

## MEMORANDUM

**DATE:** February 18, 2005

**TO:** Mark Griffin, Port of Seattle

**FROM:** Chris Mefford and Kapena Pflum

**RE:** **North Bay Jobs Stratification Analysis**

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### 1. Introduction: Purpose, Methodology and Approach

This memorandum presents an assessment of the types of employment that can be expected at North Bay given the six Development Alternatives being studied in the project's Environmental Impact Statement (EIS) process. Projected employment for each Development Alternative is stratified by industry, wage level and educational attainment.

Related Berk & Associates memoranda have analyzed the potential economic and fiscal impacts associated with the Development Alternatives (*Preliminary Economic and Fiscal Assessment: North Bay Development Alternatives, January 21, 2005* and *Assessment of Potential Net New Economic and Fiscal Impacts of North Bay Development Alternatives, February 18, 2005*). However, with economic development and job creation as a critical element of the Port's overall mission and a key objective for the North Bay project, the Port has sought a deeper understanding of the nature and types of employment anticipated at North Bay. This memorandum leverages national, regional and local occupation data and trends by industry to inform the dialogue about the types of jobs projected for North Bay.

### Methodology and Approach

**Relationship to EIS Development Alternatives.** The analysis works within the framework of the six Development Alternatives currently under study. Because Alternative 6 is a No Action Alternative – leaving the site “as is” – it would not result in new development or jobs on the property. Therefore, the analysis works with Development Alternatives 1-5 only – those Alternatives which will result in new employment on the site.

Alternatives 1 and 2 are the maximum density scenarios with approximately 7.0 million s.f. of new development. Alternative 2 allocates a significant portion of new development to residential space while Alternative 1 has no residential and higher concentrations of office and R&D space. Alternatives 3 and 4 are the medium density scenarios with 5.0 and 3.2 million s.f. of new development respectively. Alternative 3 incorporates more development because it includes development on the Washington National Guard Armory site. Alternative 5 is the low density scenario with 1.0 million s.f. developed within current zoning parameters at North Bay. Alternative 6 assumes no further development on the site.

**Quantitative and Qualitative Data Sources.** The analysis draws from policy analyses and recent reports prepared for the North Bay project, including the *North Bay Traditional and Emerging Industrial Land Market Study*, *North Bay Residential Use Policy Analysis*, and *North Bay Commercial Market and Policy Analysis*. Additional statistical data and trends were drawn from national, state and local data sources including the federal Bureau of Labor Statistics and the Washington State Employment Security Department. Interviews with local employers were also conducted to supplement the data analyses and to further understand current trends in key regional industries, particularly the biotech sector.

