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MEMORANDUM

DATE: October 3, 2016

TO:
Catherine Payne
Planner IV
Bureau of Planning
City of Oakland (City)

FROM:
Lynette Dias, AICP, Principal
Hayley Cox, Associate Planner
P. 510.251.8210
E. ldias@up-partners.com
hcox@up-partners.com

RE: CEQA Compliance for Requested Major Variance for MacArthur Station[1] Parcel A and Parcel C-1 FDPs

Prior Approved FDPs and Current Proposal

In accordance with the Standard Conditions of Approval for the MacArthur Station[2] (MS) Project PUD/PDP and the terms of the Development Agreement, the City received an application for two Final Development Plans (FDPs) for Parcel A and Parcel C-1 that were approved by the Oakland City Council on May 19, 2015. The City is currently in receipt of an application for a Major Variance for the Parcel A/Phase 3 and Parcel C-1/Phase 4 FDPs in regard to the amount of retail space provided and the use of retail space identified in the approved FDPs.

1. Parcel A

The Parcel A/Phase 3 portion of the FDP is located within the block bounded by 40th Street, Telegraph Avenue, 39th Street and Frontage Road, adjacent to the MacArthur BART Station. The approved Parcel A FDP included 287 apartment residential units and 22,287 square feet of ground floor retail.[3] As shown in Attachment A, the current proposed plans for Parcel A (comprised of Building A1 and Building A2) include minor revisions to the FDP-approved retail space allotment. The interior flex space along the mews in the FDP has been removed from

[1] The Project was previously called the MacArthur Transit Village Project.

[2] See note 1 above.

[3] An alternative development program for Parcel A, which would accommodate a grocery store was also approved but is not currently considered. The alternative plan includes 292 residential units, 33,983 square feet of ground-floor commercial space including approximately 22,287 square feet for a grocery store.

Buildings A1 and A2 and the residential lobby in Building A1 has been downsized to incorporate additional retail. Additionally, along the northern portion of Building A2, the bicycle storage area has been converted to retail space. Bicycle parking has been relocated to the southern portion of Building A2, where the residential lobby and leasing space has also been adjusted, and community space has been incorporated at the corner of 39th Street and Telegraph Avenue.

The Major Variance application proposes that, should the developer not be able to lease the space to retail tenants within a certain timeframe, the retail space along 40th Street be converted to live/work units. The developer would market the approximately 4,631 square feet of convertible retail space in Building A1 and the approximately 7,563 square feet of convertible retail space along 40th Street in Building A2—totaling 12,194 square feet—as retail space during the period starting on the commencement of construction and ending nine (9) months after the completion of construction for the applicable building. This is currently anticipated to be thirty-three (33) months of active leasing. In the event developer is unable to lease all or any portion of such convertible retail space to suitable retail tenants on commercially reasonable terms during the described leasing period, the unleased space could be converted to live/work units.

In addition, the applicant proposes to market the approximately 2,200 square feet of convertible retail space located in the interior of Building A2 along the mews as retail space for a period of eighteen (18) months, starting with the commencement of construction of Building A2. In the event that the developer is unable to lease all or any portion of such space to suitable retail tenants on commercially reasonable terms during the initial 18 months of construction, the unleased space would be converted to live/work units or resident-serving amenity space. If all of the above-described retail space—a total of 14,394 square feet—were not leased and were converted, this would represent an approximately 65 percent reduction in the amount of retail approved in the Parcel A/Stage 3 FDP. The converted space could result in approximately seven live/work units.

In addition to adjustments to retail space provision and use for Parcel A/Phase 3, driveway locations have been modified. Vehicular entry to the ground level parking garage on Parcel A would be from 39th Street and from Telegraph Avenue. This driveway would be located toward the center of the south side of the Building A2, on the north side of 39th Street, and has moved slightly eastward from its location in the Parcel A/Stage 3 FDP. The second driveway, located adjacent to the first driveway on 39th Street in the Parcel A/Stage 3 FDP, would now be located on Telegraph Avenue. This driveway would lead to the underground parking garage.[4]

[4] An analysis by Nelson\Nygaard, dated July 26, 2016, (included as Attachment B) found that this scenario provides sufficient residential and retail parking, and the proposed parking supply falls within the minimum and maximum parking requirements for both residential and retail use per the prior FDP and TDM Plan requirements. Consistent with the requirements of the Final TDM, a minimum of 30 percent of the parking spaces will be unbundled and any unbundled parking not leased by residents will be made available to commercial tenants or BART patrons.

2. Parcel C-1

The Parcel C-1/Phase 4 component of the FDP is located on the portion of the MacArthur Station site south of 39th Street and east of Turquoise Way just north of Parcel D/Phase 2, an affordable residential project (the Mural Apartments). The proposed Parcel C-1 portion of the FDP includes 96 apartment residential units and 1,202 square feet of ground-floor retail. The applicant does not propose any significant changes to the Parcel C-1 FDP.

CEQA Discussion

As described above and summarized in Table 1 below, changes to the design of the approved development for Parcels A and C-1 would be minimal, and would relate mainly to retail space. Overall, total retail space would be reduced from the approved Parcel A and C-1 FDPs by approximately 2,000 square feet. Additionally, the Major Variance would allow for up to approximately 65 percent of the retail approved in the Parcel A/Stage 3 FDP (approximately 70 percent of the retail space provided in current proposed design of the Parcel A buildings) to be converted to live/work units if not leased within a certain time period.

TABLE 1 RETAIL APPROVED UNDER PARCEL A AND C-1 FDPS COMPARED TO CURRENT DESIGN

Retail Space Approved in FDPs	
Parcel A	22,287
Parcel C-1	1,202
Total Retail Space Approved in FDPs	*23,489*
Retail Space Provided Per Current Design	
Retail Building A1 (South)	5,920
Retail Building A1 (North)	4,631
Retail Building A2 (40th St)	7,563
Retail Building A2 (Mews)	2,220
Retail Parcel C-1	1,100
Total Retail Space Per Current Design	*21,434*
Community Space	3,886
Total Retail Space Approved at FDP	*23,489*
Less Retail Space Provided Per Current Design	*(21,434)*
Total Reduction From Approved FDP	**2,055**

Source: BRIDGE Housing and Urban Planning Partners, 2016.

Given that retail space is reduced in the current proposed design, there would be no new vehicle trips generated. If retail space were converted to live/work space, that space would retain much of its retail quality and would not result in a significant shift in land use. The current design, therefore, would not result in more severe impacts in regard to transportation—the main topic area of concern under CEQA when considering changes in land use at this site—than contemplated in the 2008 EIR. None of the requested changes, therefore, are substantial or significant under CEQA. Further, project circumstances have not changed since Parcel A and C-1 FDP approvals in 2015, and there is no new information of substantial importance that was not known at the time of the 2015 FDP approvals and their accompanying CEQA analysis.

Conclusion

Urban Planning Partners reviewed the requested Major Variance and other modifications to the FDP and found that there: (1) are no substantial project changes, (2) are no substantial changes in the project circumstances, and (3) is no new information of substantial importance, which could not have been known with the exercise of reasonable diligence when the 2008 EIR was certified, that would require major revisions of the certified 2008 EIR because of a new significant effect or an increase in the severity of a previously identified significant effect. Under CEQA section 21166 and CEQA Guidelines sections 15162 and 15163, no further environmental review is required.

Attachments

Attachment A – Approved FDP vs Proposed Changes
Attachment B – Nelson\Nygaard Parking Memorandum

ATTACHMENT A

1 LEVEL 1 OVERVIEW
A 1.00 | 1" = 30'-0"

TRUE

Approved Parcel A and C-1 FDPs

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MACARTHUR STATION BLOCKS A & C1
40TH AND TELEGRAPH OAKLAND, CA
BRIDGE HOUSING

OVERVIEW PARCELS A & C1

FINAL DEVELOPMENT PACKAGE

DATE	REVISION
04.09.2015	
PROJECT NUMBER 142010	SHEET NUMBER A 1.00
SCALE 1" = 30'-0"	

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ATTACHMENT A

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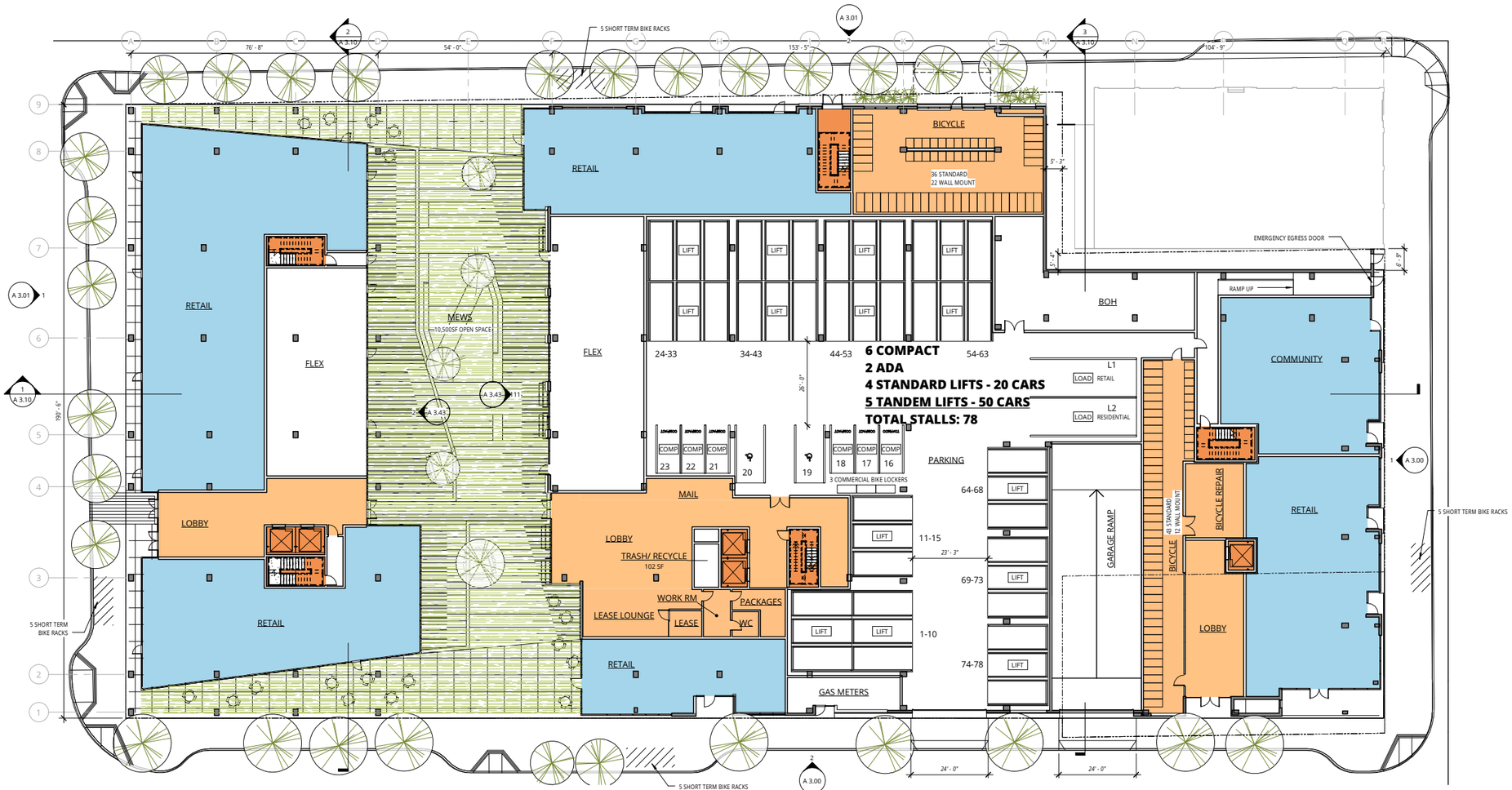


6 COMPACT
2 ADA
4 STANDARD LIFTS - 20 CARS
5 TANDEM LIFTS - 50 CARS
TOTAL STALLS: 78

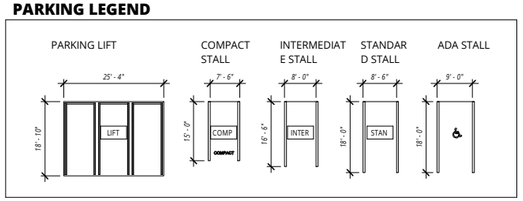
1 PARCEL A LEVEL 1

A 2.01 | 1/16" = 1'-0"

PROJECT

0 8 16 32 64

PARKING LEGEND



Approved Parcel A FDP

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MACARTHUR STATION BLOCKS A & C1
40TH AND TELEGRAPH OAKLAND, CA

BRIDGE HOUSING

PARCEL A GROUND LEVEL

FINAL DEVELOPMENT PACKAGE

DATE	REVISION
04.09.2015	
PROJECT NUMBER	SHEET NUMBER
142010	A 2.01
SCALE	
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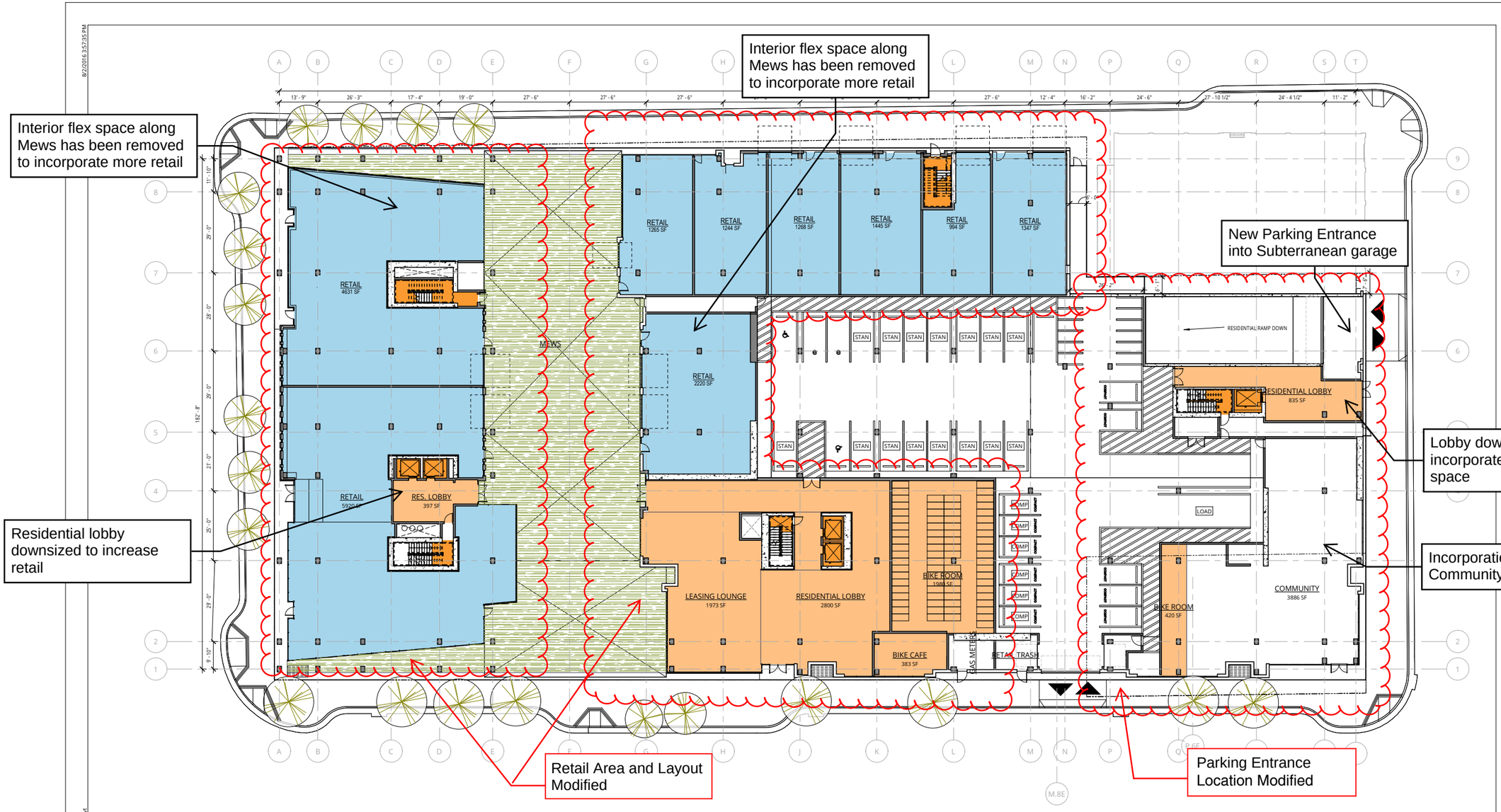
ATTACHMENT A



1 PARCEL A LEVEL 1
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PROJECT
0 8 16 32 64

Proposed Changes to Site Plan from Parcel A FDP

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MACARTHUR STATION PARCEL A
40TH STREET AND TELEGRAPH AVENUE, OAKLAND, CA
BRIDGE HOUSING

PARCEL A GROUND LEVEL

HINES DEVELOPMENT SET

DATE	REVISION
04.20.2016	
PROJECT NUMBER 142010	SHEET NUMBER A 2.01
SCALE 1/16" = 1'-0"	

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ATTACHMENT A

1 PARCEL C1 LEVEL 1

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PROJECT

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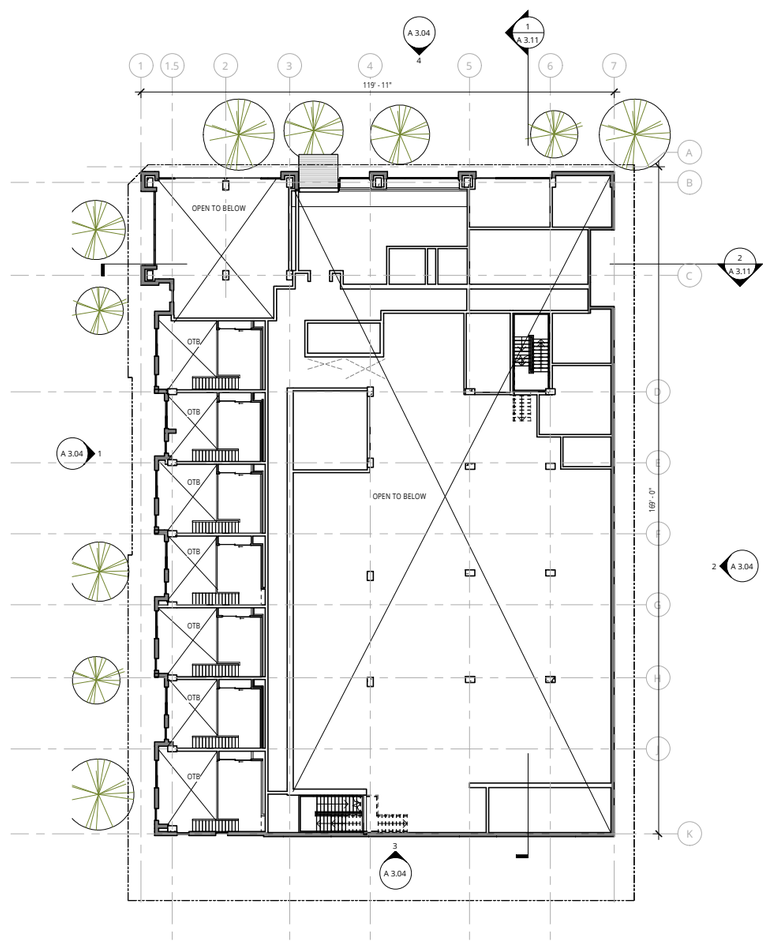

2 BLOCK C1 LOFT LEVEL

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PROJECT

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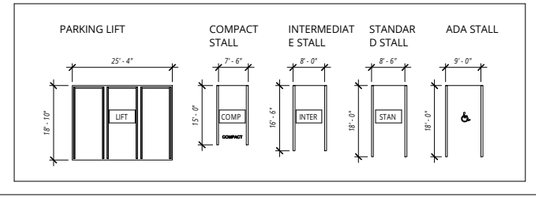
PARKING LEGEND



Approved Parcel C-1 FDP

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MACARTHUR STATION BLOCKS A & C1

40TH AND TELEGRAPH OAKLAND, CA

BRIDGE HOUSING

PARCEL C1 GROUND & MEZZANINE LEVELS

FINAL DEVELOPMENT PACKAGE

DATE	REVISION
04.09.2015	
PROJECT NUMBER	SHEET NUMBER
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SCALE	
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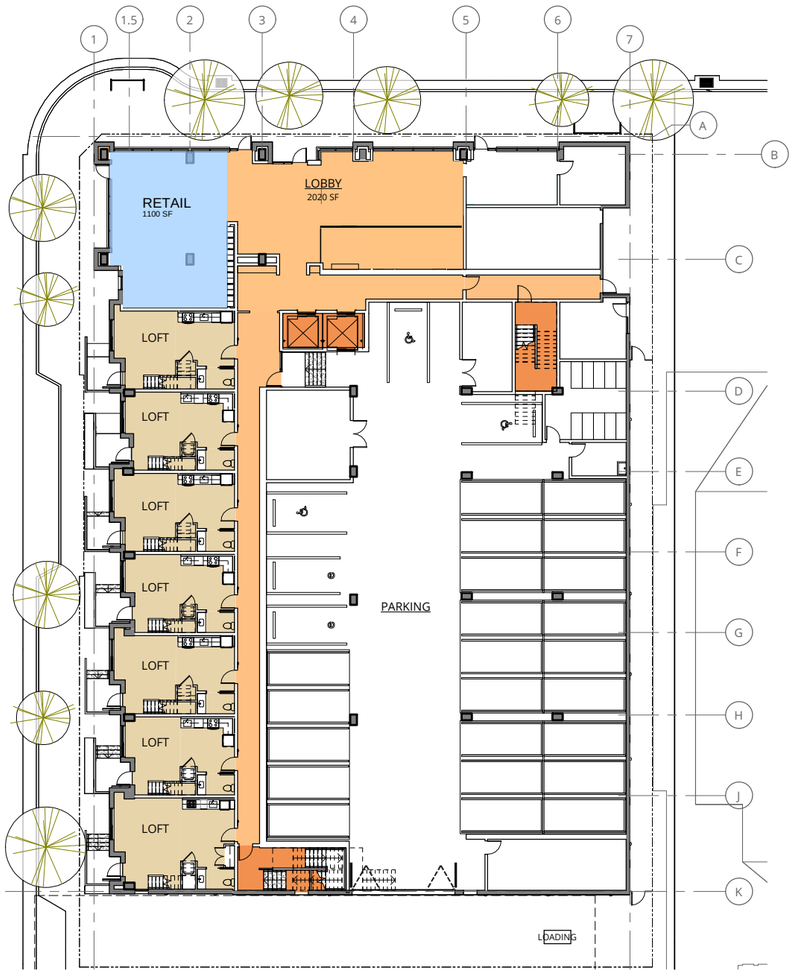

1 PARCEL C LEVEL 1

A 2.20 | 1/16" = 1'-0"

PROJECT

0 8 16 32 64

No Proposed Changes to Site Plan from Parcel C-1 FDP

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CIVIL CONSULTANT NAME

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3561 E SUNRISE DR, SUITE 225
TUCSON, AZ 85718
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MACARTHUR STATION - BLOCK C1

39TH STREET AND TELEGRAPH AVENUE, OAKLAND, CA

BRIDGE HOUSING

REVISION	DATE	REASON FOR ISSUE

PARCEL C1
GROUND & MEZZ

HINES
DEVELOPMENT SET

DATE 04.20.2016
REVISION
PROJECT NUMBER 142010
SHEET NUMBER A 2.20
SCALE 1/16" = 1'-0"

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NELSON
NYGAARD

MEMORANDUM

To: Kevin Chow

From: Jessica Alba

Date: July 26, 2016

Subject: MacArthur Station Parking Implementation – Initial Study

INTRODUCTION

Nelson\Nygaard developed the Transportation Demand Management (TDM) Plan for the MacArthur Transit Village in 2010. The TDM Plan was approved and incorporated into the Conditions of Approval for the development.

Hines is currently in the process of purchasing Parcels A & C1 of the MacArthur Station project, an approximate 383-unit market-rate rental development in Oakland. As part of this due diligence, Nelson\Nygaard has reviewed currently available background materials to provide a recommendation for how to address unbundling and public parking at the two fully entitled residential parcels. **Unbundling refers to the practice of separating (unbundling) the cost of parking from the cost of housing or the cost of tenant space.**

PARKING & TDM REQUIREMENTS

Figure 1 provides details regarding the City's parking and TDM requirements for the two parcels. Two primary documents were used to extract this information.

- City of Oakland Administrator Agenda Report - Final Development Plan (FDP), MacArthur Station Phases 3 and 4. Dated April 20, 2015.
- MacArthur Transit Village – Final Transportation Demand Management Plan. Dated October 26, 2010.

Figure 1 FDP and TDM Plan Requirements

	Parcel A	Parcel C1	Total
Rental Units	287	96	383
Retail (square feet)	22,287	1,202	23,489
Parking – Administrator Report, pdf p. 15, PC report (spaces)	254	69	323
Parking – Administrator Report, pdf p. 27, PC report (spaces) Res. Min: .5 space/unit			Residential Min: 192 Residential Max: 383

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www.nelsonnygaard.com

	Parcel A	Parcel C1	Total
Res. Max: 1 space/unit Retail Min: 1 sp/1KSF Retail Max: 1 sp/838sf			Res Proposed[1]: 294 Retail Min: 24 Retail Max: 28 or 31 Retail Proposed[1]: 28 Total Min: 216 Total Max: 414 Total Proposed[1]: 322
Unbundling (per TDM Plan)	At a minimum 30% of parking supply	No requirement	
Unleased unbundled residential spaces made available to retail or BART (per TDM Plan)	Yes	No requirement	

Two additional TDM Plan statements should be mentioned for further discussion in the following sections.

- "In Block A, one floor will be shared between various users, while a second floor will be secured only for residents." (page 7)
- "No more than 1 parking space per residential unit will be offered." (page 7)

PROPOSED PARKING ASSUMPTIONS

Figure 2 provides Bridge/Hines' proposal for the two parcels. Note that the unit count is currently an approximation:

Figure 2 Bridge/Hines Unit, Parking, and TDM Proposal

	Parcel A	Parcel C1	Total
Rental Units	287	96	383
Retail (square feet)	20,334	1,100	21,434
Residential Parking	165 + 2 carshare spaces + 6 ADA spaces	67 + 2 ADA spaces	232 + 2 carshare spaces + 8 ADA spaces
Retail/Leasing Parking	29 + 2 ADA spaces	0	29 + 2 ADA spaces
Proposed Residential Parking Ratio	173 spaces/287 units = 0.6 spaces/unit (incl. 6 ADA spaces)	69 spaces/96 units = 0.7 spaces/unit (incl. 2 ADA spaces)	242 spaces/383 units = 0.6 spaces/unit
Unbundling	30% of residential parking supply	No	
Unleased unbundled residential spaces made available to retail or BART	Yes	No	

[1] Per the 2015 Administrator Agenda Report, not the final Bridge/Hines Plan

CONCLUSIONS AND RECOMMENDATION

Sufficient Residential and Retail Parking

The proposed parking supply falls within the minimum and maximum parking requirements for both residential and retail use. The residential parking ratio is 0.6 spaces per unit in Parcel A and 0.7 spaces per unit in Parcel C1.

Recommendation

The TDM Plan requires that "30 percent of the parking for the first market rate building (Block A) will be unbundled". It also requires that "Any unbundled parking not leased by residents will be made available to commercial tenants or BART patrons." To fulfill these two requirements, Nelson\Nygaard recommends the following.

- All 175 subterranean parking spaces in Block A will be accessed behind a gate.
  - During the TDM Plan development, it was assumed that "one floor will be shared between various users, while a second floor will be secured only for residents." However, there will only be one subterranean level of parking. We therefore recommend that all of these spaces are gated, per the following supporting recommendations.
- 30% (52 spaces) of the Block A subterranean parking supply will be delineated and defined as the "potential public parking" section (BlockA30). The remaining 122 parking spaces (BlockA70) will be defined as residential only. There will be no gate between these two supplies.
- At the time new residents sign a lease agreement, they will be informed that they can choose to be placed on the BlockA70 and/or the BlockA30 waitlist. Since BlockA30 spaces will be unbundled, residents on this waitlist will know that there is a monthly parking fee associated with these spaces.
  - The rental agreement will state that the monthly fee to park in BlockA30 may vary biannually in order to manage parking demand.
  - A minimum and maximum monthly fee, set for two consecutive years, will be included in the rental agreement so that tenants are informed of what the caps are. The agreement will also include a statement that tenants will be informed of potential changes to the cap six (6) months in advance.
  - At this time, minimum and maximum fees for the first two years are not proposed. These will be developed in the next phase of the project.
  - If there is long-term availability – more than 10% of BlockA30 spaces unleased for more than 3 months – it will be made available to commercial tenants or BART patrons on a monthly basis through a waitlist administered by property management. There will be no daily public parking.
    - Example: If six (6) parking spaces in BlockA30 are not leased by residents for three (3) consecutive months, all six spaces will be offered to the commercial tenants or BART patrons on a monthly basis.

In order to comply with the TDM Plan statement (p. 7) that "No more than 1 parking space per residential unit will be offered", no household will be offered more than 1 space per unit. In the event that not all spaces are leased in the BlockA70 section, Hines will reevaluate this requirement. However, the objective is to allow each unit access to no more than one parking space.

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ATTACHMENT H

MEMORANDUM -

DATE: April 10, 2015

TO:
Elois Thornton
Department of Planning and Building
City of Oakland (City)

FROM:
Lynette Dias, AICP
P. 510.251.8210
E. ldias@up-partners.com

RE: CEQA Compliance for MacArthur Station[1] Parcel A and Parcel C-1 FDP

A. OVERVIEW/SUMMARY

1. Current Proposal

In accordance with the Standard Conditions of Approval for the MacArthur Station[2] (MS) Project PUD/PDP and the terms of the Development Agreement, the City is in receipt of an application for a Final Development Plan (FDP) for Parcel A and Parcel C-1. For Parcel A/Stage 3, the FDP proposes 287 apartment residential units and 22,287 square feet of ground-floor commercial. An alternate development program for Parcel A, which would accommodate a grocery store is also proposed. The alternate plan includes 292 residential units, 33,983 square feet of ground-floor commercial space including approximately 22,085 square feet for a grocery store. The FDP for Parcel C-1 proposes 96 apartment residential units, 1,202 square feet of ground floor retail see Project Included Data Tables at the end of this memorandum.

The key purpose of this review is to determine whether the environmental effects of the FDP are adequately analyzed in the 2008 certified MacArthur Transit Village Project Environmental Impact Report (2008 EIR). As described below, development of Parcel A and Parcel C-1 are considered in the 2008 EIR and as proposed would not result in new significant impacts or a substantial increase or severity of a previously identified significant impact from those identified

[1] The Project was previously called the MacArthur Transit Village Project.

[2] See note 1 above.

in the 2008 EIR. As a result, the City does not need to prepare a Subsequent or Supplemental EIR to satisfy the environmental review requirements of CEQA. The 2008 EIR remains adequate for the FDP proposed for Parcel A and Parcel C-1.

The discussion below provides: (1) an overview of MS Project approvals and environmental review; (2) a summary of the relationship of the current proposed Parcel A and Parcel C-1 FDP with the approved MS Project PUD/PDP and the project analyzed in the 2008 EIR; and (3) findings that Parcel A and Parcel C-1 FDP fall within the scope of the 2008 EIR and do not require preparation of subsequent or supplemental environmental review pursuant to CEQA Guidelines Section 15162 and Section 15163.

2. Prior Project Approvals and Environmental Review

The City has granted several approvals for the MS Project. The PUD/PDP approved in 2008 authorizes the development of up to 675 residential units, 49,000 square feet of commercial, 5,000 square feet of community space, a parking structure for BART patrons, and various infrastructure improvements. The PUD/PDP also establishes the approved land uses, density, bulk, massing and design guidelines for the site. Prior to approving the PUD/PDP, the City certified an EIR for the MS Project (SCH No. 2006022075) on July 1, 2008. The City also subsequently approved addenda to the EIR in 2010 for Phases/Stages 1 and 2. Each addendum found determined that no new information or changes in the project or project circumstances required subsequent or supplemental environmental review.

Each of the previous approvals for the MS Project is detailed in the PUD/PDP Substantial Conformance Memo dated March 24, 2015.

3. Summary

Urban Planning Partners reviewed the requested subsequent approvals and found that there: (1) are no substantial project changes, (2) are no substantial changes in the project circumstances, and (3) is no new information of substantial importance, which could not have been known with the exercise of reasonable diligence when the 2008 EIR was certified, that would require major revisions of the certified 2008 EIR because of a new significant effect or an increase in the severity of a previously identified significant effect. Under CEQA section 21166 and CEQA Guidelines sections 15162 and 15163, no further environmental review is required.

A summary of the relationship of these approvals relative to Parcel A and Parcel C-1 FDP to prior MS Project approvals and the certified 2008 EIR is provided below.

ATTACHMENT H

B. RELATIONSHIP OF PROPOSED FDP TO PUD/PDP AND 2008 EIR (PROJECT CHANGES)

1. Relationship to Modified PUD/PDP

Urban Planning Partners and City staff evaluated the proposed FDP for Parcel A and Parcel C-1 and found that in all fundamental respects the FDP is in substantial compliance with the modified PUD/PDP and is consistent with the terms of the Development Agreement (see memo PUD/PDP Conformance Memo, dated March 25, 2015). The Memorandum and the April 15, 2015 Planning Commission Staff Report find that the MacArthur BART Transit Village Development Agreement, the modified PUD/PDP, and the COAs and associated exhibits do not preclude any of the refinements proposed as part of the Parcel A/Stage 3 and Parcel C-1/Stage 4 FDP. Based on the analysis included in the Memorandum and Staff Report, the Parcel A/Stage 3 and Parcel C-1/Stage 4 FDP is in substantial conformance with the approved PUD/PDP. Additionally, the FDP complies with the COAs and is consistent with the terms of the Development Agreement.

2. Relationship to 2008 EIR

The Parcel A and Parcel C-1 FDP is within the scope of the MS Project evaluated in the 2008 EIR and would not trigger any new significant impacts or a substantial increase or severity of a previously identified significant impact from those identified in the 2008 EIR. The MS Project analyzed in the certified 2008 EIR consisted of a new BART parking garage; improvements to the BART Plaza; up to 675 residential units (both market-rate and affordable); up to 44,000 square feet of commercial space (including live/work units) (note that 49,000 square feet of commercial was approved); 5,000 square feet of community space or childcare space; approximately 1,000 structured parking spaces, including the 300 space BART parking garage (which was increased to 480 spaces pursuant to the Conditions of Approval); approximately 30-45 on-street parking spaces, pedestrian and bicycle friendly internal streets and walkways; improvements to the Frontage Road; a new internal street, Village Drive (now called 39th Street), located between Frontage Road and Telegraph Avenue; two new traffic signals at the intersections of 39th Street/Telegraph Avenue and West MacArthur Boulevard/Frontage Road; a rezoning of the MS Project site to S-15, and a text amendment to the S-15 zone. Multiple FDPs were contemplated in the 2008 EIR (See Draft EIR, pages 72-74) to implement the Preliminary PUD/PDP.

a) Parcel A/Stage 3

The Parcel A/Stage 3 portion of the FDP proposes 287 apartment residential units and 22,287 square feet of commercial ground-floor retail. An alternate development program for Parcel A, which would accommodate a grocery store is also proposed. The alternate plan includes 292 residential units, 33,983 square feet of ground-floor commercial space including approximately 22,287 square feet for a grocery store. The PUD/PDP allows and the EIR evaluated up to 240 residential units and 26,000 square feet of commercial space on Parcel A. The EIR did not specify to whether the units would be for sale or rental units and such a distinction would not affect the EIR findings. Additionally, the refinement of the development buildout approved as part of the modified PUD/PDP and the Stage1 and 2 FDPs and the further refinement that is proposed as part of the FDP for Parcel, A and C-1,

would not result in a net increase in the overall development approved (675 units and 49,000 square feet of commercial) in the 2008 EIR.

The two key project revisions that are considered in this analysis are whether (1) the increase in residential units from 240 to 287 or 292—a net increase of 47 or 52 units for Parcel A; and (2) the potential increase in commercial space on Parcel A by up to 7,983 square feet if the alternate plan with the grocery store is developed would result in any new or substantially greater impacts. The analysis considers that the proposed refinements to Parcel A would not result in any net changes to the approved buildout for the modified PUD/PDP of up to 675 units and 49,000 square feet of commercial.

b) Parcel C-1/Stage 4

The Parcel C-1 portion of the FDP proposes 96 apartment residential units and 1,202 square feet of ground floor retail. A total of 51 or 46 units and 17,311 or 5,615 square feet of commercial would remain for Parcel C-2 which if developed would result in a total on Parcel C of up to 148 or 142 (with Stage 3 Alternate Plan) residential units and 18,513 or 6,817 (with Stage 3 Alternate Plan) square feet of commercial. The proposed FDP is limited to C-1 and does not include C-2. The 2008 PUD/PDP allows, and the EIR evaluated up to 195 (47 or 53 units more than proposed) for-sale residential units and 12,500 (6,013 square feet more or 5,683 square feet less than proposed) square feet of commercial space on the entirety of Parcel C. The EIR did not specify to whether the units would be for sale or rental units and such a distinction would not substantially affect the EIR findings.

The refinements in the approved FDP for the Parking Structure/Stage 1 and the proposed refinements for Parcels A and C-1 being considered as part of the current FDP application, would not result in net changes of commercial or residential units for the entire MS Project over what was analyzed in the EIR. The COAs and the EIR support development of up to 675 units and 49,000 square feet of commercial. **The modified distribution of these uses between blocks do not constitute a substantial changes to the project evaluated in the EIR that would require major revisions of the certified 2008 EIR, because of a new significant effect or a substantial increase in the severity of a previously identified significant effect.**

C. CHANGED CIRCUMSTANCES AND NEW INFORMATION

In the six years since certification of the EIR, there have been some intervening events with the potential to affect the 2008 EIR findings. The most notable event being that mid-2014 the City Council approved the Broadway Valdez District Specific Plan (BVDSP), which is approximately one mile from the MS Project site, and certified the associated EIR. Additionally a few new small infill sites in the MS Project vicinity have been developed with projects that were already entitled in 2008 and there have been some minor right of way and bike lane improvements.

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Finally, since the 2008 EIR was certified, there have been updates to local, regional and State policies that may be applicable to the current FDP proposal.

The authors of this memorandum utilized the findings and analysis in the BVDSP EIR, which considers current conditions in the MS Project area and surrounding areas to assist in determining whether the changes referenced above or other new information, including changes to City, State, and regional policies and regulations, would constitute (1) a change in circumstances under which the MS Project would be taken or (2) new information of substantial importance that would require major revisions of the certified 2008 EIR, because of a new significant impact or a substantial increase in the severity of a previously identified significant impact under CEQA section 21166 and CEQA Guidelines sections 15162 and 15163.

Each environmental topic assessed under CEQA and in the 2008 EIR was considered, including Land Use and Planning Policy; Transportation and Circulation; Air Quality and Greenhouse Gases; Noise and Vibration; Hydrology and Water Quality; Public Services and Utilities; Cultural and Paleontological Resources; and Aesthetic Resources. There is no new information or changes in circumstances that would result in new significant impacts or a substantial increase or severity of a previously identified significant impact from those identified in the 2008 EIR.

The impacts associated with the Stage 2 and Stage 4 FDP are consistent with the findings of the 2008 EIR for the MS Project and no new impacts or more severe impacts would result due to new information or changed circumstances. No new mitigation measures would be required.

Each impact identified in the 2008 EIR, except two cumulative impacts, would be mitigated to a less-than-significant level with implementation of the 2008 EIR's Mitigation Measures and the City's Standard Conditions of Approval, which are both included in the MTV Mitigation Monitoring Program. The Stage 2 and Stage 4 FDP will be required to comply with the Mitigation and Monitoring Program as a Condition of Approval. The two significant and unavoidable impacts from the 2008 EIR are associated with the MS Project's contribution to cumulative impacts at two intersections (Telegraph Avenue/51st Street intersection and Broadway/MacArthur Boulevard intersection). The MS Project (including the Stage 3 and 4 FDP) would continue to contribute to these two cumulative significant and unavoidable impacts consistent with the findings of the 2008 EIR.

A summary of the assessment prepared for Transportation and Circulation and the Air Quality and Greenhouse Gas findings is provided below as these are the two topics most likely affected by changed circumstances and/or new information.

1. Transportation, Circulation, and Parking

A supplemental traffic analysis was prepared by Fehr & Peers that considered changes in background conditions that have occurred since the 2008 EIR was prepared. New information

was also considered including the City's current Traffic Impact Analysis Guidelines that include updated methods for trip generation and thresholds of significance. The analysis also looked at a variation in the type of commercial uses, including a grocery store. The updated analysis is provided as Attachment A.

The analysis utilizes the traffic analysis from the BVDSP EIR and concluded that the MS project as refined by the Parcel A and Parcel C-1 FDP would not result in any new significant transportation impacts or a substantial increase or severity of a previously identified significant transportation impact from those identified in the 2008 EIR, nor are new mitigation measures or alternatives warranted to address potential transportation impacts.

2. Air Quality and Greenhouse Gas Emissions

As described in the 2008 EIR, no significant construction-related air quality impacts would occur with implementation of the City Standard Conditions of Approval. Additionally no significant operation-period air quality impacts were identified in the 2008 EIR. No changes in the MS Project or the Parcel A or C-1 FDP or existing conditions warrant any new analysis.

Since 2008, the BAAQMD has revised its CEQA thresholds with respect to air quality and global climate change. The new thresholds, and the information used to help develop these thresholds, however, do not represent "new information" as specifically defined under CEQA. As a result, an analysis of the MS project according to the recommended May 2011 Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines and Thresholds is not required.

D. CONCLUSION

As discussed above, the development associated with the Parcel A and Parcel C-1 FDPs was adequately considered in the 2008 EIR. The refinements incorporated into the FDP applications do not represent changes that would result in new or more severe impacts (or require new or significantly altered mitigation measures) beyond those already identified in the 2008 EIR. The 2008 EIR is adequate for the Parcel A and Parcel C-1 FDP and no subsequent or supplemental environmental review is warranted.

The following discussion summarizes the reasons why no supplemental or subsequent CEQA review is necessary pursuant to *CEQA Guidelines* Section 15162 and the City can rely on the previously certified EIR.

Substantial Changes to the Project. The refinements incorporated into the Parcel A and Parcel C-1 FDP, including an increase in the amount of commercial retail and office space would **not** result in new significant impacts or a substantial increase or severity of a previously identified significant impact from those identified in the 2008 EIR. Therefore, the proposed changes

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included in the Parcel A and Parcel C-1 FDP are considered *minor* refinements, not *substantial* changes.

Project Circumstances. Since certification of the 2008 EIR, conditions in and around the MS Project area have not substantially changed and thus implementation of the Parcel A and Parcel C-1 FDP would **not** result in new significant environmental effects or a substantial increase in the severity of environmental effects already identified in the 2008 EIR. No substantial changes in noise levels, air quality, traffic, or other conditions have occurred within and around the MS Project site since certification of the EIR.

New Information. No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the 2008 EIR was certified, has been identified which is expected to result in: 1) new significant environmental effects or a substantial increase in the severity of environmental effects already identified in the EIR; or 2) mitigation measures or alternatives which were previously determined to be infeasible would in fact be feasible, or which are considerably different from those recommended in the 2008 EIR, and which would substantially reduce significant effects of the project, but the project applicant declines to adopt them.

As described previously, changes to the Parcel A and Parcel C-1 FDP would not result in significant environmental effects (including effects that would be substantially more severe than impacts identified in the 2008 EIR). Existing regulations (including City General Plan policies and ordinances in the Municipal Code) and mitigation measures included in the 2008 EIR would be adequate to reduce the impacts resulting from the Parcel A and Parcel C-1 FDP to less-than-significant levels.

Consequently, there are no substantial project changes, no substantial changes in the project circumstances, and no new information of substantial importance that would require major revisions of the certified 2008 EIR, because of a new significant effect or an increase in the severity of a previously identified significant effect. Under CEQA section 21166 and CEQA Guidelines sections 15162 and 15163, no further environmental review is required. Thus, in considering approval of the Parcel A and Parcel C-1 FDP, the City should rely on the previously certified 2008 EIR.

Attachment
Transportation Memorandum

FEHR PEERS

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MEMORANDUM

Date: April 9, 2015

To: Lynette Dias, Urban Planning Partners

From: Sam Tabibnia

Subject: MacArthur Transit Village, 2014 Modified Project – Transportation Impact Analysis

OK14-0015

This memorandum summarizes the results of the transportation impact analysis that Fehr & Peers completed for the MacArthur Transit Village Project as modified in 2014. The impacts of the project were originally analyzed in an Environmental Impact Report (EIR) certified in 2008. The analysis in this memorandum accounts for changes in the project, in background conditions, and in the thresholds of significance since the certification of the EIR.

The MacArthur Transit Village Project as modified as a result of the Final Development Plans (FDPs) for Parcel A and Parcel C-1 would not result in any additional significant or more severe impacts than those identified in the 2008 EIR.

Our analysis assumptions and summary are detailed below.

INTRODUCTION

Figure 1 shows the location of the Project within the local and regional street system. This analysis evaluates the impacts of the project on intersection operations during the weekday morning and evening peak hours.

- ***Existing*** – Represents existing conditions
- ***Existing Plus Project*** – Existing conditions plus traffic generated by the proposed project
- ***2035 No Project*** – 2035 conditions as estimated by the *Broadway Valdez District Specific Plan (BVDSP) Draft EIR* (September 2013), without the traffic generated by the proposed project.

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- ***2035 Plus Project*** – 2035 conditions as estimated by the *BVDSP Draft EIR* plus the traffic generated by the proposed project.

Fehr & Peers assessed intersection operations using Level of Service (LOS)[1] at the study intersections using the 2000 *Highway Capacity Manual* (HCM) methodologies.

PROJECT TRANSPORTATION CHARACTERISTICS

The project, as proposed in 2014, would consist of up to 675 multi-family dwelling units, 23,500 square feet of retail, 5,000 square feet of community space, and 25,500 square feet of supermarket.[2] The project also includes a 450 space garage that replaced the 618-space surface parking lot that served the BART Station.

Vehicular access to and from the project would be same as the previously analyzed project. Access to and from the MacArthur Transit Village would be through signalized intersections on 40th Street at Frontage Road adjacent to the BART Station, and on Telegraph Avenue at Village Drive south of 40th Street. Access to BART parking would be through a signalized intersection on MacArthur Boulevard.

Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the local roadway network. **Table 1** summarizes the trip generation for the proposed Project. The estimates are based on rates and equations published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual* (9th Edition) with the following adjustments:

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1 The operations of roadway facilities are described with the term "level of service" (LOS). LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (i.e., best operating conditions) to LOS F (worst operating conditions). LOS E typically corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F.

2 The current project represents less development than this, but the 675 units represent the worst-case scenario for the number of residential units allowed by the PDP Conditions of Approval and covered in the EIR.

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TABLE 1
MACARTHUR TRANSIT VILLAGE
TRIP GENERATION SUMMARY

Land Use	Units[1]	ITE Code	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
				In	Out	Total	In	Out	Total
Residential	675 DU	230 [2]	3,387	40	198	238	193	95	288
Retail	23.5 KSF	820 [3]	1,003	14	9	23	42	45	87
Supermarket	25.5 KSF	850[4]	3,096	54	33	87	123	119	242
Community Center	5.0 KSF	565 [5]	370	32	29	61	29	33	62
Subtotal			7,856	140	269	409	387	292	679
Non-Auto Reduction (-43%)[6]			-3,378	-60	-116	-176	-166	-126	-292
Pass-by Reduction (-34%) [7]			-397	0	0	0	-32	-32	-64
Net New Project Trips			**4,478**	**80**	**153**	**233**	**189**	**134**	**323**
Approved Project[8]			4,886	123	201	324	200	158	358
Net Difference			-408	-43	-48	-91	-11	-24	-35

1. DU = Dwelling Units, KSF = 1,000 square feet.
2. ITE Trip Generation (9th Edition) land use category 230 (Residential Condominium/Townhouse):
   Daily: Ln(T) = 0.87*Ln(X) + 2.46
   AM Peak Hour: Ln(T) = 0.80*Ln(X) + 0.26 (17% in, 83% out)
   PM Peak Hour: Ln(T) = 0.82*Ln(X) + 0.32 (67% in, 33% out)
3. ITE Trip Generation (9th Edition) land use category 820 (Shopping Center):
   Daily: (T) = 42.70*(X)
   AM Peak Hour: (T) = 0.96*(X) (42% in, 58% out)
   PM Peak Hour: (T) = 3.71*(X) (36% in, 64% out)
4. ITE Trip Generation (9th Edition) land use category 850 (Supermarket):
   Daily: T = 66.85*(X) + 1391.56
   AM Peak Hour: T = 3.40*(X) (62% in, 38% out)
   PM Peak Hour: T = 9.48*(X) (51% in, 49% out)
5. ITE Trip Generation (9th Edition) land use category 565 (Day Care Center):
   Daily: (T) = 74.06*(X)
   AM Peak Hour: (T) = 12.18*(X) (53% in, 47% out)
   PM Peak Hour: (T) = 12.34*(X) (47% in, 53% out)
6. City of Oakland Transportation Impact Study Guidelines based on BATS 2000 data for developments in an urban environment within 0.5 miles of a BART station.
7. Based on ITE *Trip Generation Handbook (3rd Edition*), the weekday PM peak hour average pass-by rates for land use categories 820 and 850, are 34% and 36%, respectively. A 34% pass-by rate is applied to the retail and supermarket uses to present a more conservative analysis. Pass by rates are not applied to the AM peak hour. Daily pass-by is estimated to be half of the PM peak hour. This reduction was applied to trips after the non-automobile reduction.
8. *MacArthur Transit Village Project Draft EIR, January 2008*.

Source: Fehr & Peers, 2015.

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- ***Non-Automobile Travel Modes*** - The ITE data is based on data collected at mostly single-use suburban sites where the automobile is often the only travel mode. However, the Project site is in a mixed-use urban environment with robust transit available and where many trips are walk, bike, or transit trips. Since the proposed Project is adjacent to the MacArthur BART Station, this analysis reduces the ITE based trip generation by 43 percent to account for the non-automobile trips. This reduction is consistent with City of Oakland *Transportation Impact Study Guidelines* and is based on the Bay Area Travel Survey (BATS) 2000 which shows that the non-automobile mode share within one-half mile of a BART Station in Alameda County is about 43 percent. A 2011 research study shows reducing ITE based trip generation using BATS data results in a more accurate estimation of trip generation for mixed use developments than just using ITE based trip generation.[3]

  Pass-by Trips - Pass-by trips are defined as trips attracted to a site from adjacent roadways as an intermediate stop on the way to a final destination. Pass-by trips alter travel patterns in the immediate study area but do not add new vehicle trips to the roadway network, and should therefore be excluded from trip generation estimates. According to ITE's *Trip Generation Handbook* (3rd Edition), the average weekday PM peak hour pass-by reduction is 34 percent for retail and 36 percent for supermarket uses. To be conservative, this analysis reduces the retail and supermarket trips by 34 percent for the PM.[4] This corresponds to about 64 trips, which is reasonable considering that it corresponds to about two percent of the current PM peak hour traffic volumes on Telegraph Avenue and 40th Street combined.

In addition, the project trip generation presented in Table 1 does not account for the following in order to present a "worst case" analysis:

- ***Existing Parking Lot Trips*** - The project would reduce the parking supply available to BART riders by about 168 spaces. This analysis conservatively assumes that the 450-space BART parking garage would continue to generate the same amount of peak hour traffic as the 618-space parking lot that occupied the site prior to start of construction.

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[3] *Evaluation of the Operation and Accuracy of Five Available Smart Growth Trip Generation Methodologies.* Institute of Transportation Studies, UC Davis, 2011.

[4] Since ITE does not provide pass-by reductions for AM peak hour, this analysis conservatively assumes no pass-by reductions for AM peak hour.

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As summarized in Table 1, the project would generate approximately 4,480 daily, 233 AM peak hour, and 323 PM peak hour trips. Table 1 also compares the project trip generation estimate with the project trip generation estimate in the 2008 certified EIR. The 2014 project would generate about 400 fewer daily trips, 91 fewer AM peak hour trips, and 35 fewer PM peak hour trips than estimated in the 2008 EIR. Note that the traffic impact analysis presented in the subsequent sections is conservative because it is based on a previous project description that generated more traffic than presented in Table 1.[5]

Trip Distribution, Trip Assignment

The trip distribution and assignment process estimates how the vehicle trips generated by a project site would distribute across the roadway network. **Figures 2 and 3** show the trip distribution for the residential and non-residential components of the project, respectively. The trip distribution was developed for the 2008 EIR based on existing travel patterns, locations of complementary land uses and results of the Alameda County Transportation Commission's (ACTC) Travel Demand Model.

Trips generated by the proposed project, as shown in Table 1, were assigned to the roadway network according to the trip distribution shown on Figures 2 and 3. **Figure 4** shows the resulting trip assignment by roadway segment for the weekday PM peak hour because the weekday peak hour has the highest project trip generation. Figure 4 also shows the study intersections analyzed in the 2008 EIR.

Study Intersections

The 2008 EIR analyzed the impacts of the proposed project at 25 study intersections in the vicinity of the project. The 2008 EIR identified significant impacts and improvements to mitigate those impacts to less-than-significant where feasible under cumulative conditions at the following locations:

- Under the Cumulative Year 2015 Baseline Plus Project conditions:

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[5] The traffic impact analysis is based on an earlier iteration of FDP project that included 24,500 square feet of office, 26,900 square feet of retail, and 11,200 square feet of supermarket. In comparison, the project evaluated in the traffic impact analysis included in the memo generated nine additional AM peak hour and 54 additional PM peak hour trips. As a result this analysis represents a worst-case analysis given it would generate more trips than the current FDP proposal.

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1. Telegraph Avenue/51st Street (intersection #3) – Mitigation consisting of optimizing signal timings would mitigate the impact to less-than-significant.
2. Market Street/MacArthur Boulevard (#16) – Mitigation consisting of changing the cycle length and optimizing signal timings would mitigate the impact to less-than-significant.

- Under Cumulative 2030 Baseline Plus Project conditions:

3. Telegraph Avenue/52nd Street/Claremont Avenue (#2) – Mitigation consisting of prohibiting northbound left-turns during peak commute times, changing the cycle length and optimizing signal timings, would mitigate the impact to less-than-significant.
4. Telegraph Avenue/51st Street (#3) – Mitigation consisting of changing the cycle length and optimizing signal timings, would not mitigate the impact. The impact is significant and unavoidable.
5. West Street/40th Street (#8) – Mitigation consisting of optimizing signal timings would mitigate the impact to less-than-significant.
6. Telegraph Avenue/40th Street (#13) – Mitigation consisting of providing protected/ permitted left-turn phasing on eastbound and westbound approaches, changing the cycle length, and optimizing signal timings, would mitigate the impact to less-than-significant.
7. Market Street/MacArthur Boulevard (#16) – Mitigation consisting of striping a left-turn lane on the northbound approach, changing the cycle length, and optimizing signal timings, would mitigate the impact to less-than-significant.
8. Telegraph Avenue/MacArthur Boulevard (#20) – Mitigation consisting of providing protected/permitted left-turn phasing on northbound and southbound approaches, changing the cycle length, and optimizing signal timings, would mitigate the impact to less-than-significant.
9. Broadway/MacArthur Boulevard (#22) – No improvements identified at this intersection. Impact is significant and unavoidable.

The *Broadway Valdez District Specific Plan (BVDSP) Draft EIR* (September 2013) provides the latest published traffic operations analysis at intersections in the vicinity of the MacArthur Transit Village. The BVDSP Draft EIR accounts for the approved MacArthur Transit Village project in the future forecasts. **Table 2** compares total intersection volumes under Existing and Cumulative Plus Project conditions at intersections that were analyzed in both the 2008 Project EIR and BVDSP EIR. In general, a 10 percent fluctuation in traffic volumes is within the typical fluctuation expected in day-to-day traffic volumes. Considering that the more recent traffic volume data shows a decrease or a less than 10 percent increase in volumes at all but one of the intersections listed in Table 2, it is estimated that traffic volumes in the project vicinity have decreased or stayed the same since the completed on the 2008 EIR.

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TABLE 2
INTERSECTION VOLUME COMPARISON

Intersection	Peak Hour	Existing Conditions			Cumulative Plus Project		
		MTV [1]	BVSP [2]	Percent Difference	MTV [3]	BVSP [4]	Percent Difference
Telegraph Avenue/ 52nd Street/Claremont Avenue	AM	2,622	N/A	N/A	4,507	N/A	N/A
	PM	2,907	N/A	N/A	3,662	N/A	N/A
Telegraph Avenue/ 51st Street	AM	3,607	2,817	-22%	5,138	3,896	-24%
	PM	3,856	3,085	-20%	5,064	4,440	-12%
Telegraph Avenue/ 40th Street	AM	2,198	1,766	-20%	4,201	3,540	-16%
	PM	3,360	3,549	6%	5,130	5,880	15%
Market Street/ MacArthur Boulevard	AM	1,239	1,326	7%	3,591	2,650	-26%
	PM	2,165	1,684	-22%	4,100	3,470	-15%
Telegraph Avenue/ MacArthur Boulevard	AM	2,087	1,751	-16%	5,185	3,960	-24%
	PM	3,021	2,613	-14%	5,434	5,550	2%
Broadway/ MacArthur Boulevard	AM	2,525	N/A	N/A	6,054	N/A	N/A
	PM	3,285	3,082	-6%	5,845	5,680	-3%
Telegraph Avenue/ 27th Street	AM	2,011	1,930	-4%	3,822	3,370	-12%
	PM	2,561	2,872	12%	3,958	5,080	28%

[1] Based on existing intersection volumes published in *MacArthur Transit Village Project Draft EIR (January 2008)*.
[2] Based on existing intersection volumes published in *Broadway Valdez District Specific Plan Draft EIR* (September 2013).
[3] Based on Cumulative Plus Project (2030) intersection volumes published in *MacArthur Transit Village Project Draft EIR (January 2008)*.
[4] Based on Cumulative Plus Project (2035) intersection volumes published in *Broadway Valdez District Specific Plan Draft EIR* (September 2013).

