

City and County of San Francisco

Office of the Controller - Office of Economic Analysis

Hunters Point Shipyard Phase 2/Candlestick Point: Economic Impact Report

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Main Conclusions

The proposed redevelopment of Phase 2 of the Hunters Point Shipyard and Candlestick Point (the "Project") will transform more than 700 acres of mostly vacant, underutilized land in southeast San Francisco into productive areas designed to accommodate significant new employment, housing, parks and open space. The Project will provide a mix of land uses, including market-rate and affordable homes, regional and neighborhood retail, research and development (R&D) and office space, a hotel, a performance arena, community services, and a waterfront park system. In addition, the southern portion of the Shipyard may be developed as a new football stadium for the San Francisco 49ers, or as additional R&D/office space, if the 49ers do not locate within the Project.

The development of the Project will create thousands of construction jobs, and inject an estimated \$4.3 billion into the City's economy during its projected 20+year build-out. The development of either Project alternative will result in significant employment opportunities, with an average of about 2,100 direct and indirect jobs per year during build-out, with about 1,450 of these jobs representing direct employment in the construction trades, equivalent to about 6% of citywide construction jobs projected during the same period.

The Project will create the opportunity for significant job growth from businesses occupying the completed non-residential buildings, with an estimated 11,300 direct employees projected under the Stadium alternative and about 12,200 workers in the Non-Stadium alternative at build-out. A wide range of employment opportunities will be created in either Project alternative in numerous industries and occupations, from entry-level to advanced, with annual average pay ranging from \$25,000 to \$185,000 per year, and aggregate wages of more than \$1 billion per year in either alternative upon full build-out. Of particular note is the fact that nearly half of the direct jobs are in occupations that pay less than the City's current average salary of about \$74,000 per year.

An additional 13,000 indirect and induced jobs are estimated at build-out, that together with direct employment attributed to Project, will contribute about \$6.4 to \$6.6 billion annually to San Francisco's gross city product (a measure of total spending on goods and services produced in San Francisco), in the Stadium and Non-Stadium alternatives, respectively. This represents an expansion of about 1.7% to the City's existing gross product during the projection period.

The impact of new development will not be limited to the economic activity generated by its construction and permanent employment; ultimately, 10,500 new households will make approximately \$287 million per year in retail purchases, supporting businesses in San Francisco and the region, further stimulating the economy.

Build-out of the Project will also increase the City's property tax base by approximately \$11 billion, as buildings are constructed and sold or rented. Much of the property tax increment generated by the Project will be reinvested in the Project, primarily to help pay for community benefits. However, per California Redevelopment Law, a portion of tax increment generated by the Project is "passed-through" to existing taxing entities, including the General Fund, which is anticipated to receive an average of \$4.8 million per year (in 2010 dollars) during the 45-year life of the Redevelopment Areas.





Highlights

- The redevelopment of Phase 2 of the Hunters Point Shipyard and Candlestick Point (the "Project") will transform more than 700 acres of mostly vacant, underutilized land in southeast San Francisco into productive areas designed to accommodate significant new employment, housing, parks and open space.
- The Project will provide a mix of land uses, including 10,500 housing units, over 3,340 of which will be available at below market rates, retail, research and development (R&D) and office space, hotel, performance arena, and an expansive waterfront park system. In addition, the southern portion of the Shipyard may be developed as a new football stadium for the San Francisco 49ers, or as additional R&D/office space, if the 49ers do not locate within the Project.
- The OEA has reviewed the market assumptions in the horizontal pro forma and determined that the rental rates, construction costs, and sales values are reasonable and consistent with the range of market value and cost data indicators maintained by the OEA for the mix of uses proposed
- Construction activity will contribute more than \$200 million per year, and about \$4.3 billion cumulatively at full build-out, to San Francisco's Gross City Product, defined as total spending on goods and services produced in San Francisco.
- The Project will create an estimated 11,000 to 12,000 direct permanent employment opportunities in numerous industries and occupations, from entry-level to advanced, with a wide range of annual salaries. Of particular note is that nearly half of the jobs are in occupations at, or below, the City's current average salary of about \$74,000 per year.
- The direct permanent employees are estimated to earn an aggregate salary of more than \$1 billion a year upon full build-out.
- An additional 13,000 indirect and induced jobs are projected to be generated by the Project. On average, direct and indirect employment generated by Project will contribute to an expansion of about 1.5% to the City's employment base during the projection period.
- Direct and indirect permanent employment will contribute about \$6.4 to \$6.6 billion annually to San Francisco's Gross City Product at build-out, an average expansion of about 1.7% during the projection period.
- The development of 10,500 housing units will expand the City's existing housing inventory by about 3% and add approximately 24,500 residents to San Francisco. At build-out, household spending on retail purchases are estimated at \$287 million per year, supporting businesses in San Francisco and the region.
- During the 45-year life of the Redevelopment Areas, the City's General Fund is anticipated to receive about \$4.8 million per year from the Project.
- Overall, either the Stadium or Non-Stadium Alternatives of the proposed Project will generate significant one-time and on-going economic impacts to the City.

ECONOMIC SCORECARD: PROPOSED PROJECT AT BUILD-OUT

The table below indicates the anticipated future change in San Francisco's economy resulting from development of the Project in either alternative.

It should be remembered that Project build-out will take about two decades, and that the area will accommodate a significant amount of development under the proposed Project, compared to current conditions.

	Highly Negative Impact <i>(-.5% +)</i>	Moderately Negative Impact <i>(-.01% to -.5%)</i>	Neutral Impact <i>(-0.1% to 0.1%)</i>	Moderately Positive Impact <i>(.1% to .5%)</i>	Highly Positive Impact <i>(.5% +)</i>
Construction Employment					
Permanent Employment					
San Francisco Gross City Product					
Housing Supply					

INTRODUCTION

Summary of Proposed Legislation

The main impact of the proposed legislation is the creation of regulatory conditions that will allow for significant new development in southeast San Francisco

The proposed legislation amends the General Plan, Zoning Map, and Zoning Plan to establish the Candlestick Point Activity Node Special Use District and the Hunters Point Shipyard Phase 2 Special Use District.

The legislation, along with numerous other implementing agreements and documents¹, will enable significant new development in the southeast section of San Francisco through the redevelopment of Phase 2 of the Hunters Point Shipyard and Candlestick Point (the "Project")². Once all of the necessary approvals are obtained, the Project will be developed according to the adopted Hunters Point Shipyard and Bayview Hunters Point Redevelopment Plans, and their guiding documents, chief among them the Design for Development, and the Disposition and Development Agreement between the Redevelopment Agency and the Project's master developer, discussed below.

