



# THE PAST, PRESENT, AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT

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## **Niagara Power Project FERC No. 2216**

*Prepared for:*

New York Power Authority

*Prepared by:*

NERA Economic Consulting

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**NIAGARA POWER PROJECT (FERC NO. 2216)  
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**ABBREVIATIONS**

AAEO	Annual Energy Outlook 2004
the Act	Niagara Redevelopment Act
ALP	Alternative Licensing Process
BEA	Bureau of Economic Analysis
BLS	Bureau of Labor Statistics
Census Bureau	U.S. Bureau of the Census
EP/RP	Expansion Power/Replacement Power
FERC	Federal Energy Regulatory Commission
FPC	Federal Power Commission
kWh	Kilowatt Hour
GRP	Gross Regional Product
I/O	Input-Output
LPGP	Lewiston Pump Generating Plant
MEUA	Municipal Electric Utilities Association of New York State
MMC	Marsh & McLennan Companies

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MSA	Metropolitan Statistical Area
MW	Megawatt
MWh	Megawatt Hour
N/A	Not Applicable or Not Available
N/R	Not Relevant
NERA	NERA Economic Consulting
NETC	The Niagara Economic and Tourism Corporation
NU	Niagara University
NYISO	New York Independent System Operator
NYPA	New York Power Authority
NYSEG	New York State Electric & Gas
NiMo	Niagara Mohawk
NPP	Niagara Power Project
O&M	Operation and Maintenance
Project	Niagara Power Project

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Niagara Project	Niagara Power Project
PTD	Permanent Total Disability
REMI	Regional Economic Models, Inc.
RMNPP	Robert Moses Niagara Power Plant
RG&E	Rochester Gas & Electric
TBD	To Be Determined
U.S.	United States



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**EXECUTIVE SUMMARY**

This study addresses the socioeconomic effects of the Niagara Power Project, a major hydroelectric complex operated by the New York Power Authority that uses the United States' share of the water of the Niagara River to generate power. The Project includes a 13-turbine facility and a pump storage plant that provide firm capacity of 1,880 MW and net dependable capacity of 2,400 MW. Congress and the New York State Legislature set forth conditions for the allocation of Project power, resulting in reduced wholesale power costs for various public bodies and non-profit cooperatives—including some outside New York—as well as for investor-owned utilities in upstate New York and local businesses.

The Project has a variety of socioeconomic effects on the people of New York State, particularly those in Western New York. These impacts include the economic benefits associated with the Project's provision of low-cost power as well as the Project's employment and spending. The socioeconomic effects also include economic impacts related to the Project's exemption from taxation as well as subtler, often unquantifiable, sociological impacts related to the presence of the Project.

The direct economic effects of the Project include the approximately 340 employees and over \$30 million annual payroll (including salaries and benefits) of the New York Power Authority related to the Project. (All values are in 2002 dollars.) The Project also spends approximately \$56 million annually on other goods and services. However, the primary economic benefits of the Project relate to the provision of low-cost power. The Project provides electricity at below-market rates to residents, business, and municipally owned and rural cooperative electric utilities in New York State as well as to a number of public utilities in neighboring states.

The Project's low-cost electricity represents estimated annual savings of more than \$500 million to its customers. These customers include the "replacement power" and "expansion power" industrial customers, most of which are located in Erie and Niagara Counties. These industrial customers have agreements with NYPA to maintain employment at a certain level in exchange for their allocation of

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NYPA hydropower. Together the “replacement power” and “expansion power” customers currently employ about 43,000 people with a payroll of over \$2 billion per year. The total output of these industrial companies is worth approximately \$14 billion per year. These companies also contribute to their local economies through spending on goods and services as well as through the property taxes and sales taxes they pay and the payments they make to local non-profit organizations. The low-cost Project power helps these companies to remain competitive in their markets.

The Project also affects residents of local jurisdictions through its exemption from taxation. If the exemption were removed, the ultimate impacts on residents would depend on the decisions of local taxing authorities as well as the specific outcome of negotiations between these authorities and NYPA. Based on our estimates of the potential taxable values of Project lands and facilities, we calculate that the additional revenues due to removing the exemption could range from approximately \$2 million per year if taxes were levied on only the unimproved Project lands to \$53 million per year if taxes were levied on the current value of the Project lands and facilities.

Using estimates of the direct effects of the Project—including the Project’s employment and expenditures as well as the electricity savings—and a detailed state-of-the-art economic model (Regional Economic Models, Inc., or “REMI”) that was developed specifically for this project, this study develops detailed socioeconomic impact results for 14 separate entities. (As discussed below, the effects of the Project on Expansion and Replacement power (“EP/RP”) customers were modeled in two ways, one based upon modeling effects of the increased electricity cost for EP/RP customers using REMI—the “cost approach”—and one based on the assumption that absent the Project, jobs contractually tied to the Project would not be in Western New York—the “jobs approach.”) The entities include eleven geographic regions that encompass New York State, Western New York, and the nine Local and Host Communities (Erie County, the City of Buffalo, Niagara County, the Town of Lewiston, the Village of Lewiston, Lewiston-Porter School District, the City of Niagara Falls, the Town of Niagara, the Niagara-Wheatfield School District, and the Niagara Falls City School District). The remaining entities are three selected

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communities that receive residential power at preference rates (“Preference Customer communities”).<sup>1</sup> For the out-of-state customers, the study includes estimates of potential electricity savings.

[Table ES-1](#) summarizes the overall economic results for these entities based upon the “cost approach,” including the contributions of the Project to population, employment, gross regional product (“GRP”), and personal income. (The report provides much more detail, including results for different sectors and occupational groups as well as projections.) These results indicate that the Project results in increases in economic activity for all 14 entities as judged by any one of the four measures. For New York as a whole, the Project is estimated to generate approximately 12,300 jobs, and result in approximately 24,000 additional total residents (due to additional economic activity), \$1 billion in gross regional product and almost \$600 million in personal income in 2004 (based upon our long-term forecasts). These impacts are concentrated in Western New York, particularly Erie and Niagara Counties. The Project currently generates about 5,500 jobs in Erie and Niagara Counties, and results in over \$200 million of additional GRP in each county. In Niagara County, this impact represents approximately 2 percent of all economic activity in the county. The impact of the Project on Erie County represents approximately 0.5 percent of all economic activity. The Project has a proportionately greater impact on some of the smaller communities, such as the Town of Lewiston and the City of Niagara Falls. The Project is responsible for 917 jobs (30.4 percent) and \$108 million in GRP (39 percent) in the Town of Lewiston and 818 jobs (3.4 percent) and \$94 million in GRP (5.7 percent) in the City of Niagara Falls.

Although the results under the cost approach are based upon a state-of-the-art regional economic model, it is important to note the inherent limitations of regional economic modeling in estimating the economic impacts of reduced electricity costs. Even the complex and detailed REMI model cannot reflect the detailed circumstances of the individual businesses that receive power from the Project. Thus, the REMI model may not reflect the particular importance of low-cost electricity to the individual facilities and thus the potentially larger role the low-cost power has in a given facility’s competitive cost structure. These considerations mean that the actual economic benefits of the Project may be greater than those

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<sup>1</sup> The three Preference Customer communities were selected by the Municipal Electric Utilities Association (“MEUA”) of New York State and were required to be located in Western New York.

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estimated using this approach (or that could be estimated using any regional economic model absent very costly and time-intensive plant-level modeling, which would rely on proprietary data).

As a result of these limitations, as noted above, we also implemented an alternative approach to modeling the direct impacts of the Project on employment at the Expansion and Replacement Power (“EP/RP”) customers. In this “jobs approach,” we assumed that, if not for the Project, none of the 43,422 EP/RP jobs that are contractually tied to Project power would be located in Western New York. Under this alternative modeling approach, we estimate that the Project contributes over 160,000 jobs and almost \$16 billion in GRP to the economy of Western New York. (Detailed impacts under the jobs approach are provided in the report.)

The Project affects other socioeconomic measures that are included in this study. Details of the electricity rate benefits of the Project to various entities are presented. The study also provides estimates of the effects of the Project on various land use categories for the study regions. In addition, the study provides illustrative effects of the Project on tourism and the subsequent economic impacts of any changes in regional tourism due to the Project. Moreover, the study provides assessments of socioeconomic effects on another stakeholder group, Niagara University. NERA, with consent of the Power Authority, has honored the Tuscarora nation request that a separate analysis of the Project effects on the Tuscarora Nation not be included in the Report.

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**Table ES- 1. 2004 Impacts of the Niagara Power Project**

<b>Place</b>	<b>Population</b>	<b>Employment</b>	<b>GRP (2002 Dollars)</b>	<b>Personal Income (2002 Dollars)</b>
New York State	24,078	12,273	1,007,137	591,335
Western NY	12,425	6,616	562,191	278,199
<i>Local Communities</i>				
Erie County	5,255	3,003	234,040	129,441
Buffalo City	1,523	911	78,375	28,298
<i>Host Communities</i>				
Niagara County	4,728	2,478	239,035	110,667
Lewiston Town	1,688	917	107,636	26,576
Lewiston Village	76	36	2,071	1,200
Lewiston-Porter SD	1,662	836	93,283	30,386
Niagara Falls City/SD	1,118	818	93,904	31,508
Niagara Town	243	127	8,467	7,081
Niagara-Wheatfield SD	315	122	8,965	5,875
<i>Preference Customers</i>				
Akron Village	43	20	1,287	582
Arcade Village	59	25	1,556	371
Jamestown City	532	264	17,106	5,179

Note: Developed from NERA/REMI calculations, as explained in text.



# NIAGARA POWER PROJECT (FERC NO. 2216) THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT

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## 1.0 INTRODUCTION

NERA Economic Consulting (“NERA”) prepared this report, under contract to the New York Power Authority (“NYPA”), to address the issues contained in Scope of Services Issue #10. NERA developed this study as part of the Alternative Licensing Process (“ALP”) that NYPA is pursuing to renew the license for the Niagara Power Project (“NPP”).

### 1.1 The New York Power Authority and the Niagara Power Project

NYPA is a state-owned power company that builds and operates electric generation and transmission facilities throughout New York. <sup>2</sup> NYPA was established as a non-profit, tax-exempt energy corporation through the New York Power Authority Act of 1931. NYPA is the largest state-owned power company in the United States. It currently operates 17 generating facilities and more than 1,400 circuit miles of transmission lines.

In 1957, following the collapse of the Schoellkopf Generating Station on the Niagara River, Congress enacted the Niagara Redevelopment Act (“the Act”) directing the Federal Power Commission (“FPC”)<sup>3</sup> to issue NYPA a license for the “construction and operation of a power project with capacity to utilize all of the United States’ share of the water of the Niagara River permitted to be used by international agreement.” Construction of the Niagara Power Project (“NPP” or “the Project”) began within two months of issuance of the license. The NPP began operation in February 1961.

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<sup>2</sup> Information in this section is drawn from a number of public sources, including the Scoping Document 1 for the Relicensing of the Niagara Power Project and the Scope of Services (Issue #10) and the websites of the Western New York Relicensing Consensus Committee ([Western New York Relicensing Consensus Committee 2004](#)) ([www.wnyrelicensing.buffalo.edu](http://www.wnyrelicensing.buffalo.edu)) and NYPA ([New York Power Authority 2004](#)) ([www.nypa.gov](http://www.nypa.gov) and [niagara.nypa.gov](http://niagara.nypa.gov)).

<sup>3</sup> The FPC later became the Federal Energy Regulatory Commission (FERC).

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The Project consists of a number of major components, covering approximately 3,500 acres primarily in the Town of Lewiston and the City of Niagara Falls. Two intakes are located approximately 2.6 miles above Niagara Falls. Water entering the intakes flows through two conduits to a forebay located on the east bank of the Niagara River approximately four miles below the Falls. The main generating plant of the NPP, the Robert Moses Niagara Power Plant (“RMNPP”), is located at the west end of the forebay, between the forebay and the Niagara River, and generates power with 13 turbines.

The Lewiston Pump Generating Plant (“LPGP”) is located at the east end of the forebay. The LPGP is comprised of 12 reversible pump-turbines that lift water during off-peak periods from the forebay to the Lewiston Reservoir, located east of the forebay and LPGP. During peak periods, LPGP’s pumps are reversed to operate as generators, directing water to flow back from the Reservoir into the forebay and subsequently through RMNPP to the Niagara River. The NPP switchyard—the interface between the NPP and the New York power grid—is located south of the forebay.

Together, these facilities provide the Project with 2,400 MW of net dependable capacity, of which 1,880 MW is firm capacity.

In addition to authorizing the construction and operation of the NPP, Congress in the Niagara Redevelopment Act also set forth conditions governing the allocation of most of the power from the Project. [Figure 1.1-1](#), below, summarizes the approximate distribution of firm capacity from the NPP. Section 836 (b) (1) of the Act designated at least one-half of the Project’s electricity as “preference power” to be allocated to public bodies and non-profit cooperatives within economic transmission distance. The Act further specified that a “reasonable portion” of the preference power be allocated to bargaining agencies designated by each of the neighboring states. The reasonable portion applies to the 50 percent of the Project power designated as preference power, but no more than 20 percent of the 50 percent (or 10 percent) of total Project power is required to be allocated to out-of-state recipients. The Act required NYPA to distribute 445 MW of power to the businesses (or their successors) that were the customers of the Schoellkopf and Adams Generating Stations that formerly utilized the United States share of the water available for power production. This allocation is termed “replacement power” and accounts for approximately 25 percent of the Project’s firm output.

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New York State law further specifies that NYPA set aside 250 MW of power from the NPP for sale to businesses located within 30 miles of the Project or in Chautauqua County. This power, known as “expansion power,” is allocated to companies on the basis of increased demand resulting from expansion of local production facilities. The remaining NPP power (about 13 percent of total output) is distributed to investor-owned utilities in New York, including Niagara Mohawk (“NiMo”), New York State Electric & Gas (“NYSEG”), and Rochester Gas and Electric (“RG&E”), for the purpose of serving the companies’ residential customers.

NYPA is currently in the process of upgrading the Niagara Project’s 13 turbine generators. The upgrade, which is costing close to \$300 million, is primarily intended to improve the efficiency of the generating units, although it is also expected to have the effect of increasing the Project’s firm capacity by approximately 35 MW.<sup>4</sup> Upgrade work began in 1991 and is expected to be completed by 2006.<sup>5</sup>

## **1.2 Background and Study Objectives**

The federal license granted to NYPA in 1958 for operation of the Project will expire in August 2007. In 2002, NYPA notified FERC that it would be seeking to apply for a new license. Under current law, the application must be submitted by August 2005.

In July 2002, FERC approved NYPA’s request to engage in an Alternative Licensing Process (“ALP”), which provides stakeholders increased opportunities to participate in the relicensing, particularly early in the process. During the scoping phase of the ALP process, NYPA and the stakeholders identified a number of important issues relevant to the Project relicensing. One of the sets of issues identified by the parties during the scoping process is Issue #10, titled “What are the past, present and anticipated future socioeconomic effects of the Niagara Power Project and local NYPA presence on

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<sup>4</sup> Because the exact change in total capacity and generation is somewhat uncertain, this study does not consider the expected increases in electricity generation due to the upgrade.

<sup>5</sup> <http://www.nypa.gov/press/WNYUpdate/Summer02/Su02.htm>

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the Host Communities, Local Communities, Western New York, New York State, in-state customers, out-of-state customers, and Niagara University.” This study addresses the questions raised by Issue #10.

In particular, this study is intended both to describe the socioeconomic setting in which the NPP has operated (and is expected to operate) and to provide a quantitative assessment of the socioeconomic effects of the Project.<sup>6</sup> This study addresses a number of broad categories of regional characteristics, including demographics, employment and commerce, real estate, local taxes and services, tourism, and electricity provision. In addition, although this study is intended to focus on quantifiable impacts of the Project, to the extent possible it also describes other sociological and cultural issues that may relate to the socioeconomic impacts of the Project.

Although this study addresses the broader geographic region described in Issue #10, it includes detailed estimates for the areas designated as “Host Communities” and “Local Communities.” Host Communities are defined as the taxing entities of Niagara County in which NYPA owns land used by the Project, including the Town of Lewiston, the City of Niagara Falls, the Niagara-Wheatfield School District, the Town of Niagara, the Lewiston-Porter School District, the Niagara Falls School District<sup>7</sup>, and County of Niagara as a whole. Local Communities include all the Host Communities as well as the City of Buffalo. Although not explicitly included in the Scope of Services, for completeness, we have also included the Village of Lewiston as a Host Community and Erie County as a Local Community. In addition, impacts on Niagara University, a non-taxing entity located near the Project, are addressed. This analysis does not include estimates of the economic impacts of the Project outside New York State other than the effect on the cost of wholesale power purchased as a substitute for Project power.

As part of the relicensing process, NYPA has commissioned several studies to characterize and evaluate various economic, social, environmental, or health impacts associated with the Niagara Power

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<sup>6</sup> For a more complete description of the objectives of this study as defined through the scoping process, please see Scoping Document 1 for the Relicensing of the Niagara Power Project and the Scope of Services (Issue #10).

<sup>7</sup> The Niagara Falls School District is coincident with the City of Niagara Falls. Thus, where appropriate, this report treats these entities together.

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Project. Section 5.2 in this report summarizes the economic and employment impacts of the project. Although the report does not address relative impacts on specific household groups, such as low-income or minority populations, it does consider the effects on different geographic regions, different sectors and different occupational groups. These results indicate that all relevant regions, sectors and occupational groups are positively affected by the Project. These results thus suggest that the Project does not have adverse economic impacts on low-income or minority populations. Several other resource reports contribute to the understanding of potential impacts of the Project to human health and the environment, and thus are related to Environmental Justice concerns. These reports provide further reasons to believe that the Project does not raise Environmental Justice concerns.

[Table 1.2-1](#) summarizes the socioeconomic categories and regions/places considered in this study. Although data limitations make it impossible to consider all categories for all places, this table provides a framework that is used in all sections of the report.

[Figure 1.2-1](#) shows the overall structure of our analyses. We begin by developing background on the entities covered by the study, including past information on the various socioeconomic categories. This provides the background for the next step—developing information on direct impacts of the Project. As noted below, the direct effects include those that depend upon the Project and the NYPA presence rather than on subsequent rounds of expenditures and other socioeconomic interactions. The next step is the creation of the key economic modeling framework used in this study, the development and customization of a multi-region economic model developed by REMI. As explained at considerable length in [Section 4.1](#) and [Appendix E](#), REMI is a state-of-the-art model that has been used extensively in many previous studies. The REMI model allows us to develop estimates of overall effects for many of the major socioeconomic categories, including demographic information, economic and employment information, and public sector tax and expenditure information. REMI modeling results allow us to address the current *and future* socioeconomic effects of the Project. The “long-run” impacts measured by the REMI model can be seen to represent not only the current impact of the Project but also the likely impact of the Project over time. Thus, although the REMI model is only available for the years 2000 through 2035, our estimate represents the *ongoing* impacts of the Project, which are essentially indefinite.