Source: Fehr & Peers, 2014.

Table 3 shows intersection operations at major intersections in the vicinity of the MacArthur Transit Village project under Existing and 2035 Plus Project conditions as documented in the BVDSP Draft EIR. BVDSP Draft EIR does not identify any intersections in the vicinity of the MacArthur Transit Village project as operating at a deficient level under Existing conditions and identifies the following intersections as operating at a deficient level in 2035:

1. Telegraph Avenue/40th Street
2. Telegraph Avenue/MacArthur Boulevard
3. Telegraph Avenue/27th Street

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TABLE 3
INTERSECTION LOS SUMMARY
BASED ON RECENT PUBLISHED DOCUMENTS

Intersection	Traffic Control[1]	Peak Hour	Existing Conditions		2035 Plus Project[3]	
			Delay [2] (seconds)	LOS	Delay [2] (seconds)	LOS
Telegraph Avenue/52nd Street/Claremont Avenue	Signal	AM	14.3	B	21.1	C
		PM	13.7	B	24.7	C
Telegraph Avenue/ 51st Street	Signal	AM	30.6	C	40.1	D
		PM	42.0	D	72.3	E
Telegraph Avenue/ 40th Street	Signal	AM	21.2	C	36.9	D
		PM	31.9	C	**135.0 (v/c=1.80)**	**F**
Market Street/ MacArthur Boulevard	Signal	AM	15.9	B	27.8	C
		PM	15.2	B	29.9	C
Telegraph Avenue/ MacArthur Boulevard	Signal	AM	19.5	B	36.3	D
		PM	12.5	B	**126.5 (v/c=2.23)**	**F**
Broadway/ MacArthur Boulevard	Signal	AM	30.0	C	62.6	E
		PM	38.8	D	79.1	E
Telegraph Avenue/ 27th Street	Signal	AM	22.0	C	29.3	C
		PM	22.9	C	**138.1 (v/c=1.91)**	**F**

Bold indicates intersections operating at an unacceptable level. All intersection located in Downtown or on arterials that provide direct access to Downtown where LOS E (not LOS D) is the threshold.

[1] Signal = intersection is controlled by a traffic signal

[2] For signalized intersections, average intersection delay and LOS based on the 2000 HCM method is shown. For side-street stop-controlled intersections, delays for worst movement and average intersection delay are shown: intersection average (worst movement)

[3] The 2035 Plus Project scenario includes the buildout of the MacArthur Transit Village project. Source: *Broadway Valdez District Specific Plan Draft EIR* (September 2013), Fehr & Peers, 2014.

Considering that the current project is estimated to generate fewer trips than the approved project during both AM and PM peak hours, and that recently published environmental documents show that existing and future traffic volumes in the study area have generally decreased, and that most intersections operate at same or better conditions under existing and future conditions, this analysis focuses on intersections for which recent documents (i.e., BVDSP EIR) project future operating deficiencies.

Therefore, this assessment focuses on the analysis of project impacts at these three intersections only. The proposed project is not expected to cause a significant impact at the other

intersections because the other intersections are expected to operate at LOS E[6] or better under 2035 Plus Project conditions.

SIGNIFICANCE CRITERIA

This analysis uses City of Oakland's CEQA Thresholds of Significance Guidelines (November 2013) to determine if the proposed Project would cause significant impact. The Project would have a significant impact on the environment if it were to:

Traffic Load and Capacity Thresholds

1. At a study, signalized intersection which is located **outside the Downtown**[7] **area and that does not provide direct access to Downtown**, the project would cause the motor vehicle level of service (LOS) to degrade to worse than LOS D (i.e., LOS E or LOS F) and cause the total intersection average vehicle delay to increase by four (4) or more seconds;

2. At a study, signalized intersection which is located **within the Downtown area or that provides direct access to Downtown**, the project would cause the motor vehicle LOS to degrade to worse than LOS E (i.e., LOS F) and cause the total intersection average vehicle delay to increase by four (4) or more seconds;

3. At a study, signalized intersection **outside the Downtown area and that does not provide direct access to Downtown** where the motor vehicle level of service is LOS E, the project would cause the total intersection average vehicle delay to increase by four (4) or more seconds;

4. At a study, signalized intersection **outside the Downtown area and that does not provide direct access to Downtown** where the motor vehicle level of service is LOS E, the project would cause an increase in the average delay for any of the critical movements of six (6) seconds or more;

5. At a study, signalized intersection for all areas where the motor vehicle level of service is LOS F, the project would cause (a) the overall volume-to-capacity ("V/C") ratio to increase 0.03 or more or (b) the critical movement V/C ratio to increase 0.05 or more;

---

[6] Based on City of Oakland's latest CEQA Thresholds of Significance Guidelines (November 2013), LOS E is considered the threshold on arterials that provide direct access to Downtown.

[7] The Downtown area is defined in the Land Use and Transportation Element of the General Plan (page 67) as the area generally bounded by the West Grand Avenue to the north, Lake Merritt and Channel Park to the east, the Oakland Estuary to the south, and I-980/Brush Street to the west. Intersections that provide direct access to downtown are generally defined as principal arterials within two (2) miles of Downtown and minor arterials within one (1) mile of Downtown, provided that the street connects directly to Downtown.

6. At a study, unsignalized intersection the project would add ten (10) or more vehicles to the critical movement, and after project completion, satisfy the California Manual on Uniform Traffic Control Devices (MUTCD) peak-hour volume traffic signal warrant;

Cumulative Impacts

18. A project's contribution to cumulative impacts is considered "considerable" (i.e., significant) when the project exceeds at least one of the thresholds listed above in a future year scenario.

TRAFFIC OPERATIONS ANALYSIS

This section discusses the impacts of the proposed Project on traffic operations under Existing and 2035 conditions based on the City of Oakland's Thresholds of Significance described above.

Existing Plus Project Intersection Analysis

This section presents the extent of Project impacts relative to existing conditions based on application of Significance Thresholds #1 through #6 as listed on page 7 of this memorandum. **Figure 5** shows traffic volumes under Existing and Existing Plus Project conditions. Existing traffic volumes are based on existing counts presented in the BVDSP Draft EIR and the Existing Plus Project traffic volumes consist of Existing Conditions traffic volumes plus added traffic volumes generated by the Project.

Table 4 summarizes the intersection operations results for the Existing No Project and Existing Plus Project conditions. All study intersections would continue to operate at an acceptable LOS C or better under Existing Plus Project conditions. The proposed Project would not cause a significant impact at the study intersections under Existing Plus Project conditions. Consistent with the findings of the 2008 EIR, the project would not result in any significant impacts under Existing Plus Project conditions.

ATTACHMENT H

TABLE 4
INTERSECTION LOS SUMMARY
EXISTING PLUS PROJECT CONDITIONS

Intersection	Traffic Control[1]	Peak Hour	Existing Conditions		Existing Plus Project Conditions		Significant Impact?
			Delay [2] (seconds)	LOS	Delay [2] (seconds)	LOS	
1. Telegraph Avenue/ 40th Street	Signal	AM	21.2	C	21.2	C	No
		PM	31.9	C	28.4	C	No
2. Telegraph Avenue/ MacArthur Boulevard	Signal	AM	19.5	B	19.7	B	No
		PM	12.5	B	13.9	B	No
3. Telegraph Avenue/ 27th Street	Signal	AM	22.0	C	22.0	C	No
		PM	22.9	C	23.2	C	No

Bold indicates intersections operating at an unacceptable level. All intersection located in Downtown or on arterials that provide direct access to Downtown where LOS E (not LOS D) is the threshold.

[1] Signal = intersection is controlled by a traffic signal

[2] For signalized intersections, average intersection delay and LOS based on the 2000 HCM method is shown. For side-street stop-controlled intersections, delays for worst movement and average intersection delay are shown: intersection average (worst movement)

Source: *Broadway Valdez District Specific Plan Draft EIR* (September 2013), Fehr & Peers, 2014.

2035 Intersection Analysis

Project impacts at intersections under 2035 conditions is based on direct application of Significance Threshold #18, which references Significance Thresholds #1 through #6.

Traffic Forecasts

This analysis uses the year 2035 traffic forecasts from BVDSP Draft EIR, which was based on the most recent ACTC Model (released in June 2011), which uses land use data consistent with Association of Bay Area Government (ABAG) *Projection 2009*.

The 2035 Plus Project conditions forecasts are based on the traffic forecasts published in the BVDSP Draft EIR because the land use database used to develop the BVDSP Draft EIR forecasts include the approved MacArthur Transit Village Project. The 2035 No Project conditions forecasts were estimated by subtracting the Project trips from the 2035 Plus Project conditions forecasts.

Figure 8 shows the traffic volumes for the 2035 No Project and 2035 Plus Project scenarios.

ATTACHMENT H

2035 Roadway Network

The 2035 No Project and the 2035 Plus Project conditions assume the following approved and fully funded modifications to the roadway network at the three study intersections:

- The Telegraph Avenue Complete Streets Project will provide buffered Class 2 bicycle lanes on northbound and southbound Telegraph Avenue between 20th and 41st Streets by eliminating one travel lane in each direction. The project will also provide right-turn lanes in both directions of Telegraph Avenue at most intersections.
- The MacArthur Boulevard Bikeway project will provide Class 2 bicycle lanes on MacArthur Boulevard. The project will also convert the shared left/through lane on both eastbound and westbound MacArthur Boulevard at Telegraph Avenue to exclusive left-turn lanes. The project will also upgrade the signal equipment at the Telegraph Avenue/MacArthur Boulevard intersection to provide protected east/west left-turn phasing.

2035 Intersection Operations

Table 5 summarizes intersection LOS calculations for 2035 No Project and 2035 Plus Project conditions. The three study intersections are estimated to operate at LOS F during the PM peak hour regardless of the proposed project. The project would reduce the intersection delay and/or V/C ratio at the Telegraph Avenue/40th Street intersection because it would decrease the traffic volume for some movements, such as the eastbound left-turn, due to the relocation of the BART parking access from 40th Street to MacArthur Boulevard.

The project would not cause a significant impact at the Telegraph Avenue/27th Street intersections because the project would not cause the overall volume-to-capacity (V/C) ratio to increase by 0.03 or more or the critical movement V/C ratio to increase by 0.05 or more.

Consistent with the findings of the 2008 EIR, the MTV project with the FDPs for Parcel A and C-1 would cause significant impacts at the Telegraph Avenue/40th Street and Telegraph Avenue/ MacArthur Boulevard intersections. The mitigations included in the 2008 EIR would adequately mitigate these impacts to a less-than-significant level; no new mitigation is needed. The findings are also consistent with the findings of the *Broadway Valdez District Specific Plan Draft EIR* (September 2013).

ATTACHMENT H

TABLE 5
INTERSECTION LOS SUMMARY
2035 CONDITIONS

Intersection	Traffic Control[1]	Peak Hour	2035 No Project Conditions		2035 Plus Project Conditions		Significant Impact?	2035 Plus Project Conditions (Mitigated)		Significance after Mitigation
			Delay [2] (seconds)	LOS	Delay [2] (seconds)	LOS		Delay [2] (seconds)	LOS	
1. Telegraph Avenue/ 40th Street	Signal	AM	51.9	D	55.8	E	No	60.9	E	Less than Significant
		PM	**>120 (v/c=2.58)**	**F**	**>120 (v/c=2.49)**	**F**	**Yes[3]**	**>120 (v/c=1.70)**	**F**	
2. Telegraph Avenue/ MacArthur Boulevard	Signal	AM	79.4	E	**93.4 (v/c=1.59)**	**F**	**Yes[4]**	**77.9**	E	Less than Significant
		PM	**>120 (v/c=3.22**)	**F**	**>120 (v/c=3.28)**	**F**	**Yes[5]**	**>120 (v/c=1.58)**	**F**	
3. Telegraph Avenue/ 27th Street	Signal	AM	31.9	C	32.8	C	No	32.8	C	No Impact
		PM	**>120 (v/c=2.42)**	**F**	**>120 (v/c=2.43)**	**F**	No	**>120 (v/c=2.43)**	**F**	

Bold indicates intersections operating at an unacceptable level. All intersection located in Downtown or on arterials that provide direct access to Downtown where LOS E (not LOS D) is the threshold.

[1] Signal = intersection is controlled by a traffic signal

[2] For signalized intersections, average intersection delay and LOS based on the 2000 HCM method is shown. For side-street stop-controlled intersections, delays for worst movement and average intersection delay are shown: intersection average (worst movement)

[3] The project would cause a significant impact at this intersection because the project would cause the critical movement V/C ratio to increase by 0.05 or more at an intersection operating at LOS F regardless of the project.

[4] The project would cause a significant impact at this intersection because the project would cause the intersection LOS to degrade from LOS E to LOS F.

[5] The project would cause a significant impact at this intersection because the project would cause the overall intersection V/C ratio to increase 0.03 or more and critical movement V/C ratio to increase by 0.05 or more at an intersection operating at LOS F regardless of the project.

Source: *Broadway Valdez District Specific Plan Draft EIR* (September 2013), Fehr & Peers, 2014.

ATTACHMENT H

Please contact us with questions or comments.

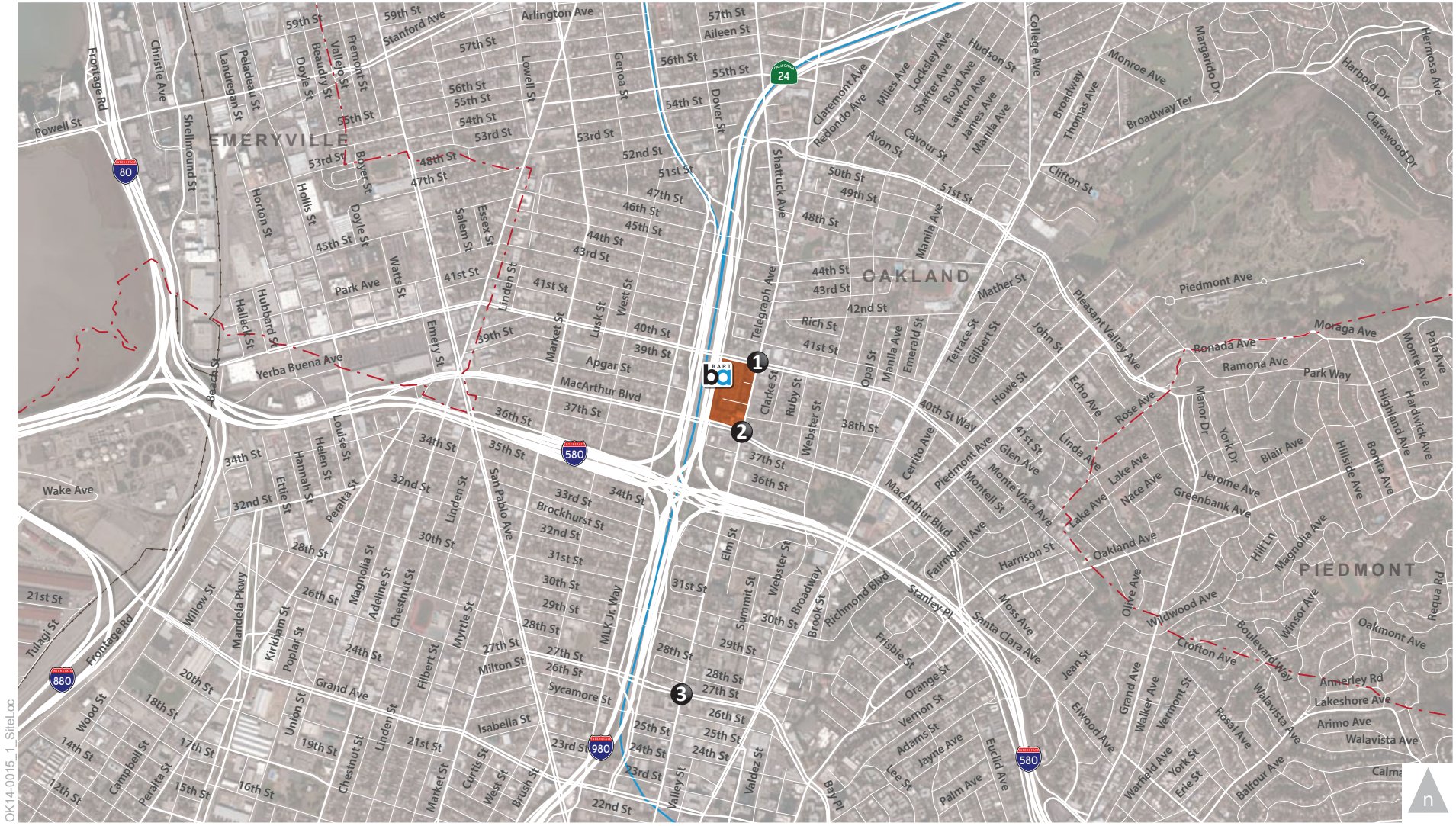
Attachments:

Figures:

Figure 1 Site Location
Figure 2 Residential Trip Distribution
Figure 3 Non-Residential Trip Distribution
Figure 4 Project Peak Hour Net Change in Traffic Volume
Figure 5 Existing Peak Hour Traffic Volumes
Figure 6 2035 Peak Hour Traffic Volumes

Appendix:

Intersection LOS Calculations



OK14-0015_1_SiteLoc

LEGEND

Study Intersection

MacArthur Transit Village

Figure 1

Site Location

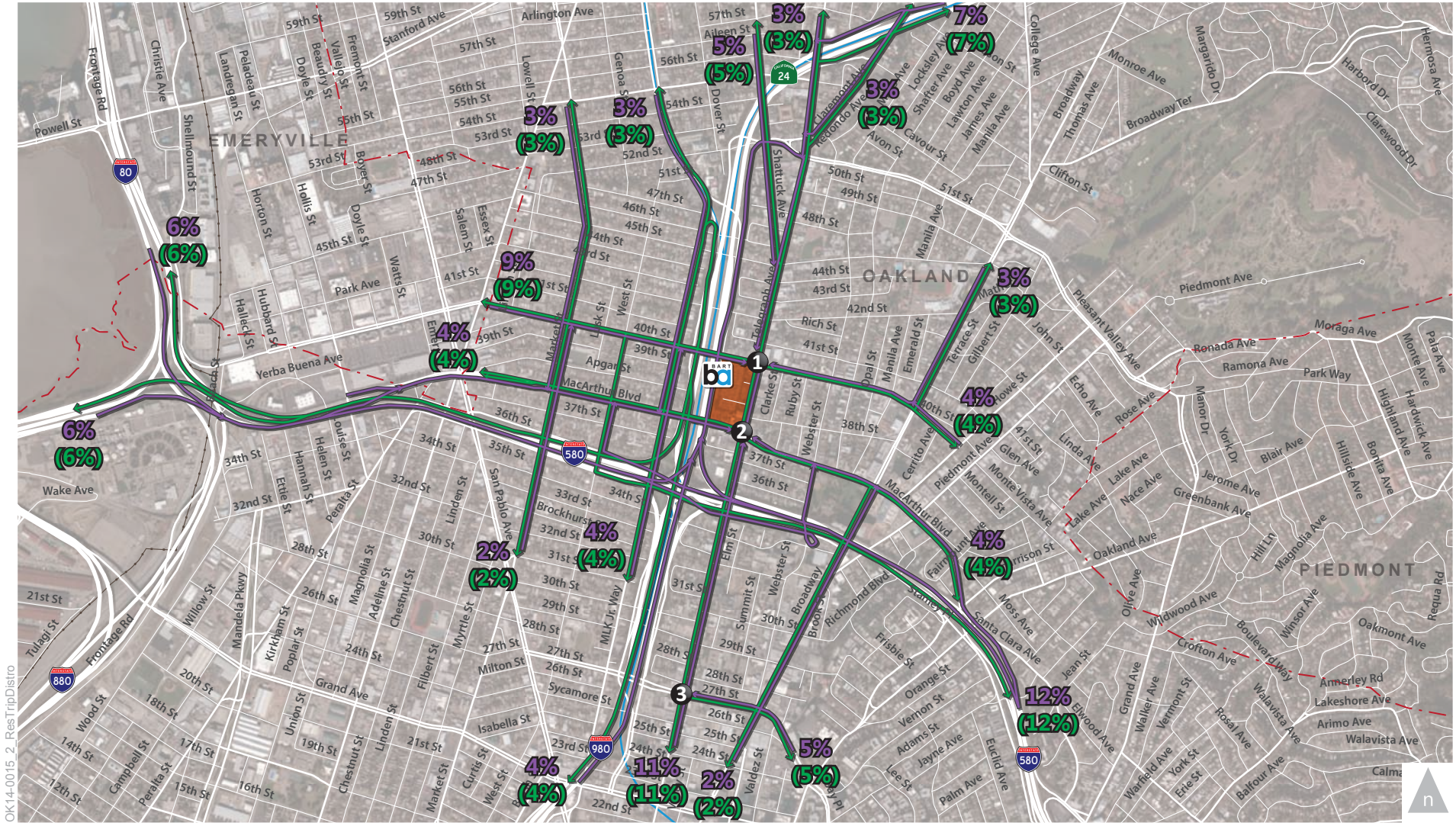
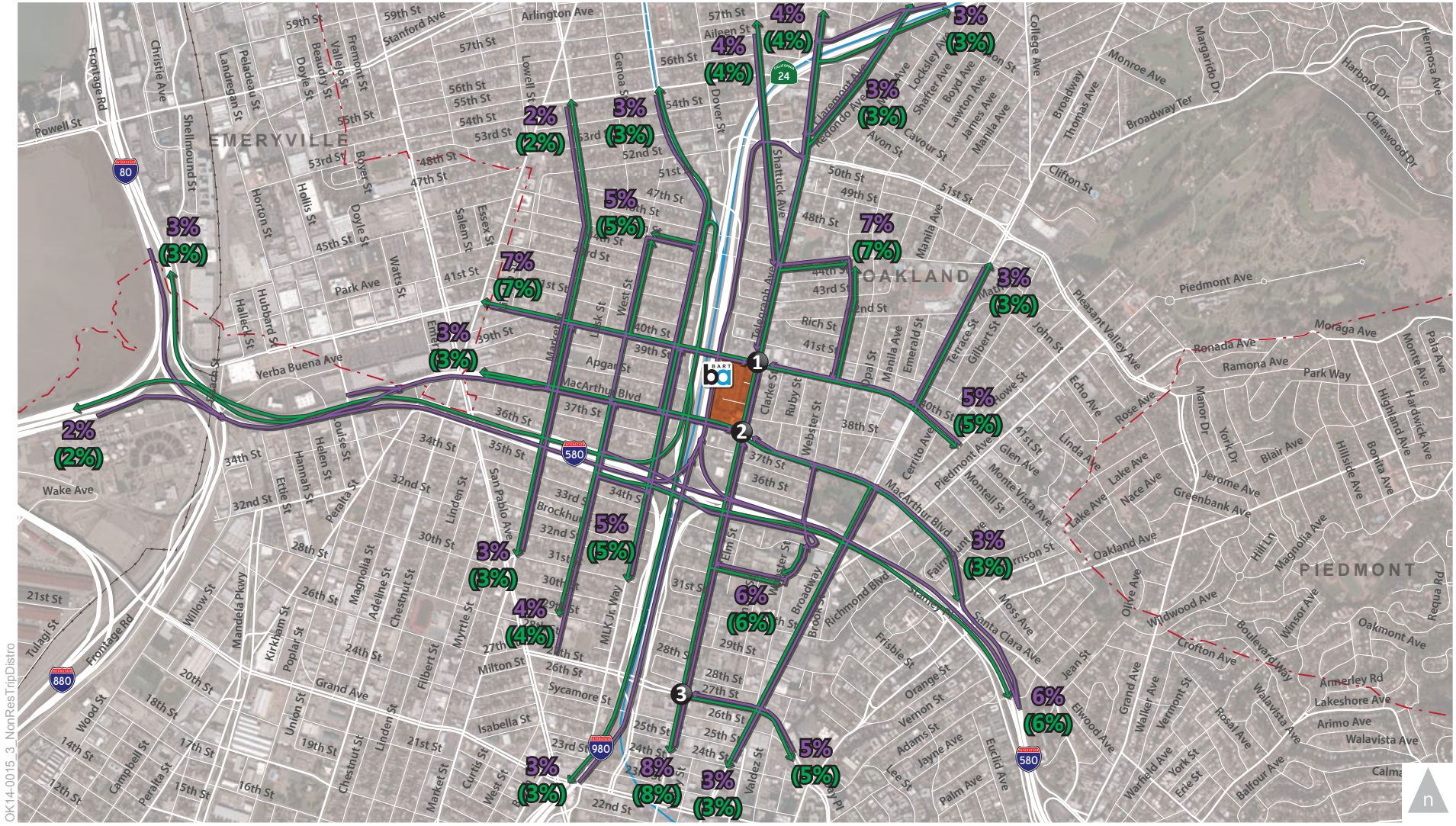


Figure 2

Residential Trip Distribution



LEGEND

X% (Y%) Inbound % (Outbound %) Project Trip Distribution

Inbound Travel Route

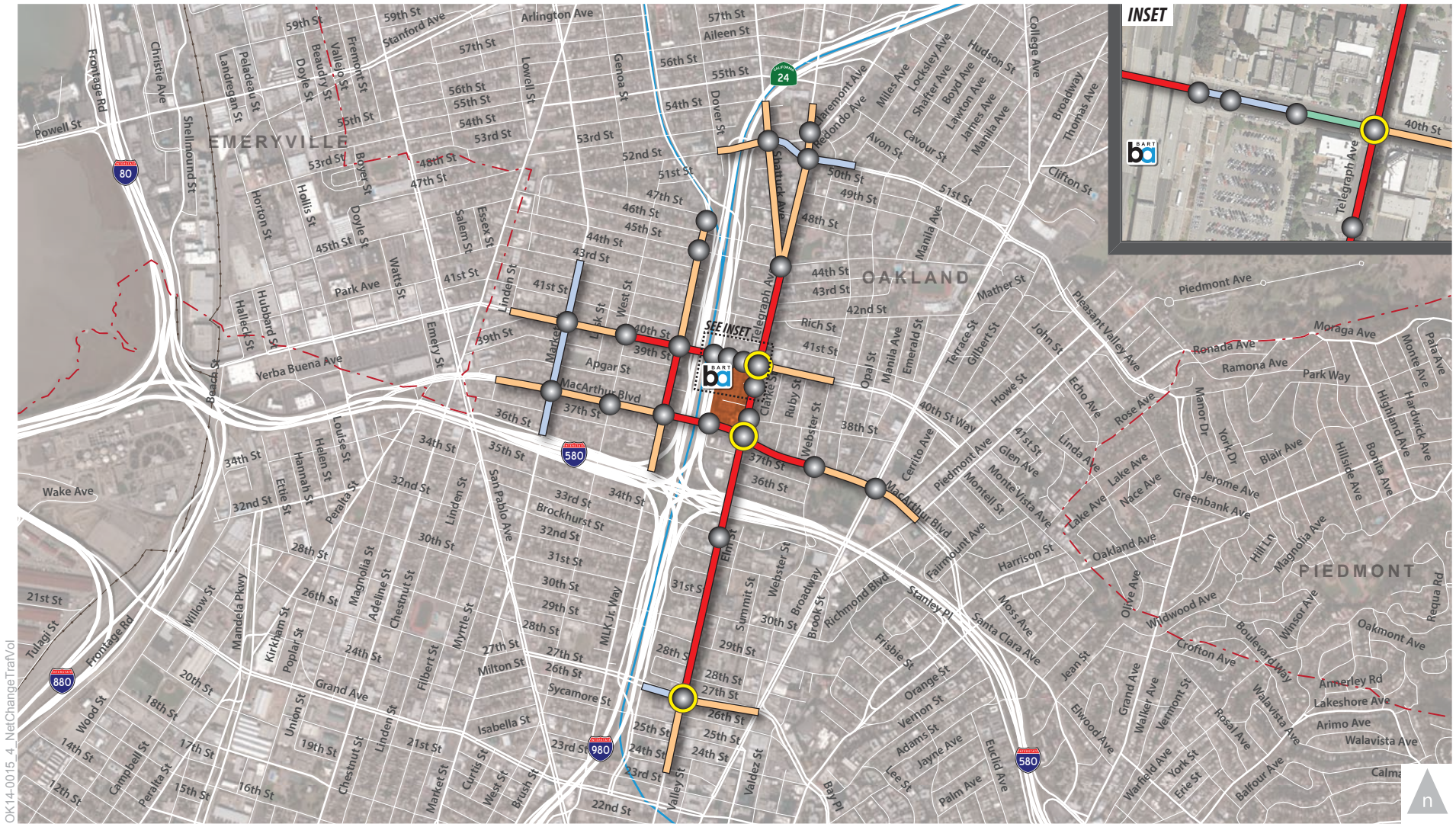
Outbound Travel Route

Study Intersection

MacArthur Transit Village

Figure 3

Non-Residential Trip Distribution



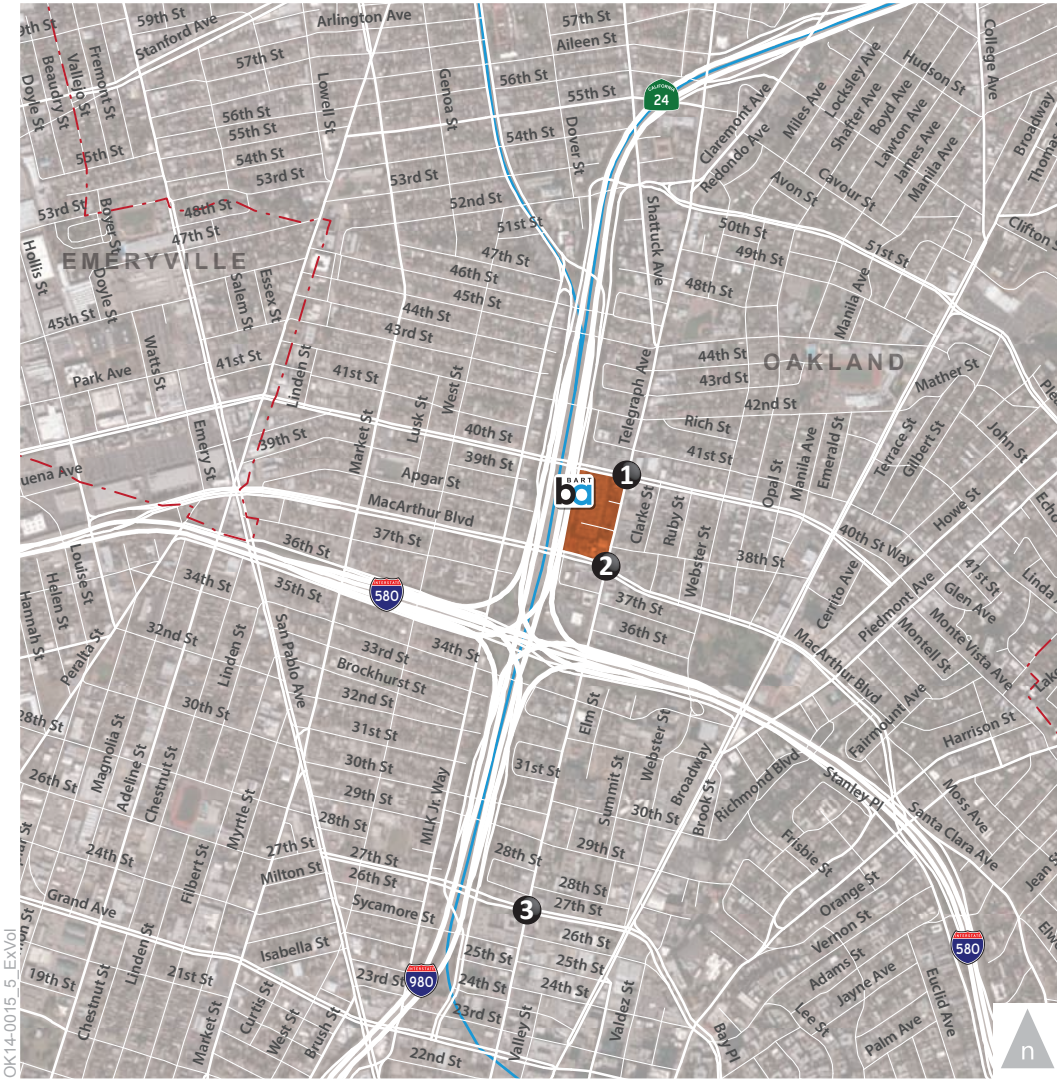
OK14-0015_4_NetChangeTrafVol

LEGEND

- Previous Study Intersection
- Recently Analyzed as Operating Deficiently
- MacArthur Transit Village
- Street Segment where Project would Increase Peak Hour Traffic by 50 or more trips
- Street Segment where Project would Increase Peak Hour Traffic by between 10 to 50 trips
- Street Segment where Project would Increase or decrease Peak Hour Traffic by 10 or fewer trips
- Street Segment where Project would Decrease Peak Hour Traffic by between 10 to 50 trips
- Street Segment where Project would Decrease Peak Hour Traffic by 50 or more trips

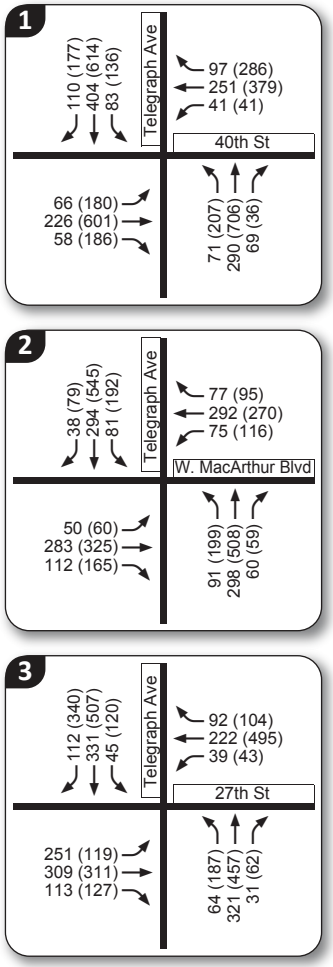
Figure 4

Project Peak Hour Net Change in Traffic Volume

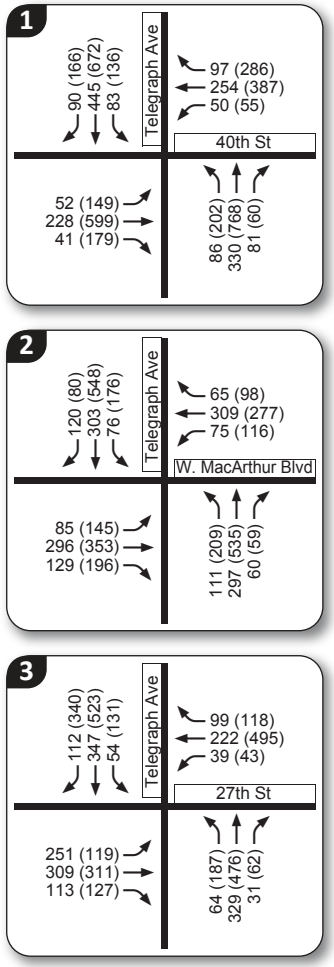


OK14-0015_5_ExVol

EXISTING



EXISTING PLUS PROJECT



LEGEND

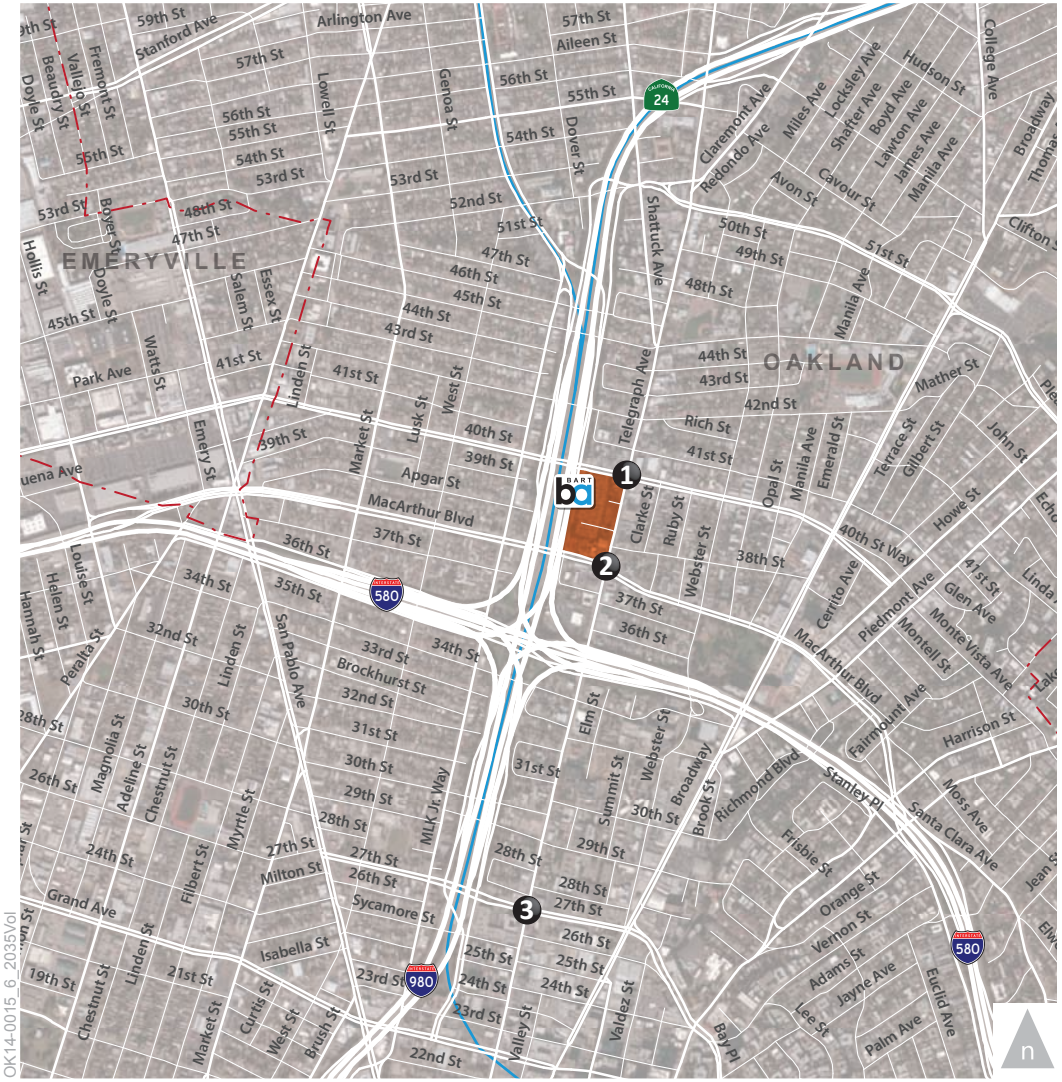
XX (YY) AM (PM) Peak Hour Trafffic Volumes

(#) Study Intersection

MacArthur Transit Village

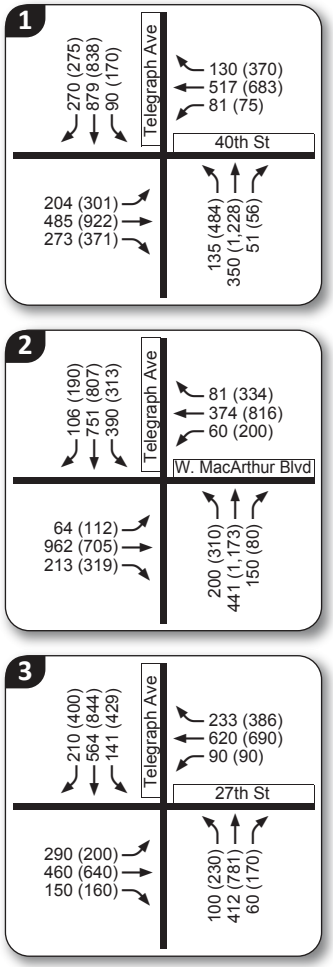
Figure 5

Existing Peak Hour Traffic Volumes

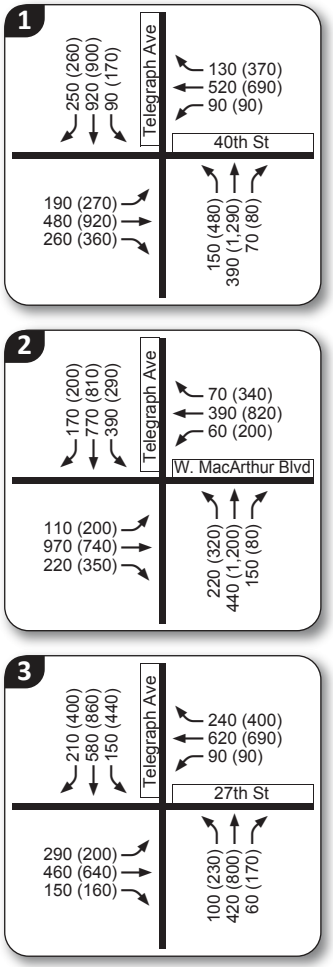


OK14-0015_6_2035Vol

2035 NO PROJECT



2035 PLUS PROJECT



LEGEND

XX (YY) AM (PM) Peak Hour Trafffic Volumes

(#) Study Intersection

MacArthur Transit Village

Figure 6

2035 Peak Hour Traffic Volumes

APPENDIX
Intersection LOS Calculations

MacArthur Transit Village

September 2014

FEHR PEERS

HCM Signalized Intersection Capacity Analysis
1: 40th St. & Telegraph Ave.

6/16/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	226	58	41	251	97	71	290	69	83	404	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.97		1.00	0.97		1.00	0.98	
Flpb, ped/bikes	0.95	1.00		0.97	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.96		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1688	3387		1710	3306		1770	3345		1770	3368	
Flt Permitted	0.46	1.00		0.54	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	820	3387		964	3306		1770	3345		1770	3368	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	66	226	58	41	251	97	71	290	69	83	404	110
RTOR Reduction (vph)	0	30	0	0	53	0	0	18	0	0	22	0
Lane Group Flow (vph)	66	254	0	41	295	0	71	341	0	83	492	0
Confl. Peds. (#/hr)	81		52	52		81			112			59
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	19.5	19.5		19.5	19.5		7.7	43.8		8.2	44.3	
Effective Green, g (s)	19.5	19.5		19.5	19.5		7.7	43.8		8.2	44.3	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.09	0.52		0.10	0.52	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	188	777		221	758		160	1724		171	1755	
v/s Ratio Prot		0.07			c0.09		0.04	0.10		c0.05	c0.15	
v/s Ratio Perm	0.08			0.04								
v/c Ratio	0.35	0.33		0.19	0.39		0.44	0.20		0.49	0.28	
Uniform Delay, d1	27.4	27.3		26.4	27.7		36.6	11.1		36.4	11.4	
Progression Factor	1.00	1.00		1.00	1.00		0.85	1.28		1.00	1.00	
Incremental Delay, d2	1.1	0.2		0.4	0.3		1.9	0.3		2.2	0.4	
Delay (s)	28.6	27.5		26.8	28.0		33.2	14.5		38.6	11.8	
Level of Service	C	C		C	C		C	B		D	B	
Approach Delay (s)		27.7			27.9			17.6			15.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: W MacArthur Blvd. & Telegraph Ave.

6/16/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	283	112	75	292	77	91	298	60	81	294	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		0.91			0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		0.98	1.00	
Frt		0.96			0.97		1.00	0.97		1.00	0.98	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4786			4870		1746	3427		1738	3465	
Flt Permitted		0.83			0.77		0.55	1.00		0.54	1.00	
Satd. Flow (perm)		3984			3792		1013	3427		984	3465	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	283	112	75	292	77	91	298	60	81	294	38
RTOR Reduction (vph)	0	89	0	0	61	0	0	9	0	0	6	0
Lane Group Flow (vph)	0	356	0	0	383	0	91	349	0	81	326	0
Confl. Peds. (#/hr)	34		41			34	21		29	29		21
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		17.7			17.7		56.8	56.8		56.8	56.8	
Effective Green, g (s)		17.7			17.7		56.8	56.8		56.8	56.8	
Actuated g/C Ratio		0.21			0.21		0.67	0.67		0.67	0.67	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		830			790		677	2290		658	2315	
v/s Ratio Prot								c0.10			0.09	
v/s Ratio Perm		0.09			c0.10		0.09			0.08		
v/c Ratio		0.43			0.48		0.13	0.15		0.12	0.14	
Uniform Delay, d1		29.3			29.6		5.1	5.2		5.1	5.2	
Progression Factor		1.20			1.00		1.00	1.00		1.26	1.28	
Incremental Delay, d2		0.1			0.2		0.4	0.1		0.4	0.1	
Delay (s)		35.2			29.8		5.6	5.3		6.8	6.7	
Level of Service		D			C		A	A		A	A	
Approach Delay (s)		35.2			29.8			5.4			6.7	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: 27th St. & Telegraph Ave.

6/16/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	251	309	113	39	222	92	64	321	31	45	331	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3381		1770	3345		1761	3487		1765	3376	
Flt Permitted	0.95	1.00		0.95	1.00		0.46	1.00		0.52	1.00	
Satd. Flow (perm)	1770	3381		1770	3345		852	3487		972	3376	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	251	309	113	39	222	92	64	321	31	45	331	112
RTOR Reduction (vph)	0	39	0	0	57	0	0	7	0	0	33	0
Lane Group Flow (vph)	251	383	0	39	257	0	64	345	0	45	410	0
Confl. Peds. (#/hr)			2			21	10		5	5		10
Confl. Bikes (#/hr)			5			3			4			27
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	15.7	29.4		4.5	18.2		37.6	37.6		37.6	37.6	
Effective Green, g (s)	16.2	28.9		5.0	17.7		39.1	39.1		39.1	39.1	
Actuated g/C Ratio	0.19	0.34		0.06	0.21		0.46	0.46		0.46	0.46	
Clearance Time (s)	4.5	3.5		4.5	3.5		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	337	1150		104	697		392	1604		447	1553	
v/s Ratio Prot	c0.14	c0.11		0.02	0.08			0.10			c0.12	
v/s Ratio Perm							0.08			0.05		
v/c Ratio	0.74	0.33		0.38	0.37		0.16	0.22		0.10	0.26	
Uniform Delay, d1	32.5	20.9		38.5	28.9		13.4	13.8		13.0	14.1	
Progression Factor	1.00	1.00		1.19	0.80		1.26	1.28		1.00	1.00	
Incremental Delay, d2	7.6	0.1		0.8	0.1		0.9	0.3		0.5	0.4	
Delay (s)	40.1	20.9		46.6	23.1		17.8	18.0		13.4	14.5	
Level of Service	D	C		D	C		B	B		B	B	
Approach Delay (s)		28.1			25.7			17.9			14.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: 40th St. & Telegraph Ave.

6/16/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	601	186	41	379	286	207	706	36	136	614	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.96		1.00	0.95		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.97	1.00		0.97	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1708	3288		1708	3138		1770	3496		1770	3379	
Flt Permitted	0.26	1.00		0.19	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	474	3288		342	3138		1770	3496		1770	3379	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	180	601	186	41	379	286	207	706	36	136	614	177
RTOR Reduction (vph)	0	37	0	0	172	0	0	4	0	0	33	0
Lane Group Flow (vph)	180	750	0	41	493	0	207	738	0	136	758	0
Confl. Peds. (#/hr)	93		122	122		93			86			39
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	25.5	25.5		25.5	25.5		12.1	30.8		10.2	28.9	
Effective Green, g (s)	25.5	25.5		25.5	25.5		12.1	30.8		10.2	28.9	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.15	0.39		0.13	0.36	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	151	1048		109	1000		268	1346		226	1221	
v/s Ratio Prot		0.23			0.16		c0.12	0.21		0.08	c0.22	
v/s Ratio Perm	c0.38			0.12								
v/c Ratio	1.19	0.72		0.38	0.49		0.77	0.55		0.60	0.62	
Uniform Delay, d1	27.2	24.1		21.1	22.0		32.6	19.2		33.0	21.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	134.1	2.0		0.8	0.1		11.8	1.6		3.1	2.4	
Delay (s)	161.4	26.0		21.9	22.2		44.5	20.8		36.1	23.4	
Level of Service	F	C		C	C		D	C		D	C	
Approach Delay (s)		51.2			22.2			26.0			25.3	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: W MacArthur Blvd. & Telegraph Ave.

6/16/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	325	165	116	270	95	199	508	59	192	545	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		0.91			0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.98			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			0.99		0.99	1.00		0.99	1.00	
Frt		0.95			0.97		1.00	0.98		1.00	0.98	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4735			4796		1748	3469		1746	3454	
Flt Permitted		0.82			0.73		0.41	1.00		0.44	1.00	
Satd. Flow (perm)		3920			3554		751	3469		805	3454	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	60	325	165	116	270	95	199	508	59	192	545	79
RTOR Reduction (vph)	0	68	0	0	65	0	0	4	0	0	6	0
Lane Group Flow (vph)	0	482	0	0	416	0	199	563	0	192	618	0
Confl. Peds. (#/hr)	55		54	54		55	37		38	38		37
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.0			15.0		39.4	39.4		39.4	39.4	
Effective Green, g (s)		15.0			15.0		39.4	39.4		39.4	39.4	
Actuated g/C Ratio		0.23			0.23		0.61	0.61		0.61	0.61	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		906			821		456	2106		489	2097	
v/s Ratio Prot								0.16			0.18	
v/s Ratio Perm		c0.12			0.12		c0.27			0.24		
v/c Ratio		0.53			0.51		0.44	0.27		0.39	0.29	
Uniform Delay, d1		21.9			21.7		6.8	6.0		6.6	6.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			0.2		0.2	0.0		0.2	0.0	
Delay (s)		22.2			21.9		7.1	6.0		6.8	6.1	
Level of Service		C			C		A	A		A	A	
Approach Delay (s)		22.2			21.9			6.3			6.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	10.5
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: 27th St. & Telegraph Ave.

6/16/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	311	127	43	495	104	187	457	62	120	507	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.97		1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3344		1770	3430		1766	3464		1765	3292	
Flt Permitted	0.95	1.00		0.95	1.00		0.27	1.00		0.43	1.00	
Satd. Flow (perm)	1770	3344		1770	3430		494	3464		795	3292	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	119	311	127	43	495	104	187	457	62	120	507	340
RTOR Reduction (vph)	0	51	0	0	22	0	0	11	0	0	121	0
Lane Group Flow (vph)	119	387	0	43	577	0	187	508	0	120	726	0
Confl. Peds. (#/hr)			20			12	9		6	6		9
Confl. Bikes (#/hr)			9			3			25			13
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	7.9	23.4		4.6	20.1		43.5	43.5		43.5	43.5	
Effective Green, g (s)	8.4	22.9		5.1	19.6		45.0	45.0		45.0	45.0	
Actuated g/C Ratio	0.10	0.27		0.06	0.23		0.53	0.53		0.53	0.53	
Clearance Time (s)	4.5	3.5		4.5	3.5		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	175	901		106	791		262	1834		421	1743	
v/s Ratio Prot	c0.07	c0.12		0.02	c0.17			0.15			0.22	
v/s Ratio Perm							c0.38			0.15		
v/c Ratio	0.68	0.43		0.41	0.73		0.71	0.28		0.29	0.42	
Uniform Delay, d1	37.0	25.7		38.5	30.3		15.1	11.0		11.1	12.1	
Progression Factor	1.00	1.00		0.93	1.36		0.95	0.84		0.89	0.86	
Incremental Delay, d2	8.3	0.1		0.9	2.8		14.9	0.4		1.7	0.7	
Delay (s)	45.3	25.8		36.5	44.0		29.4	9.6		11.6	11.1	
Level of Service	D	C		D	D		C	A		B	B	
Approach Delay (s)		30.0			43.5			14.9			11.1	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: Telegraph Ave. & 40th St.

8/26/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	228	41	50	254	97	86	330	81	83	445	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	0.97		1.00	0.99	
Flpb, ped/bikes	0.95	1.00		0.97	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1688	3426		1709	3308		1770	3340		1770	3404	
Flt Permitted	0.46	1.00		0.55	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	816	3426		996	3308		1770	3340		1770	3404	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	52	228	41	50	254	97	86	330	81	83	445	90
RTOR Reduction (vph)	0	19	0	0	52	0	0	19	0	0	15	0
Lane Group Flow (vph)	52	250	0	50	299	0	86	392	0	83	520	0
Confl. Peds. (#/hr)	81		52	52		81			112			59
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	19.6	19.6		19.6	19.6		8.3	43.7		8.2	43.6	
Effective Green, g (s)	19.6	19.6		19.6	19.6		8.3	43.7		8.2	43.6	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.10	0.51		0.10	0.51	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	188	789		229	762		172	1717		170	1746	
v/s Ratio Prot		0.07			c0.09		c0.05	0.12		0.05	c0.15	
v/s Ratio Perm	0.06			0.05								
v/c Ratio	0.28	0.32		0.22	0.39		0.50	0.23		0.49	0.30	
Uniform Delay, d1	26.9	27.1		26.5	27.7		36.4	11.4		36.4	11.9	
Progression Factor	1.00	1.00		1.00	1.00		0.87	1.32		1.00	1.00	
Incremental Delay, d2	0.8	0.2		0.5	0.3		2.3	0.3		2.2	0.4	
Delay (s)	27.7	27.4		27.0	28.0		34.1	15.3		38.6	12.3	
Level of Service	C	C		C	C		C	B		D	B	
Approach Delay (s)		27.4			27.9			18.6			15.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Telegraph Ave. & W MacArthur Blvd.

8/26/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	296	129	75	309	65	111	297	60	76	303	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		0.91			0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		0.98	1.00	
Frt		0.96			0.98		1.00	0.97		1.00	0.96	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4767			4899		1749	3426		1738	3357	
Flt Permitted		0.77			0.75		0.51	1.00		0.54	1.00	
Satd. Flow (perm)		3709			3698		930	3426		985	3357	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	85	296	129	75	309	65	111	297	60	76	303	120
RTOR Reduction (vph)	0	102	0	0	51	0	0	9	0	0	23	0
Lane Group Flow (vph)	0	408	0	0	398	0	111	348	0	76	400	0
Confl. Peds. (#/hr)	34		41			34	21		29	29		21
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		17.9			17.9		56.6	56.6		56.6	56.6	
Effective Green, g (s)		17.9			17.9		56.6	56.6		56.6	56.6	
Actuated g/C Ratio		0.21			0.21		0.67	0.67		0.67	0.67	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		781			778		619	2281		655	2235	
v/s Ratio Prot								0.10			0.12	
v/s Ratio Perm		c0.11			0.11		c0.12			0.08		
v/c Ratio		0.52			0.51		0.18	0.15		0.12	0.18	
Uniform Delay, d1		29.8			29.7		5.4	5.3		5.1	5.4	
Progression Factor		1.18			1.00		1.00	1.00		1.26	1.47	
Incremental Delay, d2		0.3			0.2		0.6	0.1		0.4	0.2	
Delay (s)		35.3			29.9		6.0	5.4		6.8	8.1	
Level of Service		D			C		A	A		A	A	
Approach Delay (s)		35.3			29.9			5.6			7.9	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: Telegraph Ave. & 27th St.

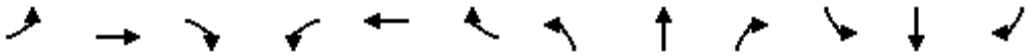
8/26/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	251	309	113	39	222	99	64	329	31	54	347	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.95		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3381		1770	3335		1761	3488		1765	3381	
Flt Permitted	0.95	1.00		0.95	1.00		0.45	1.00		0.52	1.00	
Satd. Flow (perm)	1770	3381		1770	3335		832	3488		961	3381	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	251	309	113	39	222	99	64	329	31	54	347	112
RTOR Reduction (vph)	0	39	0	0	64	0	0	7	0	0	31	0
Lane Group Flow (vph)	251	383	0	39	257	0	64	353	0	54	428	0
Confl. Peds. (#/hr)			2			21	10		5	5		10
Confl. Bikes (#/hr)			5			3			4			27
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	15.7	29.4		4.5	18.2		37.6	37.6		37.6	37.6	
Effective Green, g (s)	16.2	28.9		5.0	17.7		39.1	39.1		39.1	39.1	
Actuated g/C Ratio	0.19	0.34		0.06	0.21		0.46	0.46		0.46	0.46	
Clearance Time (s)	4.5	3.5		4.5	3.5		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	337	1149		104	694		382	1604		442	1555	
v/s Ratio Prot	c0.14	c0.11		0.02	0.08			0.10			c0.13	
v/s Ratio Perm							0.08			0.06		
v/c Ratio	0.74	0.33		0.38	0.37		0.17	0.22		0.12	0.28	
Uniform Delay, d1	32.5	20.9		38.5	28.9		13.4	13.8		13.1	14.2	
Progression Factor	1.00	1.00		1.20	0.80		1.27	1.29		1.00	1.00	
Incremental Delay, d2	7.6	0.1		0.8	0.1		0.9	0.3		0.6	0.4	
Delay (s)	40.1	20.9		47.2	23.1		18.0	18.1		13.7	14.6	
Level of Service	D	C		D	C		B	B		B	B	
Approach Delay (s)		28.1			25.7			18.1			14.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: Telegraph Ave. & 40th St.