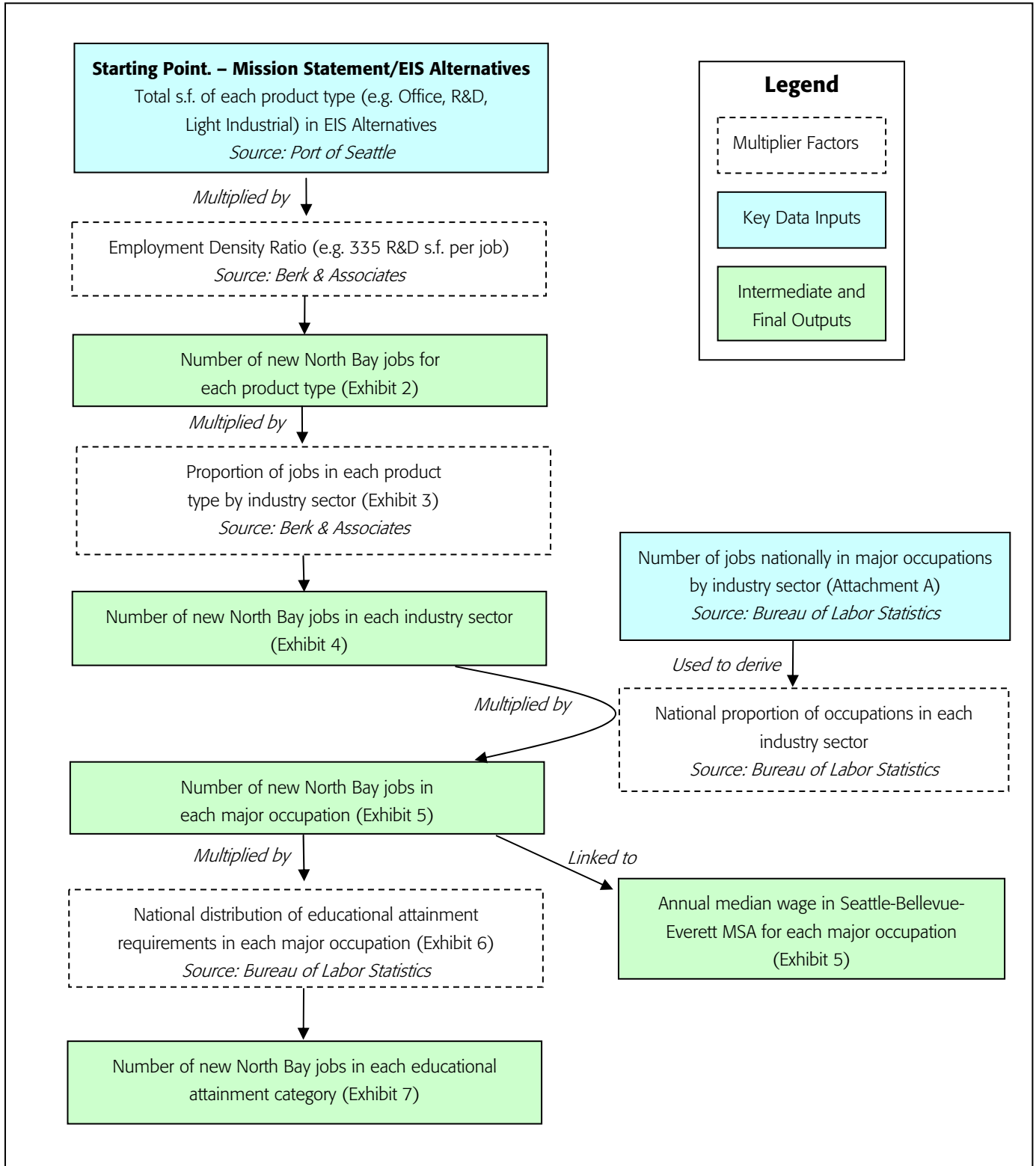
**Definitions of Terms.** Listed below are definitions of a few important real estate and employment terms and how they are used in this memorandum.

- **Development Alternative or EIS Alternative.** Used interchangeably to refer to the six Development Alternatives being studied in the project's EIS process.
- **Building Product Type or Product Type.** These terms refer to the five types of development being considered in the Development Alternatives (Office, R&D/Lab, Light Industrial/Flex/Tech, Retail, and Residential).
- **Industry or Sector.** Used interchangeably to refer to industry categories delineated by two-digit North American Industry Classification System (NAICS) codes (e.g. manufacturing, retail trade, information).
- **Occupation or Major Occupation.** Used interchangeable to refer to 22 major occupation categories delineated by the Standard Occupation Classification (SOC) System (e.g. management occupations, legal occupations, sales and related occupations).

**Limitations of Analysis.** This analysis uses several conversion factors, assumptions, and national averages that insert a degree of uncertainty in the final results. The analysis is not meant to forecast how many jobs in each occupation will be brought into North Bay under each Development Alternative. Rather, it provides a representation of the range of occupations that could be expected at North Bay and the wages and levels of education typically associated with these occupations.

**Exhibit 1** presents a graphic summary of the steps and methodology used to stratify the new jobs projected for each North Bay Development Alternative.

