

**APPENDIX A:
SOUTH OF MARKET REDEVELOPMENT PLAN
SUPPLEMENT TO FEIR –
TRANSPORTATION ANALYSIS**

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Ref: South of Market Redevelopment Plan Supplement to FEIR – Transportation Analysis

Project Description

The Revised Plan Amendment Project Area is located South of Market Street and is bounded by Fifth Street to the east, Seventh Street to the west, Harrison Street to the south, and Mission Street, Natoma Street and Stevenson Street to the north. The total study area is approximately 68.8 acres. The Revised Plan Amendment Project Area contains 423 parcels, of which 382 are improved with buildings. A transportation report was prepared for the Project Area in the 1997 South of Market Plan Amendment FEIR (1997 FEIR) and the 2002 Mid-Market Redevelopment Plan FIER (MM FEIR). The 2002 Mid-Market and South-of-Market Redevelopment Project Area Transportation Study (MM - SOM Report) was used to prepare the MM FEIR.

Study Scope and Approach

The purpose of this transportation analysis is to compare the transportation impacts between the Revised Plan Amendment Project and the 1997 FEIR. Since existing traffic conditions in the Project Area were reevaluated in the MM-SOM Report, this transportation analysis also compares the transportation impacts between the Revised Plan Amendment and the MM-SOM Report. The estimated increase in vehicle-trips were projected based on the trip generation rates and mode split data in the Planning Department's 2002 Transportation Impact Analysis Guidelines for Environmental Review (SF Guidelines). Trip distribution was based on data from the SF Guidelines for the C-3 district.

The Mid-Market FEIR indicated that the intersections of Fifth/Mission and Sixth/Brannan would have significant and unmitigable traffic impacts under the Future (2020) Cumulative conditions. This Supplement to the 1997 FEIR focuses on the comparisons of traffic impacts for these two intersections and other non-traffic related impacts. Intersection turning movement volumes for these intersections remain the same as those presented in the Mid-Market FEIR. Incremental vehicular trips were added to the Existing-Plus-Project and Future Cumulative conditions to estimate the Existing-Plus-Project and Future Cumulative conditions for the Revised Plan Amendment.

Land Use Comparison

Table 1 summarizes the land use categories and sizes for the 1997 FEIR and MM-SOM Report and compares them with the Revised Plan Amendment. It should be noted that South-of-Market land use data presented in the MM-SOM Report was used to analyze transportation impacts in the Mid-Market FEIR. As shown in Table 1, the gross square footage for commercial and industrial uses for the Revised Plan Amendment is exactly the same as in the MM - SOM Report. The difference in public school trips is based on the plans for renovation and switching of locations between the existing school and Public Park. It is expected that no new trips would be generated by these land uses.

Table 1: Land Use Comparison

Land Use Category (GSF)	1997 FEIR		MM - SOM Report		Revised Plan Amendment	
	GSF	Units	GSF	Units	GSF	Units
Residential	1,209,750		468,900		533,250	
<i>SRO Units</i>	115,800	579	n/a	n/a	rehab	300
<i>Studio/1 Bdrm Units</i>	328,050	729	204,300	454	217,350	483
<i>2+ Bdrm Units</i>	765,900	851	264,600	294	315,900	351
Commercial	164,890		114,618		114,618	
Industrial	182,820		91,375		91,375	
Public (School Site and Park)**	223,800		n/a		n/a	
Total	1,781,260	2,159	674,893	748	739,243	1,134

Source: San Francisco Redevelopment Agency, *South of Market Redevelopment Plan Amendment Final Environmental Impact Report, 1997*; Project Summary Table, 2004.

Table 1 shows an increase of 64,350 square feet (from 468,900 square feet to 533,250 square feet) of residential use between the Revised Plan Amendment and the MM-SOM Report. Thus, only the difference in the number of residential units was used to calculate the net new PM peak hour vehicle trip generation. Table 2 presents the estimated net increase in PM peak hour vehicle-trips for the maximum buildout of the Revised Plan Amendment for the year 2020 condition. Vehicle-trips were estimated by dividing the number of auto person-trips by the vehicle occupancy rates (VOR) for residential use. As shown in Table 2, the Revised Plan Amendment would generate approximately 20 net new PM peak hour vehicle-trips compared to the estimated vehicle trips in MM-SOM Report. Out of the 20 net new trips, 13 would be inbound to the area, and 7 would be outbound. These inbound and outbound trips were distributed onto the entire network based on the trip distribution pattern consistent with the MM-SOM Report.