8/26/2014



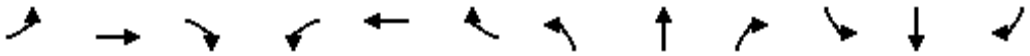
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	599	179	55	387	286	202	768	60	136	672	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.96		1.00	0.95		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.97	1.00		0.96	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.94		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1709	3295		1707	3143		1770	3474		1770	3398	
Flt Permitted	0.26	1.00		0.20	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	465	3295		351	3143		1770	3474		1770	3398	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	149	599	179	55	387	286	202	768	60	136	672	166
RTOR Reduction (vph)	0	35	0	0	167	0	0	7	0	0	26	0
Lane Group Flow (vph)	149	743	0	55	506	0	202	821	0	136	812	0
Confl. Peds. (#/hr)	93		122	122		93			86			39
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	25.5	25.5		25.5	25.5		12.1	30.8		10.2	28.9	
Effective Green, g (s)	25.5	25.5		25.5	25.5		12.1	30.8		10.2	28.9	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.15	0.39		0.13	0.36	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	148	1050		111	1001		267	1337		225	1227	
v/s Ratio Prot		0.23			0.16		c0.11	0.24		0.08	c0.24	
v/s Ratio Perm	c0.32			0.16								
v/c Ratio	1.01	0.71		0.50	0.51		0.76	0.61		0.60	0.66	
Uniform Delay, d1	27.2	24.0		22.0	22.1		32.5	19.8		33.0	21.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	75.8	1.8		1.3	0.1		10.3	2.1		3.1	2.8	
Delay (s)	103.0	25.8		23.3	22.3		42.9	21.9		36.1	24.3	
Level of Service	F	C		C	C		D	C		D	C	
Approach Delay (s)		38.2			22.4			26.0			25.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Telegraph Ave. & W MacArthur Blvd.

8/26/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	145	353	196	116	277	98	209	535	59	176	548	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		0.91			0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.98			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		0.99			1.00		0.99	1.00		0.99	1.00	
Frt		0.96			0.97		1.00	0.99		1.00	0.98	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4716			4798		1748	3472		1746	3453	
Flt Permitted		0.76			0.69		0.40	1.00		0.42	1.00	
Satd. Flow (perm)		3620			3369		735	3472		767	3453	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	145	353	196	116	277	98	209	535	59	176	548	80
RTOR Reduction (vph)	0	60	0	0	64	0	0	5	0	0	6	0
Lane Group Flow (vph)	0	634	0	0	427	0	209	589	0	176	622	0
Confl. Peds. (#/hr)	55		54	54		55	37		38	38		37
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		17.7			17.7		39.2	39.2		39.2	39.2	
Effective Green, g (s)		17.7			17.7		39.2	39.2		39.2	39.2	
Actuated g/C Ratio		0.26			0.26		0.58	0.58		0.58	0.58	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		950			884		427	2019		446	2008	
v/s Ratio Prot								0.17			0.18	
v/s Ratio Perm		c0.17			0.13		c0.28			0.23		
v/c Ratio		0.67			0.48		0.49	0.29		0.39	0.31	
Uniform Delay, d1		22.2			21.0		8.2	7.1		7.7	7.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.4			0.2		0.3	0.0		0.2	0.0	
Delay (s)		23.6			21.1		8.6	7.1		7.9	7.2	
Level of Service		C			C		A	A		A	A	
Approach Delay (s)		23.6			21.1			7.5			7.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	15.5
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: Telegraph Ave. & 27th St.

8/26/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	311	127	43	495	118	187	476	62	131	523	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.97		1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3344		1770	3418		1766	3467		1765	3296	
Flt Permitted	0.95	1.00		0.95	1.00		0.26	1.00		0.42	1.00	
Satd. Flow (perm)	1770	3344		1770	3418		481	3467		774	3296	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	119	311	127	43	495	118	187	476	62	131	523	340
RTOR Reduction (vph)	0	51	0	0	25	0	0	10	0	0	113	0
Lane Group Flow (vph)	119	387	0	43	588	0	187	528	0	131	750	0
Confl. Peds. (#/hr)			20			12	9		6	6		9
Confl. Bikes (#/hr)			9			3			25			13
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	7.9	23.5		4.6	20.2		43.4	43.4		43.4	43.4	
Effective Green, g (s)	8.4	23.0		5.1	19.7		44.9	44.9		44.9	44.9	
Actuated g/C Ratio	0.10	0.27		0.06	0.23		0.53	0.53		0.53	0.53	
Clearance Time (s)	4.5	3.5		4.5	3.5		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	174	904		106	792		254	1831		408	1741	
v/s Ratio Prot	c0.07	c0.12		0.02	c0.17			0.15			0.23	
v/s Ratio Perm							c0.39			0.17		
v/c Ratio	0.68	0.43		0.41	0.74		0.74	0.29		0.32	0.43	
Uniform Delay, d1	37.0	25.6		38.5	30.3		15.5	11.2		11.4	12.2	
Progression Factor	1.00	1.00		0.93	1.36		0.96	0.85		0.89	0.86	
Incremental Delay, d2	8.5	0.1		0.9	3.1		16.9	0.4		2.1	0.8	
Delay (s)	45.5	25.7		36.8	44.3		31.7	9.9		12.2	11.3	
Level of Service	D	C		D	D		C	A		B	B	
Approach Delay (s)		29.9			43.8			15.5			11.4	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: Telegraph Ave. & 40th St.

8/26/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	204	485	273	81	517	130	135	350	51	90	879	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	0.98		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	0.97	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.97		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1722	3273		1745	3371		1770	3410		1770	3351	
Flt Permitted	0.27	1.00		0.20	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	482	3273		362	3371		1770	3410		1770	3351	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	204	485	273	81	517	130	135	350	51	90	879	270
RTOR Reduction (vph)	0	92	0	0	26	0	0	12	0	0	33	0
Lane Group Flow (vph)	204	666	0	81	621	0	135	389	0	90	1116	0
Confl. Peds. (#/hr)	81		52	52		81			112			59
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	26.5	26.5		26.5	26.5		11.3	36.6		8.4	33.7	
Effective Green, g (s)	26.5	26.5		26.5	26.5		11.3	36.6		8.4	33.7	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.13	0.43		0.10	0.40	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	150	1020		112	1050		235	1468		174	1328	
v/s Ratio Prot		0.20			0.18		c0.08	c0.11		0.05	c0.33	
v/s Ratio Perm	c0.42			0.22								
v/c Ratio	1.36	0.65		0.72	0.59		0.57	0.27		0.52	0.84	
Uniform Delay, d1	29.2	25.3		26.0	24.7		34.6	15.6		36.4	23.2	
Progression Factor	1.00	1.00		1.00	1.00		0.85	0.92		1.00	1.00	
Incremental Delay, d2	198.9	1.5		20.5	0.9		3.2	0.4		2.6	6.6	
Delay (s)	228.2	26.8		46.5	25.6		32.5	14.7		39.0	29.8	
Level of Service	F	C		D	C		C	B		D	C	
Approach Delay (s)		69.5			27.9			19.2			30.4	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Telegraph Ave. & W MacArthur Blvd.

8/26/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	962	213	60	374	81	200	441	150	390	751	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		0.91			0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		0.99	1.00	
Frt		0.97			0.98		1.00	0.96		1.00	0.98	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4889			4899		1760	3369		1748	3459	
Flt Permitted		0.87			0.71		0.26	1.00		0.39	1.00	
Satd. Flow (perm)		4265			3479		483	3369		720	3459	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	64	962	213	60	374	81	200	441	150	390	751	106
RTOR Reduction (vph)	0	43	0	0	47	0	0	28	0	0	9	0
Lane Group Flow (vph)	0	1196	0	0	468	0	200	563	0	390	848	0
Confl. Peds. (#/hr)	34		41			34	21		29	29		21
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		31.5			31.5		43.0	43.0		43.0	43.0	
Effective Green, g (s)		31.5			31.5		43.0	43.0		43.0	43.0	
Actuated g/C Ratio		0.37			0.37		0.51	0.51		0.51	0.51	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		1580			1289		244	1704		364	1749	
v/s Ratio Prot								0.17			0.25	
v/s Ratio Perm		c0.28			0.13		0.41			c0.54		
v/c Ratio		0.76			0.36		0.82	0.33		1.07	0.48	
Uniform Delay, d1		23.4			19.5		17.7	12.5		21.0	13.7	
Progression Factor		1.15			1.00		1.00	1.00		1.05	0.93	
Incremental Delay, d2		1.8			0.1		25.5	0.5		56.8	0.6	
Delay (s)		28.8			19.5		43.2	13.0		78.7	13.4	
Level of Service		C			B		D	B		E	B	
Approach Delay (s)		28.8			19.5			20.6			33.8	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: Telegraph Ave. & 27th St.

8/26/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	460	150	90	620	233	100	412	60	141	564	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3392		1770	3346		1763	3462		1763	3350	
Flt Permitted	0.95	1.00		0.95	1.00		0.24	1.00		0.42	1.00	
Satd. Flow (perm)	1770	3392		1770	3346		438	3462		776	3350	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	290	460	150	90	620	233	100	412	60	141	564	210
RTOR Reduction (vph)	0	31	0	0	45	0	0	13	0	0	44	0
Lane Group Flow (vph)	290	579	0	90	808	0	100	459	0	141	730	0
Confl. Peds. (#/hr)			3			32	15		8	8		15
Confl. Bikes (#/hr)			8			5			6			41
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	16.9	32.4		7.7	23.2		31.4	31.4		31.4	31.4	
Effective Green, g (s)	17.4	31.9		8.2	22.7		32.9	32.9		32.9	32.9	
Actuated g/C Ratio	0.20	0.38		0.10	0.27		0.39	0.39		0.39	0.39	
Clearance Time (s)	4.5	3.5		4.5	3.5		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	362	1272		170	893		169	1339		300	1296	
v/s Ratio Prot	c0.16	0.17		0.05	c0.24			0.13			0.22	
v/s Ratio Perm							c0.23			0.18		
v/c Ratio	0.80	0.46		0.53	0.90		0.59	0.34		0.47	0.56	
Uniform Delay, d1	32.2	20.0		36.6	30.1		20.7	18.4		19.5	20.4	
Progression Factor	1.00	1.00		1.06	1.10		1.16	1.17		1.00	1.00	
Incremental Delay, d2	11.4	0.1		0.6	5.8		13.5	0.7		5.2	1.8	
Delay (s)	43.5	20.1		39.2	39.0		37.6	22.3		24.7	22.2	
Level of Service	D	C		D	D		D	C		C	C	
Approach Delay (s)		27.6			39.1			24.9			22.6	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: Telegraph Ave. & 40th St.

8/26/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	301	922	371	75	683	370	484	1228	56	170	838	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.93		1.00	0.94		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.98	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.95		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	3166		1770	3145		1770	3493		1770	3345	
Flt Permitted	0.16	1.00		0.16	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	286	3166		292	3145		1770	3493		1770	3345	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	301	922	371	75	683	370	484	1228	56	170	838	275
RTOR Reduction (vph)	0	54	0	0	91	0	0	4	0	0	12	0
Lane Group Flow (vph)	301	1239	0	75	962	0	484	1280	0	170	1101	0
Confl. Peds. (#/hr)	140		183	183		140			129			59
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	25.5	25.5		25.5	25.5		13.5	29.8		11.2	27.5	
Effective Green, g (s)	25.5	25.5		25.5	25.5		13.5	29.8		11.2	27.5	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.17	0.37		0.14	0.34	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	91	1009		93	1002		298	1301		247	1149	
v/s Ratio Prot		0.39			0.31		c0.27	c0.37		0.10	0.33	
v/s Ratio Perm	c1.05			0.26								
v/c Ratio	3.31	1.23		0.81	0.96		1.62	0.98		0.69	0.96	
Uniform Delay, d1	27.2	27.2		25.0	26.8		33.2	24.9		32.7	25.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1066.1	111.5		36.4	19.4		295.8	21.4		6.2	18.2	
Delay (s)	1093.3	138.7		61.4	46.1		329.0	46.3		39.0	43.9	
Level of Service	F	F		E	D		F	D		D	D	
Approach Delay (s)		319.0			47.2			123.7			43.2	
Approach LOS		F			D			F			D	

Intersection Summary			
HCM 2000 Control Delay	144.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.03		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	124.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Telegraph Ave. & W MacArthur Blvd.

8/26/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	705	319	200	816	334	310	1173	80	313	807	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		0.91			0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.97			0.97		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		0.99	1.00	
Frt		0.96			0.96		1.00	0.99		1.00	0.97	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4702			4723		1751	3489		1760	3392	
Flt Permitted		0.65			0.65		0.18	1.00		0.10	1.00	
Satd. Flow (perm)		3085			3099		325	3489		190	3392	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	112	705	319	200	816	334	310	1173	80	313	807	190
RTOR Reduction (vph)	0	46	0	0	3	0	0	3	0	0	14	0
Lane Group Flow (vph)	0	1090	0	0	1347	0	310	1250	0	313	983	0
Confl. Peds. (#/hr)	83		81	81		83	56		57	57		56
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		38.3			38.3		39.0	39.0		39.0	39.0	
Effective Green, g (s)		38.3			38.3		39.0	39.0		39.0	39.0	
Actuated g/C Ratio		0.44			0.44		0.44	0.44		0.44	0.44	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		1345			1351		144	1549		84	1506	
v/s Ratio Prot								0.36			0.29	
v/s Ratio Perm		0.35			c0.43		0.95			c1.65		
v/c Ratio		0.81			1.39dl		2.15	0.81		3.73	0.65	
Uniform Delay, d1		21.6			24.7		24.4	21.1		24.4	19.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.6			23.6		541.1	3.0		1255.4	0.8	
Delay (s)		25.2			48.3		565.5	24.1		1279.8	19.9	
Level of Service		C			D		F	C		F	B	
Approach Delay (s)		25.2			48.3			131.5			320.9	
Approach LOS		C			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	134.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.53		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	15.5
Intersection Capacity Utilization	123.3%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: Telegraph Ave. & 27th St.

8/26/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	640	160	90	690	386	230	781	170	429	844	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.95		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3395		1770	3305		1767	3421		1767	3331	
Flt Permitted	0.95	1.00		0.95	1.00		0.10	1.00		0.20	1.00	
Satd. Flow (perm)	1770	3395		1770	3305		188	3421		371	3331	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	200	640	160	90	690	386	230	781	170	429	844	400
RTOR Reduction (vph)	0	24	0	0	88	0	0	22	0	0	68	0
Lane Group Flow (vph)	200	776	0	90	988	0	230	929	0	429	1176	0
Confl. Peds. (#/hr)			30			18	14		9	9		14
Confl. Bikes (#/hr)			14			5			38			20
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	9.8	26.1		7.1	23.4		38.3	38.3		38.3	38.3	
Effective Green, g (s)	10.3	25.6		7.6	22.9		39.8	39.8		39.8	39.8	
Actuated g/C Ratio	0.12	0.30		0.09	0.27		0.47	0.47		0.47	0.47	
Clearance Time (s)	4.5	3.5		4.5	3.5		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	214	1022		158	890		88	1601		173	1559	
v/s Ratio Prot	c0.11	c0.23		0.05	c0.30			0.27			0.35	
v/s Ratio Perm							c1.22			1.16		
v/c Ratio	0.93	0.76		0.57	1.11		2.61	0.58		2.48	0.75	
Uniform Delay, d1	37.0	26.9		37.1	31.1		22.6	16.5		22.6	18.6	
Progression Factor	1.00	1.00		0.89	1.29		0.99	0.90		0.86	0.89	
Incremental Delay, d2	42.8	2.9		0.3	51.5		748.6	1.1		681.7	3.2	
Delay (s)	79.8	29.8		33.4	91.6		770.9	15.9		701.2	19.8	
Level of Service	E	C		C	F		F	B		F	B	
Approach Delay (s)		39.8			87.1			163.0			194.5	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	131.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.89		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	107.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: 40th St. & Telegraph Ave.

6/16/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	480	260	90	520	130	150	390	70	90	920	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	0.98		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	0.97	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.97		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1723	3280		1745	3371		1770	3385		1770	3368	
Flt Permitted	0.26	1.00		0.21	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	478	3280		381	3371		1770	3385		1770	3368	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	190	480	260	90	520	130	150	390	70	90	920	250
RTOR Reduction (vph)	0	85	0	0	26	0	0	15	0	0	28	0
Lane Group Flow (vph)	190	655	0	90	624	0	150	445	0	90	1142	0
Confl. Peds. (#/hr)	81		52	52		81			112			59
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	26.5	26.5		26.5	26.5		11.7	36.6		8.4	33.3	
Effective Green, g (s)	26.5	26.5		26.5	26.5		11.7	36.6		8.4	33.3	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.14	0.43		0.10	0.39	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	149	1023		119	1051		244	1458		175	1319	
v/s Ratio Prot		0.20			0.19		c0.08	c0.13		0.05	c0.34	
v/s Ratio Perm	c0.40			0.24								
v/c Ratio	1.28	0.64		0.76	0.59		0.61	0.30		0.51	0.87	
Uniform Delay, d1	29.2	25.1		26.3	24.7		34.5	15.9		36.4	23.8	
Progression Factor	1.00	1.00		1.00	1.00		0.89	0.94		1.00	1.00	
Incremental Delay, d2	165.7	1.3		23.6	0.9		4.2	0.5		2.5	7.8	
Delay (s)	194.9	26.5		49.9	25.6		34.8	15.4		38.9	31.6	
Level of Service	F	C		D	C		C	B		D	C	
Approach Delay (s)		60.9			28.6			20.2			32.1	
Approach LOS		E			C			C			C	

Intersection Summary			
HCM Average Control Delay	36.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: W MacArthur Blvd. & Telegraph Ave.

6/16/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	970	220	60	390	70	220	440	150	390	770	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		0.91			0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		0.99	1.00	
Frt		0.97			0.98		1.00	0.96		1.00	0.97	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4881			4921		1762	3369		1749	3423	
Flt Permitted		0.82			0.71		0.21	1.00		0.38	1.00	
Satd. Flow (perm)		4008			3513		398	3369		706	3423	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	110	970	220	60	390	70	220	440	150	390	770	170
RTOR Reduction (vph)	0	40	0	0	35	0	0	29	0	0	17	0
Lane Group Flow (vph)	0	1260	0	0	485	0	220	561	0	390	923	0
Confl. Peds. (#/hr)	34		41			34	21		29	29		21
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.1			34.1		40.4	40.4		40.4	40.4	
Effective Green, g (s)		34.1			34.1		40.4	40.4		40.4	40.4	
Actuated g/C Ratio		0.40			0.40		0.48	0.48		0.48	0.48	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		1608			1409		189	1601		336	1627	
v/s Ratio Prot								0.17			0.27	
v/s Ratio Perm		c0.31			0.14		c0.55			0.55		
v/c Ratio		0.78			0.34		1.16	0.35		1.16	0.57	
Uniform Delay, d1		22.2			17.7		22.3	14.0		22.3	16.0	
Progression Factor		1.12			1.00		1.00	1.00		1.05	0.97	
Incremental Delay, d2		2.3			0.1		116.6	0.6		90.7	0.9	
Delay (s)		27.2			17.7		138.9	14.6		114.1	16.4	
Level of Service		C			B		F	B		F	B	
Approach Delay (s)		27.2			17.7			48.4			45.1	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	36.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	102.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: 27th St. & Telegraph Ave.

6/16/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	460	150	90	620	240	100	420	60	150	580	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3392		1770	3342		1763	3463		1763	3354	
Flt Permitted	0.95	1.00		0.95	1.00		0.23	1.00		0.41	1.00	
Satd. Flow (perm)	1770	3392		1770	3342		423	3463		765	3354	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	290	460	150	90	620	240	100	420	60	150	580	210
RTOR Reduction (vph)	0	31	0	0	47	0	0	13	0	0	42	0
Lane Group Flow (vph)	290	579	0	90	813	0	100	467	0	150	748	0
Confl. Peds. (#/hr)			3			32	15		8	8		15
Confl. Bikes (#/hr)			8			5			6			41
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	16.9	32.4		7.7	23.2		31.4	31.4		31.4	31.4	
Effective Green, g (s)	17.4	31.9		8.2	22.7		32.9	32.9		32.9	32.9	
Actuated g/C Ratio	0.20	0.38		0.10	0.27		0.39	0.39		0.39	0.39	
Clearance Time (s)	4.5	3.5		4.5	3.5		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	362	1273		171	893		164	1340		296	1298	
v/s Ratio Prot	c0.16	0.17		0.05	c0.24			0.13			0.22	
v/s Ratio Perm							c0.24			0.20		
v/c Ratio	0.80	0.45		0.53	0.91		0.61	0.35		0.51	0.58	
Uniform Delay, d1	32.2	20.0		36.6	30.2		20.9	18.5		19.9	20.6	
Progression Factor	1.00	1.00		1.05	1.10		1.15	1.17		1.00	1.00	
Incremental Delay, d2	11.4	0.1		0.6	6.3		14.9	0.7		6.1	1.9	
Delay (s)	43.5	20.1		39.1	39.6		39.0	22.3		25.9	22.4	
Level of Service	D	C		D	D		D	C		C	C	
Approach Delay (s)		27.6			39.5			25.2			23.0	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: 40th St. & Telegraph Ave.

6/16/2014

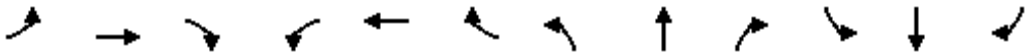
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	920	360	90	690	370	480	1290	80	170	900	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.94		1.00	0.94		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.98	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.95		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	3173		1770	3147		1770	3478		1770	3363	
Flt Permitted	0.16	1.00		0.16	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	287	3173		292	3147		1770	3478		1770	3363	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	270	920	360	90	690	370	480	1290	80	170	900	260
RTOR Reduction (vph)	0	52	0	0	89	0	0	6	0	0	12	0
Lane Group Flow (vph)	270	1228	0	90	971	0	480	1364	0	170	1148	0
Confl. Peds. (#/hr)	140		183	183		140			129			59
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	25.5	25.5		25.5	25.5		13.5	29.8		11.2	27.5	
Effective Green, g (s)	25.5	25.5		25.5	25.5		13.5	29.8		11.2	27.5	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.17	0.37		0.14	0.34	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	91	1011		93	1003		299	1296		248	1156	
v/s Ratio Prot		0.39			0.31		c0.27	c0.39		0.10	0.34	
v/s Ratio Perm	c0.94			0.31								
v/c Ratio	2.97	1.21		0.97	0.97		1.61	1.05		0.69	0.99	
Uniform Delay, d1	27.2	27.2		26.8	26.9		33.2	25.1		32.7	26.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	914.1	105.9		81.5	20.8		287.5	40.1		6.1	24.8	
Delay (s)	941.3	133.1		108.3	47.6		320.8	65.2		38.9	50.9	
Level of Service	F	F		F	D		F	E		D	D	
Approach Delay (s)		273.9			52.4			131.5			49.4	
Approach LOS		F			D			F			D	

Intersection Summary			
HCM Average Control Delay	135.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.80		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	124.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: W MacArthur Blvd. & Telegraph Ave.

6/16/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	740	350	200	820	340	320	1200	80	290	810	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		0.91			0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.97			0.97		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		0.99	1.00	
Frt		0.96			0.96		1.00	0.99		1.00	0.97	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4698			4723		1752	3491		1760	3387	
Flt Permitted		0.65			0.65		0.17	1.00		0.10	1.00	
Satd. Flow (perm)		3084			3086		316	3491		190	3387	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	200	740	350	200	820	340	320	1200	80	290	810	200
RTOR Reduction (vph)	0	43	0	0	2	0	0	3	0	0	15	0
Lane Group Flow (vph)	0	1247	0	0	1358	0	320	1277	0	290	995	0
Confl. Peds. (#/hr)	83		81	81		83	56		57	57		56
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		38.3			38.3		39.0	39.0		39.0	39.0	
Effective Green, g (s)		38.3			38.3		39.0	39.0		39.0	39.0	
Actuated g/C Ratio		0.44			0.44		0.44	0.44		0.44	0.44	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		1345			1346		140	1551		84	1504	
v/s Ratio Prot								0.37			0.29	
v/s Ratio Perm		0.40			c0.44		1.01			c1.53		
v/c Ratio		1.45dl			1.80dl		2.29	0.82		3.45	0.66	
Uniform Delay, d1		23.4			24.8		24.4	21.4		24.4	19.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		10.9			26.7		600.6	3.5		1133.0	0.9	
Delay (s)		34.3			51.4		625.0	24.9		1157.4	20.1	
Level of Service		C			D		F	C		F	C	
Approach Delay (s)		34.3			51.4			144.9			273.8	
Approach LOS		C			D			F			F	

Intersection Summary			
HCM Average Control Delay	126.5	HCM Level of Service	F
HCM Volume to Capacity ratio	2.23		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	10.5
Intersection Capacity Utilization	126.1%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: 27th St. & Telegraph Ave.

6/16/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	640	160	90	690	400	230	800	170	440	860	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.94		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3395		1770	3300		1767	3423		1767	3334	
Flt Permitted	0.95	1.00		0.95	1.00		0.10	1.00		0.19	1.00	
Satd. Flow (perm)	1770	3395		1770	3300		186	3423		360	3334	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	200	640	160	90	690	400	230	800	170	440	860	400
RTOR Reduction (vph)	0	25	0	0	85	0	0	22	0	0	66	0
Lane Group Flow (vph)	200	775	0	90	1005	0	230	948	0	440	1194	0
Confl. Peds. (#/hr)			30			18	14		9	9		14
Confl. Bikes (#/hr)			14			5			38			20
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	9.5	25.9		7.0	23.4		38.6	38.6		38.6	38.6	
Effective Green, g (s)	10.0	25.4		7.5	22.9		40.1	40.1		40.1	40.1	
Actuated g/C Ratio	0.12	0.30		0.09	0.27		0.47	0.47		0.47	0.47	
Clearance Time (s)	4.5	3.5		4.5	3.5		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	208	1015		156	889		88	1615		170	1573	
v/s Ratio Prot	c0.11	0.23		0.05	c0.30			0.28			0.36	
v/s Ratio Perm							c1.24			1.22		
v/c Ratio	0.96	0.76		0.58	1.13		2.61	0.59		2.59	0.76	
Uniform Delay, d1	37.3	27.1		37.2	31.1		22.4	16.4		22.4	18.5	
Progression Factor	1.00	1.00		0.89	1.28		0.98	0.90		0.86	0.89	
Incremental Delay, d2	50.9	3.1		0.3	60.4		748.9	1.1		730.4	3.3	
Delay (s)	88.2	30.2		33.3	100.2		770.8	15.8		749.8	19.8	
Level of Service	F	C		C	F		F	B		F	B	
Approach Delay (s)		41.8			95.1			160.6			208.7	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	138.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.91		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	109.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: 40th St. & Telegraph Ave.

6/16/2014

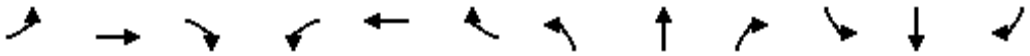
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	480	260	90	520	130	150	390	70	90	920	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	0.98		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.97		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1761	3280		1766	3371		1770	3385		1770	3368	
Flt Permitted	0.23	1.00		0.19	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	425	3280		360	3371		1770	3385		1770	3368	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	190	480	260	90	520	130	150	390	70	90	920	250
RTOR Reduction (vph)	0	88	0	0	27	0	0	16	0	0	28	0
Lane Group Flow (vph)	190	652	0	90	623	0	150	444	0	90	1142	0
Confl. Peds. (#/hr)	81		52	52		81			112			59
Turn Type	pm+pt			pm+pt			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	28.6	24.6		27.0	23.8		8.1	32.2		7.5	31.6	
Effective Green, g (s)	28.6	24.6		27.0	23.8		8.1	32.2		7.5	31.6	
Actuated g/C Ratio	0.34	0.29		0.32	0.28		0.10	0.38		0.09	0.37	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	206	949		167	944		169	1282		156	1252	
v/s Ratio Prot	c0.04	0.20		0.02	0.18		c0.08	0.13		0.05	c0.34	
v/s Ratio Perm	c0.27			0.15								
v/c Ratio	0.92	0.69		0.54	0.66		0.89	0.35		0.58	0.91	
Uniform Delay, d1	26.5	26.8		21.7	27.0		38.0	18.9		37.2	25.4	
Progression Factor	1.00	1.00		1.00	1.00		0.76	0.94		1.00	1.00	
Incremental Delay, d2	41.4	2.1		3.3	1.7		36.6	0.7		5.1	11.6	
Delay (s)	67.9	28.9		25.0	28.7		65.6	18.5		42.3	37.0	
Level of Service	E	C		C	C		E	B		D	D	
Approach Delay (s)		36.8			28.3			30.1			37.3	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: W MacArthur Blvd. & Telegraph Ave.

6/16/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	970	220	60	390	70	220	440	150	390	770	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		0.91			0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		0.99	1.00	
Frt		0.97			0.98		1.00	0.96		1.00	0.97	
Flt Protected		1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4881			4921		1762	3369		1749	3423	
Flt Permitted		0.82			0.71		0.21	1.00		0.38	1.00	
Satd. Flow (perm)		4008			3513		398	3369		706	3423	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	110	970	220	60	390	70	220	440	150	390	770	170
RTOR Reduction (vph)	0	40	0	0	35	0	0	29	0	0	17	0
Lane Group Flow (vph)	0	1260	0	0	485	0	220	561	0	390	923	0
Confl. Peds. (#/hr)	34		41			34	21		29	29		21
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.1			34.1		40.4	40.4		40.4	40.4	
Effective Green, g (s)		34.1			34.1		40.4	40.4		40.4	40.4	
Actuated g/C Ratio		0.40			0.40		0.48	0.48		0.48	0.48	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		1608			1409		189	1601		336	1627	
v/s Ratio Prot								0.17			0.27	
v/s Ratio Perm		c0.31			0.14		c0.55			0.55		
v/c Ratio		0.78			0.34		1.16	0.35		1.16	0.57	
Uniform Delay, d1		22.2			17.7		22.3	14.0		22.3	16.0	
Progression Factor		1.12			1.00		1.00	1.00		0.91	0.84	
Incremental Delay, d2		2.3			0.1		116.6	0.6		90.8	0.9	
Delay (s)		27.2			17.7		138.9	14.6		111.0	14.4	
Level of Service		C			B		F	B		F	B	
Approach Delay (s)		27.2			17.7			48.4			42.7	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	35.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	102.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: 27th St. & Telegraph Ave.

6/16/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	460	150	90	620	240	100	420	60	150	580	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3392		1770	3342		1763	3463		1763	3354	
Flt Permitted	0.95	1.00		0.95	1.00		0.23	1.00		0.41	1.00	
Satd. Flow (perm)	1770	3392		1770	3342		423	3463		765	3354	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	290	460	150	90	620	240	100	420	60	150	580	210
RTOR Reduction (vph)	0	31	0	0	47	0	0	13	0	0	42	0
Lane Group Flow (vph)	290	579	0	90	813	0	100	467	0	150	748	0
Confl. Peds. (#/hr)			3			32	15		8	8		15
Confl. Bikes (#/hr)			8			5			6			41
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	16.9	32.4		7.7	23.2		31.4	31.4		31.4	31.4	
Effective Green, g (s)	17.4	31.9		8.2	22.7		32.9	32.9		32.9	32.9	
Actuated g/C Ratio	0.20	0.38		0.10	0.27		0.39	0.39		0.39	0.39	
Clearance Time (s)	4.5	3.5		4.5	3.5		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	362	1273		171	893		164	1340		296	1298	
v/s Ratio Prot	c0.16	0.17		0.05	c0.24			0.13			0.22	
v/s Ratio Perm							c0.24			0.20		
v/c Ratio	0.80	0.45		0.53	0.91		0.61	0.35		0.51	0.58	
Uniform Delay, d1	32.2	20.0		36.6	30.2		20.9	18.5		19.9	20.6	
Progression Factor	1.00	1.00		1.05	1.10		1.15	1.17		1.00	1.00	
Incremental Delay, d2	11.4	0.1		0.6	6.3		14.9	0.7		6.1	1.9	
Delay (s)	43.5	20.1		39.1	39.6		39.0	22.3		25.9	22.4	
Level of Service	D	C		D	D		D	C		C	C	
Approach Delay (s)		27.6			39.5			25.2			23.0	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: 40th St. & Telegraph Ave.

6/16/2014

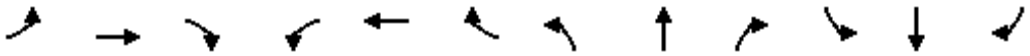
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	920	360	90	690	370	480	1290	80	170	900	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.94		1.00	0.94		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.95		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3173		1770	3147		1770	3478		1770	3363	
Flt Permitted	0.17	1.00		0.18	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	323	3173		334	3147		1770	3478		1770	3363	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	270	920	360	90	690	370	480	1290	80	170	900	260
RTOR Reduction (vph)	0	50	0	0	87	0	0	6	0	0	34	0
Lane Group Flow (vph)	270	1230	0	90	973	0	480	1364	0	170	1126	0
Confl. Peds. (#/hr)	140		183	183		140			129			59
Turn Type	pm+pt			pm+pt			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	27.1	23.1		25.5	22.3		13.5	30.7		5.5	22.7	
Effective Green, g (s)	27.1	23.1		25.5	22.3		13.5	30.7		5.5	22.7	
Actuated g/C Ratio	0.34	0.29		0.32	0.28		0.17	0.38		0.07	0.28	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	2.0		3.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	182	916		164	877		299	1335		122	954	
v/s Ratio Prot	c0.07	0.39		0.02	0.31		c0.27	0.39		0.10	c0.33	
v/s Ratio Perm	c0.43			0.15								
v/c Ratio	1.48	1.34		0.55	1.11		1.61	1.02		1.39	1.18	
Uniform Delay, d1	26.8	28.4		21.8	28.9		33.2	24.6		37.2	28.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	244.6	161.4		3.7	64.9		287.5	30.4		219.2	92.2	
Delay (s)	271.4	189.8		25.5	93.8		320.8	55.0		256.5	120.8	
Level of Service	F	F		C	F		F	E		F	F	
Approach Delay (s)		204.0			88.4			124.0			138.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	141.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	123.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: W MacArthur Blvd. & Telegraph Ave.

6/16/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	740	350	200	820	340	320	1200	80	290	810	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Lane Util. Factor		0.91			0.91		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.97			0.97		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		0.99	1.00	
Frt		0.96			0.96		1.00	0.99		1.00	0.97	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4698			4723		1752	3491		1760	3387	
Flt Permitted		0.65			0.65		0.17	1.00		0.10	1.00	
Satd. Flow (perm)		3084			3086		316	3491		190	3387	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	200	740	350	200	820	340	320	1200	80	290	810	200
RTOR Reduction (vph)	0	43	0	0	2	0	0	3	0	0	15	0
Lane Group Flow (vph)	0	1247	0	0	1358	0	320	1277	0	290	995	0
Confl. Peds. (#/hr)	83		81	81		83	56		57	57		56
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		38.3			38.3		39.0	39.0		39.0	39.0	
Effective Green, g (s)		38.3			38.3		39.0	39.0		39.0	39.0	
Actuated g/C Ratio		0.44			0.44		0.44	0.44		0.44	0.44	
Clearance Time (s)		5.5			5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		1345			1346		140	1551		84	1504	
v/s Ratio Prot								0.37			0.29	
v/s Ratio Perm		0.40			c0.44		1.01			c1.53		
v/c Ratio		1.45dl			1.80dl		2.29	0.82		3.45	0.66	
Uniform Delay, d1		23.4			24.8		24.4	21.4		24.4	19.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		10.9			26.7		600.6	3.5		1133.0	0.9	
Delay (s)		34.3			51.4		625.0	24.9		1157.4	20.1	
Level of Service		C			D		F	C		F	C	
Approach Delay (s)		34.3			51.4			144.9			273.8	
Approach LOS		C			D			F			F	

Intersection Summary			
HCM Average Control Delay	126.5	HCM Level of Service	F
HCM Volume to Capacity ratio	2.23		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	10.5
Intersection Capacity Utilization	126.1%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: 27th St. & Telegraph Ave.

6/16/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	640	160	90	690	400	230	800	170	440	860	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.94		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3395		1770	3300		1767	3423		1767	3334	
Flt Permitted	0.95	1.00		0.95	1.00		0.10	1.00		0.19	1.00	
Satd. Flow (perm)	1770	3395		1770	3300		186	3423		360	3334	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	200	640	160	90	690	400	230	800	170	440	860	400
RTOR Reduction (vph)	0	25	0	0	85	0	0	22	0	0	66	0
Lane Group Flow (vph)	200	775	0	90	1005	0	230	948	0	440	1194	0
Confl. Peds. (#/hr)			30			18	14		9	9		14
Confl. Bikes (#/hr)			14			5			38			20
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	9.5	25.9		7.0	23.4		38.6	38.6		38.6	38.6	
Effective Green, g (s)	10.0	25.4		7.5	22.9		40.1	40.1		40.1	40.1	
Actuated g/C Ratio	0.12	0.30		0.09	0.27		0.47	0.47		0.47	0.47	
Clearance Time (s)	4.5	3.5		4.5	3.5		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	208	1015		156	889		88	1615		170	1573	
v/s Ratio Prot	c0.11	0.23		0.05	c0.30			0.28			0.36	
v/s Ratio Perm							c1.24			1.22		
v/c Ratio	0.96	0.76		0.58	1.13		2.61	0.59		2.59	0.76	
Uniform Delay, d1	37.3	27.1		37.2	31.1		22.4	16.4		22.4	18.5	
Progression Factor	1.00	1.00		0.89	1.28		0.98	0.90		0.86	0.89	
Incremental Delay, d2	50.9	3.1		0.3	60.4		748.9	1.1		730.4	3.3	
Delay (s)	88.2	30.2		33.3	100.2		770.8	15.8		749.8	19.8	
Level of Service	F	C		C	F		F	B		F	B	
Approach Delay (s)		41.8			95.1			160.6			208.7	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	138.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.91		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	109.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

URBAN PLANNING PARTNERS INC.

350 FRANK OGAWA PLAZA
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OAKLAND, CA 94612
510.251.8210
WWW.UP-PARTNERS.COM

MEMORANDUM

DATE: MARCH 29, 2011

TO:
Catherine Payne
Planner III
CEDA Planning and Zoning Division

FROM:
Lynette Dias, AICP
Principal

RE: CEQA Compliance for MacArthur BART Transit Village Stage[1] 2 FDP

In accordance with the Conditions of Approval for the MacArthur Bart Transit Village Preliminary Planned Unit Development and the terms of the Development Agreement, the City is in receipt of an application for a Final Development Permit for Stage Two (Stage Two FDP) proposed on Parcel D of the MacArthur Transit Village project site. The key purpose of this review is to determine whether the environmental effects of the Stage Two FDP are adequately analyzed in the 2008 Certified Environmental Impact Report (EIR) prepared for the project. As described below, this approval was considered in the EIR and as proposed would not result in new or more severe environmental impacts beyond those identified in the EIR. As a result, the City does not need to prepare a Subsequent or Supplemental EIR to satisfy the environmental review requirements of CEQA. This EIR remains adequate for the proposed Stage Two FDP.

The discussion below summarizes the following items: (1) overview of project approvals and environmental review; (2) relationship of the proposed Stage Two FDP with the approved Preliminary PUD/PDP and the project analyzed in the EIR; and (3) findings that the Stage Two FDP falls within the scope of the EIR and does not trigger the conditions described in CEQA Guidelines Section 15162 and Section 15163 calling for preparation of subsequent or supplemental environmental review.

Project Approvals and Environmental Review

The City has taken several actions to review and plan for the future development of the MacArthur BART Transit Village. These include, without limitation: (1) certified an EIR, (SCH No.

[1] The EIR and other project related materials also refers to the application as the "Phase 2" applications. "Stage" and "Phase" have the same meaning in reference to the MTV Project phasing.

2006022075) on July 1, 2008; (2) approved Ordinance No. 12883 C.M.S. amending Section 17.97.170 of the Oakland Planning Code related to the minimum usable open space requirements in the S-15 zone and rezoning the Project Site to S-15 Transit-Oriented Development Zone on July 1, 2008; (3) adopted and approved a Preliminary Planned Unit Development (Preliminary PUD/PDP) permit on July 1, 2008 to allow development of 624 to 675 residential units, 42,500 square feet of neighborhood-serving retail and commercial uses (including 7,000 square feet of live/work units), a 5,000 square feet community center use, and parking garage for BART patrons ; (4) adopted and approved a major conditional use permit to exceed parking requirements and to allow off-street parking for non-residential uses on July 1, 2008; (5) approved preliminary design review for the Preliminary PUD/PDP on July 1, 2008; and (6) approved Ordinance No. 12959 C.M.S on July 21, 2009 enacting a Development Agreement. The Planning Commission has also reviewed the Stage One FDP and Vesting Tentative Tract Map (VTTM) on November 3, 2010 and March 16, 2011 and recommended approval to the City Council. The City Council will consider approval of the Stage One FDP and VTTM on April 5, 2011.

The Development Agreement and PUD, which were both considered in the EiR, anticipate that the City will timely consider additional future approvals, including, without limitation, Final PUD (FDP) permits for each of the Project Stages, a vesting tentative map, final design review, tree removal, and conditional use permits.

The phasing plan included in the Development Agreement provided for five separate development phases each having its own schedule for submission of a final development plan (FDP) and target approval date: (1) Phase 1 consisting of the new BART garage on block E, site remediation, BART plaza improvements, internal Drive, Frontage Road improvements, and a portion of Village Drive; (2) Phase 2 consisting of the affordable rental development on block D; (3) Phase 3 consisting of the mixed-use market rate development on block A; (4) Phase 4 consisting of the mixed-use market rate development on block B; and (5) Phase 5 consisting of the mixed use market rate development on block C, which includes the Surgery Center parcel.

The Stage Two FDP project plans, dated March 16, 2011, were submitted by the project applicant in accordance with the MTV project approvals and the Development Agreement phasing provisions. The Stage Two FDP includes 90 affordable rental residential units, 90 parking spaces, and usable open space. City staff reviewed the Stage Two plans and found the proposal to be in substantial conformance with the approved PUD and its Conditions of Approval and the terms of the Development Agreement.

Urban Planning Partners reviewed the Stage Two plans and found that there are no substantial project changes, no substantial changes in the project circumstances, and no new information of substantial importance, which could not have been known with the exercise of reasonable diligence when the EiR was certified, that would require major revisions of the certified 2008 EiR, because of a new significant effect or an increase in the severity of a previously identified

significant effect. Under CEQA section 21166 and CEQA Guidelines sections 15162 and 15163, no further environmental review is required.

A summary of the relationship of these approvals relative to the Preliminary PUD/PDP approval and the certified EIR is provided below.

Relationship to approved Preliminary PUD/PDP

City staff evaluated the proposed Stage Two FDP and found that in all fundamental respects the Stage Two FDP is in substantial compliance with the project approved in the PUD. The April 2, 2011 Planning Commission Staff Report finds that there are no new or changed uses; no new facilities; no change in the overall residential unit count; no change in the amount of retail/commercial space; no change in community space; no change in the height or bulk controls; no change in the community benefits; and no change in project staging. The changes in the location of Parcel D are a result of minor changes to the garage (e.g., parcel adjustment, realignment of Internal Street) required to implement the terms of the Draft Traffic Demand Management Plan (TDMP) included in the Preliminary PUD/PDP approval. Additionally, none of the changes would violate the Development Agreement. The April 2, 2011 Staff Report also concludes that the facts described in the report support a finding by the City that the Stage Two FDP, including the refinements summarized above and described in the Staff Report, substantially conforms to the Preliminary PUD/PDP.

Relationship to EIR

The Stage Two FDP is within the scope of the project evaluated in the EIR and would not trigger any new significant impacts or a substantial increase in the severity of previously identified impacts. The MacArthur Transit Village project analyzed in the certified EIR consisted of a new BART parking garage; improvements to the BART Plaza; up to 675 residential units (both market-rate and affordable); up to 44,000 square feet of commercial space (including live/work units); 5,000 square feet of community center or childcare space; approximately 1,000 structured parking spaces, including the 300 space BART parking garage (which was increased to 480 spaces pursuant to the Conditions of Approval); approximately 30-45 on-street parking spaces, pedestrian and bicycle friendly internal streets and walkways; improvements to the Frontage Road; a new internal street, Village Drive, located between Frontage Road and Telegraph Avenue; two new traffic signals at the intersections of Village Drive/Telegraph Avenue and West MacArthur Boulevard/Frontage Road; a rezoning of the Project site to S-15, and a text amendment to the S-15 zone. Multiple FDPs were contemplated in the EIR (See Draft EIR, pages 72-74) to implement the Preliminary PUD/PDP.

For Building D, the project considered in the EIR included a 5-story building located immediately north of the parking structure and west of Internal Street. The building was 124,300 square feet and would accommodate 90 affordable units and include a below-grade podium parking structure. The Stage Two FDP building is also 5 stories with a below-grade parking structure. It is

a 134,868 square feet which Is approximately 10,000 square feet larger than the building considered In the 2008 EIR. This slight increase In the building size would not result in any new or substantially greater impacts than what was considered In the 2008 EIR particularly as the there is no Increase in the number of units and the overall development will be limited to a maximum of 675 residential units.

The conceptual plan included In the 2008 EIR showed Building D west of Internal Street. The shift in the location of Building D is necessary to accommodate refinements to the parking structure that were necessary to implement TDMP. The proposed shift would not change any of the 2008 EIR findings as development of a very similar density and scale has always been contemplated on this portion of the MTV project site. Figure III-3, Conceptual site Plan, in the 2008 EIR shows the subject portion of the site (Parcel D), being developed with Building C which included a 6-story building with a below-grade podium parking structure. The Stage Two proposal would result in less Intense development on this portion of the site as the proposed structure is only 5 stories. The 2008 EIR also specifically recognized and considered that the phasing was conceptual and that parcels may be developed out of sequence.

The MTV Project conditions of approval and mitigation measures detailed in the 2008 EIR and the adopted Mitigation Monitoring and Reporting Program will adequately address significant impacts identified for the MTV project In the 2008 EIR. No new significant impacts or a substantial increase in the severity of previously Identified impacts would occur with the development of Building D as the proposal substantially conforms to the project considered and analyzed in the 2008 EIR. Consequently, there are no substantial project changes, no substantial changes in the project circumstances, and no new information of substantial importance that would require major revisions of the certified 2008 EIR, because of a new significant effect or an Increase in the severity of a previously identified significant effect. Under CEQA section 21166 and CEQA Guidelines sections 15152 and 15163, no further environmental review Is required. Thus, in considering approval of the Stage Two FDP, the City should rely on the previously certified 2008 EIR.

During the City's review of the Stage One FDP and VTTM, Holland & Knight, who represent Alta Bates Summit Medical Center Surgery Property Company LLC(the Surgery Center) submitted three letters to the City expressing concerns about the adequacy of CEQA review.

The Surgery Center Is located at 3875 Telegraph Avenue on a parcel that is in Stage Five of the MTV Project. Although the letters were specific to the previously approved Stage One FDP and TTM8047, It is anticipated that similar issues may be raised for Stage Two FDP. The Surgery Center letters mistakenly state that the MTV Project has been changed to exclude the Surgery Center parcel; based on this change: (1) construction of the MTV Project will have significant noise, vibration, and air quality impacts on the operations, services, and patient care at the Surgery Center; and (2) the City should defer its approval of the MTV Project until these impacts

on the Surgery Center are studied in a subsequent EIR. The Surgery Center letters do not raise any issues or contain any new information requiring the City to prepare a supplemental or subsequent EIR for the MTV Project for the reasons summarized in the staff report and detailed in the Memorandum from Urban Planning Partners to Eric Angstadt and Catherine Payne, dated March 18, 2011, regarding Response to Letters Received Regarding the MacArthur Transit Village Stage One Final Development Plan Permit and Vesting Tentative Track Map 8047. (Attached as Exhibit A)

Conclusion

As discussed above, the development proposed in the Stage Two FDP application was considered in the EIR as it is in conformance with the approved PUD. The refinements incorporated into the application represent no change in development Intensity or significant physical changes on the MacArthur Transit Village site from the project analyzed in the EIR. Therefore, these changes would not result In new or more severe impacts (or require new or significantly altered mitigation measures) beyond those already identified in the EIR. The EIR is adequate and no subsequent or supplemental environmental review.

The following discussion summarizes the reasons why no supplemental or subsequent CEQA review is necessary pursuant to CEQA *Guidelines* Section 15162 and the City can rely on the previously certified EIR.

Substantial Changes to the Project. The refinements to the project are minor and necessary to accommodate the reconfiguration of the garage and the shift of Internal Street which were considered as part of the Stage One FDP and VTTM and such refinements were necessary to implement the Conditions of Approval of the Preliminary PUD/PDP as discussed in the Preliminary PUD/PDP and Phase 1 and VTTM Substantial Conformance Memo, dated October 26, 2010. The shift In the location of Building D and other minor refinements would not result in new significant environmental impacts or a substantial increase In the severity of impacts already Identified in the 2008 EIR. Therefore, the proposed changes to the project are considered *minor* refinements, not *substantial* changes.

Project Circumstances. Since certification of the EIR, conditions In and around the MacArthur Transit Village have not changed and thus Implementation of the project (including the proposed refinements) would not result in new significant environmental effects or a substantial increase In the severity of environmental effects already identified in the 2008 EIR. No substantial changes in noise levels, air quality, traffic, or other conditions have occurred within and around the project site since certification of the EIR.

New Information. No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the 2008 EIR

was certified, has been identified which is expected to result in: 1) new significant environmental effects or a substantial increase in the severity of environmental effects already Identified in the EIR; or 2) mitigation measures or alternatives which were previously determined not to be feasible would in fact be feasible, or which are considerably different from those recommended in the 2008 EIR, and which would substantially reduce significant effects of the project, but the project applicant declines to adopt them.

As described previously, changes to the proposed project would not result in significant environmental effects (including effects that would be substantially more severe than impacts identified In the 2008 EIR). Existing regulations (Including City General Plan policies and ordinances In the Municipal Code) and mitigation measures included in the 2008 EIR would be adequate to reduce the impacts resulting from implementation of changes to the proposed project to less-than-slgnificant levels.

Attachment

Exhibit A: Response to Letters Received Regarding the MacArthur Transit Village Stage One Final Development Plan Permit and Vesting Tentative Track Map 8047.

EXHIBIT A

URBAN PLANNING PARTNERS INC.
350 FRANK OGAWA PLAZA
5TH FLOOR
OAKLAND, CA 94612
510.251.8210
WWW.UP-PARTNERS.COM

MEMORANDUM

DATE: MARCH 18, 2011

TO:
Eric Angstadt and Catherine Payne
CEDA, City of Oakland
250 Frank H. Ogawa Plaza, Suite 3315
Oakland, CA 94612-2032

FROM:
Lynette Dias, AICP

RE: Response to Letters Received Regarding the MacArthur Transit Village Stage One Final Development Plan Permit and Vesting Tentative Track Map 8047.

A. EXECUTIVE SUMMARY AND OVERVIEW

1. The Surgery Center Letters

The City has received two letters (dated December 17 and December 21, 2010) from Holland & Knight, who represent Alta Bates Summit Medical Center Surgery Property Company LLC, The Surgery Center at Alta Bates Summit Medical Center, including Alta Bates Summit Medical Center, a Sutter Health affiliate (the Surgery Center). The Surgery Center is located at 3875 Telegraph Avenue on a parcel that is in Phase 5 of the MacArthur Transit Village Project (MTV Project). (See, MTV Project Site Location and Illustrative Plans, Exhibit A.) The Surgery Center letters mistakenly state that: the MTV Project has been changed to exclude the Surgery Center parcel; based on this change: (1) construction of the MTV Project will have significant noise, vibration, and air quality impacts on the operations, services, and patient care at the Surgery Center; and (2) the City Council should defer its approval of the MTV Project's Phase 1 Final Development Permit (FDP), Vesting Tentative Track Map (VTTM), and other entitlements until these impacts on the Surgery Center are studied in a subsequent EIR.

2. Summary Conclusion: No Additional Environmental Review Is Required

The Surgery Center letters do not raise any issues or contain any new information requiring the City to prepare a supplemental or subsequent EIR for the MTV Project Phase 1 FDP and VTTM for the following reasons:

- **No Project Changes:** The MTV Project has not been changed or modified to exclude the Surgery Center parcel. The MTV Project analyzed in the 2008 EIR and approved by the City is a phased development. The mixed-use building proposed for the Surgery Center parcel has always been in Phase 5, the final phase of development, for which a final development permit application is not required to be submitted until 2019. Thus, the Surgery Center parcel has not been expected or required to be included in the Phase 1 FDP application or approval. The VTTM covers those portions of the MTV Project site controlled by the project sponsor. Although the Surgery Center parcel and one other MTV Project parcel (3901 Telegraph Avenue) are not included in the VTTM, the development of these parcels are in later Project phases and, if subdivision maps are required for the development of these parcels, the necessary subdivision maps will be submitted with (or before) the FDP applications for these later phases are filed. Additionally, future development of the Surgery Center parcel could occur within its existing boundaries and no additional subdivision map may be necessary. Consequently, neither the Phase 1 FDP nor the VTTM change the MTV Project to exclude the Surgery Center and thus no project change has occurred that would require additional environmental review under CEQA.

- **No New Information:** The EIR, which analyzed a phased buildout of the MTV Project, including the noise, vibration, and air quality impacts associated with construction activities, contemplated that the Surgery Center, which would not be removed until in the final phase of development, could be operating during and subsequent to construction of the initial MTV Project phases. The Surgery Center's construction concerns could have been raised in 2008 and 2009 during the public review of the MTV Project EIR and the City's consideration of the initial Project approvals. Thus, these concerns do not constitute new information that could not have been known when the EIR was certified. Consequently, the Surgery Center has not provided new information that would require additional environmental review under CEQA.

- **Project Conditions/Mitigations Sufficient**: The MTV Project conditions of approval and mitigation measures address construction related air, noise, and vibration impacts on the surrounding area, including the Surgery Center parcel. The City's Standard Conditions of Approval (SCA) for dust control (COA-AIR 1) and construction emissions

(COA-AIR 2) will reduce the potential air quality impacts on uses adjacent to the construction site (see Exhibit B, Referenced Conditions of Approval). Additionally, in response to the Surgery Center's air quality health risk concerns, LSA Associates prepared a health risk assessment to evaluate the construction related dust and emissions on the Surgery Center (see Exhibit C, Health Risk Assessment). The health risk assessment determined that the potential dust and diesel emissions impacts on the Surgery Center would be below the thresholds of significance. A site specific construction noise plan has been prepared pursuant to COA-NOISE 5 (see Exhibit D, Noise Reduction Plan). The analysis conducted for this plan confirms the EIR's conclusion that, with implementation of the City's SCAs and the noise control strategies provided for in the plan, construction noise impacts on the Surgery Center will be less than significant. In accordance with COA-NOISE-6, Wilson Ihrig and Associates, a vibration expert has evaluated the construction plan for areas near the Surgery Center and has confirmed that the vibration impacts will be less than significant based on the use of certain construction techniques and timing restrictions (see Exhibit E, Vibration Memorandum).

Consequently, there are no substantial project changes, no substantial changes in the project circumstances, and no new information of substantial importance, which could not have been known with the exercise of reasonable diligence when the EIR was certified, that would require major revisions of the 2008 EIR, because of a new significant effect or an increase in the severity of a previously identified significant effect. Under CEQA section 21166[1] and CEQA Guidelines section 15162[2], no further environmental review is required. Thus, in considering approval of the Phase 1 FDP and VTTM, the City should rely on the previously certified 2008 EIR.

[1] CEQA section 21166 provides that when an environmental impact report has been prepared for a project, no subsequent or supplemental environmental impact report shall be required by the lead agency unless one or more of the following events occurs: (a) substantial changes are proposed in the project which will require major revisions of the EIR; (b) substantial changes occur with respect to the circumstances under which the project is being undertaken which will require major revisions of the EIR; (c) new information, which was not known and could not have been known at the time the EIR was certified as complete, becomes available.

[2] CEQA Guideline section 15162 provides that the only substantial changes in a project or the project circumstances that would result in new or more severe significant environmental impacts triggers preparation of a subsequent or supplemental EIR. Additionally, new information only triggers preparation of a subsequent or supplement EIR if it could not have been known with the exercise of reasonable diligence when the original EIR was certified and would result in new or more severe significant effects or new information about mitigation measures or alternatives that are rejected.

3. MacArthur Transit Village Project Approvals and Current Applications

In July of 2008, the City Council approved the MTV Project. The MTV Project is the phased buildout of a new mixed-use transit village development located at the existing MacArthur BART station. The MTV Project consists of up to 675 residential units (market-rate and affordable), 42,500 square feet of retail and commercial uses, a 5,000 square foot community center use, a 480 space BART parking garage, and a number of infrastructure improvements. The MTV Project site includes the existing BART surface parking lots and several private lots on West MacArthur Boulevard and Telegraph Avenue, including 3875 Telegraph Avenue, which is the location of the Surgery Center. The City prepared and certified an EIR (the 2008 EIR) that evaluated the potential impacts of the phased buildout of the MTV Project. The 2008 MTV Project approvals include a rezoning of the MTV Project site; a planned unit development permit (PUD), which includes a preliminary development plan (PDP); design review; a major conditional use permit; and the associated conditions of approval that include, design guidelines, a draft traffic demand management program, and a mitigation monitoring and reporting program (collectively, "the MTV Project approvals").

In July of 2009, the City Council approved a Development Agreement for the MTV Project, which included a phasing plan generally consistent with the 2008 approvals (see Exhibit F, Development Agreement, Section 3.3.3). The phasing plan provided for five separate development phases each having its own schedule for submission of a final development plan (FDP) and target approval date: (1) Phase 1 consisting of the new BART garage on block E, site remediation, BART plaza improvements, Internal Drive, Frontage Road improvements, and a portion of Village Drive; (2) Phase 2 consisting of the affordable rental development on block D; (3) Phase 3 consisting of the mixed-use market rate development on block A; (4) Phase 4 consisting of the mixed-use market rate development on block B; and (5) Phase 5 consisting of the mixed use market rate development on block C, which includes the Surgery Center parcel. The FDP and other necessary applications for Phase 5 may be submitted up to ten years from July 7, 2009 (i.e., July 2019), the date of the Owner Participation Agreement approval, per Development Agreement, Section 3.3.3.

In accordance with the MTV Project approvals and the Development Agreement phasing provisions, the Phase/Stage 1[3] FDP includes the new BART parking garage and the project site infrastructure improvements required to be included in Phase 1. The project sponsor also has submitted a VTTM for those parcels in the MTV Project site controlled by the project sponsor.

