

NEW YORK METROPOLITAN TRANSPORTATION COUNCIL

**DEMOGRAPHIC AND SOCIOECONOMIC
FORECASTING
POST SEPTEMBER 11TH IMPACTS**

**TECHNICAL MEMORANDUM 3.3
REPORT OF FINDINGS AND REBENCHMARKED FORECASTS**

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1.1 INTRODUCTION

The terrorist attack on the World Trade Center (WTC) on September 11, 2001 had a profound impact on New York City. The economic repercussions of this event and of the recession, which began in early 2001 and is likely to continue into 2003, have formed the subject of several reports. Many government agencies and non-profits have estimated the extent of this damage, pricing the real estate, infrastructure, employment, and revenue losses to New York City and State through 2004.

This Technical Memorandum (TM) will begin with a synopsis of the key points expressed in the text, tables, charts and maps (Section 1.2). An overview of the economic situation in New York City prior to 9/11 will follow (Section 1.3), together with a summary and analysis of the aforementioned reports (Sections 2.1-2.4). Sections 3.1-3.3 will discuss the tenant relocation data included in TM 3.1-2, while Section 4 will comprise a breakdown of losses related to the attacks and the recession (Section 4.1) and a post-9/11 adjustment of prior employment forecasts for New York City through 2025 (Section 4.2). The principle conclusions drawn from both the TMs and the reports discussed in Sections 2.1-2.4 will appear in Section 5.1. Section 5.2, an overview of the work products provided with TM 3.3, and Section 6.1, the bibliography, will complete this TM.

1.2 KEY POINTS

The following points address the major themes of this TM, in the order in which they appear:

- Despite significant growth in the late 1990s, Lower Manhattan was not yet apace with Midtown on September 11, 2001. Thus, even absent the attacks, Downtown was likely to experience greater recession-related losses.
- The costs of rebuilding the WTC site, adjacent buildings, and the infrastructure destroyed or damaged by the attacks, together with emergency response measures, are estimated at between \$32 and \$34 billion.
- These represent a portion of the costs to be met by Federal government assistance (of about \$27 billion) and insurance proceeds (of up to \$54 billion).
- Whereas the reports analyzed in Chapter 2 correspond closely in assessing the physical costs and revenue streams associated with the attacks, their estimates of the extent of New York City revenues lost from taxes and other sources vary considerably. The broadest consensus is reached in appraising the total fiscal impact to 2004 at about \$83 billion.
- These reports project citywide job losses to total between 71,000 and 125,000 in Q4 2001, with the greatest impact felt by the Finance, Insurance and Real Estate or FIRE industries. These losses are expected despite the estimated 80 percent

- of workers employed by companies in the destroyed and damaged buildings, thought to remain in New York City.
- While the reports provide useful parameters for assessing the fiscal damage to New York City and State, they are flawed by inaccurate assumptions ranging from high estimates of the death toll to excessive layoffs and relocations.
 - TM 3.1-2 has shown that the seven buildings of the WTC contained 48,100 workers, while 66,000 people were employed in the 23 office buildings and one hotel, located in the area of collateral damage known as the “frozen zone.”
 - This total of 114,100 jobs accounted for 26 percent of employment in Lower Manhattan. The 112,000 office workers, employed by over 1,100 firms, were drawn primarily from FIRE, business and computer services, and law.
 - The majority of firms located in the destroyed and damaged buildings occupied less than 5,000 square feet, while of the tenants of the WTC complex, only 9 percent leased more than 40,000 square feet, equivalent to a single floor in the twin towers.
 - This relationship holds true for the industries represented in the WTC and the frozen zone and reflects general trends in Manhattan office use.
 - Between September 11th, 2001 and July 2002, tenants of the destroyed and damaged buildings relocated to 1,203 premises. Of these, the firms that returned to Lower Manhattan accounted for 50 percent of the initial displacement, but restored 47 percent of the employment. Additionally, Midtown and the Valley received 29 percent of the post-9/11 employment.
 - By July 2002, Lower Manhattan’s pre-9/11 employment dropped by 14 percent, while New York City’s declined by 3 percent and the 31-county Region experienced 6,500 direct job losses and 209,700 indirect and recession-related layoffs.
 - Employment losses associated with the destruction of the WTC and the damage to surrounding structures may not represent permanent job losses, as companies are slowly returning to Lower Manhattan, have relocated elsewhere in New York City, or have taken only temporary leases outside New York
 - Full recovery of the pre-9/11 high water mark in New York City employment is most likely by 2005, followed by continued expansion in economic activity through 2025.

1.3 THE NEW YORK CITY ECONOMY PRIOR TO SEPTEMBER 11TH, 2001

Manhattan reached a historic peak in employment levels in the year 2000 with almost 2.8 million jobs, consisting of 2.6 million payroll jobs and 247,000 self-employed jobs (Table 16). Relative to the City’s economic trough in 1992, which represented the aftermath of corporate downsizing and a national recession, Manhattan recorded a 275,000 gain in employment over an 8-year period. Most of this increase, 210,000 jobs, occurred during the dramatic upswing from 1996 to 2000. The bulk of this growth, nearly 125,000 jobs, was driven by expansion in the services industries, including some 20,000 jobs added to financial services in the 1996 to 2000 period.

Lower Manhattan, defined as Canal Street South to the Battery, accounted for 22 percent of Manhattan’s employment in 1990. However, the area suffered a disproportionate share of its economic downturn to 1992. Lower Manhattan continued

to lose employment through 1995, while Midtown gradually recovered, and was much slower than the rest of Manhattan to participate in the 1996-2000 upsurge. Only by 1999-2000 was Lower Manhattan fully apace. From roughly 400,000 jobs in 1996, Lower Manhattan grew to 444,000 jobs by 2000, capturing 21 percent of the late 1990s growth, while declining to 17 percent of total jobs in Manhattan.

At its peak in 2000, Lower Manhattan generated nearly \$125 billion in Gross City Product (GCP), or roughly 25 percent. Moreover, it accounted for 36 percent of all financial service jobs and worker earnings (\$87,700, all industries). These earnings were half again higher than average labor payments in New York as a whole. Including bonuses, a Lower Manhattan worker in the financial services industry earned an average yearly wage of almost \$200,000 in 2000.

However, even if the final years of the 20th century showed signs of recovery in Lower Manhattan, the area nonetheless had been losing market share to Midtown from mid-Century. Indications are that, as recently as 1980, Lower Manhattan had 550,000 jobs or comprised 25 percent of Manhattan's total employment.¹ Consequently, the area could have anticipated more significant recession-related losses than Midtown, absent the events of 9/11. Even had the attacks not occurred, the State Comptroller's office estimates that New York City's FY 2001-2002 budget deficit would have run \$625 million.² The recession therefore, exacerbated by the attacks on 9/11, should not be underestimated as a factor in Lower Manhattan's economic decline.

2.1 ANALYSIS OF THE REPORTS

A total of 17 reports generated by governmental, public and private agencies will be summarized in so far as they shed light on the economic consequences of the events of September 11, 2001 and the recession. As these reports provide fairly consistent estimates of the physical costs, in terms of property and infrastructure damage, associated with the attack, these figures will be collated in Section 2.2, together with widely accepted estimates of revenue streams from insurance and federal government payouts. Section 2.3 breaks down the reports by author and date to outline more varied estimates of employment and tax losses to New York City and State. The final section, 2.4, analyzes the methodologies used to derive the results outlined in Section 2.3, to explain discrepancies and reveal how the data embodied in TM 3.1-2 exceeds previous reports in terms of accuracy and completeness.

¹ "Employment in Downtown Manhattan by Major Industry," an unpublished estimate prepared by The Port Authority of New York and New Jersey from data provided by the New York State Department of Labor, 1991.

² The State of New York Office of the State Comptroller, Office of Fiscal Research & Policy Analysis, Office of the State Deputy Comptroller of New York City, and Office of Municipal Affairs, October 2001, p. 13 (Report 3).

2.2 COSTS AND REVENUE STREAMS ASSOCIATED WITH THE SEPTEMBER 11TH ATTACK

Most reports agree on a range for physical costs associated with the September 11th attack, as well as likely revenue streams from insurance and government sources. The first measurable physical cost, the clean-up of the WTC site, was achieved for \$750 million, substantially below the City's \$1.6 billion estimate. The costs likely to be incurred by the Metropolitan Transportation Authority (MTA) in restoring the 1/9 Subway lines and by the Port Authority of New York and New Jersey (PANYNJ) in rebuilding the PATH terminal to their pre-9/11 standards will run between \$1.5 and \$4.1 billion and between \$1.0 and \$2.5 billion, respectively (Table 2). Con Edison, AT&T and Verizon will spend about \$2 billion repairing or replacing substations, utility lines and other energy and communications infrastructure.

Depending on the outcome of ongoing legal battles, Silverstein Properties, which leased WTC #1, 2 and 7 from PANYNJ,³ will receive between \$3.6 and \$7.2 billion in insurance proceeds from Towers 1 and 2. Based on current market conditions, the 14 million square feet of office, retail and hotel space destroyed at the WTC site should cost between \$6.4 and \$8.3 billion to rebuild, while the entire 35.4 million square feet inventory of destroyed and damaged buildings could be repaired or replaced for between \$11.8 and \$31.2 billion, with low-to-mid range estimates of \$11.8 to \$15.2 billion as the most likely.⁴

In addition to insurance companies, which are expected to pay out between \$36 and \$54 billion to Lower Manhattan's businesses and property owners,⁵ the federal aid package will fund rebuilding and renewal efforts in Lower Manhattan. President Bush promised \$21.7 billion in disaster assistance, including \$11.235 billion in the immediate aftermath of September 11th. This sum was divided among the Federal Emergency Management Agency (FEMA), which was allocated \$6.35 billion, the Community Development Block Grant program, budgeted \$2.7 billion to provide loans and grants to area businesses and residents, the Lower Manhattan Development Corporation (\$2.7 billion), and a variety of other agencies (\$2.15 billion). A \$5 billion economic stimulus package was proposed on March 9, 2002, and \$5.467 billion were earmarked for FEMA in a March 21, 2002 plan for the construction of an intermodal transit station, highways, and utility infrastructure.⁶ Victims' families should receive financial support from the federal government, insurance companies, and up to \$1 billion from charities.⁷

³ Silverstein Properties signed a 99-year lease for the buildings in the summer of 2001.

⁴ Some \$3.2 billion represent equipment losses incurred by the technology-dependent financial services sector. The City of New York, Office of the Comptroller, October 4, 2001, p. 7 (Report 12).

⁵ The New York State Senate Finance Committee, prepared by DRI-WEFA, January 2002 (Report 4). The New York City Comptroller's Office estimates that \$37 to 39 billion in damages were insured. The City of New York, Office of the Comptroller, October 4, 2001, 16 (Report 12).

⁶ The City of New York, Independent Budget Office, letter to G. Oliver Koppell, Council of the City of New York, April 24, 2002.

⁷ General Accounting Office (GAO), "Congressional Requesters," May 29, 2002, 21-2.

2.3 EMPLOYMENT, WAGE AND TAX IMPLICATIONS OF THE SEPTEMBER 11TH ATTACK

In addition to fixed costs, New York City and State will lose revenues from reduced real estate taxes on the WTC site, sales taxes generated by tourist and resident spending, and personal income taxes from the approximately 3,000 people killed in the WTC attack⁸ and the many more laid off as a result of 9/11 and the recession. A series of reports issued from October 2001 to September 2002 have estimated the ongoing impact of these and other factors on New York City's economy. However, although their estimates establish useful parameters for assessing the fiscal damage to New York City and State, some of their assumptions are flawed. Foremost among them are overly high estimates of the death toll from the disaster, of layoffs, and of relocations to New Jersey or elsewhere. These and other assumptions will be addressed more fully in Section 2.4.

Report 1. New York State, Division of the Budget, "Analysis of Revenue Loss Resulting from the World Trade Center Attack," October 9, 2001.

The New York State Budget Division's report, aimed at determining the extent of tax losses to New York City and State through 2003, estimates considerable job losses, coupled with reductions in wages and personal income and sales tax receipts, both directly and indirectly related to the events of 9/11. The Budget Division suggests that 87,000 workers were lost or displaced from New York State, including 5,000 killed in the WTC attacks, 30,000 from the finance and insurance industries who were relocated to New Jersey or elsewhere, 22,000 lost from business services, 20,000 from retail trade, and 10,000 from transportation (Table 4). While the construction industry is expected to grow by 10,000 jobs, the Budget Division estimates that total job losses will reach 133,000 in FY 2002-2003.

These job losses would reduce State wages by 5.4% in FY 2001-2002, resulting in a \$2.2 billion deficit in personal income tax, of which \$1.4 billion may be attributed to the financial services sector (Table 3). In FY 2002-2003, financial services are anticipated to contribute \$4.6 billion to a total loss of \$5.6 billion in personal income tax receipts, while job losses across all industries may have a \$8 billion impact on wages and a \$450 million impact on withholdings. The Budget Division estimates total direct losses at \$1.6 billion in FY 2001-2002 and \$3.0 billion in FY 2002-2003, and total indirect losses, consisting of capital gains and non-wage losses, to reach \$21 billion in 2001 and \$42 billion in 2002. These indirect costs would be reflected in personal income tax deficits of \$285 million in FY 2001-2002 and \$2.6 billion in FY 2002-2003.

Report 2. New York State, Governor's Office, "Rebuild New York – Renew America," October 9, 2001.

In the aftermath of 9/11, Governor Pataki's office issued a proposal for \$54 billion in federal aid to "help New York recover, rebuild and revitalize." This aid package was intended to cover \$33.8 billion in basic rescue, recovery and rebuilding costs, \$20 billion in economic revitalization assistance, and \$100 million for the City's security efforts.

⁸ While most of the victims were drawn from high-wage occupations, some held service or other low-wage jobs.

More generally, \$46 billion of this aid represents the Governor's estimate of the direct and tax losses associated with 9/11,⁹ while \$8 billion would fund an aid package for New York City's unemployed.

These costs reflect Governor's Office's estimates of 377,000 workers and 1,300 businesses impacted by the disaster and consequent New York City and State revenue losses of \$12 billion to early 2003 (Table 3). While these figures contribute to the \$20 billion economic recovery assessment, the \$33.8 billion component of this proposal reflects \$14.1 billion required for basic rescue and response efforts and \$19.7 billion for replacing and repairing the affected buildings and infrastructure (Table 2).

Report 3. The State of New York Office of the State Comptroller, Office of Fiscal Research & Policy Analysis, Office of the State Deputy Comptroller of New York City, and Office of Municipal Affairs, "After the World Trade Center Attack: Fiscal Uncertainties Facing the State and Local Governments," October 2001.

Adopting the estimates of the Governor's Office (Report 2) and the October 4, 2001 report of the New York City Comptroller's Office (Report 12), this consortium of government agencies approximates additional New York State and local government costs incurred as a result of the events of 9/11, the recession and the current budget crisis. They identify \$940 million in expenses through 2003 from an extra \$300 million in tax revenues lost to local governments, and increases in pension and school district funding requirements.

Report 4. The New York State Senate Finance Committee, prepared by DRI-WEFA, "Financial Impact of the World Trade Center Attack," January 2002.

According to the State Senate Finance Committee, New York State lost 99,830 jobs, of which the City accounted for 70,950, in the fourth quarter of 2001 (Table 4). New York City's share reflects 31,849 former workers in the WTC complex who have relocated out-of-state, 27,500 layoffs in the hospitality and travel industries in response to reduced personal and business tourism, and flagging demand for retail and service-based businesses in the WTC area. In addition to these industries, financial services and insurance were hard hit by 9/11, accounting for 95 percent of the jobs moved out of New York State.¹⁰ The majority of job losses (19,400) felt elsewhere in the State can be attributed to the decline in tourism, while it is estimated that New York State, led by the City (with 71,200 projected layoffs in 2002), will continue to lose employment through 2003.¹¹

The Finance Committee expects that these losses will translate to a \$1.112 billion decline in State personal income tax collections in FY 2001-2002, followed by a \$2.421

⁹ The General Accounting Office points out that only \$3 billion of the total \$54 billion does not reflect direct and tax losses. GAO, "Congressional Requesters," May 29, 2002, 4 and 29-30.

¹⁰ The Finance Committee estimates that 92,997 financial service jobs moved out of Lower Manhattan, including 28,772 out-of-state, while 14,219 insurance jobs left Downtown of which 1,558 left New York State. The New York State Senate Finance Committee, prepared by DRI-WEFA, January 2002, 16 (Report 4).

¹¹ Losses may total 78,200 in 2002 and 77,500 in 2003, while manufacturing is projected to decline by an annual average of 1-2% to 2012. The New York State Senate Finance Committee, prepared by DRI-WEFA, January 2002, 9 (Report 4).

billion fall in FY 2002-2003, to contribute to the \$6.0 billion overall budget gap (Table 3). As corporate profits plunge by 16.7 percent in 2001 and 2.6 percent in 2002, personal income should fall by 1.4 percent statewide and by \$8.7 billion in New York City, where bonus payments may slip by as much as 42 percent in 2001 and rebound by 3 percent in 2002. In addition to tax losses, the State should anticipate a drop of \$341 million in rental income from relocated firms, of which \$3.1 million represent closures, \$140.5 million relocations, and \$198 million backfills or leases at lower rental rates. The Finance Committee predicts that New York will have lost at least \$1 billion in taxable lease income by 2004.

Coincident with job cuts, the decline in tourism should result in a \$1 billion deficit in City visitor spending in 2001, followed by \$1.9 billion in 2002 and \$1.7 billion in 2003. These losses will contribute to a total impact on State revenues of \$1.971 billion in 2001, \$9.101 billion in 2002, and \$10.885 billion in 2003, of which the City will account for \$1.396 billion in 2001, \$8.710 billion in 2002, and \$5.039 billion in 2003.

Reports 5-7. The New York Central Labor Council and the Consortium for Worker Education, prepared by the Fiscal Policy Institute: Reports dated September 28, 2001, November 5, 2001, and March 8, 2002.¹²

On behalf of the New York Central Labor Council and the Consortium for Worker Education, the Fiscal Policy Institute has undertaken and twice revised an estimate of the impacts of 9/11 on New York City employment. In its September 28th analysis, the Institute anticipated the loss of 108,500 jobs in Q4 2001 (Table 4). By November 5th, this estimate was lowered to 105,200, while in its March 8th report, the Institute attributed 86,900 of a total 131,300 jobs lost in 2001 to the fourth quarter. While job losses prior to 9/11 were concentrated in business services and manufacturing, with 27,400 and 13,900 layoffs in 2001, respectively, after 9/11, finance, insurance and real estate lost 26,600 jobs collectively, air transport employment declined by 9,900, restaurants by 7,700, retail by 5,600, and hotels by 3,100.

About 13,000 of the 86,900 lost jobs represent relocations outside of New York State, marking a sharp decline from November 5th's 25,500 estimate. The securities industry may account for as many as 9,700, down from 22,000, while computer services and insurance may have been responsible for 800 each (reduced from previous estimates of 1,500 and 2,000). Overall, the Fiscal Policy Institute's November 5th report anticipated that lost output to New York City would total \$21.2 billion in 2001, a dramatic increase from the \$16.9 billion projected on September 28th.

Report 8. New York State Assembly, Ways and Means Committee, "New York State Revenue Report," March 2002.

