

January 2012

Maya van Rossum  
the Delaware Riverkeeper  
Delaware Riverkeeper Network  
925 Canal Street, Suite 3701  
Bristol, PA 19007

Dear Maya,

As you recently requested, I have read the Corps updated economic assessment of the proposed Deepening of the Delaware River to 45 feet dated May, 2011. Given the extraordinary volatility in the distribution of commodity benefits between this study and previous economic evaluations, I am surprised that the Corps would make the conclusion that “project benefits have proven to be robust.” (p 81) It would be more accurate to describe the findings of their latest study as a “happy coincidence” that newly discovered benefits attributable to shipments of food (imports) from South America more than offset the huge losses in benefits in other commodity categories.

However, as I demonstrate in my analysis that follows as an appendix to this letter, the newly discovered benefits are based on highly unlikely economic assumptions. Specifically, the Corps assumes that these imports will be delivered to Philadelphia and Philadelphia hinterland points of destination by a method that does not minimize total transportation costs. If the appropriate adjustments were made to the Corps’ analysis, it is a virtual certainty that project costs would exceed project benefits.

This alone, makes this project a bad candidate for receiving additional federal funding, especially during a time when federal deficit reduction is a major national policy objective. Added to this is the fact that the proposed spending is a subsidy to the importation of foreign goods into the port of Philadelphia. All of the benefiting commodities are imports. Even if the subsidies are passed along to the U.S. consumer (which itself depends on market conditions such as supply and demand elasticities), the project does nothing to help U.S. manufacturers.

If you have any questions, I would be glad to respond.

Sincerely

Robert N. Stearns

**Analysis of Corps of Engineers report:  
“Delaware River Main Channel Deepening Project”,  
Updated Economic Assessment of Relevant Market and Industry Trends**

According to the Army Corps, the commodities that would benefit from a deeper Delaware River channel are displayed in the table that follows.

Commodity	Average Annual Benefits 2011 Reassessment (\$ millions)	Share of Total Commodity Benefits, 2011 Reassessment (percent)	Average Annual Benefits 2004 Supplemental Report (\$ millions)	Share of Total Commodity Benefits, 2004 Supplemental Report (percent)
Crude Oil Imports	6.854	20	11.778	50
Petroleum Products	--	0	0.352	1
Food Imports, Australia/New Zealand	--	0	5.185	22
Food Imports, East Coast of South America	19.868	57	0.939	4
Slag Imports	2.014	6	1.807	8
Steel Imports	5.840	17	3.605	15
Total	34.576	100	23.666	100

Sources: Corps’ Economic Updated Economic Assessment dated May 2011, pp 23-24 and 2004 Supplement Economic Report, pp 32 and 45

Between 2004 and 2011, the project’s average annual economic benefits grew by 46 percent from \$23.7 million to \$34.6 million. There were three commodities with increased benefits. Steel import average annual benefits increased by 61 percent and slag import benefits increased by 11 percent. Most notably, benefits accruing to food imports from the east coast of South America (ECSA) increased by an explosive 2,016 percent. This dramatic shift in project benefits is demonstrated in the bar chart and the two pie charts shown on the pages that follow.

What has happened since 2008 that has caused this extraordinary increase in project benefits attributable to food imports from South America? According to the Corps, the carriers delivering food from the east coast of South America that currently service Philadelphia say they will stop using Philadelphia as a port of call once they begin to use deeper draft container vessels on their U.S. east coast service, unless the main channel of the Delaware River is deepened to 45 feet. It is asserted that all of the food that is headed for the refrigerated warehouses and other points in the Philadelphia hinterland market will be off loaded elsewhere, most likely at the Port of New York and shipped by truck to the ultimate destination.<sup>1</sup> The incremental trucking costs of using a different Atlantic port would be \$336 per TEU<sup>2</sup>, creating \$19.9 million in project benefits.

Would there be any plausible alternative to this scenario if the channel were not deepened? The Corps suggests one in its sensitivity analysis: the use of smaller ships that can transit the current Delaware River channel. Since the ships would be smaller, they would carry the food at a higher per TEU cost. According to the Corps, the difference in per TEU costs would be \$12.11 per 1,000 mile trip.<sup>3</sup> On a 5,000 mile trip (Uruguay to Philadelphia) this would be \$61 per TEU.<sup>4</sup> When total transportation costs are considered, the smaller ship delivery alternative is clearly cheaper (see table below charts).

