



## REGIONAL ECONOMIC IMPACTS OF RETAIL TRADE AT THE WTC SITE

Rebuilding and revitalization activities at the World Trade Center site will include the development of space for lease by retail establishments in the below-grade concourses connecting buildings and transit stations (Phase I). In addition, above-grade space will be available for lease by retail establishments at street-level and above in the commercial towers to be developed along Church Street and Greenwich Street. Together these proposed retail development activities (Full Build) will stimulate the regional economy through materials and payroll expenditures associated with engineering and construction, and operations of the retail establishments themselves. Regional economic impacts are assessed for two distinct stages:

- **Construction Period** – The construction period is defined broadly to include all of the activities anticipated under the total project cost budget including final design, construction, and project management and other soft costs. These activities and associated economic impacts are of a temporary duration largely limited to the multi-year period of project development.
- **Permanent Operations Period** – Once construction is complete and the retail space is occupied, the sales activity, operational expenditures of the establishments leasing the space, and spending by employees will produce impacts throughout the regional economy. These impacts are of a permanent, recurring nature and are described for a typical year of operations for each phase of development.

Three types of measurable regional economic impacts result from the proposed construction of retail establishments on-site. These include:

- **Direct Impact** – The direct impact of a project is defined as the initial change in final demand in which expenditures are made for materials and labor in the region. The direct impact to the Port Authority of New York and New Jersey (PANYNJ) region<sup>1</sup> due to the construction or permanent operation of the retail space is attributable to the local purchase of needed materials and services and the expenditure of project payroll by construction laborers or the permanent workforce.
- **Indirect Impact** – The initial direct expenditure impacts prompt further indirect economic activity by supplying industries that furnish requisite input materials and services to the industries directly involved in construction or the vendors supplying goods and services to the permanent operations of the retail establishments. These indirect impacts reflect the intermediate production or increased economic activity to supply services, materials, and machinery necessary to support the construction program and ongoing permanent annual economic activities.
- **Induced Impact** – In turn, the labor force will re-spend a significant portion of their salary and wage earnings on various consumer expenditures, producing an induced effect. The induced impact is the effect of increased consumer spending by salary and wage earners in the study industry and other

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<sup>1</sup> In assessing economic impacts of projects it sponsors in New York and New Jersey, PANYNJ commonly uses a region comprised of 17 counties in the greater New York-New Jersey metropolitan area including the five counties/boroughs in New York City (New York, Bronx, Kings, Queens, Richmond), the two counties comprising Long Island (Nassau and Suffolk), two counties in New York State to the north and west of New York City (Westchester and Rockland) and eight counties in New Jersey (Bergen, Essex, Hudson, Middlesex, Morris, Passaic, Somerset, and Union counties).



supporting industries. The induced impact is conservatively estimated by accounting for potential leakages due to taxation, savings, and non-local re-spending.

The successive rounds of economic activity stimulated by the initial expenditure of funds during construction is the ripple or multiplier effect. The ripple effect can account for a significant portion of the total regional economic impact. Together, the indirect and induced impacts constitute the multiplier effect, the extent to which the direct impact results in additional economic activity. Expressed numerically, a multiplier of 1.75 indicates that for every dollar directly generated by the industry under study, an additional \$0.75 of ripple effects are felt within the local region, for a total impact of \$1.75.

### **ASSUMED IMPACT AREA**

For the purpose of quantifying the economic impacts of the proposed action, it is assumed that impacts are likely to be concentrated in the 17-county PANYNJ region, since employees are anticipated to be largely drawn from this region and commute to the site of the proposed project via PATH, New York City Transit, private ferry and other modes of transportation. At the time of the 2000 Census, over 94 percent of employees working at establishments in Manhattan lived somewhere in the 17-county region. Nearly 87 percent of workers in the World Trade Center and surrounding offices worked in the 17-county region according to the 2000 Census.<sup>2</sup> Based on a review of the Regional Economic Information System (REIS) data published by the Bureau of Economic Analysis, there are over 380,000 construction jobs within the 17-County region.