The Ways and Means Committee takes a broader look at the impact of 9/11 on New York State's revenue streams. Personal income tax losses, based on an estimated

¹² Fiscal Policy Institute for the New York Central Labor Council and the Consortium for Worker Education, "Economic Impact of the September 11 World Trade Center Attack," September 28, 2001; "World Trade Center Job Impacts Take a Heavy Toll on Low-Wage Workers. Occupational and Wage Implications of Job Losses Related to the September 11 World Trade Center Attack," November 5, 2001; "The Employment Impact of the September 11 World Trade Center Attacks: Updated Estimates Based on the Benchmarked Employment Data," March 8, 2002.

125,300 decline in employment (including job cuts and 18,500 to 31,800 jobs moved out of state), are expected to reach \$945 million (a 3.6 percent decline) in FY 2001-2002, while collections may rebound by \$919 million (a corresponding increase) in FY 2002-2003 (Table 3). Similarly, user taxes and fees, principally sales tax, may show a decline of \$281 million or 3.8 percent in FY 2001-2002 and an increase of \$38 million or 0.5 percent in FY 2002-2003, and business taxes may drop by \$670 million or 15.5 percent to surge by \$294 million or 8 percent in FY 2002-2003.

Based on reduced real estate tax assessments on property both at the WTC site and throughout New York City, the City is expected to lose \$230 million in property tax revenues. Likewise, estimated payments may fall by \$514 million or 7.5 percent in FY 2001-2002 to rebound by \$221 million or 3.5 percent in the following year. Overall, the Ways and Means Committee suggests that All Funds receipts will grow by \$1.078 billion or 2.3 percent in FY 2001-2002 and drop by \$1.044 billion (2.1 percent) to \$47.588 billion in FY 2002-2003.

Reports 9-10. Newmark & Company Real Estate, Inc.: Reports dated Fall/Winter 2001 and April 18, 2002 (with the New York City Partnership).¹³

Newmark estimates that total job losses resulting from the September 11th attack will reach 114,000 in 2002 (Table 4). The greatest concentrations, due to layoffs and out-of-state relocations, will be felt by the services sector (36,000), retail and wholesale trade (31,000), finance, insurance and real estate or FIRE (29,000), manufacturing (15,000), and transportation, communication and public utilities or TCPU (9,000). The construction industry should gain 5,000 jobs, while other sectors may see an increase of 1,000 jobs.

Additionally, the events of September 11th displaced some 100,000 workers from Lower Manhattan. Of these, 53 percent were employed by the financial services industry, including 32,400 who relocated within New York City and 18,600 who moved out-of-state, but are likely to return. Newmark proposes that 46 percent of the impacted workers across all industries remained Downtown, 33 percent moved to Midtown or the Valley, 10 percent relocated to New Jersey, 7 percent to Westchester, 3 percent to Brooklyn, and 1 percent to Connecticut (Table 5).

This employment shift, and the resulting decrease in tax collections, will have a \$792 million impact on New York City's revenues in 2002 and a \$1.3 billion impact in 2003 (Table 3). Tourism and transportation revenues may drop by as much as \$5 billion in 2002, while retail earnings may fall by a corresponding \$4 to \$5 billion. Through 2004, Newmark estimates that the gross loss to New York City's economy will reach \$83 billion, of which \$16 billion will represent the City's budget deficit after receipt of insurance payments and federal aid.

Report 11. TenantWise.com, "WTC Tenants stabilize with 53% returning Downtown; however Downtown continues to weaken with a 20% availability rate," July 2002.¹⁴

¹³ Newmark & Company Real Estate, Inc., "A City Challenged," Fall/Winter 2001; with the New York City Partnership, "Economic Impact Analysis Post 9/11," April 18, 2002.

¹⁴ Between October 1, 2001 and July 2002, TenantWise.com released six reports on the relocation patterns of the WTC's largest former tenants. As each represents a revision of the previous report, only the most recent (July 2002) will be examined here.

Since October 2001, TenantWise.com has provided data on the relocation choices of the larger firms in the buildings destroyed or damaged on September 11th. In its July 2002 report, TenantWise estimated that, of the 75 firms occupying more than 10,000 square feet in the destroyed buildings, 11 percent remained in Lower Manhattan, while 54 percent moved to Midtown, 12 percent relocated to New Jersey or elsewhere, and 3 percent were undecided (Table 5). Of the 111 comparable tenants in the damaged buildings, 66 percent reoccupied their pre-9/11 space, 15 percent moved to Midtown, 12 percent to New Jersey or elsewhere, 5 percent to other facilities in Lower Manhattan, and 2 percent had not acquired permanent space.

The greatest majority of firms, representing 81 percent of the affected square footage, were drawn from the finance, insurance and real estate industries or FIRE. Of these, 50 percent left Lower Manhattan with 53,619 employees, 48 percent remained Downtown with 50,436 employees, and 2 percent, employing 2,030 people, had not made permanent plans. The firms that moved out of Lower Manhattan relocated a total of 31,043 employees to Midtown, 15,898 to New Jersey, and 6,678 to the Valley, the boroughs or other states (Table 5). Regarding affected firms from other industries, TenantWise suggests that, while several larger companies remained in Lower Manhattan, smaller firms were more likely to move out than comparably-sized FIRE tenants. Over the next ten years, as many as 163,000 workers currently employed in Lower Manhattan could be at risk of relocation as leases expire.

Reports 12-13. The City of New York, Office of the Comptroller: Reports dated October 4, 2001 and September 4, 2002.¹⁵

The New York City Comptroller's Office has calculated the overall economic impact on the City as a result of 9/11 at \$82.8 to \$94.8 billion through 2004 (Table 3). This range, expressed in the Office's September 4th, 2002 report, corresponds to the low end of its October 4th, 2001 estimate of \$90 to \$105 billion and the New York City Partnership's projected \$83 billion (Report 15). The Comptroller's Office's current estimate reflects losses to the Gross City Product (GCP) of \$27.3 billion accrued between September 2001 and late 2002 and \$25 to \$37 billion in FY 2003-2004, coupled with \$21.8 billion in physical costs and \$8.7 billion in human capital.

The Comptroller's Office initially projected job losses of 115,300, but downsized this estimate to 83,100 in its September 4th report (Table 4). Of these, 63,000 are recession-related and the remaining 20,100 are a direct result of the attacks on September 11th. The total employment loss should cost the City \$2.015 billion in tax revenues through 2002, of which personal income tax losses would comprise \$1.164 billion (far more than the \$519 million shortfall expected if the events of 9/11 had not occurred), sales taxes would consist of \$308 million and business taxes of \$543 million. By 2003, tax losses should climb to nearly \$3 billion.

The former tenants of the damaged and destroyed buildings are estimated to have paid \$1.75 billion in rents and employed 150,000 people, whose wages totaled \$10 billion. The Comptroller's Office predicts that, while 6.4 percent remained Downtown, 70 percent moved to Midtown, 9.2 percent to New Jersey, 8 percent to other boroughs, 2.9

¹⁵ The City of New York, Office of the Comptroller, "Preliminary Estimate: The Impact of the September 11 WTC Attack on NYC's Economy and City Revenues," October 4, 2001; "One Year Later: The Fiscal Impact of 9/11 on New York City," September 4, 2002.

percent to Connecticut, 0.4 percent to elsewhere within New York State, and 3.1 percent out of the tri-state region (Table 5). After this dispersal, as little as \$0.7 billion in rents may be paid by affected tenants throughout New York City, while a corresponding decline in wages is reflected by the City's potential \$1.164 billion deficit in personal income tax revenues.

Reports 14-16. The New York City Partnership: Reports dated November 15, 2001, February 11, 2002, and September 11, 2002.¹⁶

On behalf of the New York City Partnership, 7 global consulting firms collaborated on a report detailing the effects of September 11th on New York City's economy. The Partnership report estimates that the City will experience a \$83 billion impact, consisting of \$30 billion in capital losses, \$14 billion in cleanup costs, and \$39 billion in lost economic output (Table 3). After insurance and federal reimbursements, this impact should translate to a \$16 billion net loss.

In the immediate aftermath of the attack, as many as 125,000 jobs may have been lost to New York City, including 100,000 to Lower Manhattan (Table 4). Though many jobs are likely to return, the Partnership suggests that all 270,000 jobs located below Chambers Street are at risk if rebuilding does not proceed quickly. The Partnership estimates that the City's net loss will exceed 57,000 jobs by late 2003.

The hardest hit sectors include financial services, tourism, retailing, and small businesses. The financial services industry may account for as much as \$4.2 billion in lost economic output in Q4 2001, in part through the relocation of 19,000 jobs outside of New York City. These workers, who earned about \$1.1 billion in wages, may cost the City between \$7 and \$11 billion by 2003. Similarly, the tourism industry may have seen as many as 25,000 layoffs in 2001 and could experience a \$7 to \$13 billion shortfall in revenues by 2003. Revenues from retailing may plunge by \$7.6 billion within the same timeframe, with a concurrent drop of 23,000 in employment. In Q4 2001 alone, the Partnership estimates that some 55,000 small businesses failed, while surviving businesses could see as much as \$22.1 billion in lost sales by 2003.

Other sectors hurt by the events of 9/11 include manufacturing and wholesale trade, which lost an immediate 36,000 jobs and should see a \$5 billion decline in output through 2003. New York's insurance sector lost some 7,300 employees, while the health care industry should expect minimal job losses and a \$435 million drop in revenues. Like the energy and telecommunications sectors,¹⁷ the media industry sustained significant infrastructure damage. In addition to a \$50 million capital loss, the sector should see 4,000 to 6,000 job cuts, a decline in gross economic output of \$1.6 billion, and revenue shortfalls of \$2.4 billion in FY 2001-2002. Similarly, the professional services sector may experience \$25 million in capital costs, 600 layoffs, and a \$1.4 to \$1.6 billion drop in short-term revenues.

¹⁶ The New York City Partnership, "Working Together to Accelerate New York's Recovery," November 15, 2001; "Working Together to Accelerate New York's Recovery: Update of the NYC Partnership's Economic Impact Analysis of the September 11th Attack on New York City," February 11, 2002; "Vital Signs: Economic Realities and Challenges Facing New York City One Year After 9/11," September 11, 2002.

¹⁷ See 'Fixed Costs and Revenue Streams Associated with the September 11th Attacks' above.

The Partnership also examined the relocation trends of the largest displaced tenants, concluding that, as of September 11, 2002, 54 percent returned to Lower Manhattan, 26 percent moved to Midtown and the Valley, 11 percent to New Jersey, 5 percent to Westchester, 3 percent to Brooklyn, and 1 percent to Connecticut (Table 5). Of Downtown's share, 50 firms took part in the New York's \$294 million Community Development Block Grant (CDBG) program to retain premises Downtown staffed by 46,000 employees.

Report 17. The Milken Institute, "Metropolitan Economies in the Wake of 9/11," Undated.

The Milken Institute conducted an examination of the economic impact of 9/11 on all 315 U.S. metropolitan statistical areas (MSAs), concluding that the nation as a whole could expect 1.64 million layoffs and a decline in real Gross Domestic Product (GDP) of 1.0 percent or \$175 billion in Q1 2002. The travel and tourism sectors would be hardest hit, experiencing approximately 500,000 job losses nationwide, followed by 150,000 in entertainment and advertising, and 96,000 in financial services. While most of the country should recover by the end of 2003, New York is not expected to regain lost employment prior to 2005.

Job losses in the New York MSA are estimated to total 43,660 in 2001, 149,270 in 2002, 91,320 in 2003, and 48,880 in 2004 (Table 4). The most significant declines would be felt by business and personal services (68,000 jobs), finance, insurance and real estate or FIRE (31,000 jobs), and wholesale and retail trade (24,000 jobs). Overall, these losses would reduce personal income by \$9.1 billion in 2002, effecting a commensurate impact on New York City and State personal income tax revenues.

2.4 CRITIQUE OF DATA SOURCES AND METHODOLOGIES

Each of these reports employs assumptions as a basis for computing results. The quality of these assumptions is often related to the date on which the report was published. For example, reports compiled in 2001 include high estimates of the death toll (in the region of 5,000) from the attack, while the New York State Senate Finance Committee's January 2002 report is the first to assume fewer than 3,000 casualties (Report 4). Similarly, high projections for employment losses were scaled back as more information became available. The New York City Comptroller's Office reduced its estimates by 28 percent between October 2001 and September 2002 (Reports 12-13), while the New York State Division of the Budget noted that, prior to tax filings and bonus payments, the projections of employment and wage reductions expressed in its October 2001 report could only be rough estimates (Report 1). With time, the Budget Division's estimate of 430 affected firms was also revised to TenantWise's widely accepted 608 (Report 11).¹⁸

In addition to up-to-date casualty, employment and wage information, TM 3.1-2 is able to draw on a much more detailed tenant inventory than employed by these reports. The majority use TenantWise data, occasionally supplemented by information from

¹⁸ The highest estimate of affected tenants (652) was expressed in Newmark & Company's Fall/Winter report (Report 9).

newspapers or interviews, in assessing the number of firms and workers affected by 9/11. From October 2001, TenantWise conducted surveys of the largest space users in the WTC and surrounding buildings. The surveyed tenants were defined as non-governmental office space users of at least 10,000 square feet, located in the six office buildings of the WTC complex and in most of the 24 buildings which sustained damage on September 11, 2001.

In keeping with this narrow definition, TenantWise surveyed 186 firms of an assumed total of 450 in the destroyed buildings and 158 in the damaged buildings. TM 3.1-2 has shown that at least 1,134 firms were located in the affected buildings prior to September 11th. Moreover, TenantWise assumed that 100 percent of governmental tenants would remain in Manhattan. This theory has been proven incorrect by the relocation of the New York Metropolitan Transportation Council (NYMTC) to Queens and part of the Port Authority of New York and New Jersey (PANYNJ) to New Jersey. Finally, TenantWise applied the same relocation patterns adopted by larger firms to smaller tenants. Section 3.1 will demonstrate that this assumption was not wholly accurate.

As well as adopting TenantWise data as a basis for employment and wage projections, these reports used various economic modeling tools and techniques. These included industry-specific, Regional Industrial Multiplier System (RIMS) input-output multipliers (The New York City Partnership, Reports 14-16), the IMPLAN input-output model for New York (The New York Central Labor Council and the Consortium for Worker Education, Reports 5-7), and the DRI-WEFA and other econometric models (The New York State Senate Finance Committee, Report 4, and the Milken Institute, Report 17). Both of the reports which relied on econometric models assumed a mild national recession, in progress on September 10, 2001, as part of their baseline scenario.

Although NYMTC does not employ modeling techniques in this analysis, because of their breadth and accuracy, the conclusions drawn from data provided in TM 3.1-2 supply a more realistic picture of New York City's employment after 9/11. These findings are presented in TM 3.1-2 and more fully, in Sections 3.1-3 of this TM.

3.1 ANALYSIS OF FINDINGS FROM TM 3.1-2

In addition to a full tenant inventory, TM 3.1-2 contains a preliminary analysis of the distribution of tenants in the destroyed and damaged buildings prior to 9/11 and of their destinations as of July 2002. In a series of tables and charts, it collates these data by industry, number of establishments, square footage and employment, both, before and after the events of September 11th. The text of TM 3.1-2 provides a brief summary of the buildings, firms and jobs affected by 9/11, concentrating on the industries, like financial services, which were hardest hit. The firms and jobs retained by Lower Manhattan are enumerated followed by the number of companies that relocated to elsewhere in New York City, the tri-state region or the United States.

Following a review of the occupancy of the affected buildings in Section 3.2, this TM will examine the data provided in TM 3.1-2 in greater depth, introducing both the variable of firm size and industry-specific data on square footage and employment by new location. The distribution patterns of firms will also be examined on an industry-by-industry basis,

while a discussion of the impact of firm relocations on wage compensation will conclude this Section.

3.2 OCCUPANCY OF THE WORLD TRADE CENTER AND THE FROZEN ZONE

The seven buildings of the World Trade Center contained 14.0 million square feet of floor space and 48,100 workers (TM 3.1-2, Table 3). The twin towers, which comprised 9.5 million square feet, housed 34,200 jobs, while the two million square foot WTC #7 accommodated 5,200 workers. Buildings #3 through #6 were considerably smaller and more singular in usage, with the Marriott Hotel, the Commodities Exchange Center, and a concentration of government tenants. Roughly 600,000 square feet of hotel and 450,000 square feet of retail space existed in the complex.

Some 23 office buildings and one hotel occupied sites encircling the WTC, which were damaged by its destruction. This adjacent area, which became known as the “frozen zone,” contained 66,000 workers in 21.4 million square feet of floor space prior to 9/11. Collectively, the 114,100 jobs and 35.4 million square feet in the WTC complex and the frozen zone accounted for 26 percent of employment and 21.5 percent of non-residential floor space in Lower Manhattan. As a share of office jobs and office space, these buildings represented 30 percent of Lower Manhattan’s total, while their square footage comprised nearly 10 percent of Manhattan’s office space, 16 percent of its Class A space, and 65 percent of Lower Manhattan’s Class A inventory.¹⁹

Over 1,100 firms and some 112,000 office and retail jobs were located in the WTC and the frozen zone. The greatest concentrations of firms and jobs were drawn from financial services (28 percent of firms), insurance (4.7 percent), business and computer services (13.1 percent), and law (8.8 percent) (TM 3.1-2, Table 4). Other large office space users included government agencies (3.2 million square feet) and communications firms (1.6 million square feet). However, 589 or 51.9 percent of firms located in the destroyed and damaged buildings occupied less than 5,000 square feet (Table 6). While these firms were drawn from across all industries, the majority reflect sectors with high concentrations of companies and employment. 151 or 25.6 percent of small-sized firms provided financial services, 51 or 8.7 percent supplied business and computer services, 39 or 6.6 percent both personal services and retail and wholesale trade, and 32 or 5.4 percent law. 19 of the 20 remaining industries represented in the WTC and surrounding areas accounted for between 0.5 and 2.7 percent of small firms.

A comparable sample of sectors had premises of 5,000 to 20,000 square feet. 79 or 22.7 percent of the 348 mid-sized firms were drawn from financial services, 67 or 19.3 percent from business and computer services, 56 or 16.1 percent from law, 27 or 7.8 percent from restaurants, and 23 or 6.6 percent from retail and wholesale services. The financial services industry had an increased share (38.5 percent) of premises in the 20,000 to 50,000 range, while business and computer services represented 23.1 percent and insurance claimed 13.5 percent of the total of 104 firms.

¹⁹ The City of New York, Office of the Comptroller, October 4, 2001, 5 (Report 12).

The majority of the largest firms, some 48 or 51.6 percent of 93, offered financial services. 13 insurance companies also occupied more than 50,000 square feet, as did 8 government agencies, 4 law, and 3 communications firms. Within the six office buildings of the WTC complex, 55 of a total of 617 tenants leased more than 40,000 square feet of space, equivalent to a single floor in the twin towers. Their combined space usage amounted to 60 percent of WTC #1, 79 percent of WTC #2, 73 percent of WTC #4-6, and virtually all of WTC #7.

Of the most prominent industries in the WTC and the frozen zone, financial services firms occupied a range of premises, with 47.5 percent leasing less than 5,000 square feet and 15.1 percent more than 50,000 square feet. Some 12 industries preferred small offices, with 50 percent or more of their firms requiring less than 5,000 square feet. By comparison, only the hospitality and education industries leased 50 percent or more of their space in blocks in excess of 50,000 square feet. Most of the firms which served the financial services industry, drawn from the accounting, consulting and personal services sectors, required less than 5,000 square feet, while 71.1 percent of restaurants leased between 5,000 and 20,000 square feet.

