the public transit memorandum of these guidelines. Below is a non-exhaustive list of an example circumstance that could result in public transit delay that the department did not list in the public transit memorandum:

- A project would result in a substantial amount of loading activity in travel lanes used by a substantial number of people riding public transit (e.g., based on Muni service type designation)

CUMULATIVE

Methodology

The guidelines detail the typical methodology for cumulative analysis, including the geographical area, period, cumulative projects, and adjustments (refer to Appendix B of the guidelines) under cumulative conditions. The cumulative section in transportation studies must present (text, figure, or table) the applicable elements included in the methodology.

Impact Analysis

This section ties the methodology and description of cumulative conditions together to address the significance criteria for cumulative conditions. Refer to the guidelines for direction on what to consider when conducting the cumulative impact analysis and how to present the findings. The same examples of the types of circumstances that could result in a potential hazardous condition impact or public transit delay that were provided for existing plus project conditions apply here, except for cumulative conditions.

Demand versus Supply

The first step in the cumulative analysis is to determine whether the project, in combination with reasonably foreseeable cumulative projects within the study area, would accommodate the anticipated loading demand during the peak periods and, if not, whether study area loading facilities can accommodate the anticipated loading demand. The same examples of projects not accommodating the anticipated loading demand as provided for existing plus project conditions apply here, except for cumulative conditions.

If the cumulative projects would not result in a substantial loading deficit, then the analysis is complete.

Potentially Hazardous Conditions and Public Transit Delay

If the project does result in a loading deficit, then the impact analysis must address whether the project would create secondary effects from loading. The department provides examples of some of the circumstances that may result in potentially hazardous conditions or public transit delay associated with different ways people travel (e.g., people walking, bicycling, driving, or riding public transit) in the applicable transportation topic memorandum of these guidelines and under the Existing Plus Project and Cumulative Impact Analysis subsections.

OTHER

The guidance provided in this memorandum assumes a land use development project located outside of an area plan that requires a transportation study. This section describes the type of additional or different information that may be necessary to address loading impacts for the following circumstances: land use development project located within an area plan, an area plan, or infrastructure project (which may be located in a different county than San Francisco).

Land Use Development Project Located within an Area Plan

For projects that are consistent with an area plan for which an environmental impact report (EIR) was certified, pursuant to CEQA Guidelines section 15183, the assessment must limit its analysis to such conditions specified in that section. The guidelines provide direction on how to analyze a land use development project in an area plan and lists area plan EIRs that have been certified as of February 2019.

Attachment B of this memorandum identifies mitigation and improvement measures from area plan EIRs related to loading. The department will list loading-related mitigation and improvement measures from future area plan EIRs in Loading Memorandum Attachment B once the Planning Commission or Board of Supervisors certifies those EIRs.

Area Plans

For area plans, the assessment will typically use the significance criteria identified herein. The following subsections describe the type of additional or different information that may be necessary to address loading impacts for project description, methodology, and impact analysis. For area plans that also include infrastructure changes (e.g., street redesigns), refer to the Infrastructure Project subsection below for additional or different information that may be necessary.

Project Description

Typically, the department conducts an analysis to estimate the amount of future development that could occur in the plan area as a result of its implementation. The department typically does not have all of the project description details described herein. However, the project description may include policies that may relate to the methodology and impact analysis (e.g., curb cut restrictions). One example of a programmatic project feature of an area plan's project description may include an overall loading strategy description that identifies and prioritizes certain streets and locations where various types of loading should occur. Another example of a project description programmatic feature would be planning code revisions that address loading.

Methodology

The assessment will typically use the same methodology identified herein, except the methodology will use a larger geographical study area and require less site-specific information (e.g., driveway locations at each site) except to document circumstances where vehicles may not be allowed (e.g., curb cut restrictions). While an individual project may not require some elements listed in the Existing and Existing plus Project Methodology subsection, area plans typically will include all of these elements. The department should select streets and intersections most impacted by the area plan to represent the impacts that may occur at other locations, for analysis. Furthermore, the methodology would extrapolate loading data collected at representative locations or land uses to the entire study area, and based on this data collection, qualitatively assess the ability of the proposed streetscapes changes to accommodate loading activities.

Impact Analysis

For analysis of area plans, assess the projected amount of growth and infrastructure changes associated with the rezoning within the area plan boundaries. The analysis of demand versus supply and the secondary impacts of potentially hazardous conditions and potential delays to public transit should be similar to that described under the Existing plus Project and Cumulative Impact Analysis subsections. Examples of circumstances that would result in significant impacts are described under the Existing plus Project Impact Analysis subsection.

Infrastructure Project

For infrastructure projects (e.g., trails, new roads, bridge repair, sewer line, rail service, roadway modifications, etc.), the assessment of the project description, significance criteria, and impact analysis should be similar to private development projects. The analysis typically does not require trip generation analysis as infrastructure projects usually do not generate trips.[8] However, some infrastructure projects may induce trips, such as the addition of through lanes on existing or new highways or streets.[9] In addition, infrastructure projects may generate short-term trips due to construction workers and vehicles accessing the project site.

Project Description

The project description must describe the typical physical, additional physical, and programmatic features for existing and project conditions, as applicable. The project description must provide the geographic boundaries of the project and street cross-sections.

