

ECONOMIC & FISCAL IMPACTS OF MILLENNIUM BULK TERMINALS LONGVIEW

April 12, 2012





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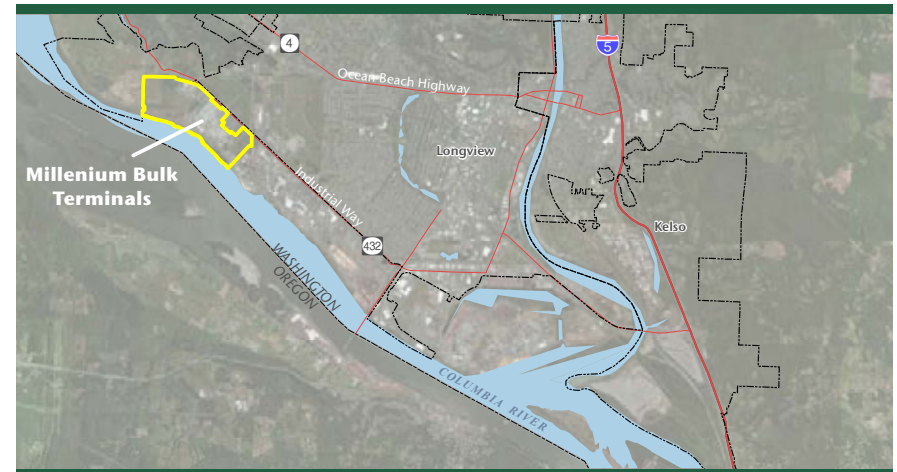
EXECUTIVE SUMMARY

Millennium Bulk Terminals Longview, LLC (Millennium) plans to reinvest in an underutilized industrial facility in Cowlitz County to:

- Conduct environmental remediation on the site
- Upgrade the existing import/export bulk facility
- Construct a coal receiving, storage, and shipping terminal

The current 416-acre site includes two former aluminum producing plants, a carbon plant and carbon transfer area, amongst other industrial uses.

The centerpiece of the project and focus of this analysis is the construction of a new coal export terminal, which will encompass more than 100 acres of the site. Millennium will be investing an estimated \$600 million in this multi-year construction project which will result in a state-of-the-art facility to support the increasing global demand for coal. The facility would be expected to begin operations in 2015 and full site capacity of 44 million metric tonnes of coal will be in place by 2018.



ABOUT COWLITZ COUNTY

- Cowlitz County has a population of 102,410
- The largest employment sector in the county is manufacturing, which employs about 20% of the total workforce; construction comprises 8% of total county employment
- In 2010, the county had an unemployment rate of 11.1% and a median household income of \$41,000
- County general tax revenues have been hard hit by the recession. Adjusted for inflation, revenues have declined both in total and on a per capita basis since 2006
- About 52% of workers living in the county are employed within the county; the County has a net job outflow of more than 8,000 jobs

Economic Development Opportunities

The Cowlitz-Wahkiakum Council of Governments is leading a separate Environmental Impact Statement (EIS) effort involving a large infrastructure project that would increase capacity and improve crossings along the Columbia River.

- The project would include up to \$200 million in public and private infrastructure improvement investments
- A large, long-term tenant such as Millennium would help secure public and private investment (beyond Millennium's investments in the site) for these necessary improvements, which have regional significance and benefit
- Improvements to the freight transportation network along the Columbia River will increase the value and attractiveness of other industrial properties

The Coal Export Terminal will result in economic and fiscal benefits to the local area and to Washington. For a number of years now, Cowlitz County has been an economically challenged area that has typically lagged behind state averages for growth. The Coal Export Terminal project represents an opportunity to locate a significant new industrial project on underutilized industrial land. State and local benefits will include new and significant jobs, wages, output, and tax revenue. It is also expected that the majority of the positions would be filled from the local labor pool.

ECONOMIC IMPACTS OF COAL EXPORT TERMINAL

- Construction activity is estimated to support **1,350 temporary direct jobs, \$70 million in direct wages, and \$232 million in direct output**
 - The indirect and induced impacts in the local, regional, and state economies resulting from construction of the export facility are estimated to be an additional 1,300 additional jobs, \$65.0 million in wages, and \$203 million in output
- At buildout, ongoing site operations are expected to produce **135 direct jobs, \$16 million in direct wages, and \$49 million in direct output** per year
 - The subsequent secondary (indirect and induced) impacts in the local, regional, and state resulting from the operation of the export facility are about 165 additional jobs, \$9 million in wages, and \$21 million in output

Economic Impacts of the Coal Export Terminal

	Construction	Operations (Stage 1)	Operations (Buildout)
Jobs Total	2,650	230	300
Direct	1,350	112	135
Indirect & Induced	1,300	118	165
Wages Total	\$135.0 M	\$20.0 M	\$25.0 M
Direct	\$ 70.0 M	\$ 13.0 M	\$ 16.0 M
Indirect & Induced	\$ 65.0 M	\$ 7.0 M	\$ 9.0 M
Output Total	\$435.0 M	\$40.0 M	\$70.0 M
Direct	\$ 232.0 M	\$ 21.0 M	\$ 49.0 M
Indirect & Induced	\$ 203.0 M	\$ 19.0 M	\$ 21.0 M

Note: Indirect and induced impacts reflect the multiplier effects resulting from respending of direct wages and output (business spending)

DIRECT FISCAL IMPACTS OF COAL EXPORT TERMINAL

- The coal export facility is estimated to generate **\$146 million (2012 dollars) in tax revenues over 30-year period**
 - Approximately 26% of this is revenue to the County; 54% to the State; and 20% to special purpose districts
- Ongoing site operations are estimated to annually generate **\$2.2 million in state tax revenues, \$1.7 million in county tax revenues, and \$1.5 million to special purpose districts**
- Construction will generate **\$37.2 million state tax revenues and \$5.9 million in county tax revenues**
 - The majority of revenues from construction are sales tax related. A smaller portion is related to the state business & occupation tax (B&O)

Direct Fiscal Impacts of the Coal Export Terminal

Fiscal Impacts	30-Year PV (2012)	Annual Average (2012)	One-time Construction (2012)
County	\$ 38.24 M	\$ 1.65 M	\$ 5.87 M
Property Tax	\$ 29.47 M	\$ 1.5 M	-
Construction Sales Tax	\$ 5.87 M	-	\$ 5.87 M
Ongoing Sales Tax	\$ 2.9 M	\$ 0.15 M	-
State	\$ 78.99 M	\$ 2.18 M	\$ 37.21 M
Property Tax	\$ 18.05 M	\$ 0.92 M	-
Construction Sales Tax	\$ 34.7 M	-	\$ 34.7 M
Ongoing Sales Tax	\$ 17.12 M	\$ 0.91 M	-
Construction B&O Tax	\$ 2.51 M	-	\$ 2.51 M
Ongoing B&O Tax	\$ 4.59 M	\$ 0.24 M	-
Utility Taxes	\$ 2.01 M	\$ 0.11 M	-
Special Purpose Districts	\$ 28.54 M	\$ 1.45 M	-
Property Tax	\$ 28.54 M	\$ 1.45 M	-
Total	\$ 145.77 M	\$ 5.28 M	\$ 43.09 M

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INTRODUCTION



Project Description

Millennium Bulk Terminals Longview, LLC (Millennium) is proposing to build and operate a coal receiving, storage, and shipping terminal that would be located adjacent to the Columbia River in unincorporated Cowlitz County, Washington near the City of Longview. The current 416-acre site includes two former aluminum producing plants, a carbon plant and carbon transfer area, amongst other industrial uses.

Millennium acquired the above-ground fixed assets and improvements from the previous terminal operator, Chinook Ventures Inc., while Northwest Alloys/ALCOA has retained ownership of the real estate, which Millennium will occupy on a leased basis.

Millennium plans to invest heavily in the site to undertake a three separate projects:

- Conduct environmental remediation on the site;
- Upgrade and maintain the existing import/export bulk facility; and
- Construct a coal export terminal.

The most significant element of this project is the coal export terminal, which will greatly increase the activity on the site. The focus of this analysis is to assess the fiscal and economic impacts of the construction and operation of the coal export facility.

Study Purpose

BERK was retained to develop an Economic and Fiscal Impact Assessment and broad understanding regarding the potential economic and fiscal impacts of the new coal export terminal. Impacts will come in the following forms:

- Jobs, wages, and output during construction of the facility as well as on an ongoing basis once the site is operating
- Multiplier effects as the wages and other spending by the operations at the new facility ripple through the state and local economy
- Tax revenues to the County, special purpose districts, and the State from both construction and ongoing operations

April 12, 2012

This study places the estimated economic and fiscal benefits of the Millennium coal export project into the context of the current fiscal and economic climate in Cowlitz County and describes how the project could advance broader economic development goals through the increase in local economic activity and related infrastructure improvements.

