City of Alameda

AlamedaPoint Development Initiative Election Phase II Preliminary Traffic Impact

September 14, 2009

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Executive Summary

On March 26, 2009, a proposed initiative drafted by the developer SCC Alameda Point, LLC (SunCal) and labeled, the Alameda Point Revitalization Initiative (Initiative), was submitted to the City of Alameda. The Initiative contemplates the master development of the former Naval Air Station (NAS) at Alameda Point as a large-scale, mixed-use, transit-oriented development. Based on the information contained in the Initiative, this Phase II election report provides a preliminary evaluation of transportation issues and traffic impacts associated with the development within the Alameda Point boundaries and at key locations within throughout the City. The results of this evaluation are summarized below:

TRANSPORTATION DEMAND MANAGEMENT FINDINGS

The Initiative provides a list of Transportation Demand Management (TDM) strategies that will be considered as future project mitigations to reduce the vehicle trips generated by development at Alameda Point, including vehicle trips to and from the project site. A specific program is not identified in the initiative. Instead, the Initiative proposes a range of TDM strategies focused on promoting alternative modes of transportation, such as shuttles, bus and ferry transit, bicycles, and walking. The following summarizes the findings of an evaluation of the Initiative's proposed TDM strategies:

- **Specific TDM Program**. As outlined in the Initiative, a TDM strategy will be determined through the Environmental Impact Report (EIR) process with details of the specific TDM program developed through the subsequent approval of a Transportation Demand Management Plan. Since the Initiative does not commit to specific TDM strategies as elements of the Project, the City's consultant and staff used its best professional judgment to identify strategies that could reasonably be incorporated into the project, based on funding constraints identified in the Initiative. These assumptions are discussed further in Chapter 2. The traffic impact analysis summarized in this report is based on these assumptions. Depending on the actual TDM strategies approved as part of the TDM Plan, the analysis in this report may understate or overstate the actual traffic impacts on City streets and the potential for diversion to alternative transportation modes.

- **Additional TDM Measures.** While the TDM program contemplated in the Initiative is likely to reduce commute traffic from the proposed project, a greater portion of project-related traffic could be diverted to alternative transportation modes if additional TDM measures were employed. These may include enhancing transit service, increasing the frequency of busses and/or ferries, providing exclusive bus rapid transit lanes where mixed flow lanes were previously contemplated, implementing congestion and parking pricing, providing additional incentives for employers for transit use for their employees, relocating housing closer to transit stations, etc. Many of these are included in the menu of TDM programs listed in the Initiative.

- **Monitoring**. The Initiative does not commit to specific TDM monitoring details and instead lists strategies that may be implemented including employers and residents surveys of all

modes of transportation. Specific details of the TDM monitoring including regular traffic and transit counts at the project entrances and at the City's gateways should be considered. This would allow the TDM program to be adjusted in response to its actual effectiveness. If monitoring indicates that traffic reduction targets are not being achieved, the TDM program should include the implementation of additional TDM strategies, as discussed above.

- **Public Benefit Cap**. The Initiative anticipates that at full buildout of the development, the property and business owners of the development will fund the operation and management of the TDM strategies. However, since the Initiative includes on-site and off-site traffic and transportation improvements in the public benefit cap, the capital improvements associated with the TDM programs appear to be included in the cap and it is unclear whether there will be sufficient monies to fully fund all the identified public benefit projects and necessary TDM capital projects.

- **EIR Mitigation vs. Project Improvement**. Since the Initiative does not commit to a specific TDM program as part of project-related public improvements, it is anticipated that the TDM program will be identified as mitigations through a subsequent EIR process, pursuant to the California Environmental Quality Act (CEQA). Since CEQA allows for mitigations measures to be waived through Statements of Overriding Consideration based on factors including financially infeasible, portions of the TDM program required to mitigate the project's impacts may be determined to be infeasible based on the cost to implement the program. Therefore, the Initiative does not guarantee which specific TDM strategies will be included as part of the development. If the TDM program were committed to as part of the Initiative and not considered strictly as a potential EIR mitigation to the project's traffic impacts, as currently proposed in the Initiative, there would be more certainty that the TDM measures discussed in the Initiative and analyzed in this report would be implemented and the corresponding traffic reductions will be achieved.

- **Land Use Mix**. The land use mix identified in the Initiative includes a broad range of uses within individual zones. While it is important to provide the developer with flexibility to phase the development and meet market demands, the type of land use constructed will directly affect traffic and transportation needs. The City's consultant and staff used its best professional judgment to identify a reasonable land use mix based on the Initiative. If there were several land use options available for a zone, to be conservative, the City typically assumed the higher traffic generator land use. Depending on the actual uses constructed, this analysis may understate or overstate the actual traffic impacts and the potential for diversion to alternative transportation modes. Prior to conducting a traffic analysis for the EIR, more definitive land uses need to be identified, especially for specific non-residential uses (such as retail, services, and schools).

- **Housing and Jobs Mix.** Based on the assumed land use mix, the Initiative proposes fewer retail (-38%), other[1](-59%), and manufacturing (-55%) jobs, but more service (+73%) and

[1] Defined as a broad grouping of job sectors that includes all jobs in Standard Industrial Classifications (SIC) codes 15-17 (construction), 40-49 (transportation, communications, and utilities), 60-67 (finance, insurance, and real estate); and 91-97 (government).

wholesale[2] (+540%) jobs than the existing General Plan. The General Plan proposes three times the jobs (7,895) when compared to the employed residents (2,743) at the buildout of Alameda Point, while the Initiative proposes fewer jobs (9,280) for the number of employed residents (6,715) at the buildout of the AP.

- **Phasing.** The Initiative proposes a single project-level EIR for the full development that includes several development phases that are not identified. Since traffic and transportation impacts are directly related to the land use mix, it is important that any project EIR analyze the traffic impacts of each proposed phase, including specific detail for land use mix and TDM program elements. Ii is unclear whether specific details of future phases will be available at the time of the EIR preparation. Should this be the case, a project-level EIR analysis could be limited to only those phases that are clearly defined in terms of land uses and TDM measures, while the other phases could be analyzed at a programmatic level. As details of future phases are known, a project-level EIR could be conducted at that time.

- **Multi-Modal Corridor**. The Initiative deletes the General Plan policy to construct a landscaped multi-modal corridor for transit, buses, and pedestrians along Ralph Appezzato Memorial Parkway. The inclusion of this corridor may increase traffic diversion to alternative transportation modes considered under the TDM program and therefore reduce traffic impacts associated with the development.

STREET NETWORK FINDINGS

The Initiative proposes parameters for the design and dimension of the various types of streets that will be constructed on-site as part of the development of Alameda Point. The proposed street network includes streets that range from major boulevards to alleys. Usually the street design takes into consideration the amount of traffic that will be using the facility. Since the Initiative did not provide this information, a review of the proposed street network resulted in the following general findings:

- **Travel Lane Dimensions**. The streets should be designed to balance the needs of all users. The travel lane widths for connectors (10 feet) and local streets (9 feet) do not meet existing City standards. Depending on the traffic volumes, percent of trucks, and parking demands expected on these streets, the narrower widths may affect the comfort zones for motorists and bicyclists, reducing the capacity of the streets. These concerns may be addressed by increasing the travel lane width for connectors to 11 feet (12 feet is the current recommended width) and local streets to 10 feet (the current recommended width).

- **Parking Lane Dimensions**. The 7-foot parking lane assumed for the various types of streets in the Initiative do not meet the City standard of 8 feet. As discussed above, depending on the traffic volumes, percent of trucks, and parking demands expected on these streets, the narrower widths may affect the comfort zones for motorists and bicyclists and reduce its overall capacity. An 8-foot parking lane is a more appropriate dimension as per the current City standards.

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[2] Includes a broad range of jobs listed in SIC codes 50-51, including Grocery, Autos, Furniture, Electronics, Clothing, Nursery, Office Supplies and Equipment. etc.

- **Other Street Issues**. It is unclear whether the streets have appropriate turning radii at intersections to accommodate emergency and service vehicle access without having these vehicles cross into the opposing travel lane. Increasing the curb radius may affect the corner lot size and building setbacks. In addition, depending on the street width, utilities may need to be included outside the street right-of-way, requiring utility easements and affecting building setbacks.

TRAFFIC IMPACT ANALYSIS FINDINGS

The scope of work of the traffic impact analysis consists of an evaluation of various traffic performance indicators for future 2035 "Project" vs. "No Project (Existing General Plan)" scenarios at numerous key gateways and intersections throughout the City. The three scenarios analyzed include a "No Project/Existing General Plan" scenario, based on the cumulative 2035 General Plan Buildout; a "Project without TDM" scenario, based on buildout in 2035 of the Project described in the Initiative without any TDM strategies; and a "Project with TDM" scenario, based on buildout in 2035 of the Project with TDM measures. The following provides a summary of the major findings from the traffic impact analysis:

- **Overall Finding**. In general, for all traffic performance indicators evaluated as part of the traffic impact analysis, the "Project without TDM" scenario generated the greatest impacts on traffic in the City. While the "Project with TDM" scenario reduced those impacts, it consistently generated greater impacts than the "No Project/Existing General Plan" scenario due to an overall greater number of housing units and relatively fewer jobs for the amount of housing proposed for the development.

- **Traffic Volumes, Volume-to-Capacity (V/C) Ratios, and Speeds at Gateways**. Based on the standard Institute of Transportation Engineers (ITE) trip generation rates, the Project would generate 91,467 daily trips in 2035. The "Project without TDM" would result in 74,548 daily trips, 18 percent less than the ITE rate. This reduction is attributed to internal trips associated with the proposed land use mix proposed and existing transit levels. The "Project with TDM" would generate 61,561 daily trips, 33 percent less than the ITE rates and 24 percent more than the "No Project/Existing General Plan" scenario. Overall, the results demonstrate that in all scenarios the traffic flow in 2035 is expected to approach or exceed the capacity of the gateways analyzed based on the V/C ratios.

  During the traditional commute directions for the City (outbound morning and inbound evening peak hours), traffic volumes at the gateways under the "Project with TDM" scenario are greater than the "No Project/Existing General Plan" scenario. During the morning peak hour, outbound traffic increases by 6.3 percent, and during the evening peak hour, inbound traffic increases by 4.2 percent under the "Project with TDM" scenario when compared to the "No Project/Existing General Plan" scenario. The average speeds along these street segments follow this same trend in the commute direction during peak hours with the slowest speeds experienced by the "Project without TDM" scenario and faster speeds under the "No Project/Existing General Plan" scenario.
- **Level of Service and Delays at Key Intersections**. During the morning peak hour the "No Project/Existing General Plan" and "Project with TDM" scenarios result in the same

LOS at the key intersections, despite some delays being greater under the "Project with TDM" scenario. During the evening peak hour, the LOS degrades to unacceptable LOS standards for two additional intersections under the "Project with TDM" scenario when compared to the "No Project/Existing General Plan" scenario. Three intersections that maintain acceptable LOS under the "Project with TDM" scenario experience less or equal delay with the "Project with TDM" scenario during the morning and evening peak hours when compared to the "No Project/Existing General Plan" scenario.

- **Vehicle Queues at Key Intersections**. In general, during the morning peak hour, there is not a significant increase in queue lengths between the "No Project/Existing General Plan" scenario and the "Project with TDM" scenario. The only exceptions are:

    - the eastbound through, westbound through and southbound right movements at the intersection of Atlantic Avenue/ Webster Street;
    - the eastbound through for Clement Avenue/Park Street; and
    - the northbound through movement at Blanding Avenue/Tilden Way

    These results imply that traffic from the project and from other parts of the City are diverting from the Posey Tube in the morning due to increased congestion at the Posey Tube. It is noted that there are improvements to the queue lengths with the "Project with TDM" scenario when compared to the "No Project/Existing General Plan" scenario for the westbound through and the southbound through movements at the Clement Avenue/Park Street intersection. This may be attributed to Rapid Bus Transit improvements included in the TDM program analyzed with the project.

    In general, during the evening peak hour, there are additional increases in queue lengths when comparing the "Project with TDM" scenario to the "No Project/Existing General Plan" scenario. This includes:

    - the eastbound through, westbound through, northbound left and southbound right movements at the intersection of Atlantic Avenue/ Webster Street;
    - the northbound through for Clement Avenue/Park Street;
    - the eastbound through, westbound through, and northbound through movements at Blanding Avenue/Tilden Way; and
    - the southbound through at Blanding Avenue/Park Avenue.

    These results imply that traffic to and from the project are using all the studied Estuary crossings to leave/return to the project site. When congestion occurs at the Posey/Webster Tubes, project-related traffic is diverting to the other estuary crossings. It is noted that this analysis did not include potential traffic increases associated with the project on the City of Oakland facilities.

- **Travel Times from the Project Site to Gateways and Regional Roadway**. Travel times under the "Project without TDM" scenario are greater than under the "Project with TDM" scenario, and both project scenarios experience greater travel times than the "No Project/Existing General Plan" scenario. Commute times to I-880 from the project site

for both peak hours are greater in the "Project with TDM" scenario than in the "No Project/Existing General Plan" scenario for morning outbound traffic and evening inbound traffic, the City's typical commute trend. For example, during the morning peak hour, the outbound commute time through the Posey Tube increases from 16 minutes to 20 minutes, a 28 percent increase. Similarly, during the evening peak hour, the inbound commute time through the Webster Tube increases from 16 minutes to 19 minutes, an 18 percent increase. For the reverse commute, however, travel times stay about the same or improve for morning inbound traffic and evening outbound traffic when comparing the "No Project/Existing General Plan" and "Project with TDM" scenarios.

Chapter 1
Introduction

On March 26, 2009 a proposed initiative drafted by the developer SCC Alameda Point, LLC (SunCal) and labeled, the Alameda Point Revitalization Initiative (Initiative), was submitted to the City of Alameda. The Initiative contemplates the master development of the former Naval Air Station (NAS) at Alameda Point as a large-scale mixed-use, transit-oriented development. In accordance with California Elections Code Sec. 9212, the City Council of the City of Alameda directed staff to prepare a Phase I and Phase II election report. The Phase I report, an Executive Summary of the proposed Initiative, was released to the public in May 2009. This Phase II report, prepared by staff, in conjunction with transportation consultants, Dowling Associates and Nelson/Nygaard, provides a preliminary evaluation of transportation issues and traffic impacts within the Alameda Point boundaries and at key locations throughout the City resulting from the Initiative.[3] The proposed scope of work for this report was designed to ensure that this evaluation could easily be transferred to any subsequent environmental analysis required for the Project proposed in the Initiative, thus reducing the future cost of that effort.