[3] The City also refers to the application as the "Stage 1" applications. "Stage" and "Phase" have the same meaning in reference to the MTV Project phasing.

The MTV Project parcels not included in the VTTM, the Surgery Center parcel and the 3901 Telegraph Avenue parcel, will be included in future phases and if any subdivision maps are required in connection with development on these parcels, the appropriate maps will be filed with the final development permit applications as required by Condition of Approval No. 26 (see Exhibit B, Referenced Conditions of Approval). The project sponsor has filed the FDP application for the Phase/Stage 2 development on parcel D and that application is under review by the City staff.

B. RESPONSES TO COMMENTS

The following analysis provides responses to each comment raised in the Surgery Center's December 21, 2010 letter.[4] The responses are keyed to each comment included in the Surgery Center letter (see Exhibit G, letter with enumerated comments).

Comment 1 – MTV Project

The Surgery Center asserts that the MTV Project has been changed to delete the Surgery Center site. Additionally, the Surgery Center asserts that the Staff Report contains inconsistent project descriptions.

Response 1. The MTV Project has not changed to exclude the Surgery Center parcel. The MTV Project has always been proposed, analyzed in the 2008 EIR, and approved as a phased project. The Phase/Stage 1 FDP under consideration by the City Council simply represents the first phase of the MTV Project. The 2008 EIR, the MTV PUD, and the MTV Development Agreement all describe a phased project and establish requirements related to the phased final applications. The Surgery Center parcel is located in block C of the MTV Project site (see Exhibit A). The development on block C is designated as Phase 5 and the final applications for block C are not expected to be pursued for several years. Consequently, there is no reason or requirement to include the development proposed for the Surgery Center parcel in the Phase/Stage 1 FDP application.

The MTV Project phasing description in the EIR and the phasing requirements in the Conditions of Approval and Development Agreement are summarized below.

[4] All of the points raised in the Surgery Center December 17, 2010 letter are covered in greater detail in the December 20, 2010 letter.

2008 EIR

The 2008 EIR states the following:

> The project would be constructed over approximately seven years (see Table III-3)[5]. The phasing program discussed below is conceptual in that phasing is expected to occur sequentially; however, some phases could occur concurrently, or phasing may occur out of sequence depending on market conditions. (p.68)

Table III-3 Phasing Schedule

Phase	Schedule
BART Plaza Improvements	2009
Site Remediation and Demolition	2009
BART Parking Structure (Building E)	2009
Affordable Development (Building D)	2009
Building B	2010
Building A	2012
Building C [Surgery Center]	2014

Source: MTCP, 2007.

The 2008 EIR described the buildout of the MTV Project as occurring in five phases. (Draft EIR, p.70.) Phase I included the BART garage (block/building E), site remediation, and certain site infrastructure improvements. The Phase 1 FDP application is consistent with the Phase I description in the 2008 EIR. The phasing schedule included the development proposed for the Surgery Center parcel (block/building C) in the final phase. Thus, the 2008 EIR did not anticipate that the Surgery Center parcel development would be included in the Phase/Stage 1 FDP. The Phase 1 FDP is consistent with the 2008 EIR MTV Project and phasing description.

[5] This buildout estimate was later extended to ten years in the Development Agreement.

Conditions of Approval for the MTV Project

The City Council adopted final Conditions of Approval in connection with its July 1, 2008 approval of the MTV Project. Condition No. 2 (Effective Date, Expiration, Extensions and Extinguishment) addresses phasing/staging of the MTV Project (see Exhibit B, Referenced Conditions of Approval). This condition states that the submittal of "Final Development Plans (FDPs) shall be permitted in five (5) stages over a 10 year time period." The description of the Phase/Stage 1 FDP includes the new BART parking garage, site remediation, Internal Drive, the Frontage Road improvements, and a portion of Village Drive. (Condition 2.(a)(i).) The Phase/Stage 1 FDP meets the requirements of this condition.

Under Condition of Approval No. 2, the development approved for block C, which includes the Surgery Center parcel, is designated Phase/Stage 5. The FDP for Phase/Stage 5 is required to be submitted to the Planning Department for review and processing within 10 years from the date of the PUD approval. (Condition No. 2.(a)(v).) Thus, the development on the Surgery Center parcel is not required to be a part of the Phase/Stage 1 FDP. Condition No. 2 confirms that: (a) the MTV Project was approved as a phased development; (b) the MTV Project approvals do not require development of the Surgery Center parcel to be included in the Phase/Stage 1 FDP; and (c) development on, and the submittal of the FDP for, the Surgery Center parcel is not expected or required for a number of years.

Although Condition of Approval No. 2 allows the project sponsor discretion to substitute different blocks/buildings in the Phase/Stage 3, 4, and 5 applications, the Phase/Stage 1 and 2 applications must be processed in accordance with the terms of the condition. (Condition No. 2(c).) This provision reflects the City's policy determination regarding the importance of proceeding with the Phase/Stage 1 and 2 improvements early in the development phasing. Additionally, Condition No. 2 provides that the phasing timeframes prescribed in the Development Agreement would supersede this condition. (Condition No. 2(e).) The Development Agreement phasing provisions are discussed below.

Condition of Approval No. 26 (Subdivision Maps) states that the FDP for each development phase must be accompanied by the required subdivision map necessary to subdivide the property (see, Exhibit B, Referenced Conditions of Approval). The VTTM under consideration by the City Council covers all of the MTV Project parcels that are under the project sponsor's control. At the time the FDP for the Surgery Center parcel is pursued, a determination will be made as to whether a subdivision map is required. Development on the Surgery Center parcel, however, may not require a new subdivision map or an amendment of the VTTM. The project sponsor's current MTV Project site plan shows that the existing Surgery Center parcel

configuration would accommodate the planned development (see Exhibit A, MTV Project Illustrative Plans).

Development Agreement

Section 3.3.3 of the Development Agreement adopted by the City Council details the requirements for the MTV Project phasing (see, Exhibit A, MTV Project Illustrative Plans). Consistent with the 2008 EIR and the Conditions of Approval, Section 3.3.3 provides for a five-phase development plan. Pursuant to Section 3.3.3, the Phase/Stage 1 FDP includes the BART parking garage, site remediation, BART plaza improvements, Internal Drive, the Frontage Road improvements and a portion of Village Drive. In compliance with the Development Agreement, the project sponsor timely submitted the FDP for Phase/Stage 1 together with the necessary VTTM. The FDP applications for the remaining four project phases are required to be submitted over approximately ten years. The Phase/Stage 5 Surgery Center parcel FDP application is not required until 2019. Thus, the Phase/Stage 1 FDP and the VTTM are consistent with the phasing requirements of the Development Agreement. The submittal of the FDP application for, and development of, the Surgery Center parcel are not required for many years.

Phase/Stage 1 FDP and VTTM

The Phase/Stage 1 FDP does not include the development planned for the Surgery Center parcel because it is not part of the Phase/Stage 1 development. It is neither necessary nor required by any of the MTV Project approvals for the development of Phase 1 to include the development on the Surgery Center parcel. The VTTM does not include the Surgery Center parcel because the project sponsor does not yet control the Surgery Center parcel. These circumstances are not project changes. As anticipated by the 2008 EIR, the MTV Project Conditions of Approval, and the Development Agreement, it is expected that the project sponsor will proceed with the FDPs for future phases and, if necessary, subdivision maps or VTTM amendments, in accordance with the Project phasing schedule and following any necessary acquisition of the parcels included in these future phases.

Consistent Project Description

The Surgery Center letter states that the City Staff Report contains an inconsistent Project description. This comment misinterprets the Staff Report. The Surgery Center's assessor parcel number is listed as part of the overall MTV Project site approved in the PUD (and other MTV Project approvals) and the parcel is shown as part of the MTV Project site on the zoning map included in the Staff Report. This information confirms that the Surgery Center parcel remains a part of the MTV Project, even though it is not included in the Phase/Stage 1 FDP and the VTTM.

The Surgery Center letter also characterizes one of the Project modifications as "not requiring

acquisition of 3875 Telegraph Avenue (the Surgery Center property)." Again, this comment misinterprets the Staff Report. The Staff Report lists the Phase/Stage 1 refinements that have occurred between the PUD/preliminary development plan approval and the FDP in the context of demonstrating that the FDP substantially conforms to the PUD/preliminary development plan. One of the changes listed is the minor shift in the location of a portion of Village Drive in order to align Village Drive with the existing 39th Street. The City Council Staff Report, dated December 14, 2010, states (p.5):

- **Village Drive**, has been shifted to line up with the 39th Street right-of-way and to allow the Stage One VTTM to move forward prior to the acquisition of the Surgery Center property.

Although it was originally anticipated that a portion of Village Drive would require use of a portion of the Surgery Center parking area, the original alignment of Village Drive did not require demolition of the Surgery Center building. Moreover, the realignment of Village Drive to avoid the Surgery Center parking area does not preclude acquisition of the Surgery Center parcel and its development in Phase/Stage 5 consistent with Project described in the 2008 EIR, the MTV Project approvals, and the Development Agreement. The Staff Report analysis confirms that the Phase/Stage 1 project refinements reflected in the FDP and VTTM are in substantial conformance with the PUD/preliminary development plan and do not constitute substantial changes or substantial new information that would require revisions to the 2008 EIR. Shifting Village Drive allows acquisition of the Surgery Center parcel after the Phase/Stage 1 approvals; it does not remove Phase/Stage 5 and the development of the Surgery Center parcel from the MTV Project. As shown in the discussion above, Phase/Stage 5 is not anticipated to be developed for quite a few years and there is no reason or obligation to include the development of Phase/Stage 5 or the Surgery Center parcel in the Phase/Stage 1 final approvals.

In summary, the MTV Project has not been changed to exclude the development of the Surgery Center parcel. The development of this parcel is just not part of the Phase/Stage 1 FDP or the VTTM.

Comment 2 – Analysis of Impacts on the Surgery Center

The comment states that, because the project has been changed to exclude the Surgery Center, the EIR did not evaluate project's impacts on the continued operation of the Surgery Center.

Response 2. The 2008 EIR described the MTV Project as a phased development and described the proposed five development phases. (See, Response 1.). The 2008 EIR assumed demolition of the Surgery Center at the time the Surgery Center parcel would be developed, which was

projected to occur in the final, fifth phase of the MTV Project. The illustrative phasing schedule included in the 2008 EIR showed development of the Surgery Center property in 2014. The 2008 EIR fully considered the construction and operational environmental impacts of the MTV Project on the surrounding area, which, during the first phases of buildout, would include the Surgery Center parcel.

The MTV Project phasing has remained consistent: this is a five phase project and the development on the Surgery Center is part of Phase/Stage 5, which is not expected or required to be initiated for a number of years. No provision in any of the MTV Project approvals requires the Phase/Stage 1 FDP or the initial VTTM to include the Phase/Stage 5 development proposed for the Surgery Center parcel. Abiding by the approved phasing plan does not mean that the Surgery Center parcel has been excluded from the MTV Project. The facts do not support the Surgery Center's assertion that the project has changed. Consequently, there is no substantial project change that would trigger the potential for new environmental review.

Additionally, the concerns now raised by the Surgery Center about its ongoing operations is not new information of substantial importance that could not have been known at the time the 2008 EIR was certified. The 2008 EIR plainly analyzed a phased project with development on the Surgery Center parcel in the final phase. The construction and operational impacts of the MTV Project on surrounding uses were fully assessed in the 2008 EIR. Additionally, the EIR included an alternative (Alternative 3, "Mitigated Reduced Building/Site Alternative") that examined the construction and operational impacts of a project without the Surgery Center site. Thus, the Surgery Center was aware that the first phases of the MTV Project or the implementation of Alternative 3 would involve construction activities adjacent to its site. All of the concerns raised in the Surgery Center letter were known and could have been raised in 2008. The Surgery Center could have, but did not, raise its concerns at the time the City certified the 2008 EIR. The Surgery Center's December 2010 comments on the 2008 EIR do not meet the CEQA definition of new information of substantial importance that was not known, or could not have been known with the exercise of due diligence, at the time the EIR was certified. (*CEQA Guidelines* section 15162.)

In light of these facts, the 2008 EIR remains valid and no longer subject to challenge. The City filed the following Notices of Determination for the MTV Project: (1) July 16, 2008 – NOD for the MTV Project approvals; (2) July 10, 2009 – NOD for the Owner Participation Agreement; (3) July 23, 2009 – NOD for Development Agreement. No legal challenge to the 2008 EIR was filed. The time to do so has long expired.

Moreover, as part of the City staff review of the Phase/Stage 1 FDP and the VTTM, the staff considered the differences between the approved PUD/preliminary development plan and the Phase/Stage 1 FDP and the VTTM to determine whether any additional environmental review

would be required pursuant to *CEQA and the CEQA Guidelines*. The staff found that no subsequent or supplemental environmental review was necessary, because the minor refinements to the site plan, some of which implemented Conditions of Approval, did not constitute substantial changes in the project, substantial changes to the project circumstances, or new information of substantial importance that would result in any new significant impacts or a substantial increase in the severity of impacts already identified in the 2008 EIR. See Approved November 3, 2010 Planning Commission Report (revised on 11/13/10).

Comment 3 – Notice to the Surgery Center

The comment states that the project sponsor has "unilaterally, and without prior notice" to the Surgery Center changed the project and additional environmental review should be required to consider noise, vibration, dust and diesel particulate matter.

Response 3. The MTV Project has not been changed to exclude the Surgery Center (see discussion above pp 1-10). The Surgery Center owners have known about the MTV Project for several years and were informed that the project sponsor was proceeding with the first phase of development. The project sponsor has provided documentation that since 2008 the project sponsor and the Surgery Center owners have met and corresponded a number of times to discuss the project sponsor's acquisition of the Surgery Center parcel (see Exhibit H, Summary of Negotiations with the Surgery Center).

With respect to the Phase/Stage 1 FDP and the VTTM, the documentation provided by the project sponsor shows that a representative of the Surgery Center attended the April 21, 2010 community presentation by the project sponsor at which the Phase/Stage 1 FDP and construction schedule were reviewed. On June 2, 2010, the project sponsor sent a letter to the Surgery Center to provide an update on the Phase/Stage 1 FDP and the anticipated dates for City hearings on the plan. This letter specifically described the realignment of Village Drive to allow Phase/Stage 1 to proceed without acquiring the right to use a portion of the Surgery Center parcel. The letter also reiterated that the Surgery Center parcel continued to be included as part of the MTV Project and is shown on block C-3 in the current MTV Project Illustrative Plan, which reflects the FDP plans for Phases 1 and 2 (see Exhibit A). Representatives of the project sponsor also met with the Surgery Center owners on December 1, 2010 to discuss the MTV Project status and the continued interest in the acquisition.

See responses to the Surgery Center Letter Attachments A and B below regarding noise, vibration, and dust and diesel particulate matter.

Comment 4 – Surgery Center Operations

This comment provides information regarding the Surgery Center's operations, services, and patient care, which it characterizes as "uniquely sensitive receptors."

Response 4. The 2008 EIR noise and air quality analyses considered the category of sensitive receptors, which includes residences and hospitals among other uses. To the extent that a surgery center also could be considered a sensitive receptor, it would be covered by the requirements in the City's standard conditions of approval and imposed on the MTV Project to reduce construction noise, vibration, and air quality impacts on these uses.[6] See responses to the Surgery Center Letter Attachments A and B below regarding noise, vibration, and dust and diesel particulate matter.

Comment 5 – Surgery Center Parcel and the Phase/Stage 1 Applications

This comment states that the project sponsor has acknowledged that the Surgery Center has been removed from the Project and dismisses the Project's impacts on the Surgery Center.

Response 5. This comment misinterprets the information it quotes from the October 26, 2010 memorandum from Art May to Catherine Payne. First, as discussed above (Response 1), the MTV Project has not been changed to remove the Surgery Center parcel. In fact, the memorandum quoted in the Surgery Center letter states the project sponsor expects to include the Surgery Center parcel in an amended VTTM when the project sponsor gains control of the Surgery Center parcel. Nothing is this statement "acknowledges" or implies that the project sponsor has amended the MTV Project to delete Phase/Stage 5 and the development of the Surgery Center parcel. This memorandum merely acknowledges that the Surgery Center parcel is not necessary for the Phase/Stage 1 FDP and the initial VTTM. Second, the memorandum does not dismiss the MTV Project impacts on the Surgery Center. Instead, the quoted sentence from the memorandum means that the Phase/Stage 1 development will not require the use of any portion of the Surgery Center parcel and in this sense will not affect the Surgery Center. The main point of the quoted statement is that the construction of the Phase/Stage 1 development is not dependent on acquisition of the Surgery Center site.

[6] The standard conditions of approval were formally adopted by the Oakland City Council in November 2008 to reduce potential impacts of projects, Ordinance No. 12899 C.M.S., November 3, 2008. However, the standard conditions of approval were used by the City prior to formal adoption and those related to noise were approved by the Council several years prior to the adoption of the standard conditions of approval.

Comment 6 – Construction Impacts

This comment states that because the Surgery Center has been removed from the MTV Project it will be affected by the construction impacts on its patients, employees, operations, and equipment from noise, vibration, dust and diesel particulate, and fumes.

Response 6. As discussed above, the Surgery Center has not been removed from the MTV Project and no additional CEQA analysis is warranted on this basis. (See, Responses 1 and 2 above.) The 2008 EIR covered the construction impacts of the MTV Project. The 2008 EIR analyzed the MTV Project as a phased project, with the Surgery Center site development in the final phase. Consequently, the construction impacts from the early development phases on sites included in later development phases were considered in the construction impact analysis. Additionally, the EIR included Alternative 3, a project without the Surgery Center site. This alternative included an evaluation of construction impacts.

To respond to the concerns raised by the Surgery Center, the project sponsor retained LSA Associates and Wilson Ihrig and Associates to (1) prepare a health risk assessment to evaluate the air quality (dust and diesel emission) concerns; (2) prepare the construction noise plan required by the COA-NOISE-5 and evaluate whether the measures included in this plan would ensure that the construction noise would meet City requirements; and (3) evaluate the vibration concerns and recommend any necessary vibration reduction strategies pursuant to COA-NOISE-6. These analyses confirm the EIR's determination that project construction activities undertaken pursuant to the City's Standard Conditions of Approval would not result in significant adverse air quality, noise, or vibration impacts. The LSA Associates and Wilson Ihrig and Associates analyses are discussed in detail below in Responses to the Attachment A and B of the December 21, Surgery Center letter.

In order to provide the City Council with additional information about the potential impacts of construction projects adjacent to medical facilities, we reviewed two EIRs recently certified by the City for new hospitals/medical centers, both of which involve construction activities adjacent to existing hospitals: the Alta Bates Summit Medical Center, Summit Campus Seismic Upgrade and Master Plan EIR (ABSMC EIR) and the Kaiser Permanente Oakland Medical Center Master Plan Project EIR (Kaiser EIR). These hospitals are significantly larger than the Surgery Center, provide more medical services and have more equipment than the Surgery Center, and, unlike the Surgery Center, operate 24 hours a day and accommodate short-term and long-term patient stays.

Construction Air Quality Comparison: Both the ABSMC EIR and the Kaiser EIR relied solely on the City's SCAs to mitigate potential construction air quality impacts. The air quality SCAs included in

the MTV 2008 EIR require more stringent mitigation of dust and equipment emissions than the SCAs included in the ABSMC EIR and the Kaiser Medical Center EIR.

Construction Noise Comparison: The less-than-significant noise finding in the MTV 2008 EIR is consistent with the findings included in the ABSMC EIR and the Kaiser EIR. Both of the ABSMC and Kaiser projects proposed the use of heavy construction equipment immediately adjacent to existing hospital uses. The Kaiser EIR considers the use of pile drivers and the ABSMC EIR considers the use of drilled piles, which would be installed (for both projects) immediately adjacent to existing hospital facilities. The noise SCAs included in the MTV EIR are identical to those included in the ABSMC EIR and slightly more restrictive than those included in the Kaiser EIR, which Charles M. Salter Associates (noise consultant for Kaiser EIR) found to be adequate to reduce the construction noise impacts to a less-than-significant level. The Surgery Center has not identified any unique circumstances of the Surgery Center or the MTV Project would necessitate mitigation beyond what is required by the SCAs and was found to adequately mitigate the construction noise impacts for the ABMSC or the Kaiser projects.

Construction Vibration Comparison: The less-than-significant vibration impact finding in the MTV 2008 EIR is consistent with the findings in the ABSMC EIR and the Kaiser EIR. Neither the ABSMC EIR nor the Kaiser EIR identified any vibration impacts and both projects include construction activities that are significantly more intense than the MTV Project. The ABSMC EIR states: “since the proposed project would not include any vibration-causing activity aside from that associated with construction and motor vehicles, it can be assumed that no impact would occur with regard to criterion 6) [vibration]. (Draft EIR page 4.5-12). The Kaiser EIR noise and vibration analysis is silent on the topic.

Comment 7 – Environmental Review for the Stage One FDP and VTTM

The comment asserts that a subsequent EIR must be prepared to analyze the impact of the "modified" project on the Surgery Center, the new circumstance of the continued operation of the Surgery Center, and the new information regarding the removal of the Surgery Center from the project.

Response 7. See Responses 1 and 2 above. The Surgery Center is not being removed from the MTV project. Thus, this is not a substantial change to the MTV Project. The continued operation of the Surgery Center until Phase 5 is proposed for development was assumed in the 2008 EIR. Thus, this is not a substantial change with respect to the circumstances under which the project is undertaken. Because the Surgery Center is not being removed from the MTV Project, this is

not new information. Therefore, none of the CEQA Guidelines 15162 criteria for subsequent environmental review are triggered and no subsequent EIR is required.

Comment 8 – Substantial Conformance with Preliminary Development Plan Approval

The comment asserts that because the Surgery Center has been removed from the MTV Project, the Phase/Stage 1 FDP is not in substantial conformance with the approved preliminary development plan. Additionally, the comment asserts that the City cannot make the required findings for a PUD approval.

Response 8. As explained above, the Surgery Center has not been removed from the MTV Project. City staff evaluated the Phase/Stage 1 FDP application and found it substantially conforms to the approved PUD/preliminary development plan (see Approved November 3, 2010 Planning Commission Report (revised on 11/3/10). The PUD for the MTV Project was approved in 2008. This approval and its findings are no longer subject to challenge.

Comment 9 – Approval the Stage One VTTM

The comment asserts that the City cannot approve the VTTM because the Project is likely to cause serious public health and safety problems related to significant impacts on patients at the Surgery Center and the City's SCAs are not adequate.

Response 9. Please refer to Air Quality Master Response to Attachment A, Illingworth & Rodkin, letter dated December 21, 2010, below, which demonstrate that the approval of the VTTM will not cause any public health or safety problems for the Surgery Center patients.

Attachment A: Illingworth & Rodkin, letter dated December 21, 2010

This letter details the Surgery Center's specific air quality concerns. The letter presents concerns regarding acute impacts from increased dust and increased exposure to diesel particulate matter that would result based on the assertion that the MTV Project has been changed to eliminate the Surgery Center site and construction will occur immediately adjacent to the Surgery Center.

The following analysis provides a Master Response to the air quality issues raised.

Air Quality Master Response

As discussed above, the MTV Project has not been changed to eliminate the Surgery Center site. This comment also incorrectly states that the 2008 EIR did not identify any sensitive receptors adjacent to the Project and did not address localized impacts from construction equipment exhaust. The 2008 EIR air quality analysis identifies sensitive receptors and provides an analysis of construction-related air quality impacts.

The 2008 EIR states that the MTV Project would contribute to regional ozone emissions in the form of emissions from construction vehicles and would contribute to particulate matter emissions through construction vehicle emissions and the disturbance of soil within the project site during the construction period (p. 245). Additionally, an estimate of the construction emissions was prepared based on preliminary construction plans using the URBEMIS 2007 model. Table IV.D-6 (Draft EIR, p. 247) shows the construction emission model results.[7] The temporary construction-period air quality impacts (for all pollutants) were found to be less-than-significant with the implementation of both the City's air quality SCAs, including the standard and enhanced measures for dust control and the construction equipment measures (listed as listed as COA AIR-1 and AIR-2 in the 2008 EIR).

The MTV Project's potential effects on sensitive receptors are addressed on page 246 of the Draft EIR under subsection (5) "Exposure of sensitive receptors to substantial pollutant concentrations." The section describes sensitive receptors as facilities that house or attract children, the elderly, and people with illnesses or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are cited as examples of sensitive receptors. The 2008 EIR finds that construction of the project would temporarily increase localized emissions and that construction-period air quality impacts (for all pollutants), including impacts to sensitive resources, would be less-than-significant with implementation of the SCAs for dust control and construction equipment measures. (Draft EIR page 246.)

Although no new analysis is warranted under CEQA, a health risk assessment was undertaken to address the Surgery Center's concerns and confirm the EIR's finding that no significant impacts related to construction air quality concerns would occur (see, Health Risk Assessment, Exhibit C). The analysis considered a detailed construction equipment schedule for Phases 1 and 2 that was

[7] Since the certification of the 2008 EIR, the Bay Area Air Quality Management District (BAAQMD) has adopted new CEQA thresholds for construction emissions. None of the results listed in Table IV.D-6 exceed the new BAAQMD thresholds for construction emissions. BAAQMD CEQA Guidelines (June 2010), p.2-6. However, those guidelines do not apply here because the City commenced review of the Phase 1 FDP and the VTTM applications, including a review under CEQA to determine if any of the factors under CEQA Guidelines sections 15162 or 15163 were implicated CEQA review of Phase 1 commenced prior to February 2010.

provided by the project sponsor (see Exhibit I, Construction Equipment Schedule, dated January 28, 2011). The findings from this health risk assessment are summarized below.

A health risk assessment (HRA) was conducted to assess health related air quality impacts from construction on patients and workers at the Surgery Center. The HRA assessed the impacts from the Phase/Stage 1 FDP and the Phase/Stage 2 FDP construction activities, because the project sponsor has submitted to the City the Phase/Stage 2 FDP application. Using the detailed construction schedule and equipment list provided by the Keystone Development Group and a combination of the California Air Resources Board's URBEMIS 2007 and HARP models, a detailed HRA was developed. The URBEMIS 2007 model was used to translate the construction details into pollutant emissions rates. These emissions were then assigned locations on the MTV Project site corresponding with the construction phasing plan and within those areas, placed closer to the Surgery Center to maximize the predicted impact. The HARP model was then used to combine these emissions and local meteorological conditions into an air dispersion model to predict pollutant concentrations and corresponding health risk levels. To insure completeness, the health risk levels were determined not only for the patients and workers at the Surgery Center, but also for the residences adjacent to the project site. It is standard HRA methodology to assess only the outdoor risk levels, since the amount of protection afforded by buildings varies substantially. It is probable that the Surgery Center provides above average protection to patients and workers inside the building, however, this HRA does not attempt to quantify that protection.

The primary health concern is the short-term acute affects from the exhaust of the heavy-duty construction equipment operating in close proximity to the Surgery Center. However, there is also a longer term exposure to the workers at the Surgery Center, and possibly to patients of the Surgery Center. Although the Surgery Center does not have inpatient accommodations, this HRA includes the expected carcinogenic and chronic health risks to a patient staying not only overnight but doing so for the entire construction period. It is assumed that the workers stay 8 hours per day on average and continue to work at the Surgery Center for the entire construction period. The HRA conservatively assumes that doctors, nurses, and patients spend all day outside on the side of the Surgery Center building nearest to the construction activities. Based on these conservative assumptions, Table 1 shows the HRA results**.** The BAAQMD additionally requires that the long-term carcinogenic health risk results have age factors applied to account for the range of age groups in the general population. Table 2 shows the age groups, their adjustment factors, and the adjusted carcinogenic health risk level for someone staying at the Surgery Center for the full construction period, 24 hours a day or for residents of the nearby homes.

Table 1: Inhalation Health Risks from Construction Operations

Risk Category	Carcinogenic Inhalation Health Risk	Chronic Inhalation Health Index	Acute Inhalation Health Index	Threshold Exceeded
2-Year Patient Risks	0.24 in 1 million	0.0061	0.04	No
Worker Risks	0.047 in 1 million	0.0061	0.04	No
Residential Risks	0.24 in 1 million	0.0061	0.04	No
BAAQMD Threshold	10 in 1 million	1	1	

Source: LSA Associates, Inc., January 2011

Table 2: 70-Year Carcinogenic Age Group Adjustment

Risk Group	ASF	Duration	Carcinogenic Inhalation Health Risk
3rd Trimester to age 2 years	10	2.25/70	0.077 in a million
age 2 years to age 16 years	3	14/70	0.14 in a million
age 16 to 70 years	1	54/70	0.20 in a million
Adjusted 70 year lifetime risk			**0.41 in a million**
BAAQMD Threshold			**10 in a million**
Threshold Exceeded			**No**

Source: LSA Associates, Inc., January 2011

As shown on Tables 1 and 2 for both patients and workers at the Surgery Center, as well as nearby residents, construction operations would result in a maximum health risk level that is below the BAAQMD's criterion of significance (10 in 1 million) for cancer health effects and for chronic or acute health risks. While the Surgery Center patients may be uniquely sensitive to air pollution, these health risk levels are substantially below the BAAQMD's thresholds of significance, making it unlikely that anyone, even uniquely sensitive individuals, would experience a negative health effect.

Historically, the BAAQMD has used the criterion of 10 in 1 million to determine the risk for point sources such as emissions from industrial facilities. This threshold was developed for these kinds of emissions sources that operate continuously for decades. Applying this threshold to a relatively brief event, such as the construction of this project, is very conservative. Additionally, the BAAQMD has documented that the best management approach to fugitive dust emissions from construction activities is an effective approach that reduces fugitive dust from 30 percent to more than 90 percent. Through the City's SCA, which are listed as COA AIR-1 and AIR-2 in the

2008 EIR, the MTV Project must implement best management practices to reduce fugitive dust emissions.

Attachment B: Charles M Salter Associates, letter dated December 21, 2010

This letter details the Surgery Center's specific construction noise and vibration concerns and asserts that the project would result in potentially significant noise and vibration impacts. The concerns presented are based on the incorrect assertion that the MTV Project has been changed to eliminate the Surgery Center site.

Noise Master Response

The 2008 EIR, Section IV.E-7, Noise, includes a discussion of potential effects associated with sensitive receptors during both construction and operation periods and assumes that pile driving may be necessary. The analysis assumes that the MTV Project will be built in five phases, over a seven-year period (page 299) and that the Surgery Center property would be the last phase (page 70). Page 299 of Section IV.E-7, Noise, states:

> *Construction of the project is to occur over a seven-year period, beginning in 2009. During this period, a wide variety of construction remediation and demolition equipment would be used and materials would be transported to and from the site during each development phase.*

The 2008 EIR evaluated the increase in traffic flow on local streets associated with the transport of workers, equipment, and materials to and from the project site. The 2008 EIR found that the increase in traffic flow on the surrounding roads due to construction traffic would be minimal, but there would be short-term intermittent high noise levels associated with trucks arriving to and departing from the project site.

The 2008 EIR also evaluated noise generated by heavy equipment operating on the project site, including the potential for pile driving. The 2008 EIR found that construction-related noise associated with typical construction equipment would be 91 dBA Lmax at a distance of 50 feet and that sensitive land uses (or sensitive receptors) would be located within 50 feet of construction. For pile driving on the MTV Project site, the 2008 EIR found that sensitive receptors located within 50 feet of the MTV Project site could be exposed to maximum noise levels of up to 93 dBA Lmax. (Draft EIR p. 299)

The analysis found that the MTV Project construction-related noise effects would be reduced to less than significant with implementation of the City's SCAs for construction noise which are included in the 2008 EIR as: COA NOISE-1: Days/Hours of Construction Operation; COA NOISE-2:

Noise Control; COA NOISE-3: Noise Complaint Procedures; and COA NOISE-5: Pile Driving and Other Extreme Noise Generators.

As part of the process of preparing for construction of Phase/Stage 1 and Phase/Stage 2 and in compliance with COA NOISE-5, the project applicant retained an acoustical consultant to prepare a final noise plan based on the FDP submittal that details a set of site specific noise attenuation measures to ensure that maximum feasible noise attenuation will be achieved.[8] The plan (see Exhibit D) considers both Phase/Stage 1 and Phase/Stage 2 of the MTV Project and the associated construction equipment schedules provided by the project sponsor (see Exhibit I, Construction Equipment Schedule, dated January 28, 2011). The plan confirms that noise levels from construction activities would be reduced consistent with the requirements of COA-NOISE-5 with implementation of the noise conditions, including the best management practices outlined in COA NOISE 2 and the use of temporary sound walls in certain areas, consistent with the types of measures listed in the COA-NOISE-5, which states:

> *The noise reduction plan shall include, but not be limited to, an evaluation of implementing the following measures. These attenuation measures shall include as many of the following control strategies as applicable to the site and construction activity:*
>
> *a) Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;*
> *b) Implement "quiet" pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;*
> *c) Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;*
> *d) Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example, and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and*
> *e) Monitor the effectiveness of noise attenuation measures by taking noise measurements.*

The noise reduction plan includes the following requirements, which will reduce the projected worst case hourly average construction noise levels at the closest receptor sites:

(1) Prior to initiation of on-site construction-related earthwork activities, a minimum 8-foot high temporary sound barrier shall be erected along the project property line abutting the residential sensitive land uses that are adjacent to the construction site on MacArthur Boulevard and Telegraph Avenue.

[8] Consistent with the requirements of COA-NOISE-5, which requires a noise plan that includes a set of site-specific noise attenuation measures based on the project's final design plans be submitted to the City for review and approval prior to the commencement of construction, the project sponsor will prepare and submit subsequent noise reduction plans for future phases once final design plans are available and construction is planned to commence.

(2) Prior to initiation of on-site construction-related earthwork activities, a minimum 6 foot high temporary sound barrier shall be erected along the project property line abutting the outpatient Surgery Center.

(3) These sound barriers shall be constructed with a minimum surface weight of 4 pounds per square foot and shall be constructed so that vertical and horizontal gaps are eliminated. These temporary barriers shall remain in place through the construction phase in which heavy equipment, such as excavators, dozers, scrapers, loaders, rollers, pavers, and dump trucks are operating within 150 feet of the edge of the construction site and the adjacent sensitive land uses.

These noise reduction strategies will ensure that construction noise during the loudest periods of construction for the Phase/Stage 1 and Phase/Stage 2 FDPs will be reduced as required by COA-NOISE-5. In addition, the Project contractor must also comply with all of the other noise reduction strategies in the COA-NOISE-1,-2,-3, and -4, which will further reduce construction noise impacts in the Project vicinity. The noise reduction plan also includes requirements for monitoring construction noise through measurements and for adjusting equipment use if the monitoring identifies construction noise that exceeds the City's thresholds.

Construction Vibration Master Response

The 2008 EIR acknowledged that construction activities could cause ground-borne vibration in the Project vicinity (see Draft EIR p. 300). Under the City's significance criteria, temporary vibration from construction work is not considered significant. The City's Standard Condition of Approval for vibration (listed as COA-NOISE-6, Vibration Adjacent Historic Structures, in the 2008 EIR) requires the project applicant to retain an appropriate professional to determine threshold levels of vibration that could damage nearby buildings and design means and methods of construction that would not exceed the thresholds.

Pursuant to the SCA, to respond to the Surgery Concerns, and to confirm that no significant impacts related to vibration would result from the MTV Project construction using the FTA criteria referenced by the Surgery Center, the project sponsor retained Wilson, Ihrig and Associates (WIA), experts in vibration analysis, to analyze the Construction Equipment Schedule (see Exhibit I) for Phases 1 and 2 (see Exhibit E, Vibration Memorandum). As part of the Construction Equipment Schedule, the Project Sponsor has committed to the use of reduced-vibratory construction methods, which would reduce the vibration generated by the construction activities to below the FTA thresholds proposed by the Surgery Center.

The WIA analysis confirms that anticipated vibration from construction activities for Phase 1 and 2 of the MTV Project would not exceed the FTA Category 1 criterion, which applies to buildings where vibration would interfere with interior operations, at the Surgery Center.

Pursuant to the SCA (see COA NOISE-6 in 2008 EIR), WIA recommends that (1) the contractors implement the Construction Equipment Schedule elements detailed in Exhibit I; and (2) vibration monitoring be conducted at the Surgery Center to document the baseline conditions during operations prior to construction and to monitor the vibration at the facilities during the key periods of construction that are subject to vibration to verify that construction-related vibration is not exceeding the FTA category 1 criterion. The key periods of construction would occur when the equipment discussed above are in operation (e.g., vibratory roller compactor, vibrating plate compactors, and/or jumping jack). As part of compliance with COA NOISE-6, the project sponsor will be required to comply with these recommendations which will ensure the impact remains less than significant.

Conclusion

The Surgery Center letters do not raise any issues or contain any new information requiring the City to prepare a supplemental or subsequent EIR for the MTV Project Phase 1 FDP and VTTM as described in the Executive Summary above.

Exhibits

Exhibit A, MTV Project Site Location and Illustrative Plans
Exhibit B, Referenced Conditions of Approval
Exhibit C, Health Risk Assessment
Exhibit D, Noise Reduction Plan
Exhibit E, Vibration Memorandum
Exhibit F, Development Agreement, Section 3.3.3
Exhibit G, December 21 Letter from Surgery Center with comments enumerated
Exhibit H, Summary of Negotiations with the Surgery Center
Exhibit I, Construction Equipment Schedule

EXHIBIT A

Exhibit A-1 Project Site Area and Surgery Center Location

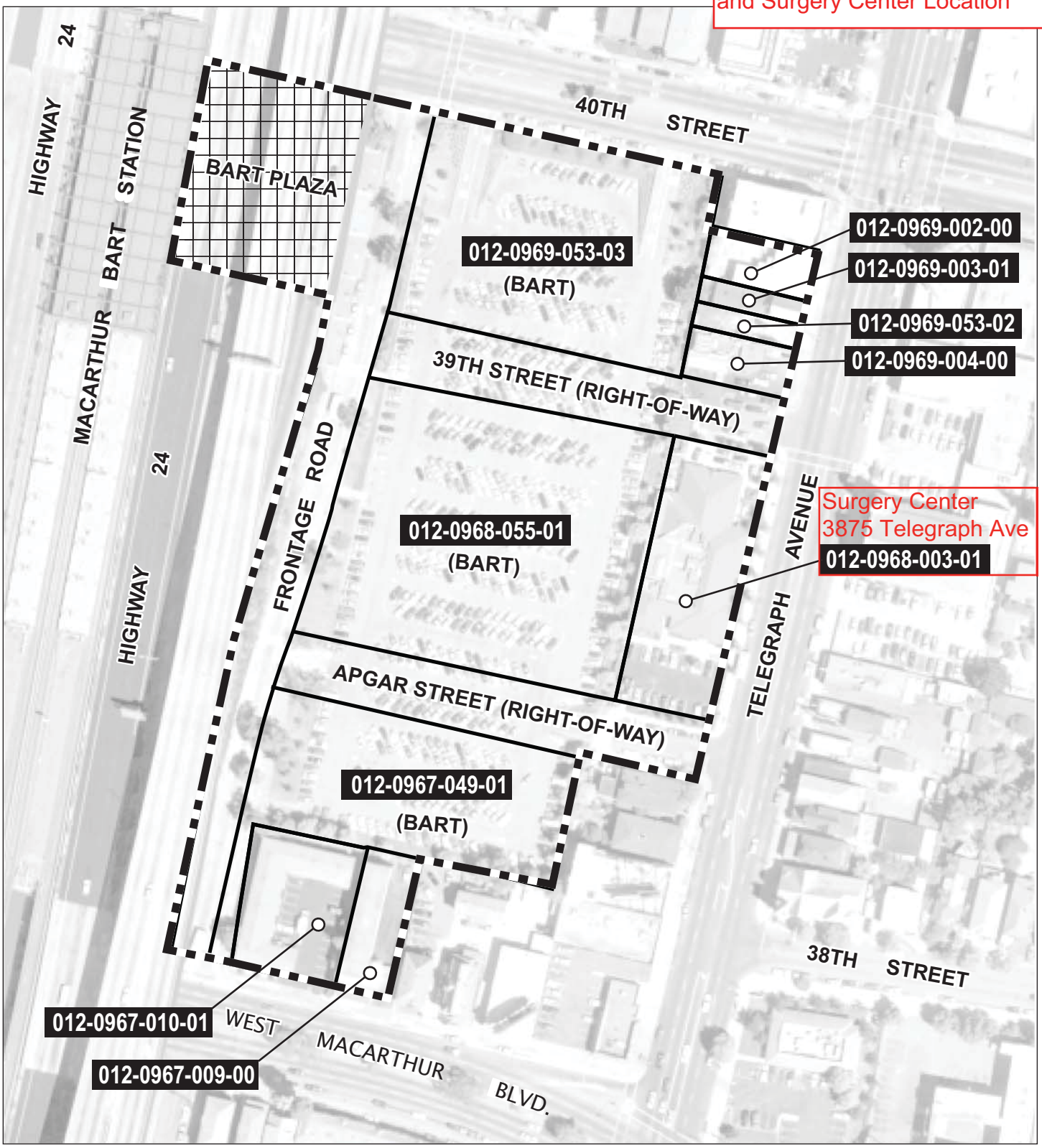

EXHIBIT A1

Legend

- Project site
- BART Plaza
- Parcel lines

N

0 75 150
feet

MacArthur Transit Village Project Site

SOURCE: CITY OF OAKLAND, 2006.

Exhibit A-2: Illustrative Plan from EIR/2008 Approval

EXHIBIT A

MacArthur Village Project EIR
Illustrative Site Plan 2008

Surgery Center Parcel

SOURCE: MACARTHUR TRANSIT COMMUNITY PARTNERS,LLC, 2007.

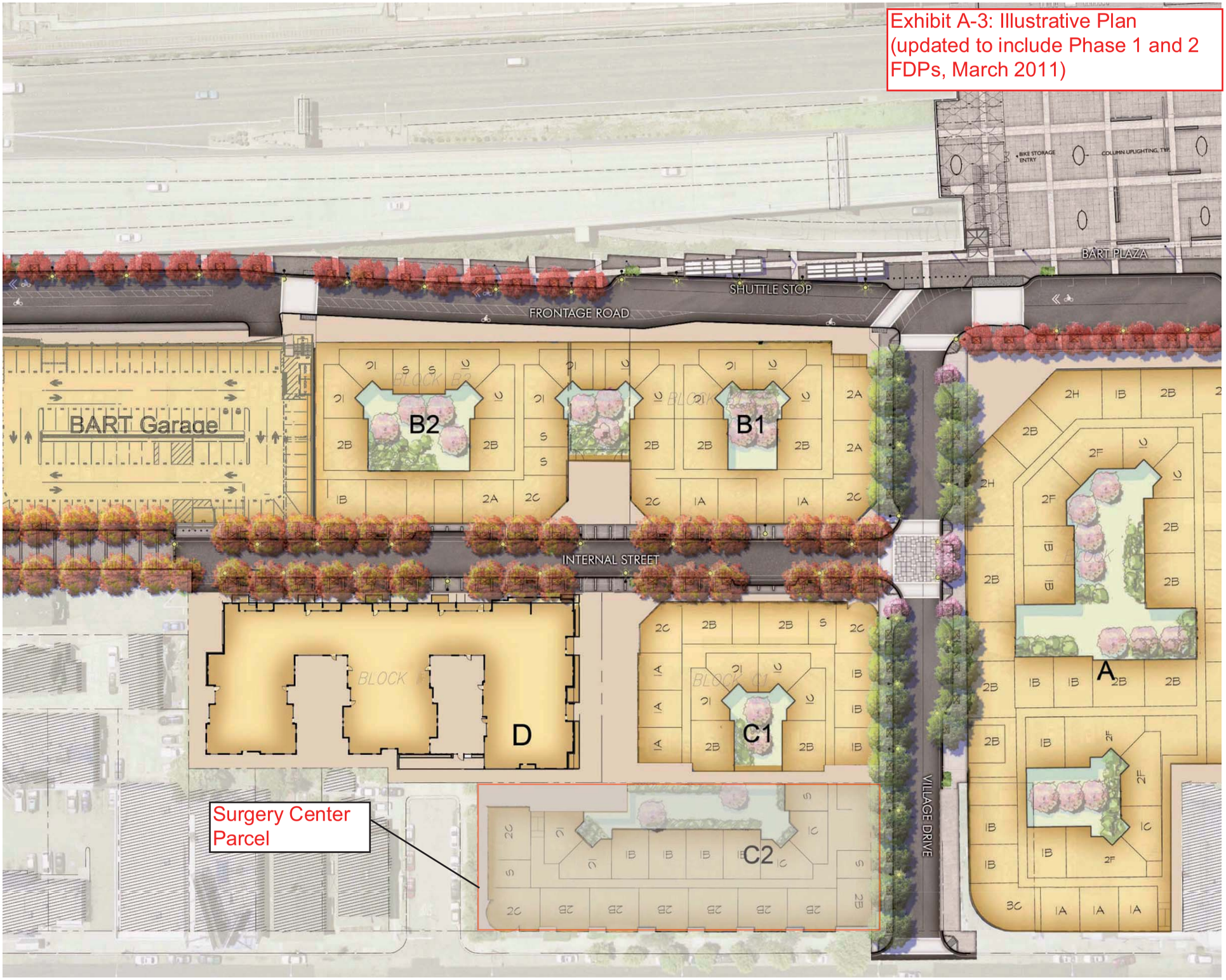
Exhibit A-3: Illustrative Plan
(updated to include Phase 1 and 2
FDPs, March 2011)
BART PLAZA
SHUTTLE STOP
FRONTAGE ROAD
BART Garage
B2
B1
INTERNAL STREET
D
C1
C2
A
VILLAGE DRIVE
Surgery Center
Parcel
EXHIBIT A

Note: This exhibit only includes pages with conditions of approval referenced in the Surgery Center Letters Response Memorandum. See November 3, Planning Commission Report, dated November 3, 2010 (as amended and approved by the Planning Commission on 11/13/10)

EXHIBIT A

CONDITIONS OF APPROVAL
FOR THE MACARTHUR TRANSIT VILLAGE PROJECT

Part 1: General Conditions of Approval

1. **Approved Use**

Ongoing

a) The project shall be constructed and operated in accordance with the authorized use as described in the application materials, staff report, and the plans submitted on **May 28, 2008**, and as amended by the following conditions. Any additional uses or facilities other than those approved with this permit, as described in the project description and the approved plans will require a separate application and approval. Any deviation from the approved drawings, Conditions of Approval or use shall require prior written approval from the Director of City Planning or designee. The project may however increase the number of permitted residential dwelling units up to a maximum of 675 dwelling units, as analyzed in the MacArthur Transit Village Project EIR provided that a) the ratio of affordable units (20% of market rate units) is maintained; and the resulting project design with the additional units shall conform in all major respects with the approved Preliminary Development Plan.

b) This action by the **City Planning Commission** ("this Approval") includes the approvals set forth below**.** This Approval includes:

i. **Planned Unit Development (PUD), under Oakland Planning Code Chapters 17.122 and 17.140;**

ii. **Major Conditional Use Permit (CUP), under Oakland Planning Code Chapter 17.134; and**

iii. **Design Review, under Oakland Planning Code Chapter 17.136**

c) **This Approval shall not become effective unless the proposed legislative actions (rezoning and text amendment) occur as stated in Condition of Approval 20.**

2. **Effective Date, Expiration, Extensions and Extinguishment**

Ongoing

Unless a different termination date is prescribed, this Approval shall expire **two years** from the approval date, unless within such period all necessary permits for construction of Stage 1 (the BART Parking Garage) have been issued. Upon written request and payment of appropriate fees submitted no later than the expiration date of this permit, the Director of City Planning or designee may grant two one-year extensions of this date, with additional extensions subject to approval by the approving body. Expiration of any necessary building permit for this project may invalidate this Approval if the said extension period has also expired. These time periods are "tolled" due to litigation challenging this approval and thus such time shall not be counted toward expiration of this approval. The Preliminary Development Plan Approval for the Planned Unit Development Permit shall expire June 4, 2018 and all Final Development Plan phases shall be reviewed and approved by that date (see below for details on FDP Staging).

Notwithstanding, the timeframes provided for in this Condition no. 2 the project sponsor shall, if feasible, make reasonable effort to proceed with all phases of the project as expeditiously as possible, and have the full build out of the project be completed as early as possible.

FDP Staging
Submittal of Final Development Plans (FDPs) shall be permitted in five (5) stages over a 10 year time period from the date of this approval, as detailed below.

(a) Each stage of FDP is described below:

i. Stage 1. Stage 1 FDP for the project will include the construction of Building E, the replacement BART parking garage, site remediation, Internal Drive, the Frontage Road improvements, and the portion of Village Drive that extends from the Frontage Road to the Internal Drive. Stage 1 FDP shall be submitted to the Planning Department for review and processing and the project applicant shall make regular and consistent progress toward approval of Stage 1 FDP within 1 year from the date of this approval. If approved, construction associated with Stage 1 FDP shall commence in earnest by not later than 2 years from the date of Stage 1 FDP approval.

ii. Stage 2. Stage 2 FDP for the project will include construction of Building D, consisting of a minimum of 90 below market rate rental units. Stage 2 FDP shall be submitted to the Planning Department for review and processing and the project applicant shall make regular and consistent progress toward approval of Stage 2 FDP within 3 years from the date of this approval. If approved, construction associated with Stage 2 FDP shall commence in earnest by not later than 2 years from the date of Stage 2 FDP approval.

iii. Stage 3. Stage 3 FDP for the project will include construction of Building A, consisting of up to 240 ownership residential units and 26,000 square feet of commercial space. All street improvements, including the completion of Village Drive and any new traffic signals required by the project, will be completed in this phase. This phase will also include the completion of a public plaza directly across Frontage Road from the existing BART Plaza. Stage 3 FDP shall be submitted to the Planning Department for review and processing and the project applicant shall make regular and consistent progress toward approval of Stage 3 FDP within 3 years-from the date of this approval. If not feasible, Stage 3 FDP approval may be delayed up to a year. If approved, construction associated with Stage 3 FDP shall commence in earnest not later than 2 years from the date of Stage 3 FDP approval.

iv. Stage 4. Stage 4 FDP for the project will include the construction of Building B, consisting of up to 150 ownership residential units and 5,500 square feet of commercial space. Stage 4 FDP shall be submitted to the Planning Department for review and processing and the project applicant shall make regular and consistent progress toward approval of Stage 4 FDP within 8 years from the date of this approval. If approved, construction

associated with Stage 4 FDP shall commence in earnest not later than 2 years from the date of Stage 4 FDP approval.

v. Stage 5. Stage 5 FDP for the will include the construction of Building C, consisting of up to 195 ownership residential units and 12,500 square feet of commercial space. This phase will also include the construction of a community center use on the ground floor of Building C. Stage 5 FDP shall be submitted to the Planning Department for review and processing 10 years from the date of this approval. If approved, construction associated with Stage 5 FDP shall commence in earnest not later than 2 years from the date of Stage 5 FDP approval.

(b) For purposes of this conditions, the term "commence in earnest" shall mean to initiate activities based on a City-issued building permit and other necessary permit (s) and diligently prosecute such permit(s) in substantial reliance thereon and make regular and consistent progress toward the completion of construction and the issuance of final certificate of occupancy, including successful completion of building inspections to keep the building permit and other permits active without the benefit of extension.

(c) Provided that Stage 1 and 2 FDPs are approved in accordance with the above time frames, the Developer shall have the discretion to change which buildings (A, B, or C) are constructed in which Stages (3, 4 or 5) provided that the FDP submittal dates for these stages remain the same. All other modifications to FDP staging shall be subject to review and approval by the Planning Commission.

(d) FDP Stages may be combined and reviewed prior to the outlined time frames. If each stage of FDP is not submitted/completed within the time frames outlined above, the PDP shall be considered null and void.

(e) If, subsequent to this approval, a Development Agreement for this project is adopted by the City, the phasing and construction timeframes prescribed within the Development Agreement shall supersede this condition of approval and govern construction phasing for the project.

3. Scope of This Approval; Major and Minor Changes

Ongoing

The project is approved pursuant to the Planning Code only. Minor changes to approved plans may be approved administratively by the Director of City Planning or designee. Major changes to the approved plans shall be reviewed by the Director of City Planning or designee to determine whether such changes require submittal and approval of a revision to the approved project by the approving body or a new, completely independent permit.

4. Conformance to Approved Plans; Modification of Conditions or Revocation

Ongoing

a) Site shall be kept in a blight/nuisance-free condition. Any existing blight or nuisance shall be abated within 60-90 days of the project sponsor obtaining site control, unless an earlier date is specified elsewhere.

b) The City of Oakland reserves the right at any time during construction to require certification by a licensed professional that the as-built project conforms to all applicable zoning requirements, including but not limited to approved maximum heights and minimum setbacks. Failure to construct the project in accordance with approved

accordance with the California Air Resources Board and the Office of Environmental Health and Hazard Assessment for exposure to vehicular exhaust from roadways, the project sponsor has agreed to incorporate into the project a mechanical ventilation system that meets the efficiency standard of the MERV 13 for those units with windows fronting the freeway or Frontage Road. The ventilations shall be subject to review and approval by the City's Building Services Division. Appropriate maintenance, operation and repair materials will be furnished to project residents.

25. Components of Final Development Plans.

Prior to approval of Any Final Development Plans

In accordance with the Planning Code Chapter 17.140, each stage of FDP shall:

(a) Conform to all major respects with the approved Preliminary Development Plan received by the Planning Division on May 28, 2008, and included as Exhibit F;

(b) Comply with development standards of the S-15 Zone, except and modified for building height as bonus for the Planned Unit Development and shown in the Preliminary Development Plan;

(c) Be consistent with the MacArthur Transit Village Design Guidelines included in these conditions as Exhibit C-3;

(d) Include all information included in the preliminary development plan plus the following:

i. the location of water, sewerage, and drainage facilities;
ii. detailed building floor plans, elevations and landscaping plans;
iii. the character and location of signs;
iv. plans for street improvements; and
v. grading or earth-moving plans.

(e) Be sufficiently detailed to indicate fully the ultimate operation and appearance of the development stage including the quality of exterior materials and windows; and

(f) Include copies of legal documents required for dedication or reservation of group or common spaces, for the creation of nonprofit homes' association, or for performance bonds, shall be submitted with each Final Development Plan.

26. Subdivision Maps

Prior to final approval of Each Final Development Plan

Final Development Plans shall be accompanied by subdivision maps as required to subdivide the property. The subdivision maps shall be reviewed and processed in accordance with Title 17, Subdivisions, of the City of Oakland Municipal Code and the Subdivision Map Act.

27. Final Development Review and Approval by City Council.

Prior to final approval of Any Final Development Plan

All Final Development Plan(s) shall be subject to review and recommendation by the Planning Commission's Design Review Committee and Planning Commission, with final approval by the City Council.

28. Minimum Setback to Buildings Adjacent to Project Site.

Prior to issuance of a building permit

All buildings within the project shall maintain a minimum 5 foot setback, except at the ground level, to existing buildings adjacent to the project site. The 5 foot minimum setback will ensure a minimum setback of 9 feet from the south windows located in the building light

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Standard COA/MM	Mitigation Monitoring			Reporting	
	Monitoring Schedule	Monitoring Responsibility	Monitoring Procedure	Comments	Date/ Initials
D. AIR QUALITY					
COA AIR-1: Dust Control. *Prior to issuance of a demolition, grading, or building permit.* During construction, the project applicant shall require the construction contractor to implement the following measures required as part of BAAQMD basic and enhanced dust control procedures required for construction sites. These include: **BASIC (Applies to ALL construction sites)** a) Water all active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible. b) Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). c) Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites. d) Sweep daily (with water sweepers using reclaimed water if possible) all paved access roads, parking areas and staging areas at construction sites. e) Sweep streets (with water sweepers using reclaimed water if possible) at the end of each day if visible soil material is carried onto adjacent paved roads. f) Limit the amount of the disturbed area at any one time, where feasible.	Ongoing throughout demolition, grading, and/or construction	City of Oakland, CEDA, Building Services Division	• Make regular visits to the project site to ensure that all dust-control mitigation measures are being implemented. • Verify that a designated dust control coordinator is on-call during construction periods.		

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	Monitoring Schedule	Monitoring Responsibility	Monitoring Procedure	Comments	Date/ Initials
g) Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph. h) Pave all roadways, driveways, sidewalks, etc. as soon as feasible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. i) Replant vegetation in disturbed areas as quickly as feasible. j) Enclose, cover, water twice daily or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.). k) Limit traffic speeds on unpaved roads to 15 miles per hour. l) Clean off the tires or tracks of all trucks and equipment leaving any unpaved construction areas.					
ENHANCED (All "Basic" Controls listed above plus the following if the construction site is greater than 4 acres) a) All "Basic" controls listed above, plus: b) Install sandbags or other erosion control measures to prevent silt runoff to public roadways. c) Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more). d) Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress. The name and telephone number of such person shall be provided to the BAAQMD prior to the start of construction as well as posted on-site over the duration of construction. e) Install appropriate wind breaks at the construction site to minimize wind blown dust.					

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COA AIR-2: Construction Emissions. *Prior to issuance of a demolition, grading, or building permit.* To minimize construction equipment emissions during construction, the project applicant shall require the construction contractor to: a) Demonstrate compliance with BAAQMD Regulation 2, Rule 1 (General Requirements) for all portable construction equipment subject to that rule. BAAQMD Regulation 2, Rule 1, provides the issuance of authorities to construct and permits to operate certain types of portable equipment used for construction purposes (e.g., gasoline or diesel-powered engines used in conjunction with power generation, pumps, compressors, and cranes) unless such equipment complies with all applicable requirements of the "CAPCOA" Portable Equipment Registration Rule" or with all applicable requirements of the Statewide Portable Equipment Registration Program. This exemption is provided in BAAQMD Rule 2-1-105. b) Perform low- NOx tune-ups on all diesel-powered construction equipment greater than 50 horsepower (no more than 30 days prior to the start of use of that equipment). Periodic tune-ups (every 90 days) shall be performed for such equipment used continuously during the construction period.	Prior to issuance of a demolition, grading, or building permit; and ongoing throughout construction	City of Oakland, CEDA, Building Services Division	Verify that all construction equipment meets mitigation measures.		
E. NOISE AND VIBRATION					
COA NOISE-1: Days/Hours of Construction Operation. *Ongoing throughout demolition, grading, and/or construction.* The project applicant shall require construction contractors to limit standard construction activities as follows: a) Construction activities are limited to between 7:00 a.m. and 7:00 p.m. Monday through Friday, except that pile driving and/or other extreme noise generating activities greater than 90 dBA limited to between 8:00 a.m. and 4:00 p.m. Monday through Friday.	Ongoing throughout demolition, grading, and/or construction	City of Oakland, CEDA, Building Services Division	Make regular visits to the construction site to ensure that construction activities are restricted the hours designated in COA NOISE-1.		