Redevelopment of Hunters Point Shipyard (Phase 2) and Candlestick Point

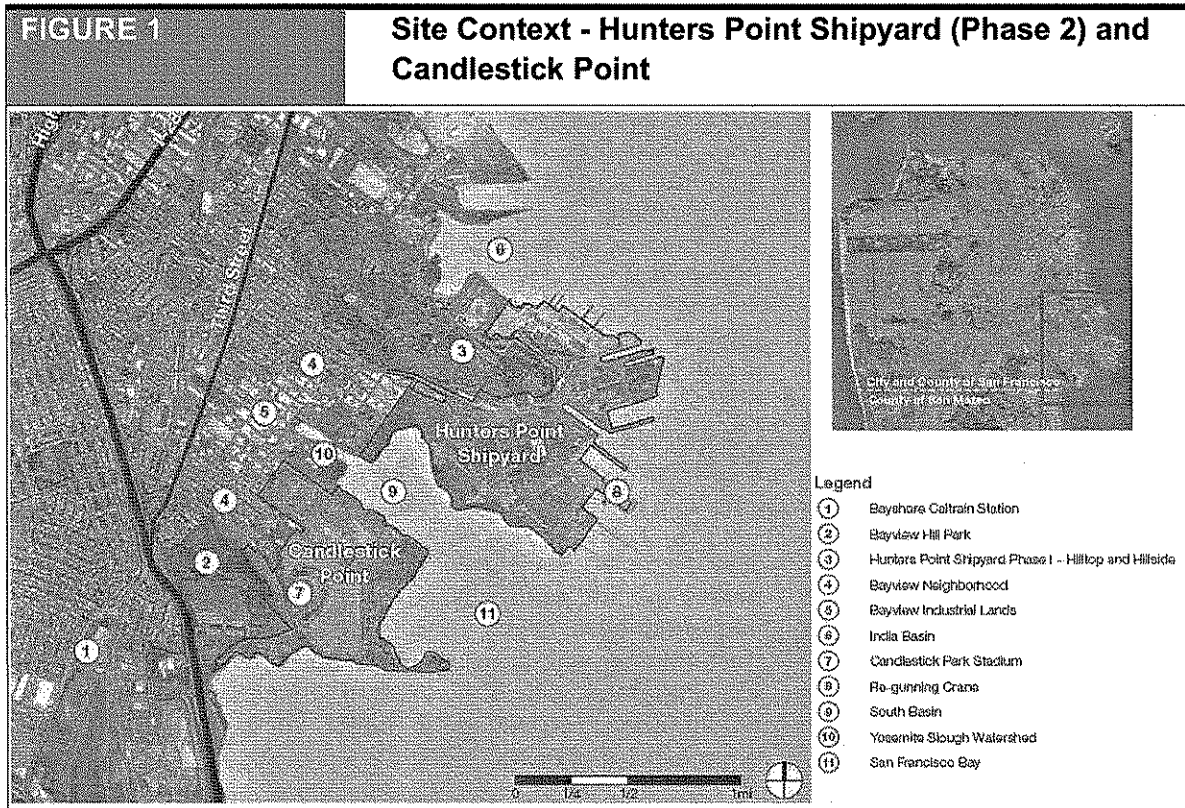
The proposed Project will transform more than 700 acres of mostly vacant, underutilized land in southeast San Francisco into productive areas designed to accommodate significant new employment, housing, parks and open space. The Project will integrate with the existing Bayview / Hunters Point neighborhood, creating a major new mixed-use, transit-oriented district in southeast San Francisco.

The Project will provide a mix of land uses, including market-rate and affordable homes, regional and neighborhood retail, research and development (R&D) and office space, a hotel, a performance arena, community services, and an expansive waterfront park system that extends along the entire shoreline of Candlestick Point and the Hunters Point Shipyard ("Shipyard"). In addition, the southern portion of the Shipyard may be developed as a new football stadium for the San Francisco 49ers, or as additional R&D/office space, if the 49ers do not locate within the Project.

¹ In addition to the proposed amendments to the General Plan, Zoning Map and Zoning Code, there are numerous other regulatory approvals from various agencies required for redevelopment of the Project. For a full list of Project approvals and documents, see Exhibit G of the Executive Summary referenced in footnote 5.

² The Project, as defined in detail later, is consistent with the Conceptual Framework for integrated development endorsed by the Board of Supervisors and Mayor in May 2007 and approved by San Francisco voters in June 2008 through passage of Proposition G.

A site context map of the proposed Project, showing key landmarks, is presented in Figure 1³.



Because of the uncertainty of the 49ers stadium preference at this time, planning for the Project has included two alternatives: the Stadium Alternative, and the Non-Stadium Alternative, which expands commercial uses on portions of the Shipyard site currently reserved for the stadium and related uses⁴.

³ Numerous documents have been generated regarding the Project, covering a range of topics, from environmental remediation on the former Navy Shipyard to an executive summary of the proposed Project, highlighting key elements of the public-private partnership, including details of community benefits, the deal structure between the City/Agency and master developer, related Project documents, and other information relating to the proposed project. These and other relevant documents can be found on the Office of Economic and Workforce Development's website: http://www.oewd.org/Development_Projects-Candlestick_Park_Hunters_Point_Shipyard.aspx. Rather than repeating their content here, the OEA refers readers to this site for detailed information on the background and history of the Project.

⁴ Even though the 49ers were successful in obtaining voter approval for a stadium plan in Santa Clara, uncertainty regarding the financial feasibility of a new stadium in that city remains. As such, it will likely take a number of years before the final stadium location is determined. The Project includes a location for the stadium on the Shipyard site; if certain conditions, including binding commitments from the 49ers to construct a new stadium in San Francisco, are not satisfied by 2014, the non-stadium alternative will prevail. The OEA analyzed the economic impacts of both alternatives, summarized in Table 1.

The Project will be developed through a public-private partnership between the City, through its Redevelopment Agency, and the master developer, led by Lennar. Briefly, the master developer is contributing private capital and its development expertise to construct the infrastructure (roads, parks, utilities, transit, public benefits, etc.) necessary to support the Project. The City's contribution to the partnership is primarily in the form of land from the Shipyard site and a commitment to reinvest a portion of the property tax increment generated by the Project to help fund the significant development costs, including community benefits⁵.

The terms of this partnership are governed by a legally binding Disposition and Development Agreement ("DDA") between the parties, which details obligations such as: the community benefits package and its timing, the financing plan, revenue sharing, and a timeline for development of the horizontal infrastructure, including penalties if this Schedule of Performance is not met.

Included in the DDA is a development pro forma (prepared jointly by the master developer and City), which provides detailed estimates of infrastructure costs, as well as anticipated revenue from the sale of finished land to vertical developers. These revenue and costs figures are projected over time, consistent with the Schedule of Performance, to test the financial feasibility of the Project (considering all infrastructure development costs, community benefit obligations, affordable housing program costs, etc. against anticipated revenue from finished land sales).

The pro forma was developed through an iterative process in which various land use mixes, public benefits, and market assumptions were tested, and refined over time, taking into account input from the community, while still maintaining a financially viable project.

The land use mix and development program which emerged from this process is the basis for the Project alternatives analyzed in this report, and is consistent with the DDA, other implementing documents, and the amendments contemplated by the proposed legislation. Further, the OEA has reviewed the market assumptions in the horizontal pro forma and

⁵Through a community planning process and negotiations between the City and master developer, a public benefits package emerged which includes more than 330 acres of parks, 3,345 affordable housing units (nearly 32% of all units), transportation improvements, small and local business assistance, community facilities, and redeveloped space for existing Shipyard artists. For a detailed summary of public benefits generated by the Project, see page 6 of the Executive Summary of the proposed Project at: <http://www.oewd.org/media/docs/Draft%20Hunters%20Point%20Shipyard%20Phase%202-Candlestick%20Point%20Executive%20Sumamry%20with%20Attachments%202.2.10.pdf>

determined that the rental rates, construction costs, and sales values are within the range of market value and cost data indicators maintained by the OEA.

**Land Use,
Population and
Employment
Assumptions**

*10,500 housing units
will increase the City's
existing housing
inventory by more
than 3%*

Table 1 summarizes the development program, population, and employment assumptions under both the Stadium and Non-Stadium alternatives upon full build-out of the Project, as discussed in the previous section. Appendices 1 and 2 detail the phasing assumptions of vertical construction and associated population and employment growth for both alternatives over time.

Both alternatives provide for the same amount of housing, retail, hotel, arena, and marina uses. The Stadium alternative has about 2,000 more parking spaces to accommodate additional parking demand from the 69,000-seat stadium. The Non-Stadium alternative requires fewer parking spaces, and can accommodate about 500,000 square feet of additional job-generating R&D/Office space, resulting in slightly more and varied employment in this alternative.

The development program and employment assumptions summarized in Table 1 are the basis for the economic impact analysis in the following section of the report⁶.

⁶ Although the Project is anticipated to be developed as described, because of the multiyear build-out of the Project, circumstances affecting such development may change over time, potentially affecting the timing of development and/or the development program. The DDA includes provisions, such as a Schedule of Performance to help ensure that development is timely. However, if market conditions deteriorate, for example, the DDA allows for a delay in the horizontal development (of up to 6 years cumulatively). In addition, the DDA includes a provision to refine select terms of the agreement (such as the land use mix) if the Developer can demonstrate why development is infeasible without the proposed changes, and the City/Agency agree. See Section 3.6 of the DDA for additional information. If a land use change were to be requested, the amendments would be reviewed by the OEA, and the economic impacts analyzed.

