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May 2, 2011

Mr. Jeffrey Bishop
Chief Executive Officer
Oregon International Port of Coos Bay
125 Central Avenue, Suite 300
Coos Bay, OR 97420

Mr. Bishop:

The purpose of this report is to provide an overview of the current state of the Coos County economy and a discussion of the net economic impact of the development of the Oregon Gateway Marine Terminal proposed by the Oregon International Port of Coos Bay ("Port"). The impact analysis summarizes past and recent research conducted by ECONorthwest.

Impacts, as considered in this research, are measured as net changes in jobs and labor earnings within Coos County that would arise from both the construction and operation of the Port's project along with the upland development that it would facilitate. We have used the Jordan Cove Energy Project's ("JCEP") planned development of a liquefied natural gas ("LNG") terminal as the basis for our projections for the upland development because that is the project for which data is most readily available and reliable.

The impact analysis focuses only on the net increase in jobs and labor earnings that would occur inside Coos County should the proposed developments be completed.

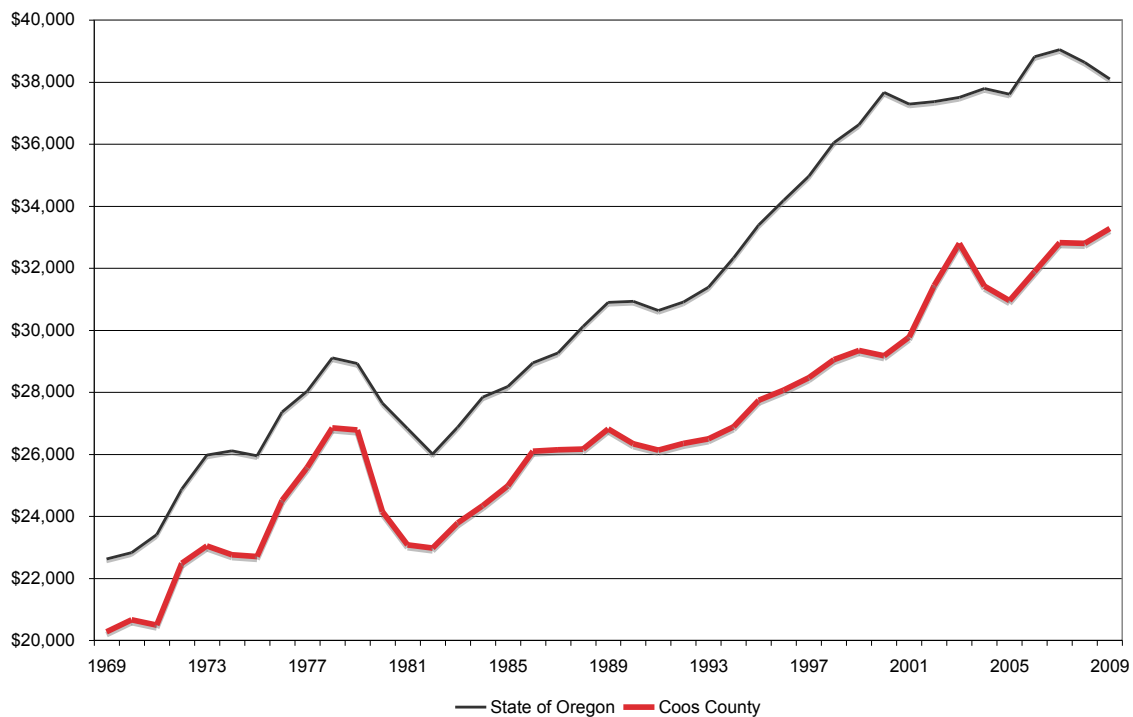
Jobs are described as job-years of employment for both full- and part-time work. Labor earnings are the sum of wages, salaries, benefits, and proprietors' (self-employment) income.

Overview of the Coos County economy

Historically, the foundations of the Coos County economy were forestry, fishing, and, in earlier years, coal mining. These industries weakened considerably since the mid 20th century. In their place some other sectors of the economy grew, but not sufficiently so. Employment has been stagnant and per capita income growth has lagged well behind statewide averages.