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The REMI modeling results are then used in conjunction with information from other ALP studies to develop assessments of the socioeconomic/cultural effects. The final step is to use the combined results to develop an overall integrated socioeconomic report.

## 1.3 Organization of the Report

The remainder of this report is divided into three major sections. [Section 2.0](#) is titled “Socioeconomic Background.” This section describes the socioeconomic setting in which the Project has operated from its inception in 1961 to the present. We present information describing the various geographic areas included in the study in terms of the broad socioeconomic categories noted above. Our main sources for these data include the U.S. Department of Commerce, the U.S. Bureau of Census (“Census Bureau”), various government agencies of New York State as well as counties and municipalities within New York, and industry groups such as the Buffalo-Niagara Partnership and the Municipal Electric Utilities Association of New York State (“MEUA”).

[Section 3.0](#) is titled “Direct Socioeconomic Effects of the Power Project.” This section presents estimates of the *direct impacts* of the Project. As noted, these are the effects of the Project that can be identified as resulting directly from Project activities and are not dependent on subsequent economic interactions. These direct impacts include the employment and payroll of the Project, the monetary outlays by NYPA for supplies and services related to the Project, the direct value of the low-cost electric power purchased by NYPA customers, the effects on tax revenues and rates, public expenditures, other payments made by NYPA in the region, and effects of the Project on other socioeconomic aspects of the region. The data on direct impacts—including employment, electricity distribution, and spending—were obtained primarily from NYPA. Other sources include some NYPA customers, numerous state and local government agencies in New York, and the U.S. Department of Energy.

[Section 4.0](#) is titled “Modeling the Socioeconomic Impacts of the Niagara Project and the NYPA Presence.” This section presents the results of REMI modeling of the overall effects of the Project, integrating the direct impacts, into a modeling framework that incorporates *multiplier effects*. As noted, the major tool for developing estimates of multiplier effects is the REMI model, a state-of-the-art,

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nationally recognized model for estimating the full economic impacts of major private and public developments.

[Section 5.0](#) is titled “Summary of the Overall Socioeconomic Impacts of the Niagara Project and the NYPA Presence.” This section provides a summary of the effects of the Project in the major impact categories that we focus on throughout the report. Note that this assessment discusses both the REMI modeling results as well as impacts not amenable to modeling, including real estate and socioeconomic/cultural analyses as well as the integration of other ALP studies (e.g., the Construction Effects Study and the Cultural Resources Study). The result of these various assessments is an overall integrated assessment of the socioeconomic effects of the Project and the NYPA presence.

#### **1.4 NERA Economic Consulting and Study Team**

This study was prepared by NERA Economic Consulting (“NERA”), an international firm of economists with approximately 500 professionals operating in 16 offices across North and South America, Europe, Asia and Australia. NERA has extensive experience evaluating the socioeconomic effects of major energy facilities and other projects and policies both in the United States and abroad. The study was directed by Dr. David Harrison. The other authors of this study were Dr. Jesse David and Mr. James Patchett. Mr. Paul Reschke, and Mr. Andrew Foss also contributed to the study. The study was supported by the New York Power Authority, which provided access to information as well as other help. As noted in the report, many other organizations provided additional data and other assistance to the study. We are grateful for this support and assistance, although NERA alone is responsible for the report and any errors or omissions it may contain.



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**TABLE 1.2-1**  
**STUDY REGIONS AND SOCIOECONOMIC CATEGORIES**

<b>Place</b>	<b>Demographic</b>	<b>Economy/ Employment</b>	<b>Public Sector</b>	<b>Electricity</b>	<b>Real Estate</b>	<b>Tourism</b>	<b>Sociological/ Cultural</b>
New York State	X	X		X			
Western NY	X	X		X	X		
<i>Local Communities</i>							
Erie County	X	X	X	X	X	X	X
Buffalo	X	X	X	X	X	X	X
<i>Host Communities</i>							
Niagara County	X	X	X	X	X	X	X
Lewiston Town	X	X	X	X	X	X	X
Lewiston Village	X	X	X	X	X	X	X
Lewiston-Porter SD	X	X	X	X	X	X	X
Niagara Falls City / SD	X	X	X	X	X	X	X
Niagara Town	X	X	X	X	X	X	X
Niagara-Wheatfield SD	X	X	X	X	X	X	X
<i>Additional Stakeholders</i>							
Niagara University		X			X		X
<i>Preference Customers</i>							
Akron Village	X	X		X	X		
Arcade Village	X	X		X	X		
Jamestown City	X	X		X	X		

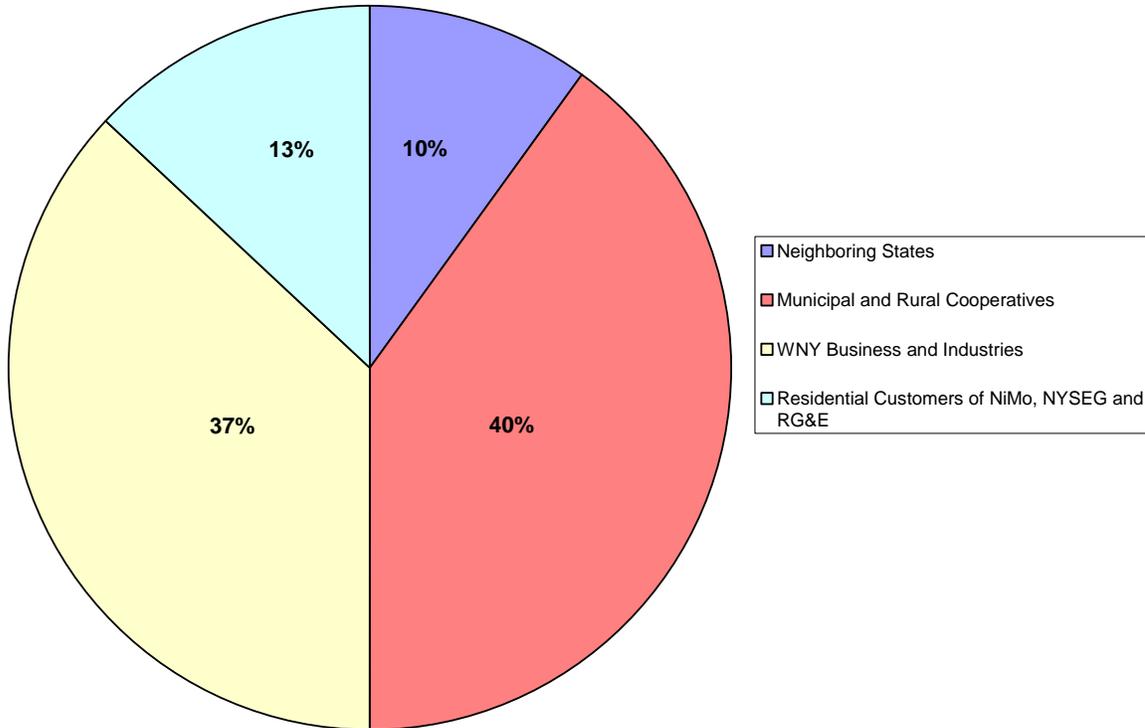
Notes: Prepared by NERA, as explained in text.



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**FIGURE 1.1-1**  
**DISTRIBUTION OF PROJECT POWER (FIRM CAPACITY)**

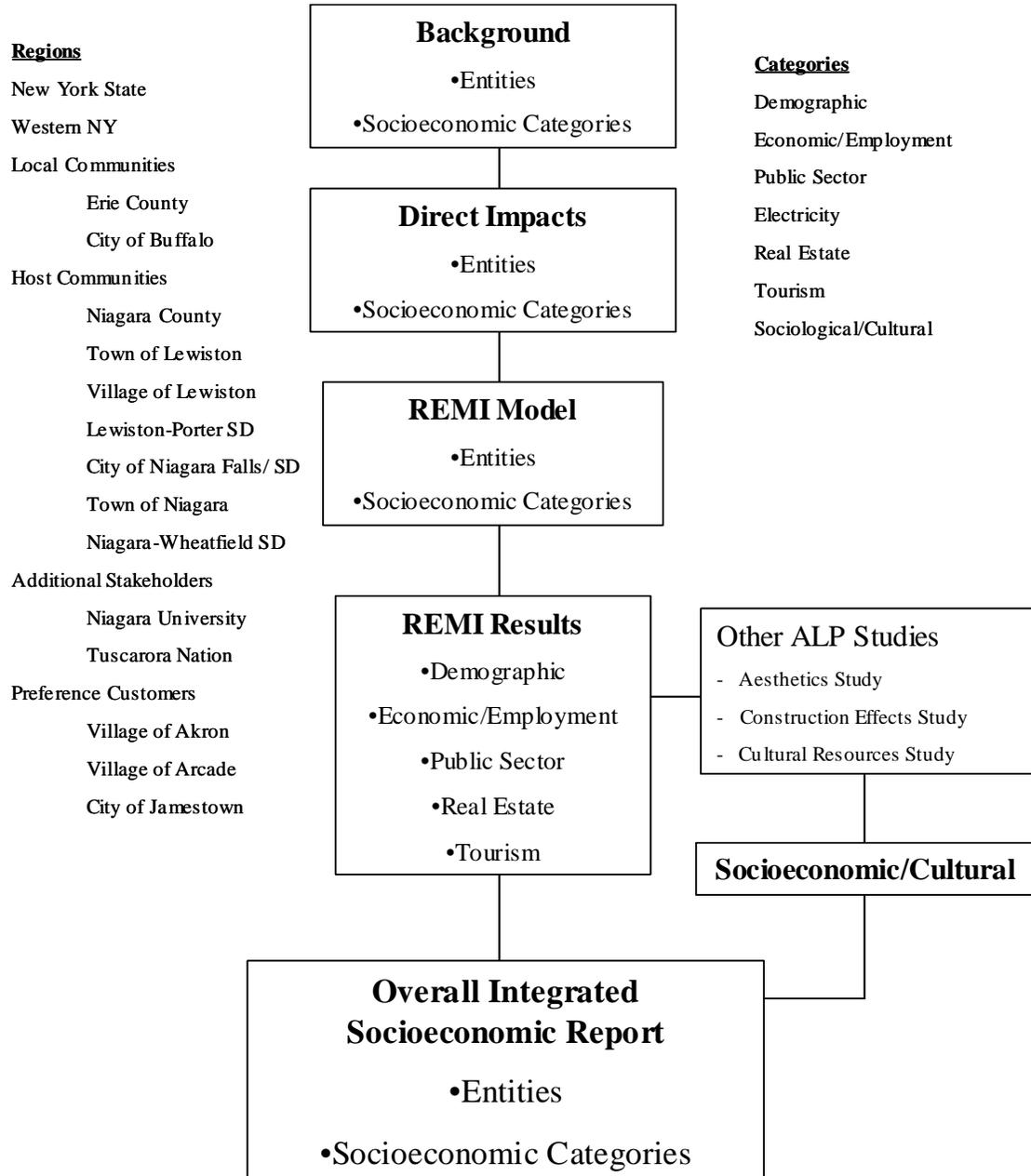


Note: Data from <http://www.wnyrelicensing.buffalo.edu/npp/pcom.html>.

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**FIGURE 1.2-1  
STRUCTURAL ORGANIZATION OF THIS STUDY**



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## **2.0 SOCIOECONOMIC BACKGROUND**

This section discusses current and historical trends in New York State, Western New York, and the Project region, including detailed information on the various entities highlighted in this study. [Table 1.2-1](#) above listed the defined regions for which information is developed. We provide socioeconomic information on the topics listed below in the following order:

- Demographic;
- Economic/employment;
- Public sector (taxes and services);
- Electricity;
- Real estate;
- Tourism; and
- Sociological/Cultural.

[Figure 2.0-1](#) displays a map of all of the geographic areas considered in this study. The map shows all of New York State, including Western New York, Erie County, Niagara County, and the City of Buffalo. [Figure 2.0-2](#) provides a detailed map of the *Host Communities*. Finally, [Figure 2.0-3](#) shows Erie County in further detail, with the City of Buffalo broken out. These two regions (Erie County and the City of Buffalo) make up the *Local Communities* considered in this study. This map shows the location of the City of Buffalo as well as two of the communities receiving power at preference rates (“Preference Customer communities”) that are considered in the study: the Village of Akron and the Village of Arcade. The third Preference Customer community considered in this study—the City of Jamestown—is located in Chautauqua County and is shown in [Figure 2.0-1](#).

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## **2.1 Demographics**

This section summarizes demographic trends in the study areas. Specific parameters considered here include total population, age distribution, educational levels, income and poverty rates, and race and ethnicity. We first discuss trends in total population since 1900. The sections that follow discuss various demographic indicators, including age, education, race, and ethnicity between 1970 and 2000. Where data are available, we present information for the Host and Local Communities, Western New York, the State of New York, and, for comparative purposes, the United States.

### **2.1.1 Population and Migration**

This section describes the population trends in New York State since 1900, including a more detailed consideration of Western New York, the Host and Local Communities, and the three Preference Customer communities. We also present information on population changes in the United States (“U.S.”) as a whole, for comparative purposes. In addition, we provide information on the population (i.e. student enrollment) at Niagara University (“NU”).

The population in New York State grew by approximately 28 percent between 1950 and 2000, from 14.8 million to about 19.0 million, as [Table 2.1.1-1](#) shows. In the period from 1950 through 1990, New York’s population peaked at 18.2 million in the 1970 Census, before falling back to 17.6 million in 1980. Since 1980, statewide population has regained its upward trend, reaching a new peak (19.0 million) in 2000. The population of the U.S. as a whole grew at a substantially greater rate, nearly doubling between 1950 and 2000, growing from 151.3 million to 281.4 million people.

Between 1950 and 1990, like the state as a whole, the population of Western New York<sup>8</sup> peaked in 1970. However, unlike the state, Western New York’s total population has been in continual decline

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<sup>8</sup> For the purposes of this study, Western New York is defined as the counties of Allegheny, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, and Wyoming.

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since its 1970 peak of 1.8 million people, though it has remained above its 1950 population of 1.5 million. Indeed, the 2000 Census recorded a population of 1.6 million people in Western New York, the lowest decennial population recorded there since the 1950 Census.

For the two counties considered separately in this study—Erie and Niagara County—the population trend has been roughly similar to that of Western New York overall. Both counties’ populations peaked more than three decades ago (Erie in 1970 and Niagara in 1960) and have been in a gradual decline since that time. Like Western New York as a whole, both counties recorded their lowest decennial population totals since 1950 in the 2000 Census, with a year 2000 population of about 950,000 in Erie County and just fewer than 220,000 in Niagara County.

The other Host and Local Communities have experienced a similar population trend over the last half-century. Most of these communities experienced a population peak before 1990 and have since lost population. For example, like Niagara County, the City of Niagara Falls experienced a peak decennial population in 1960 (just over 100,000) and has seen a significant population decline since that time, recording a population of fewer than 56,000 in the 2000 Census.

Although many of the Host and Local Communities considered here experienced population peaks more than two decades ago, some have experienced recent growth as well. The Town of Lewiston, for example, more than doubled its population between 1950—when it had a population of 6,921—and its peak in 1980 with a population of 16,407, before falling back under 16,000 in the 1990 Census.<sup>9</sup> Since 1990, Lewiston has seen some modest resurgence, however, reaching a recorded population of 16,257 in the 2000 Census. The Niagara-Wheatfield School District has also experienced recent population growth, fueled by growth in the Town of Wheatfield.

[Table 2.1.1-2](#) provides additional background on the nature of population changes in the U.S., New York State, and Western New York, presenting detailed data on migration patterns in these

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<sup>9</sup> Note that annexations have had an impact on the populations of some of the Host Communities.

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communities. (The data presented here are provided at the county level or above, because these data are not available at the sub-county level.) The table shows that the U.S. as a whole experienced significant in-migration between 1980 and 1999, while New York had negative net migration over the same period. Western New York had slightly greater out-migration between 1980 and 1990 (-6.9 percent) than New York State (-2.7 percent) and between 1990 and 1999 (-6.3 percent, compared to -4.3 percent). The Host and Local Communities, represented by Erie and Niagara Counties, experienced a similar pattern of out-migration to that of Western New York, falling both over the 1980-1990 period (-7.7 percent and -6.9 percent, respectively) and over the 1990-1999 period (-6.6 percent and -4.5 percent, respectively). The Preference Customer community of Jamestown, represented by Chautauqua County, also experienced out-migration over the period, though Wyoming County (home to the Village of Arcade) saw slight net in-migration. (The third Preference Customer community considered here, the Village of Akron, is located in Erie County.)

[Table 2.1.1-3](#) and [Table 2.1.1-4](#) show population projections through 2035, at the county level, for all of the counties in which the communities are located. The projections show that U.S. population is expected to continue to grow, reaching a population of 380 million by 2035. Unlike the nation, however, the population of New York State is expected essentially to be level between 2005 (19.12 million) and 2015 (19.10 million), before regaining an upward population trend through 2035 (20.86 million).

As the projections in [Table 2.1.1-3](#) show, Erie, Niagara, and Wyoming<sup>10</sup> Counties are all expected to follow a trend roughly similar to the State, experiencing leveling off or slight declines in population through 2015, before regaining population growth at the end of the period. Similarly, Chautauqua County is expected to experience a slight decline in population between 2005 (136,823) and 2010 (136,656) before regaining its growth trend through the end of the period, with a projected population of 165,395 in 2035.

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<sup>10</sup> The Village of Arcade is located in Wyoming County.

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It may also be useful to consider the “population” (i.e., the *student* population) of another stakeholder group—Niagara University. [Table 2.1.1-5](#) shows the total enrollment in Niagara University between 1990 and 2000 (the period for which data were available). The table shows that enrollment has remained relatively constant over the period, consistently in the range of 3,000 students. Data provided by NU indicates that enrollment has grown to 3,186 as of 2003.

### **2.1.2 Age Distribution**

This section discusses the age-related trends of the population in New York State. We provide information on the percentage of the population accounted for by four broad age ranges—under 20 ([Table 2.1.2-1](#)), 20 through 34 ([Table 2.1.2-2](#)), 35 through 64 ([Table 2.1.2 -3](#)), and over 65 ([Table 2.1.2-4](#)).