**Exhibit 1  
Jobs Stratification Methodology Flowchart**



**Overview of Methodology.** As **Exhibit 1** shows, the analysis was conducted in a step-wise fashion, starting with the s.f. of each product type projected for each EIS Alternative. A series of conversion factors and assumptions, based on national, regional and local empirical trends, were then applied to project employment levels for each of the Alternatives, and to stratify them by industry, occupation, wage level, and educational attainment. The following key analytic steps were conducted:

- 1. Conversion of Square Footage to Employment by Type of Development.** Starting with the s.f. of each product type projected for each EIS Alternative, employment density (s.f. of floorspace per employee) assumptions were used to convert s.f. into estimates of the number of new jobs for each product type. All employment projections are based on project build-out. In alignment with the project's mission statement and program assumptions for the EIS Alternatives, four types of building products were analyzed:
  - Office;
  - Research & development/lab;
  - Light industrial/flex/tech; and
  - Retail goods and services.

Residential uses are also being analyzed in the EIS although no jobs are assumed to occur as a result of its development.

- 2. Allocation of Jobs by Building Product Type to Industry Sector.** A set of assumptions based on information about space requirements and demands among various industries was used to allocate jobs by product type to major industry sectors.
- 3. Conversion of Jobs by Industry to Major Occupations.** National occupational data listing the number of jobs in each occupation by industry were used to calculate the proportions of each major occupation within each industry sector. These proportions were used to convert the projected new North Bay jobs by industry totals into employment by major occupation category.
- 4. Association of Major Occupations to Wage Data.** North Bay jobs grouped by occupation were linked to wage data from the Washington State Employment Security Department for the Seattle-Bellevue-Everett metropolitan statistical area (MSA), to show the types of wages that could be expected for new jobs created at the site.
- 5. Conversion of Jobs by Major Occupation to Level of Educational Attainment.** North Bay jobs by occupation were converted into jobs by educational attainment using national data from the Bureau of Labor Statistics on the levels of education associated with each major occupation.

**2. North Bay Development Alternatives and Industry Attraction**

**Projected Employment by Building Product Type.** The North Bay Development Alternatives under consideration in the Port’s EIS process provide a useful framework for analyzing job capacity, industry types and occupational trends. **Exhibit 2** presents a summary of employment projections by building product type (office, R&D/lab, light industrial/flex/tech and retail) associated with the build-out development assumptions and square footage estimates for each Development Alternative. This analysis was developed as input to the EIS process in January 2005 (*Preliminary Economic and Fiscal Assessment: North Bay Development Alternatives Memorandum, Berk & Associates, January 21, 2005.*).

**Exhibit 2  
North Bay Development Alternatives and Projected Jobs by Product Type**

Product Type	Square Footage and Jobs for Each EIS Alternative									
	Alt 1: Max. Density w/o Residential		Alt 2: Max. Density w/ Residential		Alt 3: Med. Density w/Res'l (Armory)		Alt 4: Med. Density w/ Residential		Alt 5: Low Density - Current Zoning	
	Gross Area (S.F.)	Number of Jobs	Gross Area (S.F.)	Number of Jobs	Gross Area (S.F.)	Number of Jobs	Gross Area (S.F.)	Number of Jobs	Gross Area (S.F.)	Number of Jobs
Office	3,287,500	9,240	1,770,833	4,940	1,798,750	5,080	475,000	1,400	100,000	250
R&D / Lab	2,875,000	8,080	2,241,667	6,260	2,075,500	5,860	1,425,000	4,210	350,000	880
Light Industrial/Flex/ Tech	250,000	700	250,000	700	237,000	670	200,000	590	525,000	1,330
Retail - Goods and Service	525,000	1,480	575,000	1,600	493,500	1,390	100,000	300	15,000	40
<b>Total</b>	<b>6,937,500</b>	<b>19,500</b>	<b>4,837,500</b>	<b>13,500</b>	<b>4,604,750</b>	<b>13,000</b>	<b>2,200,000</b>	<b>6,500</b>	<b>990,000</b>	<b>2,500</b>

Source: Port of Seattle, Berk & Associates

**Exhibit 2** shows the scale of development and employment planned for North Bay: the number of jobs projected at build-out ranges from 19,500 in Alternative 1 to 2,500 in Alternative 5. The nearly 20,000 jobs projected for Alternative 1 and the estimated 13,500 and 13,000 jobs associated with Alternatives 2 and 3 respectively, reflect the Port’s objectives that the property be developed into a thriving employment center for the region. By any measure, these employment projections represent a significant number of jobs, and a resulting opportunity for a diversity of employment types, as discussed below.