The county’s economy is becoming increasingly dependent on tourism as its main source of service exports (non-local revenues). Recent large developments opened in the 1990’s and have since expanded: Bandon Dunes Golf Resort (1999) and the Mill Casino & Hotel (1995). Government employment and transfer payments (Social Security, welfare, *etc.*) have also grown in importance. However, such a shift is indicative of structurally weak economy. This is reflected in the persistent and widening gap in per capita incomes between Oregon and Coos County seen in Figure 1.

Figure 1 – Inflation adjusted per capita income, 1969 – 2009, Oregon and Coos County, 2011 \$ per resident



Source: Regional Economic Information System, Bureau of Economic Analysis, US Department of Commerce. April 2011. Converted into 2011 dollars using the US Consumer Price Index.

According to the U. S. Bureau of Economic Analysis (“BEA”), 2009 per capita personal income in Coos County was \$31,614 or about \$4,600 less than the state average. The BEA is the federal agency responsible for estimating personal income. 2009 is the most recent year for which county level data are available.

The sources of 2009 personal income are shown on Table 1. Residents earned about \$933 million from working. Indicative of a weak private sector economy, total wages from government jobs (\$339 million) were high in comparison to private employment (\$390 million). The latest state employment data confirm this heavy reliance on public sector employment. In 2010, government employed 18.7 percent of all workers in Oregon. However, in Coos County, 29.0 percent depended on public sector jobs.¹

Table 1 – Sources of per capita incomes for Coos County residents, 2009

Sources of Local Personal Income in 2009	Coos County
<i>Labor earnings of locals:</i>	
Wages and salaries paid by local private employers	389,685
Wages and salaries paid by government employers	339,029
Local employer retirement & insurance contributions	141,183
Locally owned farmers' net income	(5,211)
Self-employed worker earnings	141,843
Less government insurance taxes paid by workers	(77,912)
Less pay outflow to non-locals working in county	(29,536)
Plus pay inflow to residents working outside county	33,641
Net labor earnings of local residents	\$932,722
<i>Plus other sources of personal income:</i>	
Dividends, interest, and rental income	\$438,180
Welfare, SSI, foster care, & other social services	57,195
Unemployment insurance	37,190
Social Security retirement, pensions, disability & other	519,901
Total Personal Income	\$1,985,188
Population	62,795
Per capita income	\$31,614

Source: Regional Economic Information System, Bureau of Economic Analysis, US Department of Commerce. April 2011.

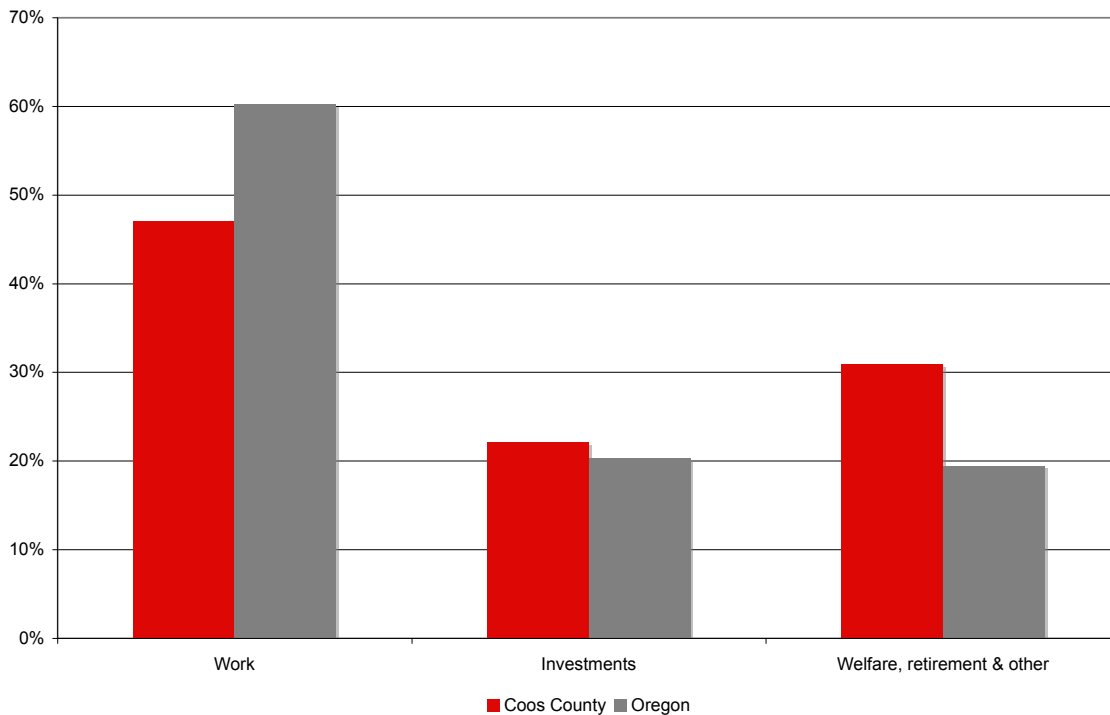
Other evidence of a weak economy can be seen in the commutation data on Table 1. Residents relied on pay inflows (from jobs outside Coos County) for about \$33.6 million of their labor earnings. Outflows (jobs held by non-locals working in Coos County) were less — \$29.5 million. This pattern is indicative of relatively poor local employment opportunities in Coos County.

