

CHAPTER THREE

**Total Economic Impacts from
Historic Rehabilitation**

INTRODUCTION AND SUMMARY

This chapter discusses how the *total economic impact* of the \$123 million of rehabilitation effected in historic properties annually (estimated in Chapter Two) is derived. First, the typical purchases for each type of property on which historic rehabilitation is taking place—single-family, multifamily, and nonresidential—are detailed by industry. The lists of typical labor, material, and service purchases for each property type are then standardized. These estimated economic “recipes” for historic renovation are then multiplied by the amount of annual such activity for each property type. The resulting vectors of historic rehabilitation volume are then applied to input-output models that calculate total economic impacts (direct, indirect, and induced) for the state of New Jersey and the nation. The results are as follows:

Annual Total Economic Impacts of the Annual Historic Rehabilitation in New Jersey (\$123 Million)

	In New Jersey	Outside New Jersey	Total (U.S.)
Jobs (person years)	2,316	2,291	4,607
Income (\$000)	\$81,085	\$75,212	\$156,297
GDP/GSP (\$000)	\$116,404	\$90,631	\$207,035
Total Taxes (\$000)	\$38,217	\$26,876	\$65,093
Federal (\$000)	\$22,915	\$17,871	\$40,786
State (\$000)	\$8,322	\$4,874	\$13,196
Local (\$000)	\$6,980	\$4,131	\$11,111
In-State Wealth (\$000) (GSP Minus Federal Taxes)	\$93,489	-----	-----

GDP/GSP = Gross domestic product/Gross state product

“RECIPES” FOR HISTORIC REHABILITATION

The first category of total economic impact—*direct effects*, or direct requirements—are readily identified once a project has been bid and once its costs have been calculated and summed. In theory, the best way to estimate a project’s direct requirements would be to use bid sheets that apply cost elements (i.e., labor and materials) to items specified by the project’s architects and engineers. Bid sheets would provide sufficient detail on project requirements to identify the industry that supplies the components, as well as the type of labor needed for the work. The quality of the estimates of a project’s direct requirements, in turn, determines the quality of the estimates of other categories of economic impacts. Thus, estimates demand an unusual amount of thoroughness and care. In ideal circumstances, the thoroughness extends to identifying where the direct requirements come from as well as a very detailed specification of the supplying industry.

In the case of this study, CUPR obtained detailed cost information on renovations effected on a variety of historic properties by:

- ¥ Contacting developers/sponsors active in historic preservation
- ¥ Obtaining files on historic rehabilitation projects certified for federal preservation tax credits
- ¥ Obtaining files on projects in New Jersey that had received funding from the New Jersey Historic Trust.

In all instances, the information obtained approached the detail of a bid sheet. Based on these sources, CUPR received information on 56 historic properties requiring \$97.4 million in recent rehabilitation (see Appendix B for details). The detailed cost estimates for these projects were summed by property type—single-family residential, multifamily residential, and nonresidential (again, see Appendix B). Using information from the detailed cost estimates as well as the prior experience of the Regional Science Research Corporation in similar studies (Intergovernmental Policy Analysis Program, University of Rhode Island 1993), the cost estimates by property type were converted into purchases of goods and services, including labor, by industry. This lengthy, sometimes subjective, conversion process enabled the specification required to get accurate results by industry from the economic model. The result is an “economic recipe” of the direct requirements for historic rehabilitation by property type. (See Appendix B for these recipes.)

ESTIMATING TOTAL ECONOMIC IMPACTS

Total economic impacts encompass both *direct* and *multiplier* effects. The latter incorporate *indirect* and *induced* impacts. The character of the direct impacts of historic preservation is derived from the recipes noted above. The process for estimating a given project’s indirect and induced economic impacts is more roundabout. By definition, a project’s first round of indirect impact includes the purchases of any supplies and/or services that are required to produce the direct effects. Subsequent purchases of supplies and services generate other rounds of indirect impacts. The induced impacts are the purchases that arise, in turn, from the increase in aggregate labor income of households. Aggregate labor income is defined as the sum of wages, salaries, and proprietors’ income earned by workers. Both the indirect and induced economic impacts demonstrate how the demand for direct requirements reverberates through an economy.

Figure 3.1 details the economic impacts of the rehabilitation of historic properties. The *direct impact* component consists of purchases made specifically for the construction project. Direct impacts on the local economy are composed only of purchases from local organizations. The *indirect impact* component consists of spending on goods and services by industries that produce the items purchased by the contractors who are preserving the property. Among his many business relationships, for example, a contractor might purchase windows from “Jerry’s Home Improvement Inc.” (JHI), which makes custom windows. In order to produce windows, JHI must hire craftsmen as well as contract with firms that supply glass, adhesives, paints and coatings, glazing, and wood products. JHI also hopes to make a profit for its owners/shareholders.

In order to meet JHI’s needs, its suppliers must also hire workers and obtain materials and specialized services. The same process is repeated for their suppliers, and

so on. Thus, an extensive network of relationships is established based upon round after round after round of business transactions that emanate from a single preservation project. It is this network of transactions that describes the set of indirect impacts. Of course, a firm's net indirect contribution to the preservation activity largely depends on: (1) the total value of its transactions in the network; and (2) the proximity of its business relationship(s) to the preservation contractor within the project's business network. Similar to direct impacts, local indirect impacts are composed only of indirect business transactions that occur in the local economy.

Finally, *induced impacts* are a measure of household spending. They are a tally of the expenditures made by the households of the construction workers on a preservation project, as well as the households of employees of the supplying industries.