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	Monitoring Schedule	Monitoring Responsibility	Monitoring Procedure	Comments	Date/ Initials
b) Any construction activity proposed to occur outside of the standard hours of 7:00 a.m. to 7:00 p.m. Monday through Friday for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened and such construction activities shall only be allowed with the prior written authorization of the Building Services Division. c) Construction activity shall not occur on Saturdays, with the following possible exceptions: • Prior to the building being enclosed, requests for Saturday construction for special activities (such as concrete pouring which may require more continuous amounts of time), shall be evaluated on a case-by-case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened. Such construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division. • After the building is enclosed, requests for Saturday construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division, and only then within the interior of the building with the doors and windows closed. d) No extreme noise generating activities (greater than 90 dBA) shall be allowed on Saturdays, with no exceptions.					

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e) No construction activity shall take place on Sundays or Federal holidays. f) Construction activities include but are not limited to: truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.					
COA NOISE-2: Noise Control. *Ongoing throughout demolition, grading, and/or construction.* To reduce noise impacts due to construction, the project applicant shall require construction contractors to implement a site-specific noise reduction program, subject to city review and approval, which includes the following measures: a) Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible). b) Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used if such jackets are commercially available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.	Ongoing throughout demolition, grading, and/or construction	City of Oakland, CEDA, Building Services Division	• Verify that a site-specific noise reduction program has been prepared and implemented. • Make regular visits to the construction site to ensure that noise from construction activities is appropriately controlled.		

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	Monitoring Schedule	Monitoring Responsibility	Monitoring Procedure	Comments	Date/ Initials
c) Stationary noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction d) The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.					
COA NOISE-3: Noise Complaint Procedures. *Ongoing throughout demolition, grading, and/or construction.* Prior to the issuance of each building permit, along with the submission of construction documents, the project applicant shall submit to the City Building Services Division a list of measures to respond to and track complaints pertaining to construction noise. These measures shall include: a) A procedure and phone numbers for notifying the City Building Services Division staff and Oakland Police Department; (during regular construction hours and off-hours); b) A sign posted on-site pertaining with permitted construction days and hours and complaint procedures and who to notify in the event of a problem. The sign shall also include a listing of both the City and construction contractor's telephone numbers (during regular construction hours and off-hours); c) The designation of an on-site construction complaint and enforcement manager for the project;	Submit list prior to the issuance of a building permit; Ongoing throughout demolition, grading, and/or construction	City of Oakland, CEDA, Building Services Division	Verify the implementation of the list of measures to respond to and track complaints pertaining to construction noise.		

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	Monitoring Schedule	Monitoring Responsibility	Monitoring Procedure	Comments	Date/ Initials
d) Notification of neighbors and occupants within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities about the estimated duration of the activity; and e) A preconstruction meeting shall be held with the job inspectors and the general contractor/on-site project manager to confirm that noise measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed.					
COA NOISE-4: Interior Noise. *Prior to issuance of a building permit.* If necessary to comply with the interior noise requirements of the City of Oakland General Plan Noise Element and achieve an acceptable interior noise level, noise reduction in the form of sound-rated assemblies (i.e., windows, exterior doors, and walls) shall be incorporated into project building design, based upon recommendations of a qualified acoustical engineer. Final recommendations for sound-rated assemblies will depend on the specific building designs and layout of buildings on the site and shall be determined during the design phase; however, the following sound-rated assembly recommendations, based on the conceptual project layout and design (described in Chapter III, Project Description) should be included in the final study and will be included in the Standard Condition of Approval: An alternate form of ventilation, such as air conditioning systems, shall be included in the design for all units located within 659 feet of the centerline of SR-24, or within 153 feet of the centerline of 40th Street, or within 166 feet of the centerline of MacArthur Boulevard to ensure that widows can remain closed for prolonged periods of time to meet the interior noise standard and Uniform Building Code Requirements.	Submit noise recommend-ations prior to the issuance of a building permit for each phase of construction containing residential units Implement recommend ations according to timeframes outlined in plan	City of Oakland, CEDA, Building Services Division	Verify that appropriate sound-rated assemblies to reduce noise levels have been incorporated into the project building design.		

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All residential building façades directly exposed to and within 240 feet of the centerline of SR-24 must be constructed to meet the interior DNL 45 dB requirement; this likely could be achieved with an overall STC-30 rating with windows having a minimum STC-34 rating. This could be achieved with a typical 1-inch insulated glazing assembly, possibly with one light being laminated (or other appropriate example assembly). Quality control must be exercised in construction to ensure all air-gaps and penetrations of the building shell are controlled and sealed.					
COA NOISE-5: Pile Driving and Other Extreme Noise Generators. *Ongoing throughout demolition, grading, and/or construction.* To further reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90 dBA, a set of site-specific noise attenuation measures shall be completed under the supervision of a qualified acoustical consultant. Prior to commencing construction, a plan for such measures shall be submitted for review and approval by the City to ensure that maximum feasible noise attenuation will be achieved. This plan shall be based on the final design of the project. A third-party peer review, paid for by the project applicant, may be required to assist the City in evaluating the feasibility and effectiveness of the noise reduction plan submitted by the project applicant. The criterion for approving the plan shall be a determination that maximum feasible noise attenuation will be achieved. A special inspection deposit is required to ensure compliance with the noise reduction plan. The amount of the deposit shall be determined by the Building Official and the deposit shall be submitted by the project applicant concurrent	Submit plan prior commencing construction activities involving pile driving or other extreme noise generators; Implement measures according to timeframes outlined in the plan	City of Oakland, CEDA, Building Services Division	• Verify that a plan for reducing extreme noise generating construction impacts has been prepared. • Verify that the plan will achieve the maximum feasible noise attenuation. • Verify that a special inspection deposit has been submitted.		

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with submittal of the noise reduction plan. The noise reduction plan shall include, but not be limited to, an evaluation of implementing the following measures. These attenuation measures shall include as many of the following control strategies as applicable to the site and construction activity: a) Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings; b) Implement "quiet" pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions; c) Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site; d) Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example, and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and e) Monitor the effectiveness of noise attenuation measures by taking noise measurements.					

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	Monitoring Schedule	Monitoring Responsibility	Monitoring Procedure	Comments	Date/ Initials
COA NOISE-6: Demolition/Construction Adjacent to Historic Structures. The project applicant shall retain a structural engineer or other appropriate professional to determine threshold levels of vibration and cracking that could damage the buildings adjacent to the project site and design means and methods of construction that shall be utilized to not exceed the thresholds. Additionally, the project applicant shall submit a demolition plan for review and approval so as not to unduly impact neighboring property improvements particularly 505 40th Street. Neighboring property improvements within 10 of the project boundary shall be indicated on the demolition plan. The method of protection for any improvements within 5 feet of the project boundary shall be specifically addressed in the demolition plan. The applicant shall submit such engineering report and demolition plan and means of compliance with the engineering recommendations to the City (CEDA Building Services) for review and approval and implement the approved plan. f)	Prior to the issuance of a demolition, grading, or building permit for building A	City of Oakland, CEDA, Building Services Division	Verify that a structural engineer or other appropriate professional has determined the means and methods of construction will not exceed threshold levels of vibration that may damage buildings adjacent to the project site.		

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EXHIBIT A

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SOUTH SAN FRANCISCO

MEMORANDUM

DATE: March 11, 2011

TO: Joe McCarthy, Project Manager, and Art May, Development Director, MacArthur Transit Community Partners

FROM: Tony Chung and Ronald Brugger, LSA Associates, Inc.

SUBJECT: Response to Holland & Knight Comment Letter on the EIR for the MacArthur Transit Village Project in the City of Oakland, California.

LSA Associates, Inc. (LSA) has reviewed the comment letter provided by Holland & Knight dated December 21, 2010 on the MacArthur Transit Village Project. Although none of the criteria have been met or circumstances have occurred under CEQA Guidelines section 15162 that would require any additional environmental review with respect to the Project, we have prepared an analysis, including a health risk assessment, responding to the contentions in this letter. The scope of this analysis was to evaluate the air quality impacts associated with construction of the Phase 1 and Phase 2 Final Development Plans of the MacArthur Transit Village project (Phase 1 and 2 FDPs)[1] based on the Construction Equipment Schedule, dated January 28, 2011.

In summary our analysis demonstrates (1) as stated in the Project EIR, the City's Standard Conditions of Approval with respect to dust and diesel emissions will mitigate potential impacts on the Surgery Center; and (2) the project construction would not create a health risk for patients and employees of the Surgery Center. Our responses are provided below.

Comment: The Surgery Center states that the following impacts will occur from Project construction:

- Dust and diesel particulate matter impacts on respiratory and cardiovascular patients uniquely sensitive to air pollution.
- Dust contamination of sterile medical devices, and
- Diesel particulate matter and fume impacts on patients and employees at the Surgery Center, including headaches and nausea.

LSA Response: The MacArthur Transit Village EIR correctly analyzed the dust and diesel particulate matter emissions associated with Project construction. The Project is subject to the City's Standard Conditions of Approval for dust (SCA-AIR-l) and construction equipment (SCA-AIR2), which are designed to reduce any potential impacts to a less-than-significant level. The requirements of these Standard Conditions of Approval are consistent with the Bay Area Air Quality Management District's (BAAQMD) basic and enhanced construction mitigation measures that were in effect when the EIR was published and remain generally consistent with the BAAQMD's basic and additional construction

[1] These are the two FDPs applications currently on file with the City and the two construction phases of the MacArthur Transit Village Project that are anticipated to overlap to some extent and occur within the next two years. Consequently the effects of both of these construction phases are considered in this analysis.

mitigation measures in the 2010 BAAQMD CEQA Guidelines (page 2-6). Additionally, the Project EIR quantified the estimated construction emissions based on the phased construction schedule in Table IV.D-6 (EIR p.247). This Table confirms that the Project's unmitigated construction emissions are below the BAAQMD's 2010 CEQA Guidelines threshold's of significance for construction emissions. Consequently, there is no evidence to suggest that the Surgery Center would experience any significant adverse impacts related to dust and diesel emissions from the Project construction. The potential dust and diesel particulate matter emissions from the Project construction will be significantly reduced and controlled through implementation of SCA-AIR-l and SCA-AIR-2. These conditions of approval protect the Surgery Center.

A health risk assessment (HRA) was conducted to more precisely assess the air quality impacts from construction on the project site to patients and workers at the Surgery Center. Using the detailed Construction Equipment Schedule, dated January 28, 2011, provided by the MacArthur Transit Community Partners (MTCP) and a combination of the California Air Resources Board's URBEMIS 2007 and HARP models, a very detailed HRA was developed. The URBEMIS 2007 model was used to translate the construction details into pollutant emissions rates. These emissions were then assigned locations on the project site corresponding with the construction phasing plan and within those areas, placed closer to the Surgery Center to maximize the predicted impact. The HARP model was then used to combine these emissions and local meteorological conditions into an air dispersion model to predict pollutant concentrations and corresponding health risk levels. It is standard HRA methodology to assess only the outdoor risk levels, since the amount of protection afforded by buildings vary substantially. It is probable that the Surgery Center provides above average protection to patients and workers within, however, this HRA does not attempt to quantify that protection. Thus, this HRA assumes that the exposure occurs for the standard California-recommended 24 hours per day, 7 days per week, 240 days per year.

The primary health concern is the short-term acute affects from the exhaust of the heavy-duty construction equipment operating in close proximity to the Surgery Center. However, there is also the potential for a longer term exposure to the workers at the Surgery Center, and possibly to patients of the Surgery Center. The Surgery Center currently provides ambulatory care, performing outpatient surgeries and nursing care. It does not have inpatient accommodations. However, since this project has no control over how the Surgery Center operates, this HRA also includes the predicted carcinogenic and chronic health risks to a patient staying not only overnight, but doing so for the entire construction period. It is assumed that the Surgery Center workers stay 8 hours per day on average and continue to work at the Surgery Center for the entire construction period. To insure completeness, the health risk levels were determined not only for the patients and workers at the Surgery Center, but also for the homes surrounding the project site. Again, the HRA assumes the doctors, nurses and patients all spend all day outside on the side of the Surgery Center building nearer to the construction activities. Table 1 shows the HRA results.

Table 1: Inhalation Health Risks from Construction Operations

Risk Category	Carcinogenic Inhalation Health Risk	Chronic Inhalation Health Index	Acute Inhalation Health Index	Threshold Exceeded ?
2-Year Patient Risks	0.24 in 1 million	0.0061	0.040	No
Worker Risks	0.047 in 1 million	0.0061	0.040	No
Residential Risks	0.24 in 1 million	0.0061	0.040	No
BAAQMD Threshold	10 in 1 million	1	1	

Source: LSA Associates, Inc., February 2011

The BAAQMD additionally requires that the long-term carcinogenic health risk results have age factors applied to account for the range of age groups in the general population. Table 2 shows the age groups, their adjustment factors, and the adjusted carcinogenic health risk level for someone staying at the Surgery Center for the full construction period 24 hours a day or for residents of the nearby homes.

Table 2: 70-Year Carcinogenic Age Group Adjustment

Risk Group	ASF	Duration	Carcinogenic Inhalation Health Risk
3rd Trimester to age 2 years	10	2.25/70	0.077 in a million
age 2 years to age 16 years	3	14/70	0.14 in a million
age 16 to 70 years	1	54/70	0.20 in a million
Adjusted 70 year lifetime risk			**0.41 in a million**
BAAQMD Threshold			**10 in a million**
Threshold Exceeded ?			**No**

Source: LSA Associates, Inc., February 2011

This HRA completely assessed health risk levels; however, there is no quantitative method to predict fume impacts. Since there is a correlation between pollutant concentrations and the resulting odor, it is logical to conclude that since the HRA shows very low concentrations of pollutants there will not be a odor impact.

CONCLUSIONS

As shown in Tables 1 and 2 for both patients and workers at the Surgery Center, as well as to nearby residents, construction operations would result in a maximum health risk level that is below the BAAQMD's criterion of significance for cancer health effects (10 in 1 million), and for chronic or acute health risks. While the Surgery Center patients may be uniquely sensitive to air pollution, these health risk levels are substantially below the BAAQMD thresholds of significance, making it unlikely that anyone, even uniquely sensitive individuals, would experience a negative health effect.

Historically, the BAAQMD has used the criterion of 10 in 1 million to determine the risk for point sources such as emissions from industrial facilities. This threshold was developed for these kinds of emissions sources that operate continuously for decades. Applying this threshold to a relatively brief event, such as the construction of this project, is very conservative. Additionally, the BAAQMD has documented that the average ambient air in the San Francisco Bay area has pollutant levels such that everyone living there has a carcinogenic health risk of 602 in 1 million.[2] The increase in health risk to the patients and workers at the Surgery Center is so small that no real difference would be detectable.

[2] Bay Area Air Quality Management District. 2004. *Toxic Air Contaminant Control Program, Annual Report 2002*. June.

Dust control is a major concern of the BAAQMD for all construction operations. As described on page D-47 of the BAAQMD CEQA Guidelines: "For fugitive dust emissions, the BAAQMD recommends following the current best management practices approach which has been a pragmatic and effective approach to the control of fugitive dust emissions. Studies have demonstrated (Western Regional Air Partnership, U.S.EPA) that the application of best management practices at construction sites have significantly controlled fugitive dust emissions. Individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to more than 90 percent. In the aggregate best management practices will substantially reduce fugitive dust emissions from construction sites. These studies support staff's recommendation that projects implementing construction best management practices will reduce fugitive dust emissions to a less than significant level." This project is committed to follow all best management practices to minimize fugitive dust impacts.

Whether a particular odor is objectionable can be very subjective. Odors rarely have direct health impacts, but they can be very unpleasant and can lead to anger and concern over possible health effects among the public. The current BAAQMD odor impact threshold is five confirmed complaints per year over a three year period. This project will be sensitive to odor complaints and make all efforts to minimize odor impacts.

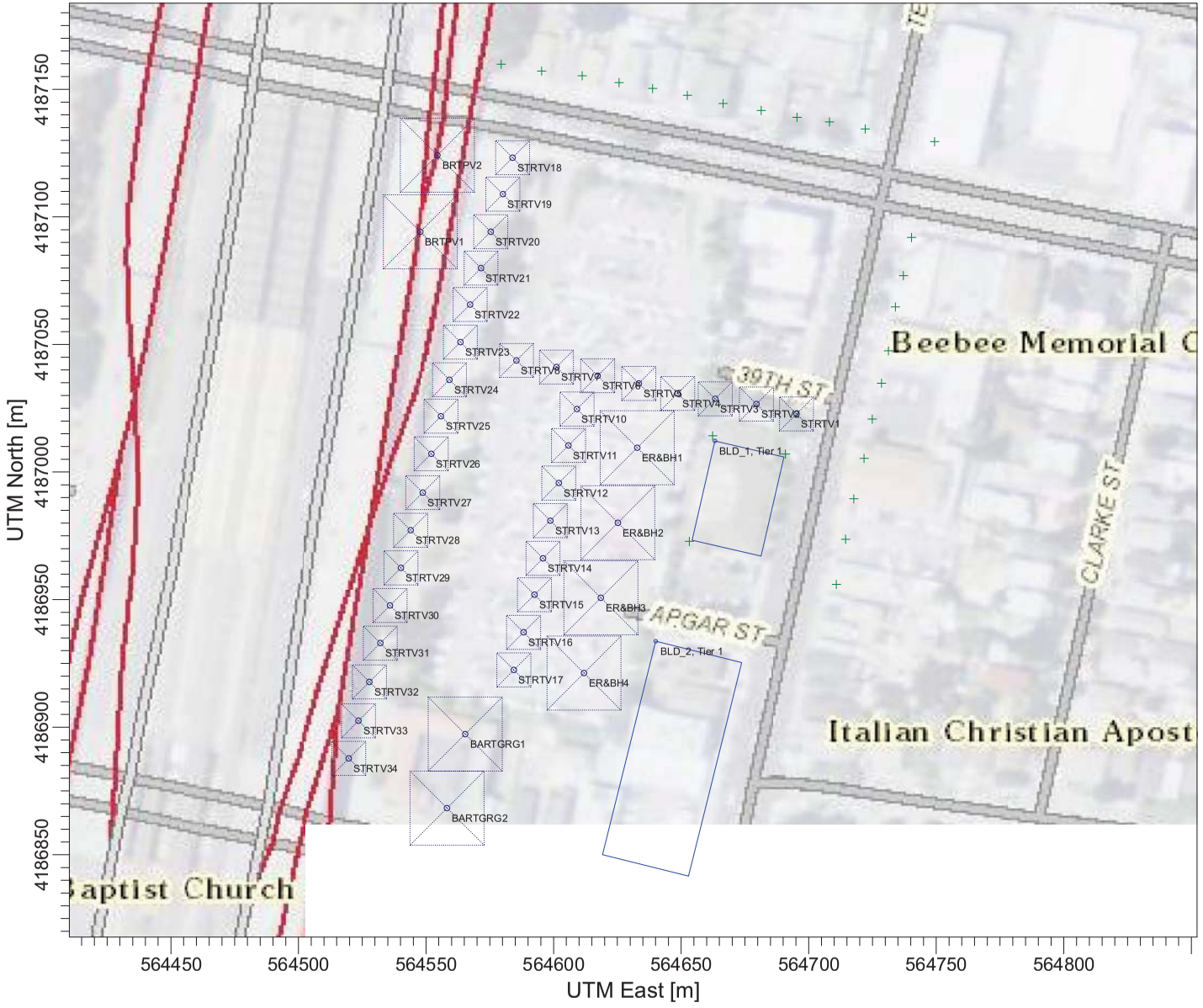
Attachment: HRA Worksheets and modeling files

HRA Worksheets and Modeling Files

EXHIBIT C

PROJECT TITLE:

MacArthur BART HEALTH RISK ASSESSMENT
Construction Emissions



COMMENTS:

Green pluses represent receptors, large blue rectangles represent buildings, squares with cross inside represent volume sources

SOURCES:

41

RECEPTORS:

25

COMPANY NAME:

LSA Associates, Inc.

MODELER:

Ronald Brugger

DATE:

2/11/2011

SCALE: 1:2,492

0 0.05 km

LSA

PROJECT NO.:

MTC1101

AERMOD View - Lakes Environmental Software

P:\MTC1101\Modeling\MacBExh.isc

EXHIBIT A

EXHIBIT C

```
**
**************************************
**
** ISCST3 Input Produced by:
** AERMOD View Ver. 6.7.1
** Lakes Environmental Software Inc.
** Date: 1/31/2011
** File: P:\MTC1101\Modeling\MacBExh.INP
**
**************************************
**
**
**************************************
** ISCST3 Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE MacArthur BART HEALTH RISK ASSESSMENT
   TITLETWO Construction Emissions
   MODELOPT DFAULT CONC  URBAN
   AVERTIME 1 PERIOD
   POLLUTID OTHER
   TERRHGTS ELEV
   RUNORNOT RUN
   ERRORFIL P:\MTC1101\Modeling\MacBExh.err
CO FINISHED
**
**************************************
** ISCST3 Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION STRTV1 VOLUME 564695.209 4187022.782 24.000
** DESCRSRC Street Volume 1
   LOCATION STRTV2 VOLUME 564679.514 4187026.655 24.020
** DESCRSRC Street Volume 2
   LOCATION STRTV3 VOLUME 564663.360 4187028.711 24.000
** DESCRSRC Street Volume 3
   LOCATION STRTV4 VOLUME 564648.616 4187030.784 24.000
** DESCRSRC Street Volume 4
   LOCATION STRTV5 VOLUME 564633.397 4187034.742 24.000
** DESCRSRC Street Volume 5
   LOCATION STRTV6 VOLUME 564617.260 4187037.732 23.870
** DESCRSRC Street Volume 6
   LOCATION STRTV7 VOLUME 564601.141 4187041.147 23.630
** DESCRSRC Street Volume 7
   LOCATION STRTV8 VOLUME 564585.446 4187043.747 23.440
** DESCRSRC Street Volume 8
   LOCATION ER&BH1 VOLUME 564632.800 4187009.549 23.600
** DESCRSRC Parcel B - Volume 1
   LOCATION ER&BH4 VOLUME 564611.907 4186921.223 22.490
** DESCRSRC Parcel D - Volume 1
   LOCATION ER&BH3 VOLUME 564618.532 4186950.710 23.000
** DESCRSRC Parcel D - Volume 2
   LOCATION ER&BH2 VOLUME 564625.190 4186980.147 23.090
** DESCRSRC Parcel D - Volume 3
   LOCATION BARTGRG2 VOLUME 564558.236 4186868.277 21.710
** DESCRSRC Parcel E - Volume 1
   LOCATION BARTGRG1 VOLUME 564565.370 4186897.289 22.000
** DESCRSRC Parcel E - Volume 2
   LOCATION STRTV10 VOLUME 564609.162 4187024.699 23.450
```

EXHIBIT A

EXHIBIT C

```
** DESCRSRC Street Volume 10
   LOCATION STRTV11 VOLUME 564605.833 4187010.431 23.200
** DESCRSRC Street Volume 11
   LOCATION STRTV12 VOLUME 564602.028 4186995.687 23.000
** DESCRSRC Street Volume 12
   LOCATION STRTV13 VOLUME 564598.699 4186980.943 23.000
** DESCRSRC Street Volume 13
   LOCATION STRTV14 VOLUME 564595.845 4186966.200 23.000
** DESCRSRC Street Volume 14
   LOCATION STRTV15 VOLUME 564592.516 4186951.931 22.910
** DESCRSRC Street Volume 15
   LOCATION STRTV16 VOLUME 564588.236 4186937.187 22.940
** DESCRSRC Street Volume 16
   LOCATION STRTV17 VOLUME 564584.431 4186922.444 22.380
** DESCRSRC Street Volume 17
   LOCATION BRTPV1 VOLUME 564547.773 4187094.190 23.620
** DESCRSRC BART Plaza - Volume 1
   LOCATION BRTPV2 VOLUME 564554.431 4187124.153 24.000
** DESCRSRC BART Plaza - Volume 2
   LOCATION STRTV18 VOLUME 564583.917 4187123.203 24.000
** DESCRSRC Street Volume 18
   LOCATION STRTV19 VOLUME 564580.112 4187108.935 24.000
** DESCRSRC Street Volume 19
   LOCATION STRTV20 VOLUME 564575.356 4187094.191 24.000
** DESCRSRC Street Volume 20
   LOCATION STRTV21 VOLUME 564571.551 4187079.923 23.880
** DESCRSRC Street Volume 21
   LOCATION STRTV22 VOLUME 564567.271 4187065.655 23.310
** DESCRSRC Street Volume 22
   LOCATION STRTV23 VOLUME 564563.466 4187050.911 23.030
** DESCRSRC Street Volume 23
   LOCATION STRTV24 VOLUME 564559.185 4187036.167 23.000
** DESCRSRC Street Volume 24
   LOCATION STRTV25 VOLUME 564555.856 4187021.899 23.000
** DESCRSRC Street Volume 25
   LOCATION STRTV26 VOLUME 564552.051 4187007.155 23.000
** DESCRSRC Street Volume 26
   LOCATION STRTV27 VOLUME 564548.722 4186991.936 22.890
** DESCRSRC Street Volume 27
   LOCATION STRTV28 VOLUME 564543.966 4186977.192 22.550
** DESCRSRC Street Volume 28
   LOCATION STRTV29 VOLUME 564540.161 4186962.448 22.130
** DESCRSRC Street Volume 29
   LOCATION STRTV30 VOLUME 564535.880 4186947.704 22.070
** DESCRSRC Street Volume 30
   LOCATION STRTV31 VOLUME 564532.076 4186932.960 22.000
** DESCRSRC Street Volume 31
   LOCATION STRTV32 VOLUME 564527.795 4186917.741 22.000
** DESCRSRC Street Volume 32
   LOCATION STRTV33 VOLUME 564523.515 4186902.521 21.830
** DESCRSRC Street Volume 33
   LOCATION STRTV34 VOLUME 564519.710 4186887.778 21.380
** DESCRSRC Street Volume 34
** Source Parameters **
   SRCPARAM STRTV1 1.0 1.000 3.098 0.465
   SRCPARAM STRTV2 1.0 1.000 3.098 0.465
   SRCPARAM STRTV3 1.0 1.000 3.098 0.465
   SRCPARAM STRTV4 1.0 1.000 3.098 0.465
   SRCPARAM STRTV5 1.0 1.000 3.098 0.465
   SRCPARAM STRTV6 1.0 1.000 3.098 0.465
   SRCPARAM STRTV7 1.0 1.000 3.098 0.465
   SRCPARAM STRTV8 1.0 1.000 3.098 0.465
   SRCPARAM ER&BH1 1.0 1.000 6.744 0.930
   SRCPARAM ER&BH4 1.0 1.000 6.744 0.930
   SRCPARAM ER&BH3 1.0 1.000 6.744 0.930
```

EXHIBIT A

```
SRCPARAM ER&BH2 1.0 1.000 6.744 0.930
SRCPARAM BARTGRG2 1.0 1.000 6.744 0.930
SRCPARAM BARTGRG1 1.0 1.000 6.744 0.930
SRCPARAM STRTV10 1.0 1.000 3.098 0.465
SRCPARAM STRTV11 1.0 1.000 3.098 0.465
SRCPARAM STRTV12 1.0 1.000 3.098 0.465
SRCPARAM STRTV13 1.0 1.000 3.098 0.465
SRCPARAM STRTV14 1.0 1.000 3.098 0.465
SRCPARAM STRTV15 1.0 1.000 3.098 0.465
SRCPARAM STRTV16 1.0 1.000 3.098 0.465
SRCPARAM STRTV17 1.0 1.000 3.098 0.465
SRCPARAM BRTPV1 1.0 1.000 6.744 0.930
SRCPARAM BRTPV2 1.0 1.000 6.744 0.930
SRCPARAM STRTV18 1.0 1.000 3.098 0.465
SRCPARAM STRTV19 1.0 1.000 3.098 0.465
SRCPARAM STRTV20 1.0 1.000 3.098 0.465
SRCPARAM STRTV21 1.0 1.000 3.098 0.465
SRCPARAM STRTV22 1.0 1.000 3.098 0.465
SRCPARAM STRTV23 1.0 1.000 3.098 0.465
SRCPARAM STRTV24 1.0 1.000 3.098 0.465
SRCPARAM STRTV25 1.0 1.000 3.098 0.465
SRCPARAM STRTV26 1.0 1.000 3.098 0.465
SRCPARAM STRTV27 1.0 1.000 3.098 0.465
SRCPARAM STRTV28 1.0 1.000 3.098 0.465
SRCPARAM STRTV29 1.0 1.000 3.098 0.465
SRCPARAM STRTV30 1.0 1.000 3.098 0.465
SRCPARAM STRTV31 1.0 1.000 3.098 0.465
SRCPARAM STRTV32 1.0 1.000 3.098 0.465
SRCPARAM STRTV33 1.0 1.000 3.098 0.465
SRCPARAM STRTV34 1.0 1.000 3.098 0.465
SRCGROUP BRTPV1 BRTPV1
SRCGROUP BRTPV2 BRTPV2
SRCGROUP ER&BH1 ER&BH1
SRCGROUP ER&BH4 ER&BH4
SRCGROUP ER&BH3 ER&BH3
SRCGROUP ER&BH2 ER&BH2
SRCGROUP BARTGRG2 BARTGRG2
SRCGROUP BARTGRG1 BARTGRG1
SRCGROUP STRTV1 STRTV1
SRCGROUP STRTV10 STRTV10
SRCGROUP STRTV11 STRTV11
SRCGROUP STRTV12 STRTV12
SRCGROUP STRTV13 STRTV13
SRCGROUP STRTV14 STRTV14
SRCGROUP STRTV15 STRTV15
SRCGROUP STRTV16 STRTV16
SRCGROUP STRTV17 STRTV17
SRCGROUP STRTV18 STRTV18
SRCGROUP STRTV19 STRTV19
SRCGROUP STRTV2 STRTV2
SRCGROUP STRTV20 STRTV20
SRCGROUP STRTV21 STRTV21
SRCGROUP STRTV22 STRTV22
SRCGROUP STRTV23 STRTV23
SRCGROUP STRTV24 STRTV24
SRCGROUP STRTV25 STRTV25
SRCGROUP STRTV26 STRTV26
SRCGROUP STRTV27 STRTV27
SRCGROUP STRTV28 STRTV28
SRCGROUP STRTV29 STRTV29
SRCGROUP STRTV3 STRTV3
SRCGROUP STRTV30 STRTV30
SRCGROUP STRTV31 STRTV31
SRCGROUP STRTV32 STRTV32
SRCGROUP STRTV33 STRTV33
```

EXHIBIT C

```
   SRCGROUP STRTV34 STRTV34
   SRCGROUP STRTV4 STRTV4
   SRCGROUP STRTV5 STRTV5
   SRCGROUP STRTV6 STRTV6
   SRCGROUP STRTV7 STRTV7
   SRCGROUP STRTV8 STRTV8
SO FINISHED
**
**************************************
** ISCST3 Receptor Pathway
**************************************
**
**
RE STARTING
** DESCRREC "" ""
   DISCCART    564662.36   4187014.18   24.00
   DISCCART    564653.21   4186972.86   23.06
   DISCCART    564690.85   4187007.06   24.00
   DISCCART    564579.46   4187159.86   24.23
   DISCCART    564595.32   4187157.15   24.29
   DISCCART    564611.18   4187155.33   24.74
   DISCCART    564625.68   4187152.62   24.97
   DISCCART    564638.81   4187150.35   25.00
   DISCCART    564652.41   4187147.63   25.00
   DISCCART    564666.45   4187144.46   25.00
   DISCCART    564681.40   4187141.74   25.02
   DISCCART    564695.44   4187139.02   25.26
   DISCCART    564708.13   4187137.21   25.66
   DISCCART    564722.17   4187134.49   25.75
   DISCCART    564749.36   4187129.51   26.00
   DISCCART    564740.30   4187091.91   25.06
   DISCCART    564737.12   4187076.96   25.00
   DISCCART    564733.95   4187064.72   25.00
   DISCCART    564731.23   4187047.51   24.87
   DISCCART    564728.52   4187034.82   24.65
   DISCCART    564724.89   4187020.78   24.24
   DISCCART    564721.72   4187005.38   24.10
   DISCCART    564717.64   4186989.52   24.00
   DISCCART    564714.47   4186973.66   23.96
   DISCCART    564710.85   4186955.99   23.65
RE FINISHED
**
**************************************
** ISCST3 Meteorology Pathway
**************************************
**
**
ME STARTING
   INPUTFIL P:\MTC1101\Modeling\OAK78-83.ASC
   ANEMHGHT 10 METERS
   SURFDATA 23230 1978 OAKLAND/WSO_AP
   UAIRDATA 23230 1978 OAKLAND/WSO_AP 569300.00 4172700.00
ME FINISHED
**
**************************************
** ISCST3 Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
** Plotfile Path: P:\MTC1101\Modeling\MACBEXH.IS\
   PLOTFILE 1 BRTPV1 1ST 01H1G001.PLT
```

EXHIBIT A

EXHIBIT C

```
PLOTFILE PERIOD BRTPV1 PE00G001.PLT
PLOTFILE 1 BRTPV2 1ST 01H1G002.PLT
PLOTFILE PERIOD BRTPV2 PE00G002.PLT
PLOTFILE 1 ER&BH1 1ST 01H1G003.PLT
PLOTFILE PERIOD ER&BH1 PE00G003.PLT
PLOTFILE 1 ER&BH4 1ST 01H1G004.PLT
PLOTFILE PERIOD ER&BH4 PE00G004.PLT
PLOTFILE 1 ER&BH3 1ST 01H1G005.PLT
PLOTFILE PERIOD ER&BH3 PE00G005.PLT
PLOTFILE 1 ER&BH2 1ST 01H1G006.PLT
PLOTFILE PERIOD ER&BH2 PE00G006.PLT
PLOTFILE 1 BARTGRG2 1ST 01H1G007.PLT
PLOTFILE PERIOD BARTGRG2 PE00G007.PLT
PLOTFILE 1 BARTGRG1 1ST 01H1G008.PLT
PLOTFILE PERIOD BARTGRG1 PE00G008.PLT
PLOTFILE 1 STRTV1 1ST 01H1G009.PLT
PLOTFILE PERIOD STRTV1 PE00G009.PLT
PLOTFILE 1 STRTV10 1ST 01H1G010.PLT
PLOTFILE PERIOD STRTV10 PE00G010.PLT
PLOTFILE 1 STRTV11 1ST 01H1G011.PLT
PLOTFILE PERIOD STRTV11 PE00G011.PLT
PLOTFILE 1 STRTV12 1ST 01H1G012.PLT
PLOTFILE PERIOD STRTV12 PE00G012.PLT
PLOTFILE 1 STRTV13 1ST 01H1G013.PLT
PLOTFILE PERIOD STRTV13 PE00G013.PLT
PLOTFILE 1 STRTV14 1ST 01H1G014.PLT
PLOTFILE PERIOD STRTV14 PE00G014.PLT
PLOTFILE 1 STRTV15 1ST 01H1G015.PLT
PLOTFILE PERIOD STRTV15 PE00G015.PLT
PLOTFILE 1 STRTV16 1ST 01H1G016.PLT
PLOTFILE PERIOD STRTV16 PE00G016.PLT
PLOTFILE 1 STRTV17 1ST 01H1G017.PLT
PLOTFILE PERIOD STRTV17 PE00G017.PLT
PLOTFILE 1 STRTV18 1ST 01H1G018.PLT
PLOTFILE PERIOD STRTV18 PE00G018.PLT
PLOTFILE 1 STRTV19 1ST 01H1G019.PLT
PLOTFILE PERIOD STRTV19 PE00G019.PLT
PLOTFILE 1 STRTV2 1ST 01H1G020.PLT
PLOTFILE PERIOD STRTV2 PE00G020.PLT
PLOTFILE 1 STRTV20 1ST 01H1G021.PLT
PLOTFILE PERIOD STRTV20 PE00G021.PLT
PLOTFILE 1 STRTV21 1ST 01H1G022.PLT
PLOTFILE PERIOD STRTV21 PE00G022.PLT
PLOTFILE 1 STRTV22 1ST 01H1G023.PLT
PLOTFILE PERIOD STRTV22 PE00G023.PLT
PLOTFILE 1 STRTV23 1ST 01H1G024.PLT
PLOTFILE PERIOD STRTV23 PE00G024.PLT
PLOTFILE 1 STRTV24 1ST 01H1G025.PLT
PLOTFILE PERIOD STRTV24 PE00G025.PLT
PLOTFILE 1 STRTV25 1ST 01H1G026.PLT
PLOTFILE PERIOD STRTV25 PE00G026.PLT
PLOTFILE 1 STRTV26 1ST 01H1G027.PLT
PLOTFILE PERIOD STRTV26 PE00G027.PLT
PLOTFILE 1 STRTV27 1ST 01H1G028.PLT
PLOTFILE PERIOD STRTV27 PE00G028.PLT
PLOTFILE 1 STRTV28 1ST 01H1G029.PLT
PLOTFILE PERIOD STRTV28 PE00G029.PLT
PLOTFILE 1 STRTV29 1ST 01H1G030.PLT
PLOTFILE PERIOD STRTV29 PE00G030.PLT
PLOTFILE 1 STRTV3 1ST 01H1G031.PLT
PLOTFILE PERIOD STRTV3 PE00G031.PLT
PLOTFILE 1 STRTV30 1ST 01H1G032.PLT
PLOTFILE PERIOD STRTV30 PE00G032.PLT
PLOTFILE 1 STRTV31 1ST 01H1G033.PLT
PLOTFILE PERIOD STRTV31 PE00G033.PLT
```

EXHIBIT A

EXHIBIT C

```
   PLOTFILE 1 STRTV32 1ST 01H1G034.PLT
   PLOTFILE PERIOD STRTV32 PE00G034.PLT
   PLOTFILE 1 STRTV33 1ST 01H1G035.PLT
   PLOTFILE PERIOD STRTV33 PE00G035.PLT
   PLOTFILE 1 STRTV34 1ST 01H1G036.PLT
   PLOTFILE PERIOD STRTV34 PE00G036.PLT
   PLOTFILE 1 STRTV4 1ST 01H1G037.PLT
   PLOTFILE PERIOD STRTV4 PE00G037.PLT
   PLOTFILE 1 STRTV5 1ST 01H1G038.PLT
   PLOTFILE PERIOD STRTV5 PE00G038.PLT
   PLOTFILE 1 STRTV6 1ST 01H1G039.PLT
   PLOTFILE PERIOD STRTV6 PE00G039.PLT
   PLOTFILE 1 STRTV7 1ST 01H1G040.PLT
   PLOTFILE PERIOD STRTV7 PE00G040.PLT
   PLOTFILE 1 STRTV8 1ST 01H1G041.PLT
   PLOTFILE PERIOD STRTV8 PE00G041.PLT
OU FINISHED
**
************************************
** Project Parameters
************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    North American Datum 1983
** DTMRGN   CONUS
** UNITS    m
** ZONE     10
**
```

EXHIBIT A

EXHIBIT C

LSA Associates, Inc.

URBEMIS 2007 Annual Construction Emissions Rates

MTC1101

				PM10 Exhaust	ROG
2011				0.210069899	0.777930779
	Demolition 03/03/2011-03/31/2011	Motel Demo	BART Garage	0.011815347	0.024744268
	Mass Grading 04/01/2011-05/31/2011	Environmental Remediation	ER&BH	0.031206026	0.063550874
	Mass Grading 05/01/2011-05/31/2011	BART Garage - Earthwork	BART Garage	0.005756416	0.010915693
	Trenching 06/01/2011-06/30/2011	BART Garage - Piles	BART Garage	0.008540256	0.016372634
	Trenching 06/01/2011-08/31/2011	BART Garage - Grade Beams / Pile Caps	BART Garage	0.029798098	0.047941697
	Demolition 07/01/2011-08/31/2011	Frontage Road - Demo & Earthwork	Street Vols 18-34	0.017847907	0.035941638
	Trenching 08/01/2011-09/30/2011	Frontage Road - Utilities	Street Vols 18-34	0.006552109	0.01258851
	Asphalt 09/01/2011-12/31/2011	BART Garage - Vertical Concrete	BART Garage	0.054765691	0.07922191
	Demolition 09/01/2011-09/30/2011	BART Plaza - Demo	BART Plaza	0.006802976	0.013167806
	Asphalt 10/01/2011-10/31/2011	BART Plaza - Concrete	BART Plaza	0.002212237	0.006062875
	Asphalt 10/01/2011-11/30/2011	Frontage Road - Paving & Sidewalks	Street Vols 18-34	0.017414164	0.031185679
	Trenching 10/01/2011-11/30/2011	W. MacArthur - Utilities	Street Vols 18-34	0.006260904	0.012029021
	Coating 11/01/2011-03/31/2012	BART Garage - Exterior Skin	BART Garage	0.000142053	0.399894425
	Fine Grading 11/01/2011-11/30/2011	BRiDGE - Earthwork	ER&BH	0.006486542	0.013681873
	Asphalt 12/01/2011-02/28/2012	BRiDGE - Concrete	ER&BH	0.002151591	0.004280295
	Asphalt 12/01/2011-12/31/2011	W. MacArthur - Concrete	Street Vols 18-34	0.002317581	0.006351583
2012				0.09	1.10
	Asphalt 12/01/2011-02/28/2012	BRiDGE - Concrete	ER&BH	0.004216838	0.00847455
	Coating 11/01/2011-03/31/2012	BART Garage - Exterior Skin	BART Garage	0.000210533	0.885031083
	Demolition 01/01/2012-01/31/2012	BART Plaza - Demo	BART Plaza	0.006742369	0.013505804
	Asphalt 02/01/2012-02/28/2012	BART Plaza - Concrete	BART Plaza	0.002146619	0.006132647
	Building 02/01/2012-03/31/2012	BART Garage - Sitework	BART Garage	0.024589458	0.077750154
	Fine Grading 04/01/2012-05/31/2012	Internal Streets & Village - Earthwork	Street Vols 1-16	0.016886366	0.033507655
	Trenching 09/01/2012-11/30/2012	Internal Streets & Village - Utilties	Street Vols 1-16	0.031723811	0.060486488
	Asphalt 11/01/2012-01/30/2013	Internal Streets & Village - Paving & Sidewal	Street Vols 1-16	0.005711218	0.01110517
2013				0.00	0.01
	Asphalt 11/01/2012-01/30/2013	Internal & Village - Paving & Sidewalks	Street Vols 1-16	0.003006187	0.00589604
			total	0.305303299	1.87982036938142

EXHIBIT A

EXHIBIT C

LSA Associates, Inc.

Translating Base PM10 and ROG Emissions Rates to Toxic Compound Emissions Rates

MTC1101

Construction Area	Number of modeling sources	URBEMIS PM10 tons/year	URBEMIS ROG tons/year	Years of Construction
BART Garage	2	0.135617852	1.541871863	2
EvRem & BRiDGE	4	0.044060998	0.089987592	2
BART Plaza	2	0.017904201	0.038869131	2
Internal Street	16	0.057327581	0.110995353	2
Frontage Rd	17	0.050392666	0.09809643	2
	41	0.305303299	1.879820369	

Annual Emissions (lb/year)

Construction Area	PM10	1,3-butadiene	acetaldehyde	benzene	ethylbenzene	formaldehyde	methanol	mek	naphthalene	styrene	toluene	xylene
BART Garage	3.875	8.37E-02	3.24	0.882	0.134	6.48	0.0132	0.651	0.0374	0.0256	0.649	0.269
EvRem & BRiDGE	0.629	2.44E-03	0.0945	0.0257	0.00392	0.189	3.86E-04	0.019	0.00109	7.46E-04	0.0189	0.00785
BART Plaza	0.512	2.11E-03	0.0817	0.0222	0.00339	0.163	3.33E-04	0.0164	9.44E-04	6.44E-04	0.0164	0.00679
Internal Street	0.205	7.53E-04	0.0291	0.00793	0.00121	0.0583	1.19E-04	0.00586	3.37E-04	2.30E-04	0.00584	0.00242
Frontage Rd	0.169	6.26E-04	0.0242	0.0066	0.00101	0.0485	9.89E-05	0.00487	2.80E-04	1.91E-04	0.00486	0.00201

	Construction days/year	Construction hours/day
	250	8

Hourly Emissions (lb/hr)

	PM10	1,3-butadiene	acetaldehyde	benzene	ethylbenzene	formaldehyde	methanol	mek	naphthalene	styrene	toluene	xylene
BART Garage	1.94E-03	4.19E-05	1.62E-03	4.41E-04	6.70E-05	3.24E-03	6.60E-06	3.26E-04	1.87E-05	1.28E-05	3.25E-04	1.35E-04
EvRem & BRiDGE	3.15E-04	1.22E-06	4.73E-05	1.29E-05	1.96E-06	9.45E-05	1.93E-07	9.50E-06	5.45E-07	3.73E-07	9.45E-06	3.93E-06
BART Plaza	2.56E-04	1.06E-06	4.09E-05	1.11E-05	1.70E-06	8.15E-05	1.67E-07	8.20E-06	4.72E-07	3.22E-07	8.20E-06	3.40E-06
Internal Street	1.02E-04	3.77E-07	1.46E-05	3.97E-06	6.05E-07	2.92E-05	5.95E-08	2.93E-06	1.69E-07	1.15E-07	2.92E-06	1.21E-06
Frontage Rd	8.47E-05	3.13E-07	1.21E-05	3.30E-06	5.05E-07	2.43E-05	4.95E-08	2.44E-06	1.40E-07	9.55E-08	2.43E-06	1.01E-06

Speciation Profile #818	
1,3-butadiene	0.0019
acetaldehyde	0.07353
benzene	0.02001
ethylbenzene	0.00305
formaldehyde	0.14714
methanol	0.0003
mek	0.01477
naphthalene	0.00085
styrene	0.00058
toluene	0.01473
xylene	0.00611

From the ARB website: Speciation Profiles Used in ARB Modeling
http://www.arb.ca.gov/ei/speciate/dnldopt.htm#specprof
downloaded 10/14/2010

EXHIBIT A

EXHIBIT C

This file: P:\MTC1101\Modeling\Rep_Can_70yr_Inh_AllRec_AllSrc_AllCh_ByRec_Site.txt

Created by HARP Version 1.4d Build 23.09.07
Uses ISC Version 99155
Uses BPIP (Dated: 04112)
Creation date: 2/1/2011 1:11:46 PM

EXCEPTION REPORT
   (there have been no changes or exceptions)

INPUT FILES:
   Source-Receptor file: P:\MTC1101\Modeling\MACBEXH.SRC
   Averaging period adjustment factors file: not applicable
   Emission rates file: EmRates.ems
   Site parameters file: P:\MTC1101\Modeling\project.sit

Coordinate system: UTM NAD83

Screening mode is OFF

Exposure duration: 70 year (adult resident)
Analysis method: 80th Percentile Point Estimate (inhalation pathway only)
Health effect: Cancer Risk
Receptor(s):   All
Sources(s):   All
Chemicals(s):   All

SITE PARAMETERS

   Inhalation only. Site parameters not applicable.

CHEMICAL CROSS-REFERENCE TABLE AND BACKGROUND CONCENTRATIONS

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	9901	DieselExhPM	Diesel engine exhaust, particulate matter (Diesel PM)	0.000E+00
0002	106990	1,3-Butadiene	1,3-Butadiene	0.000E+00
0003	75070	Acetaldehyde	Acetaldehyde	0.000E+00
0004	71432	Benzene	Benzene	0.000E+00
0005	100414	Ethyl Benzene	Ethyl benzene	0.000E+00
0006	50000	Formaldehyde	Formaldehyde	0.000E+00
0007	67561	Methanol	Methanol	0.000E+00
0008	78933	MEK	Methyl ethyl ketone {2-Butanone}	0.000E+00
0009	91203	Naphthalene	Naphthalene	0.000E+00
0010	100425	Styrene	Styrene	0.000E+00
0011	108883	Toluene	Toluene	0.000E+00
0012	1330207	Xylenes	Xylenes (mixed)	0.000E+00

CHEMICAL HEALTH VALUES

CHEM	CAS	ABBREVIATION	CancerPF(Inh) (mg/kg-d)^-1	CancerPF(Oral) (mg/kg-d)^-1	ChronicREL(Inh) ug/m^3	ChronicREL(Oral) mg/kg-d	AcuteREL ug/m^3
0001	9901	DieselExhPM	1.10E+00	*	5.00E+00	*	*
0002	106990	1,3-Butadiene	6.00E-01	*	2.00E+01	*	*
0003	75070	Acetaldehyde	1.00E-02	*	1.40E+02	*	4.70E+02
0004	71432	Benzene	1.00E-01	*	6.00E+01	*	1.30E+03
0005	100414	Ethyl Benzene	8.70E-03	*	2.00E+03	*	*
0006	50000	Formaldehyde	2.10E-02	*	9.00E+00	*	5.50E+01
0007	67561	Methanol	*	*	4.00E+03	*	2.80E+04
0008	78933	MEK	*	*	*	*	1.30E+04
0009	91203	Naphthalene	1.20E-01	*	9.00E+00	*	*
0010	100425	Styrene	*	*	9.00E+02	*	2.10E+04
0011	108883	Toluene	*	*	3.00E+02	*	3.70E+04
0012	1330207	Xylenes	*	*	7.00E+02	*	2.20E+04

EMISSIONS DATA SOURCE: Emission rates loaded from file: P:\MTC1101\Modeling\ExEmRates2.ems

EXHIBIT A

EXHIBIT C

EMISSION RATES HAVE BEEN MANUALLY EDITED BY USER
CHEMICALS ADDED OR DELETED:
  ADDED DieselExhPM
  ADDED 1,3-Butadiene 9901
  ADDED Acetaldehyde 106990
  ADDED Benzene 75070
  ADDED Ethyl Benzene 71432
  ADDED Formaldehyde 100414
  ADDED Methanol 50000
  ADDED MEK 67561
  ADDED Naphthalene 78933
  ADDED Styrene 91203
  ADDED Toluene 100425
  ADDED Xylenes 108883

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV1 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV2 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV3 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV4 STACK 1 EMS (lbs/yr)

EXHIBIT A

EXHIBIT C

SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV5 STACK 1 EMS (lbs/yr)

SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV6 STACK 1 EMS (lbs/yr)

SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV7 STACK 1 EMS (lbs/yr)

SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV8 STACK 1 EMS (lbs/yr)

SOURCE MULTIPLIER=1

EXHIBIT A

EXHIBIT C

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=ER&BH1 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.629	3.15e-4
106990	1,3-Butadiene	1		2.44e-3	1.22e-6
75070	Acetaldehyde	1		0.0945	4.73e-5
71432	Benzene	1		0.0257	1.29e-5
100414	Ethyl Benzene	1		0.00392	1.96e-6
50000	Formaldehyde	1		0.189	9.45e-5
67561	Methanol	1		3.86e-4	1.93e-7
78933	MEK	1		0.019	9.50e-6
91203	Naphthalene	1		0.00109	5.45e-7
100425	Styrene	1		7.46e-4	3.72e-7
108883	Toluene	1		0.0189	9.45e-6
1330207	Xylenes	1		0.00785	3.93e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=ER&BH4 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.629	3.15e-4
106990	1,3-Butadiene	1		2.44e-3	1.22e-6
75070	Acetaldehyde	1		0.0945	4.73e-5
71432	Benzene	1		0.0257	1.29e-5
100414	Ethyl Benzene	1		0.00392	1.96e-6
50000	Formaldehyde	1		0.189	9.45e-5
67561	Methanol	1		3.86e-4	1.93e-7
78933	MEK	1		0.019	9.50e-6
91203	Naphthalene	1		0.00109	5.45e-7
100425	Styrene	1		7.46e-4	3.72e-7
108883	Toluene	1		0.0189	9.45e-6
1330207	Xylenes	1		0.00785	3.93e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=ER&BH3 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.629	3.15e-4
106990	1,3-Butadiene	1		2.44e-3	1.22e-6
75070	Acetaldehyde	1		0.0945	4.73e-5
71432	Benzene	1		0.0257	1.29e-5
100414	Ethyl Benzene	1		0.00392	1.96e-6
50000	Formaldehyde	1		0.189	9.45e-5
67561	Methanol	1		3.86e-4	1.93e-7
78933	MEK	1		0.019	9.50e-6
91203	Naphthalene	1		0.00109	5.45e-7
100425	Styrene	1		7.46e-4	3.72e-7
108883	Toluene	1		0.0189	9.45e-6
1330207	Xylenes	1		0.00785	3.93e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=ER&BH2 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)

EXHIBIT A

EXHIBIT C

9901	DieselExhPM	1	0.629	3.15e-4
106990	1,3-Butadiene	1	2.44e-3	1.22e-6
75070	Acetaldehyde	1	0.0945	4.73e-5
71432	Benzene	1	0.0257	1.29e-5
100414	Ethyl Benzene	1	0.00392	1.96e-6
50000	Formaldehyde	1	0.189	9.45e-5
67561	Methanol	1	3.86e-4	1.93e-7
78933	MEK	1	0.019	9.50e-6
91203	Naphthalene	1	0.00109	5.45e-7
100425	Styrene	1	7.46e-4	3.72e-7
108883	Toluene	1	0.0189	9.45e-6
1330207	Xylenes	1	0.00785	3.93e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=BARTGRG2 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		3.875	1.94e-3
106990	1,3-Butadiene	1		8.37e-2	4.19e-5
75070	Acetaldehyde	1		3.24	1.62e-3
71432	Benzene	1		0.882	4.41e-4
100414	Ethyl Benzene	1		0.134	6.70e-5
50000	Formaldehyde	1		6.48	3.24e-3
67561	Methanol	1		0.0132	6.60e-6
78933	MEK	1		0.651	3.26e-4
91203	Naphthalene	1		0.0374	1.87e-5
100425	Styrene	1		0.0256	1.28e-5
108883	Toluene	1		0.649	3.25e-4
1330207	Xylenes	1		0.269	1.35e-4

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=BARTGRG1 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		3.875	1.94e-3
106990	1,3-Butadiene	1		8.37e-2	4.19e-5
75070	Acetaldehyde	1		3.24	1.62e-3
71432	Benzene	1		0.882	4.41e-4
100414	Ethyl Benzene	1		0.134	6.70e-5
50000	Formaldehyde	1		6.48	3.24e-3
67561	Methanol	1		0.0132	6.60e-6
78933	MEK	1		0.651	3.26e-4
91203	Naphthalene	1		0.0374	1.87e-5
100425	Styrene	1		0.0256	1.28e-5
108883	Toluene	1		0.649	3.25e-4
1330207	Xylenes	1		0.269	1.35e-4

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV10 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV11 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4

EXHIBIT A

106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV12 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV13 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV14 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV15 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7

75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV16 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV17 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.205	1.02e-4
106990	1,3-Butadiene	1		7.53e-4	3.77e-7
75070	Acetaldehyde	1		0.0291	4.16e-5
71432	Benzene	1		7.93e-3	3.97e-6
100414	Ethyl Benzene	1		0.00121	6.05e-7
50000	Formaldehyde	1		0.0583	2.92e-5
67561	Methanol	1		1.19e-4	5.95e-8
78933	MEK	1		0.00586	2.93e-6
91203	Naphthalene	1		3.37e-4	1.69e-7
100425	Styrene	1		2.30e-4	1.15e-7
108883	Toluene	1		0.00584	2.92e-6
1330207	Xylenes	1		0.00242	1.21e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=BRTPV1 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.512	2.56e-4
106990	1,3-Butadiene	1		2.11e-3	1.06e-6
75070	Acetaldehyde	1		0.0817	4.09e-5
71432	Benzene	1		0.0222	1.11e-5
100414	Ethyl Benzene	1		0.00339	1.70e-6
50000	Formaldehyde	1		0.163	8.15e-5
67561	Methanol	1		3.33e-4	1.67e-7
78933	MEK	1		0.0164	8.20e-6
91203	Naphthalene	1		9.44e-4	4.72e-7
100425	Styrene	1		6.44e-4	3.22e-7
108883	Toluene	1		0.0164	8.20e-6
1330207	Xylenes	1		0.00679	3.40e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=BRTPV2 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.512	2.56e-4
106990	1,3-Butadiene	1		2.11e-3	1.06e-6
75070	Acetaldehyde	1		0.0817	4.09e-5

71432	Benzene	1		0.0222	1.11e-5
100414	Ethyl Benzene	1		0.00339	1.70e-6
50000	Formaldehyde	1		0.163	8.15e-5
67561	Methanol	1		3.33e-4	1.67e-7
78933	MEK	1		0.0164	8.20e-6
91203	Naphthalene	1		9.44e-4	4.72e-7
100425	Styrene	1		6.44e-4	3.22e-7
108883	Toluene	1		0.0164	8.20e-6
1330207	Xylenes	1		0.00679	3.40e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV18 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV19 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV20 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV21 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6

100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV22 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV23 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV24 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV25 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7

50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV26 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV27 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV28 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV29 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5

67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV30 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV31 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV32 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV33 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8

EXHIBIT C

78933	MEK	1	0.00487	2.44e-6
91203	Naphthalene	1	2.80e-4	1.40e-7
100425	Styrene	1	1.91e-4	9.55e-8
108883	Toluene	1	0.00486	2.43e-6
1330207	Xylenes	1	0.00201	1.01e-6

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=STRTV34 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		0.169	8.48e-5
106990	1,3-Butadiene	1		6.26e-4	3.13e-7
75070	Acetaldehyde	1		0.0242	1.21e-5
71432	Benzene	1		0.0066	3.30e-6
100414	Ethyl Benzene	1		0.00101	5.05e-7
50000	Formaldehyde	1		0.0485	2.43e-5
67561	Methanol	1		9.89e-5	4.95e-8
78933	MEK	1		0.00487	2.44e-6
91203	Naphthalene	1		2.80e-4	1.40e-7
100425	Styrene	1		1.91e-4	9.55e-8
108883	Toluene	1		0.00486	2.43e-6
1330207	Xylenes	1		0.00201	1.01e-6

EXHIBIT A

Receptor Number	70-Year Adult Carcinogenic Risk # in a million	40-Year Worker Carcinogenic Risk # in a million	Chronic Hazard Index	Acute Hazard Index	UTM Coordinates Easting	UTM Coordinates Northing
1	0.24	0.047	0.0061	0.037	564,662	4,187,014
2	0.20	0.040	0.0054	0.040	564,653	4,186,973
3	0.16	0.031	0.0041	0.029	564,691	4,187,007
4	0.028	0.0055	0.00075	0.015	564,579	4,187,160
5	0.027	0.0054	0.00073	0.015	564,595	4,187,157
6	0.026	0.0051	0.0007	0.014	564,611	4,187,155
7	0.025	0.0050	0.00068	0.014	564,626	4,187,153
8	0.024	0.0047	0.00064	0.013	564,639	4,187,150
9	0.022	0.0044	0.00061	0.013	564,652	4,187,148
10	0.021	0.0042	0.00058	0.012	564,666	4,187,145
11	0.020	0.0039	0.00054	0.012	564,681	4,187,142
12	0.019	0.0037	0.00051	0.011	564,695	4,187,139
13	0.018	0.0035	0.00049	0.011	564,708	4,187,137
14	0.017	0.0033	0.00047	0.010	564,722	4,187,135
15	0.016	0.0031	0.00044	0.0095	564,749	4,187,130
16	0.025	0.0049	0.00068	0.012	564,740	4,187,092
17	0.030	0.0060	0.00083	0.013	564,737	4,187,077
18	0.037	0.0073	0.0010	0.014	564,734	4,187,065
19	0.050	0.0099	0.0014	0.016	564,731	4,187,048
20	0.067	0.013	0.0018	0.018	564,729	4,187,035
21	0.089	0.018	0.0024	0.020	564,725	4,187,021
22	0.093	0.018	0.0025	0.021	564,722	4,187,006
23	0.086	0.017	0.0024	0.022	564,718	4,186,990
24	0.083	0.016	0.0023	0.023	564,715	4,186,974
25	0.084	0.017	0.0024	0.024	564,711	4,186,956

EXHIBIT A

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IRVINE
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROCKLIN
SAN LUIS OBISPO
S. SAN FRANCISCO

EXHIBIT D

March 11, 2011

Mr. Joe McCarthy
MacArthur Transit Community Partners, LLC
345 Spear Street, Suite 700
San Francisco, CA 94105

Subject: Construction Noise Reduction Plan for Phase 1 and 2 FDPs of the MacArthur Transit Village Project in Oakland, California

Dear Mr. McCarthy:

LSA Associates, Inc. (LSA) is pleased to submit this construction period Noise Reduction Plan for Phase 1 and Phase 2 Final Development Plans of the MacArthur Transit Village Project (Phase 1 and 2 FDPs)[1] in the City of Oakland (City), California. This report fulfills the requirements of the City's Standard Conditions of Approval NOISE-5 for the preparation of a site-specific Noise Reduction Plan, summarizes the results of the construction noise impact modeling and analysis for Phase 1 and 2 FDPs, and provides recommended feasible strategies to reduce construction noise impacts.

