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Working Waterfronts Case Study "Ampro Boat Yard"

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Introduction

Ampro Boat Yard, located on the Western Branch of Carter's Creek in Weems, in Lancaster County, Virginia has been repairing fishing vessels and smaller recreational boats for over a century. It was first incorporated as Rappahannock Marine Railway Co. in 1905. Mr. H.R. Humphreys bought into the company in 1912 and reorganized it as "Humphreys Marine Railways and Lumber Corporation," better known as "Humphreys Railways." It became "Ampro Boat Yard" in 1988. Its primary purpose has not altered over time as the yard primarily has provided repairs for menhaden boats, although several large fishing vessels are reported to have been built by the yard as well. In its heyday, during the 1950s and 60s, it is reported that the yard employed upwards of 150 people, making it one of the largest employers in Lancaster County. Until several of years ago, the yard was hauling scallop boats from Seaford, Virginia, finfish draggers from Cape May, New Jersey and smaller menhaden boats known as snapper rigs. And then the rail bed broke. The estimated cost for repair to a rating of 1000 tons is in the neighborhood of 2.5 million dollars. The owner is uncertain that the return will justify that degree of investment. It was estimated that with the repair, a minimum of 25 employees could be hired to sustain the operation. In the meanwhile, local large fish boat operators are having to transit farther from their home ports in order to have work performed on the hull bottoms, and qualified workers are unemployed.

Economic Assessment

Any decision to invest or reinvest in this facility is clearly the owner's and many factors influence such significant reinvestment. Those factors are not to be determined or evaluated by others. The purpose of this exercise is to demonstrate the economic impact of this unique piece of working waterfront, in its current use, to the local community and Lancaster County, Virginia.

Demonstrating the public goods which may arise from privately held working waterfronts is of interest beyond the owners of the property and of ongoing interest to local economic development oriented organizations, both public and private.

This evaluation utilizes traditional regional economic base theory, to define the economic linkages of a working boat yard in the community. Economic impact models are constructed for two primary purposes:

1. To demonstrate the economic size of an industry or activity;

2. To evaluate changes in economic activity of an industry or activity.

This report addresses the second goal. The intent is to "recast" the economic impact of the facility if it returned to historic levels of activity as reflected by the numbers of employees at the facility. As noted above the historic stature of the railway was significant supporting 150 full time workers at the height of its activity. At the other end of the employment picture a minimally sustainable railway operation would create a demand for an estimated 25 employees.

This evaluation investigates the overall economic activity to Lancaster County and the Commonwealth of Virginia associated with differing levels of employment at the facility.

Economic Impact Estimation

The information collected is utilized in estimating the initial economic activities in the Lancaster County economy associated with the Ampro Boat Yard maintenance and repair business. These economic impacts take the form of initial expenditures, economic output, wages, salaries, and employment.

Values for each of these are estimated by employing the IMPLAN model, computer software and Database package designed for regional economic impact analysis in the United States at the county level (Minnesota Implan Group, Inc., 2013). The analytical framework for IMPLAN is the "input-output" economic modeling approach originally described by Leontief (1959). The model utilizes databases consisting of a set of social/economic accounts which describe the structure of the US economy in terms of transactions between households, governments, and over 500 standardized industry sectors classified on the basis of the primary commodity or service produced. This model utilized the IMPLAN economic data package for Lancaster County and the Commonwealth of Virginia.

Regional models may be constructed in IMPLAN for any county, group of counties, state or territory in the United States. Economic impacts for a given region are specified in IMPLAN as a change in final demand, output, or employment for a particular industry sector or social institution, (e.g., households, government). The aggregate economic impact of these changes is calculated by a matrix inversion procedure that develops economic multipliers, which reflect the direct, indirect and induced impacts. Direct, indirect, and induced impacts are set in motion within the County by changes in the supply and demand of boat yard services,

which in turn affects the demand for the goods and services associated with conduct of repair and refitting.

Lancaster County boat yards represent a "basic" industry in that they produce a product for sale outside the local area. Dollars generated through these out-of-county sales (or consumption locally by non-residents), when re-spent in the community, produce additional countywide economic impacts. A "basic" industry directly affects economic activity in the region when its product is sold outside the local area. These *direct* activities produce additional *indirect* effects in the local economy, as dollars earned through the repair of vessels are re-spent locally[1]. Indirect effects represent purchases of local products by repair yards. All the indirect effects are additional economic activity in the community and are indicative of additional jobs and income generated by the boat yard businesses.

Direct and indirect activities associated with boat yards in Lancaster County then produce additional *(induced)* local impacts. These impacts are associated with the spending of income earned in the direct and indirect activities. This spending translates into local retail sales, local bank deposits, and the purchase of a diverse mix of consumer goods. An assessment of the total economic impact of a basic industry, such as Lancaster boat yards, must consider the sum of the direct, indirect, and induced activities. In essence, the local boat yard sales to owners from outside the community trigger a chain of local spending, which generates income and leads to additional spending. This process, however, is not infinite in nature. At each round of spending, for example, some dollars are lost (leaked) from the local economy. Leakages are in the form of savings in non-local institutions, taxes/fees paid to the state and federal governments, and payments for goods and services used in the boat yard activity, which are initially purchased outside the local area. Thus, the true economic impact from non-local sales Dania Cut located businesses is represented by the new dollars remaining after accounting for the various "leaks" in the economy.