Table 2: Net New PM Peak Hour Vehicle-Trip Generation

Land Use	PM Peak Hour Vehicle-Trips ¹	Inbound Trips ²	Outbound Trips ²
Residential	20	13	7
TOTAL	20	13	7

Source: CHS Consulting Group, 2004.

Notes: 1. PM peak hour vehicle-trip generation based on vehicle occupancy rates provided in the SF Guidelines.

2. The PM peak hour inbound and outbound splits were derived based on percentages provided in the SF Guidelines.

Trip Distribution

Table 3 presents the trip distribution patterns for the Revised Plan Amendment. Trip distribution patterns were based on San Francisco County Transportation Authority's model data. Based on these distribution patterns, project trips were assigned to local streets.

Table 3: Trip Distribution Patterns

Place of Trip Origin	SOMA	
	In	Out
Mid-Market/SOMA	7.50%	5.50%
Rincon/Other Rincon/Yerba Buena/Transbay	9.20%	9.10%
Mission Bay (east of Third Street)	1.70%	1.50%
Southwest SOMA	3.60%	0.20%
Superdistrict 1	8.40%	9.20%
Superdistrict 2	13.60%	18.00%
Superdistrict 3	35.50%	34.80%
Superdistrict 4	6.40%	5.10%
East Bay	1.70%	1.30%
North Bay	0.40%	0.50%
South Bay	12.10%	14.80%
Total	100%	100%

Source: San Francisco County Transportation Authority traffic model output, Wilbur Smith Associates, 2001.

Comparison of Traffic Impacts from the Previous Reports

Fifteen intersections were analyzed in the 1997 FEIR and 19 intersections were analyzed in the MM-SOM Report. Tables 4 and 5 present the Level of Service (LOS) for the Existing, Existing-Plus-Project and Future Cumulative conditions for the intersections analyzed in the 1997 FEIR and the MM-SOM Report, respectively.

Table 4: Intersection Level of Service with Existing, Existing-Plus-Project and Future Cumulative conditions from the 1997 FEIR

Intersection	Existing (1997)	Existing Plus Project	Future (2010) Cumulative
Seventh/Market	A	A	A
Seventh/Mission	B	B	B
Seventh/Howard	A	A	B
Seventh/Folsom	A	A	B
Seventh/Harrison	C	C	C
Sixth/Market	A	A	A
Sixth/Mission	A	B	C
Sixth/Howard	B	B	C
Sixth/Folsom	B	C	C
Sixth/Harrison	B	C	C
Fifth/Howard	A	B	B
Fifth/Folsom	B	C	C
Fifth/Harrison	E	E	E
Fourth/Folsom	A	A	A
Fourth/Harrison	D	D	D

Source: San Francisco Redevelopment Agency, *South of Market Redevelopment Plan Amendment Final Environmental Impact Report*, pp. 149-151, 1997.

Table 5: Intersection Level of Service with Existing, Existing-Plus-Project and Future Cumulative conditions from the MM-SOM Report

Intersection	Existing (2001)	Existing Plus SOMA	Future (2020) Cumulative
Turk/Taylor	B	B	B
Golden Gate/Jones	B	B	B
Market/Fourth	B	B	C
Market/Fifth	B	B	C
Market/Ninth	C	C	D
Market/Tenth	C	C	C
Market/Van Ness	D	D	D
Mission/Fifth ¹	C/C	D/D	E/E
Mission/Sixth ¹	B/B	B/B	C/D
Harrison/Essex	F	F	F
Harrison/Fourth	D	D	F
Harrison/Fifth	B	B	B
Harrison/Seventh	B	B	D
Harrison/Eighth	B	B	B
Bryant/Fifth	C	C	D
Bryant/Sixth	B	B	C
Bryant/Eighth	B	B	D
Bryant/Tenth	B	B	B
Brannan/Sixth	D	D	F

Source: CHS Consulting Group, 2002.

Notes: 1. LOS and delays are shown without enforcement of the bus only lane on Mission and with enforcement of the bus only lane.

Table 6 presents the LOS for the Existing, Existing-Plus-Project, and Future Cumulative conditions for four intersections (Seventh/Harrison, Sixth/Mission, Fifth/Harrison, and Fourth/Harrison) analyzed in both the 1997 FEIR and the MM-SOM Report. With Future Cumulative conditions two of the four intersections, Fifth/Harrison, as analyzed in the 1997 FEIR, and Fourth/Harrison, as analyzed in the in the MM-SOM Report, would operate at LOS E and F, respectively. However, both the 1997 FEIR and the MM-SOM Report, respectively, concluded that project contributions to cumulative conditions would not be significant.