**Projection of North Bay Employment by Product Type.** Based on industry data, the *North Bay Traditional and Emerging Industrial Land Market Study* and the *North Bay Commercial Market and Policy Analysis*, a scenario of industry mixes that might be expected upon build-out at North Bay is presented in **Exhibit 3**. This Exhibit correlates NAICS industry codes to building product types planned for North Bay and projects the types of industries most likely to occupy office, R&D, light industrial/flex/tech and retail space at North Bay.

As **Exhibit 3** shows, R&D/lab space is assumed to be occupied largely by science and technology companies. Light industrial space is expected to be occupied primarily by manufacturing companies, with some related distribution activity. Retail space is entirely allocated to the retail industry. Projecting the industry mix within office use involves the greatest degree of complexity. As shown in **Exhibit 3**, 59% of office employment is assumed to be in three categories: 33% in the Information industry (e.g. software programming; Internet service providers and publishing; newspaper, book and music publishing); 13% in Professional, Scientific and Technical Services; and another 13% in Management of Companies and Enterprises. The balance of projected office-related employment is assumed to be spread across a dozen diverse industry sectors.

**Exhibit 3**  
**Projected Mix of Industries at North Bay by Building Product Type**

2-Digit NAICS Code	Industry	Portion of Jobs in Each Industry			
		Office	R&D/Lab	Light Ind. Flex/Tech	Retail
11	Agriculture, Forestry, Fishing and Hunting	3%			
21	Mining				
22	Utilities	3%			
23	Construction	3%			
31-33	Manufacturing	3%	18%	75%	
42	Wholesale Trade	3%			
44-45	Retail Trade	3%			100%
48-49	Transportation and Warehousing	3%		25%	
51	Information	33%	15%		
52	Finance and Insurance	3%			
53	Real Estate and Rental and Leasing	3%			
54	Professional, Scientific, and Tech. Services	13%	67%		
55	Mgmt. of Companies and Enterprises	13%			
56	Admin., Support, and Waste Mgmt.	3%			
61	Educational Services				
62	Health Care and Social Assistance				
71	Arts, Entertainment, and Recreation				
72	Accommodation and Food Services				
81	Other Services (except Public Admin.)	3%			
92	Public Administration	3%			
<b>Total All Industries</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: Berk & Associates

The percentages listed in **Exhibit 3** represent one of many possible ways in which industry employment might occupy the building product types at North Bay. The assumptions in **Exhibit 3** describe an industry mix that reflects priorities and goals in the project mission statement.

**Projected North Bay Employment by Industry.** Applying the assumed mix of industries at North Bay by building product type in **Exhibit 3** to the projected employment by Development Alternative from **Exhibit 2** yields an estimate of employment by industry for each of the Development Alternatives. These employment projections are shown in **Exhibit 4**. As shown in **Exhibit 4**, for Alternatives 1-4 the greatest concentration of jobs (more than 75% in all four Alternatives) is among four industries: Professional, Scientific and Technical Services; Information; Manufacturing; and Retail. The low-density Alternative 5 has jobs concentrated in Manufacturing (46% of total jobs in this Alternative), although the Alternative features fewer Manufacturing jobs in total (1,162) compared with the four higher-density Alternatives. In comparison, Alternative 1 has 2,290 Manufacturing jobs projected at build-out, Alternative 2 has 1,814, Alternative 3 has 1,726, and Alternative 4 has 1,248 Manufacturing jobs projected.