Report Contents

This study is organized into the following sections:

- **Economic Profile of Cowlitz County.** This section presents an overview of the current conditions and recent economic and fiscal trends in Cowlitz County so that the impacts of the Millennium project can be understood in context
- **Project Description.** This section describes the project in more detail, elaborating on the operations of the proposed coal export terminal as well as expected levels and timing of investments during the construction phase
- **Economic and Fiscal Impacts.** This section presents the economic and fiscal impacts associated with the construction and ongoing operation of the facility. Impacts include jobs, wages, output, and tax revenues
- **Economic Development Impacts.** This section discusses how the increased economic activity from the Millennium project could provide a foundation for other economic development opportunities in Cowlitz County

ECONOMIC PROFILE OF COWLITZ COUNTY

People make decisions on where to live and work based on the relative attractiveness of local areas. An area's ability to attract and retain residents is contingent on the ability of the local economy to provide opportunities that can support a way of life that meets residents' needs.

This section addresses this dynamic and presents the current economic and fiscal conditions of Cowlitz County, the local area analyzed for this study and the area most directly affected by the introduction of the Millennium project. Existing population trends, educational attainment, employment statistics, income levels, and County taxes are examined and in some cases compared to the broader Washington State economy to gain a better understanding of the economic environment of the area.

Cowlitz County is located in the southwestern corner of Washington State, along the Oregon border. About 43% of the population of Cowlitz County lives in unincorporated areas. The major population centers are the Cities of Longview and Kelso; other incorporated areas include the Cities of Castle Rock, Kalama, and Woodland. The closest major metropolitan area is Portland, Oregon, across the Columbia River to the southeast.

Historical Population Trends

Cowlitz County's population has been increasing steadily over the last few decades, but has been growing more slowly than Washington's population as a whole. As shown in **Exhibit 1**, population growth has also slowed in the last decade—growth averaged about 1.2% per year from 1990 to 2000, but slowed to slightly less than 1.0% per year between 2000 and 2010. While this mirrors a similar drop in the statewide trend, Cowlitz County still has slower population growth than the state as a whole.

Exhibit 1

Historical Population Growth (1980 – 2010)

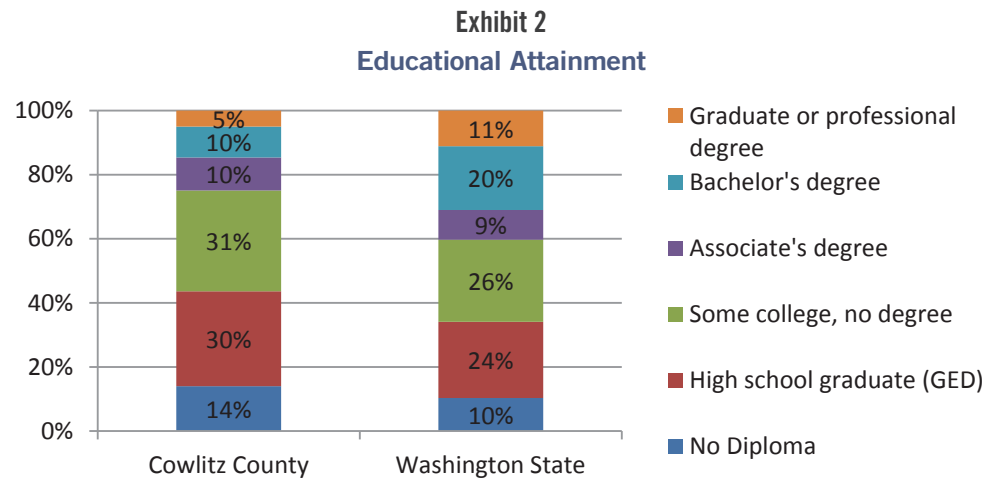
	1980	1990	2000	2010
Cowlitz County	79,548	82,119	92,948	102,410
Annual average growth		0.3%	1.2%	1.0%
Washington State	4,132,353	4,866,669	5,894,121	6,724,540
Annual average growth		1.6%	1.9%	1.3%

Source: Washington State Office of Financial Management, 2012; BERK, 2012.

Educational Attainment

The ability for Millennium to draw from the local labor pool will be determined by the ability to match business needs with the available skill-set present in the County's workforce. Educational attainment within the County offers a way to understand those available skills. By comparing the local labor characteristics with overall state averages one can also get a picture of the relative competitiveness of the County in terms of the types of employers that might be drawn to the area.

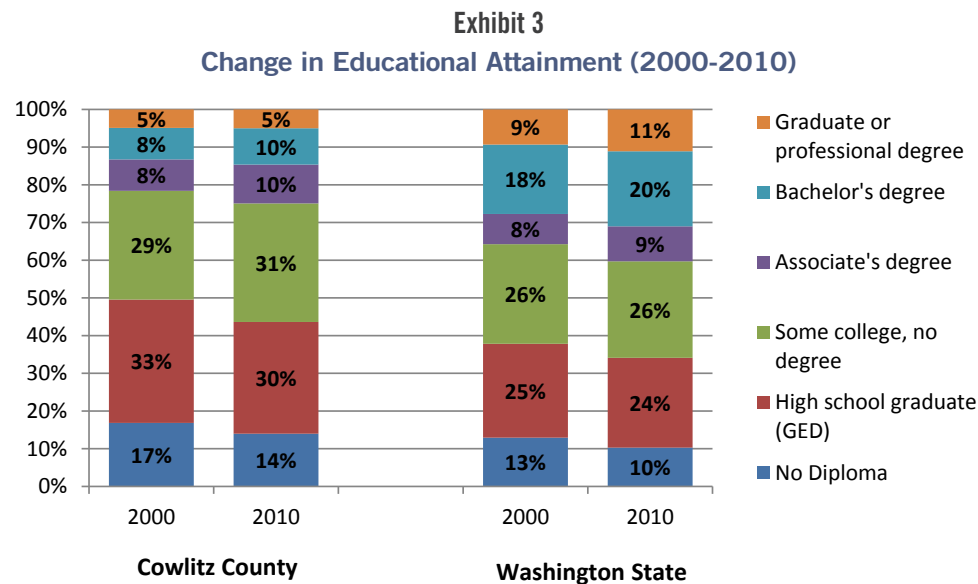
Exhibit 2 shows US Census data on the educational attainment of County residents. Of all residents over the age of 25, about 14% have not achieved a high school diploma or equivalent. This is higher than the statewide rate of 10%. Additionally, only about 15% of Cowlitz County residents have a Bachelors' degree or higher, which is about half the degree attainment rate statewide (31%).



Source: U.S. Census 2008-2010 American Community Survey 3-year estimates

Exhibit 3 shows that both Cowlitz County and the State have seen improvements in educational attainment since 2000, leading to increases in the underlying skill-set present in the workforce. In Cowlitz County, the percent of residents over 25 with no diploma has decreased from 17% to 14%. Meanwhile, the percent of residents with at least a Bachelors' degree has increased from 13% to 15%.

So while the overall improvement in the educational attainment characteristics of the local population has improved markedly over the past decade, the improvements are largely consistent with the overall statewide trend and do not suggest a shift in local competitiveness or relative change in the types of economic activity that might be attracted to the area.

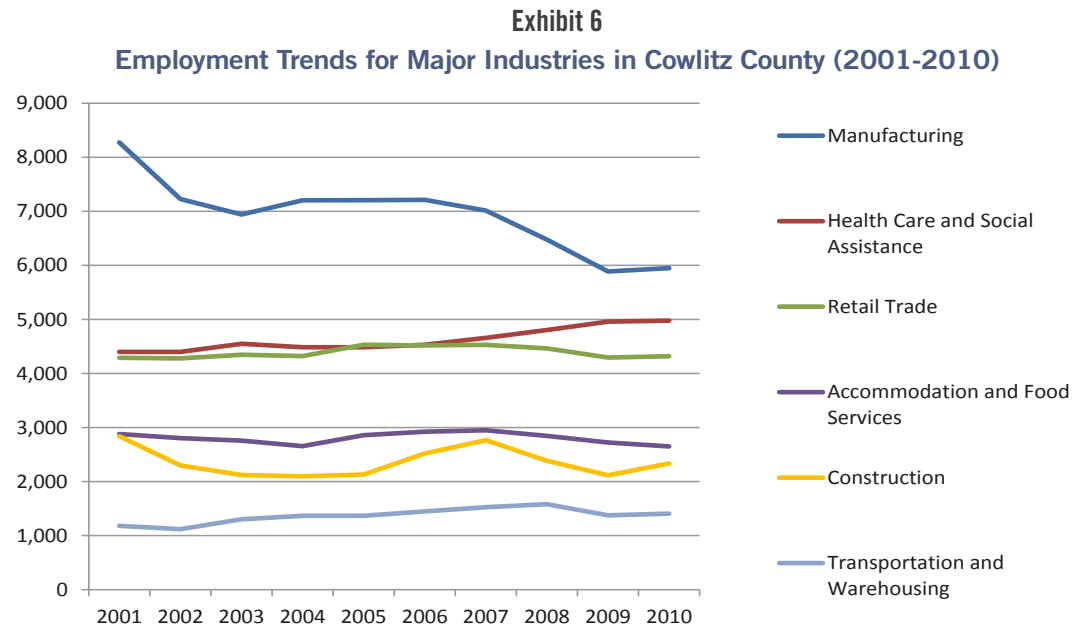


Source: US Census 2000 and US Census 2008-2010 American Community Survey 3-year estimates.

