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**Economic Feasibility of Proposed Expansion of  
Eastern Shore Farmers' Market:  
Seafood Warehouse and Distribution Facility**

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*Prepared for the  
Eastern Shore of Virginia  
Resource Conservation and Development Council  
and the Eastern Shore of Virginia Farmers' Market*

## Executive Summary

The Eastern Shore Marketing Cooperative, Resource Conservation and Development Council, the Working Watermen's Association, and various representatives of Accomack and Northampton counties have proposed an expansion of the present Eastern Shore Farmer's Market to facilitate the distribution of seafood from the various eastern shore communities. The present market facility is operating at 100% capacity and no additional space is available. The Eastern Shore of Virginia Resource Conservation and Development Council has requested from the Virginia Institute of Marine Science a preliminary economic impact assessment of expanding the facility to permit the shipping and sales of seafood; this brief report provides the impact assessment as well as background information about the economies of the Eastern Shore counties of Accomack and Northampton.

Although the two counties have limited employment and industrial opportunities, they abound with a wealth of natural resources, particularly those available from the Chesapeake Bay and Atlantic Ocean. The proposed facility offers considerable economic development opportunities for the region and the state. Preliminary analysis reveals the following: (1) the area is conveniently located relative to major metropolitan markets; (2) there is an increasing number of aquaculture production and sales facilities in the area, and aquaculture is a major seafood growth industry in the United States; (3) species regularly harvested by local watermen tend to be high-valued products, and thus, have a high local and national demand; (4) the present Farmer's Market offers an excellent structure upon which to expand; (5) centralization of shipping and sales would not only benefit local watermen and dealers but also watermen and dealers from areas outside the region; (6) the proposed facility would help local watermen and dealers increase the value received for their products by allowing them to take advantage of market conditions; (7) the proposed facility is necessary to better develop the expanding aquaculture businesses in the area; (8) the proposed facility offers substantial opportunities for increased sales of seafood within the state by allowing more product to be processed, shipped, and sold within the state of Virginia; and (9) an informal survey by the Resource Conservation and Development Council of working watermen and seafood-related business owners indicated strong support for the facility and a high likelihood of its use.

A major concern, of course, is the potential for economic development. For every \$1 million of finfish and shellfish products shipped and sold through the proposed facility, the state may expect gains in sales or output, income, and full-time employment as follows: (1) finfish--sales (\$251,819), income (\$236,025), employment (8), and (2) shellfish--finfish--sales (\$188,862), income (\$177,018), employment (6). These gains represent new economic activity. Presently, finfish and shellfish landed in the area generate about \$10 million in ex-vessel or first sales value. Aquaculture production in the area generates an additional \$7 to \$9 million annually; most of the aquaculture production is for shellfish. If the facility handled about \$5 million annually, full-time employment would be generated for approximately 20 individuals in the Eastern Shore area and approximately 40 individuals throughout the Commonwealth.

# **Economic Feasibility of Proposed Expansion of Eastern Shore Farmer's Market: Seafood Warehouse and Distribution Facility**

## Background of Proposal

The Eastern Shore Marketing Cooperative, Resource Conservation and Development Council, the Working Watermen's Association, and various representatives of Accomack and Northampton counties have proposed an expansion of the present Eastern Shore Farmer's Market to facilitate the distribution of seafood from the various eastern shore communities. The present market facility is operating at 100% capacity; there simply is no additional space at the present facility to permit expansion of products. The Farmer's Market facility has been quite successful, but will rapidly become limited in serving the current and future needs of the residents of Accomack and Northampton counties.

The Eastern Shore of Virginia Regional Partnership, consisting of over 30 shore professional, governmental, educational and business leaders, have indicated that expansion of the current facility is necessary to allow a greater volume of agricultural products to be sold and distributed and to help expand the sales of seafood. Accomack and Northampton counties, besides having considerable agricultural production and sales, also have extensive landings and sales of various wild and cultured seafood products. In Accomack and Northampton, there is slightly more than 100 individual aquaculture producers. In 1998, sales ranged from a low of approximately \$160 to slightly more than \$6.7 million. Given current efforts by the State of Virginia to expand aquaculture, it is anticipated that there will be considerable growth in aquaculture production and sales in the two counties. Expansion of the Farmer's Market to facilitate the sales and distribution of seafood should offer economic growth opportunities for the seafood industry in the region.