¹ Oregon Employment Department. Current Employment Statistics.

The structurally weak labor market is also reflected in the unemployment rate. In 2009, the county unemployment rate was 12.9 percent. That was above the national (9.3 percent) and statewide averages (11.1 percent). The latest data, February 2011, reveals continuing weakness even as the national economy recovers from the recent recession. The seasonally adjusted unemployment rate in the county was 11.4 percent versus 8.8 percent nationally and 10.0 percent statewide.

In 2009, as illustrated in Figure 2, Oregonians got 60 percent of the personal incomes by working. In Coos County, only 47 percent came from work. Instead, county residents relied heavily on welfare, Social Security retirement, pensions, disability benefits, and various transfer payments (31 percent in Coos County compared to 19 percent statewide).

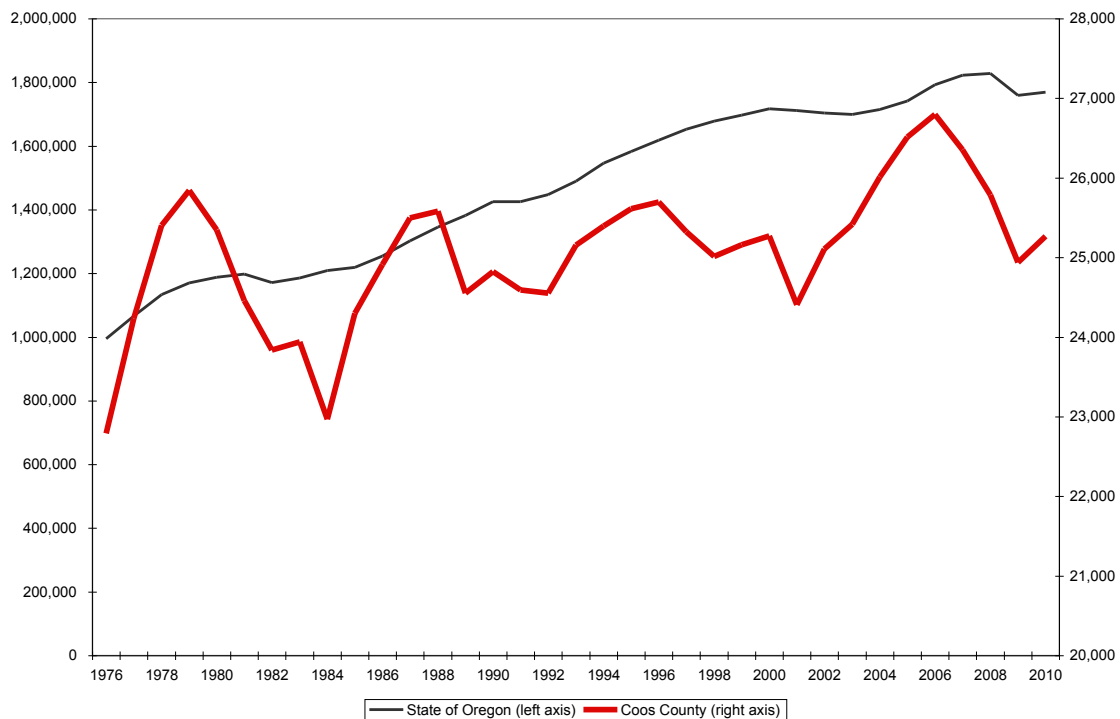
Figure 2 – Main sources of personal income, Oregon versus Coos County, percent share of total personal income in 2009