Although development at Alameda Point was analyzed for traffic related issues on numerous occasions over the past decade, these previous studies are not directly comparable to a traffic impact analysis of development proposed in the Initiative. The previous studies differ from the Initiative in terms of several key transportation variables, such as amount and type of development, street infrastructure, and Transportation Demand Management (TDM) programs. As a result, the previous analyses provide useful background information, but are not directly applicable to the evaluation of traffic impacts resulting from the Initiative. A review of past studies was conducted and is attached as an Appendix to this report.

This Report discusses the following topics:

Chapter 2. Land-Use and Transportation Proposal for Alameda Point provides a summary of proposed land uses outlined in the Initiative, discusses the proposed transit-oriented development concept; reviews the proposed TDM program, and evaluates the street network concepts proposed in the Initiative.

Chapter 3. Traffic Impact Analysis summarizes the Initiative's potential impacts on traffic performance indicators at key locations in the City, including impacts to traffic volumes, Levels of Service, vehicle delays, vehicle queues and travel times during peak times for future 2035 conditions. These results were compared to the baseline 2035 traffic condition of the City's existing General Plan.

[3] The analysis utilizes the Alameda County Congestion Management Agency's Transportation Demand model to generate peak hour traffic volumes along streets and at intersections based on the ABAG Projection 2007 Land Use data for the City of Alameda and includes additional land use data for the project estimated by staff. The volumes are then used in the Citywide Synchro Model to analyze traffic impacts such as Level of Service in terms of vehicle delays and anticipated vehicle queues at the intersection approaches. TDM program was analyzed with the help of URBEMIS (Urban Emission model).

Chapter 2
Land Use and Transportation Proposal for Alameda Point

This Chapter describes and evaluates the land use and transportation proposal included in the Initiative.

LAND USE

The Initiative proposes a mixed-use, transit-oriented development for the Alameda Point property including:

- Up to 4,346 new housing units
- 186 existing low-cost housing
- Re-use of existing buildings for up to 309 housing units
- Up to 350,000 square feet of retail space
- 3,182,000 square feet of commercial uses, including up to 500,000 square feet in existing buildings
- Up to 260,000 square feet of civic uses
- School
- 600 boat slips
- 145 acres of open space

According to the Initiative, 25 percent of the total housing units or approximately 1,210 housing units would be located at or near the proposed transit hub at the relocated ferry terminal at the Sea Plane Lagoon. The majority of these homes will be vertically mixed among retail and commercial uses, and will be located within one-quarter mile from the transit hub. The remaining 3,593 units will be located further to the north or south of the Sea Plane Lagoon and could contain other land uses including public facilities, commercial, and/or retail.

The core commercial areas will be located to the east of the Sea Plane Lagoon, near the intersection of West Atlantic Avenue and Main Street. The Initiative proposes two business parks that will be located among the housing units – one to the north and one to south of the Sea Plane Lagoon. Each business park would contain a range of land uses including research, offices, public facilities, warehousing, light industrial, maritime industries, and live-work type uses. The Initiative proposes to reuse several of the existing historic structures to the north of the Sea Plane Lagoon, and any existing housing stock at the site may be reused or relocated.

The Initiative also proposes to provide public land uses for a school, library, and a fire station. The exact location of these facilities is not clearly identified in the Initiative, and indicates potential locations to be north of the Sea Plane Lagoon. The Initiative also provides for

approximately 145 acres of open space/parks to be distributed throughout the site including a 23-acre shoreline park at the north side of the Sea Plane Lagoon and a 60-acre Sports Complex near the Oakland estuary.

The intent of the Initiative is to allow reasonable flexibility in land uses, density and intensity of use, and land use boundaries. The Initiative provides this flexibility by listing various land uses that could be accommodated within each land use boundary. Staff has used its best judgment to develop land use assumptions for the traffic analysis by estimating the locations and densities of various types of land uses, consistent with the Initiative; however, if the actual land uses are not developed where they are assumed in this analysis, traffic impacts are likely to be different than the results presented in this report. Table 1 provides a summary of the traffic-generating land uses assumed for this analysis.

Table 1: Land Use Assumptions for Alameda Point

Use	Type	Size	Units
Single Family	Households	730	HH
Condo/Townhouses	Households	4,111	HH
Retail	Retail	350	ksf
Office	Office	1,000	ksf
Civic	Gov't Office	260	ksf
Light Industrial/R&D	Light Industrial	1,000	ksf
Warehousing	Warehousing	1,182	ksf
Elementary School	Institutional	600	Students
Marina	Recreational	600	slips
Sports Complex	Recreational	60	acre
Regional Enterprise Park	Recreational	24	acre
Neighborhood Parks	Recreational	12	acre
Community Parks	Recreational	17	acre
Linear Open Space	Recreational	9	acre
Seaplane Lagoon Waterfront Park	Recreational	23	acre

Source: Land use assumptions from City and Initiative.

ksf = Thousand square feet
HH= Households

Table 2 compares the socio-demographic differences at Alameda Point between existing 2007 conditions, 2035 General Plan buildout and 2035 buildout of the Project proposed in the Initiative. The Initiative is not specific about detailed land uses at the site; this data represents staff and consultant's estimates based on information provided in the Initiative and industry standards. As indicated in Table 2, Alameda Point currently has 361 households and 1,476 jobs. For 2035, the existing General Plan is zoned for 2,000 households and 7,895 jobs, while the Initiative proposes 4,599 (130 % increase) households and 9,280 (18 % increase) jobs.

TRANSPORTATION DEMAND MANAGEMENT

The Initiative provides a list of numerous TDM strategies to reduce single-occupant vehicle use by residents and employees at Alameda Point. This menu of TDM strategies could be employed as part of the proposed development, but the Initiative does not commit to a specific program. The final selection and mix of strategies, as well as the timing of funding and implementation, would be determined at later date through the development and approval of a Transportation Demand Management Plan. Furthermore, the Initiative caps the cost for public benefits and future property assessments that will be used to fund the selected TDM strategies. Since the Initiative does not commit to specific TDM strategies as elements of the Project, staff used its best judgment to identify strategies to be included in the traffic impact analysis described in Chapter 3. The following strategies were selected:

- **Eco Pass:** The Initiative proposes to implement an Eco Pass program that would be funded by assessments on residential and commercial property owners. This program would provide unlimited access to the buses and shuttles to BART for residents and employees.

- **Shuttles and Bus Rapid Transit:** In the first phase of development, the Initiative proposes to implement a dedicated shuttle service with 15-minute headways during weekday peak hours to the 12th Street BART station. The shuttle service would evolve to a Bus Rapid Transit (BRT) service in the later stages of the development. The plan is vague about what actually would be implemented in regards to a BRT. It mentions BRT but then also states that the system would contain queue jumps at intersections and allow the buses to stay in the mixed traffic. Considering this vagueness, staff assumed a Rapid Bus Service (BRS) type of system to Fruitvale BART and a BRT to 12th Street BART. For this analysis staff has assumed 15-minute headways from 6am until 10am and 4pm until 8pm. 20-minute headways off peak and service hours 5 a.m. to 12 a.m.

- **Expanded Ferry Service:** A new ferry terminal at the Sea Plane Lagoon would replace the existing Main Street ferry terminal. It would provide expanded service to San Francisco during the peak times of the day. Currently there are 25 total ferry trips from the Main Street ferry terminal at 30-minute headways. Based upon the information in the Initiative staff has assumed the addition of 10 more trips making a total of 35 trips at 30-minute headways.

Table 2: Comparison of Socio-Demographic Land Use for Alameda Point

Scenario	Socio-Demographic Land Use										
		Household	Employed	School	Jobs						
	Households	Population	Residents	Enrollment	Retail	Service	Other	Agricultural	Manufacturing	Wholesale	Total
Existing Year 2007	361	992	676	398	306	897	160	-	107	6	1,476
2035 Existing General Plan	2,000	5,192	2,743	298	1,122	3,304	2,240	-	1,008	222	7,895
2035 Alameda Point Initiative	4,599	11,037	6,715	600	700	5,723	910	79	450	1,418	9,280
Percent of Full Specific Plan Land Use assumed in each Scenario											
Existing Year 2007	8%	9%	10%	66%	44%	16%	18%	0%	24%	0%	16%
2035 Existing General Plan	43%	47%	41%	50%	160%	58%	246%	0%	224%	16%	85%
2035 Alameda Point Initiative	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

- **Pedestrian and Bicycle Systems and Facilities:** As envisioned in the Initiative, the proposed development includes a network of pedestrian and bicycle facilities that will connect to the transit hub and individual stops to encourage the use of alternative transportation modes.

- **Transit Hub and Transportation Management Coordinator:** A new transit hub would be located at Sea Plane Lagoon that would contain a new ferry terminal with ticket sales, a taxi stand and possibly a casual carpool loading area, travel information, convenience retail, nearby car-sharing, and a nearby bicycle station that may include bicycle share service. The Initiative proposes to hire a Transportation Management Coordinator who would assist residents, workers, and employers in planning their trips, work with other programs to enhance other programs in Alameda, organize transportation fairs, organize ride-matching and van pool programs, and organize incentive programs to increase the use of transit, and other alternate transportation modes. The Coordinator would also evaluate each program's effectiveness, fine tune them, and add additional programs as needed. The Coordinator office would be located at the transit hub.

- **Parking:** The Initiative proposes to reduce existing parking standards for various land uses and to identify maximum ratios for the residential uses. A range of minimum and maximum parking ratios are provided for the commercial and retail uses. The Initiative also proposes several strategies to manage the supply of the parking including; shared parking among compatible uses, parking pricing to maintain an efficient supply and demand, preferential parking for rideshare and alternate fuel modes, valet parking for retail uses, provision of potential mechanical parking, enforcement for both on-street and off-street parking, annual surveys of residents and employees to determine parking needs, residential parking permit programs, guaranteed ride home program, and way-finding systems for parking locations. It is important that parking be carefully allocated to ensure adequate supply for all uses.

The following Table 3 provides a summary of the TDM program assumed for the traffic impact analysis based on the list of strategies described in the Initiative.

Table 3: Summary of TDM Assumptions

Area Characteristics	Unit	Source/Comment
Number of housing units within 1/2 mile radius	4,841	Project description & trip generation assumptions
Employment within 1/2 mile radius	10,916	Assumed land use employment generation
Presence of local serving retail within 1/4 mile (Y/N)	Y	Project description
Transportation Services and Facilities		
Number of daily weekday fixed-route buses stopping w/in 1/4 mile of site	74	ACT website
Number of daily rail or rapid transit buses stopping w/in 1/2 mile of site	320	Nelson\Nygaard Projections
Number of dedicated daily shuttle trips	0	No trips assumed because projection is that shuttle service will be replaced by enhanced bus or BRT service at build-out.
Number of intersections per square mile	391	Alameda Specific Plan, page 63, Figure 5-1
Percent of streets w/in 1/2 mile with sidewalks on one side	0%	Alameda Specific Plan, page 63, Figure 5-1 through 5-8
Percent of streets w/in 1/2 mile with sidewalks on both sides	100%	Alameda Specific Plan, page 63, Figure 5-1 through 5-8
Percent of arterials/collectors with bike lanes (or where suitable, direct parallel routes exist)	43%	Alameda Specific Plan, page 63, Figure 5-1 through 5-8
Transportation Demand Management		
Secure bike parking (at least one space per 20 vehicle parking spaces) (Y/N)	Y	Alameda Specific Plan page 71-73
Showers/changing facilities provided (Y/N)	Y	Alameda Specific Plan page 71-73
Building Management and/or Tenant Programs (Alameda Specific Plan page 71-73)		
Daily Parking Charge	Y	Alameda Specific Plan page 71-73
Free transit passes (Y/N)	Y	Alameda Specific Plan page 71-73
Car-sharing services provided (Y/N)	Y	Alameda Specific Plan page 71-73
Information provided on transportation alternatives (bus schedules, maps) (Y/N)	Y	Alameda Specific Plan page 71-73
Carpool matching programs (Y/N)	Y	Alameda Specific Plan page 71-73
Preferential carpool/vanpool parking (Y/N)	Y	Alameda Specific Plan page 71-73
Dedicated employee transportation coordinator (Y/N)	Y	Alameda Specific Plan page 71-73
Guaranteed ride home program provided (Y/N)	Y	Alameda Specific Plan page 71-73
Employee Telecommuting Program (Y/N)	Y	Alameda Specific Plan page 71-73
Compressed Work Schedule 3/36 (Y/N)	Y	Alameda Specific Plan page 71-73

STREET NETWORK

The proposed on-site circulation system is designed to provide connectivity to the outside street network and to transit locations. It includes amenities for alternate modes to encourage bicycling and walking through out the site. The system also provides a hierarchy of streets including boulevards, parkways, connectors, local streets, and alleys, with boulevard being similar to the City's existing designation of Island Arterials and connectors similar to Island Collectors. The orientation and location of streets are very similar to the Alameda Point Preliminary Development Concept prepared in 2005 and discussed in greater detail in the Appendix. The following provides a brief description of the streets proposed in the Initiative:

West Atlantic Avenue: This street is listed as the primary facility connecting Ralph Appezzato Memorial Parkway (RAMP) to the proposed ferry terminal at the Sea Plane Lagoon. It provides for one lane in each direction for BRT, vehicles, and bicycles, with parking and sidewalks on both sides. The Initiative did not provide information on its transition to RAMP or how the BRT and transit will be accommodated on RAMP as part of this Project.

Boulevards: There are several boulevards proposed with the development that function as island arterial and create a north/south and east/west spine for transportation activity at the site. The purpose of the boulevards is to collect traffic from other boulevards and off-site regional streets and distribute to other boulevards or Project connectors.

Waterfront Parkway: The Waterfront Parkway, located along the perimeter of the Sea Plane Lagoon is designed to enhance the visual characteristics of the open waterfront and function as a typical collector street. The Parkway is proposed to have travel and parking lanes, landscaping, pedestrian and pedestrian zone in the inbound side and a 32-foot wide zone in the outbound edge containing landscaped storm water basin, Class I path and an exclusive pedestrian paseo. This street is proposed to have a 7-foot parking lane; 8-feet is the recommended City width.