Employment Trends by Sector

A key indicator of the health of an economic system is the level of new job creation as measured by the overall growth in regional employment. The Millennium project would directly impact employment within the construction and transportation industries. Additionally, the decision for Millennium to locate this export facility in Cowlitz County would likely have spillover effects and impact other employment sectors of the County as the workforce becomes more diverse and more people choose to live in the County.

According to the Washington State Employment Security Department, total covered employment within the County has decreased by about 2,500 jobs over the past decade. As **Exhibit 6** shows, most industries have seen relatively minor shifts in employment, though manufacturing, representing roughly 20% of the County's covered employment, seems to have been particularly hard hit by job losses. The construction sector, which accounts for about 8% of total County employment, is also well below levels seen in 2001. However, this industry experienced a slight increase in 2010, primarily due to investments made in a new grain terminal, new steel pipe plant, and two new Wal-Marts.



Source: Washington Employment Security Department, 2011

Unemployment Trends

Exhibit 7 shows that the unemployment rate in Cowlitz County in 2010 was about 11.1%, which was higher than the statewide average of 7.6%. The County also had a lower labor participation rate than the state (59%) and a higher percentage of residents living below the poverty level (11.8%).

Exhibit 7
Labor Statistics for Market Area (2010)

	2010 Civilian Labor Force	Unemployment Rate	Labor Participation Rate	% Under Poverty Level
Cowlitz County	46,704	11.1%	59.0%	11.8%
Washington State	3,380,744	7.6%	65.2%	8.2%

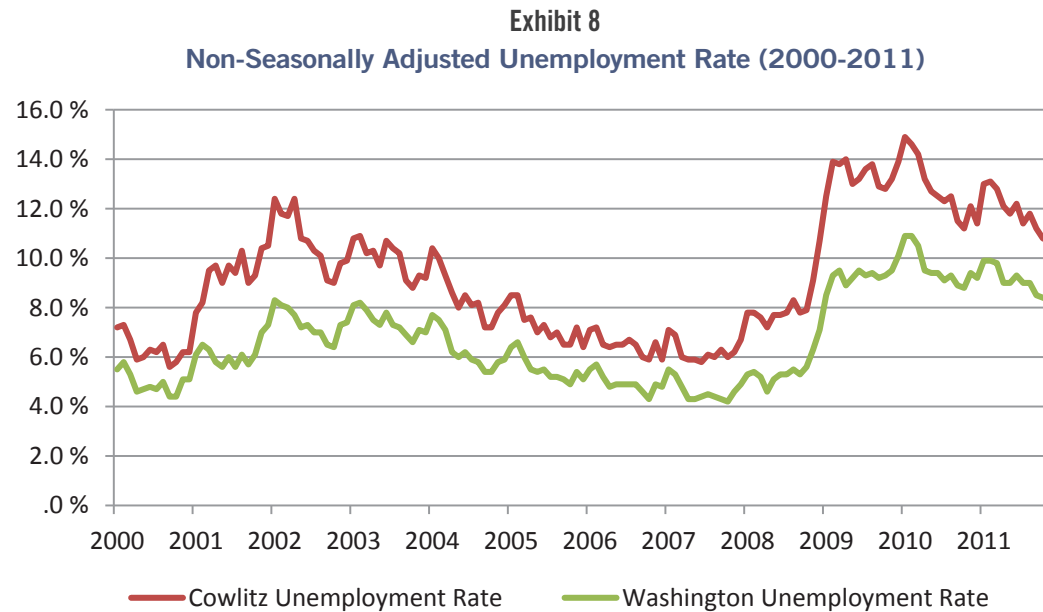
Source: US Census Bureau; 2010 American Community Survey 5-year estimates

Cowlitz County has historically had a higher unemployment rate than the State as a whole. **Exhibit 8** shows the unemployment rates for the County and the State over the last decade. While the two rates have generally followed the same overall trend, the County's unemployment rate has been consistently higher and exhibits greater volatility than that experienced by the state economy as a whole. The local unemployment rate also tends to be proportionally worse than the state average during times of recession, as seen during the 2001-2003 period and the 2009-2011 periods where the gap between the state rate and the local rate is substantially greater than during periods of more consistent economic growth.

LOCAL IMPACTS OF THE GREAT RECESSION

Growth within the last decade, as well as the recent economic downturn, has not fared well for the County compared to the State or nation.

- Unemployment soared to 14% at one point in 2010.
- Job losses were concentrated to lower wage positions, paying below \$12 per hour.
- Housing permits dropped from an annual average of 200 in 2008 to about 100 for both 2009 and 2010.
- Wood products, which once produced over 6,000 jobs for the County, fell from 1,500 jobs in 2000 to 800 jobs in 2010 due primarily to mill closures.
- Similarly, the Reynolds aluminum smelter closed in 2001, resulting in the loss of about 900 jobs.



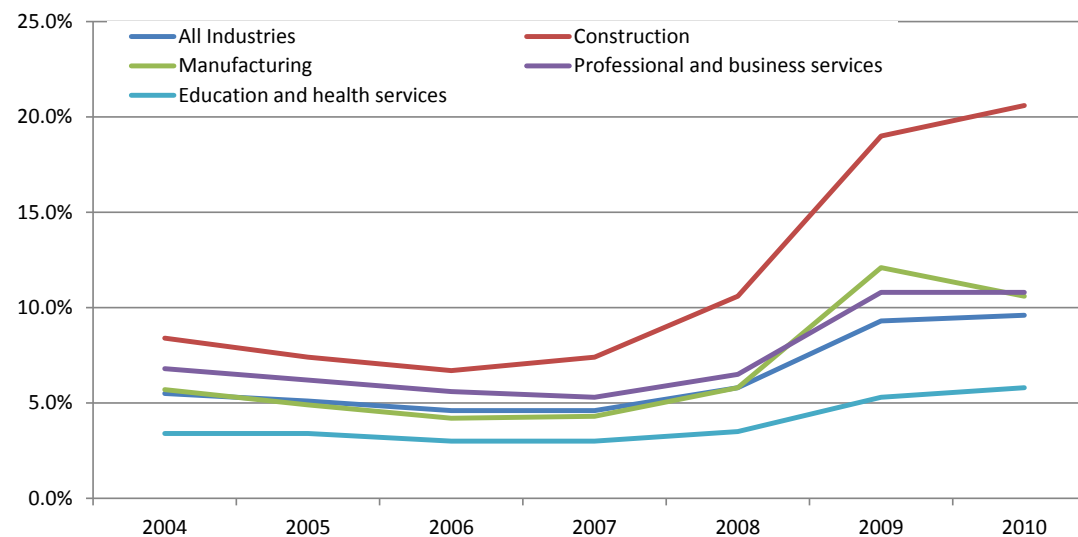
Source: Washington State Employment Security Department, 2012; BERK, 2012.

When the recessions hit in the early 2000s and again in 2008, some industries were hit harder than others. In Cowlitz County, manufacturing and construction are both industries that saw job numbers decline by a greater percentage than the overall job decline in the County during these periods. Since these industries make up such a high percentage of the County's employment, the County sees a more dramatic spike in its unemployment rate compared to the State, which has a more diversified employment picture.

Exhibit 9 shows that, on the national level, the construction industry has been one of the hardest hit by the current economic recession. This is due to the significant slow down in development projects, which has resulted in the unemployment rate for the construction industry being nearly four times the national unemployment rate for all industries.

Based on 2010 labor force statistics, there are approximately 5,180 unemployed workers in Cowlitz County. Assuming that the 2010 construction labor force was about 3,750 in Cowlitz County (8% of total civilian labor force), applying the County's unemployment rate of 11.1% would suggest that there were about 415 unemployed construction workers in Cowlitz County. However, if the County's unemployment rate was similar to the nationwide average of 20.6%, shown below in **Exhibit 9**, this would imply there are about 770 unemployed construction workers in Cowlitz County (multiplying 20.6% by Cowlitz County's 2010 construction labor force of 3,750).