The characteristics of this tenant base reflect widespread patterns of office use. As the number of office firms in Manhattan increased by 4,382 in 1989 to 55,620 in 2000, all of this increase and more occurred among small firms of fewer than 10 employees, housed in offices of less than 5,000 square feet (Table 7). While small firms experienced a gain of 4,759 for a total of 41,395, large office firms with at least 150 workers and 40,000 square feet decreased by 209, from 1,586 to 1,377, to comprise only 2.5 percent of all office building tenants in Manhattan. Financial firms, a major component of the office sector, advanced in number over the decade, from 7,035 to 10,955, but also concentrated growth among the smallest operations. These increased by 3,109, while the largest space users declined from 6.8 to 3.6 percent.

3.3 RELOCATION AND EMPLOYMENT PATTERNS OF AFFECTED FIRMS

Between September 11th, 2001 and July 2002, the 1,134 tenants of the destroyed and damaged buildings relocated to 1,203 premises. The 69 additional premises reflect the relocation choices of 20 major financial services and consulting firms, which diversified their operations among several destinations (both front and back office). From the initial displacement of firms and employment, some 311 firms, which originally employed 57,100 people, returned to 322 locations in Lower Manhattan with 53,500 workers. They accounted for 50 percent of the initial displacement, but restored 47 percent of the employment.

Among the 311 companies which returned to Lower Manhattan, 93 or 29.2 percent of financial services firms resumed or acquired leases for 11.3 million square feet of space, equivalent to 59.9 percent of their pre-9/11 space, to house 33,808 workers or 53.4 percent of their prior employment (TM 3.1-2 Table 8, and Table 8). Lower Manhattan retained similar percentages of business and computer services companies (30.9 percent of firms), government agencies (32.1), and hospitality firms (33.3), and higher percentages of insurance companies (37.7) and law firms (43).

The returning law firms leased or resumed leases on a comparable amount of space after 9/11 (40.2 percent of their pre-9/11 total), while business and computer service companies, government agencies, hospitality firms, and most strikingly trade and communications firms, retained a higher percentage of space than firms in Lower Manhattan. The opposite holds true for the insurance sector, wherein 26.9 percent of space and 23.8 percent of jobs were restored by 37.7 percent of firms, as well as for restaurants and transportation firms. Like these companies, law firms also saw a drop in employment (with 35.6 percent of jobs kept by 43 percent of firms), while most industries retained a higher percentage of jobs than firms and square footage.

The most dramatic changes were experienced by manufacturing, which relocated 100 percent of its firms, square footage and jobs outside of Lower Manhattan, and education, which retained 100 percent of its institutions and most of its pre-9/11 space and employment. Though the consulting sector lost 85 percent of its firms, the largest tenants remained in Lower Manhattan with 91.7 percent of their pre-9/11 floor space and 87.1 percent of their employment.

As a result of downsizing, the firms which returned to Lower Manhattan leased 429,433 square feet or 2.2 percent less space and employed 3,585 or 6.3 percent fewer workers after 9/11 (TM 3.1-2 Table 9, and Table 9). The 96 firms which relocated to the Valley saw a 1.4 percent decline in square footage and an 8 percent drop in employment, while the 192 firms currently in Midtown cut 2,630 or 9.5 percent of their pre-9/11 jobs, but acquired additional space (43,227 square feet for a 0.6 percent gain). Firms that moved to the boroughs, where space is cheaper and more readily available, saw dramatic increases in square footage and employment. These gains were not enough to boost New York City's totals however, where affected tenants leased or resumed leases on 0.3 percent less space for 6.1 percent or nearly 6,000 fewer employees.

The firms which relocated to Long Island, primarily Nassau, saw a 22.3 percent increase in square footage and even greater growth in employment (23.6 percent). By contrast, those which moved to the Mid-Hudson Valley lost 265,831 square feet or 24.3 percent of their pre-9/11 space and 405 or 14.7 percent of their employment. Where the affected tenants which remained in New York saw declines, those that moved to New Jersey and Connecticut experienced growth in the triple digits: a 200 percent increase in space and 150 percent in employment for New Jersey firms, and a 432 percent surge in space and 390 percent in employment for Connecticut companies. Altogether, the tenants of the destroyed and damaged buildings lost 4.6 percent of their pre-9/11 square footage, but gained 0.2 percent in employment by July 2002.

Of the firms which occupied less than 5,000 square feet in the WTC and the frozen zone, 105 or 17.3 percent moved back to Lower Manhattan, representing 32.6 percent of firms to return (Table 10). The area also retained 123 or one-third of the firms which leased 5,000 to 20,000 square feet of space, 42 or 43.4 percent of the firms which leased 20,000 to 50,000 square feet, and 52 or 39.7 percent of the firms which leased over 50,000 square feet.

Midtown, New Jersey and the Valley, after Lower Manhattan, were the largest recipients of firms of all sizes, with small firms (of less than 5,000 square feet) accounting for 40.1 percent of firms to move to Midtown, 55.3 percent to New Jersey and 44.8 percent to the Valley. No other firm size accounted for more than one-third of firms to relocate to

Midtown or the Valley or more than one-fifth to move to New Jersey. As a whole, New York City retained 59.1 percent of small firms, 72.6 percent of firms in the 5,000-to-20,000 square foot range, 83.5 percent of firms in the 20,000-to-50,000 square foot range, and 79.4 percent of large firms. New York State's percentages were slightly enhanced by firm relocations to Long Island and the Mid-Hudson.

Viewed by industry division, Lower Manhattan succeeded in regaining 100 percent of educational institutions, 50 percent of restaurants, over 40 percent of law, accounting and design firms, and about a third of financial services, insurance, business and computer services, government, and hospitality companies (Table 11). After Lower Manhattan, Midtown, the outer boroughs and New Jersey were the greatest recipients of finance firms, while Midtown and New Jersey attracted high numbers of insurance companies and, together with the Valley, business and computer services firms.

Similarly after Downtown, many law and consulting firms moved to Midtown, trade companies to the boroughs, and government agencies to the Valley. In total, New York City succeeded in retaining 90 percent of accounting firms, about 80 percent of government, personal services, law and architecture firms, and two-thirds of financial services, insurance, business and computer services, retail and wholesale trade, and engineering companies. Though small in terms of firm numbers, 50 percent of communication firms relocated outside New York City, as did 75 percent of manufacturing companies.

As a result of firm relocations, New York City lost a total of 22,247 jobs, of which New Jersey accounted for 11,679, the Mid-Hudson Valley for 2,354, Connecticut for 1,087, Long Island for 351, and elsewhere in the US or unknown for 6,775 (Table 12). The greatest numbers were lost from financial services firms which moved to New Jersey (5,786 jobs), the Mid-Hudson Valley (2,208), and Connecticut (915). The insurance and government sectors also relocated significant employment (2,207 jobs and 2,154 jobs, respectively) to New Jersey, which was the largest recipient of employment across 20 industries. It is followed by the rest of the United States, which drew jobs from 16 industries, Long Island from 8, the Mid-Hudson Valley from 7, and Connecticut from 4. The status of jobs representing 26 industries, including 1,188 from government and 962 from financial services, remains uncertain.

The tenants of the destroyed and damaged buildings pay annual wages of \$17.5 billion.²⁰ Firms which returned to Lower Manhattan contribute \$9 billion to this total, while those that moved elsewhere in New York City account for \$5.7 billion, elsewhere in the 31 county region for \$2.3 billion, and outside of the region for \$577 million (Table 13). Although Lower Manhattan lost \$8.5 billion in payroll income after 9/11, the average income earned across all industries remained high (\$168,198 per year in comparison to \$153,301 per year, as an industry-wide average for all relocated workers, including bonuses). The area's high average income may be attributed to its strong concentration of finance firms, which pay average annual salaries of \$221,816 or between \$5,591 and \$26,448 higher than comparable firms elsewhere.

Higher than average salaries are also paid by Lower Manhattan's business services, consulting, investments, and technology firms, as well as by its travel agencies. The

²⁰ This and subsequent figures are based on ES-202 year 2000 average wages by industry in the affected zip code areas, weighted to reflect the tenant mix.

opposite holds true for its concessions and restaurants, engineering firms, government agencies, non-profits, and real estate, retail and telecommunications firms. For these industries, the average salary paid by all affected firms exceeds that paid by firms which returned to Lower Manhattan by between 0.5 and 29.5 percent. This shift in average salaries, and more significantly, the \$2.9 billion in wages lost to New York City, will have a considerable impact on the City's personal income tax revenues. The magnitude of this impact, partially mitigated by New York State collections from Long Island and the Hudson Valley, can be approximated based on estimates in Section 2.3.

4.1 BREAKDOWN OF LOSSES RELATED TO THE EVENTS OF SEPTEMBER 11TH AND THE RECESSION

By July 2002, Lower Manhattan's pre-9/11 employment of 444,000 had dropped to approximately 380,000, with office employment contracting from 377,000 to 320,000. Citywide, payroll employment declined by 101,500, from 3,730,600 in June 2001 to a July 2002 low of 3,629,100 (Table 14). This drop can be attributed to two factors: the attack on September 11th, 2001, and the ongoing recession, which began in the first half of 2001 and is likely to continue into 2003. Using the employment data contained in TM 3.1-2, NYMTC has broken down the job losses related to each event. While these losses were felt most acutely by New York City, gains from relocated tenants were measured against recession-related layoffs for Long Island, the Mid-Hudson Valley, New Jersey, Connecticut, and the Region as a whole.

The disaggregated employment losses to the City and the Region have been calculated both prior to September 11th, defined as the period between June and August 2001, and after the attack, measured as of July 2002. Of the 101,500 jobs lost citywide, 22,000 represent employees of firms previously located in the destroyed or damaged buildings, while 79,500 may be attributed to the recession and indirect effects of the attack. Of the latter, 46,400 job losses occurred prior to the tragedy and 33,100 took place between September 2001 and July 2002.

Within New York City, the greatest losses were felt by finance, insurance and real estate or FIRE, which experienced 13,200 layoffs or job relocations as a result of 9/11, followed by government and services, which lost 3,400 and 3,100 jobs, respectively. In addition to job losses resulting from the attack, the recession-related and indirect effects on employment were considerable. The services industry felt the majority of its employment loss prior to 9/11, or 33,100 of some 39,300 indirect and 42,400 total layoffs or relocations. Similarly, wholesale and retail trade experienced two-thirds of their total shortfall before the tragedy.

Transportation, communications and public utilities or TCPU firms, FIRE firms, and manufacturing companies bore substantial post-9/11 indirect and recession-related losses in New York City. Conversely, as one of the few industries to grow in FY 2001-2002, government added a total of 31,900 jobs, namely 24,900 prior to 9/11 and the remaining after the attacks. Of these, 3,400 represented replacements for jobs lost as a direct result of 9/11, for a net gain in government jobs of 28,500.

Similarly, job gains were felt by Long Island, where 300 relocated employees lowered the total job losses associated with the recession and indirect effects to 17,400. These

jobs buffered losses sustained by wholesale and retail firms, and improved gains in the FIRE industry. In the Mid-Hudson Valley, an increase of 2,400 jobs, primarily in the FIRE sector, reduced net losses to 9,800. Most of these indirect losses were felt by government, manufacturing, TCPU and FIRE firms.²¹

New Jersey's influx of 11,700 jobs also reduced its recession-related losses, nearly 90 percent of which occurred prior to 9/11. This employment, relocated by former tenants of the destroyed and damaged buildings, turned an indirect loss of 2,600 jobs to a net gain of 5,500 jobs in the FIRE sector, while improving indirect gains among service firms and reducing losses in government and TCPU. Similarly, Connecticut's 1,100 job gain in the FIRE sector translated to a net job increase, offsetting its recession-related losses incurred after 9/11.

The 31-country region experienced 6,500 direct job losses, reflecting the City's 22,000 layoffs and relocations offset by job gains elsewhere in the region. An additional 209,700 layoffs can be attributed to indirect and recession-related effects, of which 46,300 occurred after September 11th. The recession alone was responsible for an 163,400 or 16 percent decline in employment, which affected almost every sector. While two fields within services grew, the industry as a whole declined by 40,500 jobs or 11 percent before 9/11, offset by a surge in employment (18,500 jobs) after the tragedy.²² Manufacturing experienced a more significant drop (59,200 jobs or 6.2 percent over the 13-month period), while comparable losses were felt by wholesale and retail trade firms (46,200 jobs or 2.2 percent) and TCPU companies (38,800 jobs or 6.5 percent).

The FIRE sector, unarguably the hardest hit by the tragedy, showed a net direct loss of 1,800 jobs and indirect losses of 25,800 jobs, over 90 percent of which occurred after 9/11. Government agencies experienced a comparable drop in employment as a direct result of the attack, but saw an increase of some 48,700 jobs in the months that followed. Though substantial, this increase was not sufficient to offset pre-9/11 layoffs, resulting in a net loss of 11,600 jobs.

	Direct Effects of 9/11	Recession & Indirect Effects	
		Aug 01-Jul 02	Jun 01-Jul 02
New York City	-22,000	-33,100	-79,500
Nassau-Suffolk	349	6,751	-17,749
Mid-Hudson	2,354	1,661	-12,191
New Jersey	11,679	-9,079	-75,579
Connecticut	1,087	-12,487	-24,687
Region	-6,531	-46,254	-209,707

Source: TM 3.3, Table 14.

²¹ However, FIRE'S 2,200 job gain offset its 2,100 layoffs.

²² While health care grew by 18,100 jobs after 9/11, business services declined by a comparable number (19,100 jobs), to see a 13-month drop of 26,600 jobs due to indirect and recession-related effects.

4.2 REBENCHMARKED FORECASTS TO 2025

According to the New York State Department of Labor, job levels in January 2002 represented the bottom of a 13-month decline in New York City's payroll employment. Since then, employment has been increasing at a rate sufficient to exceed the first two quarters of 2002, but not to recover the 2001 average, by the year's end (Table 15). Full recovery of the pre-9/11 high water mark in employment is most likely by 2005, based on the assumption of average annual rates of job growth in New York City as forecasted by the New York City Office of Management and Budget (OMB) and the Port Authority of New York and New Jersey.²³ Similar conditions would hold for Manhattan's job growth if the borough continues to retain its share of citywide employment.

If New York has lost several years of growth in its outlook, the City's long term future still portends an expansion in economic activity, focused primarily on Manhattan. In addition, employment losses associated with the destruction of the WTC and the damage to surrounding structures may not represent permanent job losses, as companies are slowly returning to Lower Manhattan, have relocated elsewhere in New York City, or have taken only temporary leases outside New York.

Using tenant relocation data contained in TM 3.1-2, Urbanomics has rebenchmarked the forecasts adopted by NYMTC in December 2000. The new forecasts assume that employment losses resulting from direct, indirect, and recession-related impacts on the economy will be recovered by 2005. The difference between the 2005 and 2025 estimates in the December 2000 forecasts has been applied to the same time frame in the new forecasts.

According to the rebenchmarked forecasts, Manhattan is projected to grow from a year 2000 base of 2.8 million jobs to 3.0 million by 2025, for a gain of 196,800 jobs or 6.6 percent (Table 16). This growth compares to an increase of 379,000 jobs or 8.1 percent in all industries citywide, from 4.3 million in 2000 to 4.7 million by 2025.²⁴ Payroll employment, which constituted about 90 percent of Manhattan's and New York City's total employment in 2000, is responsible for 54 percent of the borough's expected growth and two-thirds of the City's. These job increases, attributed to both payroll and non-payroll or self-employment, are lower than previously forecasted employment growth, due to the impact of 9/11 and the recent recession, particularly on financial services. By contrast, suburban portions of the Region actually gained jobs from the 9/11 relocations and experienced less of a recessionary effect (Table 14).

Long Island should expect a higher rate of growth over the twenty-five year period, or some 13 percent, from a year 2000 base of 1.5 million to 2025's 1,7 million jobs. This growth will be shared equally by Nassau and Suffolk, while 84 percent will occur among payroll employment. The Mid-Hudson Valley's growth should be even more rapid, with a 19.5 percent rise projected by 2025, with payroll jobs surging by 197,600 or 18 percent and non-payroll jobs by 64,800 or 24 percent. Similar increases are expected for New Jersey, which should see 832,900 new jobs by 2025 (an 18 percent increase), of which

²³ New York Office of Management and Budget; Port Authority of New York and New Jersey, 2003-2007 Business Plan.

²⁴ By 2020, the City should add 304,200 jobs, an estimate which compares favorably with the Group of 35's projected 300,000.

payroll employment will contribute 655,500 or 17 percent and non-payroll some 177,400 or 25 percent.

Connecticut's growth rate should fall between Long Island's and New Jersey's, with a 15 percent increase expected over the twenty-five year period. Two-thirds of this growth, or 119,500 jobs, should be felt by payroll employment, which is expected to increase by 12 percent, while non-payroll jobs, representing one-third of the state's growth, could surge by as much as 24 percent. Growth rates in Connecticut mirror the region's, with a 14 percent expected increase in total employment, 12 percent in payroll employment, and 21 percent in self-employment. This translates to a 1.9 million overall gain, 1.4 million or three quarters of which consists of payroll jobs and 469,900 of non-payroll jobs.

5.1 CONCLUSION

Lower Manhattan – the third largest Central Business District (CBD) in the nation – contained 375,000 office jobs and 114.1 million gross square feet of office space in 2000. With much more densely concentrated office activity than Midtown, roughly five in every six workers held office jobs in Lower Manhattan. As a share of Manhattan's total office employment, they comprised 29 percent, and as a share of total office jobs in the tri-state region, they accounted for one in every eight.

Since the high water mark of 2000, Manhattan has lost some 85,000 jobs, approximately 28,000 of which were related to firm relocations and the remaining 57,000 to recession-related cutbacks and secondary employment losses triggered by the disaster. At least one third of the job losses, or 30,000 jobs, were in finance and insurance, followed by another 20,000 in services.

Because of security and redundancy issues, especially where monetary transactions are concerned, financial service firms are likely to locate more labor-intensive facilities outside of New York City. Manhattan and Lower Manhattan are expected to retain front-office decision-makers, but headquarters will be smaller and elite in character. As a consequence, there will be less job growth in the city and more in the outer boroughs, New Jersey and Connecticut.

5.2 WORK PRODUCTS

The text of this memo is contained in a Microsoft Word 97 for Windows file entitled "TM 3.3.doc." The tables and charts appear in a Microsoft Excel 97 for Windows file called "TM 3.3.xls." Within this file, worksheet tabs identify each table by table number and each chart by chart number. The Maps are included as individual bitmap images named by map number.

