

The Concrete Connection: Economic Growth for Virginia's Eastern Shore?



THE CONCRETE CONNECTION: ECONOMIC GROWTH FOR VIRGINIA'S EASTERN SHORE?

This would be the biggest thing to hit Cape Charles since the last big hurricane.
– A patron at the Route 17 McDonald's restaurant in Cape Charles

Bayshore Concrete, a division of Skanska Inc., is located in Cape Charles on Virginia's Eastern Shore. Bayshore, which employs about 150 people, already is one of the largest employers on the Eastern Shore. It could be the major, perhaps even the sole supplier of concrete for two significant groups of future projects within Hampton Roads – the new bridges and tunnels that may be constructed over the next 15 years and the wind farms that might be built off Virginia's coast.

Bayshore would have to be considered a leading candidate to produce, move and install giant precast concrete tunnel segments for four proposed bridge and tunnel projects in Hampton Roads and also produce, move and install approximately 160 large concrete gravity foundations for the wind farm turbines out in the Atlantic Ocean. The problem is that the existing Cape Charles Federal Harbor/Federal Channel is not capable of handling these huge objects. The 15,000-ton concrete segments used in the bridges and tunnels are 29 feet high, 50 feet wide and 350 feet long. The 5,000-ton concrete gravity foundations used for wind farms, while two-thirds lighter, are 100 to 150 feet high and 80 feet wide.

Put simply, these huge concrete segments and gravity foundations would not fit in the harbor, given its current dimensions. The harbor channel today has a depth of about 18 feet, but would need to be dredged to a depth of about 35 feet out to three miles from the shore in order to accommodate the gigantic size of the concrete objects, which would be floated out of the harbor to their eventual destinations.

Here's where the financial rubber meets the road: It is estimated to cost about \$35 million to complete the dredging process, which could take place in 2012. The Town of Cape Charles, Northampton County and, of course, Bayshore Concrete together seek commonwealth and federal financial support

to undertake the dredging. They argue that it would have a potent economic stimulus effect upon the Virginia economy over the next 15 years and also that it would position Virginia as the leader for many similar future projects along the Eastern seaboard. In particular, supporters cite the prospect of Virginia becoming the primary or even sole supplier of concrete gravity foundations for what many forecast to be a burgeoning wind farm market.

Assessing The Economic Benefits

A recent economic impact study by Old Dominion University economist James V. Koch¹ found large economic benefits associated with the dredging. Table 1 summarizes those benefits.

One can see that the current value of the economic benefits to the Commonwealth of Virginia associated with the dredging of the harbor, followed by the production, delivery and installation of the concrete, is \$1.925 billion

¹ "The Economic Impact of the Cape Charles Federal Harbor/Federal Channel Dredging Project" (Old Dominion University, April 2011). Note that the funding for this study was supplied by the Town of Cape Charles, Northampton County and Bayshore Concrete.

between 2012 and 2022, if a Virginia firm does the work. On the other hand, if a non-Virginia firm does the work, then the economic benefits to the commonwealth decline to \$637 million, still a large number but only about one-third of the economic impact that is generated when a Virginia firm does the work. Graph 1 illustrates those results.

It is apparent that the non-Virginia firm benefits are less than those related to the scenario where a Virginia firm does all the work. This is because a non-Virginia firm will hire many non-Virginians to do the work and also because the non-Virginia firm will purchase many inputs, such as equipment, fuel and food, from out-of-state suppliers. These activities constitute “leakages” and reduce the economic impact of the projects on Virginia.

TABLE 1

SUMMARY OF THE ECONOMIC IMPACT OF THE CAPE CHARLES FEDERAL HARBOR/FEDERAL CHANNEL DREDGING PROJECT

If the work and production on all projects (2012-22) are performed by Virginia firms, then the economic impact is:	
Total Economic Impact	\$3,209,818,189
Virginia Economic Impact	\$2,563,735,099
Present Value Viewed from 2011	\$1,925,962,419
Total Job Years Generated	14,289.4
Total Virginia Job Years Generated	12,835.2
If the work and production on all projects (2012-22) are performed by non-Virginia firms, then the economic impact is:	
Total Economic Impact	\$3,209,818,189
Virginia Economic Impact	\$ 637,283,638
Present Value Viewed from 2011	\$ 477,720,585
Total Job Years Generated	14,289.4
Total Virginia Job Years Generated	1,381.1