Methodology

The assessment will typically use the same methodology identified herein, except the methodology will pay particular attention to proposed closures and changes to color curb zones.

Impact Analysis

The analysis of potentially hazardous conditions and potential delays to public transit should be similar to that described under the Existing plus Project and Cumulative Impact Analysis subsections.

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[8] Governor's Office of Planning and Research, Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA, January 20, 2016.

[9] Generally, minor transportation projects would not result in additional trips. Examples include, but are not limited to, rehabilitation, maintenance, and repair of transportation infrastructure; installation, removal or reconfiguration of non-through traffic lanes and traffic control devices; removal of through lanes; installation of traffic calming measures and wayfinding; removal of on- or off-street parking. Governor's Office of Planning and Research, Technical Advisory on Evaluating Transportation Impacts in CEQA, November 2017.

Demand versus Supply

Infrastructure projects are unlikely to generate a loading demand, as they typically are not associated with a land use change or growth inducement and would not generate trips. However, should the infrastructure project generate trips or remove loading, the first step in the analysis is to determine whether the infrastructure project would accommodate the anticipated loading demand and, if not, whether the study area loading facilities can accommodate the anticipated loading demand. If the project does not meet the demand at the project site or study area loading facilities, then determine if the loading deficit is substantial. The following examples are some of the circumstances that may result in a project not accommodating the anticipated loading demand. This is not an exhaustive list of circumstances, under which, a project would not meet its loading demand:

- A project would permanently remove a substantial number of loading spaces in a location without remaining convenient loading facilities
- A project would include a geometric design feature that render the use of a substantial number of existing loading facilities infeasible to use by the intended user (e.g., turning movements) in a location without remaining convenient loading facilities

If the project would not result in a substantial parking deficit, then the analysis is complete.

Potentially Hazardous Conditions and Public Transit Delay

If the project does result in a loading deficit, then the impact analysis must address whether the project would create secondary effects from loading. The department provides examples of some of the circumstances that may result in potentially hazardous conditions or result in public transit delay associated with different ways people travel (e.g., people walking, bicycling, driving, or result in transit delay) in the applicable transportation topic memorandum of these guidelines and under the Existing Plus Project and Cumulative sections Impact Analysis subsections.

ATTACHMENT A

Existing and Proposed Project Figure and Table Examples

Introduction

Attachment A represents typical figures necessary to illustrate conditions that could result in loading impacts included in a transportation study. All figures should include basic elements (e.g., north arrow, title, legend, references, acronyms, etc.). Symbology should reflect that documents may be printed in black and white. All figures and tables should include all the information the reader would need to understand the information presented. Some of the figures presented below were from previous transportation studies and are illustrative only and may not include all the basic elements.