TABLE 1

Hunters Point Shipyard Phase 2/Candlestick Point- Development Program, Population and Direct Employment Assumptions (at Build-out) (1)

	Stadium Alternative		Non-Stadium Alternative	
	Development Program (2)	Population/ Jobs(3)	Development Program (2)	Population/ Jobs(3)
Residential				
Housing (all types) (units)	10,500	24,465	10,500	24,465
Affordable Housing (% of total units) 31.9%	3,345		3,345	
Residential Property Management (jobs)		420		420
Non-Residential				
Neighborhood Retail (gross sq.ft.)	232,500	861	232,500	861
Regional Retail (gross sq.ft.)	635,000	1,814	635,000	1,814
Office (gross sq.ft.)	1,318,000	4,692	1,287,500	4,602
R&D (gross sq.ft.)	1,082,000	2,762	1,630,500	4,120
Hotel (220 rooms) (gross sq.ft.)	150,000	214	150,000	214
49er Stadium (seats)	69,000	359		-
Arena (seats)	10,000	87	10,000	87
Parks and Open Space (acres)	336	87	327	85
Marina (boat slips)	300	5	300	5
Parking (spaces - structured)	8,500	31	6,439	24
Total Direct Employment		11,334		12,232

Sources and Notes:

- (1) Appendices 1 and 2 detail vertical development phasing and the resulting population and employment generation on a multiyear basis during the 20+ year projection period for the Stadium and Non-Stadium alternatives, respectively.
- (2) Development program is based on Version 27 Base Stadium and Non Stadium Alternative Pro Formas, May 2010, consistent with the Disposition and Development Agreement (DDA) between the City/Agency and Master Developer, and the Zoning Map and code amendments contemplated by the proposed legislation.
- (3) Based on density assumptions in Draft Environmental Impact Report, November 2009 (EIR), pg. III.C-12. Population based on 2.33 people per household. Employment based on the following densities: residential property management = 25 units per job; neighborhood retail = 270 gross sq.ft. per job; regional retail = 350 gross sq.ft. per employee; office = 270 gross sq.ft. per employee; R&D = 400 gross sq.ft. per employee; Hotel = 700 gross sq.ft. per employee (about 1 employee/room); Parks and Open Space = 0.26 jobs per acre; Marina = 5 full time equivalent employees; structured parking = 270 spaces per job. Stadium based on 12 football games and 20 other events per year and 2,915 8-hour shifts per event, or 746,000 total hours annually; Arena employment based on 150 events per year and 300 4-hour shifts per event, or 180,000 total hours annually. Dividing stadium and arena annual hours by 2,080 hours provides an estimate of full time equivalent annual employment.

ECONOMIC IMPACT FACTORS

Introduction

The Project has the potential to produce significant economic impacts on the entire City of San Francisco in general, and to the southeast part of the city in particular. The legislation will allow a major new mixed-use development, increasing the capacity of the City to accommodate employment growth in a variety of sectors and occupations, as well as increasing the City's housing supply and residential population.

The economic impacts can be distinguished as follows:

- One-time impacts associated with construction spending (on infrastructure and buildings), as measured by increases in employment and spending during the 20+ year build-out period;
- On-going impacts resulting from employment in the new commercial buildings, including an estimate of the distribution of employment and wages by industry and occupation, and an estimate of the impact of this employment on total spending in San Francisco;
- On-going impacts resulting from new resident spending captured by San Francisco businesses;
- On-going direct impacts from attendees at stadium events; and,
- A brief analysis of the impact of new development on the City's property tax base⁷.

⁷ Seifel Consulting, provided an estimate of property tax increment generated by the combined Project in its February 2010 "Bayview Hunters Point Redevelopment Plan Amendment - Preliminary Report" and "Hunters Point Shipyard Redevelopment Plan Amendment - Preliminary Report," prepared for the San Francisco Redevelopment Agency. The Seifel report estimated property taxes accruing to various taxing entities, including the 20% set-aside for housing, pass-through payments for the General Fund and other funds, and revenues flowing to other Redevelopment programs. Because the deal is structured so that all but the pass-through payments are reinvested in the Project, only this figure is reported.

One-Time Construction Impacts

The development of the Project will create thousands of construction jobs, and inject billions of dollars into the City's economy during its anticipated 20+year build-out.

Development costs for the Project are comprised of two components: horizontal infrastructure costs needed to support the proposed development (roads, utilities, transit, parks, etc.), and the cost to construct the vertical buildings (residential units, commercial space, etc.). Cost estimates for both alternatives are summarized in Table 2 below. A multi-year, dynamic cost estimate summarizing annual costs during the construction period is presented in Appendix 3 for both alternatives.

TABLE 2 **Hunters Point Shipyard Phase 2/Candlestick Point-Vertical and Horizontal Development Cost Assumptions (at Build-out)**

	Stadium Alternative			Non - Stadium Alternative		
	Per Unit Cost (1)	Units/GSF	Total Cost (millions)	Per Unit Cost (1)	Units/GSF	Total Cost (millions)
Vertical Costs						
Residential	458,974	10,500	\$4,819	445,151	10,500	\$4,674
Neighborhood Retail	\$227	232,500	\$53	\$227	232,500	\$53
Regional Retail	\$228	635,000	\$145	\$228	635,000	\$145
Office	\$279	1,318,000	\$371	\$279	1,287,500	\$362
R&D	\$341	1,082,000	\$365	\$328	1,630,500	\$533
Hotel	139,284	220	\$31	139,284	220	\$31
Arena	\$1,101	75,000	\$83	\$1,101	75,000	\$83
Parking	\$22,000	8,500	\$187	\$22,000	6,439	\$142
49er Stadium	NA		\$900	NA		\$0
Marina	\$12,333	300	\$4	\$12,333	300	\$4
Sub-total			\$6,957			\$6,025
Horizontal Costs (1)(2)						
Direct (hard) Costs			\$1,553			\$1,804
Indirect (soft) Costs			\$311			\$328
Sub-total			\$1,864			\$2,131
Total Construction Costs (3)			\$8,821			\$8,157

Sources and Notes:

- (1) Average construction cost per unit, gross square foot, room, or space. Excludes land and developer profit. Construction costs are based on development assumptions in May 2010 pro forma (V27), the basis for the Disposition and Development Agreement (DDA) between the City/Agency and Master Developer. Vertical building costs are based on residual land pro formas, by unit type, land use, and location within the Project. These residual analyses are the basis for the finished land values in the horizontal pro forma, taking into account market conditions (for finished building value), and the cost to build the structures. The OEA has reviewed the pro formas and their assumptions and found them to be reasonable.
- (2) Excludes land acquisition cost, financing proceeds, and parking and stadium costs (which are included in the vertical costs). Includes cost for community facilities and artist space.
- (3) In 2010 \$. See Appendix 3 for a summary of development costs for both alternatives during the 20+ year projection period, consistent with the phasing assumptions in Appendices 1 and 2.

Construction of the Project will generate an annual average of approximately 1,500 direct construction jobs, representing a significant share of citywide construction employment projected during the 20+ year build-out.

The impact of the direct construction spending can be modeled using the OEA's econometric model of the San Francisco economy, prepared by Regional Economic Modeling Inc. (REMI).

The REMI model projects two key economic indicators that help explain the impact of constructing the Project: employment and *Gross City Product (GCP)*—an equivalent to Gross National Product (GNP) for San Francisco—which equals the total spending on goods and services produced in San Francisco⁸.