Exhibit 9
Nationwide Unemployment Rate by Industry (2004-2010)



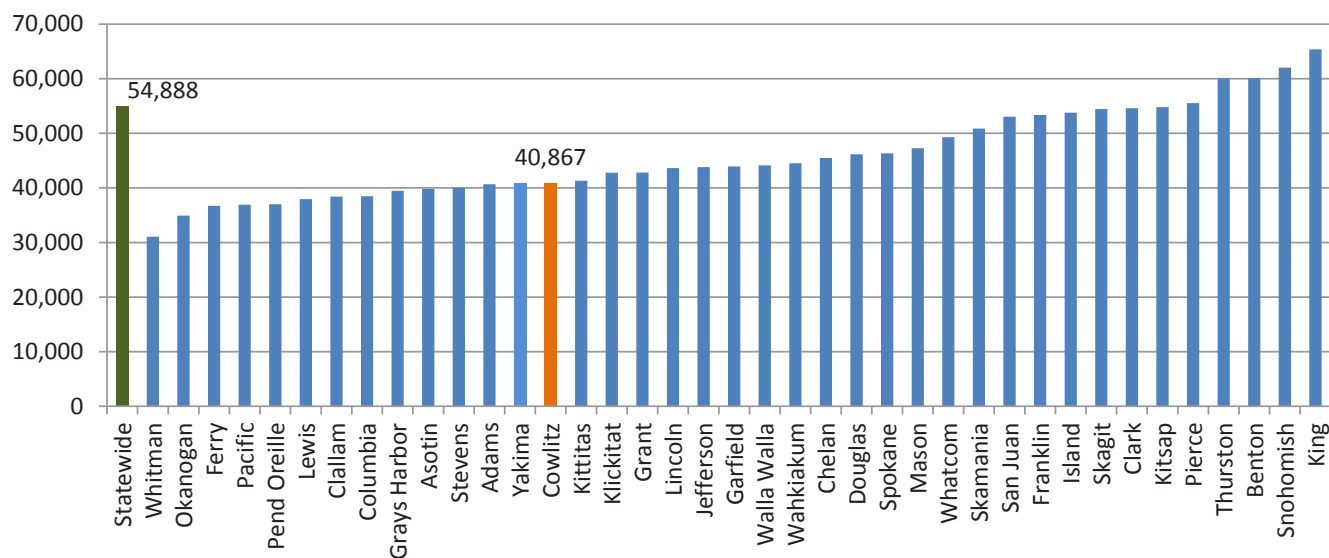
Source: The 2012 Statistical Abstract, US Census, 2011

Income Level

The capacity of a local area to sustain and improve the quality of life for its residents is correlated to the relative prosperity of the region. Looking towards future economic development within the County, it is not only useful to look at the potential for job creation, but to also understand the income dynamics of these new jobs.

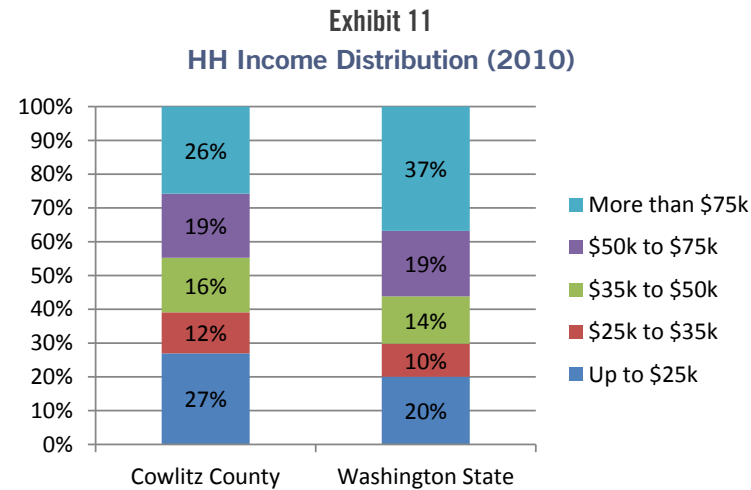
According to the State Office of Financial Management, median household income in Cowlitz County in 2010 was about \$41,000 per year, compared to \$55,000 statewide. This has been a worsening trend since 2000 since median household income has been growing more slowly in Cowlitz County than statewide—from 2000 to 2010, on an inflation-adjusted basis, median household income grew about 2.2% per year statewide and only about 1.5% per year in Cowlitz County.

Exhibit 10
Median Household Income; 2010



Source: Bureau of Economic Analysis, 2011

Looking into the share of households in the County and the state that fall into each income bracket, **Exhibit 11** shows that more than one-half of Cowlitz County households (about 55%) have annual income of less than \$50,000, and more than one-quarter of households bring home less than \$25,000 per year.

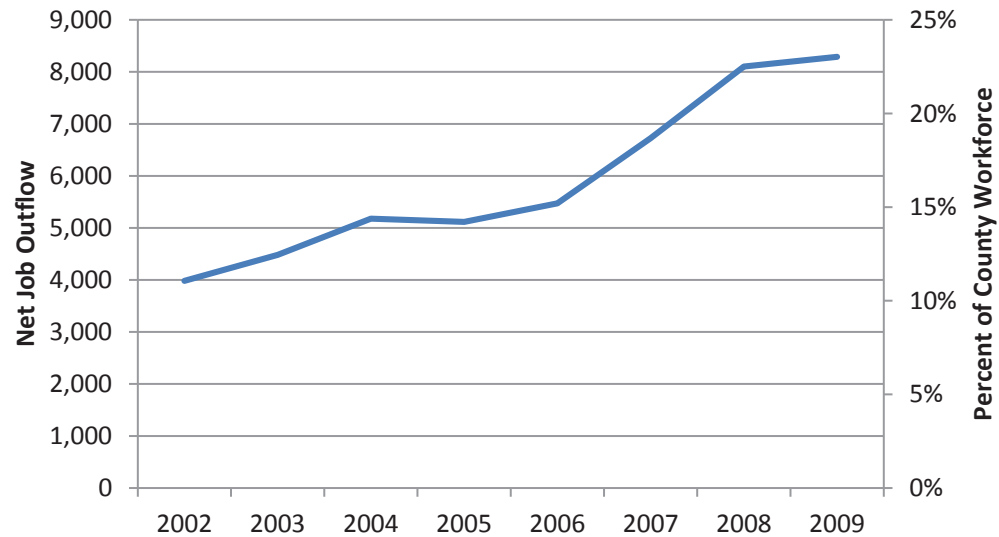


Source: U.S. Census 2008-2010 American Community Survey 3-year estimates

Labor Market Area and Commute Flows

Existing commute patterns from home to work were analyzed to understand where Cowlitz County residents currently work. The most recent travel pattern data available (published by the US Census) for people who live in Cowlitz County suggest that only about 52% of residents are employed within the County. About 48% of residents commute to jobs outside of the County. **Exhibit 10** illustrates that since 2002 there has been an increase of County residents commuting to jobs outside of the County. This is known as net job outflow. In 2002, net job outflow represented about 12% of the Countywide workforce. This increased to more than 22% in 2009.

Exhibit 12
Number and Percent of County Residents Employed in Other Counties (Net Job Outflow) (2002-2009)



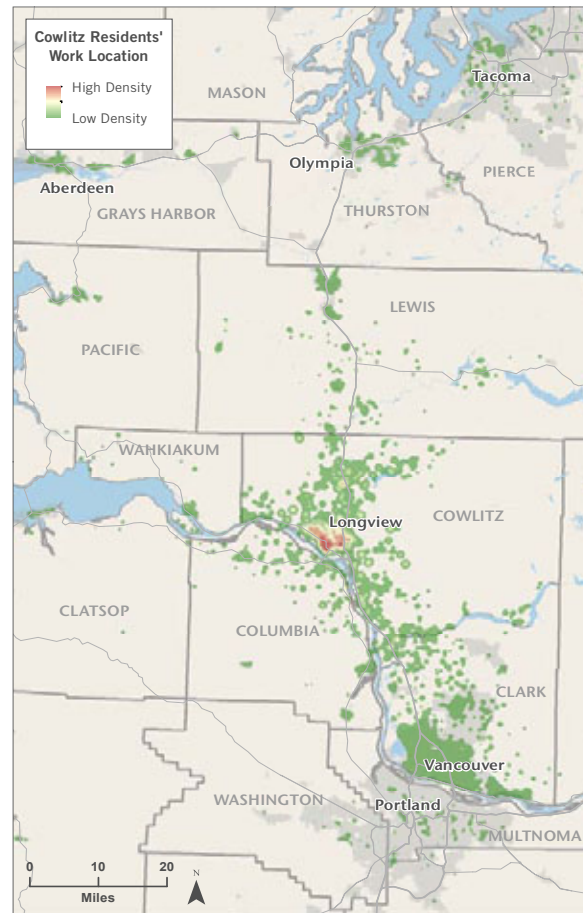
Source: US Census LEHD, 2002-2009.

Exhibit 13 graphically illustrates where Cowlitz County residents work. Those not employed in the County travel to neighboring counties for jobs. Although some workers who live outside of the County commute in to County jobs, there is still a net outflow of about 8,300 jobs. So, not surprisingly, as the total number of jobs in the County has decreased, the number of local residents that need to look farther afield for employment has increased. Particularly noteworthy is that the net outflow has grown by more than 4,000, while the decline of jobs in the County over the same period has been approximately 2,500, suggesting that people are choosing to live in Cowlitz County even when there are fewer local job opportunities.

Exhibit 13

Where Cowlitz County Residents Work (2009)

As **Exhibit 13** illustrates the concentration of those living and working within Cowlitz County are centered in and around the Longview area. The exhibit also shows a sizeable portion of residents commuting to nearby Clark County, which is not surprising since Vancouver is the nearest major metropolitan area to Cowlitz County. What it also noteworthy is that almost 3,000 County residents are commuting to King County each day (more than 50 miles per direction) for work. This dynamic of workflow likely changes year by year depending on the quality and quantity of local job opportunities. New construction and operations jobs created by the Millennium project could reduce this net outflow to the extent that they are filled by the local labor pool.