Connectors: The Connectors are proposed to be 34 feet wide curb to curb with the primary purpose to connect the local street system to the boulevards or parkways. They are proposed to have 7-foot parking lane and 10-foot travel lanes. These proposed dimensions do not meet the City current recommended standard. Eight feet and eleven feet are appropriate dimensions for parking and travel lanes, respectively.

Connector Street at Open Space: The Connectors at Open Spaces are proposed to be 27 feet wide curb to curb with the primary purpose to connect the local street system to the boulevards or parkways. They are proposed to have 7-foot parking lane and 8 to 10-foot travel lanes. Eight feet and eleven feet are appropriate dimensions for parking and travel lanes, respectively.

Local Streets: These streets are proposed to be 32 feet wide curb to curb with 5-foot sidewalks on both sides and a 5-foot wide landscaped/vegetated swale on one side and 8-foot wide landscaped/vegetated swale area on other side. Eight feet and 10 feet are appropriate dimensions for parking and travel lanes, respectively.

One Way Local Street at Open Space: The One Way Local Streets at Open Spaces are proposed to be 26 feet wide curb to curb with 7-foot parking lane and 12 foot travel lane. An 8-foot parking lane is an appropriate.

Alleys: These streets are to provide access to back side of the properties and are designed only for vehicle and emergency access. They will have a total width of 20 feet curb to curb.

Depending on the traffic volumes, percent of trucks, and parking demands expected on these streets, the narrower widths may affect the comfort zones for motorists and bicyclists, reducing the capacity of the streets. Additional traffic data would be required to determine if these reduced streets widths can be supported by the Public Works Department.

There is insufficient detail in the Initiative to determine whether the proposed street intersections provide appropriate turning radii at intersections to accommodate emergency and large service vehicle (such as ACI integrated waste trucks) access without having these vehicles cross into the opposing travel lane. This can be addressed by increasing the curb radius to an acceptable dimension of providing a wider street section at the approached to the intersections; however, this could affect the corner lot sizes, building setbacks, and lot yield. In addition, depending on the street width, utilities may need to be included outside the street right-of-way, requiring utility easements and affecting building setbacks.

The Initiative does not provide details on the off-site street network that would be enhanced or improved as part of this Project. The current General Plan identifies the planned streets that would be needed to accommodate development in the City. In addition, it is unclear why the current General Plan Policy 9.4.s was proposed to be deleted in the Initiative. This policy requires the redesign of RAMP to include a landscaped multi-modal transit corridor for buses, jitneys, or future light rail development. This policy has been replaced by a proposed policy in the Alameda Point Community Plan that limits the improvements to this street to West Atlantic Avenue, which is only inside the Alameda Point area. The deletion of this General Plan policy may affect the traffic diversion associated with TDM measures. For the technical analysis included in this report, staff has assumed all current General Plan planned streets (including the RAMP improvements) would be in place in 2035, which is the future horizon year for the traffic analysis. Therefore, the analysis in this report may understate the actual traffic impacts on City streets and the potential for diversion to alternative transportation modes.

Chapter 3
Traffic Impact Analysis

This Chapter summarizes the scope of work undertaken for the preliminary traffic impact analysis of the proposed Initiative, the results and findings of the analysis, and the methodology and assumptions that support those findings.

SCOPE OF WORK

The scope of work of the traffic impact analysis consists of an evaluation of various traffic performance indicators for future 2035 "Project" vs. "no Project" scenarios at numerous key gateways and intersections throughout the City. This analysis is not intended to be sufficient for environmental review pursuant to CEQA, but could serve as a basis for any subsequent environmental analysis, potentially resulting in cost savings to the Project applicant.

Traffic Impact Analysis Scenarios
The traffic impact analysis relies on a long-range snapshot of traffic conditions and cumulative impacts for 2035 when full build-out of Alameda Point is expected. The analysis evaluated the impacts for the following three scenarios:

1. **No Project General Plan**: 2035 General Plan Buildout (2003 General Plan Amendment [GPA])
2. **Project without TDM:** 2035 Initiative Proposal without TDM measures
3. **Project with TDM**: 2035 Initiative Proposal with select TDM measures

A more detailed explanation of what assumptions were made for each of these scenarios is provided in the subsequent Methodology and Assumptions section in this Chapter.

Traffic Performance Indicators
The following key performance indicators were analyzed for each of the three scenarios to assess the impacts that the Initiative is likely to have on traffic throughout the City:

- Traffic volumes, volume-to-capacity ratios and speeds at gateways
- Level Of Service (LOS), volume-to-capacity ratios, and vehicle delays at key intersections
- Vehicle queues at key intersections
- Travel time from the Project site to gateways and regional roadways

Locations Analyzed
The traffic impact analysis in this report evaluated the impacts of each of the scenarios on the following locations within the City:

- Gateways:
    - Posey Tube
    - Webster Tube
    - Park Street Bridge
    - Fruitvale Avenue Bridge
    - High Street Bridge

- Key Intersections:
    - Atlantic/Ralph Appezzato Memorial Parkway/Webster Street
    - Clement Avenue/ Park Street
    - Tilden Way/Blanding Avenue/Fernside Boulevard
    - Constitution Way/Marina Village Parkway
    - Buena Vista Avenue/Sherman Street
    - Blanding Avenue/Park Street
    - Stargell Avenue/Webster Street (future)
    - Queue Jump lane at Mariner Square Drive and Constitution Way (future)

FINDINGS AND RESULTS

The results of the analysis are summarized below according to each performance indicator.

Traffic Volumes, Volume-to-Capacity Ratios, and Speeds at Gateways
A comparison of total cumulative vehicle trips during the morning and evening peak hours for each of the three scenarios is presented in Table 4. The trip reductions due to the TDM measures were divided into two pieces, Travel Demand Model built-in reductions and additional reductions due to the proposed TDM program by the Initiative. Based on the standard Institute of Transportation Engineers (ITE) trip generation rates, the Project would generate 91,467 daily trips in 2035. The Project with model built-in TDM measures would result in 74,548 daily trips, 18 percent less than the ITE rate. The Project with Initiative's proposed TDM program would generate 61,561 daily trips, 33 percent less than the ITE rates and 24 percent more than the No Project General Plan scenario.

Tables 5 and 6 compare morning and evening peak hour traffic volumes generated solely by development at Alameda Point for the Project without TDM and the Project with TDM scenarios at the gateways. As expected, the total traffic volumes generated by Alameda Point development crossing the estuary gateways are less when a TDM program is implemented. Although the traffic analysis assumes a 33% reduction in peak hour traffic volumes for the Project with implementation of the proposed TDM program, the traffic volume reduction at the gateways are 18%. Therefore, 15% of the TDM reductions are internal to the City. However, implementation of the TDM measures results in a slight increase in the percent of total Project trips that use the Posey/Webster Tube. This increase is attributable to people from Alameda Point and other parts of the City adjusting their travel patterns to use the increased available capacity at the tubes resulting from the implementation of TDM.

Table 4: Comparison of Vehicle Trips for Daily, AM and PM peak

Scenario	VehicleTrips							Percent Vehicle Trips over ITE						
	Daily	AM Peak			PM Peak			Daily	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total		In	Out	Total	In	Out	Total
Existing 2007 Model	10,284	462	260	722	302	401	703	11%	11%	7%	9%	7%	8%	7%
2035 Existing GP Model	49,552	2,236	1,272	3,508	1,340	2,042	3,382	54%	53%	37%	46%	30%	40%	36%
2035 Project Model	74,548	3,218	3,152	6,370	3,016	2,951	5,967	82%	76%	91%	83%	68%	58%	63%
2035 Project with TDM	61,561	2,657	2,603	5,260	2,491	2,437	4,927	67%	63%	75%	68%	57%	48%	52%
2035 Project Standard ITE	91,467	4,219	3,478	7,697	4,407	5,097	9,503	100%	100%	100%	100%	100%	100%	100%

ITE – Institute of Transportation Engineers

Table 5: Project Trip Distribution at Gateways – AM Peak Hour

Gateway	Direction	2035 with Project - AM		2035 with Project and TDM - AM	
		Volume	Percent of Total Project Trips	Volume	Percent of Total Project Trips
Posey Tube	Outbound	1,174	37%	1,005	39%
Park St	Outbound	123	4%	62	2%
Fruitvale	Outbound	121	4%	102	4%
High St	Outbound	46	1%	31	1%
Total		**1,464**	**46%**	**1,200**	**46%**
Webster Tube	Inbound	1,024	32%	862	32%
Park St	Inbound	168	5%	112	4%
Fruitvale	Inbound	169	5%	142	5%
High St	Inbound	86	3%	69	3%
Total		**1,447**	**45%**	**1,185**	**45%**

Table 6: Project Trip Distribution at Gateways – PM Peak Hour

Gateway	Direction	2035 with Project - PM		2035 with Project and TDM - PM	
		Volume	Percent of Total Project Trips	Volume	Percent of Total Project Trips
Posey Tube	Outbound	954	32%	797	33%
Park St	Outbound	109	4%	82	3%
Fruitvale	Outbound	162	5%	127	5%
High St	Outbound	75	3%	53	2%
Total		**1,300**	**44%**	**1,059**	**43%**
Webster Tube	Inbound	1,130	37%	950	38%
Park St	Inbound	122	4%	86	3%
Fruitvale	Inbound	120	4%	87	3%
High St	Inbound	41	1%	34	1%
Total		**1,413**	**47%**	**1,157**	**46%**

While Tables 5 and 6 presented the trips generated solely from development at Alameda Point, Tables 7 and 8 compare total cumulative traffic volumes at the gateways, and the resulting volume to capacity (V/C) ratios and speeds for the morning and afternoon peak hours, respectively, for each of the scenarios. The V/C ratio indicates the operational conditions along a street segment. A ratio of above one indicates that the volume of vehicles on the street exceeds the street's capacity and is an indicator of traffic congestion. Average speed is an estimate of the travel speed that a motorist could expect along the street segment. This is another indicator of congestion. It should be noted that this speed estimate does not take into account the full operational characteristics of the street including signal coordination, cycle lengths, etc. that may be used to improve traffic flow.

Summary of Findings

- The results show a general trend that impacts are more significant with the full Project than with the existing general plan, and then these impacts are reduced by application of TDM strategies.

- In general, the impacts are the greatest under the Project without TDM scenario and the Project with TDM results in lesser impacts. In most instances, both Project scenarios result in greater impacts than the No Project General Plan scenario.

- During the traditional commute directions for the City, outbound morning and inbound evening peak hours, traffic volumes at all studied locations increase with the Project with TDM scenario when compared to the No Project General Plan scenario. Overall, during the morning peak hour, outbound traffic increases by 6.3 percent and during the evening peak hour, inbound traffic increases by 4.2 percent under the Project with TDM scenario when compared to the No Project General Plan scenario. These results may be attributed to the difference between job producing retail and commercial uses contained in the 2003 GPA and the Initiative. In particular, the proposed Project has less retail (-38%), other (-59%), and manufacturing (-55%) jobs, but more service (+73%) and wholesale (+540%) jobs when compared to the existing GPA.

- Although the traffic analysis assumes a 33% reduction in peak hour traffic volumes for the Project with implementation of the proposed TDM program, the traffic volume reduction at the gateways are 18%. Therefore, 15% of the TDM reductions are internal to the City.

- The average speeds along these street segments follow this same trend in the commute direction during peak hours with the slowest speeds experienced by the Project without TDM scenario and the fastest speeds under the No Project General Plan scenario.

- The traffic volumes during the reverse commute or, the inbound morning and outbound evening peak hours, are slightly less in the Project with TDM scenario than the No Project General Plan scenario. Since there are limited differences in the volume for the reverse commute between the No Project General Plan scenario and the Project without

TDM scenario, the reverse commute is proportionally benefiting more by the TDM program proposed by the Initiative.

- While implementation of TDM measures result in an overall reduction in trips from the Project, as capacity becomes available at the gateways, vehicles that may have been diverted to other local streets in the City are redirected to the gateways and utilizing the available capacity.

- While the TDM program reduces commute traffic from the Project, a larger portion of Project related traffic could be diverted to alternative transportation modes if additional TDM measures were employed. These may include congestion and parking pricing, increased transit service by adding more busses or ferries, additional incentives for employers for transit use for their employees, construction of housing closer to the transit stations, etc.