Source: *Regional Economic Information System, Bureau of Economic Analysis, US Department of Commerce. April 2011.*

The principal reason why labor earnings lagged in Coos County is the failure of the economy to grow jobs. As shown in Figure 3, last year 25,265 county residents worked. However, that is one percent less than in 1978 when 25,405 were employed. The county saw no job growth in 32 years. In stark contrast, over the same period, the number of employed Oregon residents rose 56 percent from 1,134,101 to 1,769,599.

Figure 3 – Employed residents in Oregon and Coos County, 1976 - 2010



Source: US Bureau of Labor Statistics.

In conclusion, Coos County has seen growth in tourism, particularly from Bandon Dunes and the Coquille Indian Tribe, which owns the Mill Casino & Hotel in North Bend and reinvests earnings in other local economic development projects. However, these have not been enough to completely overcome weaknesses in other sectors. The county economy continues to suffer overall as is shown in the employment and personal income data. Its dependence on public sector employment and transfer payments is disturbingly high.

Proposed development projects

The Port is planning to build a multi-berth port slip and access waterway to the deep-water channel within the lower Coos Bay for an estimated \$104 million. While the LNG terminal is a potential user of the slip, the Port will construct the slip for other potential users even if the LNG terminal is not built.² The Port anticipates that the slip and access channel would open the South Oregon Coast as a global port of call by accommodating oceangoing vessels, thus, helping fulfill the Port’s economic development mission.

² Oregon International Port of Coos Bay. Joint Permit Application. Received November 15, 2010 by the Oregon Department of State Lands. Page 12.

JCEP is planning on developing an LNG terminal in Coos Bay, which would use the slip being developed by the Port for docking of LNG tankers. On average 80 LNG tankers would deliver LNG to the terminal, which would store and convert the LNG into natural gas for delivery *via* pipelines. The Coos Bay facility would have the capacity to send out 365 billion cubic feet (“BCF”) of natural gas a year. However, due to seasonal fluctuations in demand and other considerations, the terminal would average about 292 BCF annually.³ JCEP says the facility would cost \$1.2 billion (2011 dollars) and take 42 months to complete.⁴

Data sources

Direct impacts are the jobs and labor earnings at the terminal and port. Data for these come from the Port, JCEP, and Black & Veatch. Labor rates were adjusted for inflation and local market conditions through the use of widely accepted sources: the Engineering News-Record skilled labor index, the U. S. Bureau of Labor Statistics’ (“BLS”) occupational employment statistics, the BLS consumer price index, and the 2007 U. S. Census of Construction.

Non-direct impacts are those that occur elsewhere in Coos County. They result from local purchases of goods and services made by the terminal or port and from the spending of wages and other earnings inside the county. These downstream impacts multiply as dollars are re-spent throughout the Coos County economy. This analysis used the 2010 IMPLAN model of the Coos County economy to estimate non-direct impacts.

Port construction. The total cost, average workforce, and duration of construction for slip and berthing structures, including harbor improvements, were provided by the Port and relayed to ECONorthwest by JCEP.⁵ ECONorthwest estimated labor costs using the average national wage of marine construction from the 2007 Economic Census and adjusting for inflation, benefits, and geography.

LNG terminal construction. The job and income effects from constructing the LNG terminal are based on two sources. Direct construction employment data are from a 2006 project labor schedule from the engineering firm Black & Veatch, which is summarized in a housing study prepared by ECONorthwest for JCEP.⁶ Total worker-years for the project were adjusted for a longer work schedule (42 months as opposed to 36 months) deemed necessary given the complexity of the project. Wage rates were adjusted for inflation. An email from JCEP provided a second source of data, which is the total cost of construction.⁷

³ ECONorthwest. Forecast of the net economic benefits of a proposed LNG terminal. October 2006. Prepared for the South Coast Development Council. Page 3.

⁴ Braddock, B. of JCEP. Email to Robert Whelan of ECONorthwest. April 22, 2011.