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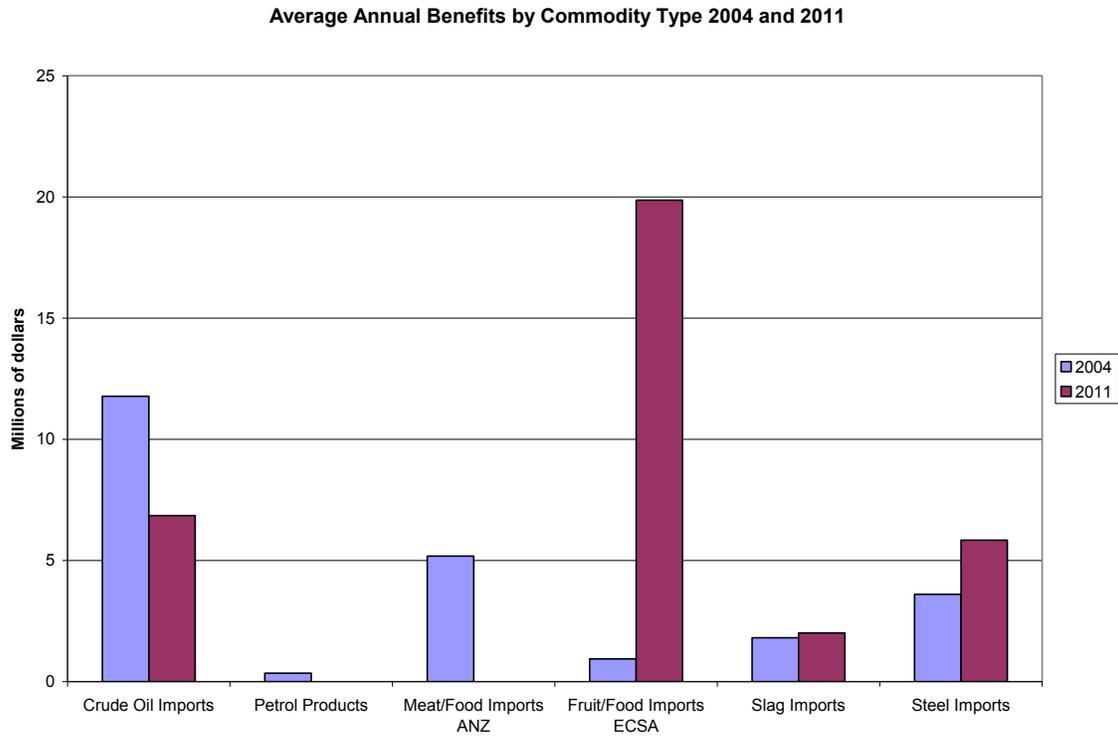
<sup>1</sup> See the Corps' Updated Economic Assessment dated May 2011, pp 23-24. The report is unclear whether this "diversion" is only for incremental traffic above the current level or for all traffic. Given the magnitude of project benefits for this cargo, it is likely that almost all is expected to be diverted.

<sup>2</sup> Corps of Engineers Updated Economic Assessment dated May 2011, p 24.

<sup>3</sup> Corps of Engineers Updated Economic Assessment dated May 2011, p 28.

<sup>4</sup> It is not clear whether the Corps' cost per 1,000 miles is based on round trip or one way mileage.

Figure One. Transportation benefits in Corps' 2004 and 2011 reports:<sup>5</sup>



<sup>5</sup> Corps of Engineers Corps of Engineers 2004 Supplement Economic Report, pp 32 and 45. and 2011 Updated Economic Assessment, pp 4 and 24.