Thus, the total economic activities and impacts to the County economy initiated by Ampro Boat Yard activity are estimated. The *direct*, *indirect*, and *induced* effects, are expressed in standard impact terms of economic output (sales), personal incomes, total value added and employment is estimated via the IMPLAN model. The estimates of business activity for 2013-2015 are used.

As the increases in business activity accrue at local businesses the changes spread throughout Lancaster County and the Commonwealth of Virginia as well. In order to capture the multiplication of the direct boat yard impacts an input output model is used here to quantify the growth using various traditional economic impact measures.

The models project the impacts associated with various levels of output at the subject firm or locale. With the Ampro estimates the levels of employment necessary to produce a million dollars of output are the beginning point to project. Associated with those levels of employment are resulting impacts quantified using various established metrics which follow in the tables below and on the next 2 pages.

Table 1 summarizes the changes in labor income associated with the various output and employment levels. Labor income includes all forms of employment compensation, including employee wages and salaries, and proprietor income or profits.

Boat yard sector		Lancaster County, Virginia[2]					
		25 workers	50 workers	75 workers	100 workers	125 workers	150 workers
Labor Income Impacts	Direct Impacts	$2.7	$5.5	$8.2	$10.9	$13.6	$16.4
	Indirect Impacts	$0.6	$1.1	$1.7	$2.2	$2.8	$3.4
	Induced Impacts	$0.6	$1.1	$1.7	$2.3	$2.9	$3.4
	Total	$3.9	$7.7	$11.6	$15.4	$19.3	$23.2

[1] *See Appendix 1 for a Glossary of Economic Impact modelling definitions.*

[2] *The impacts from the boat yard activities on Lancaster County also multiply throughout the Commonwealth of Virginia.*
  Those summary economic impact tables appear in Appendix 2.

Table 2 provides the impact estimates on sales associated with the various levels of activity at the boat yard.

Boat yard sector		Lancaster County, Virginia					
		25 workers	50 workers	75 workers	100 workers	125 workers	150 workers
Output Impacts	Direct Impacts	$8.1	$16.2	$24.3	$32.5	$40.6	$48.7
	Indirect Impacts	$1.5	$3.0	$4.5	$6.0	$7.5	$9.0
	Induced Impacts	$1.9	$3.7	$5.6	$7.5	$9.3	$11.2
	Total	$11.5	$23.0	$34.5	$45.9	$57.4	$68.9

Table 3 provides the impact measurements in terms of "value added." Value added includes wages and salaries, interest, rent, profits, and indirect taxes paid by businesses. In these IMPLAN results tables, Value-added equals the sum of Labor Income, Other Property Type Income, and Indirect Business Taxes. Value added is a key measure and is considered the fundamental measurement of local economic growth.

Boat yard sector		Lancaster County, Virginia					
		25 workers	50 workers	75 workers	100 workers	125 workers	150 workers
Value Added Impacts	Direct Impacts	$3.1	$6.2	$9.3	$12.5	$15.6	$18.7
	Indirect Impacts	$0.9	$1.7	$2.6	$3.4	$4.3	$5.1
	Induced Impacts	$1.1	$2.2	$3.3	$4.5	$5.6	$6.7
	Total	$5.1	$10.2	$15.3	$20.3	$25.4	$30.5

Table 4 accounts the impacts in terms of business tax collections generated. "Indirect business taxes" include sales, excise, and property taxes as well as fees and licenses paid by businesses during normal operations. It does not include taxes on profits or income.

Boat yard sector		Lancaster County, Virginia					
		25 workers	50 workers	75 workers	100 workers	125 workers	150 workers
Indirect Business Tax Impacts	Direct Impacts	$0.1	$0.2	$0.2	$0.3	$0.4	$0.5
	Indirect Impacts	$0.1	$0.1	$0.2	$0.2	$0.3	$0.4
	Induced Impacts	$0.1	$0.2	$0.4	$0.5	$0.6	$0.7
	Total	$0.3	$0.5	$0.8	$1.1	$1.3	$1.6

Table 5 provides the total employment impacts at the various levels of activity. Employment or jobs represents the total numbers of wage and salaried employees as well as self-employed jobs. This includes full-time, part-time and seasonal workers measured in annual average jobs.

Boat yard sector		Lancaster County, Virginia					
		25 workers	50 workers	75 workers	100 workers	125 workers	150 workers
Employment Impacts	Direct Impacts	25	50	75	100	125	150
	Indirect Impacts	11	23	34	45	57	68
	Induced Impacts	17	33	50	67	83	100
	Total	53	106	159	212	265	318

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Appendix 1. Glossary of Input-Output Terms

Direct effects/impacts: Direct impacts represent the revenues, value-added, income, or jobs that result directly from an economic activity within the study area or a regional economy.