## Purpose of Report

In this brief report, we present a limited economic assessment of the feasibility of the proposed facility. We restrict our attention, however, only to the proposed seafood warehouse and associated distribution opportunities. We also provide additional social and economic background information on the two counties that would be affected by the proposed facility.

## Proposed Seafood Warehouse

The Eastern Shore of Virginia Regional Partnership has proposed a facility with a blast freezer, two freezer units, and cold and dry storage units. The proposed facility will be operated in the same manner as the current Farmer's Market produce facility. The various components of the facility will be rented to shippers/brokers who will deal with their product and the products of any Eastern Shore waterman. The absence of a centralized seafood facility has likely hampered economic development opportunities for the seafood industry in the two county region.

The general facility is proposed to have 17,000 square feet, and approximately 8,600 square

feet will be devoted to warehousing seafood products. The necessary ingress/egress and supporting structures suggested in the proposal are quite adequate for the proposed facility. The proposed freezer units and dry and cold storage units are also adequate for the proposed facility. The estimated total cost of the proposed facility is \$3.3 million. Although the estimated total cost is not high relative to the proposed facility, there is a need to examine the potential cost relative to the potential benefits or economic impacts.

The proposed facility should be viewed as quite attractive to the region. For one thing, the proposed seafood market should not displace any existing processing or related marketing operations in the region. Second, an informal survey of watermen and seafood related business owners suggests no opposition to the market, and in fact, strong support for the proposed facility. Third, processing and marketing operations in the region have declined in recent years; the proposed facility, thus, offers a strengthened marketing opportunity for the region. In addition, the centralized seafood facility could serve as a consolidated shipping center for air freight and long-distance land transport.

Another major advantage of the proposed facility is that as a centralized seafood shipping facility, it has the potential to consolidate the shipping of product out of state which is now being shipped in a piecemeal fashion. The centralization of shipping offers potential gains in efficiency and allows industry the opportunity to take advantage of market conditions. A consolidated facility could change individual producers from price takers into price makers (e.g. seafood produced on Tangier Island is shipped to Crisfield, Maryland and Tangier watermen must accept prices offered by Crisfield buyers). Alternatively, the proposed facility offers the opportunity for enhanced incomes to watermen, culture producers, and dealers in the Eastern Shore area.

A third major advantage is that a well established and managed seafood market and transshipping center would attract interstate shipping. With the modernization of the Chesapeake Bay Bridge Tunnel (CBBT) and local highway improvements, the potential for major north-south transshipping is more realistic.

Last, the more valuable fisheries or seafood products of the region are shellfish. Shellfish offer the greatest opportunity for increased value added products and are experiencing substantial increases in consumer demand. It is anticipated that there will be considerable expansion in the blue crab speciality market (e.g., basket trade and soft crabs). There has been a resurgence of demand for oysters and striped bass; producers and dealers in oysters, striped bass, and blue crabs would be able to take advantage of a centralized shipping and marketing facility.

### Accomack and Northampton Counties

The counties of Accomack and Northampton comprise what is known as the Eastern Shore of Virginia. On one side is the Chesapeake Bay and on the other side is the Atlantic Ocean. Northampton is the southern half of the peninsula and Accomack is the northern section. There are 45 towns located within the two counties. The counties of Accomack and Northampton are conveniently located along the east coast of the United States. The Chesapeake Bay Bridge Tunnel and U.S. Highway 13 connect the Eastern Shore of Virginia to several major metro areas of the east coast:

### Distances to Major Metro Areas

Miles to Major Metro Areas	
Norfolk, VA	35
Richmond, VA	125
Baltimore, MD	140
Washington, DC	150
Philadelphia, PA	165
Raleigh, NC	225
New York, NY	290

Source: Eastern Shore of Virginia Economic Development Commission.

In addition, the Eastern Shore Railroad has more than 90 miles of track which cover the length of the two counties. Accomack Airport is located at the Accomack Industrial Park, which is just beside the existing Farmer's Market. Commercial air service is available less than 35 miles away at Norfolk International Airport.

The population levels and trends are vastly different for the two counties. Since 1969, the population of Accomack has steadily increased—from 29,308 individuals in 1969 to 32,126 individuals in 1996. In comparison, the population of Northampton has decreased from 14,604 individuals in 1969 to 12,887 individuals in 1996. Between 1969 and 1975, however, the population of Northampton was increasing. Since 1978, the population of Northampton has consistently decreased.