FIGURE 1

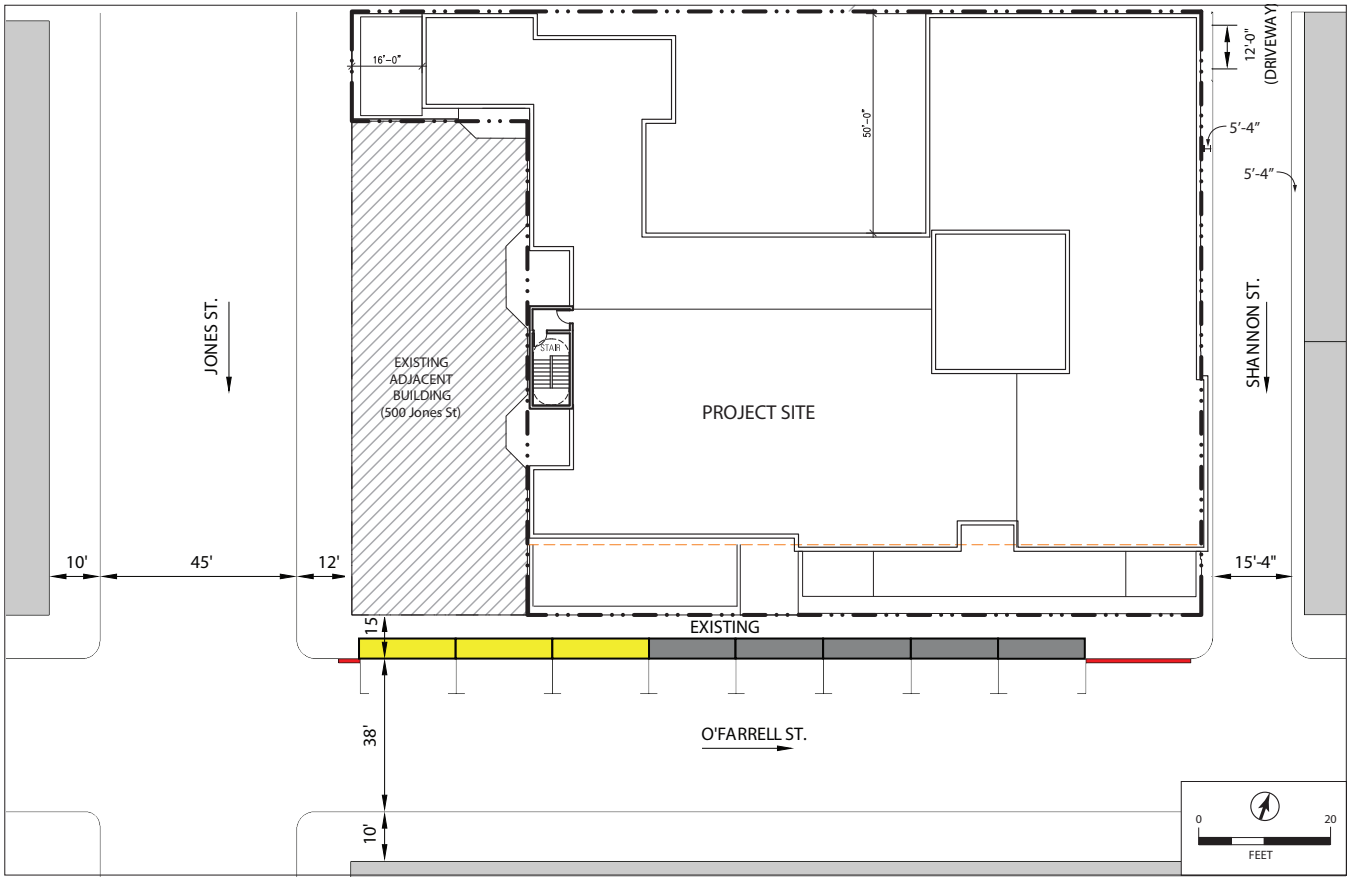
Potential Loading Locations

Figure 1 is an example of convenient loading locations. As shown, this generally includes up to 250 feet from the project site.

FIGURE 2

Existing On-Street Loading Plan

Figure 2 below is an example of a site plan that includes a detailed description of existing on-street commercial loading zones and existing parking. When developing a map similar to the one shown, include the linear dimensions of the existing loading zones, match the color of the zones to those used in the SFMTA Color Curb Program, and make existing changes explicit.