PURPOSE AND SCOPE

Noise impacts from implementation of the project were analyzed in the MacArthur Transit Village Project EIR dated January 2008. This Noise Reduction Plan for construction noise impacts has been prepared to meet the requirements of the City of Oakland's Standard Condition of Approval NOISE-5. The purpose of the Noise Reduction Plan is to demonstrate how noise associated with potential pier drilling and other extreme noise generators and construction activities associated with implementation of Phase 1 and 2 FDPs of the MacArthur Transit Village Project can be further reduced to ensure that maximum feasible noise attenuation is achieved. This Noise Reduction Plan summarizes the applicable noise limits, provides projected noise levels from construction activities, and outlines strategies consistent with the City's Standard Conditions of Approval to reduce construction noise levels to meet City standards.

For reference, the City's Standard Conditions of Approval that are applicable to this analysis are listed in Table 2 of this report. Per Condition NOISE-5, if any extreme noise generating construction activity will exceed 90 dBA L_{max}, a set of site-specific noise attenuation measures shall be prepared by a qualified acoustical consultant. The condition requires a plan for such measures that is based on the final design of the project be submitted for review and approval by the City prior to commencement of construction.

[1] These are the two FDPs applications currently on file with the City and the two construction phases of the MacArthur Transit Village Project that are anticipated to overlap to some extent and occur within the next two years. Consequently, the effects of both of these construction phases are considered in this analysis.

EXHIBIT D

NOISE TERMINOLOGY

Several noise measurement scales exist which are used to describe noise in a particular location. A *decibel* (dB) is a unit of measurement which indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3.0 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3.0 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness. Sound intensity is normally measured through the *A-weighted sound level* (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive.

Noise impacts can be described in three categories. The first is audible impacts, which refers to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dB or greater, since this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1.0 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6-dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern. There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and community noise equivalent level (CNEL) or the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

NOISE SENSITIVE RECEPTORS

Noise sensitive receptors are defined in the City's Noise Element as land uses whose purpose and function can be disrupted or jeopardized by noise. Sensitive receptors include residences, schools, churches, hospitals, elderly care facilities, hotels and libraries and certain types of passive recreational open space. Understandably, noise is of special concern when it occurs near sensitive receptors.[2]

The closest sensitive receptors to the proposed construction site are the residential land uses located on MacArthur Boulevard that border the southern boundary of the construction site and the residential land uses on Telegraph Avenue that border the eastern boundary of the construction site. Although outpatient surgery centers are not specifically identified by the City as noise sensitive uses, this analysis treats the surgery center on Telegraph Avenue as a sensitive receptor. These three sensitive land use areas have been evaluated for potential noise impacts from construction activities associated with implementation of Phase 1 and 2 FDPs.

PROJECTED CONSTRUCTION NOISE IMPACTS

Construction noise impacts have been projected for Phase 1 and 2 FDPs based on project specific phasing and construction equipment details provided by the project construction engineer as part of the Construction Equipment Schedule dated January 28, 2011. The construction noise calculation spreadsheets are provided as Attachment A of this report. The Construction Equipment Schedule is provided in Attachment B. A summary of the projected noise levels is shown in Table 1.

Noise levels were calculated for each of the three months with the highest number of pieces of equipment scheduled to be used (May, June, and September of 2011). Both the maximum noise level, L_{max} and the worst case hourly average noise level $L_{eq}(h)$ were calculated for the three nearest sensitive land uses identified above. The calculated noise levels from construction activities have been made using the following formula:

$$L_{eq}(h) = E.L. + 10Log(U.F.) - 20Log(D/50) - 10Log(D/50) - A_{shielding}$$

Where:
E.L. = reference equipment noise emission level (based on L_{max} at 50 feet)
U.F. = equipment usage factor (percent in use per typical hour as a fraction of 100 percent)
D = distance between source and receiver in feet
G = ground effects constant
$A_{shielding}$ = attenuation provided by intervening barriers

The calculations use the general noise reference levels for each identified piece of construction equipment listed in Chapter 9 of the FHWA's Highway Construction Noise Handbook. The usage factor for the worst case hour calculation assumes that all pieces of equipment that would be used during that month would be operating at their full capacity during a typical hour. Those pieces of equipment that would be operating on-site, such as the 2000 Cat 330B Excavator, are assumed to operate 100 percent of the hour, while equipment that would never operate on-site for a full-hour in sequence,

[2] City of Oakland, 2005. *City of Oakland General Plan Noise Element*. June.

such as dump trucks which will only operate while arriving and leaving the site, are assumed to operate a maximum of a half-hour.

Anticipated construction activities for the months of May and June 2011 are projected to result in noise levels in excess of 90 dBA L_{max} at the residential land uses on MacArthur Boulevard that border the construction site. In addition, for the month of May, the anticipated construction activities are also projected to exceed 90 dBA L_{max} at the residential land uses on Telegraph Avenue that border the construction site. As shown in Table 1, projected construction noise levels at the surgery center land use would reach up to 89 dBA L_{max}.

The projected worst case hourly average $L_{eq}(h)$ noise levels for anticipated construction activities would range up to 73 dBA $L_{eq}(h)$ at the closest residential land uses, and up to 67 dBA $L_{eq}(h)$ at the surgery center.

However, implementation of the noise reduction strategies outlined in the Standard Conditions of Approval would reduce these potential construction-related noise levels. In particular, compliance with Condition NOISE-5a, erection of temporary sound barriers along the property lines of impacted sensitive receptors would reduce these impacts. Therefore, the following site-specific noise reduction strategies shall be implemented as part of Phase 1 and 2 FDPs:

- Prior to initiation of on-site construction-related earthwork activities, a minimum 8 foot high temporary sound barrier shall be erected along the project property line abutting the residential sensitive land uses that are adjacent to the construction site on MacArthur Boulevard and Telegraph Avenue. The location of the temporary sound barriers is shown in Figure 1.
- Prior to initiation of on-site construction-related earthwork activities, a minimum 6 foot high temporary sound barrier shall be erected along the project property line abutting the outpatient surgery center land uses that is adjacent to the construction site on Telegraph Avenue.
- These temporary sound barriers shall be constructed with a minimum surface weight of 4 pounds per square foot and shall be constructed so that vertical or horizontal gaps are eliminated; these temporary barriers shall remain in place through the construction phase in which heavy construction equipment, such as excavators, dozers, scrapers, loaders, rollers, pavers, and dump trucks, are operating within 150 feet of the edge of the construction site by adjacent sensitive land uses.

Implementation of these site-specific noise reduction strategies are anticipated to reduce construction noise levels by a minimum of 8 dBA at the residential land uses on MacArthur Boulevard and Telegraph Avenue, and by a minimum of 5 dBA at the outpatient surgery center land use (see Table 1).

EXHIBIT A

EXHIBIT D

Table 1: Summary of Projected Construction Noise Levels

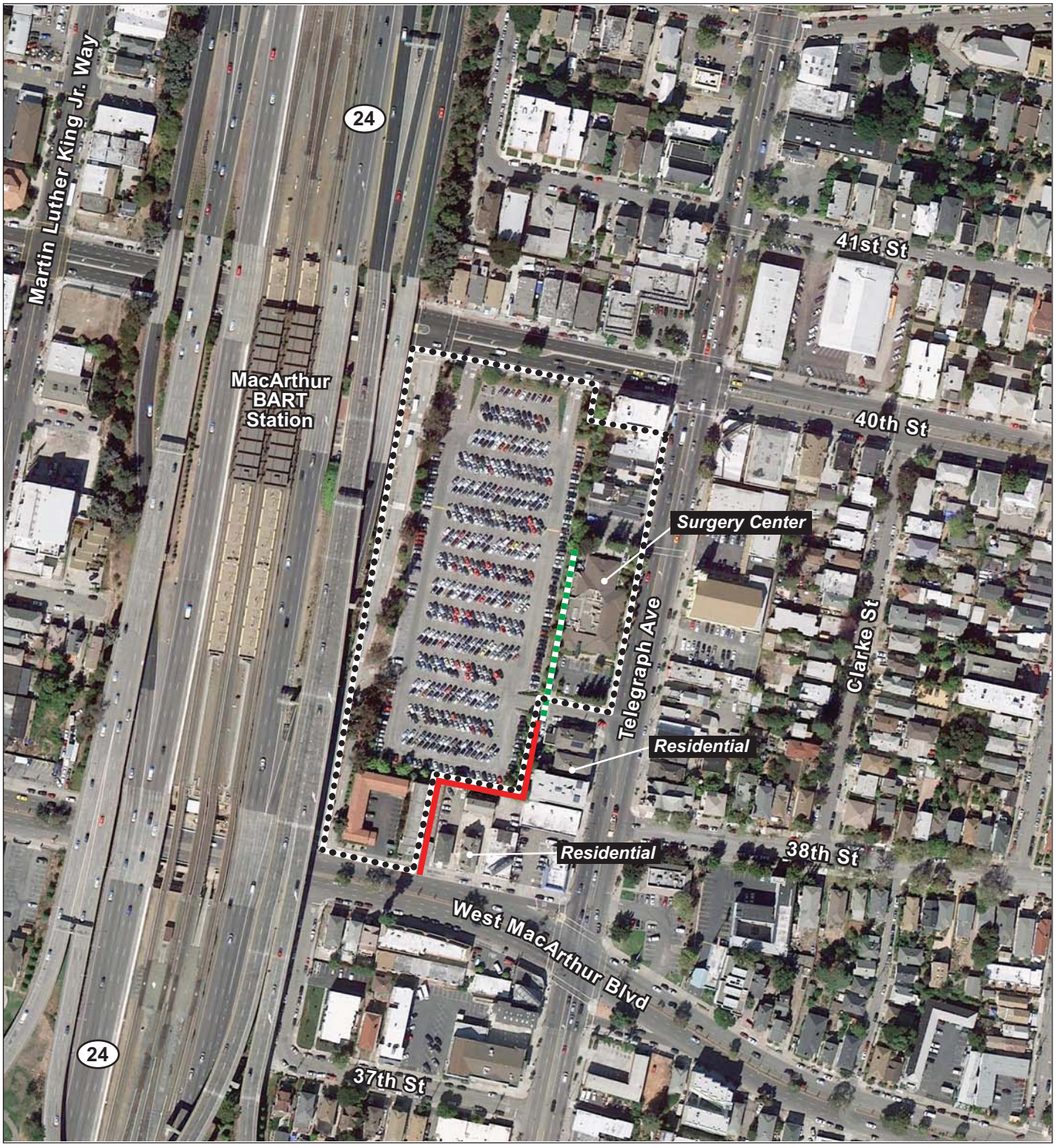
Receptor	Phase Month	Noise Levels Prior to Implementation of Noise Reduction Strategies (dBA)		Noise Levels With Implementation of Noise Reduction Strategies (dBA)	
		L_{max} [a]	$L_{eq}(h)$	L_{max}	$L_{eq}(h)$ [b]
Residential on MacArthur Boulevard	May 2011	92	69	84	61
	June 2011	92	73	84	65
	September 2011	89	69	81	61
Residential on Telegraph Avenue	May 2011	92	70	84	62
	June 2011	78	65	70	57
	September 2011	78	62	70	54
Surgery Center on Telegraph Avenue	May 2011	89	67	84	62
	June 2011	74	60	69	55
	September 2011	71	61	66	56

[a] Projected L_{max} is the loudest value.

[b] Includes shielding reduction calculation for use of temporary sound barriers.

Source: LSA Associates, Inc. 2011

EXHIBIT A



LSA

FIGURE 1

Project Site

6 Foot High Temporary Sound Barrier

8 Foot High Temporary Sound Barrier

N

0 150 300

FEET

MacArthur Transit Village Project

Noise Reduction Plan

Temporary Sound Barrier Locations

SOURCES: GOOGLE EARTH, OCTOBER 2009; LSA ASSOCIATES, INC., 2011.

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EXHIBIT D

STANDARD CONDITIONS OF APPROVAL REQUIREMENTS

The City's Standard Conditions of Approval are summarized in Table 2. The table describes how applicable conditions will be implemented into Phase 1 and 2 FDPs.

Table 2: Applicable Standard Conditions of Approval

SCA Number[a]	Requirement	Implementation Action
NOISE-1	**Days/Hours of Construction Operation.** *Ongoing throughout demolition, grading, and/or construction.* The project applicant shall require construction contractors to limit standard construction activities as follows:	Will be complied with.
1a	Construction activities are limited to between 7:00 a.m. and 7:00 p.m. Monday through Friday, except that pile driving and/or other extreme noise generating activities greater than 90 dBA limited to between 8:00 a.m. and 4:00 p.m. Monday through Friday.	Will be complied with.
1b	Any construction activity proposed to occur outside of the standard hours of 7:00 a.m. to 7:00 p.m. Monday through Friday for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened and such construction activities shall only be allowed with the prior written authorization of the Building Services Division.	Will be complied with.
1c	Construction activity shall not occur on Saturdays, with the following possible exceptions: • Prior to the building being enclosed, requests for Saturday construction for special activities (such as concrete pouring which may require more continuous amounts of time), shall be evaluated on a case-by-case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened. Such construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division. • After the building is enclosed, requests for Saturday construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division, and only then within the interior of the building with the doors and windows closed	Will be complied with.
1d	No extreme noise generating activities (greater than 90 dBA) shall be allowed on Saturdays, with no exceptions.	Will be complied with.
1e	No construction activity shall take place on Sundays or Federal holidays	Will be complied with.
1f	Construction activities include but are not limited to: truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.	Will be complied with.
1g	Applicant shall use temporary power poles instead of generators where feasible.	Will be complied with.
NOISE-2	**Noise Control.** *Ongoing throughout demolition, grading, and/or construction.* To reduce noise impacts due to construction, the project applicant shall require construction contractors to implement a site-specific noise reduction program, subject to city review and approval, which includes the following measures:	This report is submitted.
2a	Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).	Will be complied with.
2b	Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used if such jackets are commercially	Will be complied with.

	available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.	
2c	Stationary noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction.	Will be complied with.
2d	The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.	The strategies included in the plan will ensure that all feasible noise reduction controls will be implemented per Condition NOISE-5.
NOISE-3	**Noise Complaint Procedures.** *Ongoing throughout demolition, grading, and/or construction.* Prior to the issuance of each building permit, along with the submission of construction documents, the project applicant shall submit to the City Building Services Division a list of measures to respond to and track complaints pertaining to construction noise. These measures shall include:	Will be complied with.
3a	A procedure and phone numbers for notifying the City Building Services Division staff and Oakland Police Department; (during regular construction hours and off-hours) shall be submitted to the Building Services Division.	Will be complied with.
3b	A sign posted on-site pertaining with permitted construction days and hours and complaint procedures and who to notify in the event of a problem. The sign shall also include a listing of both the City and construction contractor's telephone numbers (during regular construction hours and off-hours).	Will be complied with.
3c	The designation of an on-site construction complaint and enforcement manager for the project.	Will be complied with.
3d	Notification of neighbors and occupants within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities about the estimated duration of the activity.	Will be complied with. [b]
3e	A preconstruction meeting shall be held with the job inspectors and the general contractor/on-site project manager to confirm that noise measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed.	Will be complied with.
NOISE-5	**Pile Driving and Other Extreme Noise Generators.** *Ongoing throughout demolition, grading, and/or construction.* To further reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90 dBA, a set of site-specific noise attenuation measures shall be completed under the supervision of a qualified acoustical consultant. Prior to commencing construction, a plan for such measures shall be submitted for review and approval by the City to ensure that maximum feasible noise attenuation will be achieved. This plan shall be based on the final design of the project. A third-party peer review, paid for by the project applicant, may be required to assist the City in evaluating the feasibility and effectiveness of the noise reduction plan submitted by the project applicant. The criterion for approving the plan shall be a determination that maximum feasible noise attenuation will be achieved. A special inspection deposit is required to ensure compliance with the noise reduction plan. The amount of the deposit shall be determined by the Building Official, and the deposit shall be submitted by the project applicant concurrent with submittal of the noise reduction plan.	This report is submitted.
5a	Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings.	Will be complied with.
5b	Implement "quiet" pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions	Torque down or auger cast piles are planned to be used.
5c	Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site.	Not anticipated
5d	Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for	With implementation of reduction measures

	example, and implement such measure if such measures are feasible and would noticeably reduce noise impacts.	impacts are not anticipated.
5e	Monitor the effectiveness of noise attenuation measures by taking noise measurements.	Will be complied with.

[a] The SCA Number equates to the numbering found in the Conditions of Approval for the MacArthur Transit Village Project, as approved by Planning Commission action on June 4, 2008 and subsequently amended by City Council action on July 7, 2008.

NOISE REDUCTION PLAN

Site-Specific Strategies. Projected construction noise levels could result in noise levels that exceed 90 dBA L_{max}. In order to reduce construction noise levels to the maximum extent feasible pursuant to Condition NOISE-5 for identified impacted land uses, the following site-specific noise reduction strategies shall be implemented as part of Phase 1 and 2 FDPs:

- Prior to initiation of on-site construction-related earthwork activities, a minimum 8-foot high temporary sound barrier shall be erected along the project property line abutting the residential sensitive land uses that are adjacent to the construction site on MacArthur Boulevard and Telegraph Avenue. The location of the temporary sound barriers is shown in Figure 1.
- Prior to initiation of on-site construction-related earthwork activities, a minimum 6-foot high temporary sound barrier shall be erected along the project property line abutting the outpatient surgery center land uses that is adjacent to the construction site on Telegraph Avenue.
- These temporary sound barriers shall be constructed with a minimum surface weight of 4 pounds per square foot and shall be constructed so that vertical or horizontal gaps are eliminated; these temporary barriers shall remain in place through the construction phase in which heavy construction equipment, such as excavators, dozers, scrapers, loaders, rollers, pavers, and dump trucks, are operating within 150 feet of the edge of the construction site by adjacent sensitive land uses.

These noise reduction strategies will reduce construction noise during the loudest periods of construction for Phase 1 and 2 FDPs as shown in Table 1.

Standard Conditions of Approval. In addition to these site-specific noise reduction strategies, the project contractor shall comply with all the general noise reduction strategies of Conditions NOISE-1, -2, -3, and -5 listed in Table 2 of this report. Implementation of these strategies will further reduce construction noise impacts in the project vicinity.

Supplemental Noise Reduction Strategies. Further noise reduction could be achieved with implementation of the following supplemental noise reduction strategies.

Whenever feasible, the project contractor shall encourage implementation of the following strategies throughout all phases of construction:

- Use smaller or quieter equipment;
- Use electric equipment in lieu of gasoline or diesel powered equipment;
- Turn off all idling equipment when anticipated to not be in use for more than 5 minutes;
- Minimize drop height when loading excavated materials onto trucks;

- Minimize drop height when unloading or moving materials on-site; and
- Sequence noisy activities to coincide with noisiest ambient hours.

NOISE MONITORING PLAN

Noise monitoring is required for all construction activities that would be considered extreme noise generators, activities that would result in noise levels in excess of 90 dBA L_{max} as measured at the receiving property. As noted previously, anticipated construction activities for the months of May and June 2011 could result in noise levels in excess of 90 dBA L_{max} at the residential land uses on MacArthur Boulevard that border the construction site. The anticipated construction activities for the month of May may also exceed 90 dBA L_{max} (without implementation of recommended strategies) at the residential land uses on Telegraph Avenue that border the construction site. Therefore, a noise monitoring program is required to monitor the noise levels at these potentially impacted sensitive receptor locations.

In addition to monitoring for exceedances of the maximum noise level threshold, Condition NOISE-5e requires noise monitoring to measure the effectiveness of noise attenuation measures. The noise monitoring effort shall be conducted as follows:

- Noise measurements shall be conducted on a weekly basis during the phases associated with the anticipated activities for the months of May, June, and September, and shall be conducted by a qualified acoustical consultant or a person trained by such a qualified consultant.
- These measurements shall be taken during mid-morning and mid-afternoon hours when background noise levels are anticipated to be lowest so as to try to capture noise from only construction noise sources.
- The measurements shall be taken at distance greater than 10 feet from the temporary sound barriers on the receptor property in order to determine the effectiveness of the sound barrier.
- If exceedances are identified, then the on-site construction manager shall be notified and the equipment use shall be adjusted so that noise levels are reduced.

CONCLUSION

With implementation of the site-specific noise reduction strategies outlined above, noise impacts from project-related construction activities would be reduced at impacted land uses. In addition, further noise reduction will be achieved with implementation of the strategies listed in the Standard Conditions of Approval and the supplemental noise reduction strategies outlined in this report. Furthermore, implementation of the noise monitoring program will ensure that potential noise impacts are monitored and action taken if exceedances are identified.

This report meets the requirements of Condition of Approval NOISE-5 for a site-specific noise reduction plan for Phase 1 and 2 FDPs.

EXHIBIT D

Thank you for requesting LSA's services for this task.

Sincerely,
LSA ASSOCIATES, INC.

David Clore, AICP
Principal-in-Charge

Philip Ault, LEED-AP
Noise & Air Quality Specialist/Project Manager

Attachments:

Attachment A - Construction Noise Calculation Tables
Attachment B - Construction Equipment Schedule and Key

ATTACHMENT A:
CONSTRUCTION NOISE CALCULATION TABLES

EXHIBIT D

Phase work for May 2011: Environmental Remediation and Bart Garage Earthwork

Receptor: Residential on MacArthur Boulevard

		Reference (dBA) 50 ft	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								Noise Level Calculation with Noise Attenuation Requirements Implemented								
			Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)			Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)			Attenuation technique
		Lmax	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	antiLog	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	antiLog	implemented
A	2000 Cat 330B Excavator	81	1	50	180	0.52		81	66.98118	6.698117698	4990197.084	1	50	180	0.52	8	73	58.98118	5.898117698	790892.9387	Temporary 8 ft sound barrier
B	2005 Linkbelt 330 LX Excavator	81	1	30	120	0.52		85.436975	71.41868	7.141867671	13863333.5	1	30	120	0.52	8	77.43697	63.41868	6.341867671	2197190.289	Temporary 8 ft sound barrier
C	2006 Bobcat S300 Skid steer	79																			
D	Xtreme XFR-1245 Forklift	75																			
E	Delmag RH26	84																			
F	Drill Head Motor	84																			
G	TEREX Back Hoe Loader	88																			
H	48 meter Putzmeister Boom Pump	84																			
J1	1999 Mack Dump truck	88	0.5	50	180	0.52		88	70.97088	7.097087702	12505115.36	0.5	50	180	0.52	8	80	62.97088	6.297087702	1981927.22	Temporary 8 ft sound barrier
J2	1999 Mack Dump truck	88	0.5	30	120	0.52		92.436975	75.40838	7.540837675	34740628.83	0.5	30	120	0.52	8	84.43697	67.40838	6.740837675	5506018.613	Temporary 8 ft sound barrier
K	Fork Lift - Hyster H80XL	75																			
M	Ingersoll Rand Compressor	85																			
N	Link Belt 75 ton hydro	76																			
P	JLG 600 series - 60 ft boom	75																			
Q	Delivery Stake Truck - F-450 Super Duty	85																			
R	Pecco PH 6000	75																			
S	Ditchwitch 1030 trencher	80																			
T	TEREX Back Hoe Loader	88																			
U	Hitachi Excavator - EX-550LC-5	81																			
V	Dynapac (jumping jack) - LT7000	87																			
W	STIHL - cut-off saw	70	0.5	30	120	0.52		74.436975	57.40838	5.740837675	550601.8613	0.5	30	120	0.52	8	66.43697	49.40838	4.940837675	87264.51418	Temporary 8 ft sound barrier
X	Lincoln Commander 500 welder	73																			
Y	Concrete walk behind saw -EDCO SS-20	90																			
Z1	SAKAI - dirt roller	80	1	50	180	0.52		80	65.98118	6.598117698	3963854.44	1	50	180	0.52	8	72	57.98118	5.798117698	628228.5919	Temporary 8 ft sound barrier
Z2	SAKAI - dirt roller	80	1	30	120	0.52		84.436975	70.41868	7.041867671	11012037.23	1	30	120	0.52	8	76.43697	62.41868	6.241867671	1745290.284	Temporary 8 ft sound barrier
AA	McNeilus Ready-mix Concrete truck	79																			
AB	Cement Finisher - Multiquip	80																			
AC	John Deere Skip loader - 210LE	88																			
AD	Caterpillar grader - 140H	85																			
AE	CAT 966F wheel loader	88																			
AF	Water truck - Sterling LT8500	85	0.5	50	180	0.52		85	67.97088	6.797087702	6267404.173	0.5	50	180	0.52	8	77	59.97088	5.997087702	993316.6208	Temporary 8 ft sound barrier
AG	CAT D8R - diesel - Bull Dozer	88																			
AH	CAT 1055D paver	77	0.5	50	180	0.52		77	59.97088	5.997087702	993316.6208	0.5	50	180	0.52	8	69	51.97088	5.197087702	157430.075	Temporary 8 ft sound barrier

	Distance to receptor:	Closest	Average		Lmax*	92		Sum	88886489.1		Lmax*	84		Sum	14087559.15
Environmental Remediation		50	180					Sum/12	7407207.425					Sum/12	1173963.262
BART Garage Earthwork		30	120					10*Log(Sum)	68.69654506					10*Log(Sum)	60.69654506
								Leq(h)	69					Leq(h)	61

*Calculated Lmax is the Loudest value.

*Calculated Lmax is the Loudest value.

Phase work for June 2011: Piles and Grade Beams/Pile Caps

Receptor: Residential on MacArthur Boulevard

		Reference (dBA) 50 ft	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								Noise Level Calculation with Noise Attenuation Requirements Implemented								
			Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)			Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)			Attenuation technique
		Lmax	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	antiLog	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	antiLog	implemented
A	2000 Cat 330B Excavator	81																			
B	2005 Linkbelt 330 LX Excavator	81																			
C	2006 Bobcat S300 Skid steer	79																			
D1	Xtreme XFR-1245 Forklift	75	1	30	120	0.52		79.436975	65.41868	6.541867671	3482311.932	1	30	120	0.52	8	71.43697	57.41868	5.741867671	551909.2474	Temporary 8 ft sound barrier
E	Delmag RH26	84	1	30	120	0.52		88.436975	74.41868	7.441867671	27660986.89	1	30	120	0.52	8	80.43697	66.41868	6.641867671	4383970.982	Temporary 8 ft sound barrier
F	Drill Head Motor	84	1	30	120	0.52		88.436975	74.41868	7.441867671	27660986.89	1	30	120	0.52	8	80.43697	66.41868	6.641867671	4383970.982	Temporary 8 ft sound barrier
G	TEREX Back Hoe Loader	88	1	30	120	0.52		92.436975	78.41868	7.841867671	69481257.66	1	30	120	0.52	8	84.43697	70.41868	7.041867671	11012037.23	Temporary 8 ft sound barrier
H1	48 meter Putzmeister Boom Pump	84	1	30	120	0.52		88.436975	74.41868	7.441867671	27660986.89	1	30	120	0.52	8	80.43697	66.41868	6.641867671	4383970.982	Temporary 8 ft sound barrier
J	1999 Mack Dump truck	88	0.5	30	120	0.52		92.436975	75.40838	7.540837675	34740628.83	0.5	30	120	0.52	8	84.43697	67.40838	6.740837675	5506018.613	Temporary 8 ft sound barrier
K	Fork Lift - Hyster H80XL	75																			
M	Ingersoll Rand Compressor	85																			
N	Link Belt 75 ton hydro	76																			
P	JLG 600 series - 60 ft boom	75																			
Q	Delivery Stake Truck - F-450 Super Duty	85	0.5	30	120	0.52		89.436975	72.40838	7.240837675	17411559.66	0.5	30	120	0.52	8	81.43697	64.40838	6.440837675	2759546.237	Temporary 8 ft sound barrier
R	Pecco PH 6000	75																			
S	Ditchwitch 1030 trencher	80																			
T	TEREX Back Hoe Loader	88																			
U	Hitachi Excavator - EX-550LC-5	81																			
V	Dynapac (jumping jack) - LT7000	87																			
W	STIHL - cut-off saw	70																			
X	Lincoln Commander 500 welder	73	0.5	30	120	0.52		77.436975	60.40838	6.040837675	1098595.144	0.5	30	120	0.52	8	69.43697	52.40838	5.240837675	174115.5966	Temporary 8 ft sound barrier
Y	Concrete walk behind saw -EDCO SS-20	90																			
Z1	SAKAI - dirt roller	80																			
Z2	SAKAI - dirt roller	80																			
AA1	McNeilus Ready-mix Concrete truck	79	0.5	30	120	0.52		83.436975	66.40838	6.640837675	4373586.046	0.5	30	120	0.52	8	75.43697	58.40838	5.840837675	693166.675	Temporary 8 ft sound barrier
AA2	McNeilus Ready-mix Concrete truck	79	0.5	30	120	0.52		83.436975	66.40838	6.640837675	4373586.046	0.5	30	120	0.52	8	75.43697	58.40838	5.840837675	693166.675	Temporary 8 ft sound barrier
AB	Cement Finisher - Multiquip	80																			
AC	John Deere Skip loader - 210LE	88																			
AD	Caterpillar grader - 140H	85																			
AE	CAT 966F wheel loader	88																			
AF	Water truck - Sterling LT8500	85																			
AG	CAT D8R - diesel - Bull Dozer	88																			
AH	CAT 1055D paver	77																			

	Distance to receptor:	Closest	Average		Lmax*	92		Sum	217944486		Lmax*	84		Sum	34541873.22
BART Garage Piles, Grade Beams/Pile Caps		30	120					Sum/12	18162040.5					Sum/12	2878489.435
								10*Log(Sum)	72.5916464					10*Log(Sum)	64.5916464
								Leq(h)	73					Leq(h)	65

*Calculated Lmax is the Loudest value.

*Calculated Lmax is the Loudest value.

EXHIBIT A

EXHIBIT D

Phase work for Sept 2011: Grade Beams/Pile Caps, Vertical Concrete, Utilities, BART Plaza

Receptor: Residential on MacArthur Boulevard

		Reference (dBA) 50 ft	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								Noise Level Calculation with Noise Attenuation Requirements Implemented								
			Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)			Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)			Attenuation technique
		Lmax	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	antiLog	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	antiLog	implemented
A	2000 Cat 330B Excavator	81																			
B1	2005 Linkbelt 330 LX Excavator	81	1	175	195	0.52		70.118639	66.10517	6.61051719	4078657.056	1	175	195	0.52	8	62.11864	58.10517	5.81051719	646423.5803	Temporary 8 ft sound barrier
B2	2005 Linkbelt 330 LX Excavator	81	1	590	720	0.52		59.56236	51.80927	5.18092652	151679.3713	1	590	720	0.52	8	51.56236	43.80927	4.38092652	24039.5603	Temporary 8 ft sound barrier
B3	2005 Linkbelt 330 LX Excavator	81	1	155	205	0.52		71.172766	65.55785	6.555784681	3595710.192	1	155	205	0.52	8	63.17277	57.55785	5.755784681	569881.6605	Temporary 8 ft sound barrier
C1	2006 Bobcat S300 Skid steer	79	1	175	195	0.52		68.118639	64.10517	6.41051719	2573458.625	1	175	195	0.52	8	60.11864	56.10517	5.61051719	407865.7056	Temporary 8 ft sound barrier
C2	2006 Bobcat S300 Skid steer	79	1	590	720	0.52		57.56236	49.80927	4.98092652	95703.21334	1	590	720	0.52	8	49.56236	41.80927	4.18092652	15167.93713	Temporary 8 ft sound barrier
C3	2006 Bobcat S300 Skid steer	79	1	155	205	0.52		69.172766	63.55785	6.355784681	2268739.754	1	155	205	0.52	8	61.17277	55.55785	5.555784681	359571.0192	Temporary 8 ft sound barrier
D	Xtreme XFR-1245 Forklift	75	1	30	120	0.52		79.436975	65.41868	6.541867671	3482311.932	1	30	120	0.52	8	71.43697	57.41868	5.741867671	551909.2474	Temporary 8 ft sound barrier
E	Delmag RH26	84																			
F	Drill Head Motor	84																			
G1	TEREX Back Hoe Loader	88	1	590	720	0.52		66.56236	58.80927	5.88092652	760197.6451	1	590	720	0.52	8	58.56236	50.80927	5.08092652	120483.2073	Temporary 8 ft sound barrier
G2	TEREX Back Hoe Loader	88	1	155	205	0.52		78.172766	72.55785	7.255784681	18021240.44	1	155	205	0.52	8	70.17277	64.55785	6.455784681	2856174.129	Temporary 8 ft sound barrier
H1	48 meter Putzmeister Boom Pump	84	1	30	120	0.52		88.436975	74.41868	7.441867671	27660986.89	1	30	120	0.52	8	80.43697	66.41868	6.641867671	4383970.982	Temporary 8 ft sound barrier
J1	1999 Mack Dump truck	88	0.5	590	720	0.52		66.56236	55.79897	5.579896524	380098.8225	0.5	590	720	0.52	8	58.56236	47.79897	4.779896524	60241.60363	Temporary 8 ft sound barrier
J2	1999 Mack Dump truck	88	0.5	155	205	0.52		78.172766	69.54755	6.954754685	9010620.22	0.5	155	205	0.52	8	70.17277	61.54755	6.154754685	1428087.065	Temporary 8 ft sound barrier
K	Fork Lift - Hyster H80XL	75	1	30	120	0.52		79.436975	65.41868	6.541867671	3482311.932	1	30	120	0.52	8	71.43697	57.41868	5.741867671	551909.2474	Temporary 8 ft sound barrier
M1	Ingersoll Rand Compressor	85	1	175	195	0.52		74.118639	70.10517	7.01051719	10245123.32	1	175	195	0.52	8	66.11864	62.10517	6.21051719	1623742.62	Temporary 8 ft sound barrier
M2	Ingersoll Rand Compressor	85	1	590	720	0.52		63.56236	55.80927	5.58092652	381001.3547	1	590	720	0.52	8	55.56236	47.80927	4.78092652	60384.64535	Temporary 8 ft sound barrier
M3	Ingersoll Rand Compressor	85	1	155	205	0.52		75.172766	69.55785	6.955784681	9032015.642	1	155	205	0.52	8	67.17277	61.55785	6.155784681	1431478.011	Temporary 8 ft sound barrier
N	Link Belt 75 ton hydro	76																			
P	JLG 600 series - 60 ft boom	75																			
Q1	Delivery Stake Truck - F-450 Super Duty	85	0.5	30	120	0.52		89.436975	72.40838	7.240837675	17411559.66	0.5	30	120	0.52	8	81.43697	64.40838	6.440837675	2759546.237	Temporary 8 ft sound barrier
Q2	Delivery Stake Truck - F-450 Super Duty	85	0.5	30	120	0.52		89.436975	72.40838	7.240837675	17411559.66	0.5	30	120	0.52	8	81.43697	64.40838	6.440837675	2759546.237	Temporary 8 ft sound barrier
Q3	Delivery Stake Truck - F-450 Super Duty	85	0.5	175	195	0.52		74.118639	67.09487	6.709487195	5122561.659	0.5	175	195	0.52	8	66.11864	59.09487	5.909487195	811871.3102	Temporary 8 ft sound barrier
R	Pecco PH 6000	75																			
S	Ditchwitch 1030 trencher	80																			
T	TEREX Back Hoe Loader	88																			
U	Hitachi Excavator - EX-550LC-5	81																			
V	Dynapac (jumping jack) - LT7000	87	0.5	175	195	0.52		76.118639	69.09487	6.909487195	8118713.102	0.5	175	195	0.52	8	68.11864	61.09487	6.109487195	1286729.313	Temporary 8 ft sound barrier
W1	STIHL - cut-off saw	70	0.5	175	195	0.52		59.118639	52.09487	5.209487195	161989.623	0.5	175	195	0.52	8	51.11864	44.09487	4.409487195	25673.62507	Temporary 8 ft sound barrier
W2	STIHL - cut-off saw	70	0.5	590	720	0.52		48.56236	37.79897	3.779896524	6024.160363	0.5	590	720	0.52	8	40.56236	29.79897	2.979896524	954.765075	Temporary 8 ft sound barrier
W3	STIHL - cut-off saw	70	0.5	155	205	0.52		60.172766	51.54755	5.154754685	142808.7065	0.5	155	205	0.52	8	52.17277	43.54755	4.354754685	22633.65467	Temporary 8 ft sound barrier
X	Lincoln Commander 500 welder	73																			
Y	Concrete walk behind saw -EDCO SS-20	90																			
Z	SAKAI - dirt roller	80																			
AA1	McNeilus Ready-mix Concrete truck	79	0.5	30	120	0.52		83.436975	66.40838	6.640837675	4373586.046	0.5	30	120	0.52	8	75.43697	58.40838	5.840837675	693166.675	Temporary 8 ft sound barrier
AA2	McNeilus Ready-mix Concrete truck	79	0.5	30	120	0.52		83.436975	66.40838	6.640837675	4373586.046	0.5	30	120	0.52	8	75.43697	58.40838	5.840837675	693166.675	Temporary 8 ft sound barrier
AA3	McNeilus Ready-mix Concrete truck	79	0.5	175	195	0.52		68.118639	61.09487	6.109487195	1286729.313	0.5	175	195	0.52	8	60.11864	53.09487	5.309487195	203932.8528	Temporary 8 ft sound barrier
AB	Cement Finisher - Multiquip	80																			
AC	John Deere Skip loader - 210LE	88																			
AD	Caterpillar grader - 140H	85																			
AE	CAT 966F wheel loader	88																			
AF	Water truck - Sterling LT8500	85																			
AG	CAT D8R - diesel - Bull Dozer	88																			
AH	CAT 1055D paver	77																			

Distance to receptor:	Closest	Average	Lmax*	89	Sum	90940289.26
BART Garage Grade Beams/Pile Caps, Vertical Concrete	30	120			Sum/12	7578357.438
Frontage Road Utilities	175	345			10*Log(Sum)	68.79575085
Bart Plaza Demo	590	720			Leq(h)	69
W MacArthur Demo	155	205	*Calculated Lmax is the Loudest value.			

Lmax*	81	Sum	14413064.54
		Sum/12	1201088.711
		10*Log(Sum)	60.79575085
		Leq(h)	61

*Calculated Lmax is the Loudest value.

EXHIBIT A

Phase work for May 2011: Environmental Remediation and Bart Garage Earthwork

Receptor: Residential on Telegraph

		Reference (dBA) 50 ft	Usage factor	Distance to Receptor: Closest	Distance to Receptor: Average	Ground Effect	Shielding (dBA)	Calculated (dBA): Lmax	Calculated (dBA): Leq	Calculated (dBA): 0.1*Leq	Calculated (dBA): antiLog
		Lmax									
A	2000 Cat 330B Excavator	81	1	30	105	0.43		85.43697499	73.17007114	7.317007	20749475.05
B	2005 Linkbelt 330 LX Excavator	81	1	155	250	0.43		71.17276612	64.01502889	6.401503	2520593.95
C	2006 Bobcat S300 Skid steer	79									
D	Xtreme XFR-1245 Forklift	75									
E	Delmag RH26	84									
F	Drill Head Motor	84									
G	TEREX Back Hoe Loader	88									
H	48 meter Putzmeister Boom Pump	84									
J1	1999 Mack Dump truck	88	0.5	30	105	0.43		92.43697499	77.15977118	7.715977	51996860
J2	1999 Mack Dump truck	88	0.5	155	250	0.43		78.17276612	68.00472894	6.800473	6316447.544
K	Fork Lift - Hyster H80XL	75									
M	Ingersoll Rand Compressor	85									
N	Link Belt 75 ton hydro	76									
P	JLG 600 series - 60 ft boom	75									
Q	Delivery Stake Truck - F-450 Super Duty	85									
R	Pecco PH 6000	75									
S	Ditchwitch 1030 trencher	80									
T	TEREX Back Hoe Loader	88									
U	Hitachi Excavator - EX-550LC-5	81									
V	Dynapac (jumping jack) - LT7000	87									
W	STIHL - cut-off saw	70	0.5	155	250	0.43		60.17276612	50.00472894	5.000473	100108.9471
X	Lincoln Commander 500 welder	73									
Y	Concrete walk behind saw -EDCO SS-20	90									
Z1	SAKAI - dirt roller	80	1	50	105	0.43		80	72.17007114	7.217007	16481893.89
Z2	SAKAI - dirt roller	80	1	155	250	0.43		70.17276612	63.01502889	6.301503	2002178.943
AA	McNeilus Ready-mix Concrete truck	79									
AB	Cement Finisher - Multiquip	80									
AC	John Deere Skip loader - 210LE	88									
AD	Caterpillar grader - 140H	85									
AE	CAT 966F wheel loader	88									
AF	Water truck - Sterling LT8500	85	0.5	30	105	0.43		89.43697499	74.15977118	7.415977	26060162.42
AG	CAT D8R - diesel - Bull Dozer	88									
AH	CAT 1055D paver	77	0.5	30	105	0.43		81.43697499	66.15977118	6.615977	4130257.401
	Distance to receptor:			Closest	Average		Lmax*	92		Sum	130357978.1
	Environmental Remediation			30	105					Sum/12	10863164.85
	BART Garage Earthwork			155	250					10*Log(Sum)	70.3595637
										Leq(h)	70

*Calculated Lmax is the Loudest value.

Noise Level Calculation with Noise Attenuation Requirements Implemented

Usage factor	Distance to Receptor: Closest	Distance to Receptor: Average	Ground Effect	Shielding (dBA)	Calculated (dBA): Lmax	Calculated (dBA): Leq	Calculated (dBA): 0.1*Leq	Calculated (dBA): antiLog	Attenuation technique implemented
1	30	105	0.43	8	77.43697	65.17007	6.517007	3288570	Temporary 8 ft sound barrier
1	155	250	0.43	8	63.17277	56.01503	5.601503	399487.2	Temporary 8 ft sound barrier
0.5	30	105	0.43	8	84.43697	69.15977	6.915977	8240947	Temporary 8 ft sound barrier
0.5	155	250	0.43	8	70.17277	60.00473	6.000473	1001089	Temporary 8 ft sound barrier
0.5	155	250	0.43	8	52.17277	42.00473	4.200473	15866.2	Temporary 8 ft sound barrier
1	50	105	0.43	8	72	64.17007	6.417007	2612204	Temporary 8 ft sound barrier
1	155	250	0.43	8	62.17277	55.01503	5.501503	317324	Temporary 8 ft sound barrier
0.5	30	105	0.43	8	81.43697	66.15977	6.615977	4130257	Temporary 8 ft sound barrier
0.5	30	105	0.43	8	73.43697	58.15977	5.815977	654601.7	Temporary 8 ft sound barrier
				Lmax*	84		Sum	20660347	
							Sum/12	1721696	
							10*Log(Sum)	62.35956	
							Leq(h)	62	

*Calculated Lmax is the Loudest value.

Phase work for June 2011: Piles and Grade Beams/Pile Caps

Receptor: Residential on Telegraph

		Reference (dBA) 50 ft	Usage factor	Distance to Receptor: Closest	Distance to Receptor: Average	Ground Effect	Shielding (dBA)	Calculated (dBA): Lmax	Calculated (dBA): Leq	Calculated (dBA): 0.1*Leq	Calculated (dBA): antiLog
		Lmax									
A	2000 Cat 330B Excavator	81									
B	2005 Linkbelt 330 LX Excavator	81									
C	2006 Bobcat S300 Skid steer	79									
D1	Xtreme XFR-1245 Forklift	75	1	155	250	0.43		65.17276612	58.01502889	5.801503	633144.5742
E	Delmag RH26	84	1	155	250	0.43		74.17276612	67.01502889	6.701503	5029246.119
F	Drill Head Motor	84	1	155	250	0.43		74.17276612	67.01502889	6.701503	5029246.119
G	TEREX Back Hoe Loader	88	1	155	250	0.43		78.17276612	71.01502889	7.101503	12632895.09
H1	48 meter Putzmeister Boom Pump	84	1	155	250	0.43		74.17276612	67.01502889	6.701503	5029246.119
J	1999 Mack Dump truck	88	0.5	155	250	0.43		78.17276612	68.00472894	6.800473	6316447.544
K	Fork Lift - Hyster H80XL	75									
M	Ingersoll Rand Compressor	85									
N	Link Belt 75 ton hydro	76									
P	JLG 600 series - 60 ft boom	75									
Q	Delivery Stake Truck - F-450 Super Duty	85	0.5	155	250	0.43		75.17276612	65.00472894	6.500473	3165722.871
R	Pecco PH 6000	75									
S	Ditchwitch 1030 trencher	80									
T	TEREX Back Hoe Loader	88									
U	Hitachi Excavator - EX-550LC-5	81									
V	Dynapac (jumping jack) - LT7000	87									
W	STIHL - cut-off saw	70									
X	Lincoln Commander 500 welder	73	0.5	155	250	0.43		63.17276612	53.00472894	5.300473	199743.6096
Y	Concrete walk behind saw -EDCO SS-20	90									
Z1	SAKAI - dirt roller	80									
Z2	SAKAI - dirt roller	80									
AA1	McNeilus Ready-mix Concrete truck	79	0.5	155	250	0.43		69.17276612	59.00472894	5.900473	795193.6325
AA2	McNeilus Ready-mix Concrete truck	79	0.5	155	250	0.43		69.17276612	59.00472894	5.900473	795193.6325
AB	Cement Finisher - Multiquip	80									
AC	John Deere Skip loader - 210LE	88									
AD	Caterpillar grader - 140H	85									
AE	CAT 966F wheel loader	88									
AF	Water truck - Sterling LT8500	85									
AG	CAT D8R - diesel - Bull Dozer	88									
AH	CAT 1055D paver	77									
	Distance to receptor:			Closest	Average		Lmax*	78		Sum	39626079.31
	BART Garage Piles, Grade Beams/Pile Caps			155	250					Sum/12	3302173.276
										10*Log(Sum)	65.18799858
										Leq(h)	65

*Calculated Lmax is the Loudest value.

Noise Level Calculation with Noise Attenuation Requirements Implemented

Usage factor	Distance to Receptor: Closest	Distance to Receptor: Average	Ground Effect	Shielding (dBA)	Calculated (dBA): Lmax	Calculated (dBA): Leq	Calculated (dBA): 0.1*Leq	Calculated (dBA): antiLog	Attenuation technique implemented
1	155	250	0.43	8	57.17277	50.01503	5.001503	100346.7	Temporary 8 ft sound barrier
1	155	250	0.43	8	66.17277	59.01503	5.901503	797081.8	Temporary 8 ft sound barrier
1	155	250	0.43	8	66.17277	59.01503	5.901503	797081.8	Temporary 8 ft sound barrier
1	155	250	0.43	8	70.17277	63.01503	6.301503	2002179	Temporary 8 ft sound barrier
1	155	250	0.43	8	66.17277	59.01503	5.901503	797081.8	Temporary 8 ft sound barrier
0.5	155	250	0.43	8	70.17277	60.00473	6.000473	1001089	Temporary 8 ft sound barrier
0.5	155	250	0.43	8	67.17277	57.00473	5.700473	501733.3	Temporary 8 ft sound barrier
0.5	155	250	0.43	8	55.17277	45.00473	4.500473	31657.23	Temporary 8 ft sound barrier
0.5	155	250	0.43	8	61.17277	51.00473	5.100473	126029.7	Temporary 8 ft sound barrier
0.5	155	250	0.43	8	61.17277	51.00473	5.100473	126029.7	Temporary 8 ft sound barrier
				Lmax*	70		Sum	6280310	
							Sum/12	523359.2	
							10*Log(Sum)	57.188	
							Leq(h)	57	

*Calculated Lmax is the Loudest value.

EXHIBIT A

Phase work for Sept 2011: Grade Beams/Pile Caps, Vertical Concrete, Utilities, BART Plaza

Receptor: Residential on Telegraph

		Reference	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements							Noise Level Calculation with Noise Attenuation Requirements Implemented								
		(dBA) 50 ft	Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)			Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)			Attenuation technique
		Lmax	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	antiLog	implemented
A	2000 Cat 330B Excavator	81																		
B1	2005 Linkbelt 330 LX Excavator	81	1	325	365	0.43		64.74173287	60.0212545	6.002125	1004906.025	1	325	365	0.43	8	56.74173	52.02125	5.202125	159266.9	Temporary 8 ft sound barrier
B2	2005 Linkbelt 330 LX Excavator	81	1	540	680	0.43		60.33152489	53.45500453	5.3455	221564.6406	1	540	680	0.43	8	52.33152	45.455	4.5455	35115.63	Temporary 8 ft sound barrier
B3	2005 Linkbelt 330 LX Excavator	81	1	155	390	0.43		71.17276612	59.32210115	5.93221	855480.5017	1	155	390	0.43	8	63.17277	51.3221	5.13221	135584.5	Temporary 8 ft sound barrier
C1	2006 Bobcat S300 Skid steer	79	1	325	365	0.43		62.74173287	58.0212545	5.802125	634052.8367	1	325	365	0.43	8	54.74173	50.02125	5.002125	100490.6	Temporary 8 ft sound barrier
C2	2006 Bobcat S300 Skid steer	79	1	540	680	0.43		58.33152489	51.45500453	5.1455	139797.8372	1	540	680	0.43	8	50.33152	43.455	4.3455	22156.46	Temporary 8 ft sound barrier
C3	2006 Bobcat S300 Skid steer	79	1	155	390	0.43		69.17276612	57.32210115	5.73221	539771.7056	1	155	390	0.43	8	61.17277	49.3221	4.93221	85548.05	Temporary 8 ft sound barrier
D	Xtreme XFR-1245 Forklift	75	1	155	250	0.43		65.17276612	58.01502889	5.801503	633144.5742	1	155	250	0.43	8	57.17277	50.01503	5.001503	100346.7	Temporary 8 ft sound barrier
E	Delmag RH26	84																		
F	Drill Head Motor	84																		
G1	TEREX Back Hoe Loader	88	1	540	680	0.43		67.33152489	60.45500453	6.0455	1110453.693	1	540	680	0.43	8	59.33152	52.455	5.2455	175995	Temporary 8 ft sound barrier
G2	TEREX Back Hoe Loader	88	1	155	390	0.43		78.17276612	66.32210115	6.63221	4287559.061	1	155	390	0.43	8	70.17277	58.3221	5.83221	679532.3	Temporary 8 ft sound barrier
H1	48 meter Putzmeister Boom Pump	84	1	155	250	0.43		74.17276612	67.01502889	6.701503	5029246.119	1	155	250	0.43	8	66.17277	59.01503	5.901503	797081.8	Temporary 8 ft sound barrier
J1	1999 Mack Dump truck	88	0.5	540	680	0.43		67.33152489	57.44470457	5.74447	555226.8464	0.5	540	680	0.43	8	59.33152	49.4447	4.94447	87997.52	Temporary 8 ft sound barrier
J2	1999 Mack Dump truck	88	0.5	155	390	0.43		78.17276612	63.3118012	6.33118	2143779.53	0.5	155	390	0.43	8	70.17277	55.3118	5.53118	339766.2	Temporary 8 ft sound barrier
K	Fork Lift - Hyster H80XL	75	1	155	250	0.43		65.17276612	58.01502889	5.801503	633144.5742	1	155	250	0.43	8	57.17277	50.01503	5.001503	100346.7	Temporary 8 ft sound barrier
M1	Ingersoll Rand Compressor	85	1	325	365	0.43		68.74173287	64.0212545	6.402125	2524209.808	1	325	365	0.43	8	60.74173	56.02125	5.602125	400060.3	Temporary 8 ft sound barrier
M2	Ingersoll Rand Compressor	85	1	540	680	0.43		64.33152489	57.45500453	5.7455	556545.2143	1	540	680	0.43	8	56.33152	49.455	4.9455	88206.47	Temporary 8 ft sound barrier
M3	Ingersoll Rand Compressor	85	1	155	390	0.43		75.17276612	63.32210115	6.33221	2148869.865	1	155	390	0.43	8	67.17277	55.3221	5.53221	340572.9	Temporary 8 ft sound barrier
N	Link Belt 75 ton hydro	76																		
P	JLG 600 series - 60 ft boom	75																		
Q1	Delivery Stake Truck - F-450 Super Duty	85	0.5	155	250	0.43		75.17276612	65.00472894	6.500473	3165722.871	0.5	155	250	0.43	8	67.17277	57.00473	5.700473	501733.3	Temporary 8 ft sound barrier
Q2	Delivery Stake Truck - F-450 Super Duty	85	0.5	155	250	0.43		75.17276612	65.00472894	6.500473	3165722.871	0.5	155	250	0.43	8	67.17277	57.00473	5.700473	501733.3	Temporary 8 ft sound barrier
Q3	Delivery Stake Truck - F-450 Super Duty	85	0.5	325	365	0.43		68.74173287	61.01095454	6.101095	1262104.904	0.5	325	365	0.43	8	60.74173	53.01095	5.301095	200030.1	Temporary 8 ft sound barrier
R	Pecco PH 6000	75																		
S	Ditchwitch 1030 trencher	80																		
T	TEREX Back Hoe Loader	88																		
U	Hitachi Excavator - EX-550LC-5	81																		
V	Dynapac (jumping jack) - LT7000	87	0.5	325	365	0.43		70.74173287	63.01095454	6.301095	2000301.471	0.5	325	365	0.43	8	62.74173	55.01095	5.501095	317026.4	Temporary 8 ft sound barrier
W1	STIHL - cut-off saw	70	0.5	325	365	0.43		53.74173287	46.01095454	4.601095	39911.26143	0.5	325	365	0.43	8	45.74173	38.01095	3.801095	6325.509	Temporary 8 ft sound barrier
W2	STIHL - cut-off saw	70	0.5	540	680	0.43		49.33152489	39.44470457	3.94447	8799.752491	0.5	540	680	0.43	8	41.33152	31.4447	3.14447	1394.667	Temporary 8 ft sound barrier
W3	STIHL - cut-off saw	70	0.5	155	390	0.43		60.17276612	45.3118012	4.53118	33976.61584	0.5	155	390	0.43	8	52.17277	37.3118	3.73118	5384.931	Temporary 8 ft sound barrier
X	Lincoln Commander 500 welder	73																		
Y	Concrete walk behind saw -EDCO SS-20	90																		
Z	SAKAI - dirt roller	80																		
AA1	McNeilus Ready-mix Concrete truck	79	0.5	155	250	0.43		69.17276612	59.00472894	5.900473	795193.6325	0.5	155	250	0.43	8	61.17277	51.00473	5.100473	126029.7	Temporary 8 ft sound barrier
AA2	McNeilus Ready-mix Concrete truck	79	0.5	155	250	0.43		69.17276612	59.00472894	5.900473	795193.6325	0.5	155	250	0.43	8	61.17277	51.00473	5.100473	126029.7	Temporary 8 ft sound barrier
AA3	McNeilus Ready-mix Concrete truck	79	0.5	325	365	0.43		62.74173287	55.01095454	5.501095	317026.4184	0.5	325	365	0.43	8	54.74173	47.01095	4.701095	50245.3	Temporary 8 ft sound barrier
AB	Cement Finisher - Multiquip	80																		
AC	John Deere Skip loader - 210LE	88																		
AD	Caterpillar grader - 140H	85																		
AE	CAT 966F wheel loader	88																		
AF	Water truck - Sterling LT8500	85																		
AG	CAT D8R - diesel - Bull Dozer	88																		
AH	CAT 1055D paver	77																		

	Distance to receptor:	Closest	Average		Lmax*	78		Sum	20145729.27
BART Garage Grade Beams/Pile Caps, Vertical Concrete		155	250					Sum/12	1678810.772
Frontage Road Utilities		325	365					10^Log(Sum)	62.25001747
Bart Plaza Demo		540	680					Leq(h)	62
W MacArthur Demo		155	390	*Calculated Lmax is the Loudest value.					