The population of New York State has aged in the period since 1970, as the tables below show. While the population under 20 has fallen from over 35 percent of the population in 1970 to nearly 27 percent of the population in 2000, the population composed of people in the range from 35 to 64 years of age has grown from 34 percent to nearly 39 percent of the population. Meanwhile, the population between 20 and 34 years of age composed a similar proportion of the population in 2000 as it did in 1970 (roughly 20 percent), though it constituted a greater proportion of the population in the intervening years (close to 25 percent). The population 65 and over has also experienced some growth since 1970, though it has leveled off since 1990. This trend is roughly consistent with the national trend as the “baby boomer” generation has aged through the population. Indeed, as the table shows, the age distribution of the nation as a whole has tracked New York State’s population quite closely.

The age trends in Western New York have mirrored quite closely those for the state as a whole, with the population between the ages of 35 and 64 experiencing the greatest growth and that under 20 seeing the greatest decline from 1970 through 2000.

Erie and Niagara Counties have also followed trends that are broadly similar to the state in all four age categories, though the declines in the population under 20 and increases in the population 65 and

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over have been particularly pronounced. In Niagara County, in particular, the population under age 20 has fallen from representing nearly 40 percent of the population in 1970 to composing only 27.5 percent of the population in 2000. Over the same period, the population over 65 in Niagara County has grown from 9.5 percent of the population to 15.5 percent in 2000. As the tables show, Erie County has experienced similar trends.

Most of the Host and Local Communities have experienced similar declines in the proportion of the youth population and increases in the proportion of the senior population. Shifts in many of the Host Communities are particularly marked. The Town of Niagara, for example, had an under 20 population that represented nearly 45 percent of the total population in 1970 but had declined to 25.8 percent by the 2000 Census. In addition, unlike the state and Western New York, many of the Local Communities have not experienced a “leveling off” of the youth and senior populations since 1990. Note that this trend is similar for the Preference Customer communities, including the Village of Akron and the City of Jamestown, which have followed the same patterns as the communities around them.

The City of Buffalo, on the other hand, has experienced some “leveling off” since 1990. Indeed, though Buffalo’s 65-and-over population grew from 13.3 percent in 1970 to 15 percent in 1980, it had fallen back to 13.5 percent of the total population in 2000, while its under-20 population grew to 29.3 percent, above 1980 levels. As the tables show, the City of Niagara Falls has experienced a similar leveling off.

### **2.1.3 Educational Levels**

This section describes the educational levels of the population in the United States, New York State, Western New York, the Host and Local Communities, and the three Preference Customer communities in the period from 1970 through 2000. For the purposes of this section, two measures of

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educational attainment are used—the high school dropout rate<sup>11</sup> and the college graduation rate<sup>12</sup>. [Table 2.1.3-1](#) shows the high school dropout rate, while [Table 2.1.3-2](#) presents the college graduation rate.

In all of the geographic regions considered here—almost without exception—the high school dropout rate declined continually over the period from 1970 through 2000, while the percentage of college graduates increased continually. In New York State, the high school dropout rate declined from 13.9 percent in 1970 to 9.0 percent in 2000, while the college graduation rate has grown from 11.9 percent in 1970 to 27.4 percent in 2000. These trends follow quite closely those of the nation as a whole.

Western New York had a similar overall level of educational attainment as the state, though it had fewer college graduates (21.2 percent) and a slightly lower high school dropout rate (7.4 percent) in 2000 than the state, as it has throughout the period since 1970.

The Erie and Niagara County regions experienced similar trends in educational attainment to Western New York over the 1970-2000 period. In the 2000 Census, the dropout rates in both counties were just slightly below the Western New York level, at 7.0 percent and 7.2 percent in Erie and Niagara, respectively, while the college graduation rate was above the Western New York level in Erie County (24.5 percent) and below the Western New York level in Niagara County (17.4 percent). These trends have been roughly consistent throughout the 1970-2000 period.

The college graduation rate has grown significantly since 1970 in all of the Host and Local Communities, as well as the Preference Customer communities. Among these communities, however, there is a fair amount of variation. In 2000, some communities, including Arcade (12.5 percent), the City of Niagara Falls (12.5 percent), and the Town of Niagara (10.3 percent), had markedly low college

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<sup>11</sup> The high school drop out rate is defined as the percent of the population ages 16-19 that is neither enrolled in nor graduated from high school. Because of a change in the Census definition, note that the variable was defined somewhat differently in 1970—as the percent of the population ages 16-21 that was neither enrolled in nor graduated from high school.

<sup>12</sup> The college graduation rate is defined as the percent of the population over age 25 that has completed at least a bachelor's degree.

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graduation rates, while others, such as the Town of Lewiston (29.7 percent) and the Village of Lewiston (24.4 percent), had noticeably higher graduation rates.

As high school dropout rates in the Host and Local Communities have fallen, college graduation rates haven't risen. Indeed, all of the communities had lower high school dropout rates in 2000 than in 1970. While most of the communities have continued to decline, some, like the City of Buffalo, have experienced recent increases in the dropout rates.

#### **2.1.4 Income Levels and Poverty Rates**

This section discusses the income levels of the population in the United States, New York State, Western New York, the Host and Local Communities, and the three Preference Customer communities in the period from 1970 through 2000. We rely on three measures of income level—median income, per capita income, and the poverty rate.<sup>13</sup> [Table 2.1.4-1](#) shows real median family income<sup>14</sup> (in 2002 dollars) for the relevant geographic regions, [Table 2.1.4-3](#) presents per capita income historically for the study regions, and [Table 2.1.4-5](#) presents data on the poverty rate. [Table 2.1.4.2](#), [Table 2.1.4-4](#), and [Table 2.1.4-6](#) present the same data for 1999, broken out by race.

New York State has seen continual growth in both real (inflation adjusted) median family income and real per capita income over the period from 1959 through 1999. Real per capita income increased from just under \$13,000 in 1959 to just over \$25,000 in 1999, somewhat greater than the 1999 U.S. level of around \$23,000. Similarly, real median family income in the state has grown from around \$23,000 in 1949 to almost \$56,000 in 1999. Over the same period, however, the state has experienced an increase in

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<sup>13</sup> The Census poverty level refers to income levels, based on family size, age of householder, and the number of children under 18 years of age, that are considered too low to meet essential living requirements. The criteria for determining poverty level are applied nationally (except for Alaska and Hawaii), without regard to the local cost of living. At the 2000 Census, the poverty threshold based on 1999 incomes and prices for a family of four (two adults and two children under 18) was \$16,895 (reported in 1999 dollars).

<sup>14</sup> Note that the value is recorded for the year previous to the Census; thus, for example, the 2000 Census records income from 1999. These values were converted to 2002 dollars using the CPI-U.

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the poverty rate—from 11.1 percent in 1969 to 14.6 percent in 1999, while the nation as a whole has seen a decline.

The Western New York region has also seen growth in real per capita income over the 1959-1999 period, though the region has remained below the state level over the entire period, recording real per capita income of just over \$20,000 in the 1999 Census (in 2002 dollars), about \$5,000 less than the state level. The Western New York region has also seen an increase in the poverty rate, which grew over two percentage points between 1969 and in 1999. However, the poverty rate in Western New York remained below the state level in 2000 at 12.0 percent.

In Erie and Niagara Counties, both real per capita income and median family income have increased since 1959, though, like Western New York as a whole, they have remained below average state levels. Real per capita income in Erie County was above the Western New York level by almost \$2,000 in the 1999 Census. Niagara County's per capita income was only slightly above the region with real per capita income of \$20,753. Poverty rates in both counties have also grown since 1969, though they remained below the state level in the 1999 Census. As of the 1999 Census, Niagara County had ten Census tracts in poverty areas and one Census tract in an extreme poverty (see [Table 2.1.4-7](#)).<sup>15</sup> Four of the tracts that meet the definition of a poverty area are adjacent to the FERC Boundary.

There is a great deal of variation among the other Host and Local Communities with respect to income and poverty levels, though most communities have experienced improvements in both indicators over the 1969-1999 period. The City of Buffalo and the City of Niagara Falls both recorded real per capita income levels well below the region in the 1999 Census—with per capita income in Buffalo and Niagara Falls of \$16,188 and \$16,976, respectively (in 2002 dollars). The Town of Lewiston, on the other hand, had per capita income in 1999 well above the region of Western New York—close to the state level at just above \$25,000.

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<sup>15</sup> A Poverty Area is defined as a Census tract where median income is more than 20 percent below the poverty line; an Extreme Poverty Area is defined as a Census tract where median income is more than 50 percent below the poverty line.

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Among the Host and Local Communities, Buffalo and Niagara Falls recorded particularly high poverty rates in 2000—26.6 percent and 19.5 percent, respectively. The Town of Lewiston and the Niagara-Wheatfield School District, on the other hand, recorded particularly low poverty rates—5.8 percent and 6.1 percent, respectively.

[Table 2.1.4-8](#) through [Table 2.1.4-11](#) display the sources of income for the U.S., New York State, Western New York, the Host and Local Communities, and the Preference Customer communities over the period from 1959 through the present. As the tables show, wage and salary income represents the vast majority of income over the entire period for all of the regions. Since 1969, in both Erie and Niagara Counties, there has been some modest growth in the percentage of income represented by social security payments. Over the same period, individuals in both counties saw wage or salary and self-employment income represent a declining proportion of total income. The majority of Host and Local Communities mirrored these trends.

### **2.1.5 Race and Ethnicity**

This section discusses the racial and ethnic composition of the population in United States, New York State, Western New York, the Host and Local Communities, and the three Preference Customer communities. We report statistics for two racial groups—whites and African Americans—and one ethnic group—Hispanics<sup>16</sup>. We do not report historical statistics for additional racial groups because historical Census data are often not available. However, data throughout this section include information for a number of additional racial and ethnic groups.

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<sup>16</sup> “Hispanic” is a self-designated classification for people whose origins are from Spain, the Spanish-speaking countries of Central or South America, the Caribbean, or those identifying themselves generally as Spanish, Spanish-American, etc. Origin can be viewed as ancestry, nationality, or country of birth of the person or person’s parents or ancestors prior to their arrival in the United States. Spanish/Hispanic/Latino people may be of any race.

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[Table 2.1.5-1](#) shows the percentage of the population made up of whites, [Table 2.1.5-2](#) shows the percentage of the population made up of African Americans, and [Table 2.1.5-3](#) presents information on the proportion of the population composed of Hispanics.

Over the period from 1970-2000, New York State has seen significant growth in its African-American population and a corresponding decline in the percentages accounted for by its white population. The African-American population grew from 11.4 percent of the state's population in 1970 to 17.0 percent of the population in 2000, while the white population declined from 84.9 percent of the state's population in 1970 to 69.3 percent in 2000. The state has also seen growth in its Hispanic population, which nearly doubled between 1970 and 2000, reaching 15.1 percent of the state's population in 2000. The tables indicate that these shifts were roughly consistent with national trends over the period.

The Western New York region also saw growth in its African-American population over the 1970-2000 period, along with a decline in its white population. The region's share of African Americans, however, remained well below the state's, reaching 9.8 percent of the region's population in 2000. The region's Hispanic population has also experienced some growth, though it made up only 2.8 percent of the region's population in 2000.

Erie and Niagara Counties have followed a similar growth trend to that of the region as a whole. Erie County's population, however, consisted of a larger share of African Americans (13.5 percent) and Hispanics (3.2 percent) than the region in 2000, while Niagara County had a lower percentage of African Americans (6.8 percent) and Hispanics (1.3 percent) than the region. As of 2000, Niagara County had three Census tracts where the minority population exceeded 50 percent of the total population (Tracts 202, 204, and 206), all located in the City of Niagara Falls (see [Table 2.1.5-4](#)).

In most Host and Local Communities the African-American populations compose less than 5 percent of the community's population. The City of Buffalo, however, has a significant African-American population, comprising 38.5 percent of the city's population, as does the City of Niagara Falls (20.0 percent). The City of Buffalo—where the Hispanic population represents 7.4 percent of the city's

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people—is the only one of the communities with a Hispanic population that comprises more than 2.0 percent of the people.

## **2.2 Industry and Employment**

This section provides information on trends in industry and employment. We provide data for 2000 for all of the study regions, based upon the detailed information developed in the REMI model prepared for this project. Because of the lack of historical data on industry and employment at the town and city level, however, most of the historical trend information is developed for New York State, Erie and Niagara Counties, and the City of Buffalo and the City of Niagara Falls but does not provide information for smaller regions.

The following sections consider data on three major categories related to industry and employment: gross regional product (“GRP”), employment, and occupational information.

### **2.2.1 Gross Regional Product**

This section presents information on the GRP in 2000 for the nation, New York State, the Local and Host Communities, and the selected Preference Customer communities. GRP, the total output of goods and services in each region, is a measure of a region’s overall economic activity. All figures are presented in terms of 2002 dollars.

[Table 2.2.1-1](#) and [Table 2.2.1-2](#) present the GRP in each of the study regions, broken out by industrial sector. As the tables show, the United States had a GRP of \$10.5 trillion in 2000. New York State accounted for \$658 billion of this total, with the largest amount, \$161 billion, due to services industry output.

Niagara and Erie Counties had total GRP in 2000 of \$6.3 and \$34.3 billion, respectively. The largest three sectors—services, manufacturing, and finance—account for nearly two thirds of the region’s

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total GRP. The three smallest sectors—mining, farming, and agricultural services—each contribute around \$100 million to local GRP, well under 1 percent of total region product.

Buffalo was responsible for nearly a third of Erie County’s GRP, with total GRP of \$10.2 billion. The services and manufacturing industries were responsible for close to half of this total, accounting for \$2.5 billion and \$2.1 billion of the city’s GRP, respectively.

In Niagara County, the City of Niagara Falls had the largest GRP with \$1.6 billion. As in the City of Buffalo, the services sector in the City of Niagara Falls was significant, contributing \$294 million to the region’s GRP. The largest sector, though, was durables manufacturing, which accounted for \$428 million of the City’s GRP.

Indeed, the tables show that the manufacturing and services sectors dominated the economies across the region, while the agriculture and mining sectors were relatively small.

## **2.2.2 Employment**

This section reviews employment trends, providing details in three major categories—the labor force, total employment and the unemployment rate. We first present data on the evolution of the labor force, then on total employment, by industry sector, and finally the trends in regional unemployment rates.

### **2.2.2.1 Labor Force**

[Table 2.2.2.1-1](#) presents information on the size of the labor force<sup>17</sup> over the 1950-2000 period in the U.S., New York State, Western New York, the Host and Local Communities, and the three Preference

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<sup>17</sup> A member of the labor force is either employed or actively seeking work.

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Customer communities. ([Table 2.2.2.1-2](#) presents detailed data on the labor force by race and ethnicity for 2000.) The data shows that roughly 138.8 million people were in the U.S. labor force in 2000, more than double the size of the 1950 labor force of 60.1 million. New York State's labor force has also grown since 1950, from 6.4 million in 1950 to 9.0 million in 2000.

While the national and state labor force has grown every decade since 1950, the labor force in many of the Host and Local Communities saw their first declines between 1990 and 2000. Niagara and Erie Counties both fell slightly over the 10-year period. Among the other Host and Local Communities, the City of Buffalo, the Town of Lewiston, and the Niagara Wheatfield School District were the only communities to sustain labor force growth between 1990 and 2000. Among the three Preference Customer communities considered in this study, the City of Jamestown saw a sharp decline over the last decade, while the other two experienced modest growth.

#### **2.2.2.2 Total Employment by Industry**

[Figure 2.2.2.2-1](#) through [Figure 2.2.2.2-7](#) show trends in employment by sector from 1969 to 2000 for the U.S., New York State, Western New York, Niagara, Erie, Wyoming, and Chautauqua Counties.<sup>18</sup> Employment figures for 1969 and 2000 are presented in [Table 2.2.2.2-1](#), [Table 2.2.2.2-2](#), [Table 2.2.2.2-3](#), and [Table 2.2.2.2-4](#).<sup>19</sup> [Table 2.2.2.2-5](#) shows *changes* in industry by region over this time period.

As the tables show, 167.5 million people were employed in 2000 in the nation. The bulk of these individuals, 53.3 million (31.8 percent), were employed in the services sector, almost twice the number employed in any other field. New York State had about 10.5 million employed individuals in 2000, with 3.9 million (37.5 percent) employed in the services sector.

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<sup>18</sup> As noted above, the Bureau of Economic Analysis does not provide data on historical employment for sub-county regions.

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Erie County had total employment of 557,847 in 2000. Approximately one third of these individuals—168,720—were employed in the City of Buffalo. As with the state as a whole, the services sector was by far the largest employer, with the government, manufacturing and retail trade sectors also employing a significant portion of the populace.

Niagara County had 95,661 employed individuals in 2000. The services industry employed 26,199 (27.4 percent), and there were approximately 18,500 individuals (19.4 percent) employed in the manufacturing sector. As with GRP, most of the smaller communities followed county and regional trends—with the services, manufacturing and government sectors usually accounting for the most employment.

Although the United States has seen 84 percent growth in overall employment since 1969, there have been declines in two industry categories—agriculture and manufacturing—as [Table 2.2.2.2-5](#) shows. New York State has seen an even greater decline (52 percent) in manufacturing employment since 1969. Like the country as a whole, however, significant growth in other New York State sectors—such as the services sector—has acted to offset the decline in manufacturing employment, though employment in different sectors can of course lead to different levels of income.

Niagara County and Erie County have both experienced trends similar to the state. Both counties have seen declines in agriculture and manufacturing employment, combined with employment increases in the services sector. Indeed, employment trends across all sectors in Niagara and Erie County tracked quite closely to trends in the state as a whole over the 1969-2000 period. One noticeable difference, however, is that Niagara County has actually seen a decline (2 percent) in total employment over the period, compared to a 24 percent increase in the state's employment since 1969. For context, [Table 2.2.2.2-6](#) lists the top employers Western New York. The table shows that HSBC Bank is the largest single employer in the region, with 5,500 employees in the City of Buffalo.

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<sup>19</sup> Data for 1969 are from BEA, because REMI does not provide historical information before 2000, *(footnote continued)*

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### 2.2.2.3 Unemployment Rate

[Figure 2.2.2.3-1](#) shows trends in unemployment rates for New York State over the period since 1974, compared to the national average.<sup>20</sup> As the chart shows, New York State has followed unemployment trends in the nation relatively closely, typically experiencing employment peaks and valleys in the same periods, though their degree often varied. For example, in the mid-1970s, the U.S. and New York State both saw rising unemployment rates, though New York State peaked at unemployment over 10 percent, while the U.S. peaked below 9 percent. In 2003, however, New York State and the nation as a whole shared a 6.0 percent unemployment rate. As [Figure 2.2.2.3-2](#) shows, Western New York has also experienced unemployment trends similar to national trends. Indeed, from the early to mid-nineties, unemployment rates in Western New York were roughly equivalent to national unemployment rates. Since 1996, the unemployment rates in Western New York were slightly above national rates.