Figure 3.1: Examples of Direct and Multiplier Effects (Indirect and Induced Impacts) from Historic Preservation

DIRECT IMPACTS	MULTIPLIER EFFECTS	
	INDIRECT IMPACTS	INDUCED IMPACTS
Purchases for: <ul style="list-style-type: none"> • Architectural design • Site preparation • Construction labor • Building materials • Machinery & tools • Finance & insurance • Inspection fees 	Purchases of: <ul style="list-style-type: none"> • Lumber & wood products • Machine components • Stone, clay, glass, & gravel • Fabricated metals • Paper products • Retail & wholesale services • Trucking & warehousing 	Household spending on: <ul style="list-style-type: none"> • Food, clothing, day care, • Retail services, public transit, utilities, car(s), oil & gasoline, property & income taxes, medical services, and insurance

One means of estimating indirect and induced impacts would be to conduct a survey of the business transactions of the primary contractor. The business questionnaire for this survey would ask for the names and addresses of the contractor's suppliers; what and how much they supply; the names and addresses of the contractor's employees; and the annual payroll.

A related questionnaire would cover the household spending of the employees of the surveyed firms. It would request a characterization of each employee's household budget by detailed line items, including names and addresses of the firms or organizations from which each line item is purchased.

Both questionnaires subsequently could be used to measure indirect and induced impacts of the primary contractor's activity. The business questionnaire would be sent to the business addresses identified by the primary contractor; and the household questionnaire, in turn, would be sent to the homes of the employees of those businesses that responded to the survey. This "snowball-type" sampling would continue until time or money was exhausted. In order to keep each organization's or household's contribution to the project in proper perspective, its total spending would be weighted by the size of its transaction with its customers who were included in the survey activity.

The sum of the weighted transaction values obtained via the surveys would be the total economic impact of the project.

This survey-based approach to estimating indirect and induced impacts consumes a great deal of money and time, however. In addition, response rates by firms and households on surveys regarding financial matters are notoriously low. Hence, in the rare cases where survey work has been conducted to measure economic impacts, the results have tended to be not statistically representative of the targeted network of organizations and households. Consequently, relatively less expensive economic models based on Census data are typically used to measure economic impacts.

The economic model that has proven to estimate the indirect and induced economic effects of events most accurately is the input-output model. Its advantage stems from its level of industry detail and its depiction of interindustry relations. As shown in Appendix C, a single calculation—known as the Leontief inverse—simulates the many rounds of business and household surveys. Input-output tables are constructed from nationwide Census surveys of businesses and households. The most difficult part of regional impact analysis is modifying a national input-output model so that it can be used to estimate impacts at a subnational level. “Regionalization” of the model typically is undertaken by the model producer and requires a large volume of data on the economy being modeled. This study employs regional input-output models to estimate the extent of the indirect and induced economic effects of a direct investment in historic preservation activities. The economic effects of historic rehabilitation are studied in this chapter; the effects of heritage tourism and the operations of historic sites and organizations are studied in later chapters.

THE REGIONAL SCIENCE RESEARCH CORPORATION'S INPUT-OUTPUT MODEL

The regional input-output model used by this study to derive the total economic impacts is the PC I-O Model produced by the Regional Science Research Corporation (RSRC) of Hightstown, New Jersey. RSRC's model produces very accurate estimates of the total regional impacts of an economic activity and employs detail for more than 500 industries in calculating the effects.

RSRC's models have proven to be the best of the nonsurvey-based regional input-output models at measuring a region's economic self-sufficiency. The models also have a wide array of measures that can be used to analyze impacts. In particular, RSRC produces one of the only regional economic models that enables an analysis of governmental revenue (i.e., tax) impacts and an analysis of gains in total regional wealth. (See Appendix C for more details on the relative higher quality of the RSRC model.)

The results of RSRC's PC I-O model include many fields of data. Among them, the most significant for the purposes of this study, are the total impacts with respect to:

- ¥ **Jobs:** *Employment, both part- and full-time, by place of work*, estimated using the typical job characteristics of each detailed industry. (Manufacturing jobs, for example, tend to be full-time; in retail trade and real estate, part-time jobs predominate.) All jobs generated at businesses in the region are included, even

though the associated labor income of commuters may be spent outside of the region. In this study, all results are for activities occurring within the time frame of one year. Thus, the job figures should be read as job-years, i.e., several individuals might fill one job-year on any given project.

- ¥ **Income:** “*Earned*” or “*labor*” income—specifically wages, salaries, and proprietors’ income. Income does not include nonwage compensation (i.e., benefits, pensions, or insurance), transfer payments, or dividends, interest, or rents.
- ¥ **Wealth:** *Value added—the equivalent at the subnational level of gross domestic product (GDP).* At the state level this is called gross state product (GSP). Value added is widely accepted by economists as the best measure of economic well-being. It is estimated from state-level data by industry. For a firm, value added is the difference between the value of goods and services produced and the value of goods and nonlabor services purchased. For an industry, therefore, it is composed of labor income (net of taxes), taxes, nonwage labor compensation, profit (other than proprietors’ income), capital consumption allowances, and net interest, dividends, and rents received.
- ¥ **Taxes:** *Tax revenues generated by the activity.* The tax revenues are detailed for the federal, state, and local levels of government. Totals are calculated by industry.

Federal tax revenues include corporate and personal income, social security, and excise taxes, estimated from the calculations of value added and income generated.