Per capita personal income of the two counties are similar to one another. In 1969, the per capita personal income for Accomack was \$10,333 (adjusted for inflation and expressed in terms of constant 1996 dollars) and \$9,700 in Northampton. In 1996, the per capita personal income was \$17,861 in Accomack and \$17,930 in Northampton. While the actual level of per capita personal income is lower in both counties than it is for the state, the rate of growth for the two counties has been considerably higher than it has for the state.

Average earnings per job have not increased nearly as much as has per capita personal income. In real dollar terms (adjusted for inflation and expressed in terms of constant 1996 dollars), the average earnings per job increased from \$18,845 to \$19,134 between 1969 and 1996 for Accomack County; in Northampton, average earnings per job increased from \$16,049 in 1969 to \$18,739 in 1996. In percentage terms, the annual rate of increase, respectively, was only 0.06 percent for Accomack and 0.62 percent for Northampton.

The two counties have considerably different employment patterns over time. The number of individuals, being either full or part-time workers, increased from 11,432 to 17,313 in Accomack.

## Selected Economic Indicators for Accomack and Northampton Counties, 1969-1996

Year	Accomack				Northampton			
	Population	Per Capita Income	Average Earnings per Job	Total Employment	Population	Per Capita Income	Average Earnings per Job	Total Employment
1969	29308	10333	18845	11432	14604	9700	16049	6631
1970	28863	10765	18577	11465	14454	10239	16260	6719
1971	28560	11336	18189	12328	14650	10104	15833	6793
1972	28721	12083	18667	12905	15056	10454	17312	6615
1973	29553	12927	19980	13426	15110	11379	18612	6865
1974	30551	12584	19099	13914	14849	11852	18742	6966
1975	30893	12753	19286	14022	15047	11283	17282	6791
1976	30878	13335	19462	14711	15262	11681	17750	6892
1977	30893	13533	19592	14868	15204	11599	17826	6618
1978	31259	14607	20626	15874	15382	12420	19410	6920
1979	31443	13916	19535	15639	15067	11947	17326	7016
1980	31288	13409	17912	15517	14580	11998	16018	6873
1981	31306	14011	18579	15148	14373	12992	16541	6852
1982	31264	13498	17337	14900	14145	12581	15379	6669
1983	31215	13880	17626	14816	14105	12960	15871	6482
1984	31074	15030	18932	14936	13844	14184	17344	6391
1985	31075	15782	19598	15422	13695	14379	16969	6411
1986	31228	17081	21701	15492	13526	15906	19030	6223
1987	31565	17097	21492	16187	13530	15951	18898	6317
1988	31708	17214	20584	16671	13310	17771	22442	6190
1989	31868	17780	21090	15922	13069	18450	20998	6029
1990	31668	17521	20025	16608	13077	17458	19461	5975
1991	31839	17138	19545	16877	13052	16860	19277	5683
1992	31976	17341	19470	16974	12994	16890	19724	5495
1993	32100	17410	19588	17066	12980	16894	19547	5653
1994	32186	17798	20378	17176	12936	17314	19417	5826
1995	32078	17928	19541	17465	12942	17599	18582	5927
1996	32126	17861	19134	17313	12887	17930	18739	5948

Per capita personal income and average earnings per job are expressed in terms of constant 1996 dollars

The two counties have considerably different employment patterns over time. The number of individuals, being either full or part-time workers, increased from 11,432 to 17,313 in Accomack. In Northampton, the number of individuals having either full or part time work decreased from 6,631 in 1969 to 5,948 in 1996. In percentage terms, employment in Accomack has increased at an average annual rate of 1.91 percent; in Northampton, employment has decreased at an average annual rate of 0.38 percent.

The industrial base of the two counties is also quite different. Relative to the entire area, the Eastern Shore of Virginia Economic Development Commission provides a list of 14 companies which they have identified as being the largest basic employers or businesses whose income is derived from outside the immediate Eastern Shore region. Topping the list is Perdue Farms with 1,980 employees. Three of the top companies involve either aquaculture or seafood sales: (1) Eastern Shore Seafood with 320 employees; (2) Cherrystone Aquafarms with 40 employees; and (3) Stubbs Seafood with 40 employees. The second and third largest employers are Tyson Foods with 930 employees and NASA Wallops Island Flight Facility with 750 employees.