Figure Two. Transportation Benefits in Corps' 2004 report:<sup>6</sup>

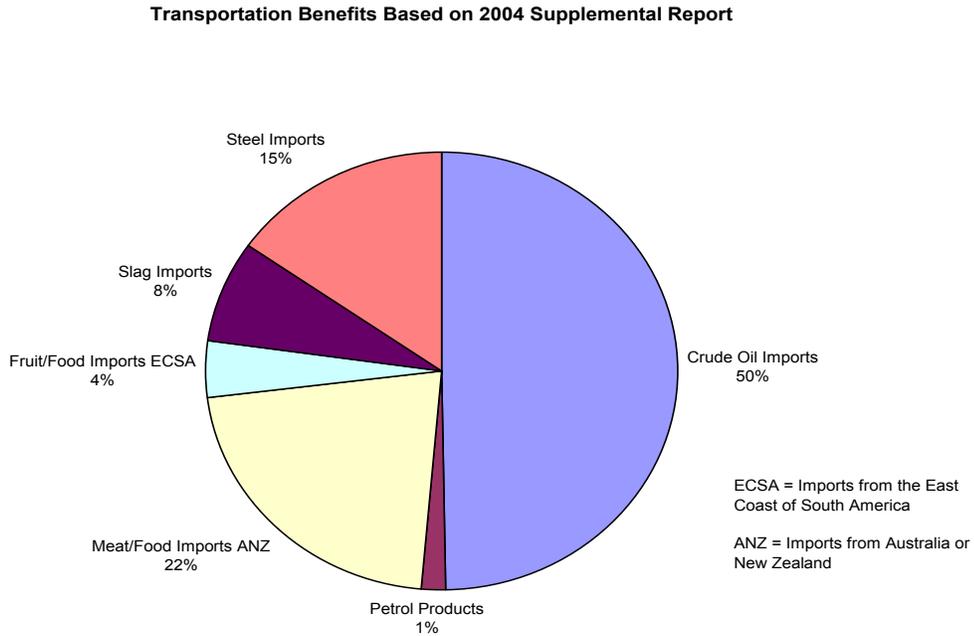
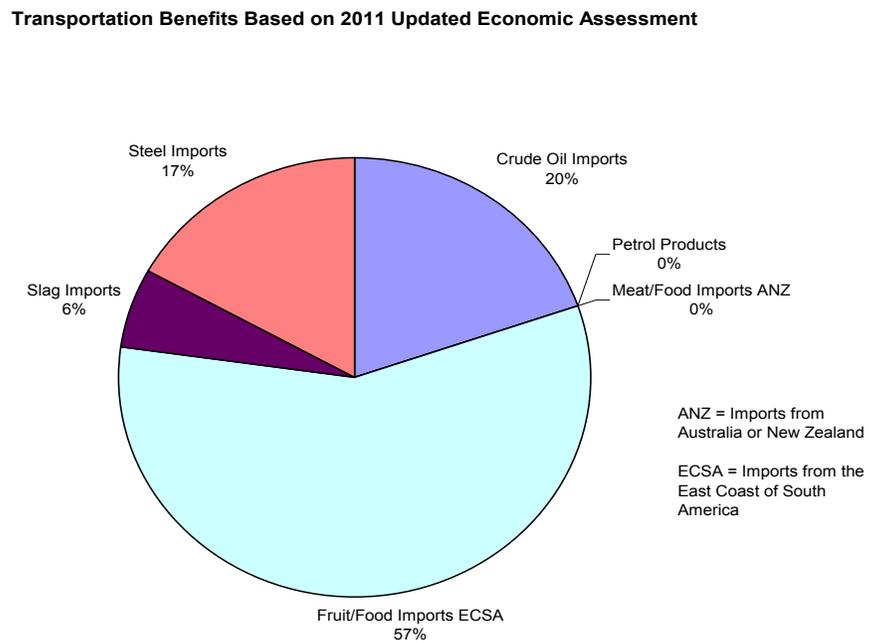


Figure Three. Transportation benefits in Corps' 2011 report:<sup>7</sup>



<sup>6</sup> Corps of Engineers 2004 Supplement Economic Report, pp 32 and 45.

<sup>7</sup> Corps of Engineers 2011 Updated Economic Assessment, pp 4 and 24.

Competitive Advantage: Large Ships Off-Loading at non-Philadelphia Ports v Smaller Ships Off-Loading at Philadelphia

	Water Transportation Cost Differential \$ per TEU	Land Transportation Cost Differential \$ per TEU	Net Transportation Cost Differential \$ per TEU
Larger ships off-loading at non-Philly ports	---	336	275
Smaller ships off-loading at Philadelphia	61	---	---

It is clearly apparent that the use of smaller ships is the least cost alternative; a result that the Corps casually dismisses:

“This [ocean] cost differential identifies the relative inefficiency of using smaller vessel (sic) which indicates that a smaller service competing on a route is unlikely to be a sustainable condition.”<sup>8</sup>

On the contrary, it is the larger vessel off-loading at an alternative port that has the higher total transportation costs and thus appears to be unsustainable. Thus, it seems clear that in the absence of a deepened Delaware channel the least cost option that will be pursued, and therefore is the comparative option that should be used in the cost benefit calculation of the project, is the approach that relies upon smaller ships to transport goods to Philadelphia as opposed to trucks. When the cost benefit of the project is calculated using this more appropriate and defensible figure, the balance of benefits to costs shrinks dramatically.

How does the use of the small vessel approach affect transportation benefits? The Corps has given us guidance for our calculations:

“A shift of 40% of east coast of South America cargo to smaller vessels would reduce total transportation cost savings by 33%.”<sup>9</sup>

This alone, reduces the Corps own estimated benefit cost ratio from 1.64 to 1.10<sup>10</sup>. But the 40% traffic share for smaller ships appears to be randomly selected by the Corps for the purpose of illustration. Clearly something closer to a 100% shift of this traffic would reduce the benefit cost ratio to less than 1 to 1, removing any economic justification for this project.

<sup>8</sup> Corps of Engineers 2011 Updated Economic Assessment, p 28.

<sup>9</sup> IBID

<sup>10</sup> The Corps includes the “40% of Containers Use Smaller Vessels” scenario in its Sensitivity Analysis, Table 7-1 (p 19 of 2011 Updated Economic Assessment) and shows a benefit cost ratio of 1.3 for this scenario. The reduction in total transportation savings (benefits) in this table is less than 33 percent as reported in the text. This inconsistency is not explained.