State tax revenues include personal and corporate income, state property, excise, sales, and other state taxes, estimated using the calculations of value added and income generated (e.g., purchases by visitors).

Local tax revenues include payments to substate governments mainly through property taxes on new worker households and businesses, but can also include revenues from local income, sales, and other taxes.

TOTAL ECONOMIC IMPACTS OF ANNUAL NEW JERSEY HISTORIC REHABILITATION

Chapter Two estimated that \$123 million in historic rehabilitation is effected annually in New Jersey. Of this, \$39 million tends to be in residential historic properties (single- and multifamily) and \$84 million in nonresidential historic properties. What is the total economic benefit of this activity? What proportion of these benefits accrues to New Jersey?

To answer these questions, the study team applied the direct requirements of \$123 million in historic rehabilitation construction activity to economic models of New Jersey and the United States. This yielded total economic impacts for the country as a whole (national or U.S. effects) and for the state of New Jersey (in-state effects). For both the nation and state, the significant economic indicators were jobs created, resident income generated, resident wealth generated (gross domestic or state product), and taxes generated by level of government.

Besides the four above measures, at the state level, CUPR estimated an additional gauge of activity termed **in-state wealth**. This measure consists of in-state generation of value added (or gross state product), less the amount that “leaks” out of the state’s economy in the form of taxes paid to the federal government. Since taxes paid to the state and local governments remain in state, they cannot be said to “leak” and, thus, are considered part of the accumulated in-state wealth.

The RSRC PC I-O model expresses the resulting jobs, income, and wealth impacts in various levels of industry detail. The most convenient application breaks the industry-level results at the one-digit standard industrial code (SIC) or division level. This level has eleven industry divisions:

1. Agriculture
2. Agricultural, Fishing, and Forestry Services
3. Mining
4. Construction
5. Manufacturing
6. Transportation and Public Utilities (TPU)
7. Wholesale Trade
8. Retail Trade
9. Finance, Insurance, and Real Estate (FIRE)
10. Services
11. Government

The RSRC model provides results in two other industry breakouts, which detail subcategories under each of these eleven groups. These breakouts use the two-digit SIC (86-industry) specification and the full industry specification of the input-output model (about 515 industries).

Jobs are also specified by occupation; and the RSRC model disaggregates occupations at two levels. The model results, however, are only as good as the data that go into them. Thus, when the direct requirements are estimated, and the industry-level purchases are also estimated (as is the case in this study), care should be taken in interpreting model results, especially when they contain extreme categorical detail. Hence, the main body of this report focuses on the one-digit SIC level results, but data on the two-digit SIC results and the more aggregate occupational breakouts of jobs are made available in the appendices. The purpose of providing such detail is to enable a better idea of the quality of jobs that are likely to be created and of the types of industries that are most likely to be affected by historic rehabilitation activities.

The total economic impacts of the \$123 million in historic rehabilitation spending are summarized below and detailed in Exhibits 3.1 through 3.6:

	In New Jersey	Outside New Jersey	Total (U.S.)
Jobs (person years)	2,316	2,291	4,607
Income (\$000)	\$81,085	\$75,212	\$156,297
GDP/GSP (\$000)	\$116,404	\$90,631	\$207,035
Total Taxes (\$000)	\$38,217	\$26,876	\$65,093
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GDP/GSP = Gross domestic product/Gross state product

Item 1 of Section II in Exhibit 3.1 shows how the \$123 million translates into direct economic effects nationwide. It creates 1,617 jobs (technically “job-years”), which produce \$64.5 million in labor income and \$76.5 million in GDP. The difference between the initial investment (\$123 million) and the GDP subsequently created by it (\$77 million) implies that historic building rehabilitation requires significant amounts of imported materials.

The indirect and induced effects of historic preservation activity require 2,990 more jobs, and generate \$91.8 million more in income, and \$131 million more in GDP in their support. As a consequence, the total economic impact—the sum of the direct and indirect and induced effects—of historic building rehabilitation is 4,607 jobs (1,617 + 2,990); \$156 million in income (\$64.5 million + \$91.8 million); and \$207 million in GDP (\$76.5 million + \$130.5 million). In other words, the multiplier effects are greater than the direct effects. The national multipliers are always substantially greater than 2.0.

According to Exhibits 3.1 and 3.4, of the 4,607 jobs created annually, about 50 percent (2,316 jobs) are created within the state. New Jersey retains nearly all of the jobs (1,501 of the 1,617) created directly by state-based historic rehabilitation activity. However, the indirect and induced impacts of New Jersey historic rehabilitation activity tend to leak out of the state. This finding is not surprising, in light of New Jersey’s suburban role to both New York City and Philadelphia; goods and services are demanded from across boundaries at both ends of the state. Indeed, separately the two multi-state metropolitan areas that dominate New Jersey are likely to be more self-sufficient economically than the state itself.

Most of the jobs created outside of the state are created indirectly in manufacturing industries to produce rehabilitation materials or to meet the demands of households. New Jersey maintains only 52 percent (445 of 850) of all the high-paying manufacturing jobs that support the rehabilitation activity. Out-of-state manufacturers pay much higher wages than those in-state—\$47,035 versus \$32,903. As a consequence,

out-of-state household consumption of goods and services plus the activity of out-of-state manufacturers combine to induce the out-of-state share of jobs in the agricultural, mining, and finance industries to extraordinarily high levels (77, 58, and 94 percent, respectively).