Table 6: Intersection Level of Service for Existing, Existing-Plus-Project and Future Cumulative Conditions for Four Intersections Common to the 1997 FEIR and MM-SOM Report

Intersection	1997 FEIR			2002 MM-SOM Report		
	Existing (1997)	Existing Plus Project	Future Cumulative (2010)	Existing (2000)	Existing Plus Project	Future Cumulative (2020)
Seventh/Harrison	C	C	C	B	B	D
Sixth/Mission	A	B	C	B/B	B/B	C
Fifth/Harrison	E	E	E	B	B	B
Fourth/Harrison	D	D	D	D	D	F

Source: CHS Consulting Group, 2004.

As shown in Table 5, the MM-SOM Report determined that traffic impacts due to development in the SOM Project Area would not be considered significant.¹ The MM-SOM Report also concluded that there would not be a significant cumulative impact on 15 of the 19 intersections analyzed. However, at four of the intersections, Harrison/Fourth, Harrison/Essex, Sixth/Brannan and Fifth/Mission, there would be a significant cumulative impact. As mentioned above, the project’s contributions to cumulative conditions at the intersection of Harrison/Fourth would not be significant. The intersection of Harrison/Essex already operates at LOS F under Existing conditions and would continue to do so under the Existing-Plus-Project conditions. The development in the Project Area would contribute a very small percentage to traffic movements that determine overall intersection LOS at intersections already at E and F and would thus not be considered to contribute to a significant cumulative effect. Thus, the SOM Redevelopment Program analyzed in the MM-SOM Report would not result in significant cumulative impacts at the intersections of Fourth/Harrison and Harrison/Essex.

Traffic Impact Analysis

Project trips were assigned to the existing roadway network using the “TRAFFIX” computer software in accordance with the trip distribution patterns and added to the existing traffic on study area roadways.

An impact on a signalized intersection is considered significant when project-related traffic causes the intersection Level of Service (LOS) to deteriorate from LOS D or better to LOS E or F, or from LOS E to F. A project may result in significant adverse impacts at intersections that operate under LOS E or F under existing conditions, depending on the

¹ San Francisco Redevelopment Agency, *Mid-Market and South-of-Market Redevelopment Project Area Transportation Study*, 2002.

magnitude of the project's contribution to the worsening of the average delay per vehicle. A project would also have a significant adverse impact if it caused major traffic hazards or contributed considerably to cumulative traffic increases, causing levels of service to deteriorate to unacceptable levels.

As shown in Table 7, the Fifth/Mission Street intersection and the Sixth/Brannan Street intersection both operate at LOS D for the Existing-Plus-Project condition analyzed in the MM-SOM Report, and would still continue to operate at LOS D under the Existing-Plus-Revised Plan Amendment condition. Similarly, the vehicle trips generated by the Revised Plan Amendment activities are not likely to have any measurable effects on other intersections analyzed and reported in the MM-SOM Report.

Table 7: Intersection Level of Service for Existing-Plus-Project Conditions From the MM-SOM Report and the Revised Plan Amendment

Intersection	2002 MM - SOM Report		Revised Plan Amendment	
	Delay	LOS	Delay	LOS
Fifth/Mission Street	40.2/42.7	D/D	40.2/42.7	D/D
Sixth/Brannan Street	52.2	D	52.2	D

Source: CHS Consulting Group, 2004.

Under Future (2020) Cumulative conditions, Fifth/Mission and Sixth/Brannan intersections would have significant cumulative traffic impacts primarily due to the anticipated background traffic growth, which would cause LOS at these intersections to deteriorate of E or F. Table 8 presents the LOS of Fifth/Mission and Sixth/Brannan intersections for Future (2020) Cumulative conditions.

Table 8: Intersection Level of Service for Future Cumulative Conditions From the MM-SOM Report and the Revised Plan Amendment

Intersection	2002 MM - SOM Report		Revised Plan Amendment	
	Delay	LOS	Delay	LOS
Fifth/Mission Street	57.5/69.5	E/E	57.5/69.5	E/E
Sixth/Brannan Street	> 80	F	> 80	F

Source: CHS Consulting Group, 2004.

Table 9 shows that the Revised Plan Amendment's contribution to the future traffic growth at the intersections of Fifth/Mission and Sixth/Brannan. The Revised Plan Amendment would contribute to traffic growth approximately 10.2 percent at the intersection of Sixth/Brannan and 14.2 percent at the intersection of Fifth and Mission. For the traffic movements that determine overall LOS performance at the intersection of Fifth/Mission, the Revised Plan Amendment would contribute to a significant impact.