Table 7: Traffic Volumes, V/C Ratios and Speeds at Gateways – AM Peak Hour

Gateway		2035 No Project - AM			2035 with Project - AM			2035 with Project and TDM - AM		
	Direction	Volume	V/C	Speed	Volume	V/C	Speed	Volume	V/C	Speed
Posey Tube	Outbound	**3,232**	1.11	3.4	**3,432**	1.18	2.2	**3,377**	1.16	2.4
Park St	Outbound	**2,172**	1.14	2.1	**2,410**	1.27	1.2	**2,359**	1.24	1.3
Fruitvale	Outbound	**1,703**	0.96	29.3	**1,814**	1.01	14.3	**1,800**	1.01	15.5
High St	Outbound	**981**	1.09	7.1	**1,085**	1.21	3.7	**1,064**	1.19	4.1
Total/ Average		**8,088**	1.075	10.475	**8,741**	1.1675	5.35	**8,600**	1.15	5.825
Webster Tube	Inbound	**3,346**	1.12	4.4	**3,386**	1.13	4	**3,324**	1.11	4.7
Park St	Inbound	**2,160**	1.14	2.2	**2,149**	1.13	2.3	**2,092**	1.1	2.9
Fruitvale	Inbound	**1,645**	0.91	29.5	**1,648**	0.92	29.5	**1,596**	0.89	29.7
High St	Inbound	**1,037**	1.15	4.7	**1,071**	1.19	3.9	**1,033**	1.15	4.8
Total/ Average		**8,188**	1.08	10.2	**8,254**	1.0925	9.925	**8,045**	1.06	10.525

2035 No Project = No Project General Plan Scenario

Table 8: Traffic Volumes, V/C Ratios and Speeds at Gateways – PM Peak Hour

Gateway		2035 No Project - PM			2035 with Project - PM			2035 with Project and TDM - PM		
	Direction	Volume	V/C	Speed	Volume	V/C	Speed	Volume	V/C	Speed
Posey Tube	Outbound	**3,126**	1.08	4.9	**3,171**	1.09	4.1	**3,123**	1.08	4.9
Park St	Outbound	**2,152**	1.13	2.3	**2,205**	1.16	1.9	**2,149**	1.13	2.3
Fruitvale	Outbound	**1,651**	0.92	29.5	**1,729**	0.96	29	**1,654**	0.92	29.5
High St	Outbound	**1,028**	1.14	5	**1,037**	1.15	4.7	**1,018**	1.13	5.3
Total/ Average		**7,957**	1.0675	10.425	**8,142**	1.09	9.925	**7,944**	1.07	10.5
Webster Tube	Inbound	**3,569**	1.19	2.8	**3,765**	1.26	2.1	**3,711**	1.24	2.3
Park St	Inbound	**2,206**	1.16	1.9	**2,352**	1.24	1.3	**2,323**	1.22	1.4
Fruitvale	Inbound	**1,738**	0.97	28.8	**1,793**	1	24	**1,776**	0.99	27.2
High St	Inbound	**1,051**	1.17	4.4	**1,115**	1.24	3.2	**1,114**	1.24	3.2
Total/ Average		**8,564**	1.1225	9.475	**9,025**	1.185	7.65	**8,924**	1.17	8.525

2035 No Project = No Project General Plan Scenario

Level of Service, Volume-to-Capacity Ratios, and Vehicle Delays at Key Intersections

Level of Service (LOS) is a traffic performance measure used to measure congestion at intersections.[4] The methodology for measuring LOS calculates a weighted average stop delay in seconds per vehicle at a signalized intersection, and assigns a level of service designation based upon the delay. Table 9 lists the LOS criteria and delay ranges for signalized intersections. The results for the eight key intersections in terms of LOS, V/C ratios, and delay are displayed in Tables 10 and 11 below for all three scenarios plus today's existing conditions.

[4] To determine the LOS at the eight selected intersections, turning movement volumes were obtained from the traffic demand model for 2035. This is the same methodology used for the recent TE update. The intersection volumes were used as inputs into the SYNCHRO model to calculate LOS based on the Highway Capacity Manual (HCM) 2000 operational methodology after optimizing the signal operation.

Table 9: Level of Service Threshold for Signalized Intersections

Level of Service (LOS)	Average Delay (seconds/vehicle)	Description
A	≤ 10	Very Low Delay: This level of service occurs when progression is extremely favorable and most vehicles arrive during a green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	> 10 and ≤ 20	Minimal Delays: This level of service generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.
C	> 20 and < 35	Acceptable Delay: Delay increases due to fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level of service. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	> 35 and < 55	Approaching Unstable Operation/Significant Delays: The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume / capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55 and ≤ 80	Unstable Operation/Substantial Delays: These high delay values generally indicate poor progression, long cycle lengths, and high volume / capacity ratios. Individual cycle failures are frequent occurrences.
F	> 80	Excessive Delays: This level, considered unacceptable to most drivers, often occurs with oversaturation (that is, when arrival traffic volumes exceed the capacity of the intersection). It may also occur at high volume / capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Source: *Highway Capacity Manual* (HCM), Transportation Research Board, Washington, DC, 2000, Chapter 16 (Signalized Intersections)

Summary of Findings

- The same general trend was observed for LOS, V/C ratios, and average vehicle delays at key intersections as was observed for the gateways. That is, impacts are more significant with the Project scenarios than with the No Project General Plan scenario, and the implementation of TDM measures reduces the impacts associated with the Project.

- During the morning peak hour the No Project General Plan and Project with TDM scenarios result in the same LOS at the key intersections, despite some delays being greater under the Project with TDM scenario. While there is no change in the LOS at these intersections, the City's Transportation Element (TE) requires mitigation for impacts that increase delay by four seconds or more if an intersection is operating at LOS D or less prior to the Project traffic. As a result, mitigations, such as the implementation of additional TDM measures, would most likely be required even for the Project with TDM scenario as part of a subsequent environmental review process.

- During the evening peak hour, the LOS is degraded for two intersections with the Project with TDM scenario when compared to the No Project General Plan scenario: (1) the intersection of Webster Street/RAMP degrades from LOS D to LOS E, a 37 percent or 18 second increase in delay; and (2) the intersection of Tilden/Blanding/Fernside Blvd. degrades from LOS D to LOS F, an 82 percent or 39 second increase in delay. In addition, under the Project with TDM scenario, other intersections experience greater delays than the No Project General Plan scenario without affecting the LOS. As with the morning peak conditions, the TE would require mitigation for impacts that increase delay by four seconds or more at an intersection that was already at LOD D or worse, such as the implementation of additional TDM measures.

- Three intersections experience less or equal delay with the Project with TDM scenario during the morning and evening peak hours when compared to the No Project General Plan scenario.

Table 10: Level of Service, V/C Ratios and Vehicle Delays at Key Intersections – AM Peak Hour

No	Intersection	Existing Conditions AM			2035 Existing General Plan AM			2035 with Project AM			2035 with Project and TDM AM		
		Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS
1	Webster St./ Ralph Appezetto Mem Pkwy.	53.4	0.88	D	**57.1**	0.93	**E**	**57.3**	0.94	**E**	**55.7**	0.91	**E**
2	Park St./Clement Ave.	37.8	0.96	D	**147.2**	**1.50**	**F**	**196.4**	**1.75**	**F**	**150.9**	**1.55**	**F**
3	Tilden/Blanding/Fernside Blvd.	15.1	0.65	B	**189.6**	**1.69**	**F**	**236**	**1.84**	**F**	**219.9**	**1.82**	**F**
4	Constitution Wy./Marina Village	25.0	0.61	C	53.2	0.95	D	53.6	0.95	D	50.2	0.95	D
5	Sherman St./Buena Vista Ave.	12.0	0.52	B	15.7	0.55	B	15.7	0.57	B	15.7	0.55	B
6	Park St./Blanding Ave.	**91.5**	**1.33**	**F**	**189.8**	**1.67**	**F**	**268.9**	**1.97**	**F**	**242.3**	**1.87**	**F**
7	Stargell (Tinker) Ave./Webster St.	Future Intersection			7.9	0.50	A	10.1	0.58	B	9.2	0.56	A
8	Mariner Square Dr./Constitution Way	Future Intersection			3.3	0.67	A	3.6	0.7	A	3.6	0.7	A

Table 11: Level of Service, V/C Ratios and Vehicle Delays at Key Intersections – PM Peak Hour

No	Intersection	Existing Conditions PM			2035 Existing General Plan PM			2035 with Project PM			2035 with Project and TDM PM		
		Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS
1	Webster St./ Ralph Appezetto Mem Pkwy.	41.7	0.74	D	48.9	0.91	D	**81.7**	**1.1**	**F**	**66.9**	1.00	**E**
2	Park St./Clement Ave.	24.7	0.84	C	**154.3**	**1.51**	**F**	**164.7**	**1.56**	**F**	**160.5**	**1.54**	**F**
3	Tilden/Blanding/Fernside Blvd.	12.1	0.56	B	48.2	**1.11**	D	**90.8**	**1.35**	**F**	**87.6**	**1.32**	**F**
4	Constitution Wy./Marina Village	24.6	0.56	C	31.6	0.73	C	32.4	0.73	C	26.6	0.67	C
5	Sherman St./Buena Vista Ave.	29.6	0.60	C	22.4	0.56	C	21.5	0.54	C	21.6	0.54	C
6	Park St./Blanding Ave.	22.2	0.85	C	**125.4**	**1.25**	**F**	**139.0**	**1.25**	**F**	**135.6**	**1.25**	**F**
7	Stargell (Tinker) Ave./Webster St.	Future Intersection			11.9	0.67	B	12.6	0.73	B	11.3	0.68	B
8	Mariner Square Dr./Constitution Way	Future Intersection			2.5	0.55	A	2.5	0.55	A	2.5	0.55	A

Vehicle Queues at Key Intersections

The traffic queues at the key intersections were also analyzed. These queues represent the maximum vehicle length that can be expected at the intersection 95 percent of the time, or the 95th percentile queue for each approach. The results at the eight study intersections are shown in Tables 12 and 13.

To analyze queue lengths, the traffic model uses the actual storage length of an approach as a data input. When queues exceed the operational capacity, the model attempts to balance queues over few signal cycle lengths. However, if queues continue to exceed the operational capacity, the traffic model stops balancing the queues and reports length of queues with an advisory that queue lengths may actually be longer. This situation is represented in Tables 12 and 13 by the "#" sign.

Summary of Findings

- In general, during the morning peak hour, there is not a significant increase in queue lengths between the No Project General Plan and the Project with TDM scenarios. The only exceptions are:
    - the eastbound-through, westbound-through and southbound-right movements at the intersection of Atlantic Avenue/ Webster Street;
    - the eastbound-through for Clement Avenue/Park Street; and
    - the northbound-through movement at Blanding Avenue/Tilden Ways

  These results imply that traffic from the Project and from other parts of the City are diverting from the Posey Tube in the morning due to increased congestion at the Posey Tube.

- It should be noted that there are improvements to the queue lengths under the Project with TDM scenario when compared to the No Project General Plan scenario for the westbound-through and the southbound-through movements at the Clement Avenue/Park Street intersection. This may be attributed to RBS improvements included in the TDM program analyzed with the Project.

- In general, during the evening peak hour, the Project with TDM scenario experiences greater queue lengths than the No Project General Plan scenario. The affected intersections include:

    - the eastbound-through, westbound-through, northbound-left and southbound-right movements at the intersection of Atlantic Avenue/ Webster Street;
    - the northbound-through for Clement Avenue/Park Street;
    - the eastbound-through, westbound-through, and northbound-through movements at Blanding Avenue/Tilden Way; and
    - the southbound-through at Blanding Avenue/Park Avenue.

  These results imply that traffic to and from the Project are using all the studied estuary crossings to leave/return to the Project site. As expected, when congestion occurs at the

Posey/Webster Tubes, Project-related traffic is diverting to the other estuary crossings. It is noted that this analysis did not include potential traffic increases associated with the Project on the City of Oakland facilities.

- In addition, queues for virtually all approaches of the intersection of Constitution Way/Marina Village Parkway improve with the Project with TDM scenario during the evening peak hour. This could be directly attributed to the traffic diversion resulting from the BRT and RBS included in this scenario.

- Although not analyzed as part of this analysis, it is reasonable to assume that due to the queues reported, traffic will divert to other streets within the grid network. It is recommended that the traffic analysis for the EIR include an analysis using SIMTRAFFIC, a micro-simulation model, for a more thorough queuing analysis. This is especially important to determine the length of queue jump lanes at major intersections.

Table 12: Vehicle Queues at Key Intersections – AM Peak Hour

Intersection	Measure Description	Turning Movement											
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Atlantic Ave. & Webster St.	Storage Length (ft)	230	1195	1195	130	398		160	796		170	1248	1248
	Existing 2007	*334*	264	22	49	216		*#257*	*#737*		76	231	*#341*
	No Project	210	264	11	56	*#514*		*#331*	*#594*		*#172*	273	406
	Project	215	*#473*	72	59	*#548*		*#373*	*#488*		*#172*	270	*#632*
	Project + TDM	*232*	*#460*	55	57	*#540*		*#373*	*#493*		*#172*	270	*#490*
Clement Ave & Park St	Storage Length (ft)		239			742			683		100	252	
	Existing 2007		*#290*			109			276		*m#91*	*m44*	
	No Project		*#618*			*#718*			*#796*		*m#83*	*m#335*	
	Project		*#803*			*#700*			*#825*		*m#78*	*m201*	
	Project + TDM		*#692*			*#647*			*#780*		*m#78*	*m109*	
Blanding Av. & Tilden Wy	Storage Length (ft)		397	397		166	50	110	240	90	125	614	70
	Existing 2007		64	9		*184*	*63*	14	132	32	*#145*	119	34
	No Project		*#464*	12		*#1151*	*338*	23	*#884*	0	*#631*	380	*111*
	Project		*#465*	11		*#872*	*264*	23	*#973*	0	*#564*	433	*122*
	Project + TDM		*#442*	12		*#1178*	*296*	23	*#947*	0	*#567*	392	*116*
Constitution Wy & Marina Village Pkwy.	Storage Length (ft)		842	842	130		900		984	984	326	326	
	Existing 2007				83		46		*#496*		145	22	
	No Project		*#406*	16	22		*#353*		*#718*	53	10	36	
	Project		*#407*	16	22		*#354*		*#724*	65	12	39	
	Project + TDM		*#409*	16	22		*#342*		*#735*	59	10	36	
Buena Vista Av & Sherman St	Storage Length (ft)		3193			2736	280	45	686		140	731	
	Existing 2007		130			107	0	33	202		92	38	
	No Project		100			50	42	39	198		*#98*	43	
	Project		107			47	42	32	204		*#100*	44	
	Project + TDM		106			48	42	33	195		*#99*	43	
Blanding Ave & Park St	Storage Length (ft)		553			626			252		225	225	
	Existing 2007		*#265*			*#400*			*m#151*		12	144	
	No Project		*#681*			*#552*			*m#608*		20	*#983*	
	Project		*#732*			495			*m#615*		20	*#1038*	
	Project + TDM		*#688*			487			*m#639*		20	*#995*	
Stargell Ave & Webster St	Storage Length (ft)	211		175				170	1248			667	667
	Existing 2007												
	No Project	145		18				59	203			114	0
	Project	*227*		16				64	220			159	0
	Project + TDM	189		16				60	216			137	0
Bus Only Connector & Constitution Wy	Storage Length (ft)						192		467				
	Existing 2007												
	No Project						30		247				
	Project						31		281				
	Project + TDM						31		280				

Notes: Queues report from Synchro , Dowling Associates, Inc.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

EB – Eastbound , WB – Westbound, NB – Northbound, SB – Southbound,
L – Left Turn Lane, R - Right Turn Lane, T - Through Lane, or combination of through/right and through//left
Storage Length represents the actual storage capacity of a lane at the intersection