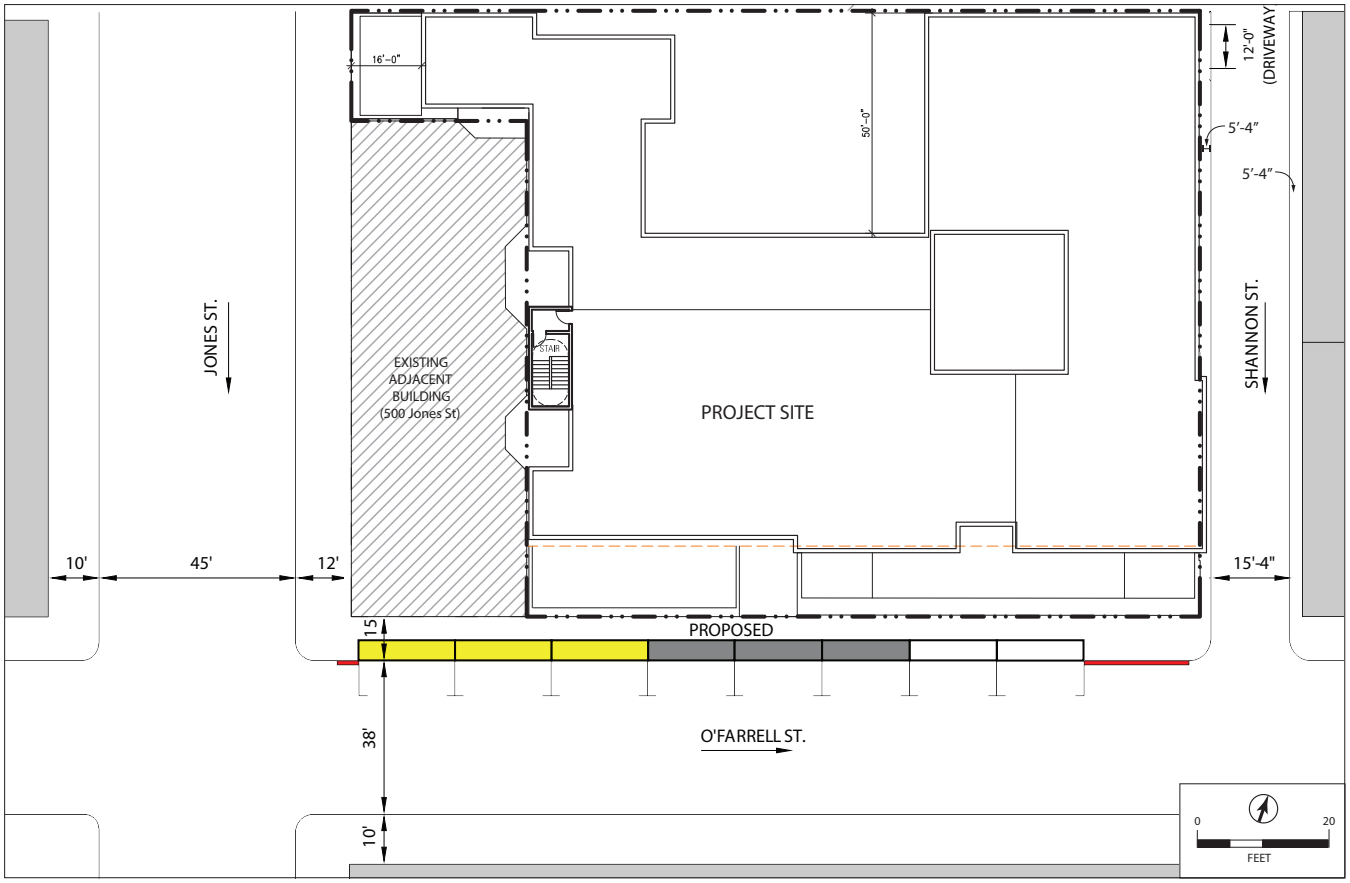


PARKING SPACE KEY
- YELLOW ZONE - COMMERCIAL LOADING SPACE (METERED M-F 9AM-4PM)
- GENERAL PARKING SPACE (METERED)
- RED ZONE - NO PARKING

FIGURE 3

Proposed On-Street Loading Plan

Figure 3 below is an example of a site plan that includes a detailed description of proposed on-street commercial and passenger loading zones. When developing a map similar to the one shown, include the linear dimensions of the proposed loading zones, match the color of the zones to those used in the SFMTA Color Curb Program, and make proposed changes explicit.

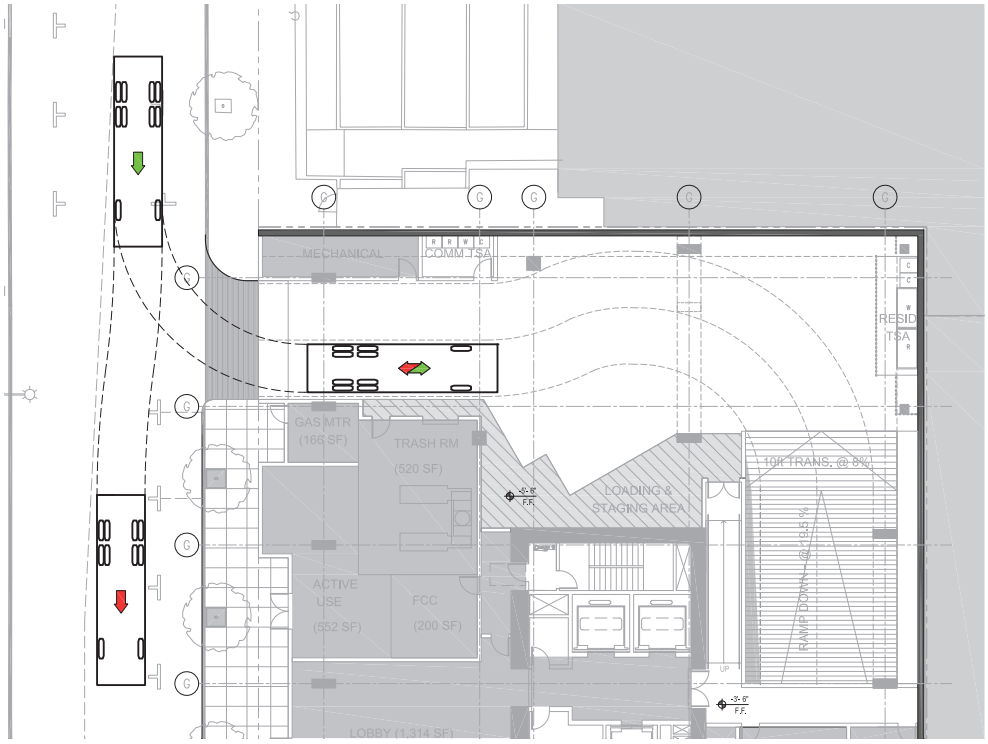


PARKING SPACE KEY
- YELLOW ZONE - COMMERCIAL LOADING SPACE (METERED M-F 9AM-4PM)
- GENERAL PARKING SPACE (METERED)
- PASSENGER LOADING/UNLOADING AT ALL TIMES
- RED ZONE - NO PARKING

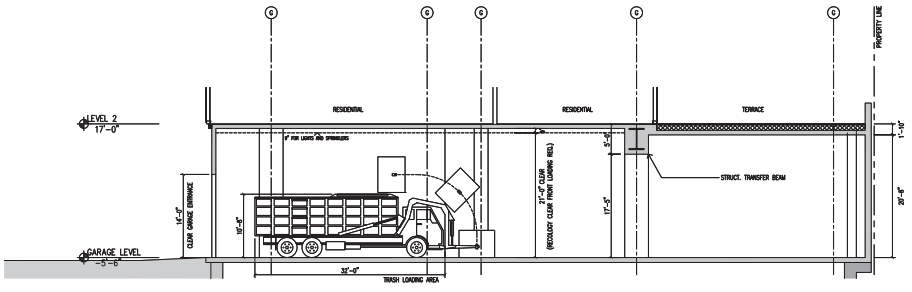
FIGURE 4

Loading Dimensions and Turn Template Into Garage

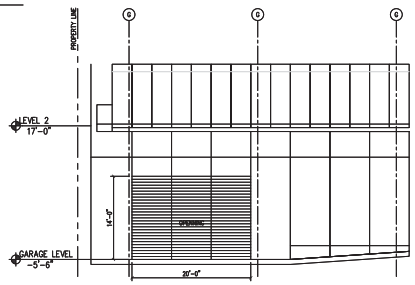
Figure 4 below shows the typical format to present off-street freight loading dimensions, including vertical clearance, width of driveway entry, and turn templates into the garage.