In Northampton, the service industry is and pretty much has been the major source of employment within the county. Only in 1969 did another industry--farming--provide the major source of employment. Prior to 1990, there were five major sources of employment in Northampton: (1) services, (2) manufacturing, (3) government, (4) retail trade, and (5) farming. In 1996, government, services, and retail trade provided approximately 70 percent of the total employment for Northampton.

In contrast, there has been four major sources of employment in Accomack over time; these have been relatively steady sources of employment. The four major sources have traditionally been government, manufacturing, services, and retail trade. Prior to 1978, however, farming was also a major source of employment in Accomack. In 1996, government, services, retail trade, and manufacturing accounted for approximately 72 percent of total employment in Accomack; farming accounted for only 7 percent.

The fishing industry has also been an important source of employment for the region. Although exact numbers on individuals working as fishermen or depending directly on the fishing industry or fish sales are not available, it appears that commercial fishing provides full or part-time employment for slightly more than 1,000 individuals; the estimated number of commercial watermen was based on data available from the Regional Economic Information System (REIS), Bureau of Economic Analysis, U.S. Department of Commerce.

More important, however, is that the commercial fisheries of the region have generated full-time employment opportunities for approximately 2,200 individuals in Virginia. More than 63 species are regularly landed in the Eastern Shore area, but blue crab has traditionally been the major species for both counties. In 1994, the ex-vessel value or first-sale value of finfish and shellfish landed in Accomack and Northampton equaled \$9.5 million. Large quantities of bluefish, Atlantic croaker, summer flounder, grey seatrout, shad, spot, striped bass, and industrial fish have also been landed in both counties. Blue crabs, quahogs, conchs, and oysters are the only shellfish species regularly landed at the Eastern Shore; prior to the departure of the surf clam fleet in 1989, large quantities of surf clams were also regularly landed in Northampton. The major shellfish species are similar for



Accomack except that sea scallops have also been frequently landed.

The Eastern Shore region also has considerable aquaculture production. Aquaculture is a growing industry in the region and in the United States. Cherrystone Aquafarms, an aquaculture producer of hard clams, has sales in excess of \$6 million annually and employs 40 or more individuals per year. There is slightly more than 100 aquaculture producers in the region—producing mostly hard clams or shedding soft-shelled crabs.

There also are two relatively large processing and distributing companies in the region: (1) Eastern Shore Seafood which employs approximately 320 individuals, and (2) Stubbs Seafood which employs about 40 individuals. There are numerous smaller dealers which sell and ship seafood throughout the region and into the nearby metropolitan areas.

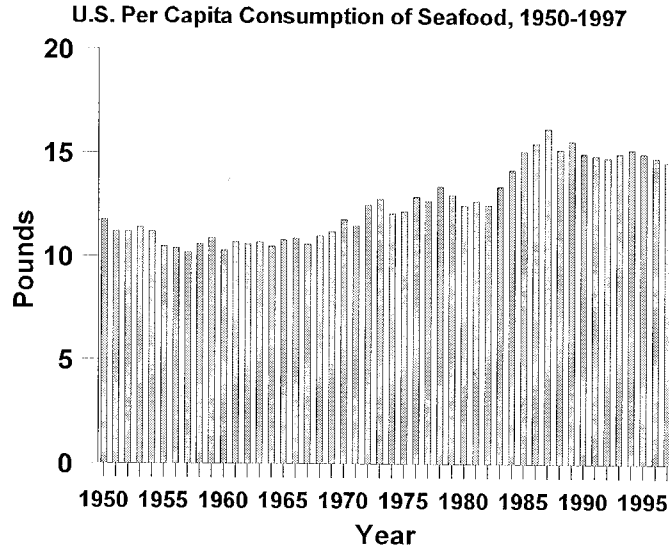
### Feasibility and Potential Economic Impacts of Proposed Seafood Warehouse

In order to adequately assess the feasibility of the proposed project, the future of the seafood industry, resource levels, management possibilities, and market potential must be considered. The volume and value of the product likely to be distributed from the facility must be estimated and forecasted. It also is essential to forecast potential changes in the wild and cultured product and value. Presently, we are unable to provide a comprehensive assessment of the feasibility of the proposed project. We can, however, provide information about the likely potential impacts of watermen and fish dealers using the facility.