⁵ Braddock, B. of JCEP. Email to Dana Siegfried of David Evans and Associates. April 12, 2011.

⁶ ECONorthwest. The impact of Jordan Cove Energy project construction personnel on Coos County housing and schools. November 2006.

⁷ Braddock, B. (April 22, 2011). *Op. Cit.*

Port operations. The net impacts of port operations calculated in this analysis are limited to three possible port activities and are presented here as examples. The first is activity tied to the presence of an LNG terminal whose impacts were forecast in an earlier study⁸ and, after adjustments for inflation, are presented in this report. It is likely that the proposed development would lead to expand shipping activities beyond LNG. Two other examples, a container terminal, which was the subject of previous research,⁹ and a bulk export facility, are also provided as illustrations of possible port uses.

LNG operations. ECONorthwest calculated the economic impacts arising from the operations of the LNG terminal in an October 2006 study for the South Coast Development Council (“SCDC”).¹⁰ A more detailed breakout of these impacts was reported in a June 2008 memo done in response to a request from FERC.¹¹ The results from these two analyses were adjusted for differences in inflation and are summarized in this letter.

Economic impact of construction

The analysis measures construction impacts in terms of jobs and labor earnings. These impacts are for the entire construction period, which lasts for more than a single year. Labor earnings are shown in 2011 dollars and employment is expressed in job-years.

Port construction

The spending on slip and berth construction, as well as an access channel, would have a wide variety of impacts on Coos County’s economy during the 18-month construction period. Although most of the necessary construction materials would be sourced from outside the study area, local businesses would experience increased demand as a result of accompanying purchases, and workers’ wages and per diem spending in the local economy. These activities would primarily affect temporary employment services, restaurants, wholesalers, and trucking. Impacts would vary according to the intensity of construction.

⁸ ECONorthwest (October 2006). *Op. Cit.*

⁹ ECONorthwest. A forecast of demographic impacts on communities resulting from new businesses in Coos County. Prepared for the South Coast Development Council. May 2007.

¹⁰ ECONorthwest (October 2006). *Op. Cit.*

¹¹ ECONorthwest. Memorandum to Brad Floyd and Bob Braddock, June 13, 2008. “Follow-up analyses of October 2006 economic impact report.”

The impact of port construction was modeled using cost estimates received by ECONorthwest. Over the course of the 18-month project, \$104 million in direct investments would cause approximately a net increase of \$26.3 million in labor earnings within Coos County. Of this, \$18.1 million would be among workers at the Port and \$10.3 million through non-direct economic activity in the local economy. The construction will also support 406 job-years of employment in the county. Of this total, 113 are a result of employment at the construction jobsite and 293 from increased employment elsewhere in Coos County. Table 2 summarizes these impacts.

Table 2 - Personal Income and Employment Impacts from Port Construction over 18 Months, 2011 \$

Impact Type	Direct	Non-Direct	Total
Labor earnings	\$16,035,937	\$10,281,431	\$26,317,368
Jobs*	113	293	406

* Job-years of employment. 113 jobs over 18 months are equivalent to 75 jobs per month on average.

LNG terminal construction

The construction of the LNG terminal would take place over 42 months. Although most construction materials and terminal equipment would come from outside the Coos County, local businesses would experience increased demand as a result of construction spending, and workers' per diem spending and wages. These activities would primarily affect temporary employment services, restaurants, wholesalers, and trucking. Impacts would vary according to the intensity of construction.

Labor costs and employment data from Black & Veatch were used in the economic impact model. Labor costs were adjusted to bring costs in terms of 2011 dollars. The skilled construction labor cost index from industry trade journal Engineering News-Record was used for this. The total project cost, average number of employees, and duration of construction were provided by JCEP.

Certain construction costs would have no discernable impacts on the local economy, such as interest expenses and imported terminal equipment. Modifications to the Coos County economic model were made to reflect these circumstances.

The direct investment of \$1.2 billion for the LNG terminal would cause a one-time net increase of \$259.5 million in labor earnings and 3,462 job-years of employment spread over a 42-month period. Of these totals, \$192.7 million in labor earnings would be made at the construction site while another \$66.8 million would be earned elsewhere in Coos County by workers engaged in the supply chain to the construction project and others who benefit from the spending of workers and their families. There would be 1,505 job-years of employment at the construction site and another 1,957 from non-direct economic activity. These totals are summarized in Table 3.