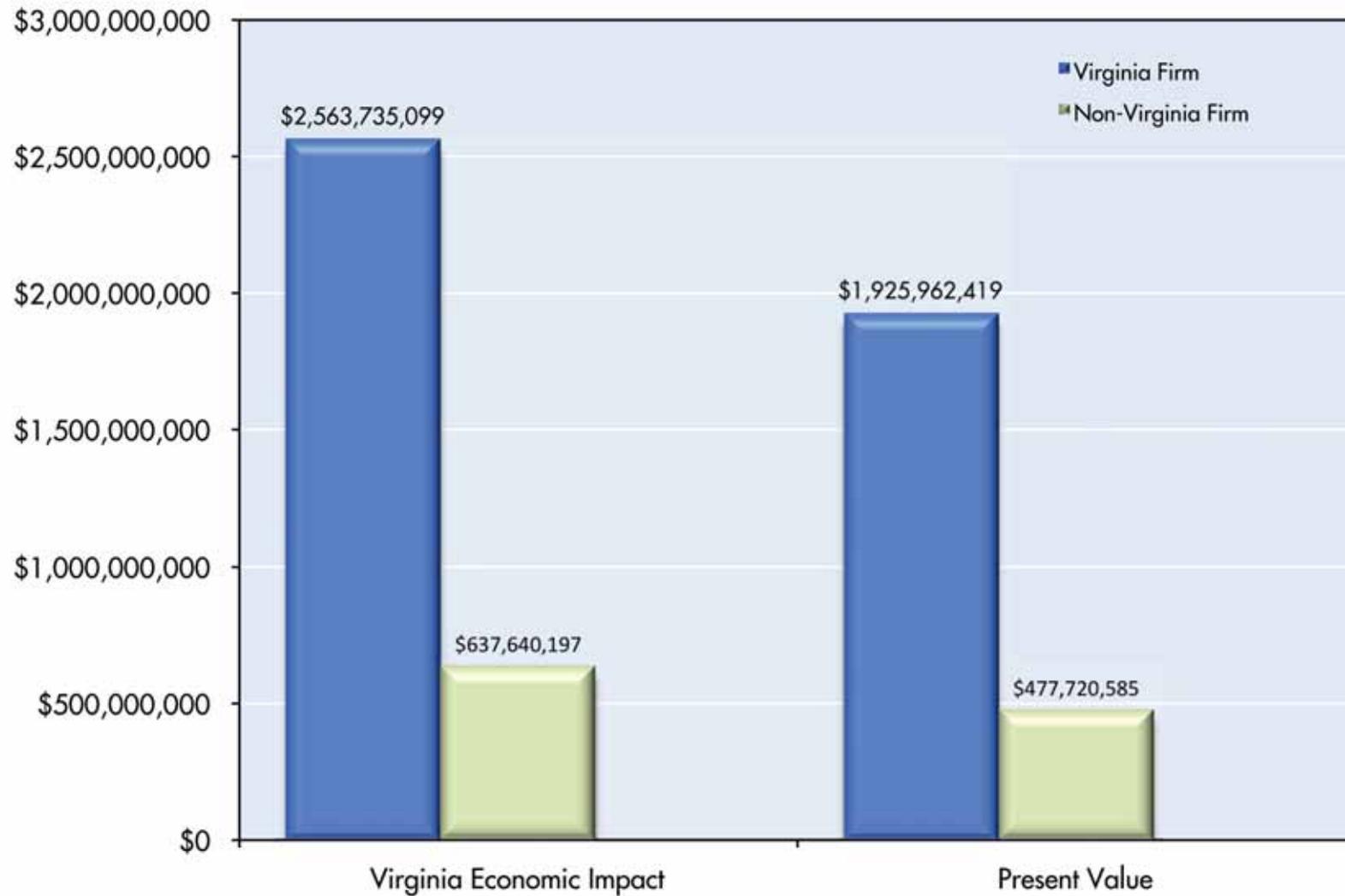
The proposed **four bridge and tunnel projects** and the value of concrete work associated with them are (all in terms of 2011 prices):

- **Midtown Tunnel (2012-16):** an estimated \$200 million in concrete work required for a project that includes adding a second tube between Portsmouth and Norfolk and an improved Port Norfolk connector between Route 164 and the tunnel.
- **Hampton Roads Bridge-Tunnel (2015-19):** an estimated \$300 million in concrete work required for a project that would expand the tunnels from two to four lanes in each direction.
- **Patriots Crossing (2016-20):** an estimated \$300 million in concrete work required for this “third crossing” project, which would connect I-564 in Norfolk with Craney Island and I-664 in Newport News.
- **Chesapeake Bay Bridge-Tunnel (2018-22):** an estimated \$400 million in concrete work required for a project that would eliminate all two-lane passages.