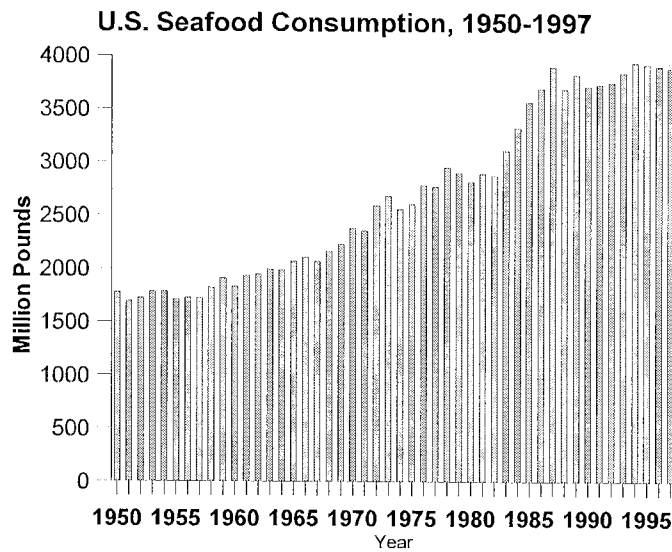
Based on an economic impact model developed by the Virginia Institute of Marine Science, we can estimate the potential sales, income, and employment generated for \$1,000,000 of sales of seafood from the Farmer's market. Our analysis only considers changes relative to wholesaling, shipping, and distributing product. We do not consider potential changes relative to the harvest sector (e.g., more fishermen and increased sales of fuel and fishing-related supplies), retail sector, and other indirect or support sectors. Our analysis is, thus, extremely conservative.

### Projected Growth in U.S. Seafood Sales

Per capita consumption of seafood has dramatically increased in the United States since 1910. In 1910, per capita consumption was approximately 11 pounds. It was not until the 1970s that per capita consumption really began to increase. Between 1969 and 1970, the per capita consumption of seafood in the United States increased from 11.2 to 11.8 pounds. In 1979, the per capita consumption had increased to 13 pounds. Since the late 1980s, but prior to 1995, per capita consumption has ranged between 15.5 and 16.2 pounds. Between 1995 and 1997, per capita consumption of seafood actually declined—from 15 pounds in 1995 to 14.6 pounds in 1997.



Based on an extensive time-series analysis of per capita consumption trends for the years 1950 through 1997, there is no apparent projected increase in per capita consumption of seafood in the United States. The best forecast of per capita consumption is 14.6 pounds. This projected value is not surprising since consumption peaked in 1987 and has since been declining. Alternative analysis, however, does indicate that per capita consumption could increase to 16.2 pounds in 1999 and exceed 17 pounds by 2003.

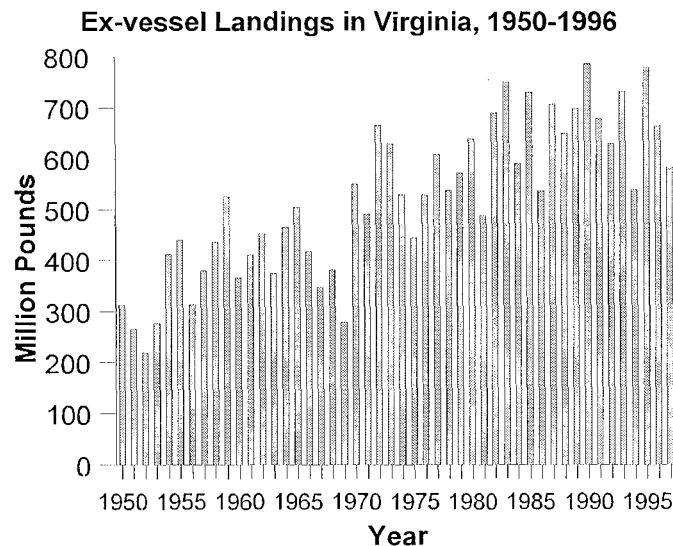


At the same time, however, total consumption of seafood in the United States has been increasing. This has been because of population growth—more people and greater consumption of seafood. Analysis suggest that future total US consumption could increase, on average, by approximately 55 million pounds per year. There is thus sufficient evidence to suggest that the U.S. fishing industry will continue to experience growth in the future.