TABLE 3 **Hunters Point Shipyard Phase 2/Candlestick Point-Construction Period Economic Impacts**

Summary Output (1)	Stadium Alternative		Non - Stadium Alternative	
	Total During Buildout	Annual Average (2)	Total During Buildout	Annual Average (2)
Direct Construction Jobs	32,412	1,473	29,845	1,421
Indirect/Induced Jobs	14,910	678	13,729	654
Total Employment	47,322	2,151	43,574	2,075
Gross City Product (2010\$) (3)	\$4,462,199,000	\$202,827,000	\$4,251,958,000	\$202,474,000

Sources and Notes:

- (1) San Francisco employment impacts associated with new construction per Regional Economic Modeling Inc. (REMI) run, 6/10/2010, based on development cost in Table 2 and phasing in Appendix 3. Direct construction employment was estimated based on construction multiplier of 1.46 (construction jobs x 1.46 = total jobs), based on previous construction multiplier analyses conducted by the OEA. Total development costs from Appendix 3 are the input source for the REMI model.
- (2) Total during build-out divided by construction period (22 years in Stadium and 21 years in Non-Stadium).
- (3) REMI output inflated to 2010\$s per Consumer Price Index (CPI) increase for the San Francisco MSA, per the US Department of Labor, Bureau of Labor Statistics (BLS).

Table 3 summarizes total employment, direct construction jobs, and spending (GCP) generated by the development of the Project, annually and during the 20+ year build-out.

⁸ The REMI Policy Insight model is based on a multi-year baseline projection of San Francisco's economy. The model contains a number of policy variables, including construction spending, new employment by industry, and others, which can be modified to reflect changes resulting from proposed legislation, in this case the proposed Project. OEA economists assess the economic impact by re-running the projection under alternative scenarios (in this case, new construction spending and new employment and population in the different alternatives), and comparing the results with the baseline projection.

An additional 650 indirect jobs per year are projected during the 20+ year build-out.

Construction of either alternative will contribute more than \$200 million per year, and about \$4.3 billion during the 20+ year build-out, to San Francisco's gross city product.

As indicated, the development of either Project alternative will result in significant employment opportunities, with an average of about 2,100 direct and indirect jobs per year during build-out⁹. Direct employment in the construction trades is estimated to average about 1,450 jobs per year, providing significant employment opportunities in this sector¹⁰. In addition, construction activity will contribute an average of more than \$200 million per year to San Francisco's gross city product, and about \$4.3 to \$4.5 billion during the 20+ year build-out period, as shown in Table 3.

⁹ The REMI Policy Insight model captures not only direct construction jobs, but also the secondary intermediate and induced jobs. Intermediate jobs are created from the manufacturing of materials required for construction. Induced jobs are a result of new employees re-spending their wages.

¹⁰ The annual average construction employment from the Project represents nearly 6% of the 25,300 citywide construction jobs projected annually during build-out, per REMI projections.

**On-Going Impacts:
Permanent
Employment**

The 11,000 to 12,000 permanent employees are estimated to earn an aggregate salary of more than \$1 billion a year upon full build-out and absorption.

The Project will create a wide range of employment opportunities in numerous industries and occupations; the direct, induced and indirect employment attributed to the Project is anticipated to expand the City's employment base by an average of about 1.5% during the projection period.

The Project will create the opportunity for significant job growth from businesses occupying the completed non-residential buildings. Table 1 presented an estimate of employment by general land use category, based on typical employment density assumptions and the land use mix of each alternative. As indicated, an estimated 11,300 direct employees are projected under the Stadium alternative, while the Non-Stadium alternative is projected to employ about 12,200 workers at build-out¹¹.

To estimate the distribution of these workers by industry and occupation, including average wages, the OEA first selected the industries likely to occupy each type of space. The first column in the top section of Table 4 includes the industry employment assumptions for each land use category. For example the Retail land use category is assumed to be occupied by those in the retail trade (NAICS code 44-45). The next columns show the distribution of jobs among these industries, as well as average annual wages for these industries in San Francisco, per the U.S. Bureau of Labor Statistics. As indicated, the Non-Stadium alternative has a slightly higher average annual wage of \$95,000 (2010\$s), compared with \$92,000 in the Stadium alternative, primarily due to the inclusion of additional space devoted to office/R&D in the Non-Stadium alternative and the higher relative wages from this sector.

The bottom half of Table 4 summarizes employment by occupation for all of the industries in each alternative, based on the state Employment Development Department (EDD) occupational staffing patterns by industry. This database analyzes the specific types of occupations that different industries create as they grow. The OEA created a profile of each industry sector noted above, and then analyzed these occupational staffing patterns to illustrate the types of jobs created by the expansion of each sector of the economy. These sector-wide staffing patterns are shown on the bottom of Table 4, sorted by annual average salary.

¹¹ In addition to the direct employment, an additional 13,000 induced and indirect permanent jobs are estimated, per REMI. During the projection period, the average increase in direct, induced, and indirect employment attributed to the Project was calculated and compared to the average employment projected by REMI for San Francisco as a whole. On average, total Project employment will contribute to an expansion of about 1.5% to the City's employment base during the projection period.

TABLE 4

Hunters Point Shipyard Phase 2/Candlestick Point- Summary of Direct Employment Distribution by Land Use, Industry and Occupation

	Stadium Alternative			Non-Stadium Alternative		
	% of Total Jobs	# of Jobs	Average Annual Wage (SF)(4)	% of Total Jobs	# of Jobs	Average Annual Wage (SF)(4)
I. Employment by Land Use and Industry						
Retail (NAICS 44-45; retail trade)	24%	2,675	\$40,992	22%	2,675	\$40,992
Office (NAICS 51,52,54; info, finance/insurance, prof. & bus. services)	41%	4,692	\$124,881	38%	4,602	\$124,875
R&D (NAICS 5417; Scientific Research and Development Services)	24%	2,762	\$102,995	34%	4,120	\$102,995
Hotel (NAICS 721; Accommodation)	2%	214	\$40,145	2%	214	\$40,145
Arena (NAICS 7113 Promoters of Performing Arts and Sports)	1%	87	\$33,176	1%	87	\$33,176
Parking (NAICS 8129; Parking Lot Attendants)	0%	31	\$28,313	0%	24	\$28,313
Stadium (NAICS 7113 Promoters of Performing Arts and Sports)	3%	359	\$33,176	0%	-	\$0
Parks/Open Space (NAICS 712; Museums, Parks and Historical Sites)	1%	87	\$36,238	1%	85	\$36,238
Marina (NAICS 7139; Other Amusement and Recreation)	0%	5	\$26,154	0%	5	\$26,154
Residential (NAICS 53; Real Estate Rental and Leasing)	4%	420	\$81,500	3%	420	\$81,500
TOTAL Employment by Industry/Average Wage	100%	11,334	\$91,950	100%	12,232	\$94,709
II. Employment by Occupation (1)						
	% of Industry Jobs (2)	# of Industry Jobs (3)	Average Annual Wage (SF)(4)	% of Industry Jobs (2)	# of Industry Jobs (3)	Average Annual Wage (SF)(4)
Personal Care and Service	2%	195	\$24,484	1%	97	\$28,401
Food Preparation and Serving Related	2%	226	\$30,466	2%	201	\$32,013
Transportation and Material Moving	2%	231	\$34,673	2%	215	\$35,694
Building and Grounds Cleaning and Maintenance	2%	210	\$34,933	2%	196	\$36,710
Healthcare Support	0%	18	\$42,070	0%	22	\$42,145
Protective Service	1%	62	\$44,700	2%	227	\$46,307
Production Occupations	2%	201	\$45,806	0%	46	\$56,752
Office and Administrative Support	17%	1,895	\$60,465	16%	1,954	\$60,848
Installation, Maintenance, and Repair	3%	301	\$62,018	2%	300	\$63,360
Sales and Related Occupations	19%	2,199	\$63,501	18%	2,185	\$64,063
Construction and Extraction	0%	46	\$78,127	0%	52	\$80,152
Healthcare Practitioners and Technical	1%	102	\$79,010	1%	116	\$78,832
Arts, Design, Entertainment, Sports, and Media	5%	569	\$84,249	4%	520	\$87,964
Life, Physical, and Social Science	10%	1,126	\$92,353	13%	1,599	\$91,916
Architecture and Engineering	4%	485	\$94,126	5%	641	\$93,904
Education, Training, and Library	0%	25	\$105,221	0%	29	\$116,177
Computer and Mathematical Occupations	9%	1,075	\$119,359	10%	1,191	\$117,652
Business and Financial Operations	9%	1,008	\$141,680	9%	1,073	\$138,141
Legal	2%	177	\$153,433	2%	186	\$155,012
Management	10%	1,181	\$185,671	11%	1,382	\$185,045
TOTAL Employment by Occupation	100%	11,334	\$91,950	100%	12,232	\$94,709
Total Wages per Year (Billions \$) (at build-out)			\$1.0421			\$1.1584