Employment or Jobs: Represents the total numbers of wage and salaried employees as well as self-employed jobs. This includes full-time, part-time and seasonal workers measured in annual average jobs.

Indirect Business Taxes: Include sales, excise, and property taxes as well as fees and licenses paid by businesses during normal operations. It does not include taxes on profits or income.

Indirect effects/impacts: Indirect effects occur when businesses use revenues originating from outside the region, or study area, to purchase inputs (goods and services) from local suppliers. This secondary, or indirect business, generates additional revenues, income, jobs and taxes for the area economy.

Induced effects/impacts: Induced effects or impacts occur when new dollars, originating from outside the study area, are introduced into the local economy. Induced economic impacts occur as the households of business owners and employees spend their earnings from these enterprises to purchase consumer goods and services from other businesses within the region. This induced effect generates additional revenues, income, jobs and taxes for the area economy.

Input-Output Analysis: The use of input-output models to estimate how revenues or employment for one or more particular industries, businesses or activities in a regional economy impact other businesses and institutions in that region, and the regional as a whole.

Input-Output Models: A mathematical representation of economic activity within a defined region using inter-industry transaction tables or matrices where the outputs of various industries are used as inputs by those same industries and other industries as well.

Labor Income: All forms of employment compensation, including employee wages and salaries, and proprietor income or profits.

Local/ Resident revenues/expenditures: Local revenues or spending represent simple transfers between individuals or businesses within a regional economy. These transactions do not generate economic spin-off or multiplier (indirect and induced) effects.

Margins: Represent the differences between retail, wholesale, distributor and producers prices.

Non-resident /Non-local revenues/expenditures: When outside or new revenues flow into a local economy either from the sale of locally produced goods and services to points outside the study area, or from expenditures by non-local visitors to the study area, additional economic repercussions occur through indirect and induced (multiplier) effects.

Other Property Type Income: Income in the form of rents, royalties, interest, dividends, and corporate profits.

Output: Revenues or sales associated with an industry or economic activity.

Total Impacts: The sum of direct, indirect and induced effects or economic impacts.

Value-added: Includes wages and salaries, interest, rent, profits, and indirect taxes paid by businesses. In the IMPLAN results tables, Value-added equals the sum of Labor Income, Other Property Type Income, and Indirect Business Taxes.

Appendix 2. Economic Impacts to the Commonwealth of Virginia

	State of Virginia						
Boat yard sector		**25 workers**	**50 workers**	**75 workers**	**100 workers**	**125 workers**	**150 workers**
Labor Income Impacts	Direct Impacts	$2.7	$5.5	$8.2	$10.9	$13.6	$16.4
	Indirect Impacts	$1.1	$2.2	$3.3	$4.4	$5.5	$6.6
	Induced Impacts	$0.9	$1.8	$2.7	$3.6	$4.5	$5.4
	Total	$4.7	$9.4	$14.2	$18.9	$23.6	$28.3
Indirect Business Tax Impacts	Direct Impacts	$0.1	$0.2	$0.2	$0.3	$0.4	$0.5
	Indirect Impacts	$0.1	$0.2	$0.3	$0.4	$0.5	$0.7
	Induced Impacts	$0.2	$0.4	$0.6	$0.7	$0.9	$1.1
	Total	$0.4	$0.7	$1.1	$1.5	$1.9	$2.2
Other Property Income Impacts	Direct Impacts	$0.3	$0.6	$0.9	$1.2	$1.5	$1.8
	Indirect Impacts	$0.5	$1.1	$1.6	$2.1	$2.7	$3.2
	Induced Impacts	$0.6	$1.2	$1.8	$2.5	$3.1	$3.7
	Total	$1.5	$2.9	$4.4	$5.8	$7.3	$8.7
Total Value Added Impacts	Direct Impacts	$3.1	$6.2	$9.3	$12.5	$15.6	$18.7
	Indirect Impacts	$1.7	$3.5	$5.2	$6.9	$8.7	$10.4
	Induced Impacts	$1.7	$3.4	$5.1	$6.8	$8.5	$10.2
	Total	$6.5	$13.1	$19.6	$26.2	$32.7	$39.3
Output Impacts	Direct Impacts	$8.1	$16.2	$24.3	$32.5	$40.6	$48.7
	Indirect Impacts	$3.1	$6.1	$9.2	$12.3	$15.3	$18.4
	Induced Impacts	$2.9	$5.7	$8.6	$11.4	$14.3	$17.1
	Total	$14.0	$28.1	$42.1	$56.1	$70.1	$84.2
Employment Impacts	Direct Impacts	25	50	75	100	125	150
	Indirect Impacts	17	35	52	69	86	104
	Induced Impacts	22	44	66	88	110	131
	Total	64	128	193	257	321	385