### **ECONOMIC IMPACTS DURING CONSTRUCTION PERIOD**

Retail establishments at the WTC site are expected to be constructed in two phases. The proposed construction budget that will be expended during Phase I is expected to be \$255 million.

In determining the economic impacts of the project, the following assumptions are made:

- The construction budget was divided between labor payroll (43 percent), materials and services (51 percent) and indirect business taxes and profits (6 percent). The split was developed after review of comparable projects and input-output vectors reported by the Bureau of Economic Analysis for similar type facilities.<sup>3</sup>
- Prevailing wage rates for selected categories of skilled and unskilled heavy construction workers in the impact area were determined using the Davis-Bacon wage rates. As mandated by the Davis-Bacon Act of 1931, all federal government construction contracts and most contracts for federally assisted construction over \$2,000 must include provisions for paying workers on-site no less than the locally

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<sup>2</sup> 2000 Census Transportation Planning Package, Part 3, county-to-county and tract-to-tract flow files. U.S. Census Bureau/Bureau of Transportation Statistics, 2005.

<sup>3</sup> The following industry was used as the basis for the industry distributions for construction: 2309220 Construction of Commercial and Institutional Buildings. For permanent operations the following industries were used as the baseline: 4A0000 Retail Trade, 722000 Eating and Drinking Establishments, 230320 Maintenance and Repair of Non-residential Buildings, 561700 Services to Buildings and Dwellings.



prevailing wages and fringe benefits paid on similar projects. The construction employees' wage package in New York County was estimated to average approximately \$73,000 per year based on a typical mix of trades and occupations, including benefits and a 40-hour work week. The construction trades range from skilled positions such as electricians earning \$43 per hour to jobbers earning \$24 per hour. Benefits range from as low as \$12 per hour to \$32 per hour for these positions.

## **PHASE I**

The construction budget can be divided into three major elements: materials and services purchases, payroll, and taxes and profits as shown in Table 1. During the first phase of construction, the project is estimated to directly support 1,360 construction-related jobs over a three and one-half year period of preliminary engineering, final design, and construction, or an annual average of 390 jobs (see Table 1) although up to 12 percent of these jobs are estimated to be provided non-locally (i.e., by laborers residing permanently outside the PANYNJ region). The project is also estimated to generate direct industry sales for construction materials, subcontractors and other goods and services of nearly \$120 million. Payroll expenses from the subject project are estimated to be over \$99 million.

After adjusting for non-local sales (approximately 50 percent) and leakages for non-local labor (approximately 15 percent), the initial project is estimated to create \$99.9 million in direct sales, \$57.4 million in direct earnings and 1,180 jobs within the entire region.



**Table 1  
Economic Impacts of Retail Trade at WTC Site  
Construction Period - Phase I**

	<b>Total</b>		
<b>Direct Effect</b>			
Construction Budget (Proposed)	\$255,330,000		
- Less Contingency (10%)	\$229,797,000		
- Construction Materials and Services Purchases	\$119,617,000		
- Payroll	\$99,414,000		
- Indirect Business Taxes & Profits	\$10,766,000		
Total Construction Jobs	1,360		
Construction Period (months)	42		
Annual Construction Jobs	390		
			<b>Jobs</b>
<b>Total Regional Multiplier Effect</b>	<b>Sales</b>	<b>Earnings</b>	<b>(Person Years)</b>
Initial Change (Direct)	\$99,846,000	\$57,364,000	1,180
Multiplier Effect	\$203,405,000	\$51,968,000	1,700
<b>Total Regional Impacts</b>	<b>\$303,251,000</b>	<b>\$109,332,000</b>	<b>2,880</b>
<b>Annual Regional Impacts</b>			
Initial Change (Direct)	\$28,527,000	\$16,390,000	340
Multiplier Effect	\$58,116,000	\$14,848,000	490
<b>Total Regional Annualized Impacts</b>	<b>\$86,643,000</b>	<b>\$31,238,000</b>	<b>830</b>

Source: The Louis Berger Group, Inc., 2005

\*Construction Period includes all preliminary engineering, final design, construction, and project management activities.