We can learn other interesting aspects of the impacts by examining them by detailed industry (see Exhibits 3.2 and 3.5). For example, the New Jersey manufacturing industries that are stimulated most by the preservation activity (listed in order of their share in the increase in the manufacturing component of GSP) are: fabricated metal products (25.8%); stone, clay, and glass products (13.9%); lumber and wood products (11.2%); electrical and electronic machinery (8.2%); mechanical machinery (8.1%); primary metals (5.9%); petroleum and coal products (5.3%); and chemicals and allied products (4.8%). Except for electrical and electronic machinery, and chemicals and allied products, these industries have all been declining in New Jersey. Hence, historic preservation activity provides a boost to the state's economy where it is most needed.

Outside of the construction, manufacturing, and wholesale trade industries, the two detailed New Jersey sectors that are most affected by preservation activity are engineering and management services (EMS) and real estate. The communications industry and trucking and warehousing feel the impact as well.

The distribution of nationwide impacts across industries is similar to that for New Jersey. As might be expected, however, the state experiences more of an impact in such industries as construction, wholesale trade, real estate, and EMS. Some consumer-oriented industries loom larger in the national mix of affected sectors. In particular, preservation activities contribute relatively more to GDP in such industries as food and kindred products, printing and publishing, and transportation equipment (automobile) manufacturing than they do to GSP. The contribution to GDP is also relatively larger for air transportation services; electricity, gas, and sanitary services; non-real estate finance industries; and business services. Of these, only business services is a producer-oriented industry. The influence on this industry is difficult to interpret, however, since it is largely composed of temporary help services, which are ultimately used by all other industries in the economy.

Exhibits 3.3 and 3.6 provide a breakdown of the occupations that support New Jersey historic building rehabilitation activity, both nationally and within the state. As might be expected, the lion's share of the skilled labor, technician, and trade jobs generated by preservation activities are located in New Jersey (71, 58, and 58 percent, respectively). The state also maintains a fair share of the managerial and professional-specialty jobs (about 48 percent of both). In the other major occupation divisions, the state's share of jobs is less sanguine. Nevertheless, with the exception of some sales agents and brokers, the pay scale of these occupations (in marketing and sales, administrative support, service, and agriculture) is at the low end.

The average annual income of all jobs created by historic rehabilitation activity nationwide (in New Jersey and other states) is estimated to be \$33,926. Multiplying this figure by the total number of new jobs created (4,607) reveals that the \$123 million investment in historic preservation is more than returned to the nation in the form of \$156 million in increased income. In one sense, therefore, historic rehabilitation activity

in New Jersey can be viewed as an income reallocation and enhancement program for the nation. The average annual income for the New Jersey jobs created by the investment is somewhat higher than for the jobs in the rest of the nation—\$35,011 versus \$32,829. This \$2,182 income-per-job gap is due largely to the higher proportions of skilled labor and trade jobs created on-site at the historic properties. The income gap makes the proportion of income accruing to New Jersey (52 percent) higher than the proportion of jobs accrued in New Jersey (50 percent).

Labor income composes about 77 percent of gross domestic product in all industries nationwide in any given year. For New Jersey historic building rehabilitation, the proportion is somewhat lower—75 percent. Nonetheless, the wealth accruing to the state from the better-paying New Jersey jobs created by historic rehabilitation activity is higher than equivalent wealth accrual outside of the state. The magnitude of the difference between them is somewhat startling—\$50,261 versus \$39,560 per job, or a wealth gap of \$10,701. This gap compares to a difference in labor income of \$2,182 per job (\$35,011 versus \$32,829). The wealth gap is due to the concentration of construction jobs created within New Jersey by state-based historic rehabilitation activity. This gap substantially improves the economic return to the state: indeed, 76 percent (\$93.5 million) of the \$123 million investment is returned to the state through the accumulation of in-state wealth (gross state product minus federal taxes). The return to the nation is also boosted; nearly \$1.69 is returned to the nation for each dollar invested—for a total return of \$207 million on the original \$123 million investment. What’s more, this high return does not even consider the enhanced attractiveness for business or tourism purposes of the properties involved.

Estimates of the economic impacts from the constituent components of the historic rehabilitation—single-family (\$36 million), multifamily (\$3 million), nonresidential (\$84 million)—are shown separately in Appendix F. Naturally, since it has the largest amount of investment annually, historic rehabilitation of nonresidential buildings has the largest impact on each measure. But does it also give the best return on investment or “biggest bang for the buck?” The summary exhibits in Appendix F in the section labeled “EFFECTS PER MILLION DOLLARS OF INITIAL EXPENDITURE” address this question. It turns out that the rehabilitation of historic nonresidential buildings does tend to yield the greatest economic return per dollar of investment to both New Jersey and the rest of the nation. More interesting, however, is the finding that not much difference exists in the size of the economic return per dollar invested among the three property types. This finding is somewhat surprising, considering the vast differences in the materials and labor types used in the three types of rehabilitation projects.

In summary, the economic impacts estimated through RSRC’s input-output models of the New Jersey and the U.S. economies reveal that the annual historic rehabilitation activity in New Jersey returns significantly more to the nation in terms of income and, hence, wealth than it costs to undertake. Nationwide, the \$123 million New Jersey investment creates about 4,600 new jobs, \$156 million in additional income, and over \$207 million in total wealth. A little over 50 percent of each of these measures accumulates in New Jersey itself.