**Exhibit 4**  
**Projected Jobs at North Bay by Development Alternative and Industry**

2-Digit NAICS Code	Industry	Alt 1: Max Density w/o Residential		Alt 2: Max Density w/ Residential		Alt 3: Med. Density (Armory)		Alt 4: Med. Density		Alt 5: Low Density	
		Jobs	% of Jobs	Jobs	% of Jobs	Jobs	% of Jobs	Jobs	% of Jobs	Jobs	% of Jobs
54	Professional, Scientific, and Tech. Services	6,646	34%	4,850	36%	4,603	35%	3,008	46%	626	25%
51	Information	4,292	22%	2,586	19%	2,572	20%	1,099	17%	217	9%
31-33	Manufacturing	2,290	12%	1,814	13%	1,726	13%	1,248	19%	1,162	46%
44-45	Retail Trade	1,784	9%	1,769	13%	1,563	12%	342	5%	46	2%
55	Mgmt. of Companies and Enterprises	1,232	6%	659	5%	677	5%	187	3%	34	1%
48-49	Transportation and Warehousing	484	2%	339	3%	337	3%	195	3%	340	14%
11	Agriculture, Forestry, Fishing and Hunting	308	2%	165	1%	169	1%	47	1%	8	0%
22	Utilities	308	2%	165	1%	169	1%	47	1%	8	0%
23	Construction	308	2%	165	1%	169	1%	47	1%	8	0%
42	Wholesale Trade	308	2%	165	1%	169	1%	47	1%	8	0%
52	Finance and Insurance	308	2%	165	1%	169	1%	47	1%	8	0%
53	Real Estate and Rental and Leasing	308	2%	165	1%	169	1%	47	1%	8	0%
56	Admin., Support, and Waste Mgmt.	308	2%	165	1%	169	1%	47	1%	8	0%
81	Other Services (except Public Admin.)	308	2%	165	1%	169	1%	47	1%	8	0%
92	Public Administration	308	2%	165	1%	169	1%	47	1%	8	0%
21	Mining	0	0%	0	0%	0	0%	0	0%	0	0%
61	Educational Services	0	0%	0	0%	0	0%	0	0%	0	0%
62	Health Care and Social Assistance	0	0%	0	0%	0	0%	0	0%	0	0%
71	Arts, Entertainment, and Recreation	0	0%	0	0%	0	0%	0	0%	0	0%
72	Accommodation and Food Services	0	0%	0	0%	0	0%	0	0%	0	0%
<b>Total All Industries</b>		<b>19,500</b>	<b>100%</b>	<b>13,500</b>	<b>100%</b>	<b>13,000</b>	<b>100%</b>	<b>6,500</b>	<b>100%</b>	<b>2,500</b>	<b>100%</b>

Source: Berk & Associates

**3. Occupations and Wage Projections at North Bay**

**Projected North Bay Employment and Wages by Occupation.** The next step in the analysis relies on national data that show the distribution of occupations among all industries. This data-intensive step is based on a large matrix of data from the Bureau of Labor Statistics, shown in **Attachment A**. Understanding the distribution of occupations within each industry allows for an estimate of the number of occupations in each Development Alternative, shown in **Exhibit 5**. The Exhibit presents occupation groups ranked by 2003 median wage levels, as reported in the Seattle-Bellevue-Everett MSA, for each occupation.

Exhibit 5

Projected Jobs and Wages by North Bay Development Alternative and Occupation Group