Trash Turning Radii
32' x 8' Truck



SECTION



ELEVATION

Legend
entry route
exit route

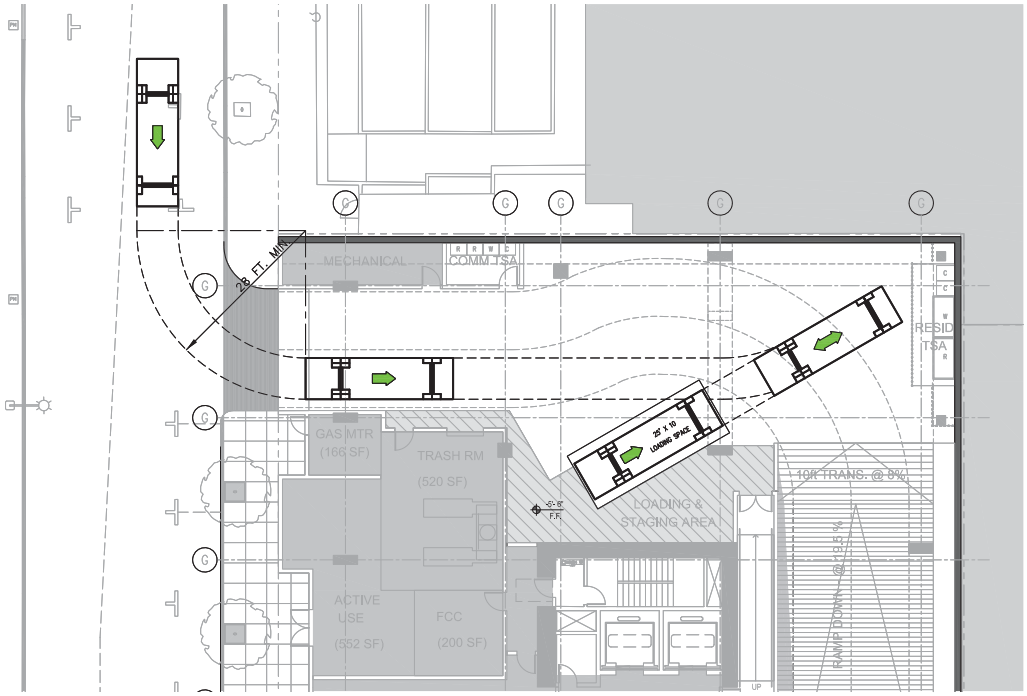
Garage Entry Diagrams

TRASH DIAGRAMS
SCALE: 1/16" = 1'-0"

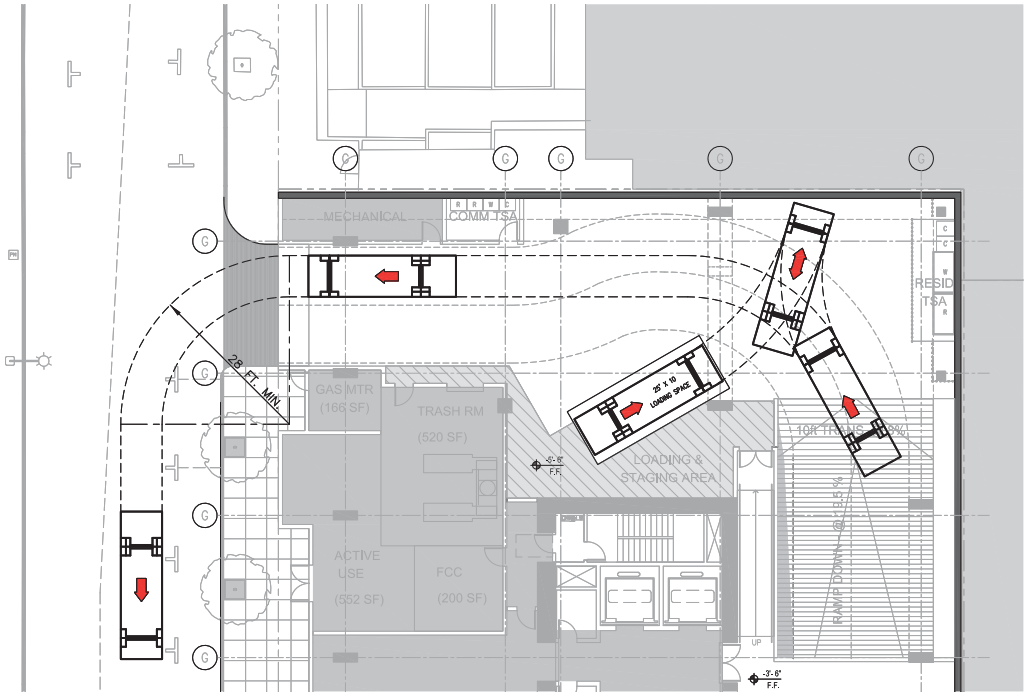
FIGURE 5

Turn Template Into/Out of Off-Street Loading Space

Figure 5 below shows the typical format to present off street freight loading turn templates into the loading space.