Table 13: Vehicle Queues at Key Intersections – PM Peak Hour

Intersection	Measure Description	Turning Movement											
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Atlantic Ave. & Webster St.	Storage Length (ft)	230	1195	1195	130	398		160	796		170	1248	1248
	Existing 2007	*#375*	239	39	67	95		138	285		114	*#548*	*#319*
	No Project	197	392	180	114	*#597*		*#77*	269		*#151*	*#528*	387
	Project	224	*#555*	77	91	*#724*		*#228*	277		*#146*	*#556*	*#662*
	Project + TDM	217	*#532*	55	90	*#692*		*#211*	289		*#157*	*#529*	*#715*
Clement Ave & Park St	Storage Length (ft)		239			742			683		100	252	
	Existing 2007		*#250*			83			236		*n#127*	*m53*	
	No Project		*#1216*			284			*#805*		*n#184*	*m189*	
	Project		*#1245*			319			*#866*		*n#171*	*m166*	
	Project + TDM		*#1216*			307			*#861*		*n#175*	*m167*	
Blanding Av. & Tilden Wy	Storage Length (ft)		397	397		166	50	110	240	90	125	614	70
	Existing 2007		83	7		117	0	6	103	24	*#163*	115	0
	No Project		184	8		*#555*	*157*	8	*#425*	0	*#276*	*#441*	62
	Project		*#305*	7		*#712*	*109*	8	*#526*	0	*#287*	*#433*	*103*
	Project + TDM		*#238*	7		*#704*	*100*	8	*#540*	0	*#276*	*#417*	*83*
Constitution Wy & Marina Village Pkwy.	Storage Length (ft)		842	842	130		900		984	984	326	326	
	Existing 2007				*#306*		49		271		147	28	
	No Project		198	36	82		321		*#504*	23	10	121	
	Project		185	36	89		313		*#502*	28	10	135	
	Project + TDM		108	37	72		289		*#404*	23	6	102	
Buena Vista Av & Sherman St	Storage Length (ft)		3193			2736	280	45	686		140	731	
	Existing 2007		169			182	0	28	67		*#400*	141	
	No Project		153			123	53	*59*	70		*#301*	165	
	Project		131			122	53	*63*	72		*#301*	163	
	Project + TDM		132			124	53	*61*	72		*#301*	166	
Blanding Ave & Park St	Storage Length (ft)		553			626			252		225	225	
	Existing 2007		*#194*			130			*m175*		12	*#422*	
	No Project		*#693*			199			*m155*		20	*#1067*	
	Project		*#654*			205			*m150*		20	*#1173*	
	Project + TDM		*#652*			205			*m151*		20	*#1153*	
Stargell Ave & Webster St	Storage Length (ft)	211		175				170	1248			667	667
	Existing 2007												
	No Project	*271*		19				40	146			232	0
	Project	*297*		19				42	137			272	0
	Project + TDM	*275*		19				39	143			236	0
Bus Only Connector & Constitution Wy	Storage Length (ft)						192		467				
	Existing 2007												
	No Project						23		147				
	Project						23		149				
	Project + TDM						23		146				

Notes: Queues report from Synchro , Dowling Associates, Inc.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

E

B – Eastbound , WB – Westbound, NB – Northbound, SB – Southbound,
L – Left Turn Lane, R - Right Turn Lane, T - Through Lane, or combination of through/right and through//left
Storage Length represents the actual storage capacity of a lane at the intersection

Travel Time from Project Site to Gateways and Regional Roadways
Travel times were estimated for all scenarios for common commute routes to and from the Project site. Tables 14 and 15 summarize the travel times for the morning and evening peak hour in both directions.[5]

Summary of Findings

- The same general trend was observed for travel times as was observed for other traffic performance indicators: travel times in the Project without TDM scenario are greater than in the Project with TDM scenario, and both Project scenarios experience greater travel times than the No Project General Plan scenario.

- Commute times to I-880 for both peak hours are greater in the Project with TDM scenario than in the No Project General Plan scenario for morning outbound traffic and evening inbound traffic, the City's typical commute trend. For example, during the morning peak hour, the outbound commute time through the Posey Tube increases from 16 minutes to 20 minutes, a 28 percent increase. Similarly, during the evening peak hour, the inbound commute time through the Webster Tube increases from 16 minutes to 19 minutes, an 18 percent increase.

- For the reverse commute, however, travel times stay about the same or improve for morning inbound traffic and evening outbound traffic when comparing the No Project General Plan and Project with TDM scenarios. This is similar to the trends noted in the traffic volume discussion. These results may be attributed to the difference between job producing retail and commercial uses contained in the 2003 GPA and the Initiative.

[5] It should be noted that the travel times from the travel demand model are not fully representative of actual operational times since the model does not account for individual intersection delays and queues. Typically, the Synchro model is used for this purpose. However, since the Synchro model does not include the extensive street network included in the traffic demand model, the travel demand model was utilized for this analysis. Since the travel time results are used primarily as comparison among the scenarios, they serve as a reasonable performance measure for this analysis. For any future EIR analysis for this project, the Synchro model should be upgraded for this analysis.

Table 14: Travel Times from the Project Site to Gateways and Regional Roadways – AM Peak Hour

Gateway	Direction	Travel Times for AM Peak (in minutes)				2035 Project % difference with TDM
		Existing Year	2035 Ex. GP	2035 Project	2035 Project with TDM	
From AP to 880 via Posey Tube	Outbound	6.5	16.0	22.0	20.4	-7%
From AP to Park St bridge	Outbound	9.6	13.1	17.0	16.1	-5%
From AP to Fruitvale Bridge	Outbound	10.1	13.5	16.6	16.5	-1%
From AP to High St Bridge	Outbound	11.0	13.4	17.0	16.2	-5%
Total		**37**	**56**	**73**	**69**	**-5%**
Average		**9.3**	**14.0**	**18.2**	**17.3**	**-5%**
From AP to 880 via Posey Tube	Inbound	5.6	11.9	12.8	11.8	-8%
From AP to Park St bridge	Inbound	9.4	13.1	13.2	12.1	-8%
From AP to Fruitvale Bridge	Inbound	9.7	9.3	9.5	9.3	-2%
From AP to High St Bridge	Inbound	11.1	15.5	15.6	14.9	-4%
Total		**36**	**50**	**51**	**48**	**-6%**
Average		**9.0**	**12.5**	**12.8**	**12.0**	**-6%**

Table 15: Travel Times from the Project Site to Gateways and Regional Roadways – PM Peak Hour

Gateway	Direction	Travel Times for PM Peak (in minutes)				2035 Project % difference with TDM
		Existing Year	2035 Ex. GP	2035 Project	2035 Project with TDM	
From AP to 880 via Posey Tube	Outbound	6.1	12.7	14.2	12.8	-10%
From AP to Park St bridge	Outbound	9.4	12.9	13.8	12.9	-7%
From AP to Fruitvale Bridge	Outbound	9.7	9.4	9.7	9.4	-3%
From AP to High St Bridge	Outbound	11.0	14.1	15.8	14.9	-6%
Total		**36**	**49**	**54**	**50**	**-7%**
Average		**9.1**	**12.3**	**13.4**	**12.5**	**-7%**
From AP to 880 via Posey Tube	Inbound	6.5	16.4	20.5	19.3	-6%
From AP to Park St bridge	Inbound	9.5	13.7	16.1	15.5	-4%
From AP to Fruitvale Bridge	Inbound	9.7	9.2	9.6	9.3	-3%
From AP to High St Bridge	Inbound	11.1	15.2	16.9	16.8	-1%
Total		**37**	**55**	**63**	**61**	**-4%**
Average		**9.2**	**13.6**	**15.8**	**15.2**	**-4%**

METHODOLOGY AND ASSUMPTIONS

In order to provide a general understanding of the traffic impacts at key locations in the City, staff acquired the services of Dowling Associates to analyze the proposed land use and TDM measures using the Alameda County Congestion Management Agency (ACCMA) Travel Demand Model and Synchro, which is a Macroscopic traffic capacity analysis model that implements 2000 Highway Capacity Manual methodology that models an urban traffic network and provides traffic delays and queues at individual intersections. These two transportation models are widely used in the Bay Area and were refined and validated for a localized analysis within the City during the preparation of the 2009 TE.

Travel demand models rely on socio-demographic inputs (population, housing, and jobs) to generate trips and is consistent with the regional forecasting assumptions from the Metropolitan

Transportation Commission and ACCMA. For the Phase II report, the traffic model was updated to include the latest Association of Bay Area Governments (ABAG) 2007 Land Use Projections. Travel demand models are based on an equilibrium assignment algorithm that uses transportation supply and demand and attempts to minimize travel times for all trips until equilibrium is attained. However, the model may not always reach equilibrium due to a number of factors, including the use of only select major streets in the networks, the difficulty of assigning trips to a extensive grid network when the entire grid network is not modeled, and the size of TAZs. As a result, the model may display some minor oscillations and inconsistency at some locations. To address this concern, the traffic consultant used a Furness method to balance the origins and destinations of trips to smooth out the results for the intersections analysis.

As described above, the model methodology relies on a long-range snapshot of traffic conditions and impacts under cumulative conditions for 2035 when full build-out of the Alameda Point is expected. The analysis included the following three scenarios:

1. **No Project General Plan**: 2035 Existing General Plan Buildout (2003 GPA)
2. **Project without TDM:** 2035 Initiative Proposal without TDM measures
3. **Project with TDM**: 2035 Initiative Proposal with select TDM measures

More specifically, the No Project General Plan scenario is an update of the TE projection for 2030 with the following modifications: the model background land use was updated from ABAG Projections for 2005 to ABAG Projections for 2007; a Veterans Affairs medical facility was added to the cumulative Project list and located to the area west of the Alameda Point Project site; and extended the horizon year to 2035. This makes the model consistent with MTC and ACCCMA requirements. This scenario also assumed the same street network and transit assumptions as the TE, including existing bus transit service to Alameda Point, ferry service relocated to the Seaplane Lagoon and RBS no dedicated travel lanes along Lincoln Avenue to the Fruitvale Bridge.

The Project without TDM scenario includes estimates of land use for the Project as identified in the proposed Specific Plan (as shown in Table 16). This scenario assumes only existing transit service to Alameda Point and does not include RBT to the Fruitvale Bridge. It also includes some trip reductions that are embedded in the travel demand model, as described later in this report.

The Project with TDM scenario includes the same land uses for the Project as identified above and includes implementation of selected TDM measures (as discussed in Chapter 2), including BRT to 12th Street BART and RBS to Fruitvale Bridge. The TDM program was analyzed using the URBEMIS traffic model specifically developed to estimate potential TDM trip reductions associated with various TDM measures.

Model Network Assumptions

The roadway and transit network assumptions contained in the travel demand model are consistent with the assumptions used for the 2009 TE update with minor changes to some TAZs to account for differences between the Initiative proposal and the 2003 GPA. This primarily affects TAZ centroid connectors. In addition, since the No Project General Plan scenario

included RBS from Alameda Point to the Fruitvale Bridge, the travel demand model was amended to eliminate this feature in order to develop the Project without TDM scenario.

Trip Generation

The total traffic generated by the proposed development was determined using either the standard ITE trip generation rates or, if ITE did not have a comparable land use, the San Diego Association of Governments (SANDAG) trip generation rates. Table 16 summarizes the total vehicle trips by land use type for the Project for daily and morning and evening peak hour periods. This table does not include the trip reductions that are embedded in the travel demand model for mixed land use, internalization of trips, pass by trips, transit usage, etc. Therefore, this table represents an upper limit of traffic that could potentially be generated for a development of this size located in suburban conditions. As described later in this report, both the traffic demand model and the URBEMIS model employ trip reductions and these trip reductions are incorporated into the traffic impacts analysis.

Table 16: Institute of Transportation Engineers (ITE) Trip Generation Assumptions for Initiative

Use	Type	Size	Units	ITE Code/ SANDAG	Daily Rate	Daily Trips	A.M. Peak Hour Traffic					P.M. Peak Hour Traffic				
							Rate	%In	%Out	In	Out	Rate	%In	%Out	In	Out
Single Family	HH	730	HH	210	9.57	6,986	0.75	0.25	0.75	137	411	1.01	0.63	0.37	464	273
Condo/Townhouses *	HH	4,111	HH	SANDAG	8.00	32,888	0.64	0.20	0.80	526	2,105	0.80	0.70	0.30	2,302	987
Retail	Retail	350	ksf	820	42.94	15,029	1.00	0.61	0.39	214	137	3.73	0.49	0.51	640	666
Office	Office	1,000	ksf	710	11.01	11,010	1.55	0.88	0.12	1,364	186	1.49	0.17	0.83	253	1,237
Civic	Govt Office	260	ksf	733	27.92	7,259	2.21	0.89	0.11	511	63	2.85	0.31	0.69	230	511
Light Industrial/R&D	LI	1,000	ksf	110	6.97	6,970	0.92	0.88	0.12	810	110	0.97	0.12	0.88	116	854
Warehousing	WH	1,182	ksf	150	3.56	4,208	0.30	0.79	0.21	280	74	0.32	0.25	0.75	95	284
Elemenatary School	INST	600	Students	520	1.29	774	0.45	0.50	0.50	135	135	0.15	0.49	0.51	44	46
Marina	Rec	600	slips	420	2.96	1,776	0.08	0.33	0.67	16	32	0.19	0.60	0.40	68	46
Sports Complex*[3]	Rec	60	acre	SANDAG	50.00	3,000	6.50	0.50	0.50	195	195	4.50	0.50	0.50	135	135
Regional Ent. Park	Rec	24	acre	417	4.57	110	0.15	0.57	0.43	2	2	0.20	0.45	0.55	2	3
Neighborhood Parks	Rec	12	acre	See Note 2	2.29	27	0.08	0.57	0.43	1	0	0.10	0.45	0.55	1	1
Community Parks	Rec	17	acre	See Note 2	2.29	39	0.08	0.57	0.43	1	1	0.10	0.45	0.55	1	1
Linear Open space	Rec	9	acre	See Note 2	1.14	10	0.04	0.57	0.43	0	0	0.05	0.45	0.55	0	0
Seaplane Lagoon Waterfront Park*	Rec	23	acre	SANDAG	60.00	1,380	2.40	0.50	0.50	28	28	4.80	0.50	0.50	55	55
Total						**91,467**				**4,219**	**3,478**				**4,407**	**5,097**
											7,697					**9,503**

Source: Land Use assumptions from City and AP Ballot Initiative, Alameda Point Specific Plan. ITE Trip Generation 8th Edition, Dowling Associates, Inc.

ksf = Thousand square feet

Note 1: * SANDAG, April 2002

Note 2: Trips Generation rates are assumed to be half of Regional Park for Neighborhood Parks and Community Parks.
Linear Open Space is quarter of Regional Park rates.