Occupation Title	2003	Alt 1: Max		Alt 2: Max		Alt 3: Med.		Alt 4: Med.		Alt 5: Low	
	Annual Median Wage	Density w/o Residential	% of Jobs	Density w/ Residential	% of Jobs	Density (Armory)	% of Jobs	Density	% of Jobs	Density	% of Jobs
Management Occupations	\$93,360	1,397	7%	929	7%	903	7%	457	7%	151	6%
Computer and Mathematical Occupations	\$69,730	1,616	8%	1,084	8%	1,050	8%	579	9%	137	5%
Architecture and Engineering Occupations	\$66,360	1,085	6%	771	6%	738	6%	458	7%	147	6%
Healthcare Practitioners and Technical Occupations	\$57,600	211	1%	157	1%	148	1%	73	1%	16	1%
Life, Physical, and Social Science Occupations	\$56,840	360	2%	253	2%	243	2%	147	2%	40	2%
Business and Financial Operations Occupations	\$56,810	1,358	7%	907	7%	880	7%	472	7%	127	5%
Legal Occupations	\$54,900	592	3%	426	3%	406	3%	259	4%	54	2%
Arts, Design, Entertainment, Sports, and Media	\$48,140	984	5%	635	5%	620	5%	307	5%	67	3%
Construction and Extraction Occupations	\$47,440	421	2%	259	2%	257	2%	103	2%	41	2%
Installation, Maintenance, and Repair Occupations	\$41,860	994	5%	652	5%	636	5%	270	4%	117	5%
Protective Service Occupations	\$40,390	135	1%	79	1%	79	1%	26	0%	7	0%
Education, Training, and Library Occupations	\$36,840	63	0%	39	0%	39	0%	18	0%	4	0%
Community and Social Services Occupations	\$34,080	51	0%	29	0%	30	0%	11	0%	2	0%
Farming, Fishing, and Forestry Occupations	\$32,350	235	1%	129	1%	132	1%	40	1%	10	0%
Office and Administrative Support Occupations	\$30,920	4,476	23%	3,027	22%	2,929	23%	1,460	22%	473	19%
Production Occupations	\$30,430	1,635	8%	1,231	9%	1,178	9%	763	12%	628	25%
Sales and Related Occupations	\$28,720	2,155	11%	1,696	13%	1,576	12%	535	8%	128	5%
Transportation and Material Moving Occupations	\$28,220	1,049	5%	744	6%	718	6%	340	5%	298	12%
Healthcare Support Occupations	\$27,280	94	0%	67	0%	64	0%	35	1%	7	0%
Building and Grounds Cleaning and Maintenance	\$22,480	223	1%	139	1%	137	1%	57	1%	20	1%
Personal Care and Service Occupations	\$21,320	204	1%	127	1%	125	1%	52	1%	19	1%
Food Preparation and Serving Related Occupations	\$18,100	162	1%	120	1%	113	1%	37	1%	10	0%
<b>Total, All Occupations</b>	<b>\$36,330</b>	<b>19,500</b>	<b>100%</b>	<b>13,500</b>	<b>100%</b>	<b>13,000</b>	<b>100%</b>	<b>6,500</b>	<b>100%</b>	<b>2,500</b>	<b>100%</b>

Source: Washington State Employment Security Department, Berk & Associates

**Key Findings.** As shown in **Exhibit 5**, each North Bay Development Alternative would likely result in thousands of jobs in a broad array of occupations: the Exhibit encompasses 22 major occupation categories spanning the full range of jobs from food preparation and building maintenance to architecture, engineering, computer service and management positions.

Likewise, employment opportunities at the site will span a relatively broad range of median wage levels. As **Exhibit 5** shows, the median wage for the Seattle-Bellevue-Everett MSA in 2003 for all occupations was \$36,330. Under the Development Alternatives for North Bay, annual median wages are expected to range from approximately \$18,000-\$22,500 for food service and building and ground maintenance positions, to about \$57,000-\$70,000 for business, financial, life science, health care and computer-related occupations, and up to \$93,400 for management positions.

Analysis of the data displayed in **Exhibit 5** shows that wages associated with Alternatives 1-4 largely mirror trends in the MSA; a little more than half of the jobs are expected to be in occupations with median wage levels below the overall wage median for the MSA. Comparing projected North Bay wages to the benchmark of regional median wages yields the following findings by Development Alternative:

- Alternative 1: 53% of wages will be below median income; 47% will be above.
- Alternative 2: 54% of wages will be below median income; 46% will be above.
- Alternative 3: 54% of wages will be below median income; 46% will be above.
- Alternative 4: 51% of wages will be below median income; 49% will be above
- Alternative 5: 64% of wages will be below median income; 36% will be above

**Caveat to the Analysis.** It is important to understand that the data presented above do not allow for a full estimate of the median wage for each Development Alternative because using only median wages for each occupation type cannot fully describe the distribution of jobs that pay more or less than the median. This analysis does, however, provide a reasonable reflection of the wages associated with the range of occupations projected to result from the North Bay Development Alternatives.