Loading Turning Radii
25' x 10' Vehicle INBOUND



Loading Turning Radii
25' x 10' Vehicle OUTBOUND

LOADING DIAGRAMS
SCALE: 1/16" = 1'-0"

FIGURE 6

Loading Observation Form and Template Sample

Figure 6 below shows the typical format to present commercial and passenger loading observations. This form should be included in the appendices of the transportation study, if applicable.

LOADING STUDY

Location: (fill in exact project location here)
Please fill in all white cells. Gray cells will auto-calculate.

City: San Francisco **Date:** **Day & Time:**

Peak Period Observations (3 consecutive hours based on maximum counts of all vehicles traveling in direction of observation											
Vehicle No.	Passenger Car	Passenger Car Delivery	Common Delivery Service	Large Frieght Truck	Extra Legal Trucks	Arrival Time (marked by the moment that the vehicle pull to a stop in the travel lane, transit lane, bike lane, or along the curb)	Departure Time (marked by the moment that the vehicle pull to a stop in the travel lane, transit lane, bike lane, or along the curb)	Stop Along Curb? (Y/N)	Is the loading event associated with the subject building? (Y/N)	Duration Time	Notes (e.g. blocked a bike lane/sidewalk/transit only lane; seemed like a potential hazard to people walking/biking)
1										0:00:00	
2										0:00:00	
3										0:00:00	
4										0:00:00	
5										0:00:00	
6										0:00:00	
7										0:00:00	
8										0:00:00	
9										0:00:00	
10										0:00:00	
11										0:00:00	
12										0:00:00	
13										0:00:00	
14										0:00:00	
15										0:00:00	
16										0:00:00	
17										0:00:00	
18										0:00:00	
19										0:00:00	
20										0:00:00	
21										0:00:00	
22										0:00:00	
23										0:00:00	
24										0:00:00	
25										0:00:00	
26										0:00:00	
27										0:00:00	
28										0:00:00	

FIGURE 6

Loading Observation Form and Template Sample (continued)

Daily total count of vehicles	
Daily passenger loading instances	
Daily passenger loading instances for subject building	
Daily freight loading instances	
Daily freight loading demand for subject building	

Day & Time:	Date:	Direction of travel -								
	Daily Count (24 hours)									
Time	Did you see a vehicle in the direction of travel within the distance specified including moving and stopped? Please count here!	Did you see a vehicle you counted in the first column pick up or drop off people that arrived during this 5 minute interval? Please count here! Do not double count in subsequent intervals.	Did you see the vehicle you counted in the previous column pick up or drop off people from the subject building? Please count here!	Was a vehicle observed for longer than 5 minutes at the same location? Please count here in the interval they depart!	Did you see a vehicle you counted in the first column pick up or drop off goods (including trash/recycling) that arrived during this 5 minute interval? Please count here! Do not double count in subsequent intervals.	Did you see the vehicle you counted in the previous column pick up or drop off goods from the subject building? Please count here!	Was a vehicle observed for longer than 30 minutes at the same location? Please count here in the interval they depart!	Count of subject building Driveway In's	Count of subject building Driveway Out's	Notes
12:00:00 AM										
12:05:00 AM										
12:10:00 AM										
12:15:00 AM										
12:20:00 AM										
12:25:00 AM										
12:30:00 AM										
12:35:00 AM										
12:40:00 AM										
12:45:00 AM										
12:50:00 AM										
12:55:00 AM										
1:00:00 AM										
1:05:00 AM										
1:10:00 AM										
1:15:00 AM										
1:20:00 AM										
1:25:00 AM										
1:30:00 AM										
1:35:00 AM										
1:40:00 AM										
1:45:00 AM										
1:50:00 AM										
1:55:00 AM										
2:00:00 AM										
2:05:00 AM										
2:10:00 AM										
2:15:00 AM										
2:20:00 AM										
2:25:00 AM										
2:30:00 AM										
2:35:00 AM										
2:40:00 AM										
2:45:00 AM										
2:50:00 AM										
2:55:00 AM										
3:00:00 AM										
3:05:00 AM										
3:10:00 AM										
3:15:00 AM										
3:20:00 AM										
3:25:00 AM										
3:30:00 AM										
3:35:00 AM										
3:40:00 AM										
3:45:00 AM										

ATTACHMENT B

Area Plan Mitigation and Improvement Measures

MITIGATION MEASURES FOR LAND USE DEVELOPMENT PROJECTS LOCATED WITHIN AN AREA PLAN

Rincon Hill Plan

No applicable mitigation or improvement measures were identified.

Market and Octavia Neighborhood Plan

No applicable mitigation or improvement measures were identified.

Eastern Neighborhoods Rezoning and Area Plan

No applicable mitigation or improvement measures were identified.

Visitacion Valley Redevelopment Plan

No applicable mitigation or improvement measures were identified.

Balboa Park Station Area Plan

Improvement Measure Truck Loading at Kragen Auto Parts site: Restrict truck access to the food market loading dock to 30 foot trucks or shorter.