Source: US Census LEHD, 2009.

	Count	% Share
Living and Employed in:		
Cowlitz County, WA	21,137	51.8%
Subtotal	21,137	51.8%
Living in Cowlitz Co. but employed outside of County:		
Clark County, WA	4,615	11.4%
King County, WA	2,939	7.2%
Multnomah County, OR	2,149	5.3%
Pierce County, WA	1,579	3.9%
Thurston County, WA	1,188	2.9%
Washington County, OR	830	2.0%
Lewis County, WA	819	2.0%
Yakima County, WA	630	1.5%
Clackamas County, OR	509	1.2%
All Other Locations	4,403	10.8%
Subtotal	19,661	48.2%
Total Primary Workers	40,798	100.0%

Fiscal Conditions

Like most jurisdictions around the state, Cowlitz County has struggled to maintain a strong revenue base since the recession began in 2008. In 2010, the County had general fund revenues of about \$37 million, which was only a 1% increase since 2006. When revenue increases are lower than the rate of inflation, it results in a loss in purchasing power in real terms and makes it very difficult to maintain service levels.

The primary components of the general fund in 2010 were property tax (44%), fees and charges for service (21%), sales tax (18%), and intergovernmental transfers (12%). The County's largest source of revenue, property tax, is constrained to 1% annual growth on the existing tax base. The only real growth in this revenue stream comes from construction projects, such as Millennium, where the value of new construction can be added on top of the 1% limit.

One of the largest drops in local revenues has come in the fees and charges for service, specifically from building, structure, and equipment permits. This category totaled \$1.6 million in 2006, and dropped to nearly zero to 2010. Plan review and other development fees have seen a similar precipitous decline, from \$1.3 million in 2006 to \$100,000 in 2010, reflecting the substantial decline in construction activity over this period. The overall general fund budget has stayed relatively flat due to the strong performance of both property and sales tax revenues, resulting from previously-planned construction projects coming online.

Exhibit 14
Cowlitz County General Fund Revenues (2006-2010)

	2006	2007	2008	2009	2010
Property Tax	13,444,806	13,959,145	14,677,036	15,813,884	16,481,031
Sales Tax	4,713,272	5,915,922	4,575,853	6,051,396	6,567,814
Other Taxes	964,263	968,636	788,838	316,724	302,935
Service Charges & Fees	10,094,533	10,902,196	7,334,127	7,397,626	7,724,385
Intergov'tl Revenues	3,925,204	4,441,502	4,506,360	4,524,436	4,609,757
Other Sources	2,526,073	2,459,454	1,608,449	1,190,612	1,471,459
Total General Fund Revenue	35,668,151	38,646,855	33,490,663	35,294,678	37,157,381
<i>County Population</i>	<i>96,800</i>	<i>97,800</i>	<i>99,000</i>	<i>99,600</i>	<i>102,410</i>
<i>Revenue per Capita</i>	<i>\$368</i>	<i>\$395</i>	<i>\$338</i>	<i>\$354</i>	<i>\$363</i>

Source: State Auditor's Office Local Government Financial Reporting System, 2012; BERK, 2012.

Exhibit 15 shows that the recessionary impacts on tax revenues have affected the County's expenditures. The County's total general fund expenditures have been nearly stagnant over the last five years—increasing at first in 2007 but then declining once the recession began in 2008.

In both nominal and inflation-adjusted terms, general fund spending per resident has decreased over the last five years. Some expense areas have remained relatively stable or continued to grow, such as public safety services (law enforcement and fire and emergency medical services). This is likely due to the high priority that public safety services tend to receive in local budgeting and because many of these services have costs that are set in contracts years in advance, which may require wage and spending increases regardless of the current County budget.

Given the constraints on revenue, some expense items have had to decrease. These reductions have happened in spending on natural resources and capital expenditures. Additionally, the amount spent on general government operations has remained nearly flat, which implies a decline in real dollars and on a per-capita basis.

Exhibit 15
Cowlitz County General Fund Expenditures (2006-2010)

	2006	2007	2008	2009	2010
Law & Justice Services	21,638,417	23,974,208	25,736,287	23,416,580	23,764,581
Fire & Emergency Services	578,867	622,409	657,317	570,095	556,594
Health & Human Services	53,212	85,561	134,312	72,042	94,337
Transportation	-5,543	5,511	-477	18,150	20,149
Natural Resources	2,572,349	3,798,715	1,455,888	1,586,411	1,569,421
General Government	6,481,209	6,660,878	7,072,436	6,390,750	6,474,976
Capital	182,528	126,076	39,354	5,638	54,002
Total General Fund Expenditures	31,501,039	35,273,358	35,095,117	32,059,666	32,534,060
<i>County Population</i>	<i>96,800</i>	<i>97,800</i>	<i>99,000</i>	<i>99,600</i>	<i>102,410</i>
<i>Spending Per Capita</i>	<i>\$325</i>	<i>\$361</i>	<i>\$354</i>	<i>\$322</i>	<i>\$318</i>

Source: State Auditor's Office Local Government Financial Reporting System, 2012; BERK, 2012.

PROJECT DESCRIPTION

Current Site Operations

The current 416-acre site consists of: two aluminum producing plants, a carbon plant and carbon transfer area, a cable mill, a demolished cryolite plant, waste water treatment plant, casting facility, wharf and ship-unloading system. Millennium has acquired the above ground fixed assets and improvements from the previous terminal operator, Chinook Ventures Inc. Northwest Alloys/ALCOA have retained ownership of the real estate, including the real estate beneath the aluminum making equipment and buildings, which Millennium will occupy on a lease basis.

Planned Improvements

The centerpiece of the improvement program for the site is the introduction of a new coal export terminal, which will encompass more than 100 acres of the site. This multi-year construction project will cost an estimated \$600 million and will result in a state-of-the-art facility that will support the increasing global demand for coal. The eventual goal will be to begin operations in 2015 and gradually ramp up to full site capacity of 44 million metric tonnes of coal by 2018.

Millennium plans to invest heavily in the site to undertake a three separate projects:

- Conduct environmental remediation on the site;
- Upgrade and maintain the existing import/export bulk facility; and
- Construct a coal export terminal.

The most significant element and focus of this analysis is the coal export terminal, which will greatly increase the activity on the site.

CONSTRUCTION OF THE TERMINAL

Construction of the project would occur in late 2013 and take place in two overlapping stages: 1) an infrastructure and upland construction stage and 2) a marine construction stage. The overall schedule for construction after receipt of the necessary permits will take approximately five years, though the export terminal will be operational after 2015. This estimate takes into account the following assumptions:

- **Engineering design** will run concurrent with permitting activities and be completed prior to the permits being issued.
- **Procurement activities**, including purchasing of large equipment and contractor negotiation and selection, will commence during the permitting process.
- Major equipment procurement duration of 16 to 24 months.
 - Construction is estimated to total about \$600 million in constant dollars. As **Exhibit 16** illustrates, estimated direct costs which do not include taxes or indirect costs, are estimated to be about \$643 million in year of expenditure (YOE) dollars.

Exhibit 16
Summary of Direct Construction Costs (YOE\$)

	Stage 1 2013-2016	Stage 2 2016-2018	Total
Uplands Site Work	\$74,000,000	\$18,000,000	\$92,000,000
Rail System	\$47,000,000	-	\$47,000,000
Marine Site Work	\$2,000,000	-	\$2,000,000
Railcar Dumping	\$35,000,000	-	\$35,000,000
Stacking - Storage	\$71,000,000	\$29,000,000	\$100,000,000
Reclaim	\$81,000,000	\$51,000,000	\$132,000,000
Loadout System	\$127,000,000	\$56,000,000	\$183,000,000
Electrical & Control Systems	\$41,000,000	\$11,000,000	\$52,000,000
Total Construction Costs	\$478,000,000	\$165,000,000	\$643,000,000

Source: Millennium Bulk Terminals Coal Export Facility Feasibility Study, 2011

ONGOING OPERATION OF THE TERMINAL

The basic operations of the coal export facility would begin when transported coal enters the site by way of rail cars from the Western United States. Rail cars would then be unloaded and coal would either be placed into one of four stockpiles or directly onto ships at port. The berthing and maneuvering of ships as they move from the dock down the Columbia River will be carried out by Pilots (combination of both Columbia River Bar and Columbia River Pilots) and Tug and Lines Services.

The eventual goal of 44 million metric tonnes per year (mmtpy) of coal going through the terminal would likely be phased in over time. This analysis assumes that the operation would begin with enough throughput to warrant 358 days of operation per year at 16 hours per day. Each year, throughput would increase until the facility was at full operational capacity; operating at 24 hours per day, 358 days per year, and three shifts per day. This ramp-up is assumed to take three years from initial opening. **Exhibit 17** illustrates the study's assumptions regarding the ramp-up of operations.