Sources and Notes:

- (1) This exhibit summarizes employment by occupation for ALL industries in both alternatives, based on each scenario's land use plan. The following NAICS codes were used to determine average wages in San Francisco: Retail (NAICS 44-45, Retail Trade); Office (NAICS 51, Information; NAICS 52, Finance and Insurance; and NAICS 54, Professional and Business Services); R&D (NAICS 5417, Scientific Research and Development); Hotel (NAICS 721, Accommodation); Parking (NAICS 8129, Parking Lot Attendants); Parks and Open Space (NAICS 712, Parks and Historical Sites); Marina (NAICS 7139, Other Amusement and Recreation); Property Management (NAICS 53 Real Estate Rental and Leasing); Stadium and Arena (NAICS 7112-13, Sports Teams and Promoters of Sports and Events). The clean-tech sector is emerging and comprises many industries; Moody's Economy.com is studying the potential for this sector in San Francisco. Although the report has not been released, a preliminary review of the occupational distribution of businesses in this sector is similar to the R&D industry, and is used as a proxy for purposes of this analysis.
- (2) Source: California Employment Development Department (EDD), Occupational Employment Survey (OES), San Francisco MSA, 1Q 2009. Figure represents summation of employment for all industries by occupation.
- (3) See Table 1 for total estimated employment generated by Project. Distribution by occupation based on "% of Industry Jobs" ratio applied to total estimated direct employment generated by the Project.
- (4) Source: US Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW) for average San Francisco wage as of 2008, inflated to 2010\$ by CPI. San Francisco wage by occupation estimated based on MSA-level wage distribution by occupation applied to average San Francisco industry wage. May not total due to rounding.
- (5) See Appendices 4 and 5 for estimated phasing of employment and wages for each alternative.

As shown, a wide range of employment opportunities will be created in either Project alternative in numerous industries and occupations, from entry-level to advanced, with annual average pay ranging from \$25,000 to \$185,000 per year, and aggregate wages of more than \$1 billion per year in either alternative upon build-out.

The following table summarizes the occupational employment distribution by wage quintile presented in Table 4. As indicated, employment by wage is fairly evenly distributed, providing jobs for a wide range of workers with varying skills and education levels. Of particular note is the fact that nearly half of the jobs are at, or below, the City's current average salary of about \$74,000 per year, in occupations that include: personal care, food preparation, transportation, building and grounds maintenance, office and administrative support, and sales occupations, among others (See Table 4).

Income Range		Stadium Alternative			Non-Stadium Alternative		
		% of Jobs	# of Jobs	Average Annual Wage	% of Jobs	# of Jobs	Average Annual Wage
\$0 - \$37,000		8%	862	\$31,328	6%	709	\$33,931
\$37,001 - \$74,000		41%	4,677	\$61,078	39%	4,734	\$61,668
\$74,001 - \$111,000		21%	2,354	\$90,032	24%	2,957	\$91,170
\$111,001 - \$148,000		18%	2,082	\$130,161	19%	2,264	\$127,367
\$148,001 - \$185,000		12%	1,358	\$181,476	13%	1,568	\$181,479
		100%	11,334	\$91,950	100%	12,232	\$94,709

Notes:
 (1) See Table 4 for detail. The income range at the Project is divided into quintiles, with the distribution shown above.

Upon build-out, direct, indirect, and induced employment attributed to the Project will contribute \$6.4 to \$6.6 billion annually to San Francisco's Gross City Product, expanding the City's economy by about 1.7%.

The impact of the Project's permanent employment on San Francisco's GCP was estimated by inputting the direct permanent employment estimates, by industry (as summarized in Appendices 5 and 6), into the REMI model. REMI calculated the indirect and induced employment (summarized in Table 6; an additional 13,000 jobs) from the Project. Together, the total employment will contribute about \$6.6 billion annually to the City's GCP in the Non-Stadium Alternative, and about \$6.4 billion annually in the Stadium Alternative (2010\$s), upon build-out.

During the projection period, the average increase in GCP attributed to the Project was calculated and compared to the San Francisco's average baseline city product projected by REMI absent the Project. On average, the Project will contribute to an expansion of about 1.7% to the City's GCP during the projection period.

**On-Going Impacts:
Resident Spending**

Aggregate household retail spending in both alternatives is estimated at \$287 million per year at build-out

The impact of new development will not be limited to the economic activity generated by its construction and permanent employment; ultimately, 10,500 new housing units will raise the city's population by approximately 24,500 people (about 3% of the existing population of about 800,000) (see Table 1).

The new household population at the Project will make retail purchases, supporting businesses in San Francisco and the region. Average retail spending per household was estimated at \$27,300 per year¹². Thus upon build-out, residents in both alternatives will spend an aggregate of \$286.6 million per year on retail purchases, further stimulating the economy.

**On-Going Impacts:
Stadium Spending**

The impact of direct concession spending by attendees of Stadium events was also estimated. As discussed in Table 1, an estimated 12 football games (at 100% occupancy) and 20 other events (at 50% occupancy) are anticipated annually at the 69,000-seat stadium, based on information provided by the 49ers. This equates to about 1.5 million fans attending stadium events annually. Assuming concession spending of \$10 per attendee, annual spending of about \$15 million is indicated in the Stadium alternative¹³.

¹² Based on the weighted average household expenditures by affordability level in the following retail categories: Apparel, General Merchandise, Food Stores, Eating and Drinking Places, Home Furnishings and Appliances, Building Materials, Motor Vehicles and Parts, Service Stations, and other retail stores. Source: CBRE retail analysis: EIR Appendix U, Exhibit 29. Average household spending is multiplied by the cumulative completed housing units to derive total retail spending per year.

¹³ Other than direct employment and stadium spending, the OEA did not analyze other potential economic impacts associated with the Stadium Alternative, such as out-of-town visitor spending on non-stadium purchases or accommodations, or the impact of potentially hosting the Superbowl, for example. Per capita concessions sales estimates per 49ers.

Property Tax Increment to General Fund

During the 45-year life of the Redevelopment Areas, the City's General Fund is anticipated to receive about \$220 million on a present value basis from the Project, or an average of about \$4.8 million per year

Build-out of the Project will also increase the City's property tax base, as buildings are constructed and sold or rented. Upon build-out, the Project will add more than \$11 billion in assessed value to the property tax rolls, generating significant property tax revenue¹⁴.

As previously mentioned, much of the property tax increment generated by the Project will be reinvested in the Project, primarily to help pay for the community benefit package. However, per California Redevelopment Law, a portion of tax increment generated in a Redevelopment Area is "passed-through" to existing taxing entities, including the school and community college districts, BART, and the City's General Fund. During the 45-year life of both Redevelopment Areas, approximately 21% of property tax increment generated by the Project will be passed through, with about 85% of this amount flowing to the General Fund.

During the 45-year projection period, the City's General Fund is anticipated to receive about \$220 million in current 2010 dollars, or an average of about \$4.8 million per year.