Multipliers permit estimation of the indirect and induced effects once direct project impacts are known. Table 1 displays a summary of the “initial change” or direct impact and the multiplier effect impacts to the local economy. The sum of all these elements constitutes the total effect which can be expressed in terms of employment, output and worker earnings. The total economic impacts within the PANYNJ region are the following:

- **Employment** - The investment will support a total of 2,880 person-years of employment over the life of the project. This equates to an average annual total of 830 jobs for local workers within the region during the construction phase of the project.
- **Output** - The total amount of economic activity, or output, that the local economy will experience due to the initial direct construction investment is \$303.3 million, or nearly \$87 million annually.
- **Earnings** - The total amount of wages that local workers will earn due to the construction investment is \$109.3 million, or over \$31 million annually.



## FULL BUILD

Adding the second phase of construction to the first to estimate the Full Build impacts, the project is estimated to directly support 3,100 engineering/construction-related jobs over a six-year period, or an annual average of 520 jobs (see Table 2) although some of these jobs are estimated to be provided non-locally (i.e., by laborers residing permanently outside the PANYNJ region). The project is also estimated to generate direct industry sales for construction materials, subcontractors and other goods and services of nearly \$275 million after deductions for contingency. Payroll expenses from the subject project are estimated to be nearly \$229 million.

After adjusting for non-local sales and leakages for non-local labor, the Full Build of the project is estimated to create \$230 million in direct sales, \$132 million in direct earnings and 2,710 jobs within the entire region.

As described in the Phase I discussion of construction impacts, multipliers permit estimation of the indirect and induced effects once direct project impacts are known. Table 2 displays a summary of the “initial change” or direct impact and the multiplier effect impacts to the local economy for the Full Build. The sum of all these elements constitutes the total effect which can be expressed in terms of employment, output and worker earnings. The total economic impacts within the PANYNJ region are the following:

- **Employment** - The investment will support a total of 6,620 person-years of employment over the life of the project. This equates to an average annual total of 1,100 jobs for local workers within the region during the construction phase of the project.
- **Output** - The total amount of economic activity, or output, that the local economy will experience due to the initial direct construction investment is \$697 million, or over \$116 million annually.
- **Earnings** - The total amount of wages that local workers will earn due to the construction investment is \$251 million, or \$42 million annually.



**Table 2  
Economic Impacts of Retail Trade at WTC Site  
Construction Period - Full Build**

	<b>Total</b>		
<b>Direct Effect</b>			
Construction Budget (Proposed)	\$586,914,000		
- Less Contingency (10%)	\$528,222,600		
- Construction Materials and Services Purchases	\$274,957,000		
- Payroll	\$228,517,000		
- Indirect Business Taxes & Profits	\$24,748,600		
Total Construction Jobs	3,100		
Construction Period (months)	72		
Annual Construction Jobs	520		
			<b>Jobs</b>
<b>Total Regional Multiplier Effect</b>	<b>Sales</b>	<b>Earnings</b>	<b>(Person Years)</b>
Initial Change (Direct)	\$229,511,000	\$131,859,000	2,710
Multiplier Effect	\$467,556,000	\$119,456,000	3,910
<b>Total Regional Impacts</b>	<b>\$697,067,000</b>	<b>\$251,315,000</b>	<b>6,620</b>
<b>Annual Regional Impacts</b>			
Initial Change (Direct)	\$38,252,000	\$21,977,000	450
Multiplier Effect	\$77,926,000	\$19,909,000	650
<b>Total Regional Annualized Impacts</b>	<b>\$116,178,000</b>	<b>\$41,886,000</b>	<b>1,100</b>

Source: The Louis Berger Group, Inc., 2005

\*Construction Period includes all preliminary engineering, final design, construction, and project management activities.

