

Date: December 1, 2010
To: Bill Davis, Aqua New Jersey
From: Mike Lahr, Ph.D., Erin Coughlin and Frank Felder, Ph.D., Edward J. Bloustein School of Planning and Public Policy, Rutgers, The State University of New Jersey
Re: Economic Impacts of a Water Main Infrastructure Investment

I. SUMMARY OF ECONOMIC IMPACT ANALYSIS

This draft memo presents the estimated economic impacts of a \$1.26 million water main infrastructure investment in Gloucester County, New Jersey. The economic impacts are analyzed under two conditions, if \$265 thousand in key materials are purchased from a manufacturer within New Jersey and if the key materials are purchased from a manufacturer outside of New Jersey. Based on the analysis, the economic impacts in New Jersey include:

Aqua Water Main Infrastructure Project (key materials manufactured within New Jersey)

- 8 direct and 2 indirect and induced one-time job-years;¹
- \$438 thousand direct and \$101 thousand indirect and induced income;
- \$1.14 million direct and \$342 thousand indirect and induced output;
- \$556 thousand direct and \$153 thousand indirect and induced gross state product;

Aqua Water Main Infrastructure Project (key materials manufactured outside New Jersey)

- 6 direct and 2 indirect and induced one-time job-years;
- \$358 thousand direct and \$82 thousand indirect and induced income;
- \$878 thousand direct and \$283 thousand indirect and induced output;
- \$435 thousand direct and \$127 thousand indirect and induced gross state product;

II. DESCRIPTION OF ECONOMIC IMPACT ANALYSIS

The economic impacts of Aqua New Jersey's (Aqua) water main infrastructure project are estimated using the Rutgers Economic Advisory Service (R/ECONTM) Input-Output Model. The R/ECONTM Input-Output Model, housed at the Center for Urban Policy Research at Rutgers University's Edward J. Bloustein School of Planning and Public Policy, consists of over 500 individual sectors of the New Jersey economy and measures the direct and indirect effects of changes in expenditures in one industry on the economic activity in all other industries.

R/ECONTM uses various measures to indicate the effects of an economic activity on the total economy of the region. These measures include the changes in regional employment, output, income, gross state product and tax revenue that result from a change in economic activity.²

¹ A job-year is the equivalent of one job in a single year.

² Center for Urban Policy Research (CUPR). A description of R/ECONTM I-O: A regional input-output model developed by Rutgers University's Center for Urban Policy Research. Rutgers, The State University of New Jersey.

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Employment is a measure of jobs at the place of business. The value of this measure depends on the prevailing mix between full- and part-time jobs for the regional industries affected by the economic change. All jobs generated at regional businesses are included, even though households in other regions may spend the wages of commuters.

Output is the value of industry production exchanged between firms and/or other organizations and the sector change in sales, except for construction and wholesale and retail trade. The wholesale and retail trade sector sales equal the change in sales plus the cost of goods sold. The construction sector change in output is equal to the change in sales of construction contractors plus the added cost of those materials and outside subcontractors.

Income includes wages, salaries and proprietors' income. It does not include nonwage compensation (such as pensions, insurance and health benefits), transfer payments (such as welfare or social security benefits) or unearned income (such as dividends, interest or rent). Wages are paid to labor at their place of work and spent at their place of residence, which may be outside the region.

Gross State Product is the difference between the value of goods and services purchased as production inputs and the value of goods and services produced. The total wealth generated by the economic activity consists of wages, state and local taxes, federal taxes, changes in nonwage employee compensation, profit-type income, net interest and capital consumption allowances.

State taxes are revenues collected by state governments through personal and corporate income, state property, excise, sales and other state taxes generated by changes in output or wages or by purchases of visitors to the region.

Local taxes are revenues collected by substate governments, occurring mainly through property taxes on new worker households and businesses, but including income, sales and other major local taxes in selected areas, where applicable.

III. AQUA WATER MAIN INFRASTRUCTURE PROJECT

The economic impacts of a \$1.26 million Aqua water main infrastructure project on High Hill Road in Gloucester County, New Jersey, undertaken in 2010, are analyzed under two conditions, if \$265 thousand in key materials are purchased from a manufacturer located within New Jersey and if the key materials are purchased from a manufacturer located outside of New Jersey.

A. KEY MATERIALS MANUFACTURED WITHIN NEW JERSEY

The R/ECON™ Input-Output Model estimated economic impacts if \$265 thousand in key materials are purchased from a manufacturer located within New Jersey are shown in Table 1. The direct impacts in New Jersey include 8 job years, \$438 thousand in income, \$1.14 million in output and \$556 thousand in gross state product. Table 2 shows the contribution to total gross state product.

Table 1 Economic Impacts if Manufacturer is Located within New Jersey

	Direct	Indirect & Induced	Total
Employment (job years)	8	2	10
Income (\$ thousands)	438	101	539
Output (\$ thousands)	1,143	342	1,484
Gross State Product (\$ thousands)	556	153	708

Table 2 Project Contributions to the Increase in Gross State Product

	Dollars (\$ thousands)
Wages (Net of Taxes)	\$496
Business Taxes	\$55
Local	\$15
State	\$11
Federal	\$28
Profits, Dividends, Rents & Other	\$158
Total Gross State Product	\$708

Every million dollars spent results in:

- 7.9 jobs one-time job-years
- \$428,322 income dollars
- \$10,531 state tax revenues
- \$14,621 local tax revenues
- \$562,386 in gross state product

B. KEY MATERIALS MANUFACTURED OUTSIDE OF NEW JERSEY

The R/ECON™ Input-Output Model estimated economic impacts if \$265 thousand in key materials are purchased from a manufacturer located outside of New Jersey are shown in Table 3. The direct impacts in New Jersey include 6 job years, \$358 thousand in income, \$878 thousand in output and \$435 thousand in gross state product. Table 4 shows the contribution to total gross state product.

Table 3 Economic Impacts if Manufacturer is Located outside of New Jersey

	Direct	Indirect & Induced	Total
Employment (job years)	6	2	8
Income (\$ thousands)	358	82	441
Output (\$ thousands)	878	283	1,161
Gross State Product (\$ thousands)	435	127	562

Table 4 Project Contributions to the Increase in Gross State Product

	Dollars (\$ thousands)
Wages (Net of Taxes)	\$401
Business Taxes	\$49
Local	\$14
State	\$10
Federal	\$26
Profits, Dividends, Rents & Other	\$112
Total Gross State Product	\$562

Every million dollars spent results in:

- 6.5 jobs one-time job-years
- \$350,357 income dollars
- \$9,269 state tax revenues
- \$12,868 local tax revenues
- \$446,705 in gross state product