Like New York State, Niagara and Erie Counties have followed national unemployment trends, though again peaking at different points, as [Figure 2.2.2.3-3](#) and [Figure 2.2.2.3-4](#) show. Indeed, in the mid-1980s, Niagara County peaked with unemployment rates well above national levels. However, since that time, Niagara County has seen unemployment track the national unemployment rate quite closely. Like Niagara County, Erie has experienced unemployment trends around or below national levels since the mid-1980s.

[Figure 2.2.2.3-5](#) and [Figure 2.2.2.3-6](#) provide data on the unemployment rates in the City of Buffalo and the City of Niagara Falls. As the tables show, both regions have had unemployment rates

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while data for 2000 are from REMI, because BEA does not provide data at the sub-county level. Note that, at the county level, BEA and REMI data are extremely similar because REMI relies on BEA data.<sup>20</sup> According to the BLS, the unemployment rate represents the number unemployed as a percent of the labor force. Unemployed persons include all persons 16 years and over who had no employment during the reference week, were available for work, except for temporary illness, and had made specific efforts to find employment sometime during the 4-week period ending with the reference  
*(footnote continued)*

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well above the national average over the period from 1988 through 2003. During the period, both regions' unemployment rates peaked in 1992 near 13 percent, before falling below 10 percent in the late 1990s and rising again starting in 2000. [Figure 2.2.2.3-7](#) presents data on Wyoming County, where the Preference Customer community of Arcade is located. [Figure 2.2.2.3-8](#) shows data for the City of Jamestown, a second Preference Customer community. The figures show that both locations have unemployment rates slightly above the national average, though they have been quite close to the national level since 1990.

### **2.2.3 Occupational Information**

This section provides information on the occupational mix and wage profile for the study regions.

#### **2.2.3.1 Occupational Mix**

[Table 2.2.3.1-1](#) and [Table 2.2.3.1-2](#) show the number and percentage of employed individuals by occupation for 2000. In the United States as a whole by far the largest number of individuals—46.8 million—worked in occupations related to sales, office and administrative support. An additional 16.8 million individuals worked in management, business or financial occupations. New York State similarly had its largest proportion of individuals in sales, office and administrative occupations, with 3.1 million total. Its second-highest occupational category was management, business and financial services, in which 1.1 million individuals were employed.

Erie and Niagara Counties share a profile similar to that of the nation as a whole with sales and office support occupations and management, business, and financial occupations significant occupational categories in both counties. Among Erie County employees, 160,616 are in sales and office support occupations, while 56,312 are in management, business and financial occupations. In Niagara County,

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week. Persons who were waiting to be recalled to a job from which they had been laid off need not  
*(footnote continued)*

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24,219 individuals are in sales and office support and 8,340 individuals employed in management, business and financial positions. Other large occupations in the counties include education, healthcare, food preparation, construction, and transportation.

As in the U.S., the state, and Erie and Niagara Counties, the majority of employees in all of the Host and Local Communities, as well as the three Preference Customer communities considered, are occupied in the sales, office, and administrative support positions.

[Table 2.2.3.1-3](#) presents data on the occupations of workers at Niagara University. (Note that these data are broken down in categories provided by NU, not the more detailed categories presented for other sectors.) Data for NU were only provided for the years 1995, 1998-1999, and 2001-2003. These data show that faculty and clerical and support staff made up the vast majority of the work force at NU in years for which data were provided.

### **2.2.3.2 Wage Rates**

[Table 2.2.3.2-1](#) provides information on wage rates for the Buffalo-Niagara Metropolitan Statistical Area (“MSA”)<sup>21</sup> as well as for New York State and the U.S. In 2001 the average wage in the Buffalo-Niagara region was 5 percent less than the national average. Note, however, that these differences in wage rates do not account for differences in the cost of living between the Buffalo-Niagara MSA and the U.S.; lower costs of living in the Buffalo-Niagara MSA than in the U.S. would tend to shrink the differences described below. People in legal occupations earned 20 percent less than their national counterparts, computer programmers made 19 percent less, and workers in personal care and service occupations earned 16 percent less (see [Table 2.2.3.2-1](#)). However, some occupations in the Buffalo-Niagara region have a higher average hourly wage than the national average. Compared to the national average, people in farm fishing and forestry occupations in the Buffalo-Niagara region earned 15

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have been looking for work to be classified as unemployed.

<sup>21</sup> The Buffalo-Niagara MSA is coincident with Buffalo and Niagara Counties.

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percent more per hour, workers in production occupations made 11 percent more per hour, and those in construction made 9 percent more per hour.

In general, wages in New York State tend to be higher than national averages and substantially higher than in the Buffalo-Niagara MSA. Again, these differences do not reflect differences in the cost of living; if the cost of living were higher on average in New York State than in Buffalo-Niagara, the differences described below would be lessened. The average hourly wage in New York State, \$19.11, was \$3.33 higher than the wages in the Buffalo-Niagara region. Indeed, average hourly rates for all job categories listed in [Table 2.2.3.2-1](#) were lower in the Buffalo-Niagara region than in New York State.

[Table 2.2.3.2-2](#) and [Table 2.2.3.2-3](#) provide historical context on wage rates, broken down by industry. The tables show that the average wages in Western New York and Erie and Niagara Counties have been well below state levels since 1975. In addition, the highest average wages in Western New York and Erie and Niagara Counties have been in the manufacturing sector since 1980, while the highest average wages in the state have been in finance, insurance and real estate, with manufacturing second in 2000.

[Table 2.2.3.2-3](#) presents wages by industry as a percent of total wages. The table shows that all regions have a substantial portion of wages in the services industry, while manufacturing makes up a much higher portion of total wages in Western New York (24.3 percent) and Erie (21.7 percent) and Niagara (37.4 percent) Counties than in the state as a whole (11.7 percent). Conversely, finance, insurance and real estate represents a much higher portion of total state wages (21.9 percent) than of wages in Western New York (6.4 percent).

#### **2.2.4 The Project's Industrial Customers**

A significant portion of the Project's electricity (approximately 40 percent) is sold directly to "expansion power" and "replacement power" (EP/RP) customers—companies that are located primarily in Erie and Niagara Counties. Based on data provided to NYPA, these companies employ approximately

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43,000 workers. These jobs are tied to the Project's low-cost electricity by contract with NYPA—in return for their allocation of NYPA hydropower, each company has committed to employment in the region.

[Table 2.2.4-1](#) lists the number of companies and the total employment by the Project's industrial customers in each industry. As shown in this table, manufacturing companies represent 97 of the 108 total EP/RP customers and approximately 90 percent of the total employment. The main industries represented by NYPA's customers include Food Manufacturing, Motor Vehicle Manufacturing, and Fabricated Metals Manufacturing (each with more than 5,000 committed jobs). Other major industries include Primary Metals Manufacturing, Printing, Chemicals, and Wholesale Trade. The Project's low-cost hydropower is important to many of these companies' abilities to compete effectively in their markets.

Based on average wage levels in these industries and regions, we calculate that locally these companies have a total annual payroll of approximately \$2.1 billion. Based on average levels of output per worker, we calculate that these companies generate approximately \$13.8 billion in output each year. [Table 2.2.4-2](#) lists the number of companies and the total employment by region, with the proportional distribution of payroll and output. As shown in this table, most of the EP/RP customers are located in Erie County. Companies in Erie County, of which approximately half are located in the City of Buffalo, represent more than 80 percent of the total committed jobs of all EP/RP customers and account for approximately \$1.7 billion in annual payroll. Companies with significant payrolls are also located in Niagara Falls City (7 percent of total committed jobs) and the City of Jamestown (1 percent).

In addition to providing employment to local residents and the associated direct income benefits, the Project's EP/RP customers generate economic activity in the region through a number of other contributions. These include:

- *Payments of property and sales taxes to local governments.* Members of the Power for Economic Prosperity (PEP), representing approximately 60 percent of the total employment by all the Project's commercial and industrial customers, pay approximately \$16 million in

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taxes annually.<sup>22</sup> Scaling this amount up proportionately to account for all EP/RP companies leads to a projection that total tax payments by these customers are approximately \$27 million annually.

- *Payments to suppliers in the Buffalo/Niagara region.* PEP members spend approximately \$170 million locally each year, implying total spending of approximately \$283 annually by all EP/RP customers.
  
- *Spending on facility investment.* PEP members have invested approximately \$3 billion in their Buffalo/Niagara region manufacturing facilities over the last 5 years, indicating total investment spending of approximately \$1 billion annually by all EP/RP customers.
  
- *Contributions to local community groups and organizations.* Manufacturing companies that receive low-cost power from NYPA support a number of non-profit organizations through financial contributions and employee support. These include the United Way, the Women's and Children's Hospital, the Roswell Park Cancer Institute, Niagara University, and the Niagara Police Athletic League, among many others.

### **2.3 Public Sector (Taxes and Services)**

This section provides information on public sector taxes and expenditures on services for the relevant areas as well as data on taxes on businesses.

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<sup>22</sup> Data on PEP members in this report are taken from the "Power for Economic Prosperity Fact/Information Sheet."

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### **2.3.1 Taxes and Local Revenues**

This section describes the taxes and other forms of public sector revenue for the Local and Host Communities between 1997 and 2001. We report the taxes and other forms of revenue for Erie and Niagara Counties, the City of Niagara Falls, the Town of Niagara, the Town and Village of Lewiston, and the City of Buffalo. We also report revenue figures for the three relevant school districts—Lewiston-Porter, Niagara-Wheatfield, and Niagara Falls. The tables from [Table 2.3.1-1](#) through [Table 2.3.1-10](#) present the revenue for each of the ten communities in thousands of 2002 dollars.

As the tables show, total revenue increased over the period considered for seven of the nine communities listed. (The Bureau of the Census only reports one year of data for the Village of Lewiston, making it impossible to calculate a trend.) The percentage increase in total revenue ranges from Erie County, which grew by 1.6 percent from 1997 to 2001, to the Niagara Falls City School District, which increased by 18.0 percent over the same period. However, only three of these communities—the Town of Niagara, the Town of Lewiston, and Erie County—show an increase in revenues generated from its own source. The growth in revenue in the other four communities is due to increases in state or other local funding. Federal funding did not increase for any of the communities over this period.

### **2.3.2 Expenditures on Services**

Here, we present information on public sector service expenditures for the Local and Host Communities between 1997 and 2001. We report the expenditures on various government services for all of the Host and Local Communities. [Table 2.3.2-1](#) through [Table 2.3.2-10](#) present the expenditures for each of the ten communities in thousands of 2002 dollars.

Total expenditures increased in this period for seven of the nine communities for which trends can be shown. The percentage increase in total expenditures was the lowest for Niagara County government, where expenditures grew by 3.8 percent from 1997 to 2001, to the Niagara-Wheatfield

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School District, where expenditures increased by 19.5 percent. Expenditures for the Town of Niagara and the City of Niagara Falls fell by 18.1 percent and 25.1 percent, respectively.

The tables show that, for both Erie and Niagara County, the largest category of expenditures was public welfare in 2001. In Erie County, public welfare represented nearly 37 percent of total expenditures with hospitals and higher education, other large categories of expenditures, representing roughly 17 percent and 5 percent, respectively, of total expenditures. In Niagara County, public welfare expenditures represented almost 32 percent of total expenditures, while other significant categories included higher education (12 percent) and health (6 percent).

Service expenditures in the other Host and Local communities vary significantly from community to community. Elementary and secondary education is by far the largest category of expenditures in the City of Buffalo, making up more than half of the city's budget. Police (6 percent), housing and community development (6 percent), and fire (5 percent) also represent significant categories of community expenditures. In the City of Niagara Falls, police is by far the largest expenditure, representing 13 percent of total non-school expenses. The Niagara Falls School District, which budgets separately from the City, had roughly the same level of expenditures as the city government. That is, the City spent roughly the same amount on education as on all other expenditure categories.

The Town of Lewiston, the Village of Lewiston, and the Town of Niagara all spent a significant portion of their budgets providing sewerage services. Highway funding also represented significant line items for each of these locales, representing between twelve and 14 percent of total expenditures.

### **2.3.3 Taxes on Businesses and Other Business Costs**

This section presents information affecting the competitive position of the Host and Local Communities relative to other regions in the country. [Figure 2.3.3-1](#) provides an overview of taxes in New York State compared to other regions, presenting total indirect business taxes as a percent of GDP. Indirect business taxes include both taxes (e.g., sales and property taxes) that are chargeable to businesses

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as well as non-tax liabilities such as regulatory fees. Thus, this indicator provides a sense of the relative cost of doing business in New York as opposed to other regions and the U.S. as a whole. As the figure shows, indirect business taxes in New York State are slightly higher than the national average, representing 7.8 percent of GDP in New York, compared to 7.6 percent in the nation as a whole. New York's indirect business taxes are also higher than the East region, but lower than other regions such as the South and West.

Of course, the indirect business tax measure does not include direct taxes such as unemployment taxes and corporate taxes. Thus, this represents only one measure of the cost of doing business in New York State, and should be considered in conjunction with information on direct taxes as well. [Table 2.3.3-1](#), [Table 2.3.3-2](#), and [Table 2.3.3-3](#) provide additional measures of the competitive position of the Host and Local Communities. These tables report the findings of a recent study by [KPMG 2004](#) that looks at the relative cost of doing business in various metropolitan areas. The study provides statistics on taxes and other costs of doing business in Buffalo, compared to a national average. [Table 2.3.3-1](#) shows that it is about 0.3 percent more expensive to do business in the Buffalo area than the average U.S. city, though the Buffalo area has a slight advantage in manufacturing (0.2 percent). [Table 2.3.3-2](#) and [Table 2.3.3-3](#) present data on corporate taxes, both as a percent of total costs and total revenues. The tables show that taxes on companies in the Buffalo region represent a slightly lower proportion of costs and revenues in most categories, with the exception of the sales tax.

[Figure 2.3.3.2](#) and [Figure 2.3.3-3](#) provide additional data on tax rates in the Host and Local Communities. [Figure 2.3.3.2](#) shows that the state corporate income tax rate in New York State (7.5 percent) is higher than the national average (6.8 percent) and the average for most regions, though lower than the average rate in the East (8.4 percent). [Figure 2.3.3-3](#) indicates that total sales taxes in both Erie and Niagara Counties (both 8.25 percent) are higher than the average national rate (7.43 percent).

In addition to sales and income taxes, businesses face other costs such as unemployment taxes and workers' compensation. [Table 2.3.3-4](#) provides data on unemployment taxes in New York State. Minimum, maximum, and new employer unemployment tax rates in New York are higher than the U.S. average. However, the taxable wage base to which these rates are applied is far lower, only the first

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\$8,500 taxable in New York as opposed to a national average of \$13,171. Thus, the unemployment taxes paid per worker by companies in New York State do not differ significantly from the national average. [Figure 2.3.3-4](#) provides a comparison of worker compensation rates across the U.S. From the perspective of businesses, New York State appears to stack up well against the rest of the country, with a maximum weekly benefit of only \$400, significantly lower than the U.S. average of \$619.

Finally, businesses located in the Host and Local Communities are subject to local property tax rates. The tax rates that businesses in these communities face are discussed in [Section 3.4.1.3](#).

## **2.4 Electricity**

This section reviews the trends in electricity prices and consumption at the national level and for New York State over the period since Project operations began in 1961. The first subsection presents information on electricity prices. The second section provides information on present and historical electricity consumption for both the U.S. and New York State.

### **2.4.1 Electricity Prices**

[Figure 2.4.1-1](#) presents data on the average prices paid (in 2002 cents/kWh) for electricity by the three major customer classes—commercial, industrial, and residential customers. The figure shows trends in average prices paid by the three major customer classes in New York State (1990-2002) and in the nation as a whole (1961-2002).

As the figure shows, electricity prices in the U.S. have fluctuated over the period since 1961. The figure shows that electricity prices declined relatively steadily (in real terms) from the early 1960s through the early 1970s, when the petroleum shortage drove prices back up, peaking close to 12 cents per kWh (in 2002 dollars) in the early 1980s. Since that peak, prices have again followed a steady decline

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through the present. Although data for New York State are only presented since 1990, the figure shows that New York State electricity prices have, like national-level prices, declined since the early 1990s.<sup>23</sup>

The figure also demonstrates the difference in average electricity rates paid by customer class. (Note that these prices include the impacts of Project power, which result in average New York State electricity prices that are lower than they would be in the absence of Project power, particularly for industrial and residential customers.) The figure shows that rates for residential and commercial consumers are, on average, significantly higher than those paid by industrial consumers. The figure also shows that prices in New York State have been consistently higher than the national average for all retail customers.

[Figure 2.4.1-2](#), [Figure 2.4.1-3](#), and [Figure 2.4.1.4](#) show residential, commercial, and industrial real electricity prices from 1990 to 2002 for states other than New York that receive Project power: Connecticut, Massachusetts, New Jersey, Ohio, Pennsylvania, Rhode Island, and Vermont. As the figures show, these states, for the most part, have experienced varying degrees of decline in real electricity prices with the exception of commercial prices in Vermont, which increased by 3 percent during these years.

## **2.4.2 Electricity Consumption**

As [Figure 2.4.2-1](#) demonstrates, electricity consumption in the U.S. has grown significantly since 1961 for all three major customer classes as well as the “other” consumption category. Indeed, in 1961, U.S. electricity consumption was just over 700 million MWh. By 2002, annual electricity consumption had grown nearly five times to almost 3.5 billion MWh. As the figure shows, total electricity consumption has been divided relatively evenly among the three major customer classes. Unlike the other sectors, however, growth in industrial sector consumption has leveled off since the early 1980s, while consumption by the other two major customer classes has continued to grow.

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<sup>23</sup> The EIA data presented in this figure was not available prior to 1990.

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In 2002, New York State accounted for approximately 4.1 percent of national electricity consumption. As [Figure 2.4.2-2](#) shows, commercial customers are by far the largest consumers of electricity in New York State, consuming over 60 million MWh of electricity in 2002, compared with under 50 million MWh of consumption by residential consumers, and just over 25 million MWh consumed by industrial customers. Since 1990, consumption by commercial and residential customers has grown steadily in New York, while industrial consumers have reduced their consumption.