Table 3 - Labor Earnings and Job Impacts for LNG Terminal Construction over 42 months, 2011\$

Impact Type	Direct	Non-Direct	Total
Labor earnings	\$192,699,658	\$66,821,007	\$259,520,665
Jobs*	1,505	1,957	3,462

* Job-years of employment. 1,505 jobs over 42 months are equivalent to 430 jobs per month on average.

Economic impact of operations

Impacts for operations are reported as annual averages for a typical year in the future. Labor earnings are expressed in 2011 dollars. Jobs are reported as annual average employment and are a mix of full- and part-time work.

Port operations

A number of possible uses have been considered for the slip and access channel including LNG, wood chips, and bulk commodities.¹² A container terminal had also been proposed.¹³ Fundamentally, the project is designed to make the Port able to handle modern, larger vessels so to become more competitive.¹⁴

The following analysis looks at the economic impact of three representative examples of users of the slip, none of which is necessarily mutually exclusive. This analysis is based largely on previous research.

The first example on Table 4 is LNG vessel services, which was analyzed by ECONorthwest in a previous report and updated here to 2011 dollars.¹⁵ It would directly employ 26 and non-directly another 60 in Coos County. Labor earnings from this activity would be \$4.8 million a year.

¹² Oregon International Port of Coos Bay. *Op. Cit.* Pages 12-13.

¹³ Di Benedetto, Bill. Coos Bay, Ore., hopes to become a port with annual capacity of 2 million TEUs. Journal of Commerce. April 16, 2007. Page 23.

¹⁴ Oregon International Port of Coos Bay. *Op. Cit.* Page 12.

¹⁵ ECONorthwest (June 13, 2008). *Op. Cit.* Page 5.

Table 4 - Personal Income and Employment Impacts from Average Year Port Operations, 12 Months, 2011 \$

Slip Use/Impact Type	Direct	Non-Direct	Total
<u>LNG vessel services</u>			
Labor earnings	\$2,222,092	\$2,534,636	\$4,756,729
Jobs	26	60	86
<u>725,000 TEU* Container terminal**</u>			
Labor earnings	#N/A	#N/A	\$83,761,232
Jobs	882	566	1,448
<u>Bulk mineral terminal (example)</u>			
Labor earnings	\$20,843,509	\$5,893,702	\$26,737,211
Jobs	280	173	453

* TEU: Twenty-foot equivalent unit is a standard capacity measure of container transportation.

The second example is a 725,000 TEU container terminal. Its total impact would result in 1,448 more jobs in Coos County and a net increase of \$83.8 million (2011 \$) in local labor income. These estimates are from a 2007 report by ECONorthwest for the SCDC.¹⁶

The third example is of a bulk mineral port and, for illustration an export terminal proposed for Bellingham, Washington that would directly employ 280, was used.¹⁷ ECONorthwest used 2007 U.S. Economic Census national average wage data for shipping labor¹⁸ and adjusted it for inflation and benefits to arrive at direct labor earnings at the bulk terminal of \$20.8 million a year. Using the 2010 economic model for Coos County it was determined that the non-direct impacts elsewhere in the county would add another \$5.9 million in labor earnings and 173 more jobs. Thus, in an average year of operations, a bulk export terminal similar in employment to what is being considered in Bellingham would have an incremental benefit of approximately \$26.7 million more in labor earnings and 453 jobs in Coos County.

¹⁶ ECONorthwest (May 2007). *Op. Cit.*

¹⁷ Stark, John. Bellingham Mayor: Region needs jobs from shipping terminal at Cherry Point. The Bellingham Herald. February 22, 2011.

¹⁸ Annual Wage for NAICS code 4883, adjusted by ECONorthwest

**725,000 TEU represents early stage Gateway Marine Terminal Development, not full build out of 2 million TEU.

LNG terminal operations

The impacts of terminal operations are for a typical operating year when 292 BCF of natural gas is sent out. The direct net impacts of the LNG terminal come from work done at the terminal as well as the cost savings in utility bills benefitting local residential, commercial, and industrial consumers arising from slightly lower natural gas prices. Unlike the analyses of June 2008 and October 2006 where income impacts were reported in 2016 dollars, the data in this analysis are expressed in 2011 dollars so to be consistent with the construction impacts that are presented.