The proposed **wind farms** involve 80 new wind turbine locations per four-year phase, beginning in 2015. Two phases (2015-22) involving 160 total wind turbines currently are contemplated for Virginia.

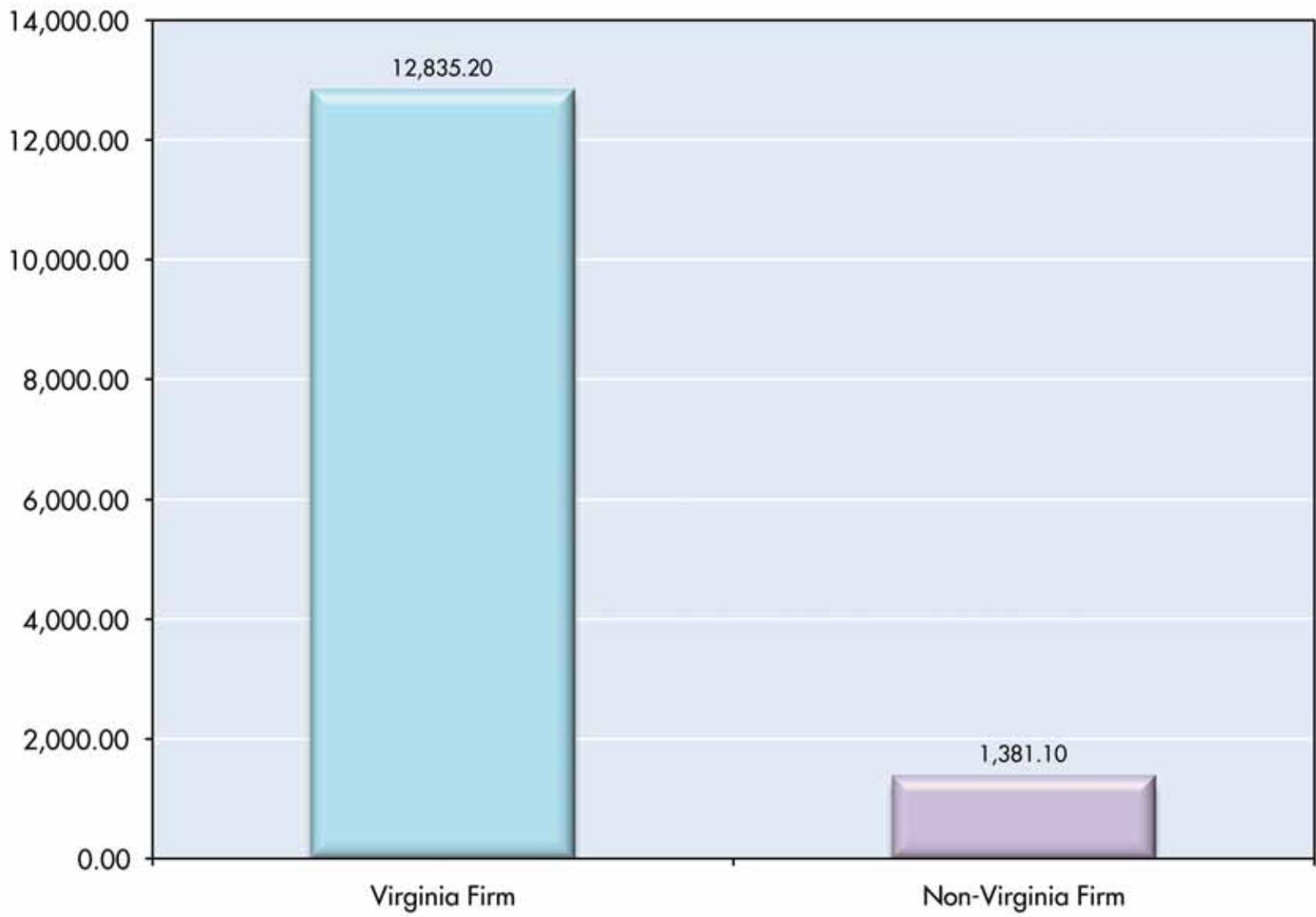
GRAPH 1

VIRGINIA ECONOMIC IMPACT: ALL PROJECTS



Source: Economic Impact of Cape Charles Federal Harbor/Federal Channel Dredging Project (April 2011)

GRAPH 2
TOTAL VIRGINIA JOB YEARS GENERATED



Source: Economic Impact of Cape Charles Federal Harbor/Federal Channel Dredging Project (April 2011)

The Koch study also found that there are many new jobs associated with the proposed projects. If a Virginia firm does the work, then 12,835 additional Virginia job years (a job year is one worker who works for one year) will be created. On the other hand, if a non-Virginia firm does the work, then only 1,381 additional Virginia job years will be created. Graph 2 illustrates those results.