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- The New York State Senate Finance Committee, prepared by DRI-WEFA, "Financial Impact of the World Trade Center Attack," January 2002. (Report 4)
- The Port Authority of New York and New Jersey, "Employment in Downtown Manhattan by Major Industry," 1991.
- The State of New York Office of the State Comptroller, Office of Fiscal Research & Policy Analysis, Office of the State Deputy Comptroller of New York City, and Office of Municipal Affairs, "After the World Trade Center Attack: Fiscal Uncertainties Facing the State and Local Governments," October 2001. (Report 3)

Table 1. Data Sources

DATA SOURCE	CONTACT INFORMATION	CONTACT PERSON	DATA COLLECTED	DATE
Cable Network News (CNN)	www.cnn.com	none	relocation data through articles	various
City University of New York (CUNY)	Queens College, City University of New York, 65-30 Kissena Blvd., Flushing, NY 11367; www.qc.com , www.cuny.edu	John Seley: tel (718) 997-5141; jseley@email.qc.cuny.edu	relocation data for non-profits	1/17/2002
CoStar Group	369 Lexington Avenue, 12th floor, New York, NY 10017; tel (917) 332-2100, fax (212) 681-0744; www.costar.com	none	list of tenants and relocation data through articles	various
Crains New York	www.crainsny.com	none	list of tenants and relocation data through articles, Rebuilding Business Directory, and Small Business Support Directory	various
Cushman Wakefield	51 West 52nd Street, New York, NY 10019, tel (212) 841-7500, fax (212) 841-7767; www.cushmanwakefield.com	none	relocation data through articles	various
Downtown Alliance	120 Broadway, Suite 3340, New York, NY 10271; tel (212) 566-6700, fax (212) 566-6707	Shirley Jaffe: sjaffe@downtownny.com	telephone survey of affected firms	6/17/2002
Grubb & Ellis	55 East 59th Street, 11th floor, New York, NY 10022; tel (212) 759-9700, fax (212) 326-4802; www.grubb-ellis.com	none	relocation data through articles and map of damaged and destroyed properties	various
Lawyers Diary and Manual	P.O. Box 50, 240 Mulberry Street, Newark, NJ 07101; tel (800) 444-4041, fax (973) 642-4280; www.law411.com	none	relocation data for lawyers	various
Newsday	www.newsday.com	none	relocation data through articles	various
New York City Economic Development Corporation (NYC EDC)	110 William Street, New York, NY 10038; tel (212) 312-3600 and (888) NYC-0100; www.newyorkbiz.com	Rachel Hitch, Senior Project Manager: tel (212) 312-3768, fax (212) 618-8898; rhitch@nycedc.com	<i>ReStart Central</i> data base	1/23/02, 1/31/02 and 2/14/02

Table 1 Continued. Data Sources

DATA SOURCE	CONTACT INFORMATION	CONTACT PERSON	DATA COLLECTED	DATE
New York City Human Resources Administration	tel (718) 291-1900; www.ci.nyc.ny.us/hra	Philippa L. Karteron, Administrator - Special Projects: karteronp@hra.nyc.gov	relocation data	1/23/2002
New York Daily News	www.nydailynews.com	none	relocation data through articles	various
New York State Department of Labor (NYS DOL)	Research and Statistics Division, P.O. Box 669, Mail Stop 8D, New York, NY 10014; tel (212) 352-6705; www.labor.state.ny.us	James Brown: usajpd@labor.state.ny.us ; Bohdan Wynnnyk: bwynnnyk@labor.state.ny.us	<i>ReStart Central</i> data base	1/23/02 and 3/11/02
New York State Empire State Development Corporation (NYS ESDC)	633 Third Avenue, New York, NY 10017; tel (800) 782-8369; www.empire.state.ny.us	Leonard Gaines: 30 South Pearl Street, Albany, NY 12245; tel (518) 292-5300; fax (518) 292-5806; lgaines@empire.state.ny.us	relocation data base	1/23/2002
NJ Transit	1 Penn Plaza East, Newark, NJ 07105; www.njtransit.com	Tom Marchwinski: cplntwm@njtransit.com	data on New Jersey relocations	2/1/2002
Tenantwise	67 Wall Street, 8th floor, New York, NY 10005; tel (212) 943-0077, fax (212) 943-2735; www.tenantwise.com	none	relocation data base and map of damaged and destroyed properties	various
The New York Times	www.nytimes.com	none	relocation data through articles	various
The North Jersey Transportation Planning Authority, Inc. (NJTPA)	1 Newark Center, 17th floor, Newark, NJ 07102; tel (973) 639-8400, fax (973) 639-1953; www.njtpa.org	Chad E. McCauley: mccauley@njtpa.org	data on New Jersey relocations	1/23/2002
The Real Estate Board of New York (REBNY)	570 Lexington Avenue, New York, NY 10022; tel (212) 616-5208, fax (212) 481-0420; www.rebny.com	Marilyn Davenport: mdavenport@rebny.com	relocation data base	1/31/02 and 2/11/02
The Wall Street Journal	www.wsj.com	none	relocation data through articles	various
The Washington Post	www.washingtonpost.com	none	list of tenants and contact information	various
Trammel Crow Company	2001 Ross Avenue, Suite 3400, Dallas, TX 75201; tel (214) 863-3000, fax (214) 863-3138; www.trammelcrow.com	none	relocation data through articles	various
Westchester County Office of Economic Development	www.co.westchester.ny.us	Sal Carrera, Director: tel (914) 995-2963; sjc3@westchestergov.com	data on Westchester relocations	1/24/2002

Table 2. Estimated Physical Costs of the World Trade Center Attack (\$ billions)

	Mayor	Governor	Newmark	NYC Comptroller	NYC Partnership
Rebuilding the WTC and Lower Manhattan	\$11.8	\$11.8	\$15.2	\$31.2	\$15.2
WTC and Hotel Space Replacement	8.3	8.3	6.4	6.7	6.4
Equipment, Lost Inventory and Renovation	2.4	2.4	6.6	11.5	6.6
Other Buildings: Structural Remediation	1.1	1.1	2.2	13.0	2.2
New York City Infrastructure	\$7.4	\$7.9	\$4.5	\$7.4	\$4.5
Metropolitan Transportation Authority (MTA)	4.1	3.7	1.5	3.0	1.5
Port Authority of New York and New Jersey (PANYNJ)	2.4	2.5	1.0	2.4	1.0
Utility and Other Infrastructure Costs	0.9	1.7	2.0	2.0	2.0
Emergency Response	\$12.9	\$14.1	\$14.4	\$13.2	\$14.0
Emergency Construction Costs	7.0	5.0	n/a	6.0	n/a
NYC Emergency Protective Measures	5.2	5.1	n/a	7.2	n/a
Other Buildings: Structural Remediation	0.7	4.0	n/a	0.0	n/a
Total	\$32.1	\$33.8	\$34.1	\$51.8	\$33.7

Source: New York State Senate Finance Committee and DRI-WEFA, Newmark and Company Real Estate Inc., and the New York City Partnership

Table 3. Estimated Revenue Losses from the World Trade Center Attack

New York State	NYS Budget	NYS Senate Finance	NYS Ways and Means
Wages: 2001-2002	\$8 billion	n/a	n/a
Withholdings: 2001-2002	\$450 million	n/a	n/a
Personal Income Taxes:			
Financial Services: 2001-2002	\$1.4 billion	n/a	n/a
Indirect losses: 2001-2002	\$285 million	n/a	n/a
Total: 2001-2002	\$2.2 billion	\$1.112 billion	\$945 million
Financial Services: 2002-2003	\$4.6 billion	n/a	n/a
Indirect losses: 2002-2003	\$2.6 billion	n/a	n/a
Total: 2002-2003	\$5.6 billion	\$2.421 billion	+\$919 million*
Business Taxes:			
2001-2002	n/a	n/a	\$670 million
2002-2003	n/a	n/a	+\$294 million
User Taxes and Fees:			
2001-2002	n/a	n/a	\$281 million
2002-2003	n/a	n/a	+\$38 million
All Funds Receipts:			
2001-2002	n/a	n/a	+\$1.078 billion
2002-2003	n/a	n/a	\$1.044 billion

Source: New York State Division of the Budget, New York State Senate Finance

Committee, and New York State Ways and Means Committee

Note*: Positive numbers represent growth instead of losses

New York City	Governor	NYS Senate Finance	NYS Ways and Means	Newmark	NYC Comptroller	NYC Partnership
Personal Income Taxes: 2001-2002	n/a	n/a	n/a	n/a	\$1.164 billion	n/a
Business Taxes: 2001-2002	n/a	n/a	n/a	n/a	\$543 million	n/a
Real Estate Taxes:						
2001-2002	n/a	n/a	\$230 million	n/a	n/a	n/a
through 2004	n/a	\$1 billion	n/a	n/a	n/a	n/a

Table 3 cont. Estimated Revenue Losses from the World Trade Center Attack

New York City	Governor	NYS Senate Finance	NYS Ways and Means	Newmark	NYC Comptroller	NYC Partnership
Visitor Spending:						
2001	n/a	\$1 billion	n/a	n/a	n/a	n/a
2002	n/a	\$1.9 billion	n/a	\$5 billion	n/a	n/a
2003	n/a	\$1.7 billion	n/a	n/a	n/a	n/a
Sales Taxes: 2001-2002	n/a	n/a	n/a	n/a	\$308 million	n/a
Revenue Losses:						
Total 2001	n/a	\$1.396 billion	n/a	n/a	n/a	n/a
Total 2002	n/a	\$8.710 billion	n/a	\$792 million	\$2.015 billion	n/a
Total 2003	n/a	\$5.039 billion	n/a	\$1.3 billion	\$3 billion	n/a
Total 2001-2003	\$12 billion	n/a	n/a	n/a	n/a	n/a
Gross City Product:						
2001-2002	n/a	n/a	n/a	n/a	\$27.3 billion	n/a
2003-2004	n/a	n/a	n/a	n/a	\$25 to 37 billion	n/a
Total Impact:						
2001-2004	n/a	n/a	n/a	\$83 billion	\$82.8 to 94.8 billion	\$83 billion

Source: New York State Governor's Office, New York State Senate Finance Committee, New York State Ways and Means Committee, Newmark and Company Real Estate Inc., New York City Office of the Comptroller, and the New York City Partnership

Table 4. Estimated Employment Losses from the World Trade Center Attack

New York Consolidated Metropolitan Statistical Area*	Milken Institute
Total 2001	43,660
Total 2002	149,270
Total 2003	91,320
Total 2004	48,880
By Industry:	
Business and Other Services	68,000
FIRE	31,000
Wholesale and Retail Trade	24,000

Source: Milken Institute

Note*: The New York CMSA consists of 15 PSMA's in 31 counties across 4 states.

New York State	NYS Budget	NYS Senate Finance	Fiscal Policy Institute	Newmark	TenantWise	NYC Comptroller	NYC Partnership
Direct losses	n/a	31,849	n/a	n/a	24,780	20,100	n/a
Indirect and Recession-related Losses	n/a	n/a	n/a	n/a	n/a	63,000	n/a
Total 2001	87,000	99,830	n/a	n/a	n/a	n/a	n/a
Total 2002-2003	133,000	155,700	n/a	n/a	n/a	n/a	n/a
By Industry:							
Business and Other Services	22,000	n/a	27,400	36,000	n/a	10,800	600
FIRE	30,000	30,330	26,600	29,000	22,576	33,600	26,300
Manufacturing	n/a	n/a	13,900	15,000	n/a	n/a	36,000
Media	n/a	n/a	n/a	n/a	n/a	n/a	4-6,000
Retail Trade	20,000	n/a	5,600	31,000	n/a	n/a	23,000
Restaurants	n/a	n/a	7,700	n/a	n/a	n/a	n/a
Tourism/Hospitality	n/a	27,500	3,100	n/a	n/a	n/a	25,000
Transportation	10,000	n/a	9,900	9,000	n/a	n/a	n/a

Source: New York State Division of the Budget, New York State Senate Finance Committee, Newmark and Company Real Estate Inc., TenantWise.com, New York City Office of the Comptroller, and the New York City Partnership

Table 4 cont. Estimated Employment Losses from the World Trade Center Attack

New York City	NYS Senate Finance	Fiscal Policy Institute	Newmark	TenantWise	NYC Partnership
Total Q4 2001	70,950	86,900	n/a	n/a	125,000
Total 2001	n/a	131,300	n/a	n/a	n/a
Total 2002	71,200	n/a	n/a	n/a	n/a
Total 2001-2002	n/a	n/a	114,000	24,780*	n/a
Net through 2003	n/a	n/a	n/a	n/a	57,000

Source: New York State Senate Finance Committee, Fiscal Policy Institute, Newmark and Company Real Estate Inc., TenantWise.com, and the New York City Partnership

Note*: This figure represents jobs which have moved out of Manhattan

Lower Manhattan	NYS Senate Finance	Newmark	TenantWise	NYC Partnership
Total 2001	n/a	n/a	62,467	100,000
FIRE	107,216	53,000	22,576	n/a

Source: New York State Senate Finance Committee, Newmark and Company Real Estate Inc., TenantWise.com, and the New York City Partnership

Table 5. Relocation Patterns of Tenants in the Destroyed and Damaged Buildings

All Large Tenants*	Newmark	NYC Comptroller	NYC Partnership
Lower Manhattan	46%	6.4%	54%
Midtown and the Valley	33%	70%	26%
Other Boroughs	3%	8%	3%
Westchester	7%	0%	5%
New Jersey	10%	9.2%	11%
Connecticut	1%	2.9%	1%
Elsewhere in NYS	0%	0.4%	0%
Outside of the Tri-State Region	0%	3.1%	0%

Source: Newmark and Company Real Estate Inc., New York City Office of the Comptroller, and the New York City Partnership

Note*: Tenants which leased 10,000 sf or more in the destroyed or damaged buildings

Tenants of Destroyed Buildings	TenantWise
Lower Manhattan	11%
Midtown	54%
New Jersey or elsewhere	32%
Undecided	3%
Tenants of Damaged Buildings	
Lower Manhattan	71%
Midtown	15%
New Jersey or elsewhere	12%
Undecided	2%

Source: TenantWise.com

Table 6. Tenants of the Destroyed and Damaged Buildings by Industry and Size, prior to 9/11

Industry	less than 5,000 sf	5-20,000 sf	20-50,000 sf	50,000+ sf	Total Firms
Accounting	9	1	1	0	11
Architecture/Design	8	3	1	0	12
Business Services	27	41	14	2	84
Communications	12	12	2	3	29
Computer Services	24	26	10	4	64
Concessions/Restaurant	10	27	1	0	38
Construction/Engineering	11	6	2	0	19
Consulting	15	3	0	2	20
Education	0	0	1	1	2
Government	11	6	3	8	28
Health Care	14	3	0	0	17
Hospitality	0	1	0	2	3
Insurance	15	11	14	13	53
Investments/Finance	151	79	40	48	318
Law	32	56	8	4	100
Manufacturing	6	2	0	0	8
Non-profit	10	8	0	2	20
Personal Services	39	6	3	0	48
Publishing	1	4	2	2	9
Real Estate	5	3	0	0	8
Retail/Wholesale	39	23	1	1	64
Technology	6	8	0	0	14
Transportation	16	10	1	1	28
Travel Agency	3	1	0	0	4
Unknown	125	8	0	0	133
Total	589	348	104	93	1,134

Source: Urbanomics, based on data contained in TM 3.1-2

Table 7. Firm Size Distribution of Office Type and Total Firms in Manhattan, 1989 and 2000

	<10	10-19	20-49	50-149	150+	Total	% 150+
2000 Total	80,179	12,373	8,863	3,922	2,444	107,781	2.3%
2000 Office	41,395	6,313	4,570	1,965	1,377	55,620	2.5%
2000 Finance	7,059	1,658	1,336	504	398	10,955	3.6%
1989 Total	74,094	11,569	8,464	3,687	2,325	100,139	2.3%
1989 Office	36,636	6,376	4,553	2,087	1,586	51,238	3.1%
1989 Finance	3,950	1,046	1,030	534	475	7,035	6.8%
Change 1989-2000 Office	4,759	-63	17	-122	-209	4,382	-4.8%

Source: County Business Patterns

Table 8. Change to Lower Manhattan of Affected Firms, Square Footage and Employment

Industry	No. of Firms pre-9/11	No. of Firms post-9/11	% of Firms Lost to Lower Manhattan	% of Firms Retained by Lower Manhattan	Square Footage pre-9/11	Square Footage post-9/11	% of Square Footage Lost to LM	% of Square Footage Retained by LM
Accounting	11	5	54.5%	45.5%	40,239	26,121	35.1%	64.9%
Architecture/Design	12	5	58.3%	41.7%	95,755	20,981	78.1%	21.9%
Business Services	84	26	69.0%	31.0%	1,186,037	547,638	53.8%	46.2%
Communications	29	3	89.7%	10.3%	1,631,526	1,330,998	18.4%	81.6%
Computer Services	64	19	70.3%	29.7%	868,993	357,163	58.9%	41.1%
Concessions/Restaurant	38	19	50.0%	50.0%	296,709	120,206	59.5%	40.5%
Construction/Engineering	19	4	78.9%	21.1%	190,826	35,881	81.2%	18.8%
Consulting	20	3	85.0%	15.0%	622,884	571,226	8.3%	91.7%
Education	2	2	0.0%	100.0%	400,583	395,540	1.3%	98.7%
Government	28	9	67.9%	32.1%	3,204,760	1,240,701	61.3%	38.7%
Health Care	17	6	64.7%	35.3%	45,201	13,291	70.6%	29.4%
Hospitality	3	1	66.7%	33.3%	935,945	380,052	59.4%	40.6%
Insurance	53	20	62.3%	37.7%	2,803,920	753,589	73.1%	26.9%
Investments/Finance	318	93	70.8%	29.2%	18,886,932	11,311,039	40.1%	59.9%
Law	100	43	57.0%	43.0%	1,641,055	659,223	59.8%	40.2%
Manufacturing	8	0	100.0%	0.0%	25,249	0	100.0%	0.0%
Non-profit	20	5	75.0%	25.0%	343,385	239,164	30.4%	69.6%
Personal Services	48	9	81.3%	18.8%	262,839	44,485	83.1%	16.9%
Publishing	9	4	55.6%	44.4%	417,249	364,778	12.6%	87.4%
Real Estate	8	3	62.5%	37.5%	37,493	20,624	45.0%	55.0%
Retail/Wholesale	64	12	81.3%	18.8%	467,240	231,686	50.4%	49.6%
Technology	14	1	92.9%	7.1%	73,565	1,800	97.6%	2.4%
Transportation	28	3	89.3%	10.7%	242,968	17,242	92.9%	7.1%
Travel Agency	4	1	75.0%	25.0%	14,134	8,339	41.0%	59.0%
Unknown	133	15	88.7%	11.3%	627,729	30,933	95.1%	4.9%
Total	1,134	311	72.6%	27.4%	35,363,214	18,722,700	47.1%	52.9%

Source: Urbanomics, based on multiple sources identified in TM 3.1-2, Section 1.2

Note: 311 establishments had 11 additional destinations in Lower Manhattan for which post 9/11 employment and floorspace is shown.