**4. Educational Requirements**

**Educational Attainment by Occupations Nationally.** Data from the Bureau of Labor Statistics on nationwide educational attainment by type of occupation helps inform the mix of educational attainment for each occupation expected at North Bay. **Exhibit 6** shows the nationwide distribution of educational attainment associated with each occupation group, ranked by the median annual wage for each occupation. For the most part, occupations with the highest median wages also require higher levels of education.

**Exhibit 6  
Nationwide Distribution of Educational Attainment by Occupation Group  
(2002 Data)**

Major Occupation Code	Occupation Title	2003 Annual Median Wage	Percentage of Jobs by Education Level		
			High School or Less	Some College	College or Higher
110000	Management Occupations	\$93,360	25%	27%	48%
150000	Computer and Mathematical Occupations	\$69,730	15%	26%	59%
170000	Architecture and Engineering Occupations	\$66,360	9%	27%	63%
290000	Healthcare Practitioners and Technical Occupations	\$57,600	12%	30%	58%
190000	Life, Physical, and Social Science Occupations	\$56,840	9%	13%	78%
130000	Business and Financial Operations Occupations	\$56,810	11%	20%	70%
230000	Legal Occupations	\$54,900	8%	16%	76%
270000	Arts, Design, Entertainment, Sports, and Media	\$48,140	12%	16%	72%
470000	Construction and Extraction Occupations	\$47,440	16%	25%	59%
490000	Installation, Maintenance, and Repair Occupations	\$41,860	10%	38%	52%
330000	Protective Service Occupations	\$40,390	51%	40%	9%
250000	Education, Training, and Library Occupations	\$36,840	37%	44%	19%
210000	Community and Social Services Occupations	\$34,080	69%	23%	8%
450000	Farming, Fishing, and Forestry Occupations	\$32,350	78%	18%	5%
430000	Office and Administrative Support Occupations	\$30,920	48%	35%	16%
510000	Production Occupations	\$30,430	43%	30%	27%
410000	Sales and Related Occupations	\$28,720	43%	41%	17%
530000	Transportation and Material Moving Occupations	\$28,220	82%	12%	6%
310000	Healthcare Support Occupations	\$27,280	72%	23%	5%
370000	Building and Grounds Cleaning and Maintenance	\$22,480	58%	35%	7%
390000	Personal Care and Service Occupations	\$21,320	71%	23%	6%
350000	Food Preparation and Serving Related Occupations	\$18,100	70%	23%	7%

Source: Bureau of Labor Statistics, Washington State Employment Security Department, Berk & Associates, 2004

**Educational Attainment by Occupations Projected for North Bay.** Applying the educational attainment distributions from **Exhibit 6** to the North Bay occupation totals from **Exhibit 5** allows for a final projection of the number of expected jobs at North Bay, stratified by educational attainment. As shown in **Exhibit 7**, all five Alternatives show a fairly even distribution of educational attainment requirements among the categories of High School or Less, Some College and College or Higher – roughly one-third of the jobs fall within each of these three categories.

### Exhibit 7 Projected Employment at North Bay by Educational Attainment

EIS Alternative	Number of New Jobs by Education Level				Percentage of Jobs by Education Level		
	High School or Less	Some College	College or Higher	Total	High School or Less	Some College	College or Higher
1: Max Density w/o Residential	6,634	5,604	7,262	19,500	34%	29%	37%
2: Max Density w/ Residential	4,623	3,905	4,972	13,500	34%	29%	37%
3: Medium Density w/ Residential (Armory)	4,448	3,753	4,799	13,000	34%	29%	37%
4: Medium Density w/ Residential	2,136	1,833	2,531	6,500	33%	28%	39%
5: Low Density - Current Zoning	969	692	839	2,500	39%	28%	34%

Source: Bureau of Labor Statistics, Berk & Associates

Alternatives 1-3, with relatively similar proportions of building product types, provide identical proportions of occupations and educational attainments: 34% of the jobs will require High School or Less education; 29% will require Some College (often associated with a two year degree from a community college); and 37% will require College or Higher levels of education. Educational attainment levels for Alternatives 4 and 5 differ slightly from Alternatives 1-3, based on the different product mix assumed. Alternative 4, with a greater proportion of R&D/Lab space has a slightly higher percentage of jobs with attainment of College or Higher. Alternative 5, with a greater percentage of development devoted to light industrial uses, results in a slightly higher percentage of jobs with educational attainment of High School or Less.