Koch, however, was asked to focus only on the economic benefits associated with the production, delivery and installation of the concrete, and therefore did not attempt to assess either the costs connected to these activities, or subsequent economic benefits down the road that would accrue from enhanced bridges and tunnels and the wind farms. With respect to costs, almost surely there would be some congestion, increased demand for public services and pollution generated by the projects. While estimating these costs would be complicated, Koch points out that the difficulties associated with doing so do not mean such costs don't exist.

Presumably new taxes and tolls would be required to finance these projects. The Koch study did not examine the politically sensitive question of where the money would come from to do the dredging, pay for the bridges and tunnels and support the construction of the wind farms. There is no economic free lunch, even for activities that create lots of positive economic impact. One can anticipate heated discussions about who should pay for these projects.

Tax Collections

There are very few forms of economic activity that some governmental unit does not choose to tax. Dredging, as well as tunnel and wind farm construction, are no exceptions. The activities outlined here will generate additional tax revenues for the Town of Cape Charles, Northampton County and the Commonwealth of Virginia. Table 2 summarizes the Koch study's estimates in this regard.

The Town of Cape Charles and Northampton County in particular would feel the benefits of the proposed projects. In the case of Cape Charles, its general fund budget was \$2.61 million for 2011-12; the estimated additional tax revenues would increase its annual tax revenues by as much as 10 percent if

a Virginia firm did all the work on these projects. Where Northampton County is concerned, its 2011-12 general fund budget was \$22.67 million, and the additional real estate property taxes and sales taxes collected would increase its revenue by more than 6 percent annually. These would be significant increases in an area where population growth recently has stalled. In the adjacent map of the Eastern Shore, note the strategic location of Cape Charles, where Bayshore Concrete already maintains a plant. It is close to all of the proposed bridge and tunnel work and would be near the suggested locations for the wind farms to the east of the Eastern Shore.

The tax revenues reflect the reality that a significant majority of the jobs generated by the dredging, bridges and tunnels, and wind farms projects would be in Northampton County and many of them in the Town of Cape Charles. Not only would government coffers swell, but also the additional disposable income of these workers would immediately be felt in nearly every retail establishment in the area.

The Commonwealth of Virginia would net approximately \$10 million in additional sales and income tax collections annually if a Virginia firm completed the outlined projects.

TABLE 2						
ESTIMATED TAX COLLECTIONS GENERATED BY THE DREDGING, BRIDGES AND TUNNELS AND WIND FARMS PROJECTS, 2012-22						
	Real Property Taxes		Sales Taxes		Income Taxes	
	Major Projects Firm is from		Major Projects Firm is from		Major Projects Firm is from	
	VA	NON-VA	VA	NON-VA	VA	NON-VA
Northampton County Including Town of Cape Charles						
	\$2.1 m.	\$2.1 m.	\$13.7 m.	\$ 3.4 m.	—	—
Commonwealth of Virginia						
	—	—	\$62.9 m.	\$15.6 m.	\$42.4 m.	\$9.9 m.

Final Thoughts

Economists are accustomed to weighing the benefits and costs of projects. In this “concrete case,” only benefits were computed and the calculation of those benefits was limited to the dredging of the Cape Charles Federal Harbor/ Federal Channel, and the subsequent production, delivery and installation of the concrete tunnel segments and the concrete gravity foundations for the wind turbines. No costs (including those related to the environment and health) were considered. Further, the political hot potato of how to pay for these projects was not addressed.

In the absence of cost-related information about the projects and a determination of necessary revenue to fund them, it is not possible to reach a conclusion about their merit. What is apparent, however, is that the estimated potential economic benefit connected to these projects is quite large – \$1.92 billion spread over the time period 2012-22. This reality alone should guarantee that the dredging proposal receives very strong consideration.



FIGURE 1

VIRGINIA'S EASTERN SHORE