**Table 8 cont. Change to Lower Manhattan of Affected Firms,
Square Footage and Employment**

Industry	Employment pre-9/11	Employment post-9/11	% of Employment Lost to LM	% of Employment Retained by LM
Accounting	143	93	34.6%	65.4%
Architecture/Design	319	74	76.8%	23.2%
Business Services	4,141	1,888	54.4%	45.6%
Communications	3,211	2,155	32.9%	67.1%
Computer Services	3,258	1,412	56.7%	43.3%
Concessions/Restaurant	1,218	431	64.6%	35.4%
Construction/Engineering	745	155	79.1%	20.9%
Consulting	1,314	1,145	12.9%	87.1%
Education	295	277	6.1%	93.9%
Government	10,983	3,556	67.6%	32.4%
Health Care	162	48	70.6%	29.4%
Hospitality	2,096	1,357	35.2%	64.8%
Insurance	10,095	2,403	76.2%	23.8%
Investments/Finance	63,290	33,808	46.6%	53.4%
Law	4,516	1,606	64.4%	35.6%
Manufacturing	92	0	100.0%	0.0%
Non-profit	1,267	851	32.9%	67.1%
Personal Services	694	159	77.1%	22.9%
Publishing	673	486	27.9%	72.1%
Real Estate	118	69	41.7%	58.3%
Retail/Wholesale	2,146	1,293	39.7%	60.3%
Technology	279	10	96.4%	3.6%
Transportation	750	62	91.8%	8.2%
Travel Agency	50	30	41.0%	59.0%
Unknown	2,267	102	95.5%	4.5%
Total	114,124	53,469	53.1%	46.9%

Table 9. Change in Square Footage and Employment of Affected Firms by Destination

Location	Square Footage				Employment			
	Pre-9/11	Post-9/11	Change	% Change	Pre-9/11	Post-9/11	Change	% Change
Manhattan - Downtown	19,152,133	18,722,700	-429,433	-2.2%	57,054	53,469	-3,585	-6.3%
Manhattan - Valley	2,406,702	2,372,488	-34,214	-1.4%	8,301	7,633	-668	-8.0%
Manhattan - Midtown	7,565,992	7,609,219	43,227	0.6%	27,702	25,072	-2,630	-9.5%
Manhattan - Elsewhere	65,923	67,706	1,783	2.7%	236	241	5	2.3%
Brooklyn	394,384	680,417	286,033	72.5%	1,335	2,199	864	64.7%
Queens	115,891	168,504	52,613	45.4%	407	508	101	24.8%
Staten Island	23,314	28,314	5,000	21.4%	84	89	5	6.0%
Unknown or Multiple New York	802,817	800,727	-2,090	-0.3%	2,977	2,935	-42	-1.4%
Total New York City	30,527,155	30,450,074	-77,081	-0.3%	98,095	92,146	-5,949	-6.1%
Nassau	38,571	56,493	17,922	46.5%	135	202	67	49.4%
Suffolk	41,756	41,756	0	0.0%	149	149	0	0.0%
Long Island	80,327	98,249	17,922	22.3%	284	351	67	23.5%
Rockland	24,390	17,807	-6,584	-27.0%	87	64	-23	-26.7%
Ulster	23,024	16,020	-7,004	-30.4%	82	57	-25	-30.2%
Westchester	1,047,413	795,169	-252,243	-24.1%	2,590	2,233	-357	-13.8%
Mid Hudson	1,094,827	828,996	-265,831	-24.3%	2,759	2,354	-405	-14.7%
Total New York State	31,702,309	31,377,320	-324,990	-1.0%	101,138	94,851	-6,287	-6.2%
New Jersey	1,090,333	3,271,775	2,181,442	200.1%	4,680	11,679	7,000	149.6%
Connecticut	58,816	313,101	254,285	432.3%	222	1,087	865	389.8%
Rest of US	189,190	265,298	76,108	40.2%	681	724	43	6.3%
Elsewhere or Unknown	2,322,566	1,771,439	-551,127	-23.7%	7,404	6,028	-1,375	-18.6%
Total	35,363,214	36,998,932	1,635,718	4.6%	114,124	114,370	246	0.2%

Source: Urbanomics, based on multiple sources identified in TM 3.1-2, Section1.2

Table 10. Relocation Patterns of Firms by Size

Destinations	less than 5,000 sf	5-20,000 sf	20-50,000 sf	50,000+ sf	Total
Manhattan - Downtown	105	123	42	52	322
Manhattan - Valley	43	31	11	11	96
Manhattan - Midtown	77	58	22	35	192
Manhattan - Elsewhere	15	6	0	0	21
Brooklyn	22	8	0	4	34
Queens	53	4	0	1	58
Staten Island	15	1	0	0	16
Unknown or Multiple New York	28	37	6	1	72
Total New York City	358	268	81	104	811
Nassau	10	4	0	0	14
Suffolk	8	3	0	0	11
Long Island	18	7	0	0	25
Rockland	2	1	0	0	3
Ulster	0	1	0	0	1
Westchester	6	3	1	1	11
Mid Hudson	8	5	1	1	15
Total New York State	384	280	82	105	851
New Jersey	57	21	7	18	103
Connecticut	6	3	1	1	11
Rest of US	18	10	2	1	31
Elsewhere or Unknown	141	55	5	6	207
Total	606	369	97	131	1,203

Source: Urbanomics, based on multiple sources identified in TM 3.1-2, Section1.2

Table 11. Relocation Patterns of Firms by Industry

Industry	Manhattan Downtown	Manhattan Valley	Manhattan Midtown	Manhattan Elsewhere	Brooklyn	Queens	Staten Island	Unknown or Multiple New York
Accounting	5	0	3	1	0	0	0	1
Architecture / Design	5	3	0	0	2	0	0	0
Business Services	27	9	16	1	2	2	0	5
Communications	3	3	4	1	3	0	1	0
Computer Services	19	9	11	0	1	0	0	4
Concessions / Restaurant	19	0	2	1	0	0	0	7
Construction / Engineering	4	7	2	0	0	0	0	0
Consulting	3	0	7	2	0	1	2	1
Education	2	0	0	0	0	0	0	0
Government	10	9	3	0	2	0	0	2
Health Care	6	1	2	1	2	0	0	0
Hospitality	1	0	0	0	0	0	0	0
Insurance	20	4	17	0	1	0	0	3
Investments / Finance	99	14	61	4	5	35	7	9
Law	44	7	20	1	4	0	1	8
Manufacturing	0	0	1	0	0	0	0	0
Non-profit	5	4	1	0	0	1	0	1
Personal Services	11	10	11	1	1	3	1	2
Publishing	4	1	1	0	0	1	0	0
Real Estate	3	0	2	0	0	0	0	0
Retail / Wholesale	12	4	5	3	4	3	1	11
Technology	1	1	3	1	1	1	0	0
Transportation	3	0	7	0	0	0	1	3
Travel Agency	1	0	0	0	1	0	0	1
Unknown	15	10	13	4	5	11	2	14
Total	322	96	192	21	34	58	16	72

Table 11 cont. Relocation Patterns of Firms by Industry

Industry	Total New York City	Nassau	Suffolk	Long Island	Rockland / Ulster	Westchester	Mid- Hudson	Total New York State
Accounting	10	0	0	0	0	0	0	10
Architecture / Design	10	0	0	0	0	0	0	10
Business Services	62	0	0	0	0	1	1	63
Communications	15	0	1	1	0	0	0	16
Computer Services	44	0	0	0	0	0	0	44
Concessions / Restaurant	29	0	0	0	0	0	0	29
Construction / Engineering	13	0	0	0	1	0	1	14
Consulting	16	0	0	0	0	1	1	17
Education	2	0	0	0	0	0	0	2
Government	26	0	0	0	0	0	0	26
Health Care	12	0	0	0	0	1	1	13
Hospitality	1	0	0	0	0	0	0	1
Insurance	45	1	0	1	0	0	0	46
Investments / Finance	234	5	5	10	2	6	8	252
Law	85	1	1	2	1	1	2	89
Manufacturing	1	0	1	1	0	0	0	2
Non-profit	12	0	0	0	0	0	0	12
Personal Services	40	0	0	0	0	0	0	40
Publishing	7	0	0	0	0	1	1	8
Real Estate	5	0	0	0	0	0	0	5
Retail / Wholesale	43	3	1	4	0	0	0	47
Technology	8	1	0	1	0	0	0	9
Transportation	14	0	0	0	0	0	0	14
Travel Agency	3	0	0	0	0	0	0	3
Unknown	74	3	2	5	0	0	0	79
Total	811	14	11	25	4	11	15	851

Table 11 cont. Relocation Patterns of Firms by Industry

Industry	New Jersey	Connecticut	Rest of US	Elsewhere or Unknown	Total
Accounting	0	0	0	1	11
Architecture / Design	0	0	0	2	12
Business Services	1	0	3	19	86
Communications	3	0	2	9	30
Computer Services	10	0	4	9	67
Concessions / Restaurant	2	0	2	5	38
Construction / Engineering	3	0	0	3	20
Consulting	2	0	2	1	22
Education	0	0	0	0	2
Government	2	0	0	5	33
Health Care	1	0	0	3	17
Hospitality	0	0	0	2	3
Insurance	10	2	3	4	65
Investments / Finance	38	7	8	50	355
Law	5	0	1	6	101
Manufacturing	0	0	0	6	8
Non-profit	0	0	0	8	20
Personal Services	2	1	1	7	51
Publishing	0	0	0	1	9
Real Estate	0	0	1	2	8
Retail / Wholesale	5	1	1	11	65
Technology	4	0	1	0	14
Transportation	8	0	1	6	29
Travel Agency	1	0	0	0	4
Unknown	6	0	1	47	133
Total	103	11	31	207	1,203

Table 12. Relocation Patterns of Employment by Industry

Industry	New York City	Long Island	Mid-Hudson Valley	New Jersey	Connecticut	Rest of US	Unknown	Total Relocations
Accounting	127	0	0	0	0	0	3	130
Architecture	143	0	0	0	0	0	0	143
Business Services	3,323	0	34	250	0	62	383	4,053
Commodities	51	0	0	43	0	0	4	98
Communications	2,304	0	0	275	0	65	130	2,773
Computer Services	2,486	0	0	207	0	33	284	3,010
Concessions	360	0	0	12	0	50	74	496
Construction	88	0	5	0	0	0	16	109
Consulting	1,218	0	1	6	0	21	15	1,260
Design	142	0	0	0	0	0	24	165
Education	277	0	0	0	0	0	0	277
Engineering	447	0	0	111	0	0	14	572
Finance	48,375	0	2,134	4,311	800	117	330	56,068
Government	7,771	0	0	2,154	0	0	1188	11,113
Health Care	199	0	4	3	0	0	72	278
Hospitality	1,357	0	0	0	0	0	32	1,389
Insurance	7,529	45	0	2,207	155	66	85	10,087
Investments	5,489	84	74	1,475	115	140	632	8,010
Law	4,428	79	76	201	0	3	129	4,916
Manufacturing	1	1	0	0	0	0	71	73
Non-profit	1,067	0	0	0	0	0	166	1,233
Personal Services	853	0	0	10	7	3	84	956
Publishing	540	0	26	0	0	0	4	570
Real Estate	111	0	0	0	0	10	25	145
Restaurant	536	0	0	28	0	18	106	689
Retail	1,746	37	0	20	10	12	73	1,898
Technology	144	34	0	81	0	8	0	267
Telecommunications	284	2	0	1	0	79	15	381
Transportation	331	0	0	232	0	31	91	685
Travel Agency	31	0	0	11	0	0	0	42
Wholesale	48	0	0	20	0	0	85	153
Unknown	341	69	0	21	0	6	1893	2,331
Total	92,146	351	2,354	11,679	1,087	724	6,028	114,370

Source: Urbanomics, based on data contained in TM 3.1-2

Table 13. Average and Aggregate Wages of Relocated Post-9/11 Employment by Industry

Industry	Downtown	Rest of NYC	Rest of Region	Outside of Region	Total*
Accounting	\$64,439	\$60,939	n/a	\$60,939	\$63,447
Architecture	116,500	116,500	n/a	n/a	116,500
Art	n/a	73,867	n/a	n/a	73,867
Business Services	126,479	78,940	\$189,032	72,539	108,102
Commodities	n/a	189,388	189,388	189,388	189,388
Communications	67,346	71,200	71,200	68,120	68,066
Computer Services	71,782	70,371	68,824	73,384	71,243
Concessions	19,574	25,872	39,193	16,705	21,427
Construction	62,596	61,004	54,236	54,236	60,405
Consulting	126,090	66,927	60,939	84,046	121,127
Design	73,552	58,653	n/a	74,312	67,280
Education	61,820	n/a	n/a	n/a	61,820
Engineering	59,364	72,538	60,939	60,939	67,515
Finance	221,816	216,225	195,368	204,505	216,506
Government	60,830	79,660	96,766	96,766	78,780
Health Care	58,727	49,797	57,990	58,094	53,686
Hospitality	37,080	n/a	n/a	39,996	37,147
Insurance	76,787	65,939	65,055	72,922	68,372
Investments	243,727	216,261	206,722	190,920	222,277
Law	97,583	91,884	92,839	94,769	93,908
Manufacturing	n/a	37,157	37,157	37,157	37,157
N/A	45,084	44,924	31,991	41,001	41,194
Non-profit	30,128	38,739	n/a	52,142	34,606
Personal Services	18,150	18,049	18,019	18,717	18,126
Publishing	40,624	37,157	37,157	37,157	40,112
Real Estate	65,531	63,664	n/a	99,820	73,210
Restaurant	27,053	34,070	34,070	34,070	31,661
Retail	57,287	23,500	15,370	49,412	50,244
Retail / Wholesale	76,847	77,366	77,500	76,968	77,243
Technology	140,000	89,752	92,818	71,200	92,399
Telecommunications	71,200	71,200	71,200	71,200	71,200
Transportation	21,719	22,758	23,117	23,117	22,850
Travel Agency	97,866	51,424	51,424	n/a	84,154
Wholesale	n/a	74,937	77,500	75,864	75,788
Average All	\$168,198	\$146,239	\$148,889	\$85,746	\$153,301
Aggregate All (\$ millions)	\$8,993.38	\$5,656.09	\$2,306.29	\$577.33	\$17,533.09

Source: NYS DOL ES-202 Employment and Earnings, Q4 2000, electronic file

Note*: Total represents an average of the preceding four columns, weighted by their respective employment.

Table 14. Pre-and-Post 9/11 Employment Changes: Separating out the Effects of 9/11 from the Recession

New York City	Total Non Agricultural Employment					
	Jun-01	Aug-01	Jul-02	Change		
	Jun-01	Aug-01	Jul-02	Jun 01-Aug 01	Aug 01-Jul 02	Jun 01-Jul 02
Total Non Agricultural	3,730.6	3,684.2	3,629.1	-46.4	-55.1	-101.5
Mining	0.2	0.2	0.2	0.0	0.0	0.0
Construction	126.9	128.6	123.7	1.7	-4.9	-3.2
Manufacturing	232.9	230.6	218.3	-2.3	-12.3	-14.6
Transport, Comm. & Util.	215.6	209.1	196.8	-6.5	-12.3	-18.8
Transportation	130.3	123.9	113.6	-6.4	-10.3	-16.7
Communications/Utilities	85.3	85.2	83.2	-0.1	-2.0	-2.1
Wholesale/Retail	625.1	613.2	606.3	-11.9	-6.9	-18.8
Finance, Insurance, Real Estate	496.5	495.2	464.3	-1.3	-30.9	-32.2
Services	1,471.4	1,438.3	1,429.0	-33.1	-9.3	-42.4
Personal Services	75.5	72.6	70.2	-2.9	-2.4	-5.2
Business Services	359.2	355.5	333.7	-3.7	-21.8	-25.5
Entertainment/Recreation	103.1	97.7	96.1	-5.4	-1.6	-7.0
Health Care	327.4	327.7	332.9	0.3	5.2	5.5
Education	125.3	113.0	119.8	-12.3	6.8	-5.5
NFP Misc. Services	266.8	261.7	268.7	-5.1	7.0	1.9
Office Misc. Services	214.1	210.1	207.6	-4.0	-2.5	-6.6
Government	562.0	569.0	590.5	7.0	21.5	28.5
Nassau-Suffolk	Jun-01	Aug-01	Jul-02	Jun 01-Aug 01	Aug 01-Jul 02	Jun 01-Jul 02
Total Non Agricultural	1,243.5	1,219.0	1,226.1	-24.5	7.1	-17.4
Mining	0.4	0.4	0.4	0.0	0.0	0.0
Construction	64.8	65.2	65.1	0.4	-0.1	0.3
Manufacturing	108.4	108.3	102.9	-0.1	-5.4	-5.5
Transport, Comm. & Util.	58.8	56.4	56.9	-2.4	0.5	-1.9
Transportation	37.9	35.4	35.4	-2.5	0.0	-2.5
Communications/Utilities	20.9	21.0	21.5	0.1	0.5	0.6
Wholesale/Retail	315.4	313.9	312.4	-1.5	-1.5	-3.0
Finance, Insurance, Real Estate	82.5	81.9	81.2	-0.6	-0.7	-1.3

Source: Urbanomics, based on data contained in TM 3.1-2 and NYS DOL Employment in Nonagricultural Establishments by Place of Work, New York City, monthly data for 2001 and 2002

Table 14 cont. Pre-and-Post 9/11 Employment Changes: Separating out the Effects of 9/11 from the Recession

New York City	Direct Effects of 9/11			Recession & Indirect Effects		
	Pre 9/11	Post 9/11	Change	Pre 9/11	Post 9/11	Total
Total Non Agricultural	114.1	92.1	-22.0	-46.4	-33.1	-79.5
Mining				0.0	0.0	0.0
Construction				1.7	-4.9	-3.2
Manufacturing	1.1	0.7	-0.4	-2.3	-11.9	-14.2
Transport, Comm. & Util.	4.1	3.0	-1.1	-6.5	-11.2	-17.7
Transportation	0.8	0.4	-0.5	-6.4	-9.8	-16.2
Communications/Utilities	3.3	2.6	-0.7	-0.1	-1.3	-1.4
Wholesale/Retail	3.4	2.7	-0.7	-11.9	-6.2	-18.1
Finance, Insurance, Real Estate	75.0	61.8	-13.2	-1.3	-17.7	-19.0
Services	19.3	16.2	-3.1	-33.1	-6.2	-39.3
Personal Services	2.8	2.2	-0.6	-2.9	-1.8	-4.6
Business Services	7.5	5.8	-1.7	-3.7	-20.1	-23.8
Entertainment/Recreation				-5.4	-1.6	-7.0
Health Care	0.2	0.2	0.0	0.3	5.2	5.5
Education	0.3	0.3	0.0	-12.3	6.8	-5.5
NFP Misc. Services	1.3	1.1	-0.2	-5.1	7.2	2.1
Office Misc. Services	7.2	6.6	-0.6	-4.0	-2.0	-6.0
Government	11.2	7.8	-3.4	7.0	24.9	31.9
Nassau-Suffolk	Pre 9/11	Post 9/11	Change	Pre 9/11	Post 9/11	Total
Total Non Agricultural	0.0	0.3	0.3	-24.5	6.8	-17.7
Mining				0.0	0.0	0.0
Construction				0.4	-0.1	0.3
Manufacturing		0.0	0.0	-0.1	-5.4	-5.5
Transport, Comm. & Util.		0.0	0.0	-2.4	0.5	-1.9
Transportation				-2.5	0.0	-2.5
Communications/Utilities		0.0	0.0	0.1	0.5	0.6
Wholesale/Retail		0.0	0.0	-1.5	-1.5	-3.0
Finance, Insurance, Real Estate		0.1	0.1	-0.6	-0.8	-1.4

Table 14 cont. Pre-and-Post 9/11 Employment Changes: Separating out the Effects of 9/11 from the Recession