[Figure 2.4.2-3](#) shows total electricity consumption for states other than New York that receive Project power. With a peak use of 165 million MWh of electricity in 2000, Ohio is the largest electricity consumer of these states. The smallest consumer of electricity is Vermont, purchasing 5.7 million MWh of electricity in 2002. All of the states saw increases in electricity consumption between 1990 and 2002 while experiencing varying degrees of fluctuation in the interim years.

## 2.5 Real Estate

This section reviews present and historical real estate patterns in the study regions. The first sub-section considers land uses, and the second discusses information on population density in the study region. The third sub-section presents data on housing characteristics, and the final section provides data on commercial real estate values.

### 2.5.1 Land Use

This section provides information on land use in the Host and Local Communities, as well as the Preference Customer communities. [Table 2.5.1-1](#) and [Table 2.5.1-2](#) present data on the land use by community, both in terms of proportion and in terms of total land use, while [Figure 2.5.1-1](#) provides a graphical representation of land-use patterns. In most of the communities presented here, residential land use represents the largest proportion of total land. In Niagara County and the Lewiston-Porter School District, however, agriculture is the largest category of land use, with residential land the second largest.

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The data indicate that the Town of Lewiston and the Niagara Wheatfield School Districts also have significant portions of land dedicated to agriculture.

In terms of land used for business purposes, the Village of Akron, the Town of Niagara and the City of Buffalo have the highest proportions of land devoted to commercial purposes, with 14.1, 10.9 and 12.8 percent, respectively. The City of Niagara Falls has the largest proportion of land dedicated to industrial uses, with 7.4 percent (672 acres) zoned for that purpose. Many of the communities also have significant portions of vacant land, ranging from as much as 20 percent vacant in the Town of Niagara to as little as 4.2 percent vacant in the Village of Lewiston.

It is also helpful, for contextual purposes, to consider the historical development of land use in the region. [Figure 2.5.1-2](#) provides some sense of how land use has evolved in the region, illustrating development during four time periods—pre 1900, 1900-1940, 1940-1960, and 1960-2000. The map shows that development before 1900 was almost exclusively in the City of Buffalo and the City of Niagara Falls, with a few outposts in the surrounding countryside. Over the first 40 years of the twentieth century, development expanded the borders of Buffalo but had little effect elsewhere in the region. The map also shows that, in the last 40 years, development has spread across the region, connecting Niagara Falls and Buffalo through a developed corridor along the Niagara River.

## 2.5.2 Population Density

[Figure 2.5.2-1](#) displays a map of population density in the Host and Local Communities. The map shows that the Village of Kenmore (near Buffalo) has the highest population density in the region, with a density of greater than 7,000 people per square mile. Buffalo and the City of Tonawanda also have high population densities, with the City of Niagara Falls, the Village of Lewiston and the Village of Youngstown having slightly lower densities. Among the Host and Local Communities, the Town of Lewiston and the Town of Niagara have the lowest population densities, with both towns having fewer than 1,000 people per square mile.

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### 2.5.3 Housing Characteristics

This section examines the housing market characteristics of the Buffalo-Niagara region. [Table 2.5.3-1](#) and [Table 2.5.3-2](#) show the number of housing units in each market and the overall vacancy rate from 1950 through 2000. The number of housing units has grown significantly in the nation over the last 50 years, nearly tripling since 1950, while housing units in New York State have increased from roughly 4.6 million in 1950 to nearly 7.7 million units in 2000. Consistent with broader suburbanization trends, neither Buffalo nor Niagara Falls has seen significant growth in the number of housing units—indeed, Buffalo has experienced a slight decline over the period. On the other hand, the number of housing units in the other, more suburban Host Communities has grown significantly over the period.

In contrast to New York State, Western New York had an overall vacancy rate that was above the U.S. rate by 1.4 percentage points in the year 2000. Although slightly higher than the state, vacancy rates during the same time in Erie and Niagara Counties were lower than national and regional levels at 8.4 and 8.2 percent, respectively. As expected, urban areas within these counties had overall vacancy rates that were significantly higher than suburban areas due to their higher proportion of rental units (see [Table 2.5.3-3](#)). For example, in the year 2000, vacancy rates in Buffalo (15.4 percent) and Niagara Falls (13.4 percent) reached much higher levels than the single digit rates in the other Host and Local Communities.

Median value of owner occupied housing (2002 dollars) in New York State was over \$30,000 higher than the nation as seen in [Table 2.5.3-4](#) for the year 2000. Except for a decline between 1960 and 1970, real median value of owner-occupied housing in Erie and Niagara Counties rose consistently over the period. However, in contrast to New York State, Erie and Niagara Counties recorded median values well below state and national levels. Among the Host and Local Communities, Buffalo had the lowest median value of housing at \$61,952, while the Town of Lewiston had the highest at \$104,158 but was still far below state and national levels by almost \$51,000 and \$21,000, respectively.

Produced by the Office of Federal Housing Enterprise Oversight (OFHEO), the House Price Index ([Figure 2.5.3-1](#)) models the quarterly growth in price of single-family homes over the period from 1978 to 2003, for the Buffalo-Niagara MSA, New York State, and the U.S. state average. Although

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housing values in New York State were only slightly above the U.S. average during the first quarter of 1978, they substantially outpaced the U.S. ending in 2003 with a value that was more than one and a half times higher. Over the same time, the Buffalo-Niagara MSA remained consistently lower than both New York State and the U.S. state average with a 2003 value that was around 40 percent of the U.S. and only 25 percent of New York.

[Table 2.5.3-5](#) reports median rent in the Buffalo-Niagara area for renter occupied housing. Although New York State as a whole had rental rates that were over \$70 per month higher than the U.S., rents in Erie and Niagara Counties were \$90 and \$129 per month lower, respectively. Similarly to median housing values rents consistently grew over the period 1950 to 2000 except for a decline between 1960 and 1970. Rental rates in the cities of Buffalo and Niagara Falls were lower than the more suburban areas such as the Town of Lewiston and the Town of Niagara.

Finally, [Table 2.5.3-6](#) presents data on residential land transactions during 2003 in the Town of Lewiston (where the majority of the Project land is located). This information was compiled from detailed books of transactions in the Town and reflects only arm's-length transactions, which excludes sales to relatives, transfers to estates, and donations to charity. These transaction data indicate that there were nearly 200 residential lots (totaling over 100 acres) sold in 2003, with one-family homes selling for a median value of around \$110,000 per home and around \$300,000/acre. (Transactions are reported in table as median price per acre including the house itself.) In addition, there were 26 parcels of undeveloped residential land sold in Lewiston for a median value of roughly \$50,000/acre.

#### **2.5.4 Characteristics of Commercial Real Estate**

[Table 2.5.4-1](#) compares the national average rental and vacancy rates to the Buffalo-Niagara MSA among various commercial property types in 2003. Generally, both square footage rent and vacancy rates were lower in the Buffalo-Niagara MSA than the nation in 2003, though there were a few exceptions. The largest differences in rental rates appeared in the downtown markets. Nationally, the downtown office market exhibited significantly higher rent of \$31.95 per square foot and a vacancy rate that was about two percentage points higher than Buffalo-Niagara's, while the average downtown retail

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rental rate nationally (\$39.24) was nearly five times the rate in Buffalo-Niagara (\$8.00 per square foot). On the other hand, rent for suburban office space in Buffalo-Niagara was \$0.90 higher than the national average, while vacancy rates were less than half the national rate at 8 percent. In addition, power centers reported rents that were around \$1.50 higher in Buffalo-Niagara than they were in the U.S. with a vacancy rate that was more than 2 percent higher. Finally, industrial real estate in Buffalo-Niagara had consistently lower rents and vacancy rates than the national average.

[Table 2.5.4-2](#) provides some additional information on the value of land in the Buffalo-Niagara region, focusing on development land rather than rental space. The data show that land prices ranged from a low of \$20,000 per acre of residential land to a high of \$1.1 million per acre of retail/commercial land. The table also presents US data for comparison purposes.

## **2.6 Tourism**

This section provides background on the tourism industry in the Buffalo-Niagara region. In addition, we provide a comparison to the tourism industry on the Canadian side of the Falls.

### **2.6.1 Tourist Activity and Expenditures**

Straddling the U.S.-Canadian border—in New York and Canada’s Ontario Province—Niagara Falls is among the largest waterfalls in the world. One-fifth of the fresh water of the world lies in the Upper Great Lakes—Michigan, Huron, Superior and Erie—and all of the outflow empties into the Niagara River and eventually over the Falls or through the U.S. and Canadian power generating stations. Twenty-five miles from the Falls is the City of Buffalo, the fifty-eighth largest city in the U.S. and second in New York State. Buffalo is home to two major league sports teams and has New York State’s largest concentration of cultural attractions outside of New York City. Together, Niagara Falls (U.S. side) and the surrounding Buffalo region attract approximately 8.4 million individual visitors each year, according

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to the Buffalo-Niagara Convention and Visitors Bureau.<sup>24</sup> An estimated 23 percent, or 1.9 million, of total visitors come to the region for business purposes ([Shifflet 2003](#)), meaning that approximately 6.5 million visitors come each year for leisure.

[Table 2.6.1-1](#) through [Table 2.6.1-3](#) present data on the tourism industry in the Buffalo-Niagara region in 2001 and 2002 from a recent survey by D.K. Shifflet & Associates ([Shifflet 2003](#)). As [Table 2.6.1-1](#) shows, approximately 46 percent of visitors to the region come on day trips, while the remaining 54 percent stay overnight. Among overnight visitors, the study indicates that the average trip lasted 3.01 days in 2002 with the majority of overnight visitors staying between one and three nights, meaning that overnight visitors are responsible for roughly 13.7 million visitor days each year. Daytrippers are assumed to stay for roughly 0.75 days and thus are responsible for approximately 2.9 million visitor days.

[Table 2.6.1-1](#) also shows that visitors spent an average of \$83.50 per day on trips to the Buffalo-Niagara region in 2002. The table includes information on the categories in which these expenditures were made, including transport (25.3 percent), food (21.7 percent), room (18.5 percent), shopping (15.3 percent), entertainment (13.4 percent), and miscellaneous (5.8 percent). [Table 2.6.1-2](#) and [Table 2.6.1-3](#) give further details about the characteristics of visitors to the region. As discussed in [Appendix A](#), the \$83.50 spent per day includes *all* trip expenditures—not just expenditures in Buffalo-Niagara. To adjust for this, we assumed that the majority of transportation spending—75 percent—was spent outside of the region. This adjustment yields an estimate of \$67.66 spent per day per visitor in the Buffalo-Niagara region. Finally, we make the assumption that all lodging expenditures are made by overnight visitors. Using this assumption, we calculated that overnight visitors spent an average of \$80.81 and day visitors spent \$52.22 per day. Using these estimates, it can be calculated that visitors to the Niagara region spent roughly \$1.3 billion in 2002. See [Appendix A](#) for further details on these calculations.

Using the data presented in [Table 2.6.1-1](#) and the estimate of the total number of visitors to the region, it is possible to develop rough estimates of the tourism industry's economic impact on the

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<sup>24</sup> Note that this figure includes business travelers.

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Buffalo-Niagara Region. ([Appendix A](#) describes the methodology for developing this analysis in more detail.) [Table 2.6.1-4](#) presents estimates of the economic impact of the tourism industry on the Host and Local Communities, Western New York and New York State. As the table shows, visitor spending in the Buffalo-Niagara region is responsible for over 30,000 jobs in Erie County and 5,000 in Niagara County, including approximately 7,000 jobs in the City of Buffalo and 1,200 in the City of Niagara Falls. Tourism is also responsible for approximately \$1.3 billion of Erie County’s gross regional product (“GRP”) and \$181 million of Niagara County’s GRP.

[Table 2.6.1-5](#) shows the impact of tourism on public revenue in the Buffalo-Niagara region and New York State as a whole. The values represent the contributions of tourism (in thousands of 2002 dollars) to various sources of public revenue, including intergovernmental revenue, property tax, sales taxes, and utility and liquor store revenue. The table indicates that the total public revenue attributable to tourism is approximately \$39.0 million in Erie County, \$13.7 million in the City of Buffalo, and \$6.3 million in Niagara County.

[Table 2.6.1-6](#) provides information on hotel occupancy rates and room rates in the Buffalo-Niagara region. As the table shows, the average cost of a room in the Buffalo-Niagara region between January and October 2003 was \$72.51 a night, with an average occupancy rate of 58.4 percent. In contrast, the average cost of a room in the U.S. was \$83.61 with an occupancy rate close to that of the Buffalo-Niagara region of 60.9 percent. In the City of Niagara Falls, average occupancy rates were 46.8 percent and rates averaged \$69.88 over the same period.

[Table 2.6.1-7](#) shows the number of workers employed in hotels—an industry closely linked to tourism—in the U.S., New York State, Western New York, Erie County, the City of Buffalo, Niagara County, and the City of Niagara Falls. As the table shows, the City of Buffalo and Erie County have about half the proportion of employees in the hotel sector as the U.S. as a whole, while Niagara County has roughly the same proportion of people employed in the hotel sector as the nation. The table also shows that the City of Niagara Falls has over three times the national average, with 3.8 percent of its workers employed in the hotel sector.

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**2.6.2 Tourist Promotion**

There have been a variety of efforts in recent years to promote tourism in the Buffalo-Niagara region. Perhaps the most significant recent addition to the area is the Seneca Niagara Casino, which opened in downtown Niagara Falls at the end of 2002 and draws an average of approximately 100,000 visits a week ([Galarneau 2003](#)). The casino will soon be joined by another new addition to downtown Niagara Falls, with construction of a \$17 million conference center in Niagara Falls. The conference center, which opened in June 2004, is supported by state grants and has been promoted by the USA Niagara Development Corporation. The area has been without a conference center since the previous Niagara Falls Convention Center was converted into the Seneca Niagara Casino in 2002 ([Fink 2003](#)).

In addition to these large-profile development initiatives, regional planners have undertaken tourism initiatives on a number of other fronts. The John R. Oishei Foundation recently commissioned a report from the Institute for Local Governance and Regional Growth at University at Buffalo to develop a comprehensive plan for cultural tourism in the Buffalo-Niagara region ([ILGRG 2002](#)). Among the contributions of this report is a detailed list of the ongoing planning efforts in the Buffalo-Niagara region. This study lists various planning initiatives related to tourism and cultural tourism in the region. These initiatives are listed in [Appendix C](#) of this report.

A coalition group, including The Urban Design Project, Foit-Albeit Associates, and The Waterfront Regeneration Trust, also developed a report in 2002 recommending a number of projects geared towards improving public access to the waterfront and increasing the number of visitors to the area. These projects were considered the best ideas taken from a number of previous reports, plans, studies and proposals on Niagara's future development strategies. In particular, they recommend the following waterfront related projects:

- construction of a waterfront trail system;
- a reconfiguration of the Robert Moses Parkway designed to eliminate its effect as a barrier to the waterfront;

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- a waterfront naturalization program for the shoreline and gorge in which unnecessary pavement is removed and trees are planted; and
- a plan for a Niagara Falls “Green Structure” which would redevelop unused industrial areas in a manner that would better connect the neighborhoods to the waterfront.

The report also recommends projects for improving the region’s cultural heritage attractions. Specifically, the group proposes the creation of a “City of Niagara Falls Family Museum,” a “Heritage Fair,” and a program for researching the history of the Niagara region. These projects and others recommended by this report are estimated to cost roughly \$145 million and are described in detail in [Appendix B](#).

### **2.6.3 Tourism in Niagara Falls, Canada**

Like the Niagara Falls area in the U.S., the Canadian Niagara Falls region has taken considerable steps in fostering the tourism industry, attracting more visitors and increasing lengths of stay. The Niagara Economic and Tourism Corporation (“NETC”) has conducted a number of studies on the tourism industry to provide potential investors in the region with information for the assessment of business opportunities in the area. This section highlights the main efforts taken to promote the tourism industry.

The NETC has taken a number of steps to attract industry related to tourism in the region. As an example, they have mailed an investment prospectus to 1,500 contacts, detailing potential investment opportunities totaling more than \$476 million.<sup>25</sup> The organization also hosts tourism Investment Familiarization Tours to better acquaint investors with the region and business opportunities. In addition, senior NETC staff attend a number of retail, entertainment and retail trade shows to promote opportunities in the region.

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<sup>25</sup> Converted to U.S. dollars using 0.755572 as exchange rate (3/9/2004)

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The 2003 Tourism Investment Update ([Advantage Niagara 2003](#)) released by NETC provides information on recently completed projects and potential future projects. Major projects completed between 2000 and 2002 are listed in [Table 2.6.3-1](#). Developments under construction are shown in [Table 2.6.3-2](#) and future developments being considered are listed in [Table 2.6.3-3](#).

The NETC also periodically conducts studies on the economics of the tourism industry ([Advantage Niagara 2003](#)). These studies provide information about the number of visitors, length of stays and total expenditures. Impacts on employment from the tourism industry are estimated as well as 2007 projections of the industry and its effects on the local economy. As shown in [Table 2.6.3-4](#) and [Table 2.6.3-6](#), the Canadian side of Niagara Falls was host to 14.2 million visitors in 2002 who spent \$1.4 billion in the region (in U.S. dollars), about \$0.2 billion more than the \$1.2 billion spent by 8.4 million visitors to the Buffalo-Niagara region (U.S. side) in 2002. The greater spending per visitor from tourists to the U.S. side can be explained at least partially by the fact that only 27.5 percent of visitors to the Canadian Niagara Falls stay overnight, while an estimated 54 percent of visitors to the U.S. side stay in the region overnight.

The Canadian expenditures are estimated to have generated 36,793 jobs<sup>26</sup> in the Niagara region of Canada and 45,192 jobs in all of Ontario. These impacts are slightly greater than those from tourism and visitor expenditures in Buffalo-Niagara (see above), which generated 36,042 jobs in Western New York and 36,567 in all of New York State .

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<sup>26</sup> The report estimates that an additional 2,222 jobs are generated from tourism-related construction activities and expenditures.

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**2.7 Sociological/Cultural**

In addition to the information provided in this section and in [Section 3.8](#), several other ALP studies provide sociological and cultural background for the study region. For a list of these other ALP studies—as well as relevant documents provided by ALP stakeholders, see [Section 3.8](#).