From a summary perspective, these data show that one-third of the North Bay jobs in these three Alternatives will require High School or Less education, and two-thirds will require some level of College. Three important data issues affect interpretation of the educational attainment data:

- **The data do not show educational requirements, and these vary within occupational categories.** The data show empirical correlation of education attained within each occupation. Many occupations can be filled with a broad mix of academic credentials and professional experience. Employers frequently find a trade-off between experience and formal education attainment; in some instances greater experience may be more desirable than educational attainment.
- **Specific educational attainment within the three educational levels can vary greatly.** The best example of this point is in the College or Higher category. This broad category encompasses the full range of educational levels and credentials, ranging from B.A. degrees to PhDs, and including post graduate professional training in law, business, medicine and other fields.

- **Specific occupations within occupational groups vary.** Occupational groups shown throughout the report represent a variety of more specifically defined occupations. The occupational groups were chosen to allow for the uncertainties of not knowing precisely what employers and jobs will locate at North Bay. An example that illustrates this point is the Architecture and Engineering category. Within this broad occupational group, a range of jobs exist, with significantly different educational attainment requirements – from draftsmen and technicians to designers to senior architects and licensed professional engineers.

### 5. Summary and Conclusions

This memorandum presents an assessment of the nature and types of employment that might be expected at North Bay given the six Development Alternatives and a set of assumptions regarding the relationships between product types, industries, and occupations. North Bay is a large development project with a build-out period that will extend over decades. If the project is successful, it will create a new employment center in the City's Interbay district, and will likely catalyze additional employment growth on surrounding properties within the area.

The number of jobs estimated at project build-out ranges from 19,500 in Alternative 1 to 2,500 in Alternative 5 (no new jobs are projected for Alternative 6, the No Action Alternative). The nearly 20,000 jobs estimated for Alternative 1 and the 13,500 and 13,000 jobs associated with Alternatives 2 and 3 respectively reflect the Port's objectives that the property be developed into a thriving regional employment center. By any measure, these employment projections represent a significant number of jobs, and a resulting opportunity for a diversity of employment types. In fact, the scale of development plans for North Bay is large enough to provide a mix of jobs fairly equivalent to the range of occupations found throughout the region. The higher density Development Alternatives 1-3, in particular, would likely result in thousands of jobs at the site, encompassing an array of occupation opportunities, paying a broad mix of wages, and calling for a range of educational attainment.

The analysis shows that about 22 major occupational categories could be expected to be represented at North Bay, spanning the full range of jobs from food preparation and building maintenance to architecture, engineering, computer service and management positions. Likewise, employment opportunities at the site will span a relatively broad range of median wage levels, ranging from approximately \$18,000-\$22,500 for food service and building and ground maintenance positions, to about \$57,000-\$70,000 for business, financial, life science, health care and computer-related occupations, and up to \$93,400 for management positions.

In general, wages for jobs at North Bay could mirror trends in the Seattle-Bellevue-Everett MSA, which had a median annual wage of \$36,330 in 2003. In all, a little more than half the estimated jobs are expected to be in occupations with median wage levels below the wage median for the MSA, and the lowest density scenario, Alternative 5, could have 64% of its jobs below the regional median wage.

Educational attainment associated with projected North Bay employment was also analyzed. The analysis shows that the five Development Alternatives have a fairly even distribution of educational attainment requirements among the categories of High School or Less, Some College and College or Higher – roughly one-third of the jobs fall within each of these three categories. From a summary perspective, about one-third of projected North Bay jobs are expected to require High School or Less education, and two-thirds could require some level of College.