The analysis reveals Coos County would see 297 jobs over what the county would otherwise experience in employment in years when the LNG terminal operates at 292 BCF. Most of the gains are attributable to the purchases by the LNG terminal itself and its employees. Consumers of natural gas would also benefit from lower prices, which would free-up money to be spent elsewhere in the local economy.

Table 5: Job impacts in Coos County from an average year of LNG terminal operations, net increase in years of employment in Coos County

Impact Source	Direct	Non-Direct	Total
LNG operations	57	190	247
Residential energy cost savings	17	5	22
Business energy cost savings	23	5	28
Total	97	201	297

In an average year of operations the LNG terminal would add a total of \$16,078,823 in labor earnings to the Coos County economy. More than half would come from the LNG operations because of the high wages and benefits offered the skilled workforce at the facility.

Table 6: Net increase in labor earnings within Coos County from an average year of LNG terminal operations, 2011 \$

Impact Source	Direct	Non-Direct	Total
LNG operations	\$5,681,184	\$8,194,496	\$13,875,681
Residential energy cost savings	458,806	163,553	622,359
Business energy cost savings	987,525	593,258	1,580,783
Total	\$7,127,515	\$8,951,308	\$16,078,823

Summary

Because of the cost, complexity, and requirements for highly skilled, well-compensated labor force, the jobs impact from construction of an LNG terminal and of the slip would be substantial. Coos County would see a net increase of 3,868 additional job-years of employment from construction.

In a typical operating year, and assuming that the slip would be used only as a bulk export terminal (mid-range estimate cited on Table 4), annual employment in Coos County would average 750 more than if no development were done.

Table 7 – Coos County Employment Impacts

Impact Type	Direct	Non-Direct	Total
Construction	1,618	2,250	3,868
Operations*	377	374	750

* Annual average impact of an LNG terminal and a bulk export terminal at the Port.

ECONorthwest bases these estimates upon information from the Port, SCDC, and JCEP, previous research, and an IMPLAN analysis using data cited in this report, which is believed to an accurate measurement of economic conditions.

Very truly yours,



Robert Whelan

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May 19, 2011

Mr. Jeffrey Bishop
Chief Executive Officer
Oregon International Port of Coos Bay
125 Central Avenue, Suite 300
Coos Bay, OR 97420

Mr. Bishop:

On May 2, 2011, ECONorthwest sent you research findings of an impact study that measured net changes in jobs and labor earnings within Coos County that would arise from both the construction and operation of the Port's project along with the upland development. As you may recall, Table 3 showed that the terminal construction project would create 1,505 job-years of employment directly and 3,462 in total for the county on a one time basis. These are equivalent to 430 direct and 989 total jobs in the county for the average month during the 42-month construction period.

My colleague, Dr. Randall Pozdena, subsequently read the analysis and suggested that we elaborate a bit on some of the uncertainties regarding how much of the associated employment would be enjoyed by the County. His past experience doing a similar research on a natural gas pipeline construction project in rural central Oregon leads Dr. Pozdena to believe that there are limits to the degree to which a rural county can capitalize on downstream employment growth during the construction phase. It depends importantly on whether currently idle labor capacity with the appropriate skills is already resident in the County or, instead, the construction workers come from elsewhere, living only transiently in the County. In the latter case, the impact on the permanent County economy will depend upon where the workers come from and how much of their earnings they spend inside Coos County. While JCEP had given us evidence from Oregon unions that they could supply craft workers needed, there is always a degree of speculation in any impact analysis regarding complex, large construction projects in comparatively rural counties such as Coos.

The import of these observations is that there are circumstances in which the local impacts would be less than contemplated in the report. This downside risk was not articulated in the May 2, 2011, memorandum but should be part of your consideration of the economic virtues of the proposed activities.

Very truly yours,

A handwritten signature in black ink, appearing to read "Robert Whelan". The signature is fluid and cursive, with the first name "Robert" being more prominent than the last name "Whelan".

Robert Whelan