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**TABLE 2.1.1-1**  
**POPULATION, 1900-2000**

Place	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
United States (000s)	74,607	91,641	105,273	122,288	130,963	151,326	179,323	203,302	226,542	248,718	281,422
New York State (000s)	7,269	9,117	10,385	12,588	13,469	14,830	16,782	18,237	17,558	17,990	18,976
Western NY	799,243	934,973	1,073,815	1,250,644	1,298,035	1,456,342	1,699,445	1,758,355	1,664,981	1,610,299	1,591,708
<i>Local Communities</i>											
Erie County	433,686	528,985	634,688	762,408	798,377	899,238	1,064,688	1,113,365	1,015,416	968,532	950,265
Buffalo City	352,387	423,715	506,775	573,076	575,901	580,132	532,759	462,359	357,569	328,186	292,648
<i>Host Communities</i>											
Niagara County	74,961	92,036	118,705	149,329	160,110	189,992	242,269	235,719	227,353	220,755	219,846
Lewiston Town	2,728	2,638	1,987	3,420	4,448	6,921	13,686	16,076	16,407	15,661	16,257
Lewiston Village	697	713	723	1,013	1,280	1,626	3,320	3,295	3,326	3,048	2,781
Lewiston-Porter SD	4,659	5,004	4,480	6,013	7,334	10,403	19,441	21,589	21,697	20,868	21,157
Niagara Falls City/SD	19,457	30,445	50,760	75,460	78,029	90,872	102,394	85,615	71,384	61,840	55,677
Niagara Town	405	349	360	865	2,618	4,729	7,503	8,288	9,648	9,880	8,894
Niagara-Wheatfield SD	2,635	2,430	2,433	3,438	6,170	10,243	17,065	19,926	21,218	22,896	25,000
<i>Preference Customers</i>											
Akron Village	1,585	1,677	1,960	2,188	2,263	2,481	2,841	2,863	2,971	2,906	3,118
Arcade Village	887	1,294	1,609	1,643	1,683	1,818	1,930	1,972	2,052	2,081	2,020
Jamestown	22,892	31,297	38,917	45,155	42,638	43,354	41,818	39,795	35,775	34,681	31,730

Notes: Data from U.S. Census Bureau. Population change also reflects changes in an area's definition or boundaries (e.g., annexation).

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**TABLE 2.1.1-2**  
**MIGRATION, 1980-1999**

Place	1980 to 1990	1990 to 1999
<i>United States</i>		
Net International Migration	5,205,852	7,478,078
Net Internal Migration	N/R	N/R
Net (International + Internal) Migration	5,205,852	7,478,078
Percent Net Migration	2.3%	3.0%
<i>New York State</i>		
Net International Migration	N/A	1,107,814
Net Internal Migration	N/A	(1,888,936)
Net (International + Internal) Migration	(471,274)	(781,122)
Percent Net Migration	-2.7%	-4.3%
<i>Western NY</i>		
Net International Migration	N/A	14,891
Net Internal Migration	N/A	(115,540)
Net (International + Internal) Migration	(114,862)	(100,649)
Percent Net Migration	-6.9%	-6.3%
<i>Local Communities</i>		
<i>Erie County</i>		
Net International Migration	N/A	8,431
Net Internal Migration	N/A	(72,698)
Net (International + Internal) Migration	(77,987)	(64,267)
Percent Net Migration	-7.7%	-6.6%

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**TABLE 2.1.1-2 (CONT.)**  
**MIGRATION, 1980 - 1999**

Place	1980 to 1990	1990 to 1999
<i>Host Communities</i>		
Niagara County		
Net International Migration	N/A	717
Net Internal Migration	N/A	(10,574)
Net (International + Internal) Migration	(15,761)	(9,857)
Percent Net Migration	-6.9%	-4.5%
<i>Preference Customers</i>		
Akron Village (see Erie County above)		
Wyoming County (includes Arcade Village)		
Net International Migration	N/A	19
Net Internal Migration	N/A	440
Net (International + Internal) Migration	177	459
Percent Net Migration	0.4%	1.1%
Chautauqua County (includes Jamestown)		
Net International Migration	N/A	312
Net Internal Migration	N/A	(6,844)
Net (International + Internal) Migration	(9,785)	(6,532)
Percent Net Migration	-6.7%	-4.6%

Notes: Data from U.S. Census Bureau. Internal migration is defined as migration within the U.S.; thus, all U.S. migration is international, by definition. Percent migration is calculated as net migration divided by the area's total population. Migration data are not compiled below the county level. Niagara County includes all of the Host Communities. Erie County includes the Local Community of the City of Buffalo and the Preference Customer of the Village of Akron, Wyoming County includes the Preference Customer of the Village of Arcade, and Chautauqua County includes the Preference Customer of the City of Jamestown. (Note that this is the case for many tables, though this note is not repeated.)

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**TABLE 2.1.1-3**  
**POPULATION PROJECTIONS, 2005-2035**

Place	2005	2010	2015	2020	2025	2030	2035
United States	295,914,000	309,228,000	322,686,000	336,268,000	350,381,000	365,222,000	380,285,000
New York State	19,121,748	19,104,516	19,101,764	19,242,066	19,607,533	20,200,568	20,858,771
Western NY	1,546,209	1,519,293	1,511,907	1,535,643	1,584,400	1,643,523	1,706,608
<i>Local Communities</i>							
Erie County	929,510	915,579	909,977	920,510	944,562	974,284	1,005,109
<i>Host Communities</i>							
Niagara County	211,614	206,958	206,523	212,375	223,269	237,259	253,753
<i>Preference Customers</i>							
Chautauqua County	136,823	136,656	138,947	144,078	150,757	157,875	165,395
Wyoming County	41,887	39,884	38,607	38,611	39,576	40,798	42,091

Notes: Data from Regional Economic Models, Inc.

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**TABLE 2.1.1-4**  
**PERCENT CHANGE IN POPULATION PROJECTIONS, 2005-2035**

Place	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035
United States	4.5	4.4	4.2	4.2	4.2	4.1
New York State	-0.1	0.0	0.7	1.9	3.0	3.3
Western NY	-1.7	-0.5	1.6	3.2	3.7	3.8
<i>Local Communities</i>						
Erie County	-1.5	-0.6	1.2	2.6	3.1	3.2
<i>Host Communities</i>						
Niagara County	-2.2	-0.2	2.8	5.1	6.3	7.0
<i>Preference Customers</i>						
Chautauqua County	-0.1	1.7	3.7	4.6	4.7	4.8
Wyoming County	-4.8	-3.2	0.0	2.5	3.1	3.2

Notes: Data from Regional Economic Models, Inc.

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**TABLE 2.1.1-5  
NIAGARA UNIVERSITY ENROLLMENT, 1990-2003**

Year	Enrollment
1990	3,063
1991	3,003
1992	3,001
1993	2,836
1994	2,879
1995	2,865
1996	2,935
1997	3,079
1998	2,888
1999	2,940
2000	3,146
2001	3,278
2002	3,446
2003	3,548

Notes: Data from Niagara University and the National Center for Education Statistics (NCES), IPEDS Peer Analysis System (see <http://nces.ed.gov/ipeds/pas/index.asp>).

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**TABLE 2.1.2-1**  
**POPULATION UNDER 20 (PERCENT), 1970-2000**

Place	1970	1980	1990	2000
United States	N/A	32.0	28.8	28.6
New York State	35.4	30.3	26.6	27.3
Western NY	38.2	31.3	27.5	27.4
<i>Local Communities</i>				
Erie County	37.7	30.4	26.2	26.8
Buffalo City	34.6	29.0	27.5	29.3
<i>Host Communities</i>				
Niagara County	39.2	31.7	27.8	27.5
Lewiston Town	43.9	35.3	29.6	28.7
Lewiston Village	38.1	27.1	21.8	20.4
Lewiston-Porter SD	42.7	33.9	28.5	27.2
Niagara Falls City / SD	36.4	29.0	26.4	27.3
Niagara Town	44.7	32.8	27.2	25.8
Niagara-Wheatfield SD	42.6	33.2	26.7	25.6
<i>Preference Customers</i>				
Akron Village	36.2	30.4	24.9	24.1
Arcade Village	N/A	N/A	32.2	29.8
Jamestown City	N/A	29.6	28.6	28.3

Notes: Data from U.S. Census Bureau and Geolytics, Inc.

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**TABLE 2.1.2-2**  
**POPULATION AGES 20-34 (PERCENT), 1970-2000**

Place	1970	1980	1990	2000
United States	N/A	25.8	25.1	20.9
New York State	19.8	24.5	25.2	20.9
Western NY	18.2	23.9	23.7	18.3
<i>Local Communities</i>				
Erie County	18.4	24.2	24.2	18.5
Buffalo City	19.2	26.3	27.7	22.4
<i>Host Communities</i>				
Niagara County	17.5	23.8	22.9	17.3
Lewiston Town	17.7	20.8	20.2	16.0
Lewiston Village	17.8	20.1	18.5	14.7
Lewiston-Porter SD	17.6	20.8	19.7	15.0
Niagara Falls City / SD	16.7	24.3	23.3	18.2
Niagara Town	20.6	25.3	24.9	16.9
Niagara-Wheatfield SD	20.0	23.1	23.3	16.5
<i>Preference Customers</i>				
Akron Village	17.6	23.8	22.1	18.2
Arcade Village	N/A	N/A	21.5	16.2
Jamestown City	N/A	23.5	24.0	19.6

Notes: Data from U.S. Census Bureau and Geolytics, Inc.

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**TABLE 2.1.2-3**  
**POPULATION AGES 35-64 (PERCENT), 1970-2000**

Place	1970	1980	1990	2000
United States	N/A	31.3	33.6	38.1
New York State	34.0	32.9	35.1	38.8
Western NY	33.3	32.3	33.9	38.8
<i>Local Communities</i>				
Erie County	33.8	33.0	34.3	38.7
Buffalo City	33.0	29.7	29.8	34.8
<i>Host Communities</i>				
Niagara County	34.0	32.5	34.1	39.7
Lewiston Town	32.7	35.4	37.7	39.9
Lewiston Village	34.8	36.7	35.8	38.7
Lewiston-Porter SD	32.6	35.2	37.3	41.2
Niagara Falls City / SD	36.1	32.0	31.2	36.0
Niagara Town	30.8	34.8	36.3	41.8
Niagara-Wheatfield SD	31.8	35.7	36.8	42.2
<i>Preference Customers</i>				
Akron Village	34.2	31.4	31.8	39.0
Arcade Village	N/A	N/A	33.4	39.9
Jamestown City	N/A	28.9	30.2	36.2

Notes: Data from U.S. Census Bureau and Geolytics, Inc.

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**TABLE 2.1.2-4**  
**POPULATION AGES 65 AND OVER (PERCENT), 1970-2000**

Place	1970	1980	1990	2000
United States	N/A	11.3	12.5	12.4
New York State	10.8	12.3	13.1	12.9
Western NY	10.3	12.5	14.9	15.5
<i>Local Communities</i>				
Erie County	10.1	12.4	15.2	16.0
Buffalo City	13.3	15.0	14.9	13.5
<i>Host Communities</i>				
Niagara County	9.3	12.0	15.2	15.5
Lewiston Town	5.8	8.5	12.5	15.3
Lewiston Village	9.2	16.1	24.0	26.2
Lewiston-Porter SD	7.1	10.0	14.5	16.5
Niagara Falls City / SD	10.8	14.8	19.1	18.5
Niagara Town	3.9	7.1	11.7	15.4
Niagara-Wheatfield SD	5.6	8.0	13.1	15.6
<i>Preference Customers</i>				
Akron Village	12.0	14.5	21.3	18.7
Arcade Village	N/A	N/A	13.0	14.0
Jamestown City	N/A	18.0	17.2	15.9

Notes: Data from U.S. Census Bureau and Geolytics, Inc.

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**TABLE 2.1.3-1**  
**HIGH SCHOOL DROP OUT RATE (PERCENT), 1970-2000**

Place	1970	1980	1990	2000
United States	12.2	12.0	10.1	10.9
New York State	13.9	10.6	9.9	8.7
Western NY	11.0	8.8	8.3	7.4
<i>Local Communities</i>				
Erie County	10.6	8.7	8.0	7.0
Buffalo City	14.8	14.4	11.6	13.1
<i>Host Communities</i>				
Niagara County	10.9	9.5	8.3	7.2
Lewiston Town	4.1	2.4	2.7	0.7
Lewiston Village	10.1	10.5	0.0	0.0
Lewiston-Porter SD	8.1	4.3	4.1	1.5
Niagara Falls City / SD	11.5	12.8	12.9	10.5
Niagara Town	8.6	9.2	10.3	7.9
Niagara-Wheatfield SD	6.9	6.5	6.7	4.5
<i>Preference Customers</i>				
Akron Village	11.2	6.2	10.3	4.1
Arcade Village	N/A	N/A	3.9	3.4
Jamestown City	N/A	12.0	18.0	12.2

Notes: Data from U.S. Census Bureau and Geolytics, Inc.

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**TABLE 2.1.3-2**  
**COLLEGE GRADUATION RATE (PERCENT), 1970-2000**

Place	1970	1980	1990	2000
United States	11.0	17.0	21.3	25.6
New York State	11.9	17.9	23.1	27.4
Western NY	9.2	13.7	17.4	21.2
<i>Local Communities</i>				
Erie County	10.0	15.1	20.0	24.5
Buffalo City	6.7	11.1	16.0	18.3
<i>Host Communities</i>				
Niagara County	7.6	11.5	13.6	17.4
Lewiston Town	20.4	24.3	26.5	29.7
Lewiston Village	19.8	24.8	24.5	24.4
Lewiston-Porter SD	19.2	23.0	25.0	27.8
Niagara Falls City / SD	5.8	9.1	9.7	12.5
Niagara Town	5.7	7.1	8.0	10.3
Niagara-Wheatfield SD	6.8	9.5	13.0	18.1
<i>Preference Customers</i>				
Akron Village	7.5	12.1	13.6	16.7
Arcade Village	N/A	N/A	13.2	12.5
Jamestown City	N/A	10.3	13.4	14.8

Notes: Data from U.S. Census Bureau and Geolytics, Inc.

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**TABLE 2.1.4-1**  
**REAL MEDIAN FAMILY INCOME, 1949-1999 (2002 DOLLARS)**

Place	1949	1959	1969	1979	1989	1999
United States	19,797	34,991	43,769	49,354	51,105	54,041
New York State	23,092	33,427	52,044	50,005	57,656	55,818
Western NY	N/A	N/A	N/A	N/A	N/A	N/A
<i>Local Communities</i>						
Erie County	24,234	39,535	51,382	51,321	50,867	53,441
Buffalo City	23,274	35,319	43,176	38,240	34,655	33,058
<i>Host Communities</i>						
Niagara County	24,649	41,371	50,014	51,229	49,182	51,634
Lewiston Town	N/A	50,663	N/A	64,343	65,698	63,300
Lewiston Village	N/A	49,939	54,838	64,744	58,895	54,485
Lewiston-Porter SD	N/A	N/A	N/A	N/A	N/A	N/A
Niagara Falls City/SD	25,987	40,988	46,558	51,229	38,896	37,121
Niagara Town	N/A	43,528	47,808	51,048	44,936	47,177
Niagara-Wheatfield SD	N/A	N/A	N/A	N/A	N/A	N/A
<i>Preference Customers</i>						
Akron Village	N/A	39,893	47,980	46,462	52,277	51,873
Arcade Village	N/A	N/A	N/A	N/A	44,657	46,096
Jamestown	23,553	34,663	42,274	39,580	37,897	36,363

Notes: Data from U.S. Census Bureau. Income figures are presented in terms of 2002 dollars. The CPI-U was used to adjust the figures. Median Income estimates were not published for the Western NY Region, the Lewiston-Porter School District, or the Niagara-Wheatfield School District. Estimates cannot be calculated for these composite areas without the raw data, which are unavailable.

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**TABLE 2.1.4-2**

**MEDIAN FAMILY INCOME, BY RACE AND ETHNICITY, 1999 (2002 DOLLARS)**

Place	All Races	White Alone	African American	American Indian, Alaska Native	Asian
United States	54,041	57,616	35,910	35,790	64,060
NY State	55,818	63,224	39,155	35,058	53,154
Western NY	N/A	N/A	N/A	N/A	N/A
<i>Local Communities</i>					
Erie County	53,441	57,471	26,947	30,652	50,467
Buffalo City	33,058	41,277	25,351	25,930	26,202
<i>Host Communities</i>					
Niagara County	51,634	53,459	24,834	27,875	46,193
Lewiston Town	63,300	17,555	62,897	44,543	215,967
Lewiston Village	54,485	54,650	-	-	-
Lewiston-Porter SD	N/A	N/A	N/A	N/A	N/A
Niagara Falls City/SD	37,121	41,135	21,806	23,206	13,866
Niagara Town	47,177	9,604	46,691	70,285	N/A
Niagara-Wheatfield SD	N/A	N/A	N/A	N/A	N/A
<i>Preference Customers</i>					
Akron Village	51,873	54,054	17,547	22,946	-
Arcade Village	46,096	46,433	-	-	70,527
Jamestown	36,363	37,265	21,690	21,115	47,783

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**TABLE 2.1.4-2 (CONT.)**  
**MEDIAN FAMILY INCOME, BY RACE AND ETHNICITY, 1999 (2002 DOLLARS)**

Place	Native Hawaiian or Other Pacific Islander	Other	Two or More Races	Hispanic or Latino
United States	49,580	34,984	42,580	37,143
NY State	39,819	31,022	38,808	33,996
Western NY	N/A	N/A	N/A	N/A
<i>Local Communities</i>				
Erie County	36,444	18,040	30,385	25,031
Buffalo City	10,461	15,530	19,546	19,943
<i>Host Communities</i>				
Niagara County	57,704	27,806	36,192	37,729
Lewiston Town	-	-	33,745	74,689
Lewiston Village	-	-	2,700	-
Lewiston-Porter SD	N/A	N/A	N/A	N/A
Niagara Falls City/SD	-	7,905	31,495	30,202
Niagara Town	-	-	-	48,368
Niagara-Wheatfield SD	N/A	N/A	N/A	N/A
<i>Preference Customers</i>				
Akron Village	-	22,946	-	22,946
Arcade Village	-	-	26,996	25,646
Jamestown	-	25,309	33,913	19,313

Notes: Data from U.S. Census Bureau. “-” indicates that either no persons of that race or ethnicity were residing in the area during the 2000 Census or the sample size is too small to report. Median Income estimates were not published for the Western NY Region, the Lewiston-Porter School District, or the Niagara-Wheatfield School District. Estimates cannot be calculated for these composite areas with the raw data, which are unavailable.