Exhibit 3.1
National Economic and Tax Impacts of Annual New Jersey
Historic Building Rehabilitation (\$123 Million)

	Economic Component		
	Employment (jobs)	Income (000\$)	Gross Domestic Product (000\$)
I. TOTAL EFFECTS (Direct and Indirect/Induced)*			
Private			
1. Agriculture	8	981	1,608
2. Agri. Serv., Forestry, & Fish	31	563	854
3. Mining	24	1,266	3,965
4. Construction	1,082	41,993	44,203
5. Manufacturing	850	33,691	46,196
6. Transport. & Public Utilities	265	12,681	22,263
7. Wholesale	102	4,486	12,670
8. Retail Trade	733	13,772	15,737
9. Finance, Ins., & Real Estate	443	16,375	26,258
10. Services	927	28,257	31,223
Private Subtotal	4,466	154,061	204,968
Public			
11. Government	<u>141</u>	<u>2,236</u>	<u>2,067</u>
Total Effects (Private and Public)	4,607	156,297	207,035
II. DISTRIBUTION OF EFFECTS/MULTIPLIER			
1. Direct Effects	1,617	64,473	76,479
2. Indirect and Induced Effects	<u>2,990</u>	<u>91,823</u>	<u>130,557</u>
3. Total Effects	4,607	156,297	207,035
4. Multipliers (3÷1)	2.849	2.424	2.707
III. COMPOSITION OF GROSS DOMESTIC PRODUCT			
1. Wages--Net of Taxes			141,417
2. Taxes			
a. Local			11,111
b. State			13,196
c. Federal			
General			23,809
Social Security			16,977
Federal Subtotal			40,786
d. Total taxes (2a+2b+2c)			65,093
3. Profits, dividends, rents, and other			526
4. Total Gross Domestic Product (1+2+3)			207,035
EFFECTS PER MILLION DOLLARS OF INITIAL EXPENDITURE			
Employment (Jobs)			37.6
Income			\$1,274,853
State Taxes			\$107,634
Local Taxes			\$90,630
Gross Domestic Product			\$1,688,706

Note: Detail may not sum to totals due to rounding.

*Terms:

Direct Effect (National)—the amount of goods and services purchased in the nation.

Indirect Effects—the value of goods and services needed to support the provision of those direct economic effects.

Induced Effects—the value of goods and services needed by households that provide the direct and indirect labor.

Source: Rutgers University Center for Urban Policy Research, 1997.

Exhibit 3.2
National Economic Impacts of Annual New Jersey
Historic Building Rehabilitation (\$123 Million)

INDUSTRY	Industry Component		
	Employment (jobs)	Income (\$000)	Gross Domestic Product (\$000)
Agriculture	8	981	1,608
Dairy Prod., Poultry, & Eggs	1	177	239
Meat Animals & Misc. Livestock	2	208	267
Cotton	0	31	41
Grains & Misc. Crops	3	382	681
Tobacco	0	56	92
Fruits, Nuts, & Vegetables	0	38	127
Forest Prod.	0	39	100
Greenhouse & Nursery Prod.	1	51	63
Agri. Serv., Forestry, & Fish	31	563	854
Agri. Services (07)	18	318	334
Forestry (08)	9	53	316
Fishing, Hunting, & Trapping (09)	4	193	204
Mining	24	1,266	3,965
Metal Mining (10)	3	213	256
Coal Mining (12)	0	0	0
Oil & Gas Extraction (13)	12	692	3,093
Nonmetal Min.-Ex. Fuels (14)	9	362	616
Construction	1,082	41,993	44,203
General Bldg. Contractors (15)	320	13,339	14,041
Heavy Const. Contractors 16)	103	4,239	4,462
Special Trade Contractors (17)	660	24,415	25,700
Manufacturing	850	33,691	46,196
Food & Kindred Prod. (20)	52	1,959	3,107
Tobacco Manufactures (21)	1	73	344
Textile Mill Prod. (22)	26	651	1,143
Apparel & Other Prod. (23)	33	611	666
Lumber & Wood Prod. (24)	92	3,021	4,241
Furniture & Fixtures (25)	19	522	607
Paper & Allied Prod. (26)	21	1,050	1,754
Printing & Publishing (27)	57	1,985	2,646
Chemicals & Allied Prod. (28)	30	1,833	2,869
Petroleum & Coal Prod. (29)	7	677	1,939
Rubber & Misc. Plastics (30)	42	1,539	1,751
Leather & Leather Prod. (31)	9	183	224
Stone, Clay, & Glass (32)	90	3,361	4,061
Primary Metal Prod. (33)	54	3,051	3,387
Fabricated Metal Prod. (34)	145	5,847	7,820
Machinery, Except Elec. (35)	60	2,588	3,226
Electric & Elec. Equip. (36)	52	2,000	3,032
Transportation Equipment (37)	27	1,612	2,072
Instruments & Rel. Prod. (38)	26	859	912
Misc. Manufacturing Ind's. (39)	8	271	395

Exhibit 3.2 (continued)
National Economic Impacts of Annual New Jersey
Historic Building Rehabilitation (\$123 Million)