	Total Non Agricultural Employment					
				Change		
Nassau-Suffolk	Jun-01	Aug-01	Jul-02	Jun 01-Aug 01	Aug 01-Jul 02	Jun 01-Jul 02
Services	415.2	417.1	421.7	1.9	4.6	6.5
Personal Services	29.2	29.5	29.3	0.3	-0.2	0.1
Business Services	109.2	110.3	109.5	1.1	-0.8	0.3
Entertainment/Recreation	25.6	25.9	25.7	0.3	-0.2	0.1
Health Care	120.5	121.6	124.0	1.1	2.4	3.5
Education	25.8	23.9	24.7	-1.9	0.8	-1.1
NFP Misc. Services	47.8	48.3	51.5	0.5	3.2	3.7
Office Misc. Services	57.2	57.7	57.0	0.6	-0.8	-0.2
Government	198.0	175.8	185.5	-22.2	9.7	-12.5
Mid Hudson	Jun-01	Aug-01	Jul-02	Jun 01-Aug 01	Aug 01-Jul 02	Jun 01-Jul 02
Total Non Agricultural	903.8	890.0	894.0	-13.9	4.0	-9.8
Mining	1.3	1.3	1.3	0.0	0.0	0.0
Construction	47.8	48.0	48.2	0.3	0.2	0.5
Manufacturing	88.6	87.3	84.4	-1.3	-2.9	-4.2
Transport, Comm. & Util.	45.3	42.2	42.4	-3.1	0.2	-2.9
Transportation	26.0	23.5	24.1	-2.5	0.6	-2.0
Communications/Utilities	19.3	18.7	18.3	-0.6	-0.4	-0.9
Wholesale/Retail	198.6	197.9	199.3	-0.7	1.4	0.7
Finance, Insurance, Real Estate	47.1	47.1	47.2	0.0	0.1	0.1
Services	312.1	313.5	316.4	1.4	2.8	4.2
Personal Services	28.3	28.6	28.8	0.4	0.1	0.5
Business Services	62.5	62.4	62.7	-0.1	0.3	0.2
Entertainment/Recreation	19.4	19.5	19.6	0.0	0.2	0.2
Health Care	89.2	89.9	91.5	0.7	1.6	2.3
Education	28.7	28.6	28.6	-0.1	0.0	-0.1
NFP Misc. Services	53.2	53.6	54.2	0.4	0.6	1.0
Office Misc. Services	30.8	30.8	31.0	0.0	0.2	0.2
Government	163.0	152.3	154.8	-10.7	2.4	-8.2

Table 14 cont. Pre-and-Post 9/11 Employment Changes: Separating out the Effects of 9/11 from the Recession

Nassau-Suffolk	Direct Effects of 9/11			Recession & Indirect Effects		
	Pre 9/11	Post 9/11	Change	Pre 9/11	Post 9/11	Total
Services		0.1	0.1	1.9	4.5	6.4
Personal Services				0.3	-0.2	0.1
Business Services				1.1	-0.8	0.3
Entertainment/Recreation				0.3	-0.2	0.1
Health Care				1.1	2.4	3.5
Education				-1.9	0.8	-1.1
NFP Misc. Services				0.5	3.2	3.7
Office Misc. Services		0.1	0.1	0.6	-0.8	-0.3
Government				-22.2		
Mid Hudson	Pre 9/11	Post 9/11	Change	Pre 9/11	Post 9/11	Total
Total Non Agricultural	0.0	2.4	2.4	-13.9	1.7	-12.2
Mining				0.0	0.0	0.0
Construction				0.3	0.2	0.5
Manufacturing		0.0	0.0	-1.3	-2.9	-4.2
Transport, Comm. & Util.		0.0	0.0	-3.1	0.2	-2.9
Transportation				-2.5	0.6	-2.0
Communications/Utilities				-0.6	-0.4	-0.9
Wholesale/Retail				-0.7	1.4	0.7
Finance, Insurance, Real Estate		2.2	2.2	0.0	-2.1	-2.1
Services		0.1	0.1	1.4	2.7	4.1
Personal Services				0.4	0.1	0.5
Business Services				-0.1	0.3	0.2
Entertainment/Recreation				0.0	0.2	0.2
Health Care		0.0	0.0	0.7	1.6	2.3
Education				-0.1	0.0	-0.1
NFP Misc. Services				0.4	0.6	1.0
Office Misc. Services		0.1	0.1	0.0	0.1	0.1
Government				-10.7	2.4	-8.2

Table 14 cont. Pre-and-Post 9/11 Employment Changes: Separating out the Effects of 9/11 from the Recession

	Total Non Agricultural Employment					
				Change		
New Jersey	Jun-01	Aug-01	Jul-02	Jun 01-Aug 01	Aug 01-Jul 02	Jun 01-Jul 02
Total Non Agricultural	3,294.2	3,227.7	3,230.3	-66.5	2.6	-63.9
Mining	1.6	1.6	1.6	0.0	0.0	0.0
Construction	130.4	129.9	127.9	-0.5	-2.0	-2.5
Manufacturing	379.0	373.2	352.6	-5.8	-20.6	-26.4
Transport, Comm. & Util.	237.2	228.5	222.2	-8.7	-6.3	-15.0
Transportation	153.8	147.5	143.9	-6.2	-3.7	-9.9
Communications/Utilities	83.4	81.0	78.3	-2.5	-2.6	-5.1
Wholesale/Retail	748.2	734.2	733.2	-14.0	-1.0	-15.0
Finance, Insurance, Real Estate	233.5	233.2	239.0	-0.3	5.8	5.5
Services	1,090.4	1,080.9	1,096.6	-9.5	15.7	6.2
Personal Services	66.3	65.7	66.2	-0.6	0.5	-0.1
Business Services	362.6	358.4	361.5	-4.2	3.1	-1.1
Entertainment/Recreation	51.8	51.6	52.2	-0.2	0.6	0.3
Health Care	280.9	281.2	289.8	0.3	8.6	8.9
Education	50.8	49.2	49.8	-1.6	0.6	-1.0
NFP Misc. Services	95.7	94.6	95.3	-1.1	0.8	-0.3
Office Misc. Services	182.2	180.2	181.7	-2.1	1.5	-0.5
Government	473.9	446.2	457.2	-27.7	11.0	-16.7
Connecticut	Jun-01	Aug-01	Jul-02	Jun 01-Aug 01	Aug 01-Jul 02	Jun 01-Jul 02
Total Non Agricultural	874.8	862.6	851.2	-12.2	-11.4	-23.6
Mining	0.3	0.3	0.3	0.0	0.0	0.0
Construction	36.4	36.4	35.3	0.0	-1.1	-1.1
Manufacturing	139.8	137.7	131.0	-2.1	-6.7	-8.8
Transport, Comm. & Util.	40.8	40.0	40.0	-0.8	0.0	-0.8
Transportation	23.7	23.1	23.0	-0.6	-0.1	-0.7
Communications/Utilities	17.1	16.9	17.0	-0.2	0.1	-0.1
Wholesale/Retail	190.6	189.2	179.9	-1.4	-9.3	-10.7
Finance, Insurance, Real Estate	62.8	62.8	63.1	0.0	0.3	0.3
Services	300.6	299.4	302.0	-1.2	2.6	1.4
Personal Services	22.3	22.2	22.4	-0.1	0.1	0.0

Table 14 cont. Pre-and-Post 9/11 Employment Changes: Separating out the Effects of 9/11 from the Recession

New Jersey	Direct Effects of 9/11			Recession & Indirect Effects		
	Pre 9/11	Post 9/11	Change	Pre 9/11	Post 9/11	Total
Total Non Agricultural	0.0	11.7	11.7	-66.5	-9.1	-75.6
Mining				0.0	0.0	0.0
Construction				-0.5	-2.0	-2.5
Manufacturing		0.1	0.1	-5.8	-20.7	-26.5
Transport, Comm. & Util.		0.5	0.5	-8.7	-6.8	-15.5
Transportation		0.2	0.2	-6.2	-3.9	-10.1
Communications/Utilities		0.3	0.3	-2.5	-2.9	-5.4
Wholesale/Retail		0.1	0.1	-14.0	-1.1	-15.1
Finance, Insurance, Real Estate		8.1	8.1	-0.3	-2.3	-2.6
Services		0.8	0.8	-9.5	14.9	5.4
Personal Services		0.0	0.0	-0.6	0.5	-0.1
Business Services		0.5	0.5	-4.2	2.7	-1.6
Entertainment/Recreation				-0.2	0.6	0.3
Health Care		0.0	0.0	0.3	8.6	8.9
Education				-1.6	0.6	-1.0
NFP Misc. Services				-1.1	0.8	-0.3
Office Misc. Services		0.3	0.3	-2.1	1.2	-0.8
Government		2.2	2.2	-27.7	8.8	-18.9
Connecticut	Pre 9/11	Post 9/11	Change	Pre 9/11	Post 9/11	Total
Total Non Agricultural	0.0	1.1	1.1	-12.2	-12.5	-24.7
Mining				0.0	0.0	0.0
Construction				0.0	-1.1	-1.1
Manufacturing				-2.1	-6.7	-8.8
Transport, Comm. & Util.				-0.8	0.0	-0.8
Transportation				-0.6	-0.1	-0.7
Communications/Utilities				-0.2	0.1	-0.1
Wholesale/Retail		0.0	0.0	-1.4	-9.3	-10.7
Finance, Insurance, Real Estate		1.1	1.1	0.0	-0.8	-0.8
Services		0.0	0.0	-1.2	2.6	1.4
Personal Services		0.0	0.0	-0.1	0.1	0.0

Table 14 cont. Pre-and-Post 9/11 Employment Changes: Separating out the Effects of 9/11 from the Recession

	Total Non Agricultural Employment					
				Change		
Connecticut	Jun-01	Aug-01	Jul-02	Jun 01-Aug 01	Aug 01-Jul 02	Jun 01-Jul 02
Business Services	77.7	77.2	75.9	-0.5	-1.3	-1.8
Entertainment/Recreation	17.3	17.2	18.1	-0.1	0.9	0.8
Health Care	82.6	82.7	83.0	0.1	0.3	0.4
Education	28.9	28.6	29.6	-0.3	1.0	0.7
NFP Misc. Services	35.5	35.3	37.1	-0.2	1.8	1.6
Office Misc. Services	36.2	36.1	36.0	-0.1	-0.2	-0.2
Government	103.4	96.7	99.5	-6.7	2.8	-3.9
Region	Jun-01	Aug-01	Jul-02	Jun 01-Aug 01	Aug 01-Jul 02	Jun 01-Jul 02
Total Non Agricultural	10,046.9	9,883.5	9,830.7	-163.5	-52.8	-216.2
Mining	3.9	3.9	3.9	0.0	0.0	0.1
Construction	406.3	408.1	400.2	1.9	-7.9	-6.0
Manufacturing	948.7	937.1	889.2	-11.6	-47.9	-59.5
Transport, Comm. & Util.	597.7	576.2	558.3	-21.5	-17.9	-39.4
Transportation	371.7	353.4	340.0	-18.2	-13.5	-31.7
Communications/Utilities	226.0	222.8	218.3	-3.3	-4.4	-7.7
Wholesale/Retail	2,077.9	2,048.4	2,031.1	-29.5	-17.3	-46.8
Finance, Insurance, Real Estate	922.4	920.2	894.8	-2.2	-25.4	-27.6
Services	3,589.7	3,549.2	3,565.7	-40.5	16.4	-24.1
Personal Services	221.6	218.7	216.9	-2.9	-1.8	-4.7
Business Services	971.2	963.7	943.3	-7.4	-20.4	-27.8
Entertainment/Recreation	217.2	211.8	211.7	-5.4	-0.1	-5.6
Health Care	900.7	903.1	921.3	2.5	18.1	20.6
Education	259.5	243.4	252.5	-16.2	9.1	-7.0
NFP Misc. Services	499.0	493.4	506.8	-5.5	13.4	7.9
Office Misc. Services	520.4	514.9	513.2	-5.6	-1.7	-7.3
Government	1,500.3	1,440.0	1,487.5	-60.3	47.4	-12.8

Table 14 cont. Pre-and-Post 9/11 Employment Changes: Separating out the Effects of 9/11 from the Recession

Connecticut	Direct Effects of 9/11			Recession & Indirect Effects		
	Pre 9/11	Post 9/11	Change	Pre 9/11	Post 9/11	Total
Business Services				-0.5	-1.3	-1.8
Entertainment/Recreation				-0.1	0.9	0.8
Health Care				0.1	0.3	0.4
Education				-0.3	1.0	0.7
NFP Misc. Services				-0.2	1.8	1.6
Office Misc. Services				-0.1	-0.2	-0.2
Government				-6.7	2.8	-3.9
Region	Pre 9/11	Post 9/11	Change	Pre 9/11	Post 9/11	Total
Total Non Agricultural	114.1	107.6	-6.5	-163.5	-46.3	-209.7
Mining				0.0	0.0	0.1
Construction				1.9	-7.9	-6.0
Manufacturing	1.1	0.8	-0.2	-11.6	-47.7	-59.2
Transport, Comm. & Util.	4.1	3.5	-0.6	-21.5	-17.3	-38.8
Transportation	0.8	0.6	-0.2	-18.2	-13.3	-31.5
Communications/Utilities	3.3	2.9	-0.4	-3.3	-4.0	-7.3
Wholesale/Retail	3.4	2.8	-0.6	-29.5	-16.7	-46.2
Finance, Insurance, Real Estate	75.0	73.2	-1.8	-2.2	-23.6	-25.8
Services	19.3	17.2	-2.1	-40.5	18.5	-22.0
Personal Services	2.8	2.2	-0.6	-2.9	-1.2	-4.1
Business Services	7.5	6.3	-1.3	-7.4	-19.1	-26.6
Entertainment/Recreation				-5.4	-0.1	-5.6
Health Care	0.2	0.2	0.0	2.5	18.1	20.6
Education	0.3	0.3	0.0	-16.2	9.2	-7.0
NFP Misc. Services	1.3	1.1	-0.2	-5.5	13.6	8.1
Office Misc. Services	7.2	7.1	0.0	-5.6	-1.6	-7.2
Government	11.2	10.0	-1.2	-60.3	48.7	-11.6

Table 15. Forecasted Employment of New York City to 2005

	Forecasted Rate of Change		Resulting Employment Forecast	
	NYC OMB	PANYNJ	NYC OMB Basis	PANYNJ Basis
2000			4,145.9	4,145.9
2001	-0.5%	-0.6%	4,125.2	4,121.0
2002	-2.6%	-2.8%	4,017.9	4,005.6
2003	1.1%	0.8%	4,062.1	4,037.7
2004	1.2%	0.9%	4,110.9	4,074.0
2005	1.0%	0.7%	4,152.0	4,102.5

Source: New York City Office of Management and Budget and the Port Authority of New York and New Jersey's 2003-2007 Business Plan

Table 16. Adjusted County Employment Forecast for the New York Metro Region, 2000-2025 (000s)

	Total Employment					
	2000	2005	2010	2015	2020	2025
Bronx	252.5	253.8	266.1	275.8	289.0	300.1
Kings	543.4	550.5	561.0	568.2	583.5	591.3
New York	2,798.5	2,776.5	2,850.9	2,894.0	2,956.5	2,995.3
Queens	590.0	589.6	607.5	621.3	643.7	658.1
Richmond	108.4	110.3	116.0	119.4	124.2	126.9
New York City	4,292.7	4,280.7	4,401.5	4,478.6	4,596.9	4,671.7
Nassau	749.5	761.4	781.0	803.4	835.6	866.1
Suffolk	722.9	751.4	768.5	779.8	798.5	828.2
Long Island	1,472.4	1,512.8	1,549.5	1,583.3	1,634.2	1,694.3
Dutchess	139.4	152.6	153.7	162.0	174.8	184.0
Orange	149.0	160.1	168.3	175.9	185.6	194.7
Putnam	33.0	36.7	39.9	43.4	48.2	51.8
Rockland	134.1	139.4	147.0	153.3	162.4	166.8
Sullivan	33.2	35.8	37.5	39.9	43.2	46.0
Ulster	80.9	85.3	89.2	94.0	102.4	110.6
Westchester	511.1	516.2	539.6	550.1	576.9	589.2
Mid Hudson	1,080.8	1,126.1	1,175.2	1,218.8	1,293.6	1,343.1
Bergen	566.8	579.6	598.9	610.5	630.5	635.4
Essex	446.6	449.7	454.6	462.6	480.3	488.8
Hudson	286.9	304.9	331.3	347.0	366.2	389.2
Hunterdon	74.4	79.1	85.6	92.4	99.8	107.1
Mercer	244.7	262.7	276.3	288.1	301.2	308.6
Middlesex	455.7	482.3	512.1	543.9	580.2	600.3
Monmouth	307.6	317.9	336.2	354.1	379.1	405.1
Morris	350.5	355.5	373.8	389.7	405.8	413.0
Ocean	178.9	188.9	199.2	207.2	213.8	220.1
Passaic	221.8	222.3	226.1	231.4	242.3	253.9
Somerset	229.4	241.0	258.3	272.7	283.1	290.3
Sussex	54.8	58.1	62.7	67.9	74.4	81.1
Union	285.0	292.5	299.1	310.3	320.2	331.1
Warren	42.4	44.9	45.8	46.8	50.1	54.4
New Jersey	3,745.3	3,879.4	4,059.8	4,224.7	4,427.2	4,578.2
Fairfield	536.9	550.4	572.0	590.3	613.1	640.7
Litchfield	89.9	92.4	96.6	100.3	105.3	110.7
New Haven	436.7	441.7	449.3	457.2	474.6	493.3
Connecticut	1,063.4	1,084.5	1,117.9	1,147.8	1,193.0	1,244.6
31 County Region	11,654.7	11,883.5	12,303.9	12,653.2	13,144.9	13,531.9

Source: Urbanomics, based on data contained in TM 3.1-2 and TM 1.3.2

Table 16 cont. Adjusted County Employment Forecast for the New York Metro Region, 2000-2025 (000s)

	Payroll Employment					
	2000	2005	2010	2015	2020	2025
Bronx	207.1	207.6	219.6	229.5	243.0	254.0
Kings	421.7	421.3	425.4	427.9	440.6	447.3
New York	2,551.3	2,502.7	2,551.8	2,575.5	2,627.6	2,657.4
Queens	457.9	452.3	465.4	475.6	496.0	508.8
Richmond	85.0	86.5	92.9	97.4	102.0	103.6
New York City	3,723.1	3,670.5	3,755.1	3,806.0	3,909.2	3,971.2
Nassau	615.5	625.2	641.8	661.4	691.4	719.2
Suffolk	602.7	625.9	637.4	644.9	660.2	685.6
Long Island	1,218.2	1,251.1	1,279.2	1,306.4	1,351.6	1,404.9
Dutchess	115.8	126.4	124.6	130.7	142.0	150.1
Orange	122.9	131.2	136.8	142.4	150.8	158.9
Putnam	22.9	24.7	26.1	28.0	31.6	34.3
Rockland	110.0	112.7	118.1	123.0	131.0	134.5
Sullivan	25.6	27.4	28.3	30.0	32.6	34.8
Ulster	64.7	67.5	70.2	73.5	79.4	84.0
Westchester	418.2	419.2	438.3	445.5	470.4	481.1
Mid Hudson	880.2	909.1	942.5	973.2	1,037.8	1,077.8
Bergen	480.6	490.2	504.2	512.5	529.4	532.0
Essex	396.2	397.5	400.1	406.1	422.2	429.8
Hudson	257.2	273.8	297.0	311.2	328.3	347.9
Hunterdon	56.8	60.3	64.7	69.4	74.8	80.1
Mercer	216.9	232.5	242.8	252.2	263.6	270.0
Middlesex	406.2	428.9	452.1	477.9	507.9	524.6
Monmouth	252.6	259.9	273.0	287.0	308.4	330.5
Morris	296.1	296.9	309.1	320.4	334.3	339.0
Ocean	138.9	146.8	154.0	160.1	165.6	170.8
Passaic	191.5	190.6	192.2	195.7	205.1	214.8
Somerset	203.1	212.9	227.1	239.0	247.7	253.7
Sussex	40.2	42.7	45.7	49.2	53.8	58.4
Union	251.6	256.0	258.4	265.8	273.3	281.9
Warren	35.7	37.9	38.0	38.5	41.5	45.5
New Jersey	3,223.6	3,326.9	3,458.5	3,585.0	3,755.7	3,879.1
Fairfield	430.6	435.0	448.3	459.6	479.0	499.8
Litchfield	66.4	67.2	69.3	71.4	75.2	79.2
New Haven	367.5	367.9	370.3	374.9	389.4	404.9
Connecticut	864.4	870.1	887.9	905.9	943.6	983.9
31 County Region	9,909.5	10,027.7	10,323.2	10,576.5	10,998.0	11,316.8