	Lmax*	70		Sum	3192883
				Sum/12	266073.6
				10^Log(Sum)	54.25002
				Leq(h)	54

*Calculated Lmax is the Loudest value.

EXHIBIT A

Phase work for May 2011: Environmental Remediation and Bart Garage Earthwork

Receptor: Surgery Center on Telegraph

		Reference	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								Noise Level Calculation with Noise Attenuation Requirements Implemented									
		(dBA) 50 ft	Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)				Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)				
		Lmax	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	antiLog	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	antiLog	Attenuation technique implemented
A	2000 Cat 330B Excavator	81	1	30	140	0.43		85.43697499	70.13405984	7.013406	10313497.9	1	30	140	0.43	5	80.43697	65.13406	6.513406	3261414	Temporary 6 ft sound barrier
B	2005 Linkbelt 330 LX Excavator	81	1	250	390	0.43		67.02059991	59.32210115	5.93221	855480.502	1	250	390	0.43	5	62.0206	54.3221	5.43221	270526.7	Temporary 6 ft sound barrier
C	2006 Bobcat S300 Skid steer	79																			
D	Xtreme XFR-1245 Forklift	75																			
E	Delmag RH26	84																			
F	Drill Head Motor	84																			
G	TEREX Back Hoe Loader	88																			
H	48 meter Putzmeister Boom Pump	84																			
J1	1999 Mack Dump truck	88	0.5	100	140	0.43		81.97940009	74.12375988	7.412376	25844967.4	0.5	100	140	0.43	5	76.9794	69.12376	6.912376	8172896	Temporary 6 ft sound barrier
J2	1999 Mack Dump truck	88	0.5	250	390	0.43		74.02059991	63.3118012	6.33118	2143779.53	0.5	250	390	0.43	5	69.0206	58.3118	5.83118	677922.6	Temporary 6 ft sound barrier
K	Fork Lift - Hyster H80XL	75																			
M	Ingersoll Rand Compressor	85																			
N	Link Belt 75 ton hydro	76																			
P	JLG 600 series - 60 ft boom	75																			
Q	Delivery Stake Truck - F-450 Super Duty	85																			
R	Pecco PH 6000	75																			
S	Ditchwitch 1030 trencher	80																			
T	TEREX Back Hoe Loader	88																			
U	Hitachi Excavator - EX-550LC-5	81																			
V	Dynapac (jumping jack) - LT7000	87																			
W	STIHL - cut-off saw	70	0.5	250	390	0.43		56.02059991	45.3118012	4.53118	33976.6158	0.5	250	390	0.43	5	51.0206	40.3118	4.03118	10744.35	Temporary 6 ft sound barrier
X	Lincoln Commander 500 welder	73																			
Y	Concrete walk behind saw -EDCO SS-20	90																			
Z1	SAKAI - dirt roller	80	1	50	140	0.43		80	69.13405984	6.913406	8192302.57	1	50	140	0.43	5	75	64.13406	6.413406	2590634	Temporary 6 ft sound barrier
Z2	SAKAI - dirt roller	80	1	250	390	0.43		66.02059991	58.32210115	5.83221	679532.317	1	250	390	0.43	5	61.0206	53.3221	5.33221	214887	Temporary 6 ft sound barrier
AA	McNeilus Ready-mix Concrete truck	79																			
AB	Cement Finisher - Multiquip	80																			
AC	John Deere Skip loader - 210LE	88																			
AD	Caterpillar grader - 140H	85																			
AE	CAT 966F wheel loader	88																			
AF	Water truck - Sterling LT8500	85	0.5	30	140	0.43		89.43697499	71.12375988	7.112376	12953167.7	0.5	30	140	0.43	5	84.43697	66.12376	6.612376	4096151	Temporary 6 ft sound barrier
AG	CAT D8R - diesel - Bull Dozer	88																			
AH	CAT 1055D paver	77	0.5	30	140	0.43		81.43697499	63.12375988	6.312376	2052938.73	0.5	30	140	0.43	5	76.43697	58.12376	5.812376	649196.2	Temporary 6 ft sound barrier
	Distance to receptor:			**Closest**	**Average**			**Lmax***		**Sum**	63069643.2					**Lmax***	**84**		**Sum**	19944372	
	Environmental Remediation			30	140					**Sum/12**	5255803.6								**Sum/12**	1662031	
	BART Garage Earthwork			250	390					**10*Log(Sum)**	67.2063913								**10*Log(Sum)**	62.20639	
										Leq(h)	**67**								**Leq(h)**	**62**	

*Calculated Lmax is the Loudest value.

*Calculated Lmax is the Loudest value.

Phase work for June 2011: Piles and Grade Beams/Pile Caps

Receptor: Surgery Center on Telegraph

		Reference	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								Noise Level Calculation with Noise Attenuation Requirements Implemented									
		(dBA) 50 ft	Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)				Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)				
		Lmax	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	antiLog	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	antiLog	Attenuation technique implemented
A	2000 Cat 330B Excavator	81																			
B	2005 Linkbelt 330 LX Excavator	81																			
C	2006 Bobcat S300 Skid steer	79																			
D1	Xtreme XFR-1245 Forklift	75	1	250	390	0.43		61.02059991	53.32210115	5.33221	214886.986	1	250	390	0.43	5	56.0206	48.3221	4.83221	67953.23	Temporary 8 ft sound barrier
E	Delmag RH26	84	1	250	390	0.43		70.02059991	62.32210115	6.23221	1706908.01	1	250	390	0.43	5	65.0206	57.3221	5.73221	539771.7	Temporary 8 ft sound barrier
F	Drill Head Motor	84	1	250	390	0.43		70.02059991	62.32210115	6.23221	1706908.01	1	250	390	0.43	5	65.0206	57.3221	5.73221	539771.7	Temporary 8 ft sound barrier
G	TEREX Back Hoe Loader	88	1	250	390	0.43		74.02059991	66.32210115	6.63221	4287559.06	1	250	390	0.43	5	69.0206	61.3221	6.13221	1355845	Temporary 8 ft sound barrier
H1	48 meter Putzmeister Boom Pump	84	1	250	390	0.43		70.02059991	62.32210115	6.23221	1706908.01	1	250	390	0.43	5	65.0206	57.3221	5.73221	539771.7	Temporary 8 ft sound barrier
J	1999 Mack Dump truck	88	0.5	250	390	0.43		74.02059991	63.3118012	6.33118	2143779.53	0.5	250	390	0.43	5	69.0206	58.3118	5.83118	677922.6	Temporary 8 ft sound barrier
K	Fork Lift - Hyster H80XL	75																			
M	Ingersoll Rand Compressor	85																			
N	Link Belt 75 ton hydro	76																			
P	JLG 600 series - 60 ft boom	75																			
Q	Delivery Stake Truck - F-450 Super Duty	85	0.5	250	390	0.43		71.02059991	60.3118012	6.03118	1074434.93	0.5	250	390	0.43	5	66.0206	55.3118	5.53118	339766.2	Temporary 8 ft sound barrier
R	Pecco PH 6000	75																			
S	Ditchwitch 1030 trencher	80																			
T	TEREX Back Hoe Loader	88																			
U	Hitachi Excavator - EX-550LC-5	81																			
V	Dynapac (jumping jack) - LT7000	87																			
W	STIHL - cut-off saw	70																			
X	Lincoln Commander 500 welder	73	0.5	250	390	0.43		59.02059991	48.3118012	4.83118	67792.2612	0.5	250	390	0.43	5	54.0206	43.3118	4.33118	21437.8	Temporary 8 ft sound barrier
Y	Concrete walk behind saw -EDCO SS-20	90																			
Z1	SAKAI - dirt roller	80																			
Z2	SAKAI - dirt roller	80																			
AA1	McNeilus Ready-mix Concrete truck	79	0.5	250	390	0.43		65.02059991	54.3118012	5.43118	269885.853	0.5	250	390	0.43	5	60.0206	49.3118	4.93118	85345.4	Temporary 8 ft sound barrier
AA2	McNeilus Ready-mix Concrete truck	79	0.5	250	390	0.43		65.02059991	54.3118012	5.43118	269885.853	0.5	250	390	0.43	5	60.0206	49.3118	4.93118	85345.4	Temporary 8 ft sound barrier
AB	Cement Finisher - Multiquip	80																			
AC	John Deere Skip loader - 210LE	88																			
AD	Caterpillar grader - 140H	85																			
AE	CAT 966F wheel loader	88																			
AF	Water truck - Sterling LT8500	85																			
AG	CAT D8R - diesel - Bull Dozer	88																			
AH	CAT 1055D paver	77																			
	Distance to receptor:			**Closest**	**Average**			**Lmax***		**Sum**	13448948.5					**Lmax***	**69**		**Sum**	4252931	
	BART Garage Piles, Grade Beams/Pile Caps			250	390					**Sum/12**	1120745.71								**Sum/12**	354410.9	
										10*Log(Sum)	60.4950708								**10*Log(Sum)**	55.49507	
										Leq(h)	**60**								**Leq(h)**	**55**	

*Calculated Lmax is the Loudest value.

*Calculated Lmax is the Loudest value.

EXHIBIT D

Phase work for Sept 2011: Grade Beams/Pile Caps, Vertical Concrete, Utilities, BART Plaza

Receptor: Surgery Center on Telegraph

		Reference	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								Noise Level Calculation with Noise Attenuation Requirements Implemented									
		(dBA) 50 ft	Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)				Usage	Distance to Receptor		Ground	Shielding	Calculated (dBA)				
		Lmax	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	antiLog	factor	Closest	Average	Effect	(dBA)	Lmax	Leq	0.1*Leq	antiLog	Attenuation technique implemented
A	2000 Cat 330B Excavator	81																			
B1	2005 Linkbelt 330 LX Excavator	81	1	315	325	0.43		65.01318901	61.24620543	6.124621	1332356.8	1	315	325	0.43	5	60.01319	56.24621	5.624621	421328.2	Temporary 8 ft sound barrier
B2	2005 Linkbelt 330 LX Excavator	81	1	370	480	0.43		63.61536561	57.13080904	5.713081	516512.58	1	370	480	0.43	5	58.61537	52.13081	5.213081	163335.6	Temporary 8 ft sound barrier
B3	2005 Linkbelt 330 LX Excavator	81	1	430	560	0.43		62.31003098	55.50400205	5.5504	355140.503	1	430	560	0.43	5	57.31003	50.504	5.0504	112305.3	Temporary 8 ft sound barrier
C1	2006 Bobcat S300 Skid steer	79	1	315	325	0.43		63.01318901	59.24620543	5.924621	840660.31	1	315	325	0.43	5	58.01319	54.24621	5.424621	265840.1	Temporary 8 ft sound barrier
C2	2006 Bobcat S300 Skid steer	79	1	370	480	0.43		61.61536561	55.13080904	5.513081	325897.406	1	370	480	0.43	5	56.61537	50.13081	5.013081	103057.8	Temporary 8 ft sound barrier
C3	2006 Bobcat S300 Skid steer	79	1	430	560	0.43		60.31003098	53.50400205	5.3504	224078.508	1	430	560	0.43	5	55.31003	48.504	4.8504	70859.85	Temporary 8 ft sound barrier
D	Xtreme XFR-1245 Forklift	75	1	250	390	0.43		61.02059991	53.32210115	5.33221	214886.986	1	250	390	0.43	5	56.0206	48.3221	4.83221	67953.23	Temporary 8 ft sound barrier
E	Delmag RH26	84																			
F	Drill Head Motor	84																			
G1	TEREX Back Hoe Loader	88	1	370	480	0.43		70.61536561	64.13080904	6.413081	2588695.11	1	370	480	0.43	5	65.61537	59.13081	5.913081	818617.3	Temporary 8 ft sound barrier
G2	TEREX Back Hoe Loader	88	1	430	560	0.43		69.31003098	62.50400205	6.2504	1779918.86	1	430	560	0.43	5	64.31003	57.504	5.7504	562859.8	Temporary 8 ft sound barrier
H1	48 meter Putzmeister Boom Pump	84	1	250	390	0.43		70.02059991	62.32210115	6.23221	1706908.01	1	250	390	0.43	5	65.0206	57.3221	5.73221	539771.7	Temporary 8 ft sound barrier
J1	1999 Mack Dump truck	88	0.5	370	480	0.43		70.61536561	61.12050908	6.112051	1294347.56	0.5	370	480	0.43	5	65.61537	56.12051	5.612051	409308.6	Temporary 8 ft sound barrier
J2	1999 Mack Dump truck	88	0.5	430	560	0.43		69.31003098	59.49370209	5.94937	889959.43	0.5	430	560	0.43	5	64.31003	54.4937	5.44937	281429.9	Temporary 8 ft sound barrier
K	Fork Lift - Hyster H80XL	75	1	250	390	0.43		61.02059991	53.32210115	5.33221	214886.986	1	250	390	0.43	5	56.0206	48.3221	4.83221	67953.23	Temporary 8 ft sound barrier
M1	Ingersoll Rand Compressor	85	1	315	325	0.43		69.01318901	65.24620543	6.524621	3346728.97	1	315	325	0.43	5	64.01319	60.24621	6.024621	1058329	Temporary 8 ft sound barrier
M2	Ingersoll Rand Compressor	85	1	370	480	0.43		67.61536561	61.13080904	6.113081	1297420.94	1	370	480	0.43	5	62.61537	56.13081	5.613081	410280.5	Temporary 8 ft sound barrier
M3	Ingersoll Rand Compressor	85	1	430	560	0.43		66.31003098	59.50400205	5.9504	892072.61	1	430	560	0.43	5	61.31003	54.504	5.4504	282098.1	Temporary 8 ft sound barrier
N	Link Belt 75 ton hydro	76																			
P	JLG 600 series - 60 ft boom	75																			
Q1	Delivery Stake Truck - F-450 Super Duty	85	0.5	250	390	0.43		71.02059991	60.3118012	6.03118	1074434.93	0.5	250	390	0.43	5	66.0206	55.3118	5.53118	339766.2	Temporary 8 ft sound barrier
Q2	Delivery Stake Truck - F-450 Super Duty	85	0.5	250	390	0.43		71.02059991	60.3118012	6.03118	1074434.93	0.5	250	390	0.43	5	66.0206	55.3118	5.53118	339766.2	Temporary 8 ft sound barrier
Q3	Delivery Stake Truck - F-450 Super Duty	85	0.5	315	325	0.43		69.01318901	62.23590548	6.223591	1673364.49	0.5	315	325	0.43	5	64.01319	57.23591	5.723591	529164.3	Temporary 8 ft sound barrier
R	Pecco PH 6000	75																			
S	Ditchwitch 1030 trencher	80																			
T	TEREX Back Hoe Loader	88																			
U	Hitachi Excavator - EX-550LC-5	81																			
V	Dynapac (jumping jack) - LT7000	87	0.5	315	325	0.43		71.01318901	64.23590548	6.423591	2652103.98	0.5	315	325	0.43	5	66.01319	59.23591	5.923591	838668.9	Temporary 8 ft sound barrier
W1	STIHL - cut-off saw	70	0.5	315	325	0.43		54.01318901	47.23590548	4.723591	52916.4313	0.5	315	325	0.43	5	49.01319	42.23591	4.223591	16733.64	Temporary 8 ft sound barrier
W2	STIHL - cut-off saw	70	0.5	370	480	0.43		52.61536561	43.12050908	4.312051	20514.0263	0.5	370	480	0.43	5	47.61537	38.12051	3.812051	6487.105	Temporary 8 ft sound barrier
W3	STIHL - cut-off saw	70	0.5	430	560	0.43		51.31003098	41.49370209	4.14937	14104.9064	0.5	430	560	0.43	5	46.31003	36.4937	3.64937	4460.363	Temporary 8 ft sound barrier
X	Lincoln Commander 500 welder	73																			
Y	Concrete walk behind saw -EDCO SS-20	90																			
Z	SAKAI - dirt roller	80																			
AA1	McNeilus Ready-mix Concrete truck	79	0.5	250	390	0.43		65.02059991	54.3118012	5.43118	269885.853	0.5	250	390	0.43	5	60.0206	49.3118	4.93118	85345.4	Temporary 8 ft sound barrier
AA2	McNeilus Ready-mix Concrete truck	79	0.5	250	390	0.43		65.02059991	54.3118012	5.43118	269885.853	0.5	250	390	0.43	5	60.0206	49.3118	4.93118	85345.4	Temporary 8 ft sound barrier
AA3	McNeilus Ready-mix Concrete truck	79	0.5	315	325	0.43		63.01318901	56.23590548	5.623591	420330.155	0.5	315	325	0.43	5	58.01319	51.23591	5.123591	132920.1	Temporary 8 ft sound barrier
AB	Cement Finisher - Multiquip	80																			
AC	John Deere Skip loader - 210LE	88																			
AD	Caterpillar grader - 140H	85																			
AE	CAT 966F wheel loader	88																			
AF	Water truck - Sterling LT8500	85																			
AG	CAT D8R - diesel - Bull Dozer	88																			
AH	CAT 1055D paver	77																			

Distance to receptor:	Closest	Average
BART Garage Grade Beams/Pile Caps, Vertical Concrete	250	390
Frontage Road Utilities	315	325
Bart Plaza Demo	370	480
W MacArthur Demo	430	560

Lmax*	71	Sum	15457392.1
		Sum/12	1288116
		10*Log(Sum)	61.0995498
		Leq(h)	61

*Calculated Lmax is the Loudest value.

Lmax*	66	Sum	4888057
		Sum/12	407338
		10*Log(Sum)	56.09955
		Leq(h)	56

*Calculated Lmax is the Loudest value.

EXHIBIT A

ATTACHMENT B:
CONSTRUCTION EQUIPMENT SCHEDULE AND KEY

See Exhibit I

EXHIBIT A

WILSON IHRIG & ASSOCIATES
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10 March 2011

MacArthur Transit Community Partners LLC
c/o Art May
Keystone Development Company
5858 Horton Street
Suite 170
Emeryville, California 94608

Subject: MacArthur Transit Village
Vibration from Construction

Dear Mr. May:

Summary

The following are key points from our review of the information provided[1] regarding the proposed MacArthur Transit Village Project (MTV Project):

- Vibration impacts of the proposed MTV Project were analyzed in the MacArthur Transit Village Project EIR dated January 2008 and no significant impacts were identified based on the City's thresholds for vibration and the City's standard condition of approval for vibration.
- Based on the Surgery Center assertion that the MTV Project construction would have significant vibration impacts on the operations at the Surgery Center, the Project Sponsor has requested Wilson Ihrig & Associates (WIA) to review the proposed Construction Equipment Schedule using the FTA criteria referenced by the Surgery Center.
- We understand that as part of the Construction Equipment Schedule for Phases 1 and 2, the Project Sponsor has committed to the use of reduced-vibratory construction methods (as described below) to minimize the effects of construction equipment working adjacent to the Surgery Center.
- With the implementation of vibration-reduction methods that the Project Sponsor has detailed as part of the Construction Equipment Schedule for Phases 1 and 2, the vibration generated by the construction activities would not exceed the FTA criteria referenced by the Surgery Center.
- WIA recommends that vibration monitoring be conducted at the Surgery Center to document the baseline conditions during operations prior to construction and that vibration at the facilities be monitored during key periods of construction that are subject to vibration to verify that the Construction Equipment Schedule measures are sufficient to ensure that vibration levels do not exceed the FTA criteria.

[1] Construction Equipment Schedule dated January 28, 2011, Illustrative Plan (L-1.0) dated 9.16.2010 and Vesting Tentative Tract Map No. 8047 (T-4) dated 10-25-10.

Discussion
As requested, we have reviewed the MTV Project Construction Equipment Schedule for Phases 1 and 2 to develop a response to the letter prepared by Timothy G. Brown and Robert P. Alvarado of Charles M. Salter Associates (CSA) and submitted to Ed Erwin of Alta Bates Summit Medical Center on 12/21/10. The letter raised concerns about the vibration impacts of construction activities on the Surgery Center located at 3875 Telegraph Avenue and suggested that certain FTA vibration criteria could be exceeded based on certain assumptions about the types of construction equipment that would be used.

Project Conditions
The City's standard condition of approval for construction-related vibration was included in the MTV Project Conditions (see COA NOISE-6). Our evaluation and recommendation fulfill part of the requirements of this condition.

Short-term Vibration
The December 21, 2010 letter from CSA asserts that the MTV Project could have a potentially significant vibration impact on the Surgery Center based on the assumption that construction adjacent to the Surgery Center would include the use of pile driving, hydraulic breakers, drilled piers, rammed aggregate piers, and vibratory compaction. The letter cites the Federal Transit Administration (FTA) vibration impact criteria[2] for General Assessment and Detailed Analysis.

The Detailed Analysis criteria cited by the Surgery Center are appropriate for an engineering-level analysis where detailed information on the vibration propagation properties of the ground and the source vibration are available. A vibration impact that is identified using the General Assessment criteria is sometimes cleared once the engineering analysis is performed and compared to the Detailed Analysis Criteria. Thus, the General Assessment evaluation and criteria are considered to be more conservative and we have used them in our analysis.

The following are the FTA criteria:

- Category 1: Buildings where vibration would interfere with interior operations
  - The criterion is based on what is acceptable for most moderately sensitive equipment such as optical microscopes.
  - The sensitivity of the equipment and surgery activities at the Surgery Center has not been confirmed.
  - Criterion: 65 VdB
- Category 2: Buildings where people normally sleep
  - The Surgery Center is an outpatient facility and this criterion would not apply as patients do not spend the night or sleep for any significant period of time; they only spend time in the recovery room to awaken from anesthesia.
  - Criteria:
    - 72 VdB for frequent events (70 or more per day)
    - 75 VdB for occasional events (30 to 70 per day)
    - 80 VdB for infrequent event (fewer than 30 per day)
- Category 3: Institutional land uses with primarily daytime use
  - If the surgical equipment and methods at the Surgery Center are not sufficiently sensitive to warrant the use of the Category 1 criterion, these would be applied
  - Criteria:

[2] FTA, *Transit Noise and Vibration Impact Assessment*, May 2006.

- 75 VdB for frequent events (70 or more per day)
- 78 VdB for occasional events (30 to 70 per day)
- 83 VdB for infrequent event (fewer than 30 per day)

For reference, the vibration level generated by a person walking within the same room can be on the order of 60 to 65 VdB, and the vibration from a bus or truck at city speeds hitting a bump on a street 25 feet away is on the order of 80 VdB. A 3 ton truck traveling at 35 mph on a smooth road would generate vibration less than 60 VdB at a distance of 25 feet. Although the sensitivity of the Surgery Center equipment has not been confirmed, the analysis below demonstrates that the MTV Project Construction would not exceed the Category 1 criterion.

Construction Equipment Schedule

We have reviewed the Construction Equipment Schedule for Phases 1 and 2 (dated January 28, 2011). The Project Sponsor has committed to limit the use of reduced-vibratory construction methods, as needed, in the vicinity of the Surgery Center, to minimize the effects of construction equipment and ensure the FTA Category 1 criterion is not exceeded. Contrary to the assumptions made in the CSA letter, the Construction Equipment Schedule does not include the use of pile driving, hydraulic breakers, drilled piers, or aggregate piers adjacent to the Surgery Center.

The construction methods contained in the Construction Equipment Schedule and potential vibration levels include:

- No driven/impact piles used
  - The construction of Phases 1 and 2 would not utilize piles driven into the ground by a hammer (pile driving).
  - The foundations for the BART parking garage are contemplated as augur cast or torque down piles and the foundation for the proposed Phase 2 residential structure would be a poured in place mat slab.
- Limited demolition
  - The demolition work near the Alta Bates Surgery Center would be to remove asphalt, thus no jackhammers or comparable equipment would be required.
  - Excavators would be used to remove the asphalt.
- Compaction Methods
  - The MTV Project plans to use large vibrating roller compactors for compacting soil, road base, and asphalt at certain locations throughout most of the project site.
    - This equipment would generate a vibration level on the order of 94 VdB at a distance of 25 feet.
  - Smaller vibrating rolling compactors, vibrating plate compactors, and/or jumping jack compactors would also be utilized as necessary, based on the monitoring described below, to ensure the FTA Category1 criterion is not exceeded at the Surgery Center.
    - These types of equipment would generate less vibration than a large vibrating roller compactor, possibly comparable to the vibration generated by a small bulldozer, which would typically generate a vibration level on the order of 58 VdB at a distance of 25 feet, well below any of the thresholds described above.

- For compaction work adjacent to the Surgery Center, the Project Sponsor has included in the Construction Equipment Schedule options to employ one or more of the following strategies if monitoring shows that additional methods are necessary to avoid interference with operation of the Surgery Center:
  - Use of sheep foot non-vibrating compactors.
  - Use of non-vibrating roller compactors.
  - Scheduling vibrating roller compaction after surgical hours and/or on weekends, subject to City review and approval.
  - Use of alternate fill materials that require no or minimal induced compaction.

  These methods would generate less vibration than a large vibrating roller compactor, possibly comparable to the vibration generated by a small bulldozer, which would typically generate a vibration level on the order of 58 VdB at a distance of 25 feet.

Conclusions
Anticipated vibration from construction activities for the MTV Project would not exceed the Category 1 criterion at the Surgery Center.

Pursuant to Standard Condition of Approval NOISE-6, WIA recommends that (1) the contractors implement the Construction Equipment Schedule elements described above and (2) vibration monitoring be conducted at the Surgery Center to document the baseline conditions during operations prior to construction and to monitor the vibration at the facilities during the key periods of construction that are subject to vibration to verify that construction-related vibration is not exceeding the FTA category 1 criterion. The key periods of construction would occur when the equipment discussed above are in operation (e.g., vibratory roller compactor, vibrating plate compactors, and/or jumping jack).

Please let us know if you have any questions on this information.

Very truly yours,

WILSON, IHRIG & ASSOCIATES, INC.

Deborah A. Jue
Associate Principal

assure City that the Project will be developed within a reasonable time period, Developer shall complete each Phase in accordance with the Phasing Plan set forth below.

3.3.1 City Right to Terminate Agreement. City shall have the right to Terminate this Agreement by written notice to Developer if City determines that, if for any reason other than due to Force Majeure, despite such Developer's reasonable efforts and other factors, including market and economic conditions as of the time in question for the uses contemplated for the Project, appropriate mix of uses and use categories, return on investment and similar criteria, Developer has not complied with the Phasing Plan.

3.3.2 Meet and Confer and Cure Period. In the event of any alleged failure to comply with the Phasing Plan, City and Developer shall follow the notice, meet and confer and cure processes set forth in Article VIII. City's sole and exclusive remedy in the event of Developer's breach of its obligations under this Article 3 shall be to Terminate this Agreement; however, any such Termination shall not relieve Developer of obligations under this Agreement that survive Termination (such as Indemnity obligations), accrued obligations under this Agreement, and obligations to comply with City Approvals, Subsequent Approvals, Governmental Agency Approvals and other Laws.

3.3.3 Phasing Plan. The Phasing Plan for the Project is as follows and illustrated on Illustrative Exhibit D. To the extent there is a conflict or inconsistency between this section 3.3.3 and Illustrative Exhibit D, this section 3.3.3 shall prevail:

(a) Developer shall submit a Final Development Plan ("FDP") application for Phase 1, comprising the BART Garage, to be constructed on parcel E, site remediation, the BART Plaza improvements, Internal Drive, the Frontage Road improvements, and the portion of Village Drive that extends from the Frontage Road to the Internal Drive all as

shown on Exhibit C, Master Development Plan, no later than one year after the Adoption Date and shall make regular and consistent progress toward approval of the FDP within one year after the initial submittal date of the FDP application. Construction of Phase 1 shall Commence in Earnest within one year after approval of the FDP for Phase 1. The target outside approval date for the FDP shall be one year after the initial submittal date of the FDP application. In the event that approval of the FDP is not obtained by the target outside approval date, then the time for construction of Phase I to Commence in Earnest shall be extended one (1) day for each day after the target outside approval date until FDP approval is obtained. Developer's obligation with respect to Phase I shall be conditioned upon, and the above-referenced deadline for submittal of an FDP and Commencement in Earnest shall be extended until, satisfaction of the following conditions, all in accordance with the OPA: (i) execution of a ground lease by Developer and BART for the BART Garage, (ii) with respect to the obligations of Developer hereunder with respect to the BART Plaza only, execution of an agreement granting Developer the right to enter the BART Plaza and construct the Plaza improvements thereon; (iii) conveyance to Developer of a fee interest or right to enter and construct with respect to the property on which the roadway improvements described above are to be built, (iv) the award and disbursement of $37,300,000 of the TOD Housing Program and the Infill Infrastructure Grant Program under California Proposition 1C, the Housing and Emergency Shelter Trust Fund Act of 2006 funds to the Project ("Prop 1C Funds") and, with respect to the obligations of Developer hereunder with respect to the BART Plaza, the award of funds sufficient to construct the BART Plaza improvements, and (v) the pass-through of the funds described in 3.3.3(a)(iv) to Developer in accordance with the OPA. Notwithstanding the foregoing, except in the event of Litigation Force Majeure, in no

event shall the above deadlines be extended for more than three (3) years for any reason, including, without limitation, Force Majeure other than Litigation Force Majeure

(b) Developer shall submit an FDP application for Phase 2, comprising the affordable rental development to be constructed on parcel D shown on Exhibit C, no later than three (3) years after the Adoption Date and shall make regular and consistent progress toward approval of the FDP within one year after the initial submittal date of the FDP application for Phase 2. Construction of Phase 2 shall Commence in Earnest within one year after approval of the FDP for Phase 2. The target outside approval date for the FDP shall be one year after the initial submittal of the Phase 2 FDP application. In the event that approval of the Phase 2 FDP is not obtained by the target outside approval date, then the time for construction of Phase 2 to Commence in Earnest shall be extended one (1) day for each day after the target outside approval date until Phase 2 FDP approval is obtained. Developer's obligation with respect to Phase 2, and the deadline for Commencement in Earnest of Phase 2 set forth above shall be extended until the earlier to occur of (i) execution by Developer and BART of a ground lease for parcel D and receipt by Developer of subsidy funds sufficient to construct Phase 2, in accordance with the OPA; or (ii) ten (10) years after the Adoption Date. In no event shall such ten (10) year deadline be extended for any reason including, without limitation, Force Majeure.

(c) Developer shall submit an FDP application for Phase 3, comprising the mixed-use market rate development to be constructed on parcel A shown on Exhibit C, including without limitation, the new hardscape public plaza along Frontage Drive in front of the building to be constructed on Parcel A as shown on Exhibit C, no later than three (3) years after the Adoption Date subject to a one-year extension at the reasonable request of Developer (if Developer reasonably believes that it is not Feasible to construct due to market

conditions), and shall make regular and consistent progress toward approval of the FDP for Phase 3 within one year after the initial submittal date of the FDP application for Phase 3. Construction of Phase 3 shall Commence in Earnest within one year after approval of the Phase 3 FDP. The target outside approval date for the FDP shall be one year after the initial submittal date of the Phase 3 FDP application. In the event that approval of the Phase 3 FDP is not obtained by the target outside approval date, then the time for construction of Phase 3 to Commence in Earnest shall be extended one (1) day for each day after the target outside approval date until FDP approval is obtained.

(d) Developer shall submit an FDP application for Phase 4, comprising the mixed-use market rate development to be constructed on parcel B shown on Exhibit C, no later than eight (8) years after the Adoption Date, and shall make regular and consistent progress toward approval of the FDP for Phase 4 within one year after the initial submittal date of the Phase 4 FDP application. Construction of Phase 4 shall Commence in Earnest within one year after approval of the Phase 4 FDP. The target outside approval date for the FDP shall be one year after the initial submittal of the Phase 4 FDP application. In the event that approval of the FDP is not obtained by the target outside approval date, then the time for construction of Phase 4 to Commence in Earnest shall be extended one (1) day for each day after the target outside approval date until FDP approval is obtained.

(e) Developer shall submit an FDP application for Phase 5, comprising the mixed-use market rate development to be constructed on parcel C shown on Exhibit C, no later than 10 (ten) years after the Adoption Date and shall make regular and consistent progress toward approval of the FDP for Phase 5 within one year after the initial submittal date of the Phase 5 FDP application. Construction of Phase 5 shall Commence in

Earnest within one year after approval of the Phase 5 FDP. The target outside approval date for the FDP shall be one year after the initial submittal of the Phase 5 FDP application. In the event that approval of the FDP is not obtained by the target outside approval date, then the time for construction of Phase 5 to Commence in Earnest shall be extended one (1) day for each day after the target outside approval date until FDP approval is obtained.

(f) Notwithstanding the timeframes set forth in subsections 3.3.3 (a) through (e) above, no target outside approval with respect to any Phase shall be extended unless Developer, with respect to such Phase, (i) uses reasonable good faith efforts to cause all FDP applications to comply with Section 17.140.040 of the City Planning Code; (ii) timely submits all FDP applications that contain all the requirements listed in of the City's Basic Application for Development Review, the City's Supplemental Submittal Requirements for a Planned Unit Development and Conditions of Approval related to the FDP (provided that in the event of Developer's failure to comply with this clause (ii), the extension of the target outside approval date will not be denied, but will be reduced by the number of days between the due date for the FDP application and the date upon which Developer submits an FDP application in compliance with this clause (ii)); and (iii) uses good faith efforts to make regular and consistent progress toward approval of the FDP, as evidenced by Developer's timely response to City's reasonable requests for information and meetings. If City does not believe Developer is eligible for any extensions of the target outside approval dates, or that any such extension should be shortened pursuant to (f)(ii), it shall immediately notify Developer in writing and initiate the dispute resolution procedures in Article VIII. Developer shall not be denied any such extension nor shall such extension be shortened absent such immediate written notice from City.

(g) If Agency does not issue the non-housing tax increment bonds and disburse the proceeds thereof to Developer in accordance with the OPA (by July 1, 2011), then all dates for submittal of complete FDP applications (other than the date for submittal of the FDP application for Phase I) and all dates for construction to Commencement in Earnest set forth in section 3.3.3 and the expiration of the Term of this Agreement shall be extended for a number of days equal to the number of days from July 1, 2011 until the Agency has issued such bonds and disbursed the proceeds thereof to Developer. If Agency fails to issue such bonds and disburse the proceeds thereof by July 1, 2014 and Developer exercises its right under the OPA to terminate the OPA, Developer shall also have the right to terminate this Agreement by written notice to City.

(h) Notwithstanding the timeframes set forth above, Developer shall, if feasible, make reasonable, good faith efforts to proceed with all phases as expeditiously as possible and to have full build-out of the Project be completed as early as possible.

(i) If, at the expiration of the Term, Developer has fully complied with the Phasing Schedule but construction of the Project is not complete, and notwithstanding the meet and confer process set forth above in Section 3.3.2, Developer shall be allowed to complete any Phase that Developer has Commenced in Earnest prior to the expiration of the Term pursuant to Section 2.4 of this Agreement.

3.4 Development Sequence. The foregoing five Phases may occur sequentially, however, they may also move forward concurrently, or, except for Phases 1 and 2, out of sequence, as conditions require in Developer's sole discretion. For example, Phase 4 could be the third Phase developed within the time prescribed above for development of Phase 3, and

EXHIBIT A

EXHIBIT D (MacArthur Transit Village)

Illustrative Phasing Plan*

		RELATIVE SCHEDULE	2009 Estimated Dates
CONTROLLING DATES			
A.	**Discretionary Approvals for Entitlement**	July -2008	
B.	**OPA Executed & Approved**	July -2009	
C.	***Start Land Acquisition***	August -2009	
D.	***Complete Land Acquisition***	TBD	
1. HORIZONTAL DEVELOPER			
i.	Submit application for final development plan approvals for Phase I	1 year after approval of OPA	July 2010
	Target Outside Approval Date	**1 year after submittal of Phase I FDP**	**July 2011**
ii.	Commence construction of Phase I	1 year after FDP approval	July 2012
iii.	Complete construction of Phase I	2 years after commencement of construction	July 2014
2. BELOW MARKET RATE HOUSING DEVELOPER			
	Stage 2		
i.	Submit applications for final development plan for Phase II	3 years after approval of OPA	July 2012
	Target Outside Approval Date	**1 year after submittal of Phase II FDP**	**July 2013**
	Secure Affordable Housing funding commitments		July 2013
ii.	Commence construction of Phase II	1 year after FDP Approval	July 2014
iii.	Complete construction of Phase II	2 years after commencement of construction	July 2016
3. MARKET RATE DEVELOPER			
	Stage 3		
i.	Submit application for final development plan approvals for Phase III	3 years after approval of OPA	July 2012
	Target Outside Approval Date	**1 year after submittal of Phase III FDP**	**July 2013**
ii	Commence construction of Phase III	1 year after FDP Approval [without extension]	July 2014
iii.	Complete construction of Phase III	2 years after commencement of construction	July 2016
	Stage 4		
i.	Submit application for final development plan approvals for Phase IV	8 years after approval of OPA	July 2017
	Target Outside Approval Date	**1 year after submittal of Phase IV FDP**	**July 2018**
ii.	Commence construction of Phase IV	1 year after FDP Approval	July 2019
iii.	Complete construction of Phase IV	2 years after commencement of construction	July 2021
	Stage 5		
i.	Submit application for final development plan approvals for Phase V	10 years after approval of OPA	July 2019

		Target Outside Approval Date	**1 year after submittal of Phase V FDP**	July 2020
	ii.	Commence construction of Phase V	1 year after FDP Approval	July 2021
	iii.	Complete construction of Phase V	2 years after commencement of construction	July 2023

*This is an Illustrative Phasing Plan; see section 3.3.3 for controlling language.

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David L. Preiss
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December 21, 2010

VIA E-MAIL
AND U.S. MAIL

President Jane Brunner and Council Members
City Council
City of Oakland
One Frank H. Ogawa Plaza
Oakland, CA 94612

Re: MacArthur Transit Village Project ("Project")
Surgery Center at 3875 Telegraph Avenue

Dear President Brunner and Council Members:

Our office was recently retained by Alta Bates Summit Medical Center Surgery Property Company LLC, The Surgery Center at Alta Bates Summit Medical Center, including Alta Bates Summit Medical Center, a Sutter Health affiliate, in connection with the above matter. Our clients are the ground lessee and operator of the Surgery Center located immediately adjacent to the Project at 3875 Telegraph Avenue. The purpose of this letter is to set forth our clients' concerns regarding significant impacts on the operations, services, and patient care at the Surgery Center resulting from the recent change in the Project to remove the Surgery Center property from the Project. Given these new significant impacts and the mandates of the California Environmental Quality Act (CEQA), we hereby request, on behalf of our clients, that the City Council defer its approval of the Project's Stage One Final Development Plan, Vesting Tentative Tract Map and any other entitlements until such new Project impacts on the Surgery Center can be adequately studied and mitigated in a Subsequent EIR for the modified Project.

The Project, as originally proposed and analyzed in the previously certified Environmental Impact Report (EIR), included the Surgery Center property (also referred to as a portion of "Block C") within the Project boundaries and development, including demolition of the Surgery Center and replacement with mixed use-residential and retail uses. However, it appears that the Project was recently changed to exclude the Surgery Center site from the Project.[1]

1

[1] The documents prepared for City staff reports contain inconsistent Project descriptions. For example, as recently as November 3, 2010, the Surgery Center is listed as part of the Project by Assessors Parcel Number in the Planning Commission Staff Report and associated map. However, in that same November 3, 2010 Staff Report, a change to the Project is listed as not requiring the acquisition of 3875 Telegraph Avenue (the Surgery Center property). A key pillar of CEQA is a consistent project description. (*County of Inyo v. City of Los Angeles* (1977) 71 CA3d 185)

It appears that neither the EIR nor any subsequent environmental analysis[2] has addressed the impacts on the Surgery Center as an ongoing operation because all along the environmental review for the Project has been premised on the Surgery Center being demolished during the course of the Project and no longer continuing operations. As discussed in the attached reports, the EIR does include an alternative which reduces the Project site to only include the parcels currently developed with the BART surface parking lots. Thus, under this alternative, the Surgery Center, along with other properties, was removed from the Project. However, the EIR did not analyze the Project's impacts on the properties removed from the Project. 2

When the Project proponents unilaterally, and without prior notice to our clients, removed the Surgery Center site from the Project, additional environmental review under CEQA should have been performed to analyze the Project's impacts on the continuing operations at the Surgery Center. The impacts from the Project that are of particular concern to our clients include, but are not necessarily limited to, noise, vibration, dust and diesel particulate matter. 3

The Surgery Center's operations, services, and patient care are uniquely sensitive receptors to such effects. The Surgery Center performs several sensitive surgeries including (i) approximately 50 neurosurgical procedures (laminectomies, nerve repairs) as well as ENT procedures (middle ear reconstructions, typanoplasties, myringotomies with tubes, microdirect larygoscopies with removal of vocal cord lesions) using an operating microscope, (ii) approximately 185 eye surgeries per year, and (iii) hand procedures and pediatric urology cases using surgical loops (glasses fitted with magnifying lenses for delicate surgery). The Surgery Center uses sensitive equipment including (i) Arthroscopy monitors that display surgical images used in at least 50% of surgeries, and (ii) X-ray imaging with C-arms (fluoroscopy units) which are used for all interventional pain cases (approximately 1,800 cases per year) and for surgeries. 4

The Project proponent's singular effort to address the removal of the Surgery Center property from the Project was summarily encapsulated in a footnote to the October 26, 2010 Memorandum from Art May, MacArthur Transit Community Partners, LLC (MTCP) to Catherine Payne, CEDA - Planning regarding Substantial Conformance with the PDP Approval. For the first time, that Memorandum acknowledges that the Surgery Center property will in fact be removed from the Project. In a footnote on page five of the Memorandum, the Project proponent dismisses the Project's impacts on the Surgery Center by concluding that: 5

> At this time, the VTTM does not include the Surgery Center property because MTCP does not have control of these properties. It is expected that the VTTM will be amended to include these properties when MTCP retains site control. This

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the Project is listed as not requiring the acquisition of 3875 Telegraph Avenue (the Surgery Center property). A key pillar of CEQA is a consistent project description. (*County of Inyo v. City of Los Angeles* (1977) 71 CA3d 185)

[2] Such analysis appears to be comprised of a October 25, 2010 Memorandum from Lynette Dias, AICP to Catherine Payne, Planner regarding CEQA Compliance for MacArthur BART Transit Village Phase 1 FDP and Phase 3 Vesting Tentative Map; and a October 26, 2010 Memorandum from Art May, MTCP to Catherine Payne, CEDA-Planning regarding Substantial Conformance with the PDP Approval.

circumstance does not preclude development of Phase I ***as the site development does no effect [sic] the Surgery Center parcel***. [emphasis added.]

5 Cont.

No basis is provided for this conclusion and there can be no such basis. To date, the record indicates that no environmental review has been performed to analyze and mitigate the particular impacts on the Surgery Center property resulting from its removal from the Project. Furthermore, the Memorandum incorrectly concludes that there will be "no change in the project site." (October 26, 2010 Memorandum, at p. 7)

The October 25, 2010 Memorandum from Lynette Dias, AICP to Catherine Payne, Planner regarding CEQA Compliance for MacArthur BART Transit Village Phase 1 FDP and Phase 1 Vesting Tentative Map, does not specifically mention or address the removal of the Surgery Center property from the Project. In fact, without any independent analysis, this CEQA Compliance Memorandum simply cites the October 26, 2010 Memorandum, discussed above, that there is "no change in the project site." (October 25, 2010 Memorandum, at p. 2)[3]

As set forth in the attached reports prepared by well-recognized experts,[4] there are significant impacts resulting from the removal of the Surgery Center from the Project including, but not limited to:

6

- noise impacts on patients,
- vibration impacts on sensitive medical operations and equipment, and
- dust and diesel particulate matter impacts on respiratory and cardiovascular patients uniquely sensitive to air pollution.

Furthermore, according to operating physicians at the Surgery Center, there are additional significant impacts including, but not limited to:

- dust contamination of sterile medical devices, and
- diesel particulate matter and fume impacts on patients and employees at the Surgery Center, including headaches and nausea.

These impacts on the Surgery Center are not limited to Phase I of the Project. These impacts will continue throughout the approximately seven (7) year build-out of the Project.

Under the clear mandates of CEQA, the City Council cannot approve the Project's Stage One Final Development Plan and Vesting Tentative Tract Map until a Subsequent EIR is prepared analyzing the impacts of the entire modified Project on the Surgery Center. Pursuant to CEQA, a Subsequent EIR is required: (i) when substantial changes are proposed in the Project with new

7

[3] The October 25, 2010 memorandum does reference the later October 26, 2010 memorandum.
[4] December 21, 2010 Charles M. Salter Associates, Inc. Noise and Vibration Report; and December 21, 2010 Illingworth & Rodkin, Inc. Air Quality Report.

significant environmental effects or a substantial increase in the severity of previously identified significant effects, (ii) substantial changes occur with respect to the circumstances under which the project is undertaken with new significant environmental effects or a substantial increase in the severity of previously identified significant effects, or (iii) new information of substantial importance shows that the project will have one or more significant effects, previously examined significant effects will be substantially more severe, previously rejected mitigation measures or alternatives are now feasible, or mitigation measures and alternatives which are considerably different than those previously analyzed. (CEQA Guidelines §15162(a))

7 Cont.

Under these CEQA requirements, the removal of the Surgery Center property from the Project is a change in the Project that requires a Subsequent EIR.[5] The new significant impacts described in the attached reports and summarized above constitute substantial evidence that clearly triggers the requirement for preparation, circulation, and certification of a Subsequent EIR. Even though only one of the three triggers for a Subsequent EIR must be met, the current situation actually meets all three triggers. The removal of the Surgery Center property is a substantial change to the Project with new significant environmental effects on the Surgery Center. Additionally, the continued operations of the Surgery Center adjacent to the Project is a substantial change with respect to the circumstances under which the Project is undertaken with new significant environmental effects on the Surgery Center. Furthermore, the new information that the Surgery Center property has been removed from the Project is of substantial importance and shows that the Project will have significant effects on the Surgery Center. (e.g., see *Concerned Citizens of Costa Mesa, Inc. v. 32nd Dist. Agric. Ass'n* (1986) 42 C3d 929, post-EIR changes to proposed project, including changes in the size of the site and orientation of the project, were sufficiently important to require evaluation in a Subsequent or Supplemental EIR.)

Therefore, under these circumstances, a Subsequent EIR is required to fully analyze and mitigate significant impacts on the Surgery Center before the City Council may approve the Project's Stage One Final Development Plan and Vesting Tentative Tract Map. The Subsequent EIR will require the same notice and public review periods as the Project's Draft EIR. (CEQA Guidelines §15162(d))

Additionally, with respect to the entitlements and the removal of the Surgery Center from the Project, given the removal of a significant portion of the Project site (a portion of Block C[6]), the Final Development Plan does not satisfy the City's requirement that final development plans "conform in all major respects" with the approved preliminary development plan. Similarly, the City cannot find that the Stage One Final Development Plan "conforms in all substantial respects" to the previously approved Preliminary Development Plan. (City Municipal Code §17.140.040, §17.140.060) Moreover, a planned unit development permit may only be granted if "the location, design, and size are such that the development can be well integrated with its surroundings, and, in the case of a departure in character from surrounding uses, that the location

8

[5] A Supplemental EIR is not appropriate in this situation because the changes to the Project are not minor. (CEQA Guidelines §15163).
[6] Block C was planned and analyzed to include approximately 12,500 square feet of commercial space and 187 market-rate residential units and 8 affordable units.

and design will adequately reduce the impact of the development." (City Municipal Code §17.140.080) For reasons noted above, the location of the Project is not currently well integrated with its surroundings, which include the Surgery Center.

Also, the City Council cannot presently approve the currently proposed Vesting Tentative Tract Map because the Project is likely to cause serious public health and safety problems related to its significant impacts on patients at the Surgery Center. (City Municipal Code §16.08.030) As noted in the attached reports, the City of Oakland's standard conditions of approval applicable to the Project, standing alone, also are not adequate to address these unique impacts to the Surgery Center. 9

Thank you in advance for your consideration of these comments. In light of these concerns, we also reiterate our previous request for a continuance of your consideration of these newest entitlements until appropriate CEQA review can be completed. In the meantime, feel free to contact the undersigned or Stacey Wells of Alta Bates Summit Medical Center at (510) 869-8227.

Sincerely yours,

HOLLAND & KNIGHT LLP

David L. Preiss

DLP:s l

cc: Clerk of the City Council
Catherine Payne, City Planner
Mark Wald, Deputy City Attorney
Arthur May, Keystone Development Group
Joseph Forbes McCarthy, BUILD
Clients

Attached: December 21, 2010 Charles M. Salter Associates, Inc. Noise and Vibration Report; and
December 21, 2010 Illingworth & Rodkin, Inc. Air Quality Report.

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December 21, 2010

Ed Erwin
Director, Real Estate
Alta Bates Summit Medical Center
2880 Gateway Oaks, 2nd Floor
Sacramento, CA 95833

VIA E-Mail: David.Preiss@hklaw.com

SUBJECT: MacArthur Transit Village in Oakland, California - Comments on Air Quality Impacts to Surgery Center

Dear Mr. Erwin:

As you know, we were hired to determine whether recent changes to the MacArthur Transit Village project (Project) will have any significant air quality impacts on the property, operations and patient care at the Surgery Center of Alta Bates & Summit Medical Center located immediately adjacent to the Project at 3875 Telegraph Avenue (Surgery Center). We have concluded that the changes to the Project, that remove the Surgery Center property from the Project, will have such significant effects on the Surgery Center. These effects could last the entire duration of construction, estimated at approximately 7 years.

We reviewed recent changes to the Mac Arthur Transit Village Project that removed the Surgery Center from the planned development in regard to impacts associated with air quality. This included review of the Oakland City Staff Report for the December 14, 2010 Community and Economic Development Agency hearing regarding this project, specifically Attachment F (CEQA Memo)[1] and Attachment G (Conformance Memo)[2]. The Draft Environmental Impact Report (DEIR) for the Mac Arthur BART Transit Village Project addressed air quality impacts from the project, assuming development of the entire project. Air quality impacts to the Surgery Center, which was formerly a portion of Block C of the project, were not addressed. The applicant is currently seeking approval from the City for the Stage 1 Final Development Permit (FDP) and Vesting Tentative Tract map for the project. However, adequate review of the construction air quality impacts upon the Surgery Center from Stage 1 and the balance of the Project has not been conducted.

The 2008 DEIR evaluated air quality impacts associated with the proposed project. As part of this analysis, construction air quality impacts were addressed through the application of Conditions of Approval that identified generic dust control measures recommended by the Bay Area Air Quality Management District (BAAQMD). The DEIR air quality analysis did not identify any sensitive receptors

[1] Memorandum from Lynette Dias, AICP to Catherine Payne dated October 25, 2010. *Re: CEQA Compliance for Mac Arthur BART Transit Village Phase I FDP and Phase I Vesting Tentative Map*
[2] Memorandum from Art May MTCP to Catherine Payne dated October 26, 2010. *Re: MacArthur Transit Village Project Phase I FDP and Vesting Tentative Tract Map – Substantial Conformance with the PDP Approval*

adjacent to the project, since all sensitive receptors were buffered from the project. As a result, localized air quality impacts from construction equipment exhaust were not addressed. According to page 68 of the DEIR "Demolition and Construction Schedule," the Project will be constructed over approximately seven (7) years.

The proposed action would develop a portion of the site and realign internal roadways. As a result, the Surgery Center located at 3875 Telegraph Avenue would remain, but be immediately adjacent to the construction activities on two sides. As a result, dust and diesel equipment exhaust from construction activities would affect surgeries and patient care. The DEIR and CEQA evaluation for this current action did not identify the new construction air quality impacts that would affect the Surgery Center[1].

The proposed action would leave the Surgery Center immediately adjacent to construction activities associated with development of the project, as proposed in the current Phase I FDP and Phase I Vesting Tentative Map as well as the subsequent stages of the Project. The Surgery Center is considered a sensitive receptor, as it would fall under the category of a hospital. The Surgery Center includes patients who may be experiencing cardiovascular and respiratory distress as a result of procedures performed at the Surgery Center. As a result, some of these patients would be very sensitive to the impacts of air pollution. Construction activities that produce diesel exhaust and dust would occur adjacent to the facility. The DEIR, while not taking into account that construction activities would occur so close to a sensitive receptor, merely prescribed standard dust control measures as conditions of approval (pages 235 and 236 of the DEIR). The DEIR did not address local impacts of construction equipment exhaust to sensitive receptors. Pages 478 through 480 of the DEIR did address the Mitigated Reduced Building/Site Alternative (which reduced the Project site area to only include the parcels currently developed with the BART surface parking lots), but never assumed a sensitive receptor (i.e., the Surgery Center) would exist adjacent to the project construction. As a result, the air quality analysis for the alternative project concluded "the air quality impacts would be less than the proposed project." This conclusion is erroneous since the alternative where the Surgery Center remains in place throughout the life of the Project is a very sensitive receptor in close proximity to construction activities. Construction so close to the Surgery Center brings up two air quality issues: (1) acute impacts from increased dust and (2) acute impacts from increased exposure to diesel particulate matter.

The impacts from dust are merely addressed through standard conditions of approval that are meant to reduce dust through the application of generic dust control measures. These measures do not include any assurances that dust would be reduced to a level that would not result in significant exposures at the Surgery Center. Measure "d)" on page 235 would designate a person to monitor the dust control program, but there is no person that could suspend construction if the program is not working.

Although adverse effects of acute exposures to diesel particulate matter have been known since at least 2000, the DEIR or recent CEQA analysis for the project neglect to address these impacts to the adjacent Surgery Center. As reported by the BAAQMD[3], "The vast majority of premature deaths associated with air pollution - more than 90% - are related to exposure to fine particulate matter ($PM_{2.5}$). Most of the deaths associated with $PM_{2.5}$ are related to cardiovascular and respiratory problems." Sources of $PM_{2.5}$ include dust and exhaust. A source of $PM_{2.5}$ emission is from construction equipment and the dust

[3] BAAQMD. 2010. Bay Area 2010 Clean Air Plan (page 1-17). September.

generated by demolition and grading activities. Surgery Center patients would be exposed to these emissions that were not addressed for the revised project.

In May 2010, the BAAQMD issued screening tables for evaluating impacts of air toxics during construction[4]. These guidelines identify screening distances for cancer and non-cancer risks. Cancer risks and $PM_{2.5}$ exposures are based on chronic exposures. However, the tables also included minimum distances associated with acute exposures. For a construction of a commercial project ranging in size from 4.6 to 13.8 acres, these screening tables recommend a minimum buffer of 85 meters from the construction fence line. This would buffer the acute hazards posed by Acrolein, which is one of the most toxic TACs associated with diesel exhaust based on its non-cancer toxicity value. As previously mentioned, the Surgery Center would be located immediately adjacent to the construction site. It appears that there is a high potential for patients at the surgery center to be significantly exposed to TACs during construction, on an acute basis. This issue was not addressed in the DEIR or the subsequent environmental analysis for the proposed action. There are no mitigation measures or conditions of approval identified by the City to reduce these exposures. While the DEIR significance criteria identify "ground level concentrations of non-carcinogenic TACs such that the Hazard Index would be greater than 1 for the MEI" as significant, the DEIR or subsequent summary environmental analysis do not evaluate the potential for this effect.

Additional review of the air quality impacts to the Surgery Center is warranted along with the identification of mitigation measures to prevent significant impacts. Such mitigation measures may include, but are not limited to controls on equipment exhaust, limits on construction activities that coincide with surgeries, and identification of trigger levels that would suspend construction activities when emissions may adversely affect sensitive operations at the Surgery Center. In addition, BAAQMD recently identified suggested mitigation measures to reduce emissions of diesel equipment exhaust that they recommend for construction sites[5]. These should also be considered for the project.

* * *

This concludes our review of the air quality impacts to the Surgery Center at 3825 Telegraph near the planned Mac Arthur Transit Village in Oakland, CA. Please contact us if you have any further questions or concerns about this matter

Respectfully,

James A. Reyff
Illingworth & Rodkin, Inc.

Attachment 1: Illingworth & Rodkin, Inc. Bio
Attachment 2: Resume of James Reyff

10-171

[4] BAAQMD. 2010. Screening Tables for Air Toxics Evaluation During Construction. May.
[5] BAAQMD. 2010. BAAQMD CEQA Air Quality Guidelines. June.

Attachment 1
Illingworth & Rodkin Bio

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AIR QUALITY

In 1995 Illingworth & Rodkin, Inc. was expanded to include air quality and meteorological capabilities. The bulk of the firms' air quality work involves environmental air quality studies that are in support of both private and public projects. Air quality studies for land use projects to support Environmental Impact Reports are most common. Types of projects include specific plans for a variety of land use types, office centers, construction activities, wastewater treatment facilities, waste management facilities, quarries, and other industrial facilities. The firm also assists local communities in developing air quality policies for incorporation into General Plans.