INDUSTRY	Industry Component		
	Employment (jobs)	Income (\$000)	Gross Domestic Product (\$000)
Transport. & Public Utilities	265	12,681	22,263
Railroad Transportation (40)	26	1,357	2,177
Local Pass. Transit (41)	22	577	645
Trucking & Warehousing (42)	96	3,819	4,007
Water Transportation (44)	7	274	420
Transportation by Air (45)	14	838	1,110
Pipe Lines-Ex. Nat. Gas (46)	1	40	189
Transportation Services (47)	9	380	419
Communication (48)	50	3,006	6,146
Elec., Gas, & Sanitary Serv. (49)	40	2,391	7,150
Wholesale	102	4,486	12,670
Wholesale-Durable Goods (50)	54	2,488	8,148
Wholesale-Nondurable Goods (51)	49	1,998	4,522
Retail Trade	733	13,772	15,737
Bldg. Mat.-Garden Supply (52)	34	944	1,041
General Merch. Stores (53)	76	1,306	1,915
Food Stores (54)	67	1,336	1,493
Auto. Dealers-Serv. Stat. (55)	77	2,190	2,450
Apparel & Access. Stores (56)	32	545	851
Furniture & Home Furnish. (57)	11	332	406
Eating & Drinking Places (58)	294	4,126	4,827
Miscellaneous Retail (59)	143	2,994	2,752
Finance, Ins., & Real Estate	443	16,375	26,258
Banking (60)	56	2,030	3,667
Nondep. Credit Institut. (61)	50	1,801	1,622
Security, Comm. Brokers (62)	22	1,741	2,402
Insurance Carriers (63)	62	2,687	2,883
Ins. Agents, Brokers (64)	102	3,923	4,123
Real Estate (65)	46	358	8,107
Holding and Invest. Off. (67)	106	3,835	3,454
Services	927	28,257	31,223
Hotels & Other Lodging (70)	60	983	1,732
Personal Services (72)	97	1,781	1,899
Business Services (73)	212	6,096	6,933
Auto Repair, Serv., Garages (75)	52	1,834	2,166
Misc. Repair Services (76)	43	1,174	1,239
Motion Pictures (78)	35	756	699
Amusement & Recreation (79)	23	544	652
Health Services (80)	60	2,002	2,123
Legal Services (81)	23	1,463	1,618
Educational Services (82)	28	556	603
Social Services (83)	26	378	427
Museums, Botan.-Zoo. Gardens (84)	1	31	30
Membership Organizations (86)	68	1,339	1,309
Engineer. & Manage. Serv. (87)	196	9,171	9,637
Miscellaneous Services (89)	3	149	155
Government	141	2,236	2,067
Total	4,607	156,297	207,035

Note: Detail may not sum to totals due to rounding.

Exhibit 3.3
National Employment Impacts by Occupation of Annual New Jersey
Historic Building Rehabilitation (\$123 Million)

OCCUPATION TITLE	Employment (jobs)
Total, All Occupations	4,607
Exec., Admin., and Management Occupations	524
Managerial and Administrative Occupations	378
Management Support Occupations	146
Professional Specialty Occupations	239
Engineers	64
Architects and Surveyors	22
Life Scientists	2
Computer, Math, and Operations Res. Analysts	17
Physical Scientists	5
Social Scientists	1
Social, Recreational, and Relig. Workers	13
Lawyers and Judicial Workers	8
Teachers, Librarians, and Counselors	31
Health Diagnosing Occupations	3
Health Assessment & Treating Occupations	16
Writers, Artists, and Entertainers	43
All Other Professional Workers	13
Technicians and Related Support Occupations	125
Health Technicians and Technologists	37
Engineering & Science Technicians & Technologists	63
Technicians, Except Health and Engin. & Science	28
Marketing and Sales Occupations	421
Cashiers	78
Counter and Rental Clerks	16
Insurance Sales Workers	26
Real Estate Agents, Brokers, & Appraisers	7
Salespersons, Retail	129
Securities and Financial Service Sales Workers	8
Stock Clerks, Sales Floor	34
Travel Agents	2
All Other Sales and Related Workers	125
Administrative Support Occupations, incl. Clerical	842
Adjusters, Investigators, & Collectors	50
Communications Equipment Operators	11
Computer & Peripheral Equipment Operators	10
Financial Records Processing Occupations	130
Information Clerks	47
Mail Clerks and Messengers	9
Postal Clerks and Mail Carriers	49
Mat'l Record., Sched., Dispatch, & Distrib. Occs.	80
Records Processing Occupations, except Financial	30
Secretaries, Stenographers, and Typists	164
Other Clerical and Administrative Support Workers	264

Exhibit 3.3 (continued)
National Employment Impacts by Occupation of Annual New Jersey
Historic Building Rehabilitation (\$123 Million)

OCCUPATION TITLE	Employment (jobs)
Service Occupations	520
Cleaning & Building Service Occs., except Private	101
Food Preparation and Service Occupations	287
Health Service Occupations	26
Personal Service Occupations	47
Protective Service Occupations	37
All Other Service Workers	24
Agric., Forestry, Fishing, & Related Occupations	50
Animal Caretakers, except Farm	2
Farm Occupations	21
Farm Operators and Managers	3
Fishers, Hunters, and Trappers	0
Forestry and Logging Occupations	7
Gardeners & Groundskeepers, except farm	12
Supervisors, Farming, Forestry, & Agricul. Occs.	2
All Other Agric., Forestry, Fishing, & Rel. Workers	2
Precision Production, Craft, & Repair Occupations	959
Blue-collar Worker Supervisors	110
Construction Trades	476
Extractive and Related Workers, Incl. Blasters	7
Mechanics, Installers, and Repairers	228
Production Occupations, Precision	130
Plant and System Occupations	7
Operators, Fabricators, and Laborers	925
Mach. Setters, Set-up Ops, Operators, & Tenders	223
Hand Workers, incl. Assemblers & Fabricators	113
Transp. & Material Moving Machine & Vehicle Ops.	261
Helpers, Laborers, & Material Movers, Hand	329

Note: Detail may not sum to totals due to rounding.