Table 16 cont. Adjusted County Employment Forecast for the New York Metro Region, 2000-2025 (000s)

	Non-Payroll Employment					
	2000	2005	2010	2015	2020	2025
Bronx	45.4	46.2	46.5	46.3	46.0	46.0
Kings	121.6	129.2	135.6	140.2	142.9	144.0
New York	247.2	273.8	299.2	318.5	328.9	337.9
Queens	132.1	137.3	142.1	145.7	147.7	149.4
Richmond	23.4	23.8	23.1	22.0	22.2	23.2
New York City	569.6	610.2	646.4	672.6	687.7	700.6
Nassau	134.0	136.1	139.2	142.0	144.3	146.9
Suffolk	120.3	125.5	131.1	134.9	138.3	142.5
Long Island	254.2	261.6	270.3	276.9	282.6	289.4
Dutchess	23.6	26.3	29.0	31.3	32.8	33.9
Orange	26.1	28.8	31.5	33.6	34.9	35.8
Putnam	10.1	12.0	13.8	15.4	16.6	17.5
Rockland	24.1	26.7	28.9	30.4	31.5	32.4
Sullivan	7.6	8.4	9.2	9.9	10.6	11.2
Ulster	16.2	17.8	19.1	20.5	23.0	26.5
Westchester	92.9	97.0	101.3	104.6	106.6	108.0
Mid Hudson	200.6	217.0	232.7	245.7	255.9	265.4
Bergen	86.2	89.4	94.7	98.0	101.1	103.3
Essex	50.4	52.2	54.5	56.5	58.1	59.0
Hudson	29.7	31.1	34.3	35.9	37.9	41.3
Hunterdon	17.6	18.8	20.9	23.0	25.0	27.0
Mercer	27.8	30.2	33.5	35.8	37.6	38.5
Middlesex	49.5	53.4	60.0	66.1	72.3	75.6
Monmouth	54.9	58.0	63.2	67.1	70.8	74.7
Morris	54.4	58.6	64.7	69.3	71.6	74.0
Ocean	40.0	42.1	45.2	47.1	48.2	49.4
Passaic	30.3	31.7	33.9	35.6	37.2	39.0
Somerset	26.2	28.1	31.1	33.7	35.4	36.6
Sussex	14.6	15.3	17.0	18.7	20.7	22.8
Union	33.3	36.5	40.7	44.6	47.0	49.1
Warren	6.7	7.1	7.7	8.2	8.6	8.9
New Jersey	521.7	552.5	601.3	639.7	671.5	699.1
Fairfield	106.3	115.4	123.7	130.7	134.1	140.9
Litchfield	23.5	25.2	27.3	28.9	30.1	31.4
New Haven	69.2	73.9	79.0	82.4	85.2	88.4
Connecticut	199.0	214.4	230.0	241.9	249.4	260.7
31 County Region	1,745.2	1,855.8	1,980.6	2,076.8	2,147.0	2,215.1

Chart 1. Establishments Represented in Destroyed and Damaged Buildings, prior to 9/11

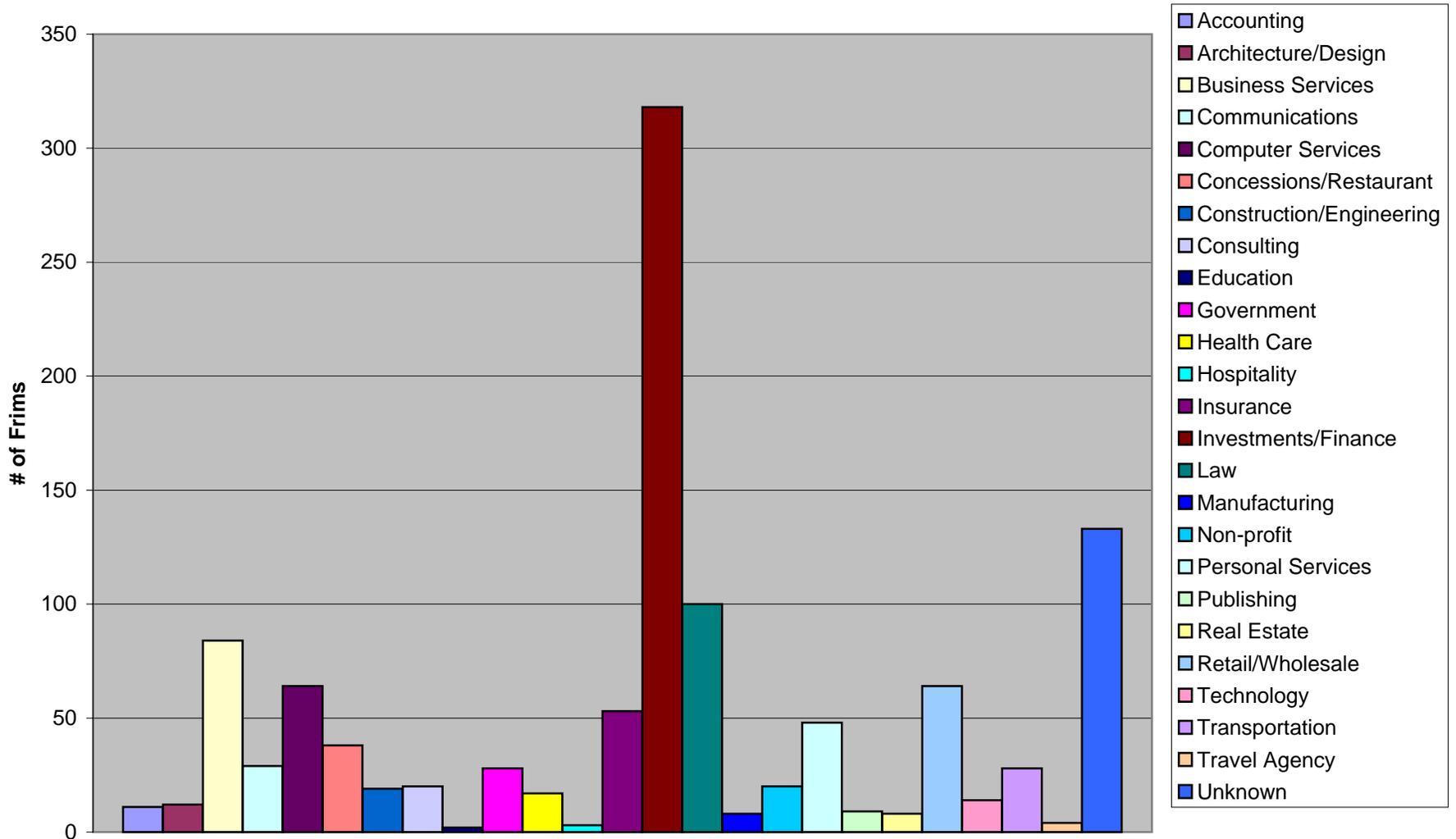


Chart 2. Net Employment Losses from Lower Manhattan due to Destroyed and Damaged Buildings, Post 9/11

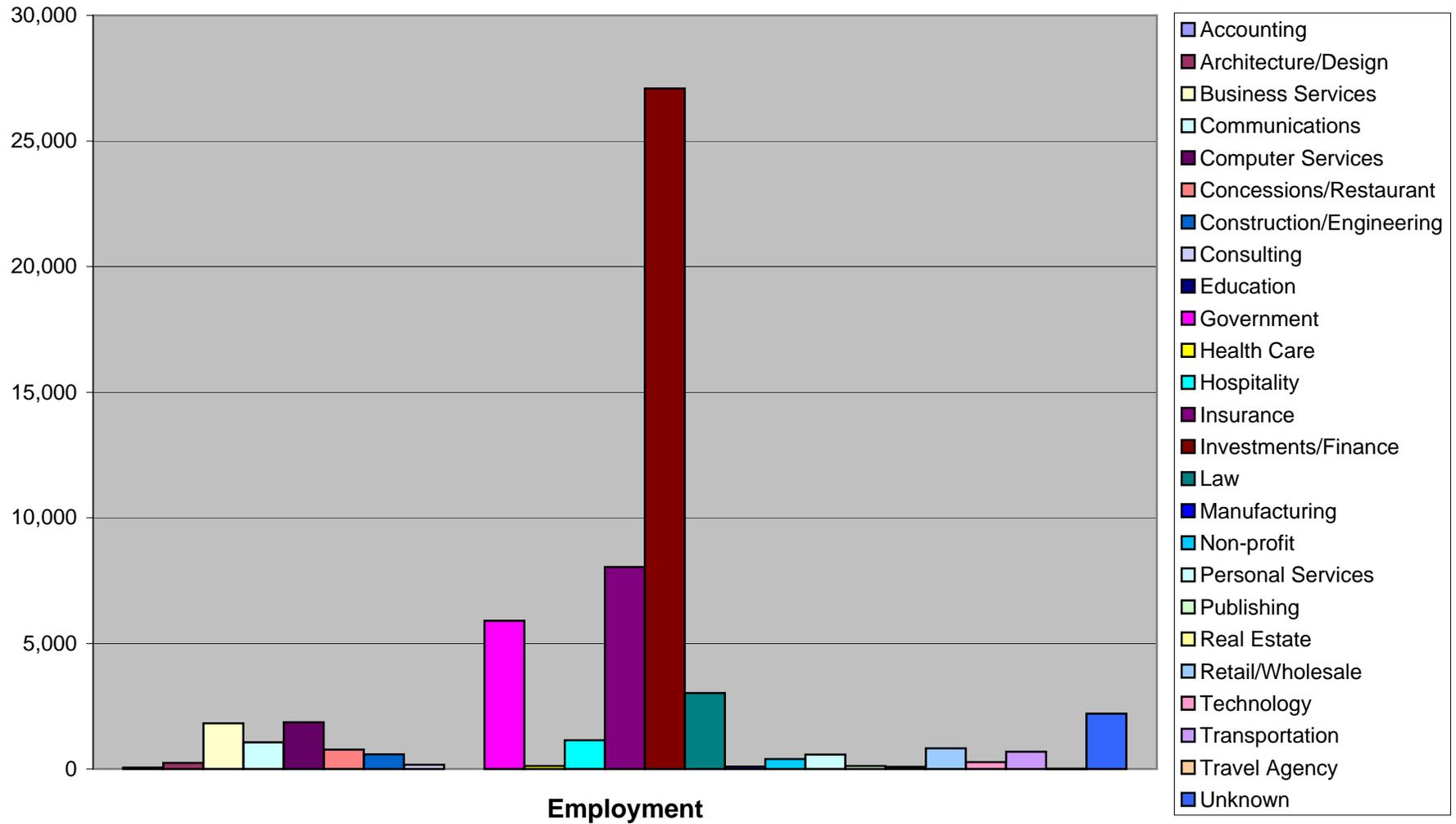
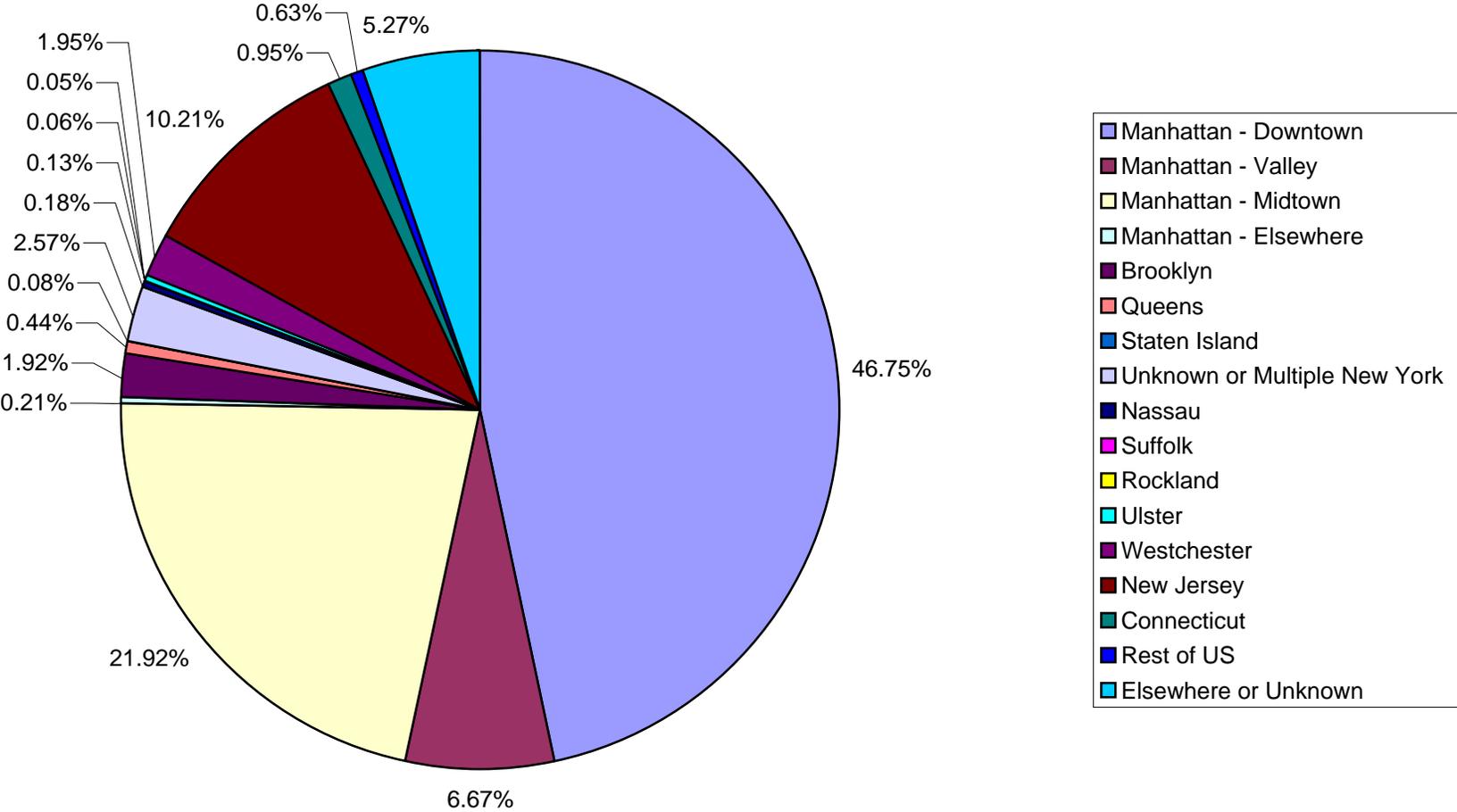