## ANNUAL ECONOMIC IMPACTS DURING PERMANENT OPERATION

Economic impacts of the retail establishments' operational phase are generated through sales made by those establishments and the direct expenditures annually for goods, materials, contracted services, utilities, and other supplies needed to support those sales. Estimates of annual retail sales are based on sales per square footage of leaseable space for comparable facilities. In determining the economic impacts of permanent operations, the following assumptions are made:

- Net leaseable area of 146,190 SF for Phase I and 504,000 SF for the Full Build.
- Employment of approximately 700 property management, retail sales, maintenance, cleaning, and security positions for Phase I and 1,100 employees for the Full Build with a regional-capture of 87 percent based on journey-to-work patterns.
- Annual retail sales of \$800 per square foot for Phase I and \$1,200 for the Full Build based on the projected merchandising mix with an implied allowance for vacancy.



**PHASE I**

Table 3 displays a summary of the direct impact and multiplier effects to the local economy attributable to annual retail sales anticipated for space created during Phase I. The proposed project’s ongoing operations and maintenance activities at the levels anticipated for Phase I are expected to create approximately 610 new jobs, inject \$47 million in sales and over \$16 million in direct earnings in to the local economy annually. In addition, local multiplier effects associated with these direct expenditures are expected to generate \$90 million in local sales each year and indirectly support another 730 jobs.

Thus, including both direct expenditures and their multiplier effects, the first phase of the operation of the proposed retail space is projected to support \$137 million in total regional sales, \$39 million in earnings, and 1,340 new jobs on an annual basis.

**Table 3**  
**Economic Impacts of Retail Trade at WTC Site**  
**Permanent Operations - Phase I**

	<b>Total</b>		
<b>Direct Effect</b>			
Operations Spending (Projected)	\$116,952,000		
- Materials, Goods, and Services Purchases	\$58,892,000		
- Payroll	\$28,568,000		
- Indirect Business Taxes, Profits	\$29,492,000		
Total Permanent Jobs (Annual)	700		
<b>Total Regional Multiplier Effect</b>			
	<b>Sales</b>	<b>Earnings</b>	<b>Jobs (Person Years)</b>
Initial Change (Direct)	\$46,603,000	\$16,484,000	610
Multiplier Effect	\$90,395,000	\$22,055,000	730
<b>Total Regional Impacts</b>	<b>\$136,998,000</b>	<b>\$38,539,000</b>	<b>1,340</b>

Source: The Louis Berger Group, Inc., 2005

**FULL BUILD**

Table 4 displays a summary of the direct impact and multiplier effects to the local economy for permanent operations of the retail space constructed in the Full Build. The proposed project is anticipated to create approximately 960 new jobs and inject approximately \$221.0 million in sales and over \$23 million in direct earnings in to the local economy each year. In addition, local multiplier effects associated with these direct expenditures are expected to add another \$425 million in local sales each year, indirectly supporting another 3,410 jobs with earnings of \$104 million.

Thus, including both direct expenditures and multiplier effects, operations at sales levels anticipated for the Full Build are projected to support over \$646 million in regional sales, over \$128 million in earnings and 4,370 new full and part-time jobs on an annual basis.