Note 3: Daily Trip basd on SANDAG, April 2002, Developed Park with Meeting Rooms and Sports Facility.

Methodology for TDM Analysis

TDM trip reduction benefits associated with the Project were determined by Nelson/Nygaard Consultants using the URBEMIS traffic model. URBEMIS (urban emissions) model was developed by the California Air Resources Board to calculate the air quality impacts of new development. The URBEMIS model is based on trip-generation rates published by the Institute for Transportation Engineers, and it takes into account not just the physical characteristics and location of a development but also the impact of demand management programs such as telecommuting and parking charges. It makes it possible to fairly evaluate developments that minimize transportation impacts by, for example, locating close to transit or providing high densities and a mix of uses. The final reduced total number of daily trips from the URBEMIS were distributed and assigned to the street network using the ACCMA travel demand model. Table 17 summarizes the key land use inputs and assumptions used to prepare the URBEMIS trip generation model.

Table 17: Land Use and Trip Generation Assumptions for URBEMIS

Use	Type	Size	Units	ITE Code/SANDAG	Daily Rate
Single Family	**Res**	730[3]	HU	210	9.57
Condo/Townhouses *	**Res**	4111[3]	HU	SANDAG	8.00
Retail	**Retail**	350	ksf	820	42.94
Office	**Office**	1,000	ksf	710	11.01
Civic	**Govt Office**	260	ksf	733	27.92
Light Industrial/R&D	**LI**	1,000	ksf	110	6.97
Warehousing	**WH**	1,182	ksf	150	3.56
Elementary School	**INST**	600	Students	520	1.29
Marina	**Rec**	600	slips	420	2.96
Sports Complex*	**Rec**	60	acre	SANDAG	50.00
Regional Ent. Park	**Rec**	24	acre	417	4.57
Neighborhood Parks	**Rec**	12	acre	See Note 2	2.29
Community Parks	**Rec**	17	acre	See Note 2	2.29
Linear Open space	**Rec**	9	acre	See Note 2	1.14
Seaplane Lagoon Waterfront Park*	**Rec**	23	acre	SANDAG	60.00

Source: Land Use assumptions from City and AP Ballot Initiative, Alameda Point Specific Plan. ITE Trip Generation 8th Edition, Dowling Associates, Inc.

ksf = thousand square feet

Note 1: * SANDAG, April 2002

Note2: Trips Generation rates are assumed to be half of Regional Park for Neighborhood Parks and Community Parks. Linear Open Space is quarter of Regional Park rates.

Note 3: URBEMIS uses Housing Units rather than Households.

TDM Results

The URBEMIS analysis provided trip reduction estimates based on the assumption that certain TDM measures will be in place. These measures were mostly identified in the Specific Plan as documented above. Table 18 summarizes the trip reductions that can be realized for each TDM category and measure and the TDM program related reductions total is 33,246 daily trips.

Table 18: Daily Trip Reductions by TDM Category for Alameda Point Project

DETAILED REDUCTIONS	LOCAL CONTEXT	RESIDENTIAL DENSITY	6,515	*15,204*
		DIVERSITY OF LAND USES	8,411	
		AFFORDABLE HOUSING	278	
	TRANSPORTATION INFRASTRUCTURE	TRANSIT SERVICE	9,185	*14,267*
		BICYCLE & PEDESTRIAN	5,082	
	TRANSPORTATION DEMAND MANAGEMENT PROGRAM	PARKING PRICING	2,151	*3,775*
		FREE TRANSIT PASSES	589	
		OTHER TDM	1,034	

In addition, Table 19 summarizes total trips and potential TDM trip reductions for each land use type and shows the potential daily trip reduction and percent reduction from ITE trips. A similar approach was used for morning and evening peak hour traffic.

Table 19: Daily Trip Reductions by Land Use Category for Alameda Point Project

By Land Use	Units	Total Trips without TDM (ITE & SANDAG)		Total Trips with TDM (URBEMIS)		Total Trips (ITE & SANDAG) REDUCED by TDM (URBEMIS)		
Single Family	730	9.57	6,986	6.63	4,841	(2.94)	(2,145)	-31%
Condo / Townhouse	4,111	8	32,888	4.17	17,152	(3.83)	(15,736)	-48%
Elementary School	600	1.29	774	0.90	542	(0.39)	(232)	-30%
Regional Park	24	4.57	110	3.29	79	(1.28)	(31)	-28%
Sports Complex	60	50	3,000	36.01	2,161	(13.99)	(839)	-28%
Neighborhood & Community Parks	29	2.29	66	1.65	48	(0.64)	(19)	-28%
Linear Parks	9	1.14	10	0.83	7	(0.31)	(3)	-28%
Marina	600	2.96	1,776	2.12	1,272	(0.84)	(504)	-28%
Waterfront Park	23	60	1,380	43.21	994	(16.79)	(386)	-28%
Shopping Center	350	42.94	15,029	31.09	10,882	(11.85)	(4,147)	-28%
General Office	1,000	11.01	11,010	7.50	7,505	(3.51)	(3,505)	-32%
Government Center	260	27.92	7,259	20.03	5,209	(7.89)	(2,050)	-28%
Warehouse	1,182	3.56	4,208	2.40	2,834	(1.16)	(1,374)	-33%
Light Industry	1,000	6.97	6,970	4.69	4,694	(2.28)	(2,276)	-33%
			91,467		**58,220**		**(33,246)**	**-36%**

Travel Model Adjustment for TDM

By design, the travel demand forecasting model reduces vehicular trips based on standard deductions for the existence of basic transit, residential densities, mix of land use, internalization of trips, and pass by trips.

Table 20 provides a comparison of trip generation totals between the ITE daily trips, the URBEMIS recommended trips (with associated TDM reductions), and both the Project with TDM and Project without TDM scenarios. Using unadjusted ITE trip generation, the Project would generate an estimated 91,467 daily vehicle trips. The travel demand model for the Project predicts about 75,000 daily trips. The reduced trips are due to the factors mentioned above and due to the difference in model's methodology for trip calculation described earlier. The URBEMIS TDM analysis indicates that the ITE daily trips would be reduced to 58,220 vehicle trips or a 36 percent reduction overall. However, due to the uncertainty of the TDM measures that will be eventually approved as part of the TDMP (variability in headways, amount of dedicated lanes for RBS or BRT, etc.); the funding caps included in the proposed Initiative; the potential double-counting of trip reductions for land-use mix; residential densities; and the transportation facilities (non-TDM) proposed with the Project, consultant and staff recommended that the full 36 percent not be utilized. Instead the Project with TDM scenario assumes a 33 percent overall reduction in ITE trips for a reduction to 61,561 trips.

Table 20: TDM Reduction Comparison

	URBEMIS with TDM		2035 Project without TDM Forecast		2035 Project with TDM Forecast	
ITE Total Daily Trips	Total Daily Trips	% TDM Reduction	Total Daily Trips	% TDM Reduction	Total Daily Trips	% TDM Reduction
91,467	58,220	36%	75,000	18%	61,561	33%

Appendix
Review of Exiting Documents Relating to Transportation Planning at Alameda Point

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This Appendix provides a summary of the previous planning documents that have been prepared to analyze traffic impacts associated with development at Alameda Point. While some of the documents are outdated, they still provide relevant information on the previous plans and how they differ or align with the Initiative. However, staff finds that the previous studies and plans have limited applicability to the transportation analysis of the Initiative contained in this report due to significant changes in the land uses proposed under the Initiative or the lack of suitable traffic analyses conducted under previous studies.

1. Reuse of Naval Air Station Alameda and the Fleet and Industrial Supply Center, Alameda Annex and Facility – EIR 1999

AP Land Use assumptions:
The EIR for the Reuse of the Naval Air Station Alameda and the Fleet Industrial Supply Center analyzed six alternate mixed land uses assumptions. The Reuse Plan Alternative was determined to be the preferred alternative and included the following six sub-areas:

1. Civic Core – total 334 acres – 65 acres campus, 57 acres open space, 37 acres Civic open space, 4 acres commercial, 16 acres Civic core housing, 113 acres mixed core and 42 acres mixed use.
2. Inner Harbor – total 119 acres – 70 acres Light Industry, 36 acres Regional Park, and 13 acres RV park.
3. North Water Front – total 120 acres – 61 acres light industry, 5 acres hotel, 34 acres office/workplace, 12 acres waterfront housing, and 8 acres school.
4. Marina – total 126 acres – 17 acres marina, 32 acres marina housing, 15 acres marina industry, 5 acres hotel, 10 acres recreational/commercial, and 47 acres marina open space.
5. Northwest Territories – total 208 to 343 acres (varies due to size of wildlife refuge area) – 162 acres Maritime related light industry, 2 acres Golf Club House, 29 acres open space, and 150 acres golf course.
6. Runway Area Open Space/Wildlife Habitat – total 390 acres to 525 acres

Street Network Assumptions:
The street network was assumed to be the same as the network contained in the 1990 General Plan. This street network was updated in 2009 as part of the General Plan Amendment to update the Transportation Element.

TDM assumptions:
No detailed TDM measures were identified or analyzed. However, some modifications to the transit service was considered, including a demonstration project for the use of Amphibious Transportation Vehicle (DUKW) and an electric shuttle service to the 12th Street BART Station.

Traffic Impact Analysis:
A total of 12 arterial segments and 36 intersections in Alameda and Oakland were analyzed using 1990 data. The data were extrapolated to the 2010 conditions for the project analysis.

Applicability to Phase II Report:
The land use and street network assumptions contained in the NAS EIR are different from the proposal contained in the Ballot Initiative. In addition, the analysis relied on 1990 traffic data and is not useful in determining existing conditions. Therefore, while the EIR provides an historical perspective of development concepts for AP, it does not provide traffic data or analyses that can be used to assist with the traffic analysis for the Phase II report.

2. Catellus Mixed Use Environmental Impact Report (EIR) – 2000

AP Land use assumptions:
The Catellus Mixed Use EIR used the interim leasing agreements to define existing land uses and reflected what was occupied at the time of the EIR preparation. Future land uses were considered similar to the NAS Alameda Reuse EIR mentioned above.

Street Network Assumptions:
The street network assumes that Mitchell Avenue is extended from Main Street to Mariner Square Drive, Clement Avenue is extended from Atlantic Avenue to Tilden Way, and Fifth Street is extended from Stargell Avenue to Mitchell Avenue. In addition, the report assumes the following improvements associated with as part of the Broadway/Jackson Interchange Improvement Project: direct connection from the Posey Tube to the Jackson Street on-ramp, a new bridge ramp from southbound I-880 to the Webster Street Tube, and ramp modifications at Broadway to provide a direct access to the Webster Street Tube from northbound I880. All other street improvements identified in the NAS Alameda Reuse Plan EIR were also included in the analysis.

TDM assumptions:
No TDM assumptions were included or analyzed.

Traffic Impact Analysis:
A total of 12 intersections in the western part of Alameda and 13 intersections in Oakland were analyzed using Traffix Software. The regional roadways were analyzed using the Alameda County Congestion Management Agency (ACCMA) model. Future year 2020 cumulative conditions at intersections were projected by adding a one-half of one percent

per year growth rate to the existing conditions. Actual land-use data from the traffic model was not used to determine this information.

Applicability to Phase II Report:
The Catellus EIR provides some useful information on past planning level issues related to the Broadway Jackson Interchange Improvement Project. However, due to significant changes in the proposed land uses at AP, the conclusions in the report have limited applicability in defining potential impacts associated with the SunCal Ballot Initiative proposal. Furthermore, the analysis was limited to the west end area intersections, and does not identify potential impacts to other estuary crossings. Finally, the land-use projections, ACCMA model, and City's street network assumptions have changed since this analysis and the results are not directly applicable. Therefore, while the EIR provides an historical perspective of development concepts for AP, it does not provide traffic data or analyses that can be used to assist with the traffic analysis for the Phase II report.

3. Alameda Point Community Partners – Master Concept Plan – 2002

AP Land Use assumptions:
The Master Concept Plan assumed the following land uses:

- Office – 1.45 million square feet
- Research and Development – 1.25 million square feet
- Warehouse – 500,000 square feet
- Manufacturing – 1.0 million square feet
- Specialty Retail – 300,000 square feet
- Residential – 1,634 units (Affordable 142 and multi-unit 157 included)

Street Network Assumptions:
No traffic impact analysis was conducted on street networks.

TDM Assumptions:
The report included the following TDM program assumptions:

Enhanced bus service, electric shuttle to West Oakland BART Station, increased ferry service, bicycle station at Sea Plane Lagoon, Transit Center at Sea Plane Lagoon, improve bike and pedestrian facilities, relocation of the ferry terminal to Sea Plane Lagoon, Car Share program, integration of ferry and bus system, and an aerial Gondola concept to West Oakland BART Station.

Traffic Impact Analysis:
No traffic impact analysis was conducted at any intersections or street segments inside or outside the City. To determine traffic impacts, the consultant assumed that the proposed TDM program would reduce peak-hour traffic volumes by 32 percent and compared the peak hour volumes from the project and cumulative traffic from other uses with the 2005 and 2020 theoretical capacities in the Tubes. The Plan also provided an accounting of the

parking demand at the Alameda Point without going into details on how it would be accommodated by each land use.

Applicability to Phase II Report:
The Master Concept Plan has limited applicability to the Phase II report as no traffic impact analysis was conducted that could be used in the Phase II report analysis methodology. Similarly, The TDM program credit data is not useful in the Phase II report due to lack of any details on trip credits for each TDM measure and no information on how the trips were distributed along various streets.