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**TABLE 2.1.4-3**  
**REAL PER CAPITA INCOME, 1959-1999 (2002 DOLLARS)**

Place	1959	1969	1979	1989	1999
United States	10,531	14,241	17,735	20,921	23,310
New York State	12,729	16,474	18,224	23,940	25,256
Western NY	11,120	13,860	16,201	18,217	20,254
<i>Local Communities</i>					
Erie County	11,557	14,716	17,246	19,673	21,982
Buffalo City	11,808	14,524	14,692	15,154	16,188
<i>Host Communities</i>					
Niagara County	11,575	14,022	16,957	18,440	20,753
Lewiston Town	N/A	14,354	20,342	23,283	25,133
Lewiston Village	N/A	19,956	22,867	23,103	23,197
Lewiston-Porter SD	N/A	15,699	20,392	22,677	24,668
Niagara Falls City/SD	12,696	14,515	15,966	15,820	16,976
Niagara Town	N/A	12,917	17,286	17,907	18,897
Niagara-Wheatfield SD	N/A	14,214	17,879	19,650	21,827
<i>Preference Customers</i>					
Akron Village	N/A	16,882	15,913	17,938	19,126
Arcade Village	N/A	N/A	N/A	16,174	17,900
Jamestown	12,062	14,196	14,390	15,569	16,539

Notes: Data from U.S. Census Bureau. Income figures are presented in terms of 2002 dollars. The CPI-U was used to adjust the figures.

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**TABLE 2.1.4-4**  
**PER CAPITA INCOME, BY RACE AND ETHNICITY, 1999 (2002 DOLLARS)**

<b>Place</b>	<b>All Races</b>	<b>White Alone</b>	<b>African American</b>	<b>American Indian, Alaska Native</b>	<b>Asian</b>
United States	23,310	25,827	15,590	13,922	23,565
NY State	25,256	29,419	16,735	13,981	22,264
Western NY	20,254	21,989	13,178	14,045	22,398
<i>Local Communities</i>					
Erie County	21,982	23,688	13,903	13,905	22,912
Buffalo City	16,188	19,175	13,243	11,223	12,066
<i>Host Communities</i>					
Niagara County	20,753	21,465	14,505	14,029	23,566
Lewiston Town	25,133	24,996	10,193	19,042	58,891
Lewiston Village	23,197	23,354	62,306	10,798	N/A
Lewiston-Porter SD	26,371	26,361	10,192	13,675	61,419
Niagara Falls City/SD	16,976	18,290	13,289	14,869	11,119
Niagara Town	18,897	18,852	30,298	13,775	28,076
Niagara-Wheatfield SD	21,889	22,126	28,693	14,113	17,705
<i>Preference Customers</i>					
Akron Village	19,126	19,557	8,639	10,331	19,437
Arcade Village	17,900	17,907	11,763	-	31,434
Jamestown	16,539	17,174	11,041	13,850	37,604

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**TABLE 2.1.4-4 (CONT.)**  
**PER CAPITA INCOME, BY RACE AND ETHNICITY, 1999 (2002 DOLLARS)**

Place	Native Hawaiian or Other Pacific Islander	Other	Two or More Races	Hispanic or Latino
United States	14,562	11,676	14,475	13,078
NY State	16,256	11,908	15,407	13,810
Western NY	11,431	10,274	10,335	11,817
<i>Local Communities</i>				
Erie County	10,394	9,866	11,107	11,528
Buffalo City	3,598	9,014	8,428	11,138
<i>Host Communities</i>				
Niagara County	14,792	9,703	9,207	13,904
Lewiston Town	5,414	1,196	16,984	30,581
Lewiston Village	-	10,366	3,430	10,366
Lewiston-Porter SD	5,522	1,183	20,073	23,887
Niagara Falls City/SD	-	11,318	7,180	13,632
Niagara Town	-	12,166	2,177	12,775
Niagara-Wheatfield SD	-	9,733	4,783	15,767
<i>Preference Customers</i>				
Akron Village	-	8,175	447	9,870
Arcade Village	-	-	9,439	5,121
Jamestown	6,664	6,665	8,333	7,459

Notes: Data from U.S. Census Bureau. Income figures are presented in terms of 2002 dollars. The CPI-U was used to adjust the figures. Per capita income figures for the Western New York region, the Lewiston-Porter School District, and the Niagara-Wheatfield School District were developed from a weighted average of their geographic components. “-“ indicates that either no persons of that race or ethnicity were residing in the area during the 2000 Census or the sample size is too small to report.

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**TABLE 2.1.4-5**  
**POVERTY RATE (PERCENT), 1969-1999**

Place	1969	1979	1989	1999
United States	12.6	12.4	13.1	12.4
New York State	11.1	9.4	13.0	14.6
Western NY	9.6	10.6	12.0	12.0
<i>Local Communities</i>				
Erie County	9.3	10.6	12.2	12.2
Buffalo City	15.2	20.7	25.6	26.6
<i>Host Communities</i>				
Niagara County	8.3	8.8	10.7	10.6
Lewiston Town	6.7	3.8	4.6	5.8
Lewiston Village	4.2	2.3	7.6	8.6
Lewiston-Porter SD	5.7	3.7	5.3	5.3
Niagara Falls City/SD	10.9	13.7	18.6	19.5
Niagara Town	7.2	6.2	8.7	9.3
Niagara-Wheatfield SD	5.4	5.5	6.7	6.1
<i>Preference Customers</i>				
Akron Village	8.3	8.6	7.8	8.2
Arcade Village	N/A	N/A	10.4	8.8
Jamestown	12.0	13.6	18.7	19.5

Notes: Data from U.S. Census Bureau. The 1970 Census was the first decennial census to include poverty data. Poverty figures for the Western New York region, the Lewiston-Porter School District, and the Niagara-Wheatfield School District were developed from a weighted average of their geographic components. Poverty Rate is expressed in terms of persons below the poverty level.

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**TABLE 2.1.4-6**  
**POVERTY RATE (PERCENT), BY RACE AND ETHNICITY, 1999**

Place	All Races	White Alone	African American	American Indian, Alaska Native	Asian
United States	12.4	9.1	24.9	25.7	12.6
New York State	14.6	9.8	25.0	27.3	17.4
Western NY	12.0	8.8	33.8	28.0	23.0
<i>Local Communities</i>					
Erie County	12.2	7.8	33.1	28.6	23.3
Buffalo City	26.6	18.3	34.4	39.9	36.0
<i>Host Communities</i>					
Niagara County	10.6	8.2	37.2	28.1	28.1
Lewiston Town	5.8	5.5	N/A	23.0	4.1
Lewiston Village	8.6	8.1	N/A	N/A	N/A
Lewiston-Porter SD	5.3	4.9	N/A	23.9	4.3
Niagara Falls City/SD	19.5	13.2	39.3	43.9	53.2
Niagara Town	9.3	8.1	4.1	37.7	N/A
Niagara-Wheatfield SD	6.1	5.5	8.4	31.3	21.7
<i>Preference Customers</i>					
Akron Village	8.2	7.3	N/A	N/A	N/A
Arcade Village	8.8	8.5	71.4	N/A	N/A
Jamestown	19.5	18.0	37.1	37.0	23.9

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**TABLE 2.1.4-6 (CONT.)**  
**POVERTY RATE (PERCENT), BY RACE AND ETHNICITY, 1999**

Place	Native Hawaiian or Other Pacific Islander	Other	Two or More Races	Hispanic or Latino
United States	17.7	24.4	18.2	22.6
New York State	25.9	30.7	23.8	28.0
Western NY	41.2	43.4	29.9	36.2
<i>Local Communities</i>				
Erie County	52.8	45.3	31.3	37.2
Buffalo City	68.0	50.4	45.9	44.9
<i>Host Communities</i>				
Niagara County	12.0	32.8	28.8	27.5
Lewiston Town	N/A	N/A	37.7	37.7
Lewiston Village	N/A	N/A	100.0	N/A
Lewiston-Porter SD	N/A	N/A	22.8	29.9
Niagara Falls City/SD	57.1	36.0	37.8	34.2
Niagara Town	N/A	N/A	59.9	N/A
Niagara-Wheatfield SD	N/A	N/A	36.4	N/A
<i>Preference Customers</i>				
Akron Village	N/A	N/A	100.0	N/A
Arcade Village	N/A	N/A	N/A	45.8
Jamestown	N/A	39.9	31.6	35.4

Notes: Data from U.S. Census Bureau. Poverty data for the Western New York region, the Lewiston-Porter School District, and the Niagara-Wheatfield School District were developed from a weighted average of their geographic components. “-“ indicates that either no persons of that race or ethnicity were residing in the area during the 2000 Census or the sample size is too small to report. Poverty Rate is expressed in terms of persons below the poverty level.

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**TABLE 2.1.4-7**  
**LOW INCOME POPULATIONS IN NIAGARA COUNTY BY CENSUS TRACT, 1999**

Tract Number	Percent Below Poverty Line	Place	Adjacent to	
			NYPA Land	FERC Boundary
<i>Poverty Area (&gt;20% Below Poverty Line)</i>				
Tract 204	20.0	City of Niagara Falls	no	no
Tract 205	33.9	City of Niagara Falls	yes	yes
Tract 206	38.4	City of Niagara Falls	no	no
Tract 209	37.2	City of Niagara Falls	no	no
Tract 211	29.5	City of Niagara Falls	yes	yes
Tract 212	26.5	City of Niagara Falls	yes	yes
Tract 213	25.1	City of Niagara Falls	no	no
Tract 217	24.3	City of Niagara Falls	yes	yes
Tract 235	20.1	City of Lockport	no	no
Tract 237	32.7	City of Lockport	no	no
<i>Extreme Poverty Area (&gt;40% Below Poverty Line)</i>				
Tract 202	50.1	City of Niagara Falls	no	no

Notes: Data from U.S. Census Bureau. The Census Bureau defines a “poverty area” as a Census tract where 20 percent or more of the residents have incomes below the poverty threshold and an “extreme poverty area” as one with 40 percent or more below the poverty level.

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**TABLE 2.1.4-8**  
**SOURCES OF INCOME (PERCENT), US, NEW YORK STATE AND WESTERN NEW YORK,**  
**1959-1999**

Place	1959	1969	1979	1989	1999
United States					
Wage or Salary	74.3	63.2	75.8	75.0	74.6
Self-employment	14.4	7.5	7.2	6.8	5.9
Interest, Dividends, or Net Rental	N/A	N/A	6.1	7.3	6.8
Social Security	N/A	23.1	5.2	5.3	5.1
Supplemental Security	N/A	N/A	N/A	N/A	0.5
Public Assistance	N/A	0.5	1.0	0.8	0.2
Retirement	N/A	N/A	N/A	3.7	5.1
Other Types	11.2	5.8	4.7	1.1	1.9
New York State					
Wage or Salary	75.8	79.6	75.8	75.9	75.4
Self-employment	13.8	8.5	5.9	6.7	5.6
Interest, Dividends, or Net Rental	N/A	N/A	6.6	7.5	6.7
Social Security	N/A	2.8	5.7	4.9	4.9
Supplemental Security	N/A	N/A	N/A	N/A	0.6
Public Assistance	N/A	1.0	1.5	0.9	0.3
Retirement	N/A	N/A	N/A	3.1	4.8
Other Types	10.4	8.2	4.6	0.9	1.7
Western NY					
Wage or Salary	78.5	60.3	76.1	74.0	72.4
Self-employment	10.8	5.6	4.7	5.2	4.4
Interest, Dividends, or Net Rental	N/A	N/A	5.8	6.4	5.9
Social Security	N/A	26.1	7.0	7.8	7.6
Supplemental Security	N/A	N/A	N/A	N/A	0.7
Public Assistance	N/A	0.5	1.1	1.1	0.3
Retirement	N/A	N/A	N/A	4.3	6.6
Other Types	10.7	7.5	5.3	1.3	2.3

Notes: Data from U.S. Census Bureau.

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**TABLE 2.1.4-9**  
**SOURCES OF INCOME (PERCENT), LOCAL COMMUNITIES, 1959-1999**

Place	1959	1969	1979	1989	1999
<i>Local Communities</i>					
Erie County					
Wage or Salary	79.0	78.1	76.4	74.2	72.8
Self-employment	10.3	6.5	4.4	4.9	4.2
Interest, Dividends, or Net Rental	N/A	N/A	5.9	6.6	6.2
Social Security	N/A	3.0	6.7	7.6	7.3
Supplemental Security	N/A	N/A	N/A	N/A	0.7
Public Assistance	N/A	0.7	1.2	1.1	0.3
Retirement	N/A	N/A	N/A	4.3	6.3
Other Types	10.7	11.7	5.4	1.2	2.2
Buffalo City					
Wage or Salary	77.4	83.0	71.5	71.7	71.7
Self-employment	9.1	0.1	3.3	3.7	3.2
Interest, Dividends, or Net Rental	N/A	N/A	6.1	6.2	5.3
Social Security	N/A	4.8	9.5	9.3	8.2
Supplemental Security	N/A	N/A	N/A	N/A	1.6
Public Assistance	N/A	1.9	3.0	3.1	1.0
Retirement	N/A	N/A	N/A	4.3	6.2
Other Types	13.5	10.3	6.5	1.7	2.7

Notes: Data from U.S. Census Bureau.

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**TABLE 2.1.4.10**  
**SOURCES OF INCOME (PERCENT), HOST COMMUNITIES, 1959-1999**

Place	1959	1969	1979	1989	1999
<i>Host Communities</i>					
Niagara County					
Wage or Salary	83.0	83.0	77.9	75.3	73.7
Self-employment	8.4	6.2	3.8	4.1	2.9
Interest, Dividends, or Net Rental	N/A	N/A	5.2	5.6	5.0
Social Security	N/A	3.2	6.8	8.1	7.9
Supplemental Security	N/A	N/A	N/A	N/A	0.7
Public Assistance	N/A	0.6	1.1	0.9	0.3
Retirement	N/A	N/A	N/A	4.6	7.3
Other Types	8.7	6.9	5.2	1.3	2.4
Lewiston Town					
Wage or Salary	N/A	67.6	76.6	74.5	72.0
Self-employment	N/A	7.3	6.4	6.0	4.8
Interest, Dividends, or Net Rental	N/A	N/A	7.1	6.6	7.1
Social Security	N/A	1.7	4.7	6.4	6.9
Supplemental Security	N/A	N/A	N/A	N/A	0.4
Public Assistance	N/A	0.1	0.5	0.3	0.1
Retirement	N/A	N/A	N/A	5.5	6.8
Other Types	N/A	23.4	4.7	0.7	2.0
Lewiston Village					
Wage or Salary	N/A	88.3	75.9	69.0	69.4
Self-employment	N/A	1.4	4.5	3.3	3.0
Interest, Dividends, or Net Rental	N/A	N/A	7.8	7.8	5.4
Social Security	N/A	2.2	5.5	9.7	11.2
Supplemental Security	N/A	N/A	N/A	N/A	0.5
Public Assistance	N/A	N/A	0.3	0.3	0.0
Retirement	N/A	N/A	N/A	9.0	7.2
Other Types	N/A	8.1	6.0	0.9	3.3

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**TABLE 2.1.4.10 (CONT.)**  
**SOURCES OF INCOME, HOST COMMUNITIES, 1959-1999**

Place	1959	1969	1979	1989	1999
Lewiston-Porter SD					
Wage or Salary	N/A	72.6	77.4	74.1	72.9
Self-employment	N/A	6.6	5.7	5.4	4.6
Interest, Dividends, or Net Rental	N/A	N/A	6.7	7.0	7.0
Social Security	N/A	2.0	4.8	6.8	6.7
Supplemental Security	N/A	N/A	N/A	N/A	0.4
Public Assistance	N/A	0.2	0.4	0.3	0.1
Retirement	N/A	N/A	N/A	5.5	7.1
Other Types	N/A	18.7	4.9	0.8	1.4
Niagara Falls City/SD					
Wage or Salary	84.1	80.4	73.6	70.3	67.0
Self-employment	7.3	5.0	2.9	2.6	2.5
Interest, Dividends, or Net Rental	N/A	N/A	5.9	6.2	5.4
Social Security	N/A	6.4	9.3	11.9	11.3
Supplemental Security	N/A	N/A	N/A	N/A	1.1
Public Assistance	N/A	1.1	2.1	2.0	0.6
Retirement	N/A	N/A	N/A	5.3	8.9
Other Types	8.6	7.1	6.2	1.7	3.2
Niagara Town					
Wage or Salary	N/A	87.3	80.6	77.4	72.7
Self-employment	N/A	4.7	3.1	5.2	1.6
Interest, Dividends, or Net Rental	N/A	N/A	4.6	4.1	4.1
Social Security	N/A	2.5	5.1	7.2	9.9
Supplemental Security	N/A	N/A	N/A	N/A	1.1
Public Assistance	N/A	0.5	1.0	0.8	0.3
Retirement	N/A	N/A	N/A	3.3	7.6
Other Types	N/A	5.0	5.6	2.0	2.8

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**TABLE 2.1.4.10 (CONT.)**  
**SOURCES OF INCOME, HOST COMMUNITIES, 1959-1999**

Place	1959	1969	1979	1989	1999
Niagara-Wheatfield SD					
Wage or Salary	N/A	83.9	81.5	77.6	76.7
Self-employment	N/A	4.4	3.5	5.1	2.2
Interest, Dividends, or Net Rental	N/A	N/A	4.8	4.9	5.3
Social Security	N/A	2.4	5.0	6.6	7.5
Supplemental Security	N/A	N/A	N/A	N/A	0.6
Public Assistance	N/A	0.3	0.6	0.6	0.1
Retirement	N/A	N/A	N/A	3.5	5.8
Other Types	N/A	9.0	4.6	1.6	1.9

Notes: Data from U.S. Census Bureau.

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**TABLE 2.1.4.11**  
**SOURCES OF INCOME PERCENT, PREFERENCE CUSTOMERS, 1959-1999**

Place	1959	1969	1979	1989	1999
<i>Preference Customers</i>					
<i>Akron Village</i>					
Wage or Salary	N/A	85.3	77.8	76.6	73.0
Self-employment	N/A	6.6	4.4	2.3	2.4
Interest, Dividends, or Net Rental	N/A	N/A	4.6	6.2	2.8
Social Security	N/A	4.1	8.1	10.0	9.6
Supplemental Security	N/A	N/A	N/A	N/A	0.8
Public Assistance	N/A	N/A	0.6	0.7	0.3
Retirement	N/A	N/A	N/A	2.3	8.6
Other Types	N/A	4.0	4.6	2.0	2.6
<i>Arcade Village</i>					
Wage or Salary	N/A	N/A	N/A	76.9	75.7
Self-employment	N/A	N/A	N/A	3.1	2.2
Interest, Dividends, or Net Rental	N/A	N/A	N/A	5.1	3.2
Social Security	N/A	N/A	N/A	8.0	9.0
Supplemental Security	N/A	N/A	N/A	N/A	0.6
Public Assistance	N/A	N/A	N/A	1.0	0.4
Retirement	N/A	N/A	N/A	3.6	6.4
Other Types	N/A	N/A	N/A	2.3	2.5
<i>Jamestown</i>					
Wage or Salary	74.5	81.0	73.5	70.3	69.3
Self-employment	11.4	7.7	7.3	4.6	4.4
Interest, Dividends, or Net Rental	N/A	N/A	6.0	7.4	6.1
Social Security	N/A	4.6	7.7	10.3	9.5
Supplemental Security	N/A	N/A	N/A	N/A	1.3
Public Assistance	N/A	0.6	0.8	1.9	0.5
Retirement	N/A	N/A	N/A	4.1	6.5
Other Types	14.1	6.1	4.7	1.4	2.5

Notes: Data from U.S. Census Bureau.