Exhibit 17
Operational Ramp-up

	2015	2016	2017	2018
Operating Hours Per Day	16.0	16.0	24.0	24.0
Operating Days per Year	90.0	358.0	358.0	358.0
Shifts Per Day	2.0	2.0	3.0	3.0
Total Employees	112.0	112.0	135.0	135.0
Terminal Admin Staff	25.0	25.0	25.0	25.0
Waterfront Staff	16.0	16.0	30.0	30.0
Terminal Upland Staff	71.0	71.0	80.0	80.0
Total Wages (in Millions)	\$3.5	\$14.5	\$19.5	\$20.1
<i>Average per Employee</i>	<i>\$31,487</i>	<i>\$129,725</i>	<i>\$144,504</i>	<i>\$148,839</i>

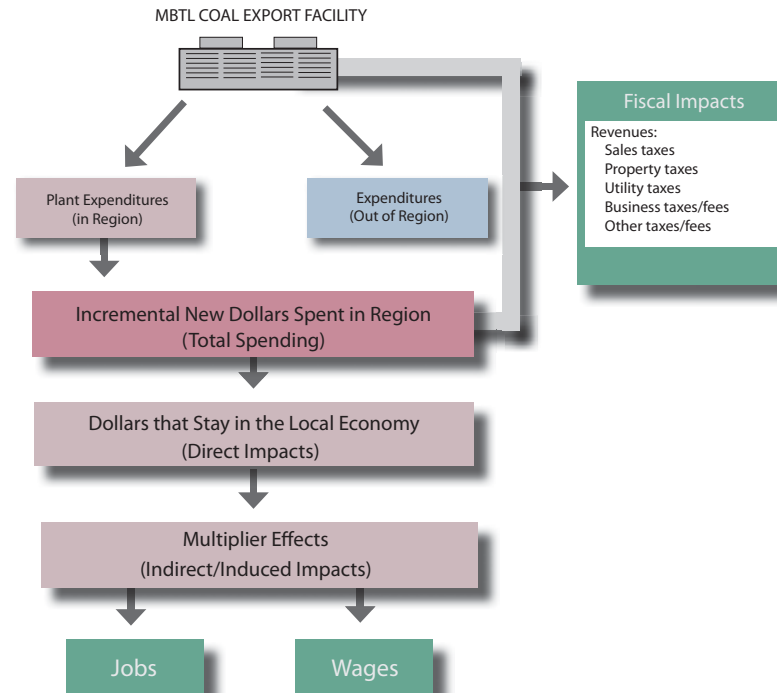
Source: Millennium Bulk Terminals Coal Export Facility Feasibility Study, 2011; BERK, 2012

ECONOMIC & FISCAL IMPACTS

Economic & Fiscal Benefits

The coal export terminal will result in economic and fiscal benefits to the local area and to the State of Washington. Historically, Cowlitz County has been an economically challenged area that has lagged behind state averages for growth. The coal export terminal project represents a chance to place a meaningful project on an underutilized piece of industrial land in the County. State and local benefits will include new jobs, wages, output, and tax revenue. Given the County's current economic and employment situation, it is expected that the majority of the positions would be filled from the local labor pool.

Exhibit 18
Millennium Spending & Economic Benefits



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Positive economic benefits associated with the development and operation of the Millennium project will be from increases in net local spending, which creates demand for local labor, goods, and services. This analysis focuses on how the Millennium project construction and operation in Cowlitz County will affect the local tax base, as well as the potential statewide economic impacts in terms of increased jobs, output, and wages (exclusive of benefits).

There will be jobs, wages, and fiscal impacts created along the entire supply chain associated with the coal export terminal, from the point of extraction to the ultimate delivery of the material. However, for the purposes of this analysis, the assumption is that the coal that would be handled at the Millennium site would be extracted even without the new export facility. The jobs and business activity associated with the mining and transportation of the coal are likely to occur regardless.

As a result, the scope of the economic and fiscal benefit analysis is focused on impacts relating to on-site construction and operations, since the key issue that is being explored is what the local and state benefits might be if the material is exported through the proposed Millennium facility.

ECONOMIC IMPACTS

The direct economic benefits are based on the expected staffing and expenditure plan for the proposed Millennium project. There would also be benefits beyond the site because the coal export terminal does not operate in isolation – it is supported by ship networks that operate on the Columbia River and rail networks that operate throughout Washington State and beyond. The impacts on these industries are not included in the indirect and induced effects, but will be discussed separately, including:

- Value of increased rail activity to rail companies
- Value of railroad infrastructure improvements to rail companies as well as other local industrial sites.
- Value of increased shipping activity to shipping companies (likely not an impact to Washington State)
- Value of increased shipping activity to Columbia River and Columbia River Bar Pilots.

The analysis of indirect and induced jobs and wages was conducted using the Washington State Input-Output model, which captures inter-industry relationships and allows for the estimation of multiplier effects.

Construction Impacts

Total construction expenditures are estimated to be about \$600 million. However, as much as half of this cost is for equipment purchases that are not expected to result in any direct job impacts in Washington, as the equipment is most likely to come from out-of-state equipment manufacturers. Accounting for these costs reduces the on-site construction expenditures resulting in direct job impacts to about \$232 million. This \$232 million in direct construction output is estimated to support 1,350 temporary direct jobs and \$70 million in direct wages. The subsequent secondary (indirect and induced) impacts in the local, regional, and state economy resulting from construction of the export facility are estimated to be about 1,300 additional jobs, \$65 million in wages, and \$203 million in additional economic output.

It is likely that a large portion of new workers hired would be drawn from the local pool of unemployed and underemployed construction workers. Based on current labor force statistics, the number of construction jobs estimated to be created by the Millennium project would comprise about 25% of the unemployed in Cowlitz County (1,300 construction jobs / 5,180 unemployed) and about 5% of the unemployed within the entire market area (1,300 construction jobs / 27,000 unemployed). As reported in the previous section, there are likely 400 to 800 unemployed construction workers in Cowlitz County. This would represent 30 to 60 percent of the total estimated construction workforce for the project.

Ongoing Operation Impacts

In terms of direct effects, the initial stage of the coal export facility would create an estimated 112 new jobs and roughly \$24 million in annual direct output. Once the coal export facility ramps-up to full buildout and operational capacity the total direct impact would be about 135 jobs, direct wages totaling \$16 million, and direct output totaling \$49 million. The majority of the positions would be expected to be filled from the local labor pool.

OFF-SITE DIRECT IMPACTS

This study counts only on-site activity when estimating direct impacts. However, there are additional direct impacts that would be related to the Millennium project, but occur off-site. These off-site impacts are not included in the estimates presented in **Exhibit 19**, but may have real benefits to the region:

- River Pilots.** The Columbia River Pilots and Columbia River Bar Pilots guide vessels in from the Pacific Ocean. These organizations currently handle about 3,600 trips per year.
 The MBTL project will be served by about 300 ships annually, resulting in 600 new trips. This 16% increase in traffic will likely result in additional Pilot jobs, though these jobs may not be located in Cowlitz County or even Washington State.
- Rail Companies.** New traffic of about 3,000 unit trains annually will increase employment, wages, and tax revenue from rail companies serving the MBTL site. However, these impacts will occur both in and out of Washington State, and mostly outside of the Cowlitz County impact area. The most likely localized benefit from the increased rail activity would be increases in state taxes from rail operators.

The analysis shows that for every direct job at the Coal Export facility, roughly 1.22 additional indirect and induced jobs will be supported within the local, regional, or state economy. This estimate is based on economic multiplier effects that have been identified through the development of the Washington State Input-Output model. These subsequent secondary (indirect and induced) impacts in the local, regional, and state economy resulting from the full operation of the export facility are about 165 additional jobs, \$9 million in wages (about \$54,500 per job), and \$21 million in output. The indirect jobs, wages, and output are based on the respending of direct wages and Millennium's local spending on goods and services.

Exhibit 19
Summary of Economic Impacts from Facility Construction & Operations

	Construction	Operations (Stage 1)	Operations (Buildout)
Jobs Total	2,650	230	300
Direct	1,350	112	135
Indirect & Induced	1,300	118	165
Wages Total	\$135.0 M	\$20.0 M	\$25.0 M
Direct	\$ 70.0 M	\$ 13.0 M	\$ 16.0 M
Indirect & Induced	\$ 65.0 M	\$ 7.0 M	\$ 9.0 M
Output Total	\$435.0 M	\$40.0 M	\$70.0 M
Direct	\$ 232.0 M	\$ 21.0 M	\$ 49.0 M
Indirect & Induced	\$ 203.0 M	\$ 19.0 M	\$ 21.0 M

The direct impact analysis suggests that the permanent full-time jobs added on-site would be reasonably well suited to the local labor force, suggesting some portion of the new jobs being filled from the existing labor force and that the average wages would be higher than the current average income level in the County.

Fiscal Benefits

Exhibit 20 illustrates estimated tax revenues of the taxing jurisdictions that would directly benefit from the construction and operation of the coal export facility, primarily Cowlitz County, Washington State, and other special districts. The estimates are presented as both average annual and as a present value (PV) over 30 years from 2012.