For the traffic movements that determine overall LOS performance at the intersection of Sixth/Brannan, the Revised Plan Amendment would not contribute to a significant impact.

Table 9: Revised Plan Amendment Project Contribution to Growth

Intersection	Existing Volume	Future Cumulative Volume	Growth	Project Volume	% of Growth	% of Future Volume
Sixth/Brannan Street	5524	6594	1070	109	10.20%	1.70%
Fifth/Mission Street	2808	3405	597	85	14.20%	2.50%
Fifth/Mission Critical Movement (SB)	569	669	100	63	63%	9.40%

Source: CHS Consulting Group, 2004.

At the intersection of Fifth/Mission, the Revised Plan Amendment would add substantial volumes to the southbound through traffic movement, which is the intersection critical movement. Therefore, the Revised Plan Amendment’s contribution to this movement would be considered significant under Future (2020) Cumulative conditions. This conclusion is the same as the one reached in the Mid-Market FEIR.

At the intersection of Sixth/Brannan, the Revised Plan Amendment would not add traffic to the critical movements (northbound right-turn, eastbound through, and westbound left-turn movements), but would add trips to movements which would continue to operate satisfactorily. Thus, the traffic added due to the implementation of the Revised Plan Amendment would not materially affect the overall poor operation of this intersection. Therefore, the Revised Plan Amendment would not represent a considerable contribution to Future Cumulative traffic conditions and would not have a significant traffic impact on the intersection of Sixth/Brannan. It should be noted that the methodology used to determine significant impacts was refined by the San Francisco Planning Department. The methodology used for this Supplement focuses on the contribution to the critical movement only, not total movement as used in the MM-SOM Report.

The Mid-Market FEIR identified a mitigation measure, which recommended adjusting signal timing to mitigate the Future (2020) Cumulative impacts at the intersection of Fifth/Mission. However any changes to the signal timing along Mission Street could potentially affect the signal progression and MUNI bus operation along the corridor and would require further study. If it is determined that this mitigation measure would have a significant impact on MUNI operations, it would not be implemented. Therefore, the Revised Plan Amendment would have immitigable impacts at the

intersection of Fifth/Mission and would result in a significant and unavoidable traffic impact.

Prior to any development in the Project Area, a localized transportation study, including parking impacts, loading impacts, and impacts on transit may be required by the San Francisco Planning Department.

Parking Impacts

The only change between the Revised Plan Amendment and the MM-SOM Report is residential land use. The Revised Plan Amendment would increase residential development by about 86 units, compared to the Mid-Market FEIR. The Mid-Market FEIR determined that cumulatively, there would be a total shortfall of about 2,300 public parking spaces in the Study Area. The Revised Plan Amendment would result in a net new demand of 118 additional parking spaces. Consequently, the overall parking shortage in the study area would be 2,418 spaces. This would not be considered significant as shown on page 131 of the 2002 Mid-Market FEIR.

Pedestrian Impacts

During the weekday PM peak-hour, the Revised Plan Amendment would generate 96 more pedestrian trips (51 transit, 45 walk) compared with the total 769 pedestrian trips analyzed in the MM-SOM Report. The net increase in pedestrian volumes would not cause significant impacts because these pedestrians would spread over an approximately 68.8-acre study area.

Bicycle Impacts

Additional bicycle trips generated by the Revised Plan Amendment would be relatively small and bicycle volumes on most study streets are relatively low. Accordingly, it is not anticipated that the Revised Plan Amendment would have a significant negative impact on bicycle conditions in the study area.

Transit Impacts

It is estimated that the Revised Plan Amendment would generate a total of 490 weekday PM peak-hour transit trips (inbound and outbound) combined. The net increase in transit trips would be approximately 51 trips more than those presented in the Mid-Market FEIR. As the Revised Plan Amendment would increase residential land use compared to the SOM Program analyzed in the Mid-Market FEIR, the estimated increase in transit ridership by the Revised Plan Amendment would mostly be inbound trips during the PM peak-hour and therefore, is not accounted for in the MUNI and regional transit screeline analysis (the screenline analysis focuses on outbound trips

only, the peak direction during the PM peak-hour). Hence, the Revised Plan Amendment would not result in a significant transit impact.

Loading Impacts

The Revised Plan Amendment would generate net new 2 daily truck trips. There would be no change in average hour, nor peak hour loading demand. Therefore, the Revised Plan Amendment could not cause additional loading demand.