Exhibit 3.4
In-State Economic and Tax Impacts of Annual New Jersey
Historic Building Rehabilitation (\$123 Million)

	Economic Component		
	Employment	Income	Gross State
	(jobs)	(000\$)	Product
			(000\$)
I. TOTAL EFFECTS (Direct and Indirect/Induced)*			
Private			
1. Agriculture	1	5	23
2. Agri. Serv., Forestry, & Fish	8	142	225
3. Mining	10	258	419
4. Construction	932	37,726	42,836
5. Manufacturing	445	14,642	24,356
6. Transport. & Public Utilities	132	3,898	8,996
7. Wholesale	56	3,773	8,961
8. Retail Trade	234	4,849	7,397
9. Finance, Ins., & Real Estate	72	3,350	7,671
10. Services	375	11,752	14,856
Private Subtotal	2,265	80,395	115,734
Public			
11. Government	<u>51</u>	<u>689</u>	<u>670</u>
Total Effects (Private and Public)	2,316	81,085	116,404
II. DISTRIBUTION OF EFFECTS/MULTIPLIER			
1. Direct Effects	1,501	58,443	76,479
2. Indirect and Induced Effects	<u>815</u>	<u>22,642</u>	<u>39,925</u>
3. Total Effects	2,316	81,085	116,404
4. Multipliers (3÷1)	1.543	1.387	1.522
III. COMPOSITION OF GROSS STATE PRODUCT			
1. Wages--Net of Taxes			71,057
2. Taxes			
a. Local			6,980
b. State			8,322
c. Federal			
General			13,370
Social Security			9,545
Federal Subtotal			22,915
d. Total taxes (2a+2b+2c)			38,217
3. Profits, dividends, rents, and other			7,131
4. Total Gross State Product (1+2+3)			116,404
EFFECTS PER MILLION DOLLARS OF INITIAL EXPENDITURE			
Employment (Jobs)			18.9
Income			\$661,376
State Taxes			\$67,876
Local Taxes			\$56,935
Gross State Product			\$949,464

Note: Detail may not sum to totals due to rounding.

*Terms:

Direct Effect (State)—the amount of goods and services purchased in New Jersey.

Indirect Effects—the value of goods and services needed to support the provision of those direct economic effects.

Induced Effects—the value of goods and services needed by households that provide the direct and indirect labor.

Source: Rutgers University Center for Urban Policy Research, 1997.

Exhibit 3.5
In-State Economic Impacts of Annual New Jersey
Historic Building Rehabilitation (\$123 Million)

INDUSTRY	Industry Component		
	Employment (jobs)	Income (\$000)	Gross State Product (\$000)
Agriculture	1	5	23
Dairy Prod., Poultry, & Eggs	0	0	0
Meat Animals & Misc. Livestock	0	0	0
Cotton	0	0	0
Grains & Misc. Crops	0	0	2
Tobacco	0	0	2
Fruits, Nuts, & Vegetables	0	0	0
Forest Prod.	0	0	5
Greenhouse & Nursery Prod.	1	5	14
Agri. Serv., Forestry, & Fish	8	142	225
Agri. Services (07)	8	132	177
Forestry (08)	0	1	7
Fishing, Hunting, & Trapping (09)	0	9	41
Mining	10	258	419
Metal Mining (10)	0	0	0
Coal Mining (12)	0	0	0
Oil & Gas Extraction (13)	2	6	7
Nonmetal Min.-Ex. Fuels (14)	8	252	412
Construction	932	37,726	42,836
General Bldg. Contractors (15)	270	11,124	13,796
Heavy Const. Contractors (16)	77	4,014	4,273
Special Trade Contractors (17)	585	22,588	24,766
Manufacturing	445	14,642	24,356
Food & Kindred Prod. (20)	10	327	871
Tobacco Manufactures (21)	0	1	3
Textile Mill Prod. (22)	8	183	462
Apparel & Other Prod. (23)	5	93	155
Lumber & Wood Prod. (24)	72	1,790	2,732
Furniture & Fixtures (25)	6	210	267
Paper & Allied Prod. (26)	8	222	400
Printing & Publishing (27)	9	269	437
Chemicals & Allied Prod. (28)	15	590	1,173
Petroleum & Coal Prod. (29)	10	483	1,293
Rubber & Misc. Plastics (30)	14	382	644
Leather & Leather Prod. (31)	0	8	12
Stone, Clay, & Glass (32)	72	2,096	3,388
Primary Metal Prod. (33)	19	899	1,437
Fabricated Metal Prod. (34)	102	4,018	6,303
Machinery, Except Elec. (35)	39	1,272	1,984
Electric & Elec. Equip. (36)	43	1,327	2,002
Transportation Equipment (37)	3	134	266
Instruments & Rel. Prod. (38)	9	266	403
Misc. Manufacturing Ind's. (39)	2	74	124

Exhibit 3.5 (continued)
In-State Economic Impacts of Annual New Jersey
Historic Building Rehabilitation (\$123 Million)