For air quality, many projects involve the analysis of air quality impacts from both direct and indirect sources of air pollutants. Indirect sources include transportation facilities, which Illingworth & Rodkin's staff has considerable experience evaluating. Through years of conducting environmental noise and air quality studies for local, state and federal agencies, the firm has developed considerable experience in dealing with both the technical and policy issues involved with air quality. While transportation projects can involve considerable air quality technical aspects, the regulatory challenges can be quite complex. This is especially true in the case with federal projects, where SIP conformity issues arise. Illingworth & Rodkin Inc.'s staff have dealt successfully with these issues on a wide variety of projects ranging from large new freeway projects to simple urban intersection modifications. Conformity issues can be the largest hurdles for urban projects, especially those that involve federal action. Illingworth & Rodkin, Inc. has the right staff experience to tackle both the technical and regulatory air quality issues in both a quality and cost-effective manner.

The firm also conducts assessments to evaluate the air pathway health risk from common toxic air contaminants. This includes analysis of contaminants and $PM_{2.5}$ from traffic and construction equipment as well as common stationary sources.

Environmental Studies
- Assessments for environmental studies (EIR, IS, EIS, EA)
- Transportation projects
- New residential developments
- Control plans and ordinances
- Ordinance compliance
- Conformity determinations
- Peer Review

Computer Modeling
- Air Pollutant emissions estimation using EMFAC2002, Mobile, AP-42
- Microscale air quality traffic modeling using CALINE4, CAL3QHC
- Stationary air pollution source modeling using EPA-approved models (e.g., SCREEN3 and ISCST)
- Analysis of meteorological data

Field Monitoring
- Aerometrics and Air toxics
- Meteorological conditions
- Fence line monitoring (e.g., particulates)

Attachment 2
Resume of James Reyff

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JAMES A. REYFF

Mr. Reyff is a Meteorologist with expertise in the areas of air quality and acoustics. His expertise includes meteorology, air quality emissions estimation, transportation/land use air quality studies, air quality field studies, and environmental noise studies. He is familiar with federal, state and local air quality and noise regulations and has developed effective working relationships with many regulatory agencies.

During the past 22 years, Mr. Reyff has prepared Air Quality Technical Reports for over 10 major Caltrans highway projects and conducted over 100 air quality analysis for other land use development projects. These projects included carbon monoxide microscale analyses, the calculation of project emissions (e.g., ozone precursor pollutants, fine particulate matter, and diesel particulate matter), seasonal field monitoring, and preparation of air quality conformity determinations. Mr. Reyff advised decisions of federal and local air quality agencies regarding impact assessment methodologies and air quality conformity issues. He has conducted air quality evaluations for specific plans and General Plan updates. Recently, he prepared the air quality analysis for the NASA Ames Research Park, which included a Federal SIP Conformity analysis.

Mr. Reyff has been responsible for a variety of meteorological and air quality field investigations in support of air permitting and compliance determinations. He has conducted air quality analyses of diesel generators in support of regulatory permitting requirements and environmental compliance issues. Mr. Reyff has designed and implemented meteorological and air quality monitoring programs throughout the Western United States including Alaska. Programs include field investigations to characterize baseline levels of air toxics in rural areas, as well as regulatory air quality and meteorological monitoring. He was the Meteorologist involved in a long-term monitoring program at the Port of Oakland that evaluated meteorological conditions and fine particulate matter concentrations in neighborhoods adjacent to the Port.

Mr. Reyff has conducted over 15 major acoustical technical studies for transportation systems. He has managed several research studies for Caltrans including a noise study that evaluated long-range diffraction and reflection of traffic noise from sound walls under different meteorological conditions. Mr. Reyff has also evaluated noise from power plants, quarries and other industrial facilities. He has also been actively involved in research regarding underwater sound effects from construction on fish.

PROFESSIONAL EXPERIENCE

1995-Present	Illingworth & Rodkin, Inc.
Project Scientist	Petaluma, California
1989-1995	Woodward-Clyde Consultants (URS)
Project Meteorologist	Oakland, California
1988-1989	Oceanroutes (Weather News)
Post Voyage Route Analyst	Sunnyvale, California

EDUCATION

1986 San Francisco State University
B.S., Major: Geoscience (Meteorology)

PROFESSIONAL SOCIETIES

American Meteorological Society
Institute of Noise Control Engineering

AWARDS

FHWA Environmental Excellence Award – 2005
Caltrans Excellence in Transportation, Environment - 2005

Attachment B

Charles M Salter Associates Inc

Consultants in
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& Security System Design

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21 December 2010

Ed Erwin
Director, Real Estate
Alta Bates Summit Medical Center
2880 Gateway Oaks, 2nd Floor
Sacramento, CA 95833
Via E-mail: erwine@sutterhealth.org

Subject: **MacArthur Transit Village Project – Oakland, CA**
Potential Noise and Vibration Impacts on Surgery Center
Located at 3875 Telegraph Avenue

Dear Mr. Erwin:

We have been retained to determine whether recent changes to the MacArthur Transit Village project (Project) will have any significant impacts on the property, operations and patient care at the Surgery Center of Alta Bates & Summit Medical Center located immediately adjacent to the Project at 3875 Telegraph Avenue (Surgery Center) particularly with respect to noise and vibration. We have concluded that the recently revised Project, that removes the Surgery Center property from the Project, will have such significant effects on the Surgery Center throughout the approximately seven (7) years of Project construction.

We have completed our review of the various documents prepared for the MacArthur Transit Village project located in Oakland, California. Included in our review is the Noise and Vibration section of the Draft Environmental Impact Report (DEIR) and the Agenda Report dated 14 December 2010 from the City of Oakland, City and Economic Development Agency (CEDA).

Based on our review, potentially significant noise and vibration impacts that could adversely affect The Surgery Center of Alta Bates & Summit Medical Center have not been addressed. Further analysis of project generated noise and vibration, impacts, and mitigation including continuous on-site noise and vibration monitoring, would be required. This letter summarizes our findings.

Discussion

Noise Impacts

As you know, the purpose of an EIR is to determine potentially significant impacts resulting from the development of the proposed project, and to provide mitigation measures as needed. We understand that since publication of the DEIR, the Surgery Center of Alta Bates & Summit Medical Center (a portion of "Block C" as shown on the DEIR Conceptual Site Plan, APN 012-0968-003-01 zoned C-28) will no longer be included in the Project. Therefore, the estimated seven years of continuous Project construction could generate significant impacts on the Surgery Center.

Our review of the City's Noise Element of the General Plan indicates that the City interprets a "Hospital" land-use as a noise sensitive receptor, "…whose purpose and function can be disrupted or jeopardized by noise… Understandably, noise is of special concern when it occurs near sensitive receptors."[1] Moreover, the City classifies hospital land-uses among nursing homes, libraries, residences, classrooms, and theaters as being most sensitive to noise.

Based on our discussion with management at the Surgery Center, we conclude that activities at the Surgery Center would be just as sensitive to noise as those at a full-service hospital. The Surgery Center is home to sensitive procedures and patients undergoing nerve repair, ear reconstruction, eye surgery, neurosurgery (laminectomy), vocal cord surgery, and pediatric urology. Such procedures occur several hundred times per year. Post-anesthesia recovery, pre-operative, and pain management patients on cardiac monitors occupy various portions of the building including along the exterior façade adjacent to the project site. Specialized equipment such as arthroscopy monitors, fluoroscopy imaging units, and operating microscopes are in common use. Such activities appear to be consistent with the City's specification of hospital land-uses being noise sensitive. Without mitigation, increased noise levels generated by Project construction could adversely affect the health, sleep, and recovery of patients at the Surgery Center. It could also interfere with speech intelligibility and communication between patients and medical staff, and between surgeons and staff during medical procedures.

Vibration Impacts

The DEIR establishes the Federal Transit Administration (FTA) as a source for assessing potential vibration impacts.[2] Included are thresholds for significant impacts based on "events", the number of vibration occurrences per day. The thresholds are based on perception and annoyance in residential buildings which are of course one concern at the

[1] City of Oakland, *Noise Element of the 2005 General Plan*, p. 1
[2] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06)*, May 2006

project site. In addition, the DEIR includes the FTA criteria for limiting potential building damage due to construction generated vibration. Had the Surgery Center site been listed as an adjacent sensitive receptor at the time of writing, it would have been required per CEQA to include the FTA recommended criteria for typical hospitals and/or hospitals with vibration sensitive equipment as shown in Table 1, below. An analysis methodology is provided in the same FTA document along with construction vibration levels and calculations to estimate vibration levels at various setback distances that could include the hospital.

Table 1 (Adapted from FTA Tables 8-1 and 8-3)
Ground-Borne Vibration Impact Criteria

Land-Use Category	Frequent Events	Occasional Events	Infrequent Events
Hospitals with vibration-sensitive equipment	65 VdB	65 VdB	65 VdB
Hospitals	72 VdB	75 VdB	80 VdB

Criterion	Description of Use
72 VdB	Operating Rooms. Vibration not perceptible, but ground-borne noise may be audible inside quiet rooms. Suitable for medium-power optical microscopes (100X) and other equipment of low sensitivity.
66 VdB	Adequate for medium- to high-power optical microscopes (400X), microbalances, optical balances, and similar specialized equipment.
60 VdB	**Sensitive operating rooms** (e.g. microsurgery, eye surgery, neurosurgery, etc.[3]). Adequate for high-power optical microscopes (1000X), inspection and lithography equipment to 3 micron line widths.
54 VdB	Generic vibration specification for magnetic resonance imagers (MRI)[9]. Appropriate for most lithography and inspection equipment to 1 micron detail size.
48 VdB	Suitable in most instances for the most demanding equipment, including electron microscopes operating to the limits of their capability.
42 VdB	The most demanding criterion for extremely vibration-sensitive equipment.

It is unclear at this time what methods will be used for demolition and construction. However, typical to construction of the proposed Project would include the use of pile driving, hydraulic breakers, drilled piers, rammed aggregate piers, vibratory compaction, or other methods that could generate significant impact at adjacent receptors. Vibration

3 Amick, H., *et al.*, Proceedings of International Society for Optical Engineering (SPIE), Vol. 1619, *Design of Stiff, Low-Vibration Floor Structures*, November 4-6, 1991, pp. 180-191.

levels generated by such devices and activities are summarized in the FTA document, but missing from any project analyses. Without mitigation, vibration levels generated by Project construction could adversely affect critical medical procedures at the Surgery Center. It could also be perceptible and annoying to recovering patients and staff, and interfere with the proper use of medical equipment including imaging systems and image quality.

Standard Conditions of Approval

The DEIR establishes the City of Oakland Planning Code, City of Oakland Municipal Code, City of Oakland Noise Element, and City of Oakland Standard and Uniformly Applied Conditions of Approval as sources for assessing potential noise impacts. Included in the City's codes are limits for average and maximum noise levels generated by construction activities that could affect adjacent land-uses. For reference, the DEIR lists them in the following Table 2 (adapted from Table IV.E-7):

Table 2: (Table IV.E-7)
City of Oakland Construction
Noise Standards at Receiving Property Line, dBA
(OMC Section 17.120.050)

	Daily 7am to 7pm	Weekends 9am to 8pm
Short-Term Operation (Less than 10 days)		
Residential	80	65
Commercial, Industrial	85	70
Long-Term Operation (10 days or more)		
Residential	65	55
Commercial, Industrial	70	60

The City's Condition of Approval (COA) Noise-1 also limits "extreme noise generating activities" to weekdays, 8am through 4pm. COA-5 continues to require noise measurements to monitor the effectiveness of noise attenuation procedures prepared under the supervision of a qualified acoustical consultant.

The Cumulative Noise and Vibration Impacts analysis in the DEIR also refers to the City of Oakland Standard and Uniformly Applied Conditions of Approval and projects within the vicinity of the project site. In particular, it cites the Kaiser Permanente project located at the intersection of MacArthur Boulevard and Broadway which has incorporated an

on-site continuous noise monitoring program that allows a comparison of construction generated noise levels to project standards.

The City's Standard Conditions of Approval for noise and vibration alone do not adequately address the particular impacts on the Surgery Center. These Standard Conditions of Approval focus on typical uses, not highly sensitive receptors. For example, only COA-6 addresses vibration impacts, and does so by limiting the scope to damage thresholds at historic structures. It does not include other vibration sensitive uses such as the Surgery Center which is home to vibration sensitive patients and equipment. Additional study and analysis is necessary to determine the appropriate noise and vibration mitigation for the Surgery Center due to significant impacts generated by the Project.

DEIR Alternative

The DEIR provides the required section for analyzing project alternatives. Included is the scenario for a Mitigated Reduced Building/Site Alternative, which excludes the Surgery Center from being part of the project. To date, no analysis has been provided which evaluates potentially significant impacts at the Surgery Center generated by the Project. It is notably absent from the 14 December 2010 Agenda Report. Per CEQA, additional environmental review for project alternatives must be performed to address impacts that could affect surrounding land uses and provide mitigation measures as needed.

The Project Sponsor's Letter

The 26 October 2010 letter from MacArthur Transit Community Partners, LLC (MTCP – the project sponsor to Catherine Payne, CEDA - Planning), acknowledges that the vesting tentative tract map (VTTM) does not include the Surgery Center since MTCP does not have control of the property. The letter continues to state that the VTTM will be amended to include the Surgery Center once MTCP retains site control. It states, "This circumstance does not preclude development of Phase I as the site development does no effect [sic] the Surgery Center parcel."[4] It appears that based on that assumption, the 17 November 2010 letter prepared by Urban Planning Partners Inc. (UPP – project planning consultant) concludes that refinements to the project are minor and that no substantial changes, circumstances, or new information of importance has been generated since certification of the EIR[5] (June/July 2008). The aforementioned comments are not consistent with continued operation of the Surgery Center. It should also be noted that while a traffic consultant's comments were provided along with these two letters, we were not able to find a letter, quotation, summary, or follow-up analysis provided by a qualified firm providing services in acoustics.

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[4] City of Oakland, *Agenda Report*, 14 December 2010 (oak024541.pdf), p. 344
[5] *ibid*, p. 334

Based on the project sponsor and planning team's oversight of an adjacent noise and vibration sensitive receptor (i.e., the Surgery Center), CEDA staff concludes in the 14 December 2010 Agenda Report there is nothing that would require subsequent or supplemental environmental review, since there are no new significant or substantial increases in the severity of environmental effects.[6] Again, the conclusion is not based on an analysis that includes continued use of the Surgery Center.

Conclusion

In summary, the sources listed above which have been established as a basis for noise and vibration assessment and analysis, did not consider the Surgery Center as a noise and vibration sensitive receptor needing to be evaluated for potential impacts and mitigation. The modified Project without the Surgery Center will have significant noise and vibration impacts on the Surgery Center during the approximately seven (7) years of Project construction. Because no environmental study has been performed, per CEQA, further impact analysis is necessary to determine appropriate mitigation measures to protect the ongoing uses at the Surgery Center.

* * *

This concludes our current comments. Please do not hesitate to call us with any questions.

Sincerely,

Charles M. Salter Associates, Inc.

Timothy G. Brown
Principal Consultant

Robert P. Alvarado
Senior Vice President

[6] *ibid*, p. 5

Charles M Salter Associates Inc

CHARLES M. SALTER, P.E.
President

PROFESSIONAL EXPERIENCE

Mr. Salter has practiced acoustical engineering for over 40 years. With educational backgrounds in architecture, planning, engineering, and business, Mr. Salter has conducted a wide range of consulting in the areas of architectural acoustics, noise control engineering, and environmental noise impact. He has had project responsibility for various facility types including offices, schools, churches, theaters, residences, hospitals, and civic buildings.

PUBLICATIONS

Coauthor ***ACOUSTICS: Architecture, Engineering, the Environment***. (1998 William Stout Publisher)

HONORS

Fellow of the Society, Acoustical Society of America, 2006

Received "for contributions to the teaching of architectural acoustics and to its practical applications."

Allied Professions Honor Award, American Institute of Architects, California Council, 1998

Received "in recognition of unique dedication and focused drive to enhance, support and significantly contribute to the advancement of architectural practice. The extensive knowledge displayed as an acoustical consultant, author and educator creates an invaluable balance that bridges the language among various disciplines. The three decades as an innovator, practitioner and mentor, has been instrumental in increasing awareness of crucial acoustical considerations in architectural design. The level of personal commitment coupled with industrious contributions, merit the highest admiration from the profession of architecture."

TEACHING EXPERIENCE

2004-Present	Lecturer in Acoustics, UC Berkeley
2000-2004	Adjunct Professor, UC Berkeley
1998-2001	Adjunct Professor, California College of Arts & Crafts
1973-2000	Lecturer in Acoustics, UC Berkeley

PROFESSIONAL REGISTRATION

California: M.E. No. 16460 (1974)
Nevada: M.E. No. 3963 (1974)
Institute of Noise Control Engineering, Board Certified (1975)

PROFESSIONAL AFFILIATIONS

Associate Member, American Institute of Architects
Technical Advisory Committee Member, United States Green Building Council

EDUCATION

Boston College M.B.A., Major - Finance, 1972
MIT B.S. Art and Design, Major - Architecture, Minor - City Planning, 1969
Tufts University B.S.C.E., Major - Structural Engineering, Minor - Economics, 1965

Charles M Salter Associates Inc

ROBERT P. ALVARADO
Senior Vice President

PROFESSIONAL EXPERIENCE

Mr. Alvarado has been an acoustical consultant with Charles M. Salter Associates, Inc. since 1996. He specializes in environmental noise studies, architectural acoustics, HVAC noise and vibration control, building vibration, and environmental noise mitigation. His experience includes exhibit spaces, civic facilities, mixed-use developments, offices, retail spaces, and educational facilities.

Mr. Alvarado's project management experience includes:

- John Muir Neuroscience Institute EIR, Walnut Creek, CA
- Kaiser Permanente Oakland EIR, Oakland, CA
- Queen of the Valley North Building EIR, Napa, CA
- Bay Meadows Mixed-Use EIR, San Mateo, CA
- Solana Beach Train Station Mixed-Use EIR, Solana Beach, CA
- Magnolia Park EIR, Oakley, CA
- Park and Delmas Residential Development EIR, San Jose, CA
- Marina Bay Live-Work Development EIR, Richmond, CA
- 150 Powell Street Mixed-Use, San Francisco, CA
- Santana Row Mixed-Use, San Jose, CA
- San Francisco Rock and Roll Hall of Fame Mixed-Use, San Francisco, CA
- Energy Foundation, San Francisco, CA
- Santa Cruz State Courts, Santa Cruz, CA
- Ferry Building Renovation, San Francisco, CA
- One, Two, and Three Embarcadero Center, San Francisco, CA
- Hilton Grand Vacation Club Flamingo Renovation, Las Vegas, NV
- Sea Ranch Lodge, Sea Ranch, CA
- Ritz-Carlton Marassi Mega Beach Resort, El Alamein, Egypt
- IDEO Corporate Offices, Palo Alto, CA
- Equity Office Properties, San Francisco, CA
- GSA Public Service Building, Oakland, CA
- Polaris Amphitheater, Columbus, OH
- Magic World Amphitheater, Dubai

PUBLICATIONS

Coauthor ***ACOUSTICS: Architecture, Engineering, the Environment.*** (1998 William Stout Publisher)

PROFESSIONAL AFFILIATIONS

American Institute of Architects, Associate Member
UC Berkeley Center for the Built Environment, Research Team

EDUCATION

University of California at Berkeley, B.A. Architecture
Stanford University, AEC Program, Graduate School of Engineering

TEACHING EXPERIENCE

1998-Present UC Berkeley, Guest Lecturer "Acoustic Computer Modeling"
1998-Present Stanford University, Graduate School of Engineering, Guest Lecturer, Professional Mentor

Charles M Salter Associates Inc

TIMOTHY G. BROWN
Principal Consultant

PROFESSIONAL EXPERIENCE

Mr. Brown has been an acoustical consultant with Charles M. Salter Associates, Inc. since 2004. He specializes in the areas of environmental and architectural acoustics and vibration. His projects include the testing and analysis of transportation and construction induced noise and vibration near public and private developments including residential, commercial, utility, medical, research, and technology facilities. He also has experience with noise and vibration relating to architectural, mechanical, electrical, and acoustically sensitive equipment.

Mr. Brown's experience includes the following projects:

- Daly City Noise Element Update, Daly City, CA
- San Francisco Recycling and Disposal Impact Assessment, San Francisco, CA
- Bay Meadows Redevelopment Noise and Vibration Assessment, San Mateo, CA
- New Crystal Springs Bypass Tunnel Noise and Vibration, San Mateo County, CA
- Kiernen Business Park EIR, Modesto, CA
- Villages of Patterson EIR, Patterson, CA
- Tivoli Specific Plan EIR, Modesto, CA
- Bay Division Pipeline No. 5 Noise and Vibration Study, Bay Area, CA
- San Francisco Recycling and Disposal Impact Assessment, San Francisco, CA
- United State Post Office, Oakland and San Francisco, CA
- Lockheed Martin Missiles and Space, Sunnyvale, CA
- Solana Beach Railway Station, Solana Beach, CA
- Fruitvale BART Station Emergency Engine Generator, Oakland, CA
- One Rincon Hill Construction Noise and Vibration Survey, San Francisco, CA
- Anchorage at Marina Bay Quiet Zone Implementation Assessment, Richmond, CA
- Sutter Health Camino Medical Group MRI Vibration Screening, Mountain View, CA
- Skywalker Ranch Screening Room Vibration Study, Nicasio, CA
- Pixar Animation Studios Construction Vibration Assessment, Emeryville, CA
- Livermore Performing Arts Center Noise and Vibration Assessment, Livermore, CA
- Stanford University Geophysics Laboratory Noise Study, Stanford, CA
- Gateway Community Development Project Railway Impact Analysis, Oakland, CA
- UC San Francisco MRI Vibration Study and Impact Assessment, San Francisco, CA
- Hellman Laboratory Relocation, Berkeley, CA

PROFESSIONAL AFFILIATIONS

Acoustical Society of America (ASA)
Institute of Noise Control Engineers (INCE)
Structural Engineers Association of Northern California (SEAONC)
American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)

EDUCATION

University of California, Berkeley, M.S., Civil Engineering, 2001
University of California, Davis, B.S. with High Honors, Civil Engineering, 2000

Summary of Negotiations with the Surgery Center

3/28/08	Meeting between MTCP and Victor Meinke (Alta Bates Surgery Center representative) about the MTV Project and acquisition of the Surgery Center site.
7/1/08 – 2/14/09	Various communications between MTCP and Victor Meinke and consultants regarding financial issues.
4/21/09	Letter of Intent from MTCP to the Surgery Center regarding purchase.
12/4/09	Meeting between MTCP and Surgery Center team.
1/6/10	Letter from Alta Bates Summit to MTCP requesting updated plans and a new proposal.
4/21/10	MTCPs' community meeting and presentation discussing the Phase/Stage 1 revised site design, garage plan, and development schedule. Meeting was attended by Surgery Center representative (Victor Meinke).
6/2/10	Letter from MTCP to Alta Bates Summit including a copy of the revised site plan showing the Surgery Center site as part of the MTV Project. Letter noted that acquisition of Surgery Center would not be required for the Phase/Stage 1 development. Letter also noted MTCP is still interested in the property acquisition. (See Attached letter.)
12/1/10	Meeting between MTCP (Art May & Joe McCarthy) and Alta Bates Summit (COO Charles Prosper and Dr. Glen Gormanzano) to discuss the status of the project, the plan revisions, schedule, and acquisition.

EXHIBIT A
EXHIBIT H

June 2, 2010

Mr. Victor E. Meinke
Vice President Business Development
Alta Bates Summit Medical Center
350 Hawthorne Avenue
Oakland CA 94609

Re: Project Update for MacArthur Transit Village

Dear Victor:

The purpose of this letter is provide you with a project update on MacArthur Transit Village Project ("MTV") in Oakland, Ca.

MacArthur Transit Community Partners, LLC ("MTCP") is proceeding with the design of the Bart replacement parking structure and master site work ("Phase 1") plus the acquisition of several parcels on MacArthur Boulevard and Telegraph Avenue which will facilitate the commencement of construction for Phase 1 in late 2010. The master site plan and design for the Bart replacement parking structure was reviewed by Oakland Design Review Committee on May 26, 2010 with our next review by the Oakland Planning Commission in late July 2010.

At our meeting on December 4, 2009, we realized it would be difficult to achieve a timely consensus to acquire the East Bay Surgery Center ("Surgery Center Property") from the various stakeholder of the EBOS, Sutter Health Alta Bates Summit Medical Center Surgery Property Company, LLC, and The Surgery Center of Alta Bates Summit Medical Center, LLC (collectively "Surgery Center") to facilitate our construction schedule. As a result, we have realigned Village Drive to intersect with the existing 39th Street at Telegraph Avenue which allows MTCP to proceed with the construction of Phase 1 with no requirement to acquire the Surgery Center Property which is now depicted as C-3 on the proposed Final Development Plan ("FDP"). We have attached for your information and review the proposed FDP for Phase I which modifies slightly the approved Preliminary Development Plan ("PDP").

The proposed FDP will allow the Surgery Center to continue its operations without any disruption to the Surgery Center Property. MTCP is still very interested in acquiring the Surgery Center Property at a purchase price and timing that will work for all parties. Please let us know if you have any questions regarding the proposed FDP.

Sincerely,

MACARTHUR TRANSIT COMMUNITY PARTNERS, LLC,
a California limited liability company

By: MPI MacArthur, LLC,
a California limited liability company, Member

By: _____
Terrence M. McGrath, Managing Member

By: BUILD Equity Investments (MacArthur Transit Community) LLC,
a California limited liability company, Managing Member

By: BRIDGE Urban Infill Land Development, LLC,
a Delaware limited liability company, Member

By: BRIDGE Infill Development, Inc.,
a California Corporation, Manager

By: _____
Lydia Tan, Executive Vice President

Howard S. Wright Constructors

MTV - PHASE I & II CONSTRCUTION EQUIPMENT SCHEDULE
SOUND - AIR QUALITY STUDY

January 28, 2011

DEMOLITION		
A	Equipment	2000 Cat 330B Excavator
	Size	Approx. 80,000 Lbs
	Engine	236HP
	Usage:	Duration of project – 8 hours per day, – Possible overlap
	CARB EIN #:	KC3V93
B	Equipment	2005 Linkbelt 330 LX Excavator
	Size	Approx. 80,000 Lbs
	Engine	247 HP
	Usage:	Duration of project – 8 hours per day, – Possible overlap
	CARB EIN #:	GA5L83
C	Equipment	2006 Bobcat S300 Skid steer
	Size	Approx. 9,400 Lbs
	Engine	Engine HP: 81 HP
	Usage:	Duration of project – 8 hours per day, – Possible overlap
	CARB EIN #:	UK4X33
W	Equipment	STIHL - cut-off saw
	Size	22 lbs
	Engine	6.4 hp
	Usage:	Cutting of steel and concrete sporadically
	CARB EIN #:	UK4X33
FOUNDATION		
D	Equipment	Xtreme XFR-1245 Telescoping Forklift
	Size	35,700 lbs; lift capacity 12,000 lbs
	Engine	2300 rpm
	Usage:	to unload piles - 2 hrs per day
	CARB EIN #:	XR1245020991378
E	Equipment	Delmag RH26 (Requirement to RH28) mounted on Leiberbherr Carrier
	Size	182,000 lbs
	Engine	500 hp
	Usage:	Duration of project - 8 hrs per day
	CARB EIN #:	567

F	Equipment	210,000 ft lb Drill Head Motor; 70' Mast attached to Delmag
	Size	
	Engine	Hydraulic - runs off Delmag engine
	Usage:	Drill to install screw down Pile - 8 hrs per day
	CARB EIN #:	

AA	Equipment	McNeilus Ready-mix Concrete truck
	Size	10.5 cy capacity
	Engine	350 hp
	Usage:	transport ready mix concrete to jobsite - pour day
	CARB EIN #:	

GRADE BEAM/ PILE CAPS

G	Equipment	TEREX Back Hoe Loader
	Size	18,000 lbs
	Engine	100 hp (70 kw)
	Usage:	8 hours a day - overlap with Dump truck
	CARB EIN #:	

H	Equipment	48 meter Putzmeister Boom Pump
	Size	48 meter boom - 12x8'-6"x40'
	Engine	2000 Diesel Mack - 400 Hp
	Usage:	Concrete placing - horizontal and vertical CIP concrete - 8 hrs per pour day
	CARB EIN #:	

J	Equipment	1999 Mack RD688S Tri-Axel Dump truck
	Size	44,000 lbs
	Engine	450 HP - diesel
	Usage:	Hauling of spoils
	CARB EIN #:	

VERTICAL CONCRETE

K	Equipment	Fork Lift - Hyster H80XL
	Size	8,000 lbs
	Engine	Propane
	Usage:	Moving of forms
	CARB EIN #:	

Q	Equipment	Delivery Stake Truck - F-450 Super Duty
	Size	16000 lbs
	Engine	235 HP - Diesel
	Usage:	Deliveries
	CARB EIN #:	

M	Equipment	Ingersoll Rand Compressor
	Size	2,310 lbs
	Engine	80 HP
	Usage:	Blowing decks - chipping of concrete
	CARB EIN #:	

AB	Equipment	Cement Finisher - Multiquip
	Size	46 inch diameter
	Engine	8 hp
	Usage:	Finish concrete slabs
	CARB EIN #:	

EXTERIOR SKIN

N	Equipment	HTC-8675 Series II Link Belt 75 ton hydro
	Size	12'x8'-6"x49'-0" - 85,276 lbs
	Engine	445 HP diesel
	Usage:	Hoist steel frames and precast on exterior
	CARB EIN #:	

P	Equipment	JLG 600 series - 60 ft boom
	Size	60 ft boom - 24,000 lbs
	Engine	82 HP - gas
	Usage:	Installation of exterior screen - 8 hrs per day
	CARB EIN #:	

Q	Equipment	Delivery Stake Truck - F-450 Super Duty
	Size	16000 lbs
	Engine	235 HP - Diesel
	Usage:	Deliveries
	CARB EIN #:	

X	Equipment	Lincoln Commander 500 welder
	Size	
	Engine	12 kw diesel generator
	Usage:	welding of precast panels and steel frames
	CARB EIN #:	

MAN HOIST

R	Equipment	Pecco PH 6000
	Size	Car size - (5'x12-6"x9'0) - Mast 60 feet tall - total weight 20,000 lbs
	Engine	2-20 hp - 480 V- 3 phase - 60 hz
	Usage:	9 hours a day - 6 months
	CARB EIN #:	Electric motor

SITEWORK

S	Equipment	Ditchwitch 1030 trencher
	Size	
	Engine	11 hp
	Usage:	trench for irrigation water lines and control wires
	CARB EIN #:	
T	Equipment	TEREX Back Hoe Loader
	Size	18,000 lbs
	Engine	100 hp (70 kw)
	Usage:	8 hours a day - overlap with Dump truck
	CARB EIN #:	
U	Equipment	Hitachi Excavator - EX-550LC-5
	Size	125,200 lbs
	Engine	HP 361
	Usage:	Excavation of underground utilities
	CARB EIN #:	
V	Equipment	Dynapac (jumping jack) - LT7000
	Size	168 lbs
	Engine	3.9 HP
	Usage:	Compacting of trenches
	CARB EIN #:	
W	Equipment	STIHL - cut-off saw
	Size	22 lbs
	Engine	6.4 hp
	Usage:	Cutting of steel and concrete sporadically
	CARB EIN #:	
Y	Equipment	Concrete walk behind saw -EDCO SS-20
	Size	425 lbs
	Engine	20 hp
	Usage:	Cutting of concrete slabs and parking lot - 1 to 2 days
	CARB EIN #:	
Z	Equipment	SAKAI - dirt roller
	Size	7.2 tons
	Engine	82 hp
	Usage:	Dirt compactor - 8 hrs per day
	CARB EIN #:	

AC	Equipment	John Deere Skip loader - 210LE
	Size	10,170 lbs - 1 CY
	Engine	78 HP
	Usage:	Move around dirt/ rock - make grade for pads
	CARB EIN #:	
AD	Equipment	Caterpillar grader - 140H
	Size	12'-14' blade - 32,460 lbs
	Engine	185 HP
	Usage:	Cut road grade for paving
	CARB EIN #:	
AE	Equipment	CAT 966F wheel loader
	Size	46,778 lbs - 4 cy bucket
	Engine	220 HP
	Usage:	Move dirt and rock
	CARB EIN #:	
AF	Equipment	Water truck - Sterling LT8500
	Size	4,000 gal - 53,220 lbs
	Engine	450 HP
	Usage:	dust control and wet down grade
	CARB EIN #:	
AG	Equipment	CAT D8R - diesel - Bull Dozer
	Size	80,000 lbs
	Engine	305 HP
	Usage:	Push large amount of dirt - used to spread dirt out at remediation
	CARB EIN #:	
AH	Equipment	CAT 1055D paver
	Size	45,130 lbs
	Engine	224 HP - diesel
	Usage:	Used to pave asphalt roads and parking lot
	CARB EIN #:	

This schedule is a component of the Construction Management Plan required by the City of Oakland prior to the issuance of construction related permits

The construction technique proposed in areas adjacent to the Alta Bates Surgery Center may employ one or more of the following strategies

1. Use of sheep foot non-vibrating compactors
2. Use of non-vibrating roller compactors
3. Scheduling vibrating roller compaction after surgical hours or on weekends (subject to City approval)
4. Use of alternate fill materials that require no or minimal induced compaction
5. Use of smaller vibrating rolling, vibrating plate, or jumping jack compactors

EXHIBIT I

MacArthur Transit Village
Construction Equipment Schedule **1/28/2011**

	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
			Tested	Tested			Tested																			
				2 weeks	2 weeks																					
Motel Demolition	A																									
	B																									
	C																									
	J - 50%																									
	W - 10%																									
Environmental Remediation		B	B																							
		AF - 50%	AF - 50%																	hydrolic						
		J - 50%	J - 25%																							
		Y - 5%	Z																							
			AH - 5%																							
BART Garage																										
Earthwork			B - 40%																							
			J - 50%																							
			Z - 50%																							
			W - 5%																							
Piles				D - 80%																						
				E -80%																						
				F - 80%																						
				H - 20%																						
				X - 10%																gas						
				AA - 10%																gas						
Grade Beams / Pile Caps				G - 95%																						
				J - 65%																gas						
					D - 50%																					
					H - 20%																					
					AA -20%															gas						
				Q - 30%																						
Vertical Concrete							K - 30%																			
							H - 60%																			
							AA - 60%																			
							Q - 55%																			
								M - 10%																		
Exterior Skin									P - 60%																	
									X - 90%																	
											N - 100%															
Man Hoist								R - 100%																		
Sitework												B - 70%														
												C - 30%														
												V - 30%														
												W - 20%														
												Q - 40%														
												M - 10%														
Frontage Road																										
Demo & Earthwork					B - 100%																					
					Y - 5%																					
					J - 25%																					
					Z - 80%																					
					W - 10%																					
						AC - 80%																				
Utilities						B - 35%																				
						C - 35%																				
						V - 35%																				
						W - 15%																				
						Q - 10%																				
						M - 20%																				
							AA - 10%																			
Paving & Sidewalks								AC - 60%																		
								Z - 50%																		
								AD - 30%																		
									AA - 35%																	
									C - 30%																	
									AH - 25%																	
									J - 25%																	
BART Plaza																										
Demo							G - 20%				G - 20%										This schedule is a component of the Construction Management					
							C -20%				C -20%										Plan required by the City of Oakland prior to the issuance of					
							W - 5%				W - 5%										construction related permits					
							V - 20%				V - 20%															
							M -10%				M -10%															
							J - 20%				J - 20%															
							B - 50%				B - 50%															
Concrete								G - 10%				G - 10%														
								J - 5%				J - 5%														
								D - 20%				D - 20%														
								H - 10%				H - 10%														
								AA - 10%				AA - 10%														
								Q - 10%				Q - 10%														
Bike Station / Trellis									G - 30%																	
Finishes																										
W. MacArthur																										
Demo							G - 20%																			
							C -20%																			
							W - 5%																			
							Z - 20%																			

KEY	
A	2000 Cat 330B Excavator
B	2005 Linkbelt 330 LX Excavator
C	2006 Bobcat S300 Skid steer
D	Xtreme XFR-1245 Forklift
E	Delmag RH26
F	Drill Head Motor
G	TEREX Back Hoe Loader
H	48 meter Putzmeister Boom Pump
J	1999 Mack Dump truck
K	Fork Lift - Hyster H80XL
M	Ingersoll Rand Compressor
N	Link Belt 75 ton hydro
P	JLG 600 series - 60 ft boom
Q	Delivery Stake Truck - F-450 Super Duty
R	Pecco PH 6000
S	Ditchwitch 1030 trencher
T	TEREX Back Hoe Loader
U	Hitachi Excavator - EX-550LC-5
V	Dynapac (jumping jack) – LT7000
W	STIHL - cut-off saw
X	Lincoln Commander 500 welder
Y	Concrete walk behind saw -EDCO SS-20
Z	SAKAI - dirt roller
AA	McNeilus Ready-mix Concrete truck
AB	Cement Finisher - Multiquip
AC	John Deere Skip loader - 210LE
AD	Caterpillar grader - 140H
AE	CAT 966F wheel loader
AF	Water truck - Sterling LT8500
AG	CAT D8R - diesel - Bull Dozer
AH	CAT 1055D paver

100% max hour usage
50% max hour usage

KEY	
A	2000 Cat 330B Excavator
B	2005 Linkbelt 330 LX Excavator
C	2006 Bobcat S300 Skid steer
D	Xtreme XFR-1245 Forklift
hydrolic E	Delmag RH26
F	Drill Head Motor

EXHIBIT A

URBAN PLANNING PARTNERS INC.

350 FRANK OGAWA PLAZA
5TH FLOOR
OAKLAND, CA 94612
510.251.8210
WWW.UP-PARTNERS.COM

MEMORANDUM

DATE: OCTOBER 25, 2010

TO:
Catherine Payne
Planner III
CEDA Planning and Zoning Division

FROM:
Lynette Dias, AICP
Principal

RE: CEQA Compliance for MacArthur BART Transit Village Phase I FDP and Phase 1 Vesting Tentative Map

In accordance with the Conditions of Approval for the MacArthur Bart Transit Village Preliminary Planned Unit Development and the terms of the Development Agreement, the City is in receipt of an application for a Final Development Permit for Phase 1 (Phase 1 FDP), the parking structure, and a Vesting Tentative Map (VTM) for a portion of the site. The key purpose of this review is to determine whether the environmental effects of the Phase I FDP and VTM are adequately analyzed in the 2008 Certified Environmental Impact Report (EIR) prepared for the project. **As described below, each of these approvals were considered in the EIR and as proposed would not result in new or more severe environmental impacts beyond those identified in the EIR. As a result, the City does not need to prepare a Subsequent or Supplemental EIR to satisfy the environmental review requirements of CEQA. This memorandum comprises adequate environmental documentation of the proposed Phase I FDP and VTM.**

The discussion below summarizes the following items: (1) overview of project approvals and environmental review; (2) relationship of the proposed Phase 1 FDP and VTM with the approved Preliminary PUD/PDP and the project analyzed in the EIR; and (3) findings that the FDP and VTM fall within the scope of the EIR and do not trigger the conditions described in CEQA Guidelines Section 15162 calling for preparation of a subsequent or supplemental environmental review.

Project Approvals and Environmental Review

The City has taken several actions to review and plan for the future development of the MacArthur BART Transit Village. These include, without limitation: (1) certified an EIR, (SCH

No. 2006022075) on July 1, 2008; (2) approved Ordinance No. 12883 C.M.S. amending Section 17.97.170 of the Oakland Planning Code related to the minimum usable open space requirements in the S-15 zone and rezoning the Project Site to S-15 Transit-Oriented Development Zone on July 1, 2008; (3) adopted and approved a Preliminary Planned Unit Development (Preliminary PUD/PDP) permit on July 1, 2008 to allow development of 624 to 675 residential units, 42,500 square feet of neighborhood-serving retail and commercial uses (including 7,000 square feet of live/work units), a 5,000 square feet community center use, and parking garage for BART patrons ; (4) adopted and approved a major conditional use permit to exceed parking requirements and to allow off-street parking for non-residential uses on July 1, 2008; (5) approved preliminary design review for the Preliminary PUD/PDP on July 1, 2008; and (6) approved Ordinance No. 12959 C.M.S on July 21, 2009 enacting a Development Agreement.

The Development Agreement and Preliminary PUD/PDP, which were both considered in the EIR, anticipate that the City will timely consider and possibly grant additional future approvals, including, without limitation, Final PUD (FDP) permits for each of the Project Phases, a vesting tentative map, final design review, tree removal, and conditional use permits.

Relationship of Phase I FDP and VTM to approved Preliminary PUD/PDP and certified EIR

The Phase 1 FDP and VTM applications dated October 26, 2010 have been reviewed and found to be in substantial conformance with: (1) the project evaluated in the EIR, (2) the approved Preliminary PUD/PDP and its Conditions of Approval, and (3) the terms of the Development Agreement. A summary of the relationship of these approvals relative to the Preliminary PUD/PDP approval and the certified EIR is provided below.

Relationship to approved Preliminary PUD/PDP

The attached Substantial Conformance with the PDP Approval Memo, dated October 26, 2010, regarding the Phase I FDP 's and the VTM's substantial conformance with the existing Preliminary PUD/PDP approval, details the clarifying and implementing project refinements that have been incorporated into the Phase I FDP and VTM submittal.

The analysis concludes that in all fundamental respects the project approved in the Preliminary PUD/PDP remains the same. The memo finds that there are no new or changed uses; no new facilities; no change in the overall residential unit count; no change in the amount of retail/commercial space; no change in community space; no change in the height or bulk controls; no change in the community benefits; no change in the project site; and no change in project phasing. The changes related to the BART garage and the site plan adjustments and refinements resulting from the larger garage (e.g., parcel adjustment, realignment of Internal Street) are related to implementation of the terms of the Draft TDMP included in the Preliminary PUD/PDP approval. The changes related to widening the streets and the resulting removal of the street parking on Internal Street are related to requirements imposed by City departments. The realignment of Village Drive is not precluded by any specific COA or Design Guideline. Additionally, none of the changes would violate the Development Agreement. The memo further concludes that the facts described in the memo and summarized above support a finding by the

City that the Phase I FDP and VTM, including the refinements summarized above and described in the attached memo, substantially conform to the Preliminary PUD/PDP and no Preliminary PUD/PDP amendment is required.

Relationship to EIR

The Phase I FDP and VTM are within the scope of the project evaluated in the EIR and would not trigger any new significant or significantly greater impacts. The MacArthur Transit Village project analyzed in the certified EIR consisted of a new BART parking garage; improvements to the BART Plaza; up to 675 residential units (both market-rate and affordable); up to 44,000 square feet of commercial space (including live/work units); 5,000 square feet of community center or childcare space; approximately 1,000 structured parking spaces, including the 300 space BART parking garage; approximately 30-45 on-street parking spaces, pedestrian and bicycle friendly internal streets and walkways; improvements to the Frontage Road; a new internal street, Village Drive, located between Frontage Road and Telegraph Avenue; two new traffic signals at the intersections of Village Drive/Telegraph Avenue and West MacArthur Boulevard/Frontage Road; a rezoning of the Project site to S-15, and a text amendment to the S-15 zone. Multiple FDPs and subdivision maps were contemplated in the EIR (See Draft EIR, pages 72-74) to implement the Preliminary PUD/PDP.

The currently proposed development would provide up to 675 multi-family residential units, 42,500 square feet of commercial space and a 483 space parking garage. Key project refinements that are reflected in the Phase I FDP and VTM and described in the Preliminary PUD/PDP conformance memo include:

- BART Garage - increasing the parking capacity of the BART garage and associated site plan changes
- Internal Street - shifting alignment 40 feet to west, widening to street from 20 feet to 26 feet, eliminating on-street parking, widening pedestrian walkway, and adding an EVA connection to West MacArthur Boulevard
- Realigning Village Drive to line up with 39th Street

Fehr & Peers evaluated each of these transportation related refinements and confirmed that the refinements would not cause new significant impacts or a substantial increase in the severity of previously identified impacts, and the mitigation measures proposed in the EIR would continue to be valid (see Fehr & Peers Memo date October 8, 2010). The proposed changes would also not trigger any impact changes within the other environmental topics evaluated in the EIR.

Conclusion

As discussed above, the proposed Phase I FDP and VTM applications were considered in the EIR as they are in conformance with the approved Preliminary PUD/PDP. The refinements incorporated into the applications represent no change in development intensity or significant physical changes on the MacArthur Transit Village site from the project analyzed in the EIR. Therefore, these changes would not result in new or more significant impacts (or require new or significantly altered mitigation measures) beyond those already identified in the EIR. The EIR is adequate and no subsequent or supplemental environmental review.

The following discussion summarizes the reasons why no supplemental or subsequent CEQA review is necessary pursuant to *CEQA Guidelines* Section 15162 and the City can rely on the previously certified EIR.

Substantial Changes to the Project. The refinements to the project are minor and necessary to implement the Conditions of Approval of the Preliminary PUD/PDP as discussed in the Preliminary PUD/PDP substantial conformance memo and Traffic Memo. These changes would **not** result in new significant environmental impacts or a substantial increase in the severity of impacts already identified in the 2008 EIR. Therefore, the proposed changes to the project are considered *minor* refinements, not *substantial* changes.

Project Circumstances. Since certification of the EIR, conditions in and around the MacArthur Transit Village have not changed and thus implementation of the project (including the proposed refinements) would **not** result in new significant environmental effects or a substantial increase in the severity of environmental effects already identified in the 2008 EIR. No substantial changes in noise levels, air quality, traffic, or other conditions have occurred within and around the project site since certification of the EIR.

New Information. No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the 2008 EIR was certified, has been identified which is expected to result in: 1) new significant environmental effects or a substantial increase in the severity of environmental effects already identified in the EIR; or 2) mitigation measures or alternatives which were previously determined not to be feasible would in fact be feasible, or which are considerably different from those recommended in the 2008 EIR, and which would substantially reduce significant effects of the project, but the project applicant declines to adopt them.

As described previously, changes to the proposed project would not result in significant environmental effects (including effects that would be substantially more severe than impacts identified in the 2008 EIR). Existing regulations (including City General Plan policies and ordinances in the Municipal Code) and mitigation measures included in the 2008 EIR would be adequate to reduce the impacts resulting from implementation of changes to the proposed project to less-than-significant levels.

FEHR & PEERS
TRANSPORTATION CONSULTANTS

MEMORANDUM

Date: October 8, 2010

To: Catherine Payne, City of Oakland

From: Sam Tabibnia

Subject: ***MacArthur Transit Village Project – Comparison of the Current Development Plan and the Certified EIR***

WC10-2717

Fehr & Peers has reviewed the latest site plan for the proposed MacArthur Transit Village dated June 30, 2010. Several elements in the most recent development plan have been modified since the *MacArthur Transit Village Draft EIR* (January 2008) was certified to implement various conditions of approval, mitigation measures, and City imposed requirements. Fehr & Peers completed a new analysis to determine if the proposed modifications could result in new significant impacts, or a substantial increase in the severity of previously identified impacts, and if the mitigation measures recommended in the EIR would continue to be valid.

The proposed Final Development Plan (FDP) would provide up to the same amount of residential units, and the same commercial space for the Transit Village as analyzed in the certified EIR. Access for the Transit Village and the BART Station would continue to be provided by Village Drive from both Telegraph Avenue and 40th Street. Access for the BART Garage would continue to be provided through Frontage Road at MacArthur Boulevard.

Although the overall project has not changed considerably, Fehr & Peers evaluated the potential impacts of the following project modifications on access and circulation for automobiles, buses, bicycles, pedestrians, and emergency vehicles:

- Realignment of intersection of Village Drive on Telegraph Avenue about 60 feet to the north.
- Increase in the number of parking spaces in the BART Garage from 300 spaces to about 483 spaces.
- Widening of the pedestrian path between Internal Street and West MacArthur Boulevard, which also accommodates emergency vehicle access.
- Removal of 18 on-street parking spaces on Internal Street

Based on our analysis, the proposed modifications would not change the conclusions of the EIR. The proposed modifications would not cause new significant impacts, or a substantial increase in the severity of previously identified impact, and the mitigation measures proposed in the EIR would continue to be valid.

The rest of this memorandum describes the evaluation of the modifications listed above.

PROJECT DESCRIPTION

The MacArthur Transit Village project analyzed in the certified EIR consisted of 675 multi-family residential units and 49,000 square feet of commercial space. The currently proposed development would provide up to 675 multi-family residential units and 42,500 square feet of commercial space. The proposed development is estimated to generate fewer automobile trips and is expected to result in fewer significant impacts or reduce the magnitude of off-site traffic impacts identified in the EIR.

Similar to the project analyzed in the certified EIR, access for the Transit Village and the BART Station would continue to be provided by Village Drive from both Telegraph Avenue and 40th Street. Access for the BART Garage would continue to be provided through Frontage Road at MacArthur Boulevard. Thus, the proposed development would not modify access for automobiles, bicycles, pedestrians, buses, and emergency vehicles accessing the site. Therefore, the proposed development would not cause any additional impacts than identified in the EIR; the mitigation measures recommended in the EIR would continue to be valid.

REALIGNMENT OF VILLAGE DRIVE

In comparison to the EIR analysis, the latest design plans for the project would realign the intersection of Village Drive on Telegraph Avenue about 60 feet to the north, closer to the Telegraph Avenue/40th Street intersection. Fehr & Peers analyzed traffic operations, including intersection delay and Level of Service (LOS), at the two intersections most directly affected by the proposed realignment: Telegraph Avenue/40th Street and Telegraph Avenue/Village Drive.

Table 1 summarizes intersection delay and LOS at these two intersections under the scenarios studied in the EIR for both the EIR analysis and the new analysis with Village Drive realigned about 60 feet north. The Synchro traffic analysis files previously developed for the EIR were modified by moving the Telegraph Avenue/Village Drive intersection north by 60 feet. The analysis was completed for AM and PM peak hours under Existing Plus Project, Cumulative Year 2015 Baseline Plus Project, and Cumulative Year 2030 Baseline Plus Project conditions.

As shown in Table 1, both intersections would continue to operate at the same LOS with a slight increase in overall intersection delay if Village Drive is realigned north by 60 feet. The EIR identified a significant impact at the Telegraph Avenue/40th Street intersection (Impact TRANS-6) under Cumulative Year 2030 Baseline Plus Project conditions. Mitigation Measure TRANS-6, consisting of providing protected/permitted left-turn phasing on the eastbound and westbound 40th Street approaches, changing signal cycle lengths, and optimizing signal timing at the intersection, would mitigate the impact to a less-than-significant level. As shown in Table 1, this impact would continue to be significant if Village Drive is moved and the proposed mitigation measure would continue to mitigate the impact.

FEHR & PEERS
TRANSPORTATION CONSULTANTS

TABLE 1
INTERSECTION LOS SUMMARY

Scenario	Peak Hour	EIR Analysis[1]				Village Drive Realigned[2]			
		Telegraph Ave. / 40th St.		Telegraph Ave. / Village Drive		Telegraph Ave. / 40th St.		Telegraph Ave. / Village Drive	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Existing Plus Project	AM	18.9	B	15.7	B	18.9	B	16.2	B
	PM	25.7	C	8.1	A	25.7	C	8.1	A
Cumulative Year 2015 Baseline Plus Project	AM	26.4	C	10.1	B	26.3	C	14.1	B
	PM	42.3	D	17.2	B	42.0	D	17.6	B
Cumulative Year 2030 Baseline Plus Project	AM	**82.8**	**F**	15.5	B	**82.5**	**F**	16.1	B
	PM	**90.5**	**F**	16.8	B	**90.9**	**F**	17.1	B
Cumulative Year 2030 Baseline Plus Project Mitigated	AM	54.5	D	9.3	A	54.6	D	9.4	A
	PM	53.5	D	8.3	A	53.4	D	8.2	A

Notes: **Bold** values denote significant impacts.
1. Based on *MacArthur Transit Village Project Draft Environmental Impact Report*, January 2008.
2. Village Drive moved north by 60 feet. All other analysis parameters same as the EIR analysis.
Source: Fehr & Peers, 2008 and 2010.

Based on our analysis, the proposed realignment of Village Drive would not cause any new impacts, or a substantial increase in the severity of previously identified impacts, at the two studied intersections. The previously identified impact at Telegraph Avenue/40th Street intersection would continue to be significant and the mitigation measure identified in the EIR would continue to mitigate the impact. Thus, the proposed changes would remain consistent with the findings of the certified project EIR.

INCREASE IN THE NUMBER OF PARKING SPACES IN THE BART GARAGE

The current MacArthur BART Station parking lot provides 618 parking spaces. The project as analyzed in the EIR would have reduced the number of parking spaces to about 300 spaces. Although the project would have reduced the number of parking spaces available for BART riders by 318 spaces, the traffic impact analysis conservatively assumed that the BART parking garage would continue to generate the same amount of AM and PM peak hour vehicle trips as existing conditions in order to present a "worst case" analysis (Draft EIR pages 172 and 173). However, all BART generated trips were reassigned to the new garage to account for the existing BART parking lot driveways that would be eliminated.

The current FDP would increase the number of parking spaces in the BART garage to 483 spaces (including 33 spaces dedicated to non-BART uses). The BART garage would continue to provide fewer spaces than current conditions. Thus, the EIR analysis and findings, which were based on the current number of parking spaces for BART riders, would continue to be valid, and

the proposed modifications would not cause new significant impacts or a substantial increase in the severity of the previously identified impacts.

WIDENING OF PEDESTRIAN PATH BETWEEN INTERNAL STREET AND WEST MACARTHUR BOULEVARD

Internal Street would remain a cul-de-sac. Due to the redesign of the BART Garage, the current FDP would widen the pedestrian path connecting Internal Street and West MacArthur Boulevard to 26 feet. This would allow the pedestrian path to also serve as emergency vehicle access. Movable bollard would limit vehicular access on the pedestrian path.

The proposed pedestrian path widening would improve pedestrian connection to the south and enhance emergency access for the project. It would not cause any new impacts, or a substantial increase in the severity of previously identified impacts,

REMOVAL OF ON-STREET PARKING ON INTERNAL STREET

The EIR analysis assumed that Village Drive and Internal Street combined would provide up to 45 on-street parking spaces. These spaces would primarily be used by shoppers for the commercial component of the project and visitors to the residential component of the project. The current FDP proposes to remove 18 on-street parking spaces on Internal Street to provide adequate width to accommodate the Fire Services Department requirements. However, The redesigned BART garage would provide 33 spaces dedicated for non-BART uses which would replace the 18 parking spaces removed on Internal Street. Thus, the current FDP would result in 15 additional short-term parking spaces.

Although the EIR analyzed parking as a non-CEQA issue, it identified parking deficit for short term parkers (i.e., visitor and guest parking). The current FDP would provide more short-term parking spaces than the project analyzed for the EIR. However, the project would continue to have a deficit for short-term parking. Although the magnitude of the deficit would be reduced.

CONCLUSIONS

Based on our evaluation as documented above, the proposed modifications would not change the conclusions of the EIR. The proposed modifications would not cause new impacts, or a substantial increase in the severity of previously identified impacts, and the mitigation measures proposed in the EIR would continue to be valid.

Please contact us with questions or comments.

EXHIBIT I

MacArthur Transit Village
Construction Equipment Schedule **1/28/2011**

	Mar-11	Apr-11	May-11 (Tested)	Jun-11 (Tested)	Jul-11	Aug-11	Sep-11 (Tested)	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13
							M -10%															G	TEREX Back Hoe Loader			
							J - 20%															H	48 meter Putzmeister Boom Pump			
							B - 50%															J	1999 Mack Dump truck			
Utilities								B - 35%														K	Fork Lift - Hyster H80XL			
								C - 35%														M	Ingersoll Rand Compressor			
								V - 35%														N	Link Belt 75 ton hydro			
								W - 15%														P	JLG 600 series - 60 ft boom			
								Q - 10%														Q	Delivery Stake Truck - F-450 Super Duty			
								M - 20%														R	Pecco PH 6000			
									AA - 10%													S	Ditchwitch 1030 trencher			
Concrete										G - 10%												T	TEREX Back Hoe Loader			
										J - 5%												U	Hitachi Excavator - EX-550LC-5			
										D - 20%											gas	V	Dynapac (jumping jack) - LT7000			
										H - 10%											gas	W	STIHL - cut-off saw			
										AA - 10%												X	Lincoln Commander 500 welder			
										Q - 10%											gas	Y	Concrete walk behind saw -EDCO SS-20			
Finishes											G - 30%											Z	SAKAI - dirt roller			
Internal & Village																						AA	McNeilus Ready-mix Concrete truck			
Earthwork														B - 80%							gas	AB	Cement Finisher - Multiquip			
														Y -10%								AC	John Deere Skip loader - 210LE			
														J - 60%								AD	Caterpillar grader - 140H			
														Z - 80%								AE	CAT 966F wheel loader			
														W - 10%								AF	Water truck - Sterling LT8500			
Utilities																			B - 50%			AG	CAT D8R - diesel - Bull Dozer			
																			C - 50%			AH	CAT 1055D paver			
																			V - 50%							
																			W - 10%							
																			B - 50%							
																			Q - 10%							
																			M - 10%							
																			AA - 5%							
Paving & Sidewalks																				AC - 20%						
																				Z - 20%						
																				AD - 10%						
																				AA - 20%						
																				C - 20%						
Finishes																										
BRIDGE									1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Earthwork									A - 50%																	
									AE - 50%																	
									AF - 5%																	
									J - 50%																	
									Z - 5%																	
Shoring									E - 5%																	
									F - 5%																	
Concrete										G - 25%																
										D - 25%																
										L - 20%																
Concrete pour days (10 pour days)										Schwing boom pump - 10%																
										(2) AB - 5%																
										Reed C-50HPF pump & 375 cfm																
										AA - 20%																
Rough Framing													(2) D													
													(6) nail compressors													
													(12) skilsaws													
													(1) chain saw													
													L - 50%													
Drywall / Plaster																				D						
																				multiple screw guns						
																				Trailer plaster pumps (35 HP)						
Interior Finishes																							Pneumatic nail guns			
																							Power mitre saw			
																							Screw guns			
Sitework																										

EXHIBIT A