¹⁴ Source: Seifel Consulting Inc. "Bayview Hunters Point Redevelopment Plan Amendment - Preliminary Report" and "Hunters Point Shipyard Redevelopment Plan Amendment - Preliminary Report," prepared for the San Francisco Redevelopment Agency, February 2010, Tables F-3,b,c, and d, and Tables D-3b, c, and d. Excludes value of 1,649 property tax exempt affordable housing units (Agency and Alice Griffith housing).

Summary conclusions

Overall, either the Stadium or Non-Stadium Alternatives of the proposed Project will generate significant one-time and on-going economic impacts to the City. As indicated in Table 6, the Stadium Alternative, with its slightly higher construction costs, will generate marginally more employment during the build-out phase. In addition, this alternative includes additional impacts associated with spending at Stadium events. On the other hand, the Non-Stadium Alternative, which can accommodate additional buildings for employment generating uses, is anticipated to support about 900 more direct permanent jobs, generating about \$250 million more per year in gross city product, compared to the Stadium Alternative.

TABLE 6		Hunters Point Shipyard Phase 2/Candlestick Point-Economic Impact Summary	
	Stadium Alternative	Non-Stadium Alternative	
One-Time Impacts			
<u>Construction Period Impacts (1)</u>			
Annual Average Employment	2,151	2,075	
<i>Annual Direct Construction Employment</i>	1,473	1,421	
Annual Gross City Product (2010\$s)	\$202,827,000	\$202,474,000	
On-Going Impacts (at build-out)			
<u>Permanent Employment (2)</u>			
Direct Project Employment	11,334	12,232	
Indirect and Induced Employment	12,738	13,438	
Total Employment	24,072	25,670	
Average Annual Wage (2010\$s)	\$91,950	\$94,709	
Direct Aggregate Wages per Year (2010\$s)	\$1,042,185,884	\$1,158,444,912	
Annual Gross City Product (2010\$s)	\$6,376,026,000	\$6,632,137,000	
<u>Resident Spending (3)</u>			
Aggregate Retail Spending per Year (2010\$s)	\$286,640,000	\$286,640,000	
<u>Stadium Spending (3)</u>			
Concession Spending per Year (2010\$s)	\$15,180,000	\$0	
Sources and Notes:			
(1) Annual averages during 20+ year build-out period. Employment includes direct and indirect jobs. See Table 3.			
(2) See Tables 1, 4, and Appendices 4 and 5 for direct employment detail. Indirect and induced employment, and gross city product per 6.30.10 REMI run.			
(3) See text for detail.			

APPENDIX 1: VERTICAL COMPLETION SCHEDULE AND POPULATION AND EMPLOYMENT ESTIMATES STADIUM ALTERNATIVE

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
A. Vertical Completion Schedule (1)																					
Residential (housing units)																					
Residential (all unit types)	10,500																				
Non-Residential																					
Retail																					
Net Sq.Ft.																					
Neighborhood	232,500																				
Regional	635,000																				
Sub-total	867,500																				
Commercial (R&D & Office)																					
OFFICE	1,193,000																				
R&D	957,000																				
R&D/OFFICE (50% each)	250,000																				
Sub-total	2,400,000																				
Hotel																					
Hotel	150,000																				
Arena (seats)	75,000																				
Parking (spaces - structured)	8,500																				
49er STADIUM (seats)	69,000																				
Parks and Open Space (acres)	336.4																				
Marina (slips)	300																				
Total	10,500																				

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	
B. Population and Employment Estimates																						
Residential Population																						
Total Residential Population	2,333																					
Cumulative Residential Population	1,247	2,123	3,041	4,071	7,340	8,481	9,984	11,384	12,044	14,213	16,233	18,278	21,275	22,142	23,852	24,465						
Employment																						
Density (2)																						
Retail	270																					
Neighborhood	861																					
Regional	1,814																					
Sub-total	2,675																					
Commercial Retail Employment																						
Commercial (R&D & Office)	276																					
Office Employment	400																					
R&D Employment	2,393																					
R&D/Office Employment	338																					
Sub-total	740																					
Cumulative Office/R&D Employment	740	740	740	950	1,379	2,540	4,131	4,710	6,711	7,455	7,455	7,455	7,455	7,455	7,455	7,455	7,455	7,455	7,455	7,455	7,455	
Hotels																						
Hotel Employment	700																					
Cumulative Hotel Employment	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	
Arena																						
Arena Employment	87																					
Cumulative Arena Employment	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	
Parking																						
Parking Employment	270																					
Cumulative Parking Employment	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	
49er STADIUM																						
Total Stadium Employment	359																					
Cumulative Stadium Employment	359	359	359	359	359	359	359	359	359	359	359	359	359	359	359	359	359	359	359	359	359	
Parks and Open Space																						
Parks and Open Space Employment	0.26																					
Cumulative Parks and Open Space Employment	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	
Marina																						
Total Marina Employment	5																					
Cumulative Marina Employment	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
Residential Property Management																						
Residential Employment	25																					
Cumulative Residential Employment	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	
CUMULATIVE EMPLOYMENT	11,334																					

(1) Note: Assumes 2 year delay from finished to delivery to finished vertical development. Source: DDA pro forma version 27. Timing is consistent with DDA schedule of performance.

(2) Based on density assumptions in ER; see Table 1 in report for detail.

APPENDIX 2: VERTICAL COMPLETION SCHEDULE AND POPULATION AND EMPLOYMENT ESTIMATES NON-STADIUM ALTERNATIVE

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. Vertical Completion Schedule (1)																		
Residential (Inhousing units)																		
Residential (all unit types)	-	535	376	394	442	1,403	490	132	363	270	829	1,066	608	864	451	1,280	623	354
Non-Residential																		
Retail																		
Neighborhood	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Regional	-	-	-	-	8,550	60,800	17,100	8,550	23,750	-	-	34,042	34,042	34,042	-	-	-	-
Sub-total	-	-	-	-	8,550	60,800	17,100	8,550	23,750	-	-	34,042	34,042	34,042	-	-	-	-
Commercial (R&D. & Office)																		
OFFICE	-	-	-	-	-	79,800	-	-	207,867	222,913	68,546	358,333	275,691	-	-	-	-	-
R&D	-	-	-	-	-	-	-	131,100	146,483	157,087	48,304	252,517	80,859	550,050	-	-	-	-
Sub-total	-	-	-	-	-	79,800	-	131,100	354,350	380,000	116,850	610,850	369,550	550,050	-	-	-	-
Hotel																		
Hotel	-	-	-	-	-	112,500	-	-	-	-	-	-	112,500	-	-	-	-	-
Arena																		
Arena	-	-	-	-	-	-	-	36,919	20,331	-	-	-	-	-	-	-	-	-
Parking																		
Parking	-	-	-	-	416	27	301	54	206	560	400	643	3,093	579	-	-	-	-
49er STADIUM																		
Parks and Open Space	-	10	27	10	17	26	22	20	21	48	-	12	106	-	-	8	-	300
Marina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total																		
Total	-	535	376	394	442	1,403	490	132	363	270	829	1,066	608	864	451	1,280	623	354