INDUSTRY	Industry Component		
	Employment (jobs)	Income (\$000)	Gross State Product (\$000)
Transport. & Public Utilities	132	3,898	8,996
Railroad Transportation (40)	20	682	1,341
Local Pass. Transit (41)	12	241	326
Trucking & Warehousing (42)	59	1,470	2,687
Water Transportation (44)	2	138	207
Transportation by Air (45)	4	142	293
Pipe Lines-Ex. Nat. Gas (46)	0	3	21
Transportation Services (47)	3	109	171
Communication (48)	16	803	2,785
Elec., Gas, & Sanitary Serv. (49)	17	311	1,165
Wholesale	56	3,773	8,961
Whlsale-Durable Goods (50)	41	2,211	6,021
Whlsale-Nondurable Goods (51)	15	1,562	2,940
Retail Trade	234	4,849	7,397
Bldg. Mat.-Garden Supply (52)	12	327	513
General Merch. Stores (53)	33	584	1,092
Food Stores (54)	25	533	818
Auto. Dealers-Serv. Stat. (55)	21	696	1,024
Apparel & Access. Stores (56)	13	247	518
Furniture & Home Furnish. (57)	5	127	234
Eating & Drinking Places (58)	74	1,299	1,711
Miscellaneous Retail (59)	51	1,037	1,488
Finance, Ins., & Real Estate	72	3,350	7,671
Banking (60)	13	648	1,313
Nondep. Credit Institut. (61)	11	490	536
Security, Comm. Brokers (62)	4	293	319
Insurance Carriers (63)	16	970	1,036
Ins. Agents, Brokers (64)	5	138	241
Real Estate (65)	15	415	3,795
Holding and Invest. Off. (67)	9	396	432
Services	375	11,752	14,856
Hotels & Other Lodging (70)	48	899	1,254
Personal Services (72)	38	677	967
Business Services (73)	56	554	789
Auto Repair, Serv., Garages (75)	14	410	1,041
Misc. Repair Services (76)	8	166	344
Motion Pictures (78)	4	98	159
Amusement & Recreation (79)	6	175	210
Health Services (80)	19	723	861
Legal Services (81)	9	516	686
Educational Services (82)	13	283	319
Social Services (83)	3	79	128
Museums, Botan.-Zoo. Gardens (84)	0	4	5
Membership Organizations (86)	19	475	551
Engineer. & Manage. Serv. (87)	138	6,642	7,465
Miscellaneous Services (89)	1	49	77
Government	51	689	670
Total	2,316	81,085	116,404

Note: Detail may not sum to totals due to rounding.

Exhibit 3.6
In-state Employment Impacts by Occupation of Annual New Jersey
Historic Building Rehabilitation (\$123 Million)

OCCUPATION TITLE	<u>Employment</u> (jobs)
Total, All Occupations	2,316
Exec., Admin., and Management Occupations	250
Managerial and Administrative Occupations	191
Management Support Occupations	59
Professional Specialty Occupations	115
Engineers	44
Architects and Surveyors	19
Life Scientists	0
Computer, Math, and Operations Res. Analysts	7
Physical Scientists	3
Social Scientists	0
Social, Recreational, and Relig. Workers	3
Lawyers and Judicial Workers	3
Teachers, Librarians, and Counselors	10
Health Diagnosing Occupations	1
Health Assessment & Treating Occupations	5
Writers, Artists, and Entertainers	12
All Other Professional Workers	5
Technicians and Related Support Occupations	72
Health Technicians and Technologists	16
Engineering & Science Technicians & Technologists	46
Technicians, Except Health and Engin. & Science	10
Marketing and Sales Occupations	157
Cashiers	27
Counter and Rental Clerks	5
Insurance Sales Workers	3
Real Estate Agents, Brokers, & Appraisers	3
Salespersons, Retail	49
Securities and Financial Service Sales Workers	1
Stock Clerks, Sales Floor	13
Travel Agents	0
All Other Sales and Related Workers	55
Administrative Support Occupations, incl. Clerical	325
Adjusters, Investigators, & Collectors	9
Communications Equipment Operators	3
Computer & Peripheral Equipment Operators	3
Financial Records Processing Occupations	65
Information Clerks	17
Mail Clerks and Messengers	3
Postal Clerks and Mail Carriers	7
Mat'l Record., Sched., Dispatch, & Distrib. Occs.	38
Records Processing Occupations, except Financial	10
Secretaries, Stenographers, and Typists	80
Other Clerical and Administrative Support Workers	90

Exhibit 3.6 (continued)
In-state Employment Impacts by Occupation of Annual New Jersey
Historic Building Rehabilitation (\$123 Million)

OCCUPATION TITLE	Employment (jobs)
Service Occupations	168
Cleaning & Building Service Occs., except Private	37
Food Preparation and Service Occupations	84
Health Service Occupations	8
Personal Service Occupations	19
Protective Service Occupations	12
All Other Service Workers	8
Agric., Forestry, Fishing, & Related Occupations	13
Animal Caretakers, except Farm	0
Farm Occupations	5
Farm Operators and Managers	0
Fishers, Hunters, and Trappers	0
Forestry and Logging Occupations	1
Gardeners & Groundskeepers, except farm	5
Supervisors, Farming, Forestry, & Agricul. Occs.	0
All Other Agric., Forestry, Fishing, & Rel. Workers	0
Precision Production, Craft, & Repair Occupations	678
Blue-collar Worker Supervisors	71
Construction Trades	407
Extractive and Related Workers, Incl. Blasters	5
Mechanics, Installers, and Repairers	119
Production Occupations, Precision	73
Plant and System Occupations	3
Operators, Fabricators, and Laborers	540
Mach. Setters, Set-up Ops, Operators, & Tenders	101
Hand Workers, incl. Assemblers & Fabricators	67
Transp. & Material Moving Machine & Vehicle Ops.	153
Helpers, Laborers, & Material Movers, Hand	219

Note: Detail may not sum to totals due to rounding.