**Table 4**  
**Economic Impacts of Retail Trade at WTC Site**  
**Permanent Operations - Full Build**

	Total		
<b>Direct Effect</b>			
Operations Spending (Projected)	\$604,800,000		
- Materials, Goods, and Services Purchases	\$340,615,000		
- Payroll	\$40,585,000		
- Indirect Business Taxes, Profits	\$223,600,000		
Total Permanent Jobs (Annual)	1,100		
			<b>Jobs</b>
<b>Total Regional Multiplier Effect</b>	<b>Sales</b>	<b>Earnings</b>	<b>(Person Years)</b>
Initial Change (Direct)	\$220,848,000	\$23,419,000	960
Multiplier Effect	\$425,391,000	\$104,409,000	3,410
<b>Total Regional Impacts</b>	<b>\$646,239,000</b>	<b>\$127,828,000</b>	<b>4,370</b>

Source: The Louis Berger Group, Inc., 2005

**SUBSTITUTION EFFECTS**

This report has summarized the economic impacts that could be expected from construction and operation of the retail space proposed for the World Trade Center site. Previous reports prepared by LMDC and others have recognized that not all retail sales occurring on-site would represent a net addition to the regional economy. Instead, some portion of the on-site activity represents spending that would have occurred elsewhere in the city or the region. In a recent report, LMDC assumed that up to 50 percent of sales could be considered a substitute for sales that would have occurred elsewhere in the region.<sup>4</sup> If that assumption accurately reflects the substitution effect, the total annual net addition to the regional economy attributable to the proposed project would be as follows:

- **Phase I** – Sales: \$70 million; Earnings: \$20 million; Jobs: 670
- **Full Build** – Sales: \$325 million; Earnings: \$65 million; Jobs: 2,190

<sup>4</sup> LMDC, *Economic Impact of Redeveloping the World Trade Center Site*, October 2003.





## APPENDIX: ECONOMIC ASSESSMENT METHODOLOGY

Input-output tables have been regionalized to reflect the economic activity patterns within the PANYNJ region, utilizing national inter-industry transactions data from the U.S. Department of Commerce, Bureau of Economic Analysis (BEA), regional data on industry earnings, employment and journey-to-work patterns as well as data on taxation and savings. This national and regional economic data provides the foundation for regional economic impact assessment and produces output, earnings and job multipliers that are specific to the region of the proposed action to quantify the temporary and permanent economic effects of the proposed project during its construction and operations and maintenance stages.

The approach considers separately the effects of material purchase spending – which stimulates the economic activity of local supplier industries – and payroll expenditures to the labor force serving the project during construction and operations. Further discussion of the methods or analytical steps required to estimate the direct effect and multiplier effects of the project are provided below.

Quantification of the effects of material purchases, during both the construction and operational phases of the project, relies upon the following:

- *Estimate of Material Expenditures* – Determination of the total amount and specific goods and services required to support construction and operation of retail establishments have been based upon review of PANYNJ construction budgets and consideration of the operating requirements at such facilities. The distribution of expenditures across industries was also based on data on inter-industry transactions from the U.S. Input-Output accounts maintained by the BEA.
- *Estimate of Local Purchases* – The degree to which materials are likely to be purchased in the local region is initially based upon location quotient analysis, which measures the concentration of local economic activity in each major industrial sector. Location quotients reflect the degree to which particular goods are likely to be available within a given region. This analysis is supplemented with discussions with individuals knowledgeable about the regional economy, labor market, the facility construction project and its operations and maintenance requirements in order to further consider the local economy's ability to satisfy project demand locally. The sales recorded locally through vendors and suppliers are an important direct economic effect of the project as are the jobs and household earnings supported by the businesses making such sales.
- *Adjustment for Producer vs. Purchaser prices* – Based on BEA Regional Input-Output Modeling System (RIMS-II) methodology for the “bill-of-goods” approach, an adjustment was made in the distribution of retail sales across supplying industries to account for transportation costs, and wholesale margins using data from U.S. Input-Output Accounts.
- *Application of Multipliers to Assess Total Project Impacts on the Regional Economy* – Output multipliers derived from the input-output model are used to assess the indirect and induced economic impacts on the local economy. Output multipliers indicate the total increase in output or sales that occurs in the local economy with each dollar of project-related expenditures, including business production and the re-spending of household earnings by workers. Similarly, employment and earnings multipliers are applied to measure the job creation and household income effects in the local area resulting from project-related direct expenditures.