- If longer trucks are needed, restrict deliveries to the early morning to avoid peak morning and peak evening commute periods.
- Schedule all deliveries to reduce the potential for trucks waiting to enter the loading dock (which may cause a back-up onto Ocean Avenue). Traffic volumes along Ocean Avenue are constantly high throughout the day; therefore, deliveries between 7:00 a.m. and 7:00 p.m. should be avoided.
- Maintain accurate truck logs to document the time and duration of truck activities.
- Station loading dock personnel at the corner of the Ocean/Lee intersection and at the loading dock to assist truck maneuvers and to manage traffic flows.
- Work with MTA to prohibit on-street parking along Lee Avenue during the peak loading periods to provide sufficient right-of-way for truck maneuvers.

Improvement Measure Truck Loading Phelan Loop site: Restrict truck access to the loading dock to 30 foot trucks or shorter.

- Schedule all deliveries to reduce the potential for trucks waiting to enter the loading dock (which may cause a back-up onto Ocean Avenue). Traffic volumes along Ocean Avenue are constantly high throughout the day; therefore, deliveries between 7:00 a.m. and 7:00 p.m. should be avoided.
- Maintain accurate truck logs to document the time and duration of truck activities.
- Station loading dock personnel at the corner of the Ocean/Lee intersection and at the loading dock to assist truck maneuvers and to manage traffic flows.
- Work with MTA to prohibit on-street parking along Lee Avenue during the peak loading periods to provide sufficient right-of-way for truck maneuvers.

Treasure Island and Yerba Buena Island Redevelopment Plan

No applicable mitigation or improvement measures were identified.

Glen Park Community Plan

No applicable mitigation or improvement measures were identified.

Transit Center District Plan and Transit Tower

M-TR-1f: Third/Harrison Streets Restriping: At the intersection of Third and Harrison Streets, the Municipal Transportation Agency (MTA) could convert one of the two eastbound lanes leaving the intersection into an additional westbound through lane by restriping the east (Harrison Street) leg of the intersection. In order to allow sufficient turning radius and clearance for heavy vehicles such as buses and trucks, two on-street parking spaces on the south side of Harrison Street east of the intersection would be removed.

M-TR-5: Garage/Loading Dock Attendant: If warranted by project-specific conditions, the project sponsor of a development project in the Plan area shall ensure that building management employs attendant(s) for the project's parking garage and/or loading dock, as applicable. The attendant would be stationed as determined by the project specific analysis, typically at the project's driveway to direct vehicles entering and exiting the building and avoid any safety-related conflicts with people walking on the sidewalk during the a.m. and p.m. peak periods of traffic and pedestrian activity, with extended hours as dictated by traffic and pedestrian conditions and by activity in the project garage and loading dock. (See also Mitigation Measure M-TR-4b, above.) Each project shall also install audible and/or visible warning devices, or comparably effective warning devices as approved by the Planning Department and/or the Sustainable Streets Division of the Municipal Transportation Agency, to alert people walking of the outbound vehicles from the parking garage and/or loading dock, as applicable.

M-TR-7a: Loading Dock Management: To ensure that off-street loading facilities are efficiently used and that trucks longer than can be safely accommodated are not permitted to use a building's loading dock, the project sponsor of a development project in the Plan area shall develop a plan for management of the building's loading dock and shall ensure that tenants in the building are informed of limitations and conditions on loading schedules and truck size. Such a management plan could include strategies such as the use of an attendant to direct and guide trucks (see Mitigation Measure M-TR-5), installing a "Full" sign at the garage/loading dock driveway, limiting activity during peak hours, installation of audible and/or visual warning devices, and other features. Additionally, as part of the project application process, the project sponsor shall consult with the Municipal Transportation Agency concerning the design of loading and parking facilities.

M-TR-7b: Augmentation of On-Street Loading Space Supply: To ensure the adequacy of the Plan area's supply of on-street spaces, the Municipal Transportation Agency (MTA) could convert existing on-street parking spaces within the Plan Area to commercial loading use. Candidate streets might include the north side of Mission Street between Second Street and First Street, both sides of Howard Street between Third Street and Fremont Street, and both sides of Second Street between Howard Street and Folsom Street. The MTA and Planning Department could also increase the supply of on-street loading "pockets" that would be created as part of the draft Plan's public realm improvements. Increasing the supply of on-street loading spaces would reduce the potential for disruption of traffic and transit circulation in the Plan Area as a result of loading activities. However, the feasibility of increasing the number of on-street loading spaces is unknown. Locations for additional loading pockets have not been identified, and the feasibility of adding spaces is uncertain, as any such spaces would reduce pedestrian circulation area on adjacent sidewalks. Locations adjacent to transit-only lanes would also not be ideal for loading spaces because they may introduce new conflicts between trucks and transit vehicles. Given these considerations, potential locations for additional on-street loading spaces within the Plan area are limited, and it is unlikely that a sufficient amount of spaces could be provided to completely offset the net loss in supply.

Western SoMa Community Plan

No applicable mitigation or improvement measures were identified.