- The 30 year PV of cash flow resulting from the construction and operation of the coal export facility would be approximately \$146 million. Tax revenues to the State represent the largest share of total tax revenues, totaling \$79 million, or 54%. Tax revenues to the County would represent \$38 million, or 26%. Tax revenues to special districts would represent \$29 million, or 20% of total revenues.
- Construction-related revenues from business and occupation (B&O) and sales taxes total \$43 million, or about 30% of total revenues. Sales tax estimates are based on the values supplied by Millennium for the cost of construction, equipment purchases, construction labor, etc. B&O tax estimates represent taxes paid to the State by construction companies for the value of the income they receive from this project.
- Property taxes comprise the majority of annual operating revenues, about \$3.9 million. The total levy capacity of each associated taxing jurisdiction would increase as a result of construction of the Coal Export facility. Property taxes are based on current levy rates multiplied by the taxable value of the facility, which is estimated to be equal to the value of the investment added in the property. Property tax revenues are limited to grow by 1% after the initial year of construction to reflect the 1% cap on property tax increases imposed by Initiative-747 which results in project-related property tax revenues declining slightly over time. The property taxes estimates do not include district bond levies or excess levies since the Coal Export facility would not increase revenues to the taxing districts, but would rather redistribute the taxing burden amongst other tax payers within the districts.
- Ongoing sales taxes are only applied to consumable goods and services that would be purchased by the company to support operations.
- Utility tax revenues are based on annual estimates of utility expenditures (electricity and water) on-site. Utility taxes would only be paid to the State because the site is located in unincorporated Cowlitz County (i.e. counties in Washington State do not currently have utility tax authority).

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- Based on 2010 revenue levels for the County, this project could represent a 10% increase in property tax revenues and an increase of 2% to sales tax revenues. Given the magnitude of this project, it is likely that the overall net impact to the County will be an increase in general fund revenues per capita, allowing the County more flexibility in meeting the services needs of residents. However, it is worth noting that over 50% of the property tax revenues are related to the County's Road levy, which requires that funds be dedicated specifically for transportation purposes.
- There would likely be additional revenues to the State from taxes associated with increased rail and shipping activity as well as increased fuel taxes resulting from increased rail use. However, the focus of the fiscal analysis was limited to benefits derived from on-site construction and operations.

Exhibit 20

Summary of Fiscal Impacts from Facility Construction & Operations

Fiscal Impacts	30-Year PV (2012)	Annual Average (2012)	One-time Construction (2012)
County	\$ 38.24 M	\$ 1.65 M	\$ 5.87 M
Property Tax	\$ 29.47 M	\$ 1.5 M	-
Construction Sales Tax	\$ 5.87 M	-	\$ 5.87 M
Ongoing Sales Tax	\$ 2.9 M	\$ 0.15 M	-
State	\$ 78.99 M	\$ 2.18 M	\$ 37.21 M
Property Tax	\$ 18.05 M	\$ 0.92 M	-
Construction Sales Tax	\$ 34.7 M	-	\$ 34.7 M
Ongoing Sales Tax	\$ 17.12 M	\$ 0.91 M	-
Construction B&O Tax	\$ 2.51 M	-	\$ 2.51 M
Ongoing B&O Tax	\$ 4.59 M	\$ 0.24 M	-
Utility Taxes	\$ 2.01 M	\$ 0.11 M	-
Special Purpose Districts	\$ 28.54 M	\$ 1.45 M	-
Property Tax	\$ 28.54 M	\$ 1.45 M	-
Total	\$ 145.77 M	\$ 5.28 M	\$ 43.09 M

ECONOMIC DEVELOPMENT IMPACTS

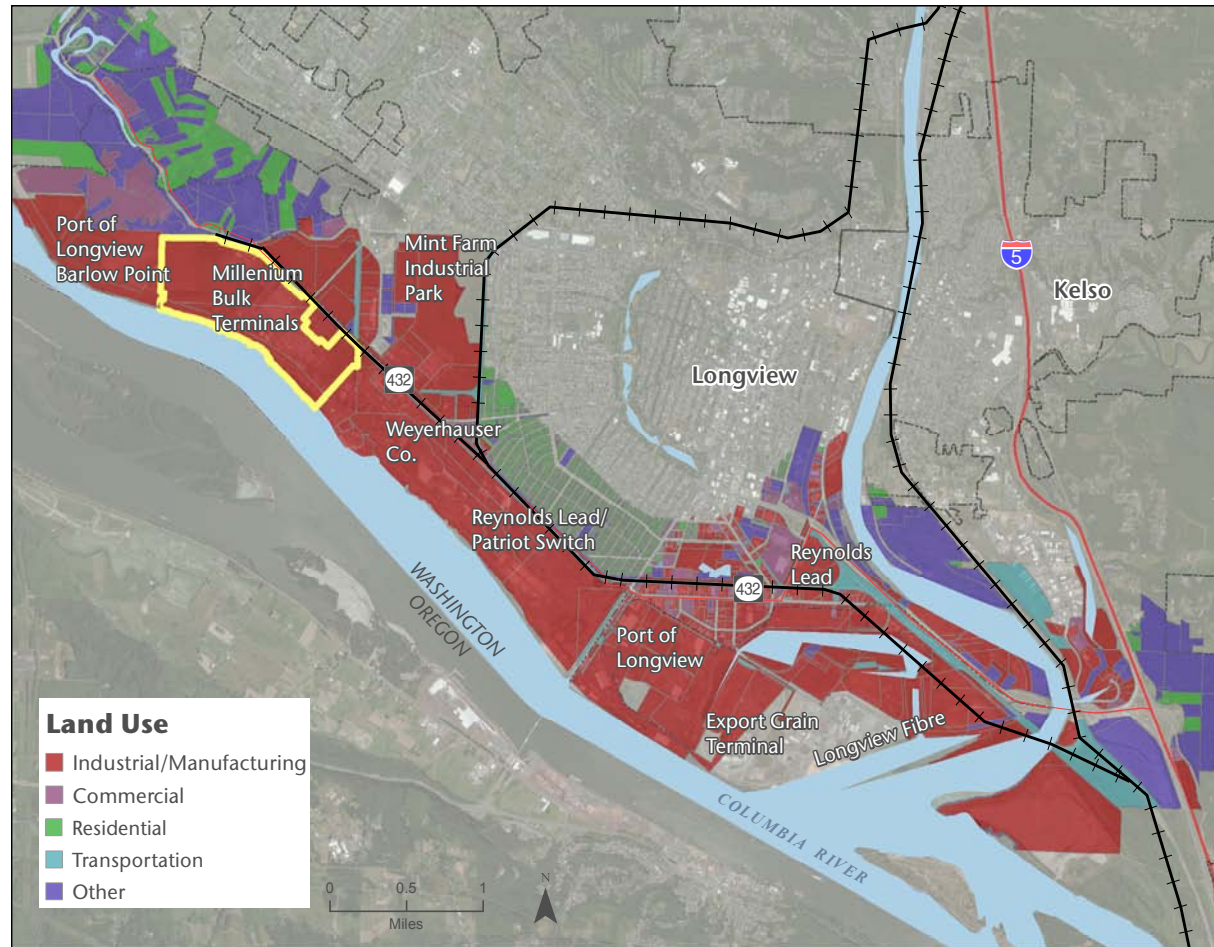
The Metropolitan Planning Organization (MPO) for the region, the Cowlitz-Wahkiakum Council of Governments (CWCOG), is leading a large Rail Realignment and Highway Improvements project that would modernize rail lines including those running parallel to the Columbia River that serve the Millennium site and neighboring industrial properties. They are undertaking this project because the existing rail and transportation systems are becoming congested as the industrial waterfront changes from manufacturing activities to a global bulk commodity trade center.

The 2008 State Route 432 Realignment Feasibility Study estimated that the identified improvements would bring increased capacity and fewer delays to the industrial rail corridor. Other major benefits of the project include improving signalization, separating vehicular traffic from increased rail traffic, improving unit train capacity enhancements, increasing passenger rail capacity, and alleviating BNSF mainline chokepoint.

The Millennium project, as well as the recently opened Export Grain Terminal, would help these rail improvements get implemented. These types of large-scale projects would enhance the potential of acquiring private investment in these rail improvements since investors would likely have more confidence investing in an area with existing long-term businesses in place. Once in place, the rail improvements would likely support the expansion of economic development opportunities in Cowlitz County, specifically in the industrial areas along the Columbia River. As **Exhibit 21** illustrates, there are a number of industrial parcels along and adjacent to the riverfront that would benefit from the planned improvements, including the 306 acres of undeveloped waterfront property at Barlow Point that the Port of Longview recently acquired in 2010 and the inland Mint Farm Industrial Park.

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Exhibit 21
Map of Industrial Properties Benefiting from Planned Rail Improvements



Source: BERK, 2012.

TECHNICAL APPENDIX: APPROACH TO ANALYSIS

Underlying Assumptions

This analysis relied on a range of assumptions in order to arrive at reasonable estimates. Some of the main assumptions are described below.