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
B. Population and Employment Estimates (2)																		
Residential Population																		
Residential Population	-	1,247	876	918	1,030	3,269	1,142	308	846	629	1,932	2,484	1,417	2,080	1,051	2,982	1,452	825
Cumulative Residential Population																		
Cumulative Residential Population	-	1,247	2,123	3,041	4,071	7,340	8,481	8,789	9,635	10,264	12,195	14,679	16,096	18,155	19,206	22,189	23,640	24,465
Employment																		
Retail																		
Neighborhood	-	-	-	-	33	237	67	33	93	-	-	133	133	133	-	-	-	-
Regional	-	-	-	-	33	237	67	33	93	-	-	133	1,814	1,947	-	-	-	-
Sub-total	-	-	-	-	33	270	337	370	463	463	463	596	2,543	2,675	2,675	2,675	2,675	2,675
Commercial (R&D. & Office)																		
Office Employment	-	-	-	-	-	-	-	-	703	850	261	1,367	1,051	-	-	-	-	-
R&D Employment	-	-	-	-	-	210	-	345	385	413	127	685	247	1,448	-	-	-	-
R&D/Office Employment	-	-	-	-	-	559	-	559	559	559	559	2,031	2,031	1,448	-	-	-	-
Sub-total	-	-	-	-	-	559	-	345	1,178	1,284	389	2,031	1,298	1,448	-	-	-	-
Cumulative Office/R&D Employment																		
Cumulative Office/R&D Employment	-	-	-	-	559	569	769	1,114	2,292	3,556	3,945	5,976	7,274	8,722	8,722	8,722	8,722	8,722
Hotel																		
Hotel Employment	-	-	-	-	-	-	-	-	-	-	-	-	214	-	-	-	-	-
Cumulative Hotel Employment																		
Cumulative Hotel Employment	-	-	-	-	-	-	-	-	-	-	-	-	214	214	214	214	214	214
Arena																		
Arena Employment	-	-	-	-	-	-	-	-	-	-	-	-	87	87	87	87	87	87
Cumulative Arena Employment																		
Cumulative Arena Employment	-	-	-	-	-	-	-	-	-	-	-	-	87	87	87	87	87	87
Parking																		
Parking Employment	-	-	-	2	0	1	0	1	2	1	1	2	2	11	2	-	-	-
Cumulative Parking Employment																		
Cumulative Parking Employment	-	-	-	2	2	3	3	4	6	7	8	10	22	24	24	24	24	24
Parks and Open Space																		
Parks and Open Space Employment	-	3	7	3	4	7	6	5	12	-	3	28	-	-	-	-	-	-
Cumulative Parks and Open Space Employment																		
Cumulative Parks and Open Space Employment	-	3	10	12	16	23	29	34	40	52	52	83	83	83	83	85	85	85
Marina																		
Marina Employment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Marina Employment																		
Cumulative Marina Employment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential Property Management																		
Residential Property Management	-	21	15	16	18	56	20	5	15	11	33	43	24	35	18	51	25	14
Cumulative Residential Employment																		
Cumulative Residential Employment	-	21	36	52	70	126	146	151	165	176	209	252	276	312	330	381	406	420
CUMULATIVE EMPLOYMENT																		
CUMULATIVE EMPLOYMENT	-	3	31	49	629	687	1,197	1,289	1,679	2,979	4,255	4,767	7,003	10,499	12,116	12,134	12,188	12,232

(1) Note: Assumes 2 year delay from finished lot delivery to finished vertical development. Source: DDA pro formas Version 27. Timing is consistent with DDA schedule of performance.
 (2) Based on density assumptions in EIR; see Table 1 in report for detail.

APPENDIX 3: HORIZONTAL AND VERTICAL CONSTRUCTION COST SUMMARY – STADIUM AND NON-STADIUM ALTERNATIVES

Hunters Point Phase 2/Candlestick Point
TOTAL HORIZONTAL AND VERTICAL CONSTRUCTION COST SUMMARY (1)
 Stadium and Non-Stadium Alternatives
 June 2010

	Total	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
STADIUM																								
Horizontal	1,853,907,690	82,467,981	34,862,716	18,615,758	50,811,668	81,821,562	102,788,757	96,005,084	143,205,201	196,097,103	270,537,447	136,621,103	63,375,181	54,606,797	56,057,024	52,808,252	41,406,830	41,975,778	57,729,652	36,472,165	46,209,089	193,802,105		
Vertical	6,936,981,766	-	-	-	115,946,884	998,087,798	206,499,273	522,385,418	764,978,919	780,215,037	165,076,342	135,350,381	453,282,395	576,927,569	507,350,880	577,224,655	287,582,084	165,434,139	470,048,550	434,394,190	264,395,427	238,511,675	62,429,529	
Total Cost	8,820,889,456	82,467,981	34,862,716	18,615,758	168,758,553	279,869,361	309,198,030	618,371,502	908,184,120	976,312,161	456,613,789	273,971,484	526,657,576	631,594,365	563,437,914	630,032,907	326,998,914	207,409,918	527,778,603	472,866,375	310,694,516	452,413,783	62,429,529	
NON-STADIUM																								
Horizontal	2,131,169,527	82,087,787	34,687,646	17,218,442	49,801,311	59,637,977	63,651,294	48,147,465	52,493,353	66,612,038	55,719,143	105,506,265	109,451,612	278,077,195	373,645,547	163,309,102	128,594,847	75,933,239	68,345,276	97,781,973	146,446,346	53,061,697		
Vertical	6,025,443,698	-	-	-	115,843,777	197,990,242	201,372,388	216,780,457	430,378,712	444,087,832	168,368,905	199,631,233	268,116,670	323,697,568	539,204,838	695,076,322	645,989,530	367,542,657	408,500,056	460,317,950	239,947,002	87,758,178		
Total Cost	8,156,613,425	82,087,787	34,687,646	17,218,442	165,645,088	257,518,219	265,023,682	265,927,923	482,872,065	510,679,470	222,088,099	305,137,498	377,578,282	601,764,763	912,850,385	658,385,424	774,574,377	463,475,896	474,845,372	558,066,923	385,393,351	140,819,865		

Note:
 (1) See Table 2 in the text for detailed assumptions and source notes. Cost phasing based on development program and timing in Appendices 1 and 2. The total cost for each alternative is the basis for the RELM model run to estimate construction period economic impacts.