An increasing amount of the supply to satisfy the US market will have to come from aquaculture and imports. The Eastern Shore region has been recognized as a major potential area for aquaculture expansion. Since 1985, growth in the aquaculture industry has been phenomenal. In 1985, total reported production of all culture products in the US equaled 375.8 million pounds. Total reported US production in 1997 equaled 693.7 million pounds. Products which have been rapidly expanding and are presently, or could be, cultured in the Eastern Shore region include striped bass, clams, soft-shelled crabs, and oysters.

Seafood sales in the US have increasingly relied on imports during the past 20 years. At the same time, however, the percent of total U.S. supply of edible fishery products attributable to imports has steadily declined. In 1988, imports accounted for 56.3 percent of the total US supply of edible fishery products; by 1997, imports accounted for 47.2 percent of the total US supply.

What about the fisheries of Virginia. Between 1950 and 1997, ex-vessel landings in Virginia of finfish and shellfish have dramatically increased—going from 313.8 million pounds in 1950 to 583.9 million pounds in 1997. Annual landings have been as high as nearly 800 million pounds—786.8 million pounds in 1990. Projections of Virginia landings, however, are complicated by numerous factors. Existing and potential management and regulation by not only the Virginia Marine Resources Commission, but also by the various federal fishery management councils (New England Fisheries Management Council, Mid-Atlantic Council, and Gulf and South Atlantic Council) and the Atlantic States Marine Fisheries Commission (ASMFC) make it extremely difficult to project landings.



Presently, nearly all major species landed or harvested in Virginia are regulated. Shad, a major fishery of the past, has a moratorium on landings. Striped bass, traditionally a major Virginia species, is regulated with a restrictive quota. Blue crabs are subject to a wide array of regulations including a limited entry program which restricts new entrants into the fishery. The sea scallop fishery, traditionally the major high valued fishery of Virginia, is being increasingly regulated and it is unknown when the various regulations will be relaxed to permit increased harvesting of scallops. Menhaden is presently subject to only minor regulations, but that will likely change in the near future as the Atlantic States Marine Fisheries Commission develops a more comprehensive management plan

for the menhaden fishery. Given that nearly all major species are being increasingly regulated; it simply is not practical to attempt to forecast future landings of Virginia finfish and shellfish. A baseline projection of the simple trend between 1950 and 1997 suggests a possible average annual increase of about 8.9 million pounds a year of finfish and shellfish in Virginia. That projected increase would be in the absence of existing or new regulations.

Overall, it is evident that total demand for seafood is increasing in the United States. It also is evident that imports and aquaculture production will have to increase to satisfy the growing demand. The Eastern Shore region has been recognized as an excellent area for culture production of products in high demand by consumers. A centralized marketing and shipping facility would offer a major opportunity for the region's watermen, present and potential culture operators, and dealers to increase the total sales of seafood.

More important, however, to the region's economy is the proposed facility offers considerable economic development and employment opportunities. For each \$1,000,000 of shellfish or finfish products shipped through the proposed facility, the following output or sales, income, and employment impacts may be expected for the state economy:

Category	Performance Measure	Impact			
		Direct	Indirect	Induced	Total
Finfish					
	Sales-\$	53,354	17,393	181,072	251,819
	Income-\$	122,673	11,052	102,301	236,025
	Employment	4	0	3	8
Shellfish					
	Sales-\$	40,016	13,044	135,804	188,862
	Income-\$	92,005	8,289	76,726	177,018
	Employment	3	0	3	6

At the local level, it is anticipated that \$1,000,000 of sales of finfish going through the proposed facility would generate 4 full time employees; \$1,000,000 of sales of shellfish products would be expected to generate 3 full-time employees for the Eastern Shore region. Relative to the state, the proposed facility would generate \$251.8 thousand in new sales, \$236.0 in income, and eight full-time employees for every \$1,000,000 of finfish product shipped and sold through the facility. For every \$1,000,000 of shellfish product shipped and sold through the proposed facility, sales or output would increase by \$188.9 thousand, income would increase by \$177.0 thousand, and employment would increase by six individuals. There also is the likelihood that the proposed facility will enhance the incomes of working watermen and owners and employees of seafood-related businesses. The proposed facility thus offers the potential for considerable gain in output, income, and employment for the region and the state.