CONSTRUCTION COSTS & STAGING

The construction schedule and cost estimates are based on the 2011 Millennium Bulk Terminals Coal Export Facility Feasibility Study. The study envisioned construction of the project would occur in late 2013 and take place in two overlapping stages: an infrastructure and upland construction stage and a marine construction stage. The overall schedule for construction after receipt of the necessary permits is estimated to take approximately 18-24 months. Cost estimates were based on 2011 estimates and were escalated 3% per year resulting in a total cost (less taxes and indirect costs) of about \$643 million in year of expenditure (YOE) dollars.

FACILITY OPERATION

It is assumed that the facility will open in 2015 and the eventual goal of 44 metric million tons per year (mmtpy) of coal going through the terminal would likely ramp up over time. This analysis assumes that the operation would begin with enough throughput to warrant 358 days of operation per year at 16 hours per day. Each year throughput would increase until the facility was at full operational capacity; operating at 24 hours per day, 358 days per year, and three shifts per day. Full site capacity of 44 million metric tonnes of coal will be in place by 2018. **Exhibit A-1** illustrates the study's assumptions regarding the ramp-up of operations.

Exhibit A-1
Operations (2015-2018)

	2015	2016	2017	2018
Operating Hours Per Day	16.0	16.0	24.0	24.0
Operating Days per Year	90.0	358.0	358.0	358.0
Shifts Per Day	2.0	2.0	3.0	3.0
Total Wages (in Millions)	\$3.5	\$14.5	\$19.5	\$20.1
<i>Average per Employee</i>	<i>\$31,487</i>	<i>\$129,725</i>	<i>\$144,504</i>	<i>\$148,839</i>

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- All direct labor (staffing and wages) associated with the coal export facility is based on the 2011 Millennium Bulk Terminals Coal Export Facility Feasibility Study. BERK estimated that the majority of positions would be variable in nature and would scale based on the output of the facility. All administrative positions are assumed to be hired prior to opening. Labor costs are escalated at 3% per year.
- The composition of total operating costs by business varies depending on the type of business. Labor can comprise as much as 70% of total operating expenditures. Given the high cost of supplies, equipment maintenance, and utilities associated with the coal export facility, it is unlikely that this labor percentage is as high. For this analysis we have assumed that labor, which is based on the Feasibility Study, comprises about 45% of total annual operating costs and all other non-labor expenditures would comprise about 55%.
- Utility expenditures, which are necessary to derive utility tax revenues, are estimated to be about 8% of total operating expenditures (14% of non-labor costs). About 90% of utility expenditures are assumed to be taxable (mainly electricity and water). The remaining utility expenditures are assumed to be not tax related.
- For estimating gross business income of the coal export facility, we developed a price per ton of coal moving through the facility that would essentially bring the 30 year internal rate of return to just a little over zero. This represents a conservative estimate of gross income derived from operations given that most businesses gauge the desirability of a potential project based on its internal rate of return and would likely not proceed with a project that achieves less than a 0% internal rate of return.

Economic Impacts

The root of economic impacts is spending. Money spent within an economy is passed from person to person, creating more economic activity than just the original transaction. This is called a multiplier effect: one dollar spent within the community can become more than one dollar of economic activity when passed along several times. On the flip side, one dollar spent in a community can become less than one dollar of economic activity if some of that money is sent out of the region.

If the goal of an economic impact analysis is to get a realistic view of how a given action will affect a regional economy, then it is important to understand the mechanisms by which that effect will be felt in the region. Input-output models are designed to identify impacts of newly introduced demand in a local economy. In other words, input-output models show economic impacts at the point of production, translating new demand into additional sales (and production) of local goods and services.

The focus on economic effects means that input-output models make a clear distinction between new expenditures in an area and new demand for local goods and services. In economic terms, expenditures only impact the local economy to the extent that those expenditures drive demand for some local economic component of production. For example, a new dollar spent has a direct economic effect in a region only to the extent that some portion of the production of the good or service purchased occurs in that same region. The difference between the dollar spent and the amount that accrues to local entities is referred to in input-output models as the margin.

In this study, economic impacts come from two places: (1) money spent on construction of the new facility and (2) money spent to operate the facility on an ongoing basis. This study measures the three main types of economic impacts:

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- **Direct Impacts.** Direct impacts are not necessarily the amount of money spent on an initial purchase. They are, instead, **the amount of that initial purchase that will remain within the local economy.** For example, when the construction company purchases tools from a local company, that supplier may send some of that money to their headquarters and some to their manufacturers in another country, and the rest will be spent on local employees and purchases from businesses within the region. The direct impact is only the amount that the supplier re-spends within the region because that is the portion that affects the local economy.
- **Indirect Impacts.** Indirect impacts result **when an industry makes purchases from another industry.** For example, when the construction company purchased a tool from a supply store, that store owner must then make more purchases from its suppliers. This is an indirect impact.
- **Induced Impacts.** Induced impacts occur from the **expenditures of employee wages.** When the construction company purchased a tool from the supply store, the salesperson received a wage for working in the shop. The wages that are then put back into the local economy as that employee makes purchases for his or her household is the induced effect of the tool purchase.

Estimating the Multiplier Effects

Statewide economic impacts are modeled using the Washington State Input-Output Model developed for the Washington State Office of Financial Management. This model was developed to trace the ripple effects of an expenditure that occurs within the economy. The model tracks how an economic action will ripple through an economy creating different levels of revenue, jobs, and income based on the economic sector.

For more information on the State's model, please visit: <http://www.ofm.wa.gov/economy/io/>

Estimating Direct Impacts

Construction. The elements of the construction project that will result in direct economic impacts include:

- The cost of construction supplies; and
- The cost of construction labor.

Temporary construction jobs and wages were estimated using the Washington State Input-Output Model (I/O Model) developed for the Washington State Office of Financial Management. The I/O Model estimates that for every \$1 million (2010\$) of direct business spending (output) would result in about 5.82 direct construction jobs and \$0.30 in direct wages. Total construction expenditures are estimated to be about \$600 million, which are based on the 2011 Millennium Bulk Terminals Coal Export Facility Feasibility Study. However, as much as half of this cost is for equipment purchases that would not result in any direct job impact. Accounting for these costs reduces the on-site construction expenditures that would result in direct job impacts to about \$232 million. This \$232 million in direct construction output will produce 1,350 temporary direct jobs and \$70 million in direct wages.

Operations. The elements of facility operation that will result in direct economic impacts include:

- The number of employees on-site;
- The cost of ongoing supply and equipment purchases; and
- The cost of operations labor.

In terms of direct effects, the initial stage of the coal export facility would create an estimated 112 new jobs and roughly \$21 million in annual direct output. Once the coal export facility ramps-up to full buildout and operational capacity, the total direct impact would be about 135 jobs, direct labor income totaling \$16.0 million, and direct output totaling \$49 million. Direct jobs and wage estimates were based on the 2011 Millennium Bulk Terminals Coal Export Facility Feasibility Study.

Fiscal Impacts

In addition to the economic impacts generated, this analysis also looked at how both the construction and operation activity generates tax revenue to the local government and to the state. The fiscal contribution identified in this study only takes into account the direct impacts of construction and operations—tax revenue generated from induced and indirect impacts are not estimated.

Construction. This study analyzed the following tax streams related to facility construction:

- Sales Tax - Analysis assumes a total sales tax rate of 7.6%; 6.5% of which would go to the State and the remaining 1.1% would be distributed to the County. The County rate includes the 0.1% criminal justice tax.
- B&O Tax - Analysis assumes that gross business income derived from construction would be taxed at the retailing B&O rate which 0.00471.

Operations. This study analyzed the following tax streams related to facility operation:

- Sales Tax - Taxable retail sales associated with the coal export facility's operations were based on an annual estimate of taxable purchases occurring on-site. This included items such as supplies and maintenance of equipment. The analysis assumes a total sales tax rate of 7.6%; 6.5% of which would go to the state and the remaining 1.1% would be distributed to the County. The County rate includes the 0.1% criminal justice tax.
- B&O Tax - Analysis assumes that gross business income derived from operations would be taxes at the retailing B&O rate which 0.00471. This is the same rate that applies to other stevedoring operations in the state.
- Utility Tax - Analysis assumes electricity, water, and sewer utility rates of 3.783%, 5.029%, and 3.852%, respectively. Tax estimates are derived by applying these rates to annual estimated utility expenditures. About 45% of utility expenditures are assumed to be related to electricity expenditures. Another 45% is related to other utility expenditures such as water. The remaining utility expenditures are assumed to be not tax related.
- Property Tax - Analysis reflects the most recent levy rate information that would apply to this site. The breakdown of rates by jurisdiction is presented below in **Exhibit A-2**.

Exhibit A-2
Levy Rates by Taxing Jurisdiction*

	Rate per \$1,000 of AV
State Schools	2.37
County Levies:	
Current Expense	1.84
County Road	2.04
Special District Levies	
Longview School Dist #122	3.53
Port of Longview	0.22
Total Combined Levy Rate	10.00

*Does not include excess or bond levies