4. Alameda Point General Plan Amendment – 2003

AP Land Use assumptions:
The Alameda Point General Plan Amendment (GPA) changed the land use designation from Federal Facilities to Other land uses. A total of 1,928 housing units and approximately 2.3 million square feet of job producing commercial uses were proposed. The land uses are briefly defined below:

- Civic Core (API) - Lt. Industry/Business Park/Office 740,000 square-feet, Industrial/Warehousing 277,500 square-feet, Civic/Institutional Buildings 100,000 square-feet, Commercial 52,000 square-feet, Sports Complex 40 acres, and Medium Density Residential 863 units.
- Inner Harbor (AP2) - Lt. Industry/Business Park/Office 400,000 square-feet, and Industrial/Warehousing 76,500 square-feet.
- Marina (AP3) - Industrial/Warehousing 76,500 square-feet, Marina-Related Industry 44,250 square-feet, Visitor-Serving Recreation/Commercial 130,000 square-feet, Marina Slips 530, Live Aboards (10 percent of 530 slips) 53, Medium Density Residential 525 units, and Hotel/Conference Center 300 rooms.
- West Neighborhood - Civic/Institutional Buildings 30,000 square-feet, Commercial 52,000 square-feet, Low Density Residential 50 units, and Medium Density Residential 490 units.
- NW Territories - Golf Clubhouse/Conference Facilities 62,000 square-feet, Sports Complex 17 acres, Golf Course 214 acres, and Hotel/Conference Center 300 rooms.

Street Network Assumptions:
The proposed street network in the project area is similar to the current General Plan network with the exception of the Mariner Square Drive realignment/extension to Marina Village Parkway/Constitution Way. The street network included in the report include the following:

- Tinker Avenue Extension assumed to be a four-lane facility connecting AP at Main Street from Webster Street.
- Mitchell Avenue Connector assumed to be a two-lane facility from AP to Marina Village Parkway.

Regional transportation improvements included the Broadway/Jackson improvements as contained in the Project Study Report completed by Caltrans in 2000 as follows:

- Construct a new southbound off-ramp for I-880 to Martin Luther King, Jr. Way;
- Improve the northbound Jackson Street on-ramp to I-880;
- Create a dual left turn from southbound Broadway at the intersection of Broadway and 5th streets;
- Improve the existing traffic operation system to better manage traffic flow between the Posey/Webster Tubes and I-880 and I-980; and
- Provide improved signage to direct traffic from I-880/I-980 to Downtown Oakland, Jack London Square, Chinatown, and the City of Alameda.
- These elements are anticipated to be completed before 2020, and were assumed in the 2020 traffic model projections.

In addition, the I-880 Access Improvements of High Street/42nd Avenue were included in the analysis. These improvements included access improvements for vehicles traveling between I-880 and the cities of Alameda and Oakland via 42nd Avenue and High Street.

Other transportation issues included the improvements associated with the State Route (SR) 260 Deficiency Plan. In 1998, the Alameda County CMA notified the cities of Alameda, Oakland, and Berkeley that 7th Street between the Posey Tube (SR 260) and the northbound I-880 at Jackson Street/6th Street was operating at LOS F during the PM peak hour. The CMA determined that the cities of Alameda, Oakland, and Berkeley significantly contribute to the SR 260 deficiency. The approved SR 260 Deficiency Plan identifies the following strategies to reduce the delay at the connection:

- Provide solid striping on the right lane of southbound Jackson Street between 7th Street and 6th Street to allow traffic from the Posey Tube on 7th Street to turn right on Jackson Street into its own lane without merging with southbound Jackson Street traffic.
- Provide a separate northbound left-turn lane on Jackson Street at the I-880 northbound on-ramp intersection.
- Close the 6th Street connection ramp to Broadway and eliminate the crossover to the Broadway off-ramp.
- Provide traffic responsive signal control.

TDM Assumptions:
No reductions in peak hour vehicular trips resulting from TDM efforts or increases in transit service or transit use were assumed in the GPA analysis.

Traffic Impact Analysis:
The traffic impact analysis was conducted using the ACCMA traffic model to generate traffic forecasts, and the 2000 Highway Capacity Manual was used to analyze the LOS at signalized intersections. The Association of Bay Area Government (ABAG) projections from 2000 were utilized for the model setup. Field counts from 2000 were used for the base year of 2005 and the year 2020 was assumed as the future forecast year.

The EIR analyzed a total of 56 intersections, of which 29 intersections were located in Oakland. A total of 10 street segments at the crossings from Alameda into Oakland were evaluated. To address ACCMA Congestion Management Plan (CMP) requirements, a total of 14 freeway segments, 37 arterial segments in Alameda, and 7 arterial segments in Oakland were also analyzed.

The analysis concluded that a total of 37,634 daily trips would be generated from the development at full build out. A total of 792 trips were assumed to be by transit. In addition, 2,704 trips and 2,911 trips were estimated for the AM and PM peak hours, respectively.

The traffic analysis identified significant impacts to two intersections in Oakland (Jackson Street/6th Street and Brush Street/12th Street) and no significant impacts to intersections in the City of Alameda. The Posey Tube street segment was determined to have significant impacts due to the project, but no significant impacts were identified for any of the CMP network segments in the AM peak hour. During the PM peak hour, High Street from Howard Street to I880, and Alameda Avenue from Fruitvale Avenue to High Street were identified with having significant impacts due to the project. These street segments are also in Oakland.

Applicability to the Phase II report:
While the GPA provides useful historical perspective on trip generation and traffic patterns, the significant changes in land use assumptions at the build out for AP, different forecast year, use of a version of the ACCMA traffic model that has since been updated, regional changes to ABAG land use assumptions, and the lack of TDM analysis, the GPA does not provide traffic data or analyses that can be used to assist with the traffic analysis for the Phase II report.

5. Alameda Point Planned Development Concept (PDC) – June 2005

AP Land Use assumptions:
The residential land use assumptions contained in the PDC are consistent with the 2003 GPA described above, but job generating commercial land use assumptions were increased by approximately 1 million square-feet. The land uses assumed were:

- 1,735 new residential units with a commitment that 25 percent of the housing would be affordable at Alameda Point, and 200 exiting housing units.
- Approximately 3.4 Million square-feet of existing and new job generating land-use that would provide up to 9,000 new jobs.
- A 336,000 square-feet of community retail center at Sea-Plane Lagoon with a Transit Center connecting 15-20 minute headway buses to BART.
- 149 Acres of public parks and 105 acres of protected water areas for recreational water activities. A marina with 500 to 800 berths.

Street Network Assumptions:

The street network was similar to what was contemplated in the 2003 GPA, including the Stargell Avenue, and Mitchell Avenue extensions. The plan also assumed a four-lane facility on Ralph Appezzato Memorial Parkway to the Sea Plane Lagoon in the early phases and transitioning to a 2-lane street once a BRT or Light Rail Transit (LRT) system is implemented by converting the two middle lanes to transit exclusive right-of-way. Main Street is proposed to be two-lanes wide with a two-way-left-turn –center lane. The PDC also included an extensive bikeway system totaling approximately 12 miles long and an enhanced transit system that would be within easy walking distance to most residents.

TDM Assumptions:
The proposed TDM program was divided into the following three stages: Day One Improvements, Mid-Term Improvements and Long-Term Improvements. The goal of the TDM program was to reduce residential trips by 10 percent and commercial trips by 30. It included the following elements:

- EcoPass for shuttles to BART for all residents. It might be expanded to provide free access to ferry service.
- An inter-modal transit center at the Sea Plane Lagoon.
- Day-one shuttle or transit service to 12th Street BART at 15 to 20 minutes headway.
- Queue jump lanes near the Posey/Webster Tubes on Stargell and Mitchell Avenue and on Atlantic Avenue at Webster Street.
- Expanded ferry service from the Sea Plane Lagoon.
- Bicycle facilities to accommodate at least 1.5 percent of the employees at the commercial areas.
- Shower and changing facilities in commercial facilities.
- Car sharing spots at key locations.
- Decoupled parking for residents for the second off-street space. This approach limits the provision of the second off-street space and a buyer would have to purchase the second space separate from the house purchase price.
- Implementation of the County's Guaranteed Ride Home program.
- Provision of a Transportation Coordinator to oversee the transportation strategies on an on-going basis.
- Mid-term strategy included Rapid Buses, similar to the San Pablo Avenue corridor
- Long-term strategy considered BRT, LRT, or Group Rapid Transit along the former Alameda Beltline right-of-way and crossing into Oakland using the railroad bridge at Fruitvale Avenue.

Traffic Impact Analysis:
No evaluation of impacts at intersections or corridors was conducted. This traffic analysis was deferred to a future environmental review after development elements were finalized. The PDC, however, reviewed the 2003 GPA analysis, and provided an estimate of the total vehicular trips that could be expected from the development, after reducing peak hour trips based on the TDM proposal.

Applicability to the Phase II report:
The PDC provides relevant information on TDM trip reductions and estimates of total trips from the development. The Phase II report reviewed this information and incorporated it where feasible. However, since no detailed traffic impact evaluations were conducted for street segments and intersections, the PDC does not provide traffic data or analyses that can be used to assist with the traffic analysis for the Phase II report.

6. Alameda Landing Mixed Use Development Supplemental EIR – July 2006

Land Use Assumptions:
The land use assumptions contained in the Alameda Landing Mixed Use Development Supplemental EIR (SEIR) were the same as the 2000 EIR assumptions described above.

Street Network Assumptions:
The SEIR included several planned streets in its analysis. These included, Stargell Avenue extension, Mitchell Avenue extension up to the western boundary of the project, extension of Fifth Street to Mitchell Avenue, Clement Avenue extension, and some intersection improvements at existing locations. The analysis did not include the Mariner Square Drive extension to the Marina Village Parkway/Constitution Way currently included in the City's General Plan.

The regional streets included the I-880 seismic retrofit projects along I880, the Broadway Jackson Interchange project improvements, and the 1998's SR 260 Deficiency Plan improvements. The analysis was limited to intersections only and no street segments were analyzed.

TDM Assumptions:
The project proposed a shuttle operating at 20 minute headways during peak time to 12th Street BART; a water taxi crossing the Estuary from the development into Oakland, should a future feasibility study show there is benefit to this proposal; several enhanced facilities for bicycle and pedestrian modes; car sharing and van pool sites; Guaranteed Ride Home program for employers; education outreach on the benefits of using alternate modes for residents and workers at the development; and a Transportation Coordinator at the site to coordinate and implement the TDM program. No specific TDM elements were analyzed as part of the traffic analysis.

Traffic Analysis:
The SEIR analyzed a total of 34 intersections, including 14 in Oakland, and identified significant impacts to Mariner Square Drive/Constitution Way, 8th Street/Webster Street, and 5th Street/Broadway in the Baseline Conditions (2010) and the cumulative analysis (2025) found significant impacts to the following intersections: Atlantic Avenue/Webster Street, Central Avenue/8th Street, Jackson Avenue /6th Street, Broadway/5th Street, Marina Village Parkway/Constitution Way, Stargell Avenue/Mariner Square Loop, Mitchell Avenue/Fifth Street, Marina Village Parkway/Mariner Square Loop, Stargell Avenue/Fifth Street, Atlantic Avenue/Constitution Way, Lincoln Avenue/Constitution

Way, Mariner Square Drive/Constitution Way, Mariner Square Drive/Marina Village Parkway, Stargell Avenue/Main Street, Ralph Appezzato Memorial Parkway/Fifth Street, Jackson Street/7th Street, Harrison Street/7th Street, and Brush Street/12th Street.

Regional street analysis included the ACCMA required CMP analysis. The ACCMA model projections were used and the project traffic was added to the 2010 and 2025 traffic projections from the model. The traffic model used the 2002 ABAG land use projections for the 2010 and 2025 forecast years. However, the EIR did not run the ACCMA traffic model to analyze impacts; instead the project traffic was added manually to the outputs. Significant street segment impacts were determined for: 7th Street and Harrison Street, Webster Tube, Atlantic Avenue, Park Street, High Street, Posey Tube, Webster Street, and Constitution Way.

Applicability to the Phase II report:
The SEIR provides useful information on the traffic impacts from the AP development on the basis of the 2003 GPA land use. However, the analysis used an incomplete street network that did not include a future signalized intersection at Webster Street/Stargell Avenue and Mitchell Avenue extension to Main Street. The SEIR also used Statement of Overriding Consideration to allow Significant and Unavoidable impacts at 4 intersections including Central Avenue/8th Street, Atlantic Avenue/Constitution Way, Lincoln Avenue/Constitution Way, and Mariner Square Drive/Constitution Way. In addition, 9 street segments in Alameda and Oakland were found significantly impacted and the impacts were considered Significant and Unavoidable. A total of 5 intersections in Oakland were impacted significantly but no mitigations were identified and the impacts were considered Significant and Unavoidable. Due to changes in proposed land use, lack of fully coded street network in the model, and new off-site traffic network, the SEIR does not provide traffic data or analyses that can be used to assist with the traffic analysis for the Phase II report.

7. Alameda Point Station Area Plan (SAP) – April 2008

Land Use Assumptions:
The Alameda Point SAP, which was funded by the Metropolitan Transportation Commission and the Alameda County Transportation Improvement Authority, considered the two following additional alternatives to the 2005 PDC.

1. Transit Enhanced PDC – The Transit Oriented PDC conceptual plan includes 1800 housing units, 450 affordable housing units, and 9,000 jobs. In this alternative, the 1800 units are distributed among a more diverse range of housing types ranging from large lot single-family homes to four and five story multi-family residential structures (up to 50 percent) with ground floor retail to lofts and studios in rehabilitated historic structures. The maximum residential density is approximately 32 units per acre. All residents and businesses pay into a transit district, similar to the PDC.

2. Transit Plus Alternative – This conceptual plan includes approximately 4,000 housing units including 1,000 affordable units (25 percent), and 9,000 jobs. The units are distributed among the full range of housing types that are available in the Transit Oriented PDC and also limited to four to five stories, but within the transit station area, a maximum residential density of 48 units per acre is allowed. All residents and businesses pay into the transit district, similar to the PDC and the Transit Oriented PDC.

The analysis focused on increasing land use strategies that would support transit use at AP and decrease automobile dependency. The analysis was intended to inform the community's discussion about land use, density, and transportation choices at AP and provide concepts and measures that could be used to evaluate future development plans proposed at AP.

Street Network Assumptions:
The SAP assumed the same street network as the PDC with limited modifications to on-site circulation for the two alternatives defined above.