Chart 3. Relocation of Employment Since 9/11

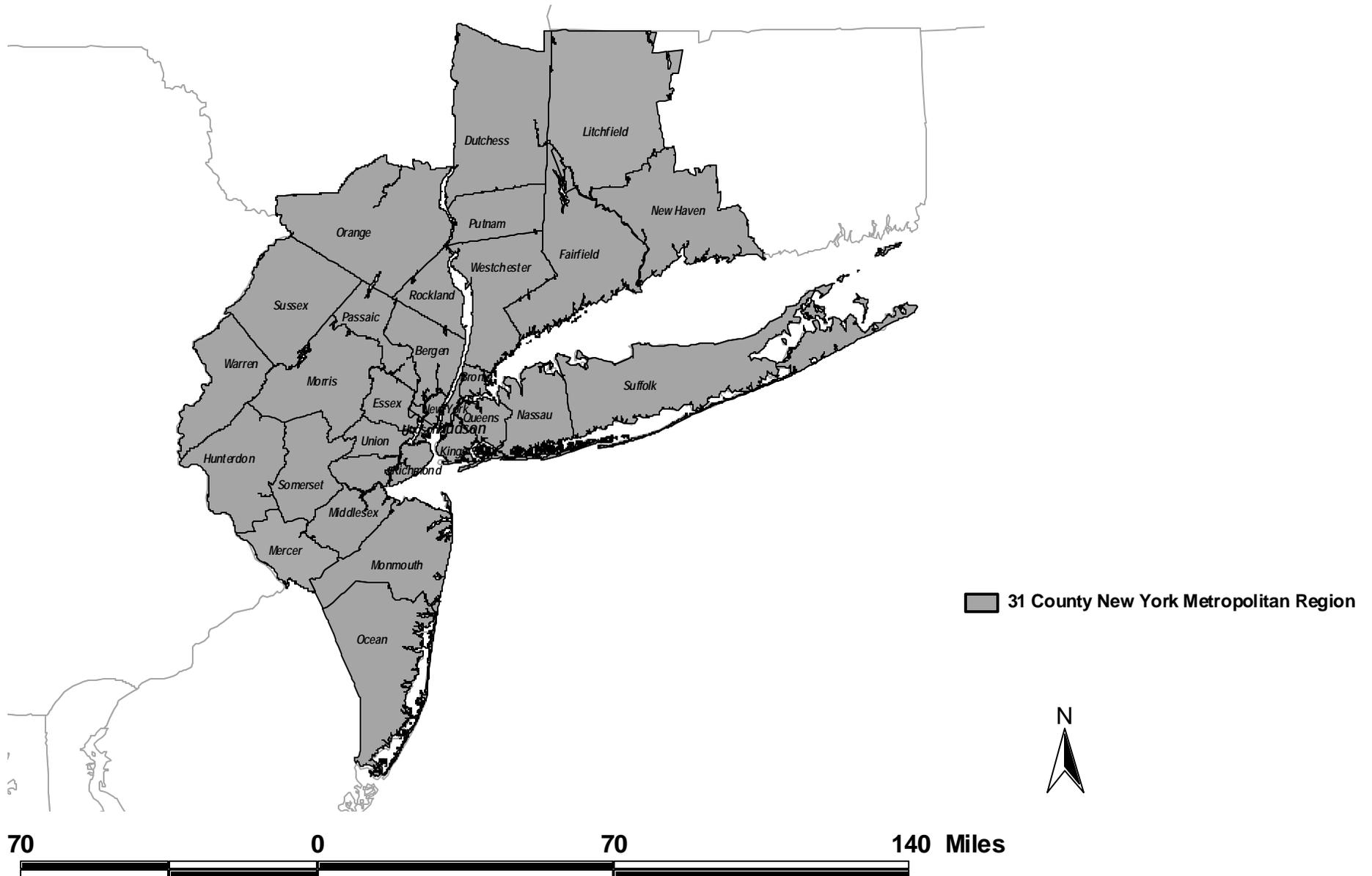


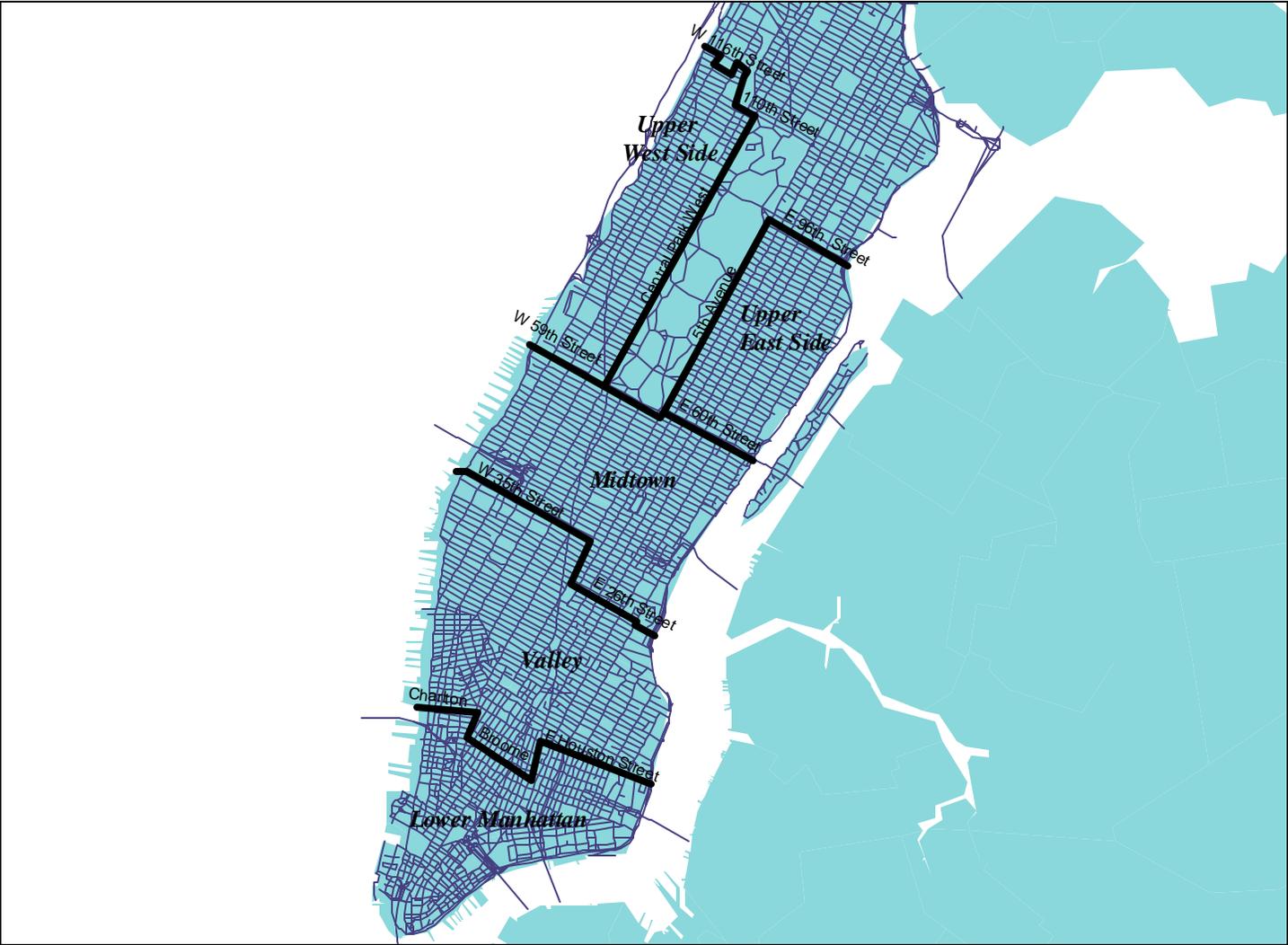


Map 1. Buildings Damaged and Destroyed as a Result of 9/11

- Area Rooflines**
- Damaged
 - Damaged Hotel
 - Damaged, To Be Razed
 - Destroyed
 - Reopened
 - Undamaged
 - Openspace
 - Streets
 - Hudson River

Map 2. Thirty-One County Region

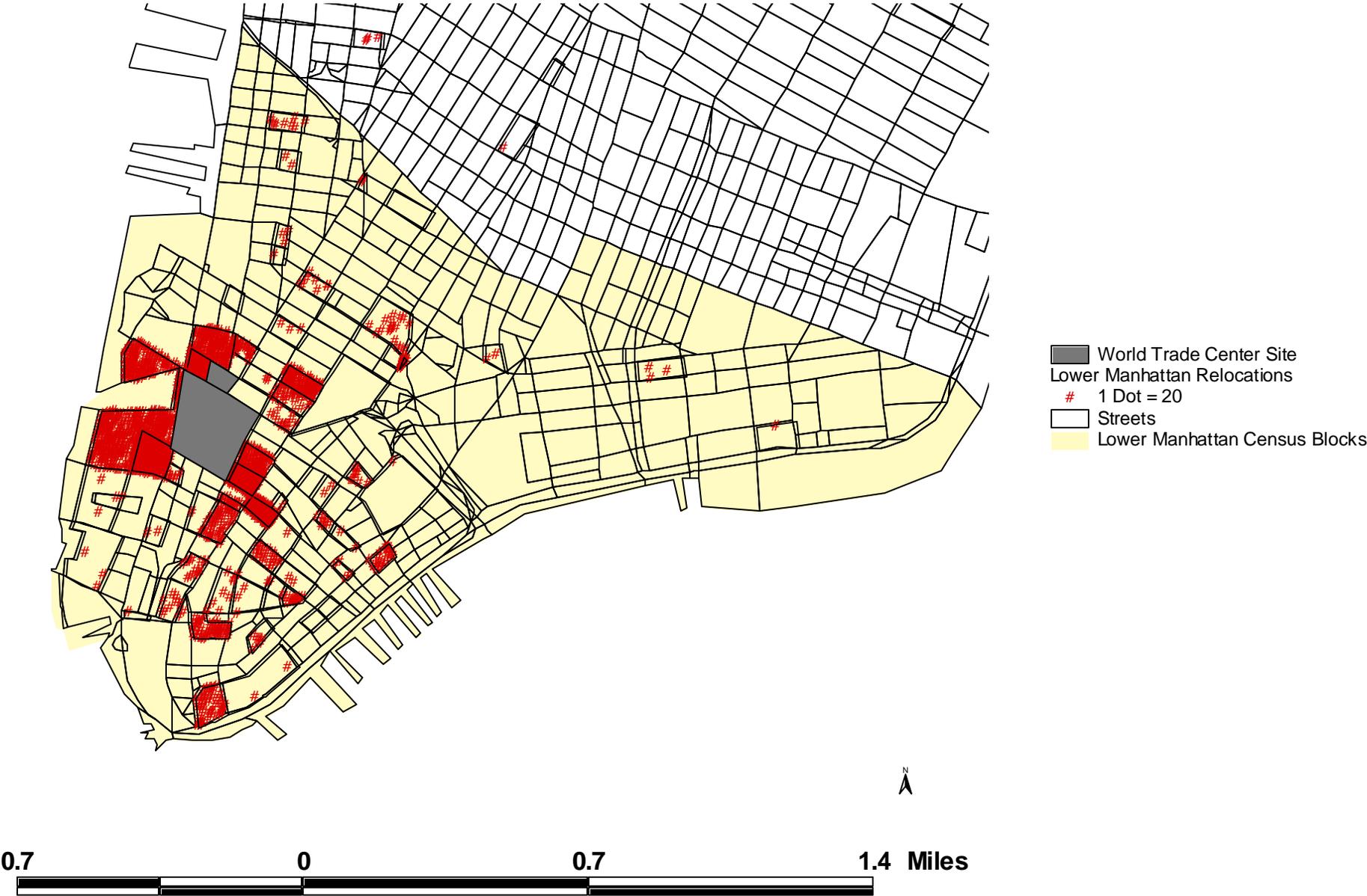




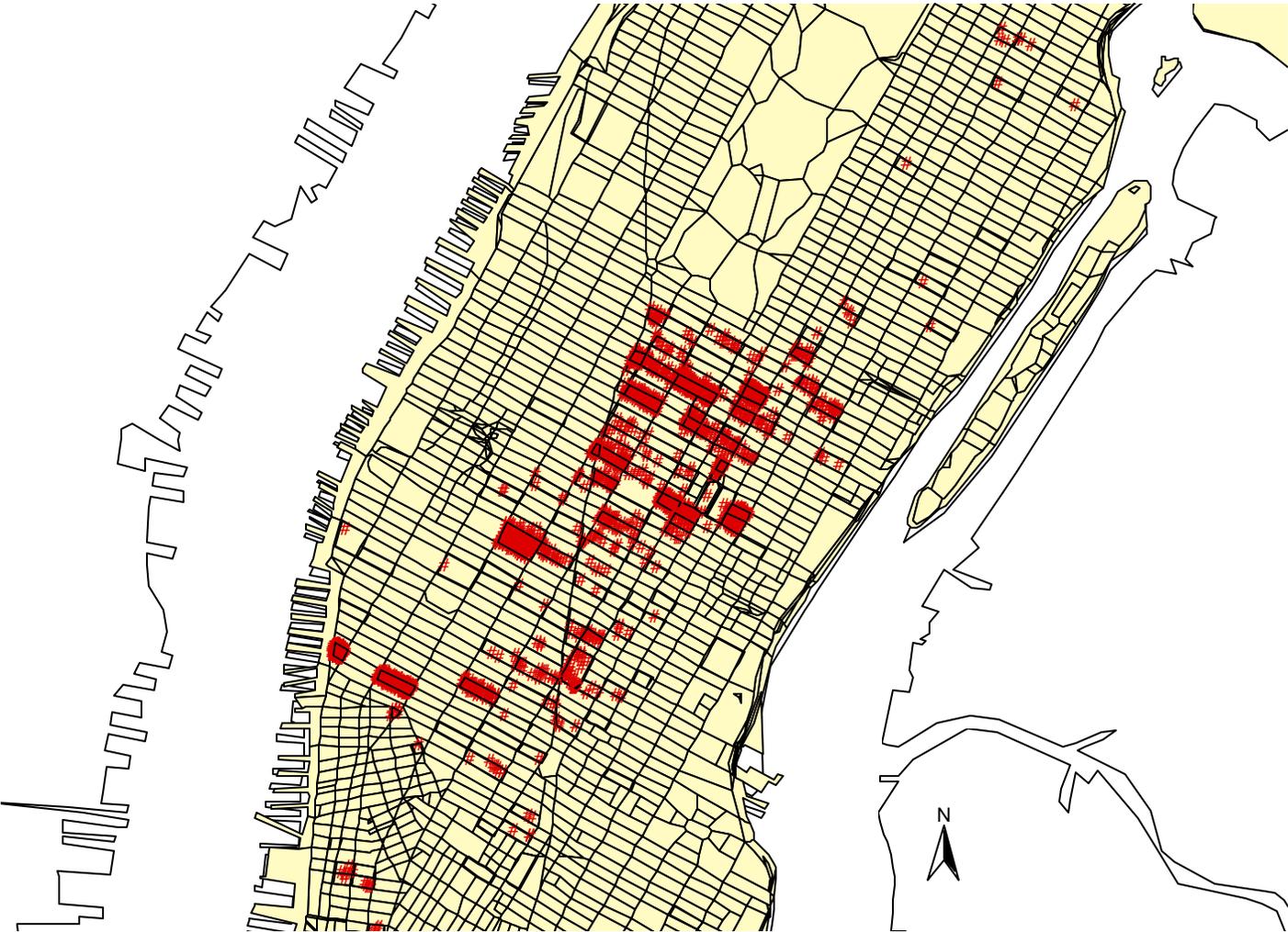
Map 3. Real Estate Neighborhood Divisions

-  Manhattan Streets
-  New York City

Map 4. Lower Manhattan: Relocated Employment



Map 5. Upper Manhattan: Relocated Employment



Upper Manhattan Relocations

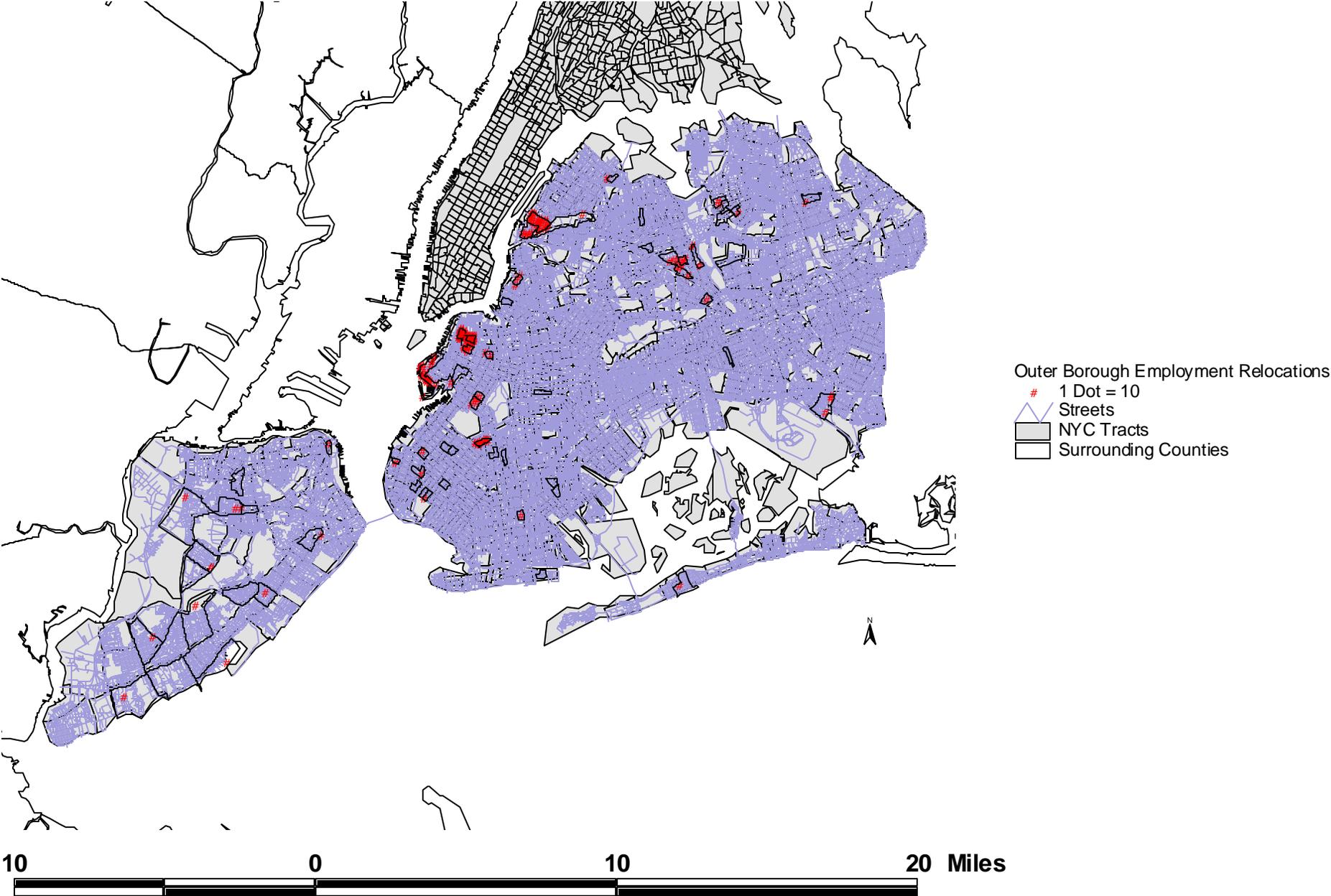
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Streets

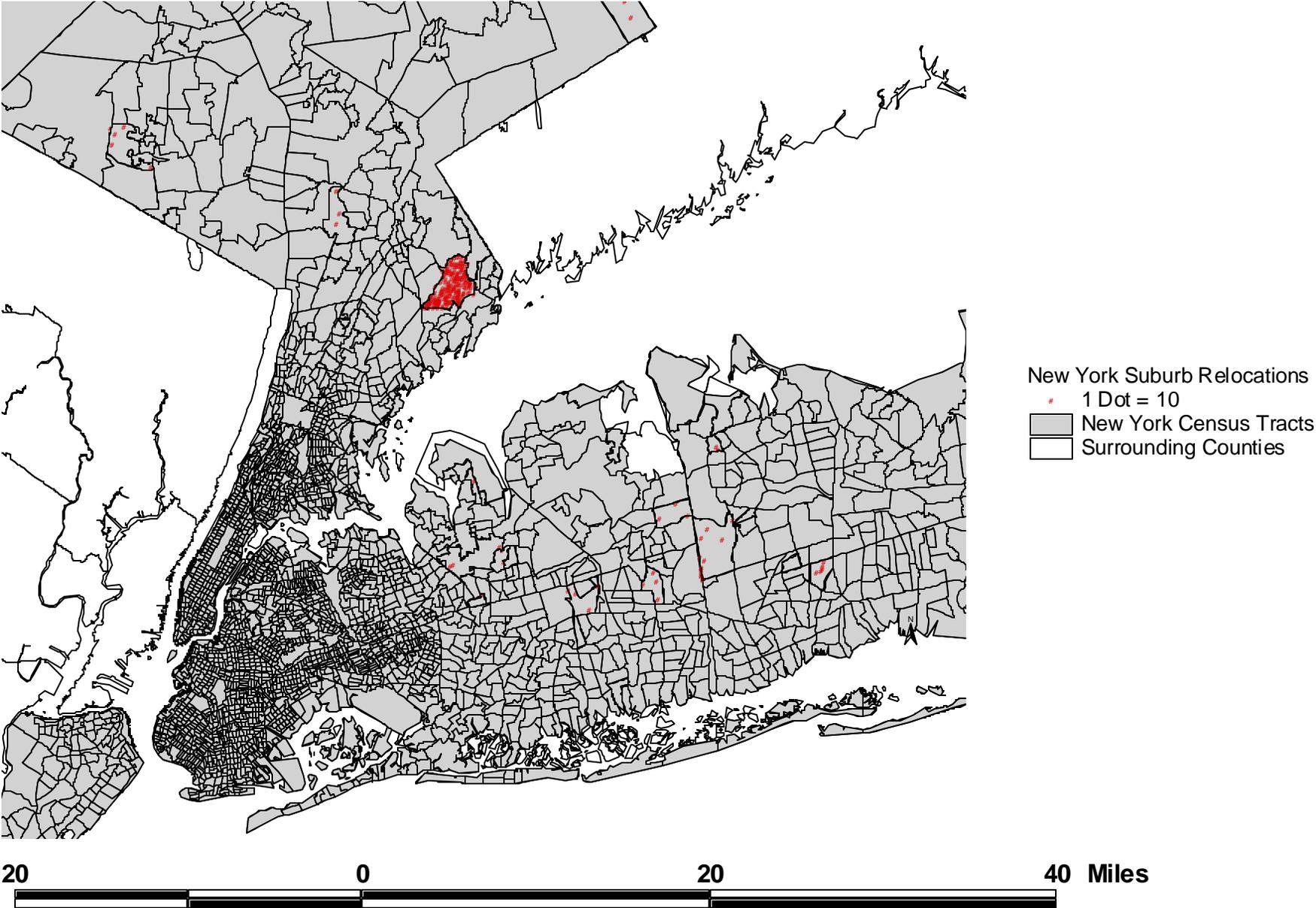
Surrounding Counties

Map by Urbanomics

Map 6. Outer Boroughs: Relocated Employment



Map 7. Other New York: Relocated Employment



Map 8. Regional New Jersey and Connecticut: Relocated Employment