Central SoMa Plan

Mitigation Measure M-TR-6a: Driveway and Loading Operations Plan (DLOP): Sponsors of development projects that provide more than 100,000 square feet of residential, office, industrial, or commercial uses shall prepare a DLOP, and submit the plan for review and approval by the Planning Department and the SFMTA in order to reduce potential conflicts between driveway operations, including loading activities, and pedestrians, bicycles and vehicles, and to maximize reliance of on-site loading spaces to accommodate new loading demand. The DLOP shall be submitted along with a building permit and approval should occur prior to the certificate of occupancy. Prior to preparing the DLOP, the project sponsor shall meet with the Planning Department and the SFMTA to review the proposed number, location, and design of the on-site loading spaces, as well as the projected loading demand during the entitlement/ environmental review process. In addition to reviewing the on-site loading spaces and projected loading demand, the project sponsor shall provide the Planning Department and SFMTA a streetscape plan that shows the location, design, and dimensions of all existing and proposed streetscape elements in the public right-of-way. In the event that the number of on-site loading spaces does not accommodate the projected loading demand for the proposed development, the project sponsor shall pursue with the SFMTA conversion of nearby on-street parking spaces to commercial loading spaces, if determined feasible by the SFMTA.

The DLOP shall be revised to reflect changes in accepted technology or operation protocols, or changes in conditions, as deemed necessary by the Planning Department and the SFMTA. The DLOP shall include the following components, as appropriate to the type of development and adjacent street characteristics:

- **Loading Dock Management**. To ensure that off-street loading facilities are efficiently used, and that trucks that are longer than can be safely accommodated are not permitted to use a building's loading dock, the project sponsor of a development project in the Plan Area shall develop a plan for management of the building's loading dock and shall ensure that tenants in the building are informed of limitations and conditions on loading schedules and truck size. The management plan could include strategies such as the use of an attendant to direct and guide trucks, installing a "Full" sign at the garage/loading dock driveway, limiting activity during peak hours, installation of audible and/or visual warning devices, and other features. Additionally, as part of the project application process, the project sponsor shall consult with the SFMTA concerning the design of loading and parking facilities.
- **Garage/Loading Dock Attendant**. If warranted by project-specific conditions, the project sponsor of a development project in the Plan Area shall ensure that building management employs attendant(s) for the project's parking garage and/or loading dock, as applicable. The attendant would be stationed as determined by the project-specific review analysis, typically at the project's driveway to direct vehicles entering and exiting the building and avoid any safety-related conflicts with pedestrians on the sidewalk during the a.m. and p.m. peak periods of traffic, bicycle, and pedestrian activity, with extended hours as dictated by traffic, bicycle and pedestrian conditions and by activity in the project garage and loading dock. Each project shall also install audible and/or visible warning devices, or comparably effective warning devices as approved by the Planning Department and/or the SFMTA, to alert pedestrians of the outbound vehicles from the parking garage and/or loading dock, as applicable.
- **Large Truck Access**. The loading dock attendant shall dictate the maximum size of truck that can be accommodated at the on-site loading area. In order to accommodate any large trucks (i.e., generally longer than 40 feet) that may require occasional access to the site (e.g., large move-in trucks that need occasional access to both residential and commercial developments), the DLOP plan shall include procedures as to the location of on-street accommodation, time of day restrictions for accommodating larger vehicles, and procedures to reserve available curbside space on adjacent streets from the SFMTA.

- **Trash/Recycling/Compost Collection Design and Management**. When designs for buildings are being developed, the project sponsor or representative shall meet with the appropriate representative from Recology (or other trash collection firm) to determine the location and type of trash/recycling/compost bins, frequency of collections, and procedures for collection activities, including the location of Recology trucks during collection. The location of the trash/recycling/compost storage room(s) for each building shall be indicated on the building plans prior to submittal of plans to the Building Department. Procedures for collection shall ensure that the collection bins are not placed within any sidewalk, bicycle facility, parking lane or travel lane adjacent to the project site at any time.
- **Delivery Storage**. Design the loading dock area to allow for unassisted delivery systems (i.e., a range of delivery systems that eliminate the need for human intervention at the receiving end), particularly for use when the receiver site (e.g., retail space) is not in operation. Examples could include the receiver site providing a key or electronic fob to loading vehicle operators, which enables the loading vehicle operator to deposit the goods inside the business or in a secured area that is separated from the business. The final DLOP and all revisions shall be reviewed and approved by the Environmental Review Officer or designee of the Planning Department and the Sustainable Streets Director or designee of the SFMTA. The DLOP will be memorialized in the notice of special restrictions on the project site permit.

ATTACHMENT C

Mitigation and Improvement Measure Examples

The following lists the typical types of measures that can mitigate or lessen impacts to passenger and commercial loading:

Potentially Hazardous Conditions and Transit Delays

- Appropriately place loading to maintain sightlines and visibility
- Provide convenient off-street or on-street loading space(s) that meet demand
- Relocate convenient off-street or on-street loading space(s) for intended users
- Relocate driveways for people away from off-street garage/loading docks
- Relocate entrances/exits (for people walking) away from off-street garage/loading docks
- Manage freight and service deliveries, and passenger loading (e.g., active loading management plan, staff monitoring)
- Provide operations and maintenance plan for off-street loading turntable
- Employ queue abatement measures or pursue design modifications to off-street vehicular entrances/exits to accommodate queuing vehicles
- Relocate convenient off-street or on-street loading space(s) away from travel lane which transit operates in or at a transit stop/station location
- Other measures that are related to potential hazards and transit delays can be found in appendices of the other relevant modes' memos of the guidelines