TDM Assumptions:
Three different TDM assumptions were considered for the three alternatives and those are defined below:

1. The PDC alternative would provide transit service to Oakland BART at 12th Street at 15 minute headways, ferry service to San Francisco at 30 minute headways, shuttle connection to San Francisco express buses and downtown Oakland, a transit station at the Sea Plane Lagoon, and a Car Share program.

2. The Transit Enhanced PDC alternative would provide transit service to Oakland BART at 12th Street at 12 minute headways, ferry service to San Francisco at 30 minute headways, shuttle connection to San Francisco express buses and downtown Oakland, a transit station at the Sea Plane Lagoon, and a Car Share program.

3. The Transit Plus alternative would provide BRT to Oakland BART at 12th Street at 5 minute headways, ferry service to San Francisco at 20 minute headways, shuttle connection to San Francisco express buses and downtown Oakland, a transit station at the Sea Plane Lagoon, a Car Share program, and a future extension of the transit service (potentially a BRT) to Fruitvale BART station.

The report also included a list of best practices on parking supply and demand policies, which included:

- Reduced off-street parking requirements
- A parking management program
- Monitor and adjust parking rates on the basis of demand
- Un-bundle parking from housing and office rents

- Implement Residential Permit Parking
- Enhanced enforcement
- Parking cash out programs for employers

Traffic Analysis:
The traffic analysis provided some useful theoretical information on land use interactions with the transportation system. The analysis compared the three alternatives in terms of daily and peak hour trips after reducing peak hour trips associated with the proposed TDM programs. The trips were generated using the Institute of Transportation Engineers rates for the two horizon years – 10 year and full build out. The SAP concluded that:

- The Transit Plus alternative would generate the same amount of trips at 10 year as the PDC at full build out.
- In order for Transit Plus alternative to have similar trips to the PDC, a one percent island wide shift to non-automotive modes is required. Therefore, any transit program under the Transit Plus alternative should provide island wide benefits to be viable.
- The PDC would generate a total of 720 transit commute riders, 3,246 daily auto trips (1,596 AM and 1,650 PM)
- The Transit Enhanced PDC would generate 1,000 transit commute riders, 2,961 daily auto trips (1,477 AM and 1,484 PM)
- The Transit Plus would generate 2,120 transit commute riders, 3,420 daily auto trips (1,699 AM and 1,721 PM)

No analysis on actual impacts to intersections or street segments was conducted for any alternative. In addition, the SAP did not use a traffic model to analyze traffic impacts. Only total traffic trips from Alameda Point were estimated after taking credits for transit enhancements for each alternative and then compared with the PDC alternative trips in the Tubes. The SAP did include more details on the trip reduction assumptions by bus and ferry service.

Applicability to Phase II Report:
The SAP provided a variety of TDM strategies as part of the proposed development, many of which are included in the list of possible strategies proposed in the Ballot Initiative. However, since there were no traffic impact analyses conducted along streets or at intersections, the SAP does not provide traffic analysis data that can be used to assist with the traffic analysis for the Phase II report.

8. The Traffic Capacity Management Procedure (TCMP) Annual Analysis Report – 2008

Staff prepares the TCMP report, typically on annual basis, as required by City Council resolution and the Catellus EIR. The TCMP is applicable to any proposed development west of Grand Street that generates new peak hour trips in excess of one percent of the current estimated reserve capacity in the Tubes. Traffic data is collected in the fall to forecast future capacity at the Posy/Webster Tubes.

AP Land Use Assumptions:
Since the existing traffic counts capture all development that is occupied, the TCMP forecasts additional traffic associated with projects that have been approved but are unoccupied. These include: Bay Port, Alameda Landing, Coast Guard - North Housing and Summer Homes.

Street Network Assumptions:
Only the existing street network is assumed in the TCMP analysis.

TDM assumptions:
No reductions in peak hour trips associated with TDM programs are included in the TCMP analysis.

Traffic Impact Analysis:
The TCMP traffic analysis is limited to the calculation of trips on the basis of existing and approved land uses west of Grand Street, and a comparison with the available Webster and Posey Tube capacities in 2007 and 2030. The analysis does not evaluate actual traffic impacts in terms of Levels of Service, delays, or queues along streets or intersections.

Applicability to Phase II Report:
The TCMP analysis is limited to reviewing the theoretical capacity of the Posey/Webster Tubes in the current year and the forecast year of 2030. It does account for any new development proposals that have not been approved. Therefore, the conclusions from this analysis do not provide information that is directly applicable to assessing future traffic impacts associated with the Ballot Initiative and was not used to assist with the traffic analysis for the Phase II report. However, since the traffic volume data is current, it was used as input for the traffic model.

9. Alameda County Congestion Management Agency (ACCMA) Level of Service (LOS) Monitoring Report (2008)

AP Land Use assumptions:
The ACCMA LOS Monitoring Report does not account for planned development. The purpose of the report is to reviews the current LOS for existing traffic conditions along major arterials using the existing field data and ensure that its applicable LOS standards for all facilities are met. This analysis is conducted to meet the Alameda County's Congestion Management Plan requirements.

Street Network Assumptions:
The analysis uses existing street network.

TDM assumptions:
There are no TDM reductions assumed as part of this analysis as the trip reductions associated with implemented TDM programs would be reflected in the traffic data.

Traffic Impact Analysis:
ACCMA has established the Alameda County Congestion Management Program (CMP). The CMP requires that Level of Service (LOS) standards be established and monitored biennially in the even numbered years on the Alameda County CMP designated roadway. The designated roadways within Alameda are as follows:

- Webster Street (SR 260) from Oakland City limit to Central Ave
- Central Avenue (SR 61) from Webster to Oakland City limit
- Atlantic Ave from Webster (SR 260) to Main Street
- Park Street from Oakland City limit to Encinal Avenue (SR 61)

Should the afternoon peak hour vehicle speed along a segment of a CMP roadway degrade to LOS F, the street is determined to be deficient and out of conformance with the CMP. This requirement is limited to those street segments that fall below the LOS standards after the creation of the CMP. Any street segments that were at LOS F at the time of CMP adoption are considered "grandfathered" and these requirements do not apply. The LOS methodology quantifies the level of congestion along a network segment. These measurements range from LOS a, representing the best operation conditions (free flow and no congestion) to LOS F representing the worst level of congestion (stop and go traffic). Should a roadway segment produce LOS F during the monitoring process, a deficiency plan to address congestion is required the jurisdiction where the deficiency exists and any other jurisdiction that contributes 15 percent to the traffic along the deficient segment.

Applicability to Phase II Report
Since the monitoring report analyzes existing conditions, the conclusions from its analysis do not provide information that is directly applicable to assessing future traffic impacts associated with the Ballot Initiative and was not used to assist with the traffic analysis for the Phase II report.

10. Alameda Point Transportation Strategy – December 2008

AP Land Use assumptions:
The proposed land uses contained in the Alameda Point Transportation Strategy are similar to the land uses contained in the Ballot Initiative. The Initiative proposes 4,841 residential units and approximately 3.5 million square feet of commercial and retail land uses, while the Transportation Strategy identifies 4,503 residential units and 3.5 million square feet of commercial and retail land uses.

Street Network Assumptions:
The street network in the Transportation Strategy is similar to the Ballot Initiative; however, some of the street cross-sections in the Initiative have narrower travel lane widths. These differences could affect the operational characteristics of streets and produce different results when analyzed for traffic impacts.

TDM assumptions:
The following TDM and transit strategies are included in the Transportation Strategy, identified to be implemented by individual phase of development, and were identified as being fully funded by the project developer:

- TDM Coordinator to manage and coordinate various aspects of the transportation program.
- A new Transit Center at the Sea Plane Lagoon that would include a ferry terminal, bus stops, facilities for East Bay and San Francisco bus service providers, a shuttle stop, bicycle parking, a bicycle share station, a car share pod, and administration/office accommodation for the TDM coordinator … ticket sales, travel & tourist information, passenger shelter,
- Bus transit center with ticket sales, travel and tourist information, passenger shelter, bus and shuttle stops, taxi stands, kiosks, retail stands, bicycle parking, attended bicycle station, car share pod, and offices for the TDM coordinator.
- Bus and/or shuttle services to Downtown Oakland and BART from 5:00 a.m. to 11:00 p.m., at 10-15 minute headways with Phase 1.
- Every resident and employee will be provided an Eco Pass, which would provide unlimited access to any transit service in Alameda Point.
- Queue jump lanes at key intersections for buses in the initial phases.
- Bus Rapid Transit (BRT) with dedicated right-of-way through much of the network connecting to 12th Street and Fruitvale BART stations.
- Provide a foundation for a later light rail or Personal Rapid Transit system but not part of the Project commitment.
- Car Share sites throughout the development.
- A residential permit parking program.
- Guaranteed Ride Home Program.
- Rideshare/Ride matching program.
- Car Pools and Van Pools with priority parking at the Transit Center.
- Improve Island-wide bicycle network through the cross-island greenway.
- Attended bicycle station at the Transit Center.
- Trip planning and way finding facilities throughout the development.
- Bicycle Share Pods to be located throughout the development.
- Various parking strategies, including unbundled parking, parking pricing, parking technologies such as pay by cell phone, and maximum parking limits for all land uses.

Traffic Impact Analysis:
No traffic analysis was provided as part of the Transportation Strategy.

Applicability to Phase II Report
The Strategy provides useful information on various TDM programs that could be implemented at the AP development. However, since no traffic impact analysis was provided as part of this report, the Strategy does not provide traffic data that can be used to complete the Phase II report.

11. Transportation Element – General Plan Amendment EIR – January 2009

AP Land Use assumptions:
The Transportation Element (TE) extracted all land use data from the 2003 GPA. It assumed approximately 2000 housing units and approximately 2.3 million square feet of job producing retail/commercial uses.

Street Network Assumptions:
For the 2030 Baseline forecast, the TE analysis assumes that the existing roadway network would remain in place in 2030 but would be supplemented by a limited number of roadway improvements identified in the General Plan or as an approved City of Alameda project. The improvements included in the 2030 Baseline within the city limits include the following:

- The Clement Avenue Extension from the intersection of Atlantic Avenue and Sherman Street to Grand Street as a two-lane street.
- The Wilver "Willie" Stargell Avenue Extension from Main Street to Webster Street as a four-lane street.
- The Mitchell Extension from Mariner Square Loop to a new intersection on Main Street
  north of Singleton Avenue as a two-lane street.
- The Fifth Street from Wilver "Willie" Stargell Avenue north to Mitchell Avenue as a two-lane street.
- Removing the angled parking on Lincoln from Park Street to Walnut to recreate the four-lane configuration.

For the proposed Transportation Element Update (2030 Project Forecast), the following roadway and transit improvements were assumed:

- The Clement Avenue Extension included in the 2030 Baseline and an additional Clement Avenue Extension from Broadway to Tilden Way as a two-lane street.
- The Wilver "Willie" Stargell Avenue Extension from Main Street to Fifth as a two-lane street (at the request of the Transportation Commission) rather than four lanes as assumed in the 2030 Base).
- The Mitchell Avenue Extension included in the 2030 Baseline.
- The Fifth Street Extension in the 2030 Baseline.
- The Mariner Square Drive extension from Mariner Square Loop (east side) to the Marina
  Village Parkway at Constitution Way intersection (as a four-lane road).
- The relocation of the Main Street Terminal to the Seaplane Lagoon.

For the purposes of assessing the impacts of different street type classification systems, the following streets were adjusted in the model in the 2030 Project Forecast to carry less

traffic volume to reflect their "transitional arterial" or "transitional collector" designation in the proposed TE:

- Eighth Street between Central Ave and Lincoln Avenue
- Buena Vista Avenue between Grand Street and Sherman Street
- Blanding Avenue between Oak Street and Tilden Way
- Bayview Drive between Otis Drive and Broadway
- Gibbons Drive from Central Avenue to Fernside Boulevard

These adjustments provided information about the effect of the proposed classification and the amount and anticipated impact of diversion of traffic to parallel streets. For instance, when comparing the 2030 Base with the 2030 Project forecasts, traffic volumes on Eighth Street decreased, due to a diversion of traffic primarily to Central Avenue and Webster Street and, to a lesser extent, to Sherman Avenue and Lincoln Avenue. Similarly, some traffic on Bayview Drive shifted to Otis Drive and Broadway. These traffic volume shifts were reflected in the intersection operations analysis

TDM assumptions:
Reductions for automobile trips were assumed for an enhanced transit service connecting Alameda Point to Fruitvale.

Traffic Impact Analysis:
The City updated the previous travel demand model to the latest ACCMA Model to provide future year traffic volumes as required by the County. The citywide forecasting model included additional refinements to traffic analysis zones and the City street network. A 2007 base year model was developed and validated to 2007 traffic counts. The model was then run to forecast travel demand for the year 2030 under the 1991 TE (2030 Baseline Forecast) and for 2030 under the proposed draft TE (2030 Project Forecast). Detailed future year growth and development projections were developed for each Traffic Analysis Zone (TAZ) of the City. The land use assumptions were developed from a variety of data sources including ABAG Projections 2005 socioeconomic data

To establish the existing and future roadway operations, an intersection LOS was determined for all signalized intersections. Using data, including signal timings, peak hour turning movement counts, and lane geometrics, a citywide intersection model was created using Synchro to assess intersection operations. The Synchro model takes into account signal coordination along particular corridors, such as Webster Street and Park Street. The Synchro model included all existing 78 signalized intersection in the city and seven future intersections and was developed for both AM and PM peak hour conditions. The intersections operating below LOS D under the 2030 Base conditions were the focus of the analysis under the 2030 Base Optimized conditions. In this scenario, the cycle length, signal timing, and offsets (at coordinated intersections) were optimized but no changes were made to the lane geometry and signal phasing. A total of 9 signalized intersections were noted to have significant impacts in the future scenario.

Applicability to Phase II Report:

The traffic model used in the GPA provides an excellent tool to analyze the land use assumptions contained in the Ballot Initiative. The Synchro model used in the GPA is also useful in directly analyzing the traffic impacts at key intersections in the City. The current traffic conditions used for the GPA 2007 scenario is recent and can be used as the existing conditions scenario in the Phase II report. However, due to the proposed land use changes included in the Ballot Initiative, update of the ABAG Projection land use data from year 2005 to 2007, and change in the horizon year from 2030 to 2035, the 2030 traffic results cannot be used to complete the Phase II report.