APPENDIX 4: SUMMARY OF EMPLOYMENT AND WAGE ESTIMATES – STADIUM ALTERNATIVE

Land Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
Retail																				
Annual Employment	-	-	-	37	274	59	728	1,223	188	74	-	-	-	-	-	-	-	-	-	-
Cumulative Employment	-	-	-	37	311	404	463	1,191	2,413	2,675	2,675	2,675	2,675	2,675	2,675	2,675	2,675	2,675	2,675	2,675
Aggregate Annual Wages				1,680,741	2,438,222	6,460,974	8,599,259	47,665,676	95,467,655	103,994,531	103,992,285	103,992,285	103,992,285	103,992,285	103,992,285	103,992,285	103,992,285	103,992,285	103,992,285	103,992,285
Office																				
Annual Employment	-	-	-	370	-	272	736	1,136	439	1,268	471	-	-	-	-	-	-	-	-	-
Cumulative Employment	-	-	-	370	370	370	370	1,378	2,514	2,853	4,221	4,692	4,692	4,692	4,692	4,692	4,692	4,692	4,692	4,692
Aggregate Annual Wages				45,043,228	45,043,228	45,043,228	67,797,538	306,556,413	359,628,448	514,992,274	571,905,733	571,905,733	571,905,733	571,905,733	571,905,733	571,905,733	571,905,733	571,905,733	571,905,733	571,905,733
R&D																				
Annual Employment	-	-	-	370	210	157	425	456	140	732	272	-	-	-	-	-	-	-	-	-
Cumulative Employment	-	-	-	370	580	737	1,162	1,618	1,758	2,490	2,762	2,762	2,762	2,762	2,762	2,762	2,762	2,762	2,762	2,762
Aggregate Annual Wages				37,460,468	55,244,328	74,034,248	165,760,021	62,494,543	76,559,681	250,833,469	277,480,916	277,480,916	277,480,916	277,480,916	277,480,916	277,480,916	277,480,916	277,480,916	277,480,916	277,480,916
Hotel																				
Annual Employment	-	-	-	-	-	-	-	-	137	77	-	-	-	-	-	-	-	-	-	-
Cumulative Employment	-	-	-	-	-	-	-	-	137	214	214	214	214	214	214	214	214	214	214	214
Aggregate Annual Wages									5,357,651	8,390,143	8,390,143	8,390,143	8,390,143	8,390,143	8,390,143	8,390,143	8,390,143	8,390,143	8,390,143	8,390,143
Arena																				
Annual Employment	-	-	-	-	-	-	-	-	-	87	-	-	-	-	-	-	-	-	-	-
Cumulative Employment	-	-	-	-	-	-	-	-	-	87	87	87	87	87	87	87	87	87	87	87
Aggregate Annual Wages										2,800,25	2,800,25	2,800,25	2,800,25	2,800,25	2,800,25	2,800,25	2,800,25	2,800,25	2,800,25	2,800,25
Parking																				
Annual Employment	-	-	-	0	12	1	2	7	5	2	1	-	-	-	-	-	-	-	-	-
Cumulative Employment	-	-	-	0	12	13	14	16	22	28	30	31	31	31	31	31	31	31	31	31
Aggregate Annual Wages				6,937	339,716	357,059	380,316	429,918	621,161	771,749	837,511	869,287	869,287	869,287	869,287	869,287	869,287	869,287	869,287	869,287
Stadium																				
Annual Employment	-	-	-	359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Employment	-	-	-	359	359	359	359	359	359	359	359	359	359	359	359	359	359	359	359	359
Aggregate Annual Wages				11,636,656	11,636,656	11,636,656	11,636,656	11,636,656	11,636,656	11,636,656	11,636,656	11,636,656	11,636,656	11,636,656	11,636,656	11,636,656	11,636,656	11,636,656	11,636,656	11,636,656
Parks and Open Space																				
Annual Employment	3	7	3	4	7	6	5	6	13	3	29	-	-	-	-	-	-	-	-	-
Cumulative Employment	3	10	13	17	24	30	35	41	54	57	86	85	85	85	85	87	87	87	87	87
Aggregate Annual Wages	95,583	352,20	446,586	605,549	838,533	1,044,220	1,246,571	1,448,467	1,892,60	1,892,60	2,100,031	3,018,554	3,018,554	3,018,554	3,018,554	3,018,554	3,018,554	3,018,554	3,018,554	3,018,554
Marina																				
Annual Employment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Employment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aggregate Annual Wages																				
Residential Property Management																				
Annual Employment	-	21	15	16	18	56	20	9	41	11	37	35	7	21	58	15	29	11	11	11
Cumulative Employment	-	21	36	52	70	126	146	154	195	207	244	279	286	307	365	380	409	420	420	420
Aggregate Annual Wages		170,022	2,686,506	4,149,221	5,554,552	9,018,262	11,673,307	12,280,075	15,534,939	16,434,732	22,413,828	22,413,828	22,413,828	22,413,828	22,413,828	22,413,828	22,413,828	22,413,828	22,413,828	22,413,828
TOTAL EMPLOYMENT																				
Annual Employment	3	29	18	760	421	558	118	504	1,175	2,504	1,986	2,257	854	7	21	60	15	34	11	11
Cumulative Employment	3	31	49	809	1,230	1,788	1,906	2,410	3,585	6,089	8,075	10,331	11,185	11,192	11,213	11,274	11,289	11,323	11,334	11,334
Aggregate Wages (\$M)	0.1	2.1	3.3	86.9	101.7	138.8	144.2	196.4	329.2	551.3	674.7	914.3	1,004.8	1,005.3	1,007.0	1,011.7	1,015.4	1,015.4	1,015.4	1,015.4

Note: based on phasing and development program in Appendices 1 and 2. See Table 4 for detailed assumptions.

APPENDIX 5: SUMMARY OF EMPLOYMENT AND WAGE ESTIMATES – NON-STADIUM ALTERNATIVE

Land Use	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032		
Average Annual Wage																					
Retail																					
Annual Employment	-	-	-	33	237	67	33	93	133	1947	133	-	-	-	-	-	-	-	-	-	
Cumulative Employment	-	-	-	33	270	337	370	463	596	2,543	2,675	2,675	2,675	2,675	2,675	2,675	2,675	2,675	2,675	2,675	
Aggregate Annual Wages	-	-	-	1,332,687	10,809,407	13,474,741	14,807,407	18,509,259	18,509,259	18,509,259	18,509,259	23,815,247	101,856,377	106,962,365	106,962,365	106,962,365	106,962,365	106,962,365	106,962,365	106,962,365	106,962,365
Office																					
Annual Employment	-	-	-	280	-	-	-	793	850	261	1,051	-	-	-	-	-	-	-	-	-	
Cumulative Employment	-	-	-	280	280	280	280	1,072	1,923	2,184	3,551	4,602	4,602	4,602	4,602	4,602	4,602	4,602	4,602	4,602	
Aggregate Annual Wages	-	-	-	34,050,962	34,050,962	34,050,962	34,050,962	130,804,141	234,146,424	265,986,676	432,429,886	560,487,031	560,487,031	560,487,031	560,487,031	560,487,031	560,487,031	560,487,031	560,487,031	560,487,031	
R&D																					
Annual Employment	-	-	-	280	280	280	480	835	1,220	1,633	1,761	2,425	2,672	4,120	4,120	4,120	4,120	4,120	4,120	4,120	
Cumulative Employment	-	-	-	280	560	840	1,320	2,155	2,985	4,618	6,379	8,804	11,476	15,596	19,716	23,836	27,956	32,076	36,196	40,316	
Aggregate Annual Wages	-	-	-	28,084,583	49,179,873	49,179,873	49,179,873	83,835,813	122,559,279	164,083,712	176,862,793	243,604,916	268,416,363	413,820,633	413,820,633	413,820,633	413,820,633	413,820,633	413,820,633	413,820,633	
Hotel																					
Annual Employment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cumulative Employment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aggregate Annual Wages	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Arena																					
Annual Employment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cumulative Employment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aggregate Annual Wages	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Parking																					
Annual Employment	-	-	-	2	0	1	0	1	2	1	1	2	2	11	2	-	-	-	-	-	
Cumulative Employment	-	-	-	2	2	3	3	4	6	7	8	10	22	24	24	24	24	24	24	24	
Aggregate Annual Wages	-	-	-	42,525	45,287	76,092	81,615	102,724	159,987	200,897	217,250	283,012	599,366	658,583	658,583	658,583	658,583	658,583	658,583	658,583	
Parks and Open Space																					
Annual Employment	2.6	7	3	4	7	6	5	5	12	-	3	28	-	-	-	2	-	-	-	-	
Cumulative Employment	3	10	12	16	23	29	34	40	52	52	55	83	83	83	83	85	85	85	85	85	
Aggregate Annual Wages	91,704	337,829	430,384	582,685	825,611	1,031,298	1,215,649	1,409,093	1,845,761	1,845,761	1,954,511	2,932,175	2,932,175	2,932,175	2,932,175	3,004,871	3,004,871	3,004,871	3,004,871	3,004,871	
Marina																					
Annual Employment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cumulative Employment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aggregate Annual Wages	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Residential Property Management																					
Annual Employment	-	21	15	16	18	56	20	5	16	11	33	43	24	35	18	51	25	14	-	-	
Cumulative Employment	-	21	36	52	70	126	146	151	166	176	209	252	276	312	330	381	406	420	420	420	
Aggregate Annual Wages	-	1,701,022	2,896,506	4,149,221	5,554,552	10,015,362	11,573,307	11,992,999	13,147,150	14,005,609	16,641,398	20,030,724	21,983,948	24,774,508	26,208,454	30,279,188	32,259,004	33,384,540	33,384,540	33,384,540	
TOTAL EMPLOYMENT																					
Annual Employment	3	28	18	581	58	510	92	390	1,300	1,276	512	2,237	3,496	1,618	18	53	25	19	-	-	
Cumulative Employment	3	31	49	629	687	1,197	1,289	1,679	2,979	4,255	4,767	7,003	10,499	12,116	12,134	12,188	12,213	12,232	12,232	12,232	
Aggregate Wages (\$M)	\$0	0.1	2.0	3.3	66.9	69.9	105.2	146.2	286.8	432.8	483.0	725.9	967.2	1,120.8	1,122.3	1,126.4	1,128.4	1,129.6	1,129.6	1,129.6	

Note: based on phasing and development program in Appendices 1 and 2. See Table 4 for detailed assumptions.

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