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**TABLE 2.1.5-1**  
**WHITE POPULATION (PERCENT), 1970-2000**

Place	1970	1980	1990	2000
United States	87.6	85.9	83.9	69.1
New York State	84.9	79.9	74.5	69.3
Western NY	90.7	91.1	89.4	87.1
<i>Local Communities</i>				
Erie County	88.8	88.1	85.9	82.8
Buffalo City	78.8	70.8	64.7	55.6
<i>Host Communities</i>				
Niagara County	93.5	93.6	92.8	91.2
Lewiston Town	98.2	97.1	97.3	96.5
Lewiston Village	100.0	100.0	98.9	98.6
Lewiston-Porter SD	98.7	98.0	97.9	97.2
Niagara Falls City / SD	90.0	85.6	82.1	77.3
Niagara Town	96.3	96.4	95.5	93.6
Niagara-Wheatfield SD	98.0	97.7	97.3	96.2
<i>Preference Customers</i>				
Akron	99.7	99.6	97.7	98.7
Arcade	N/A	N/A	99.7	98.6
Jamestown City	N/A	95.8	94.9	92.2

Notes: Data from U.S. Census Bureau and Geolytics, Inc.

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**TABLE 2.1.5-2**  
**AFRICAN-AMERICAN POPULATION (PERCENT), 1970-2000**

Place	1970	1980	1990	2000
United States	11.1	11.8	12.3	12.0
New York State	11.4	13.7	15.9	17.0
Western NY	6.3	7.3	8.1	9.8
<i>Local Communities</i>				
Erie County	8.7	10.2	11.3	13.5
Buffalo City	20.4	26.7	30.7	38.5
<i>Host Communities</i>				
Niagara County	3.9	4.9	5.5	6.8
Lewiston Town	0.1	0.7	1.3	1.0
Lewiston Village	0.0	0.0	0.0	0.3
Lewiston-Porter SD	0.1	0.5	0.7	0.7
Niagara Falls City / SD	9.3	12.7	15.4	20.0
Niagara Town	3.3	2.1	2.7	4.4
Niagara-Wheatfield SD	1.5	1.1	1.5	2.2
<i>Preference Customers</i>				
Akron	0.0	0.0	0.0	0.8
Arcade	N/A	N/A	0.1	0.4
Jamestown City	N/A	2.6	2.5	4.9

Notes: Data from U.S. Census Bureau and Geolytics, Inc.

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**TABLE 2.1.5-3**  
**HISPANIC POPULATION (PERCENT), 1980-2000**

Place	1980	1990	2000
United States	6.4	9.0	12.5
New York State	9.5	12.0	15.1
Western NY	1.2	1.9	2.8
<i>Local Communities</i>			
Erie County	1.4	2.2	3.2
Buffalo City	2.5	4.7	7.4
<i>Host Communities</i>			
Niagara County	0.8	1.1	1.3
Lewiston Town	0.9	0.5	0.7
Lewiston Village	0.5	0.9	0.1
Lewiston-Porter SD	0.7	0.6	0.5
Niagara Falls City / SD	1.0	1.5	1.9
Niagara Town	1.4	1.6	1.0
Niagara-Wheatfield SD	0.9	1.2	1.2
<i>Preference Customers</i>			
Akron	0.1	0.7	0.3
Arcade	N/A	0.2	0.6
Jamestown City	1.5	2.4	4.6

Notes: Data from U.S. Census Bureau and Geolytics, Inc. Data from 1970 is not provided because information on Hispanic populations in 1970 is unreliable due to changes in variable definition on Census forms.

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**TABLE 2.1.5-4  
MINORITY POPULATIONS IN NIAGARA COUNTY, BY CENSUS TRACT, 2000 (PERCENT)**

Tract Number	Place	Persons who are Non-white and/or Hispanic (Percent)	Adjacent to	
			NYPA Land	FERC Boundary
Niagara County		10.2		
Tract 202	Niagara Falls City	88.3	yes	no
Tract 204	Niagara Falls City	57.0	no	no
Tract 205	Niagara Falls City	40.0	yes	yes
Tract 206	Niagara Falls City	63.8	no	no
Tract 207	Niagara Falls City	25.9	no	no
Tract 209	Niagara Falls City	30.8	no	no
Tract 211	Niagara Falls City	39.4	yes	yes
Tract 212	Niagara Falls City	39.6	yes	yes
Tract 213	Niagara Falls City	28.5	no	no
Tract 217	Niagara Falls City	24.6	yes	yes

Note: Data from U.S. Census Bureau. Niagara County is provided for comparison purposes. A minority population exists where the percentage of minorities (non-white and/or Hispanic) in an affected area either exceeds 50 percent or is meaningfully greater than in the general population of the larger surrounding area. The areas shown above have more than twice the percentage of minorities than Niagara County as a whole.

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**TABLE 2.2.1-1**  
**GRP BY INDUSTRY, 2000 (MILLIONS OF 2002 DOLLARS)**

Place	Farm	Durables Manufacturing	Non-Durables Manufacturing	Mining
United States	110,169	1,271,257	784,163	110,782
New York State	2,006	57,658	41,402	1,254
Western New York	370	8,273	4,695	222
<i>Local Communities</i>				
Erie County	64	4,774	2,861	78
Buffalo City	12	1,090	1,012	8
<i>Host Communities</i>				
Niagara County	49	1,194	1,044	21
Town of Lewiston	2	53	44	0
Lewiston Village	0	17	12	0
Lewiston-Porter SD	4	100	75	0
Niagara Falls City / SD	3	225	413	0
Town of Niagara	2	42	75	0
Niagara-Wheatfield SD	5	146	130	0
<i>Preference Customers</i>				
Akron Village	3	39	6	0
Arcade Village	0	22	9	0
Jamestown City	3	291	57	7

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**TABLE 2.2.1-1 (CONT.)**  
**GRP BY INDUSTRY, 2000 (MILLIONS OF 2002 DOLLARS)**

Place	Construction	Transportation and Public Utilities	Financial, Insurance and Real Estate	Retail Trade
United States	447,266	776,257	1,975,390	870,824
New York State	21,205	45,940	149,988	47,514
Western New York	1,641	3,182	7,500	4,655
<i>Local Communities</i>				
Erie County	1,075	2,030	5,659	3,054
Buffalo City	250	707	1,567	802
<i>Host Communities</i>				
Niagara County	202	447	660	576
Town of Lewiston	12	13	27	30
Lewiston Village	3	3	13	10
Lewiston-Porter SD	19	54	57	49
Niagara Falls City / SD	44	94	150	162
Town of Niagara	12	32	47	33
Niagara-Wheatfield SD	26	51	68	76
<i>Preference Customers</i>				
Akron Village	3	6	11	13
Arcade Village	3	3	13	9
Jamestown City	24	35	113	109

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**TABLE 2.2.1-1 (CONT.)**  
**GRP BY INDUSTRY, 2000 (MILLIONS OF 2002 DOLLARS)**

Place	Wholesale Trade	Services	Agricultural, Forestry and Fishing Services	Government	Total GRP
United States	700,411	2,177,890	46,009	1,210,231	10,480,649
New York State	45,948	155,883	1,573	81,369	651,740
Western New York	3,419	10,345	136	6,849	51,287
<i>Local Communities</i>					
Erie County	2,665	7,500	75	4,235	34,070
Buffalo City	651	2,476	14	1,504	10,093
<i>Host Communities</i>					
Niagara County	239	993	18	880	6,323
Town of Lewiston	14	59	1	25	280
Lewiston Village	2	17	0	13	90
Lewiston-Porter SD	24	95	2	212	691
Niagara Falls City / SD	47	284	1	215	1,638
Town of Niagara	14	37	1	45	340
Niagara-Wheatfield SD	33	87	2	70	694
<i>Preference Customers</i>					
Akron Village	2	10	0	6	99
Arcade Village	2	17	0	9	87
Jamestown City	60	218	1	96	1,014

Notes: Data from Regional Economic Models, Inc. Sectors listed are an aggregation of the 53 REMI sectors.

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**TABLE 2.2.1-2**  
**GRP BY INDUSTRY (PERCENT), 2000**

Place	Farm	Durables Manufacturing	Non-Durables Manufacturing	Mining
United States	1.1	12.1	7.5	1.1
New York State	0.3	8.8	6.4	0.2
Western New York	0.7	16.1	9.2	0.4
<i>Local Communities</i>				
Erie County	0.2	14.0	8.4	0.2
Buffalo City	0.1	10.8	10.0	0.1
<i>Host Communities</i>				
Niagara County	0.8	18.9	16.5	0.3
Town of Lewiston	0.7	18.9	15.7	0.0
Lewiston Village	0.0	18.9	13.3	0.0
Lewiston-Porter SD	0.6	14.5	10.9	0.0
Niagara Falls City / SD	0.2	13.7	25.2	0.0
Town of Niagara	0.6	12.4	22.1	0.0
Niagara-Wheatfield SD	0.7	21.0	18.7	0.0
<i>Preference Customers</i>				
Akron Village	3.0	39.4	6.1	0.0
Arcade Village	0.0	25.3	10.3	0.0
Jamestown City	0.3	28.7	5.6	0.7

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**TABLE 2.2.1-2 (CONT.)**  
**GRP BY INDUSTRY (PERCENT), 2000**

Place	Construction	Transportation and Public Utilities	Financial, Insurance and Real Estate	Retail Trade
United States	4.3	7.4	18.8	8.3
New York State	3.3	7.0	23.0	7.3
Western New York	3.2	6.2	14.6	9.1
<i>Local Communities</i>				
Erie County	3.2	6.0	16.6	9.0
Buffalo City	2.5	7.0	15.5	7.9
<i>Host Communities</i>				
Niagara County	3.2	7.1	10.4	9.1
Town of Lewiston	4.3	4.6	9.6	10.7
Lewiston Village	3.3	3.3	14.4	11.1
Lewiston-Porter SD	2.7	7.8	8.2	7.1
Niagara Falls City / SD	2.7	5.7	9.2	9.9
Town of Niagara	3.5	9.4	13.8	9.7
Niagara-Wheatfield SD	3.7	7.3	9.8	11.0
<i>Preference Customers</i>				
Akron Village	3.0	6.1	11.1	13.1
Arcade Village	3.4	3.4	14.9	10.3
Jamestown City	2.4	3.5	11.1	10.7

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**TABLE 2.2.1-2 (CONT.)**  
**GRP BY INDUSTRY (PERCENT), 2000**

Place	Wholesale Trade	Services	Agricultural, Forestry and Fishing Services	Government
United States	6.7	20.8	0.4	11.5
New York State	7.1	23.9	0.2	12.5
Western New York	6.7	20.2	0.3	13.4
<i>Local Communities</i>				
Erie County	7.8	22.0	0.2	12.4
Buffalo City	6.5	24.5	0.1	14.9
<i>Host Communities</i>				
Niagara County	3.8	15.7	0.3	13.9
Town of Lewiston	5.0	21.1	0.4	8.9
Lewiston Village	2.2	18.9	-	14.4
Lewiston-Porter SD	3.5	13.7	0.3	30.7
Niagara Falls City / SD	2.9	17.3	0.1	13.1
Town of Niagara	4.1	10.9	0.3	13.2
Niagara-Wheatfield SD	4.8	12.5	0.3	10.1
<i>Preference Customers</i>				
Akron Village	2.0	10.1	-	6.1
Arcade Village	2.3	19.5	-	10.3
Jamestown City	5.9	21.5	0.1	9.5

Notes: Data from Regional Economic Models, Inc. Sectors listed are an aggregation of the 53 REMI sectors.

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**TABLE 2.2.2.1-1**  
**PERSONS IN THE LABOR FORCE, 1950-2000**

<b>Place</b>	<b>1950</b>	<b>1960</b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
United States	60,053,968	69,877,481	82,048,781	106,084,668	125,182,378	138,820,935
New York State	6,352,880	6,999,450	7,458,747	8,041,175	9,029,546	9,046,805
Western NY	596,577	665,378	696,397	758,197	782,986	776,375
<i>Local Communities</i>						
Erie County	371,540	418,043	443,495	466,329	476,256	465,413
Buffalo City	249,804	216,862	183,160	151,439	149,550	130,510
<i>Host Communities</i>						
Niagara County	78,189	95,166	93,350	105,140	108,402	107,560
Lewiston Town	N/A	5,457	6,058	7,637	7,960	8,419
Lewiston Village	N/A	1,261	1,393	1,699	1,496	1,401
Lewiston-Porter SD	N/A	8,690	9,274	11,469	11,825	10,785
Niagara Falls City/SD	38,437	41,525	34,092	31,952	27,928	24,786
Niagara Town	N/A	2,658	2,745	4,719	5,215	4,275
Niagara-Wheatfield SD	N/A	6,507	7,470	10,703	12,126	12,787
<i>Preference Customers</i>						
Akron Village	N/A	1,147	1,198	1,404	1,404	1,665
Arcade Village	N/A	N/A	N/A	N/A	982	996
Jamestown	19,903	17,784	15,986	15,793	16,094	15,221

Notes: Data from U.S. Census Bureau. Data for 1950 and 1960 include all persons 14 and older who are in the labor force. Data for 1970 through 2000 include all persons 16 and older who are in the labor force.

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**TABLE 2.2.2.1-2**  
**LABOR FORCE, BY RACE AND ETHNICITY, 2000**

<b>Place</b>	<b>All Races</b>	<b>White Alone</b>	<b>African American</b>	<b>American Indian, Alaska Native</b>	<b>Asian</b>
United States	138,820,935	108,079,326	14,905,895	1,054,768	5,077,791
New York State	9,046,805	6,435,314	1,264,387	32,766	513,808
Western NY	776,375	694,616	56,015	5,209	7,409
<i>Local Communities</i>					
Erie County	465,413	399,928	47,725	2,745	6,161
Buffalo City	130,510	79,999	42,199	1,052	1,690
<i>Host Communities</i>					
Niagara County	107,560	99,483	5,367	853	492
Lewiston Town	8,419	8,175	65	45	73
Lewiston Village	1,401	1,385	7	6	0
Lewiston-Porter SD	10,875	10,584	65	55	73
Niagara Falls City/SD	24,786	19,800	4,046	321	107
Niagara Town	4,275	3,936	206	88	9
Niagara-Wheatfield SD	12,805	12,295	280	109	41
<i>Preference Customers</i>					
Akron Village	1,665	1,614	7	8	9
Arcade Village	996	972	9	0	9
Jamestown	15,221	14,101	561	126	27

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**TABLE 2.2.2.1-2 (CONT.)**  
**LABOR FORCE, BY RACE AND ETHNICITY, 2000**

Place	Native Hawaiian or Other Pacific Islander	Other	Two or More Races	Hispanic or Latino
United States	180,331	6,589,301	2,933,523	14,835,741
New York State	3,476	541,026	256,028	1,160,340
Western NY	159	5,950	7,017	15,140
<i>Local Communities</i>				
Erie County	103	4,275	4,476	10,885
Buffalo City	57	3,261	2,252	7,242
<i>Host Communities</i>				
Niagara County	32	293	1,040	1,109
Lewiston Town	0	3	58	26
Lewiston Village	0	3	0	3
Lewiston-Porter SD	0	3	95	26
Niagara Falls City/SD	3	127	382	367
Niagara Town	0	12	24	48
Niagara-Wheatfield SD	0	18	62	149
<i>Preference Customers</i>				
Akron Village	0	21	6	21
Arcade Village	0	0	6	3
Jamestown	0	163	243	497

Notes: Data from U.S. Census Bureau.

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**TABLE 2.2.2.2-1**  
**EMPLOYMENT BY INDUSTRY, 1969**

<b>Place</b>	<b>Farm</b>	<b>Manufacturing</b>	<b>Mining</b>	<b>Construction</b>
United States	3,978,000	20,546,000	734,500	4,470,800
New York State	76,856	1,897,128	10,730	325,075
Western New York	15,251	227,144	882	29,747
<i>Local Communities</i>				
Erie County	2,553	137,506	275	20,426
<i>Host Communities</i>				
Niagara County	1,692	42,824	21	3,919
<i>Preference Customers</i>				
Chautauqua County	3,126	19,729	37	2,126
Wyoming County	1,770	3,544	-	420

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TABLE 2.2.2.2-1 (CONT.)  
**EMPLOYMENT BY INDUSTRY, 1969**

Place	Transportation and Public utilities	Finance, Insurance, and Real Estate	Retail Trade	Wholesale Trade
United States	4,795,900	5,914,900	13,448,900	4,097,900
New York State	531,400	844,006	1,183,421	503,783
Western New York	39,617	43,101	116,717	30,464
<i>Local Communities</i>				
Erie County	30,819	30,490	79,429	24,452
<i>Host Communities</i>				
Niagara County	2,397	3,810	13,583	1,593
<i>Preference Customers</i>				
Chautauqua County	2,625	3,508	9,597	1,882
Wyoming County	487	691	1,732	138

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TABLE 2.2.2.2-1 (CONT.)  
**EMPLOYMENT BY INDUSTRY, 1969**

Place	Services	Agricultural, Forestry and Fishing Services	Government	Total Employment
United States	16,723,100	506,200	15,841,000	91,057,200
New York State	1,803,590	28,603	1,291,221	8,495,813
Western New York	113,769	2,249	113,715	732,656
<i>Local Communities</i>				
Erie County	79,145	1,216	72,849	479,160
<i>Host Communities</i>				
Niagara County	12,686	236	14,132	96,893
<i>Preference Customers</i>				
Chautauqua County	8,206	307	8,976	60,119
Wyoming County	1,361	132	3,055	13,336

Notes: Data from Bureau of Economic Analysis (see <http://www.bea.doc.gov/bea/regional/reis/default.cfm>).

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**TABLE 2.2.2.2-2**  
**EMPLOYMENT BY INDUSTRY (PERCENT), 1969**

<b>Place</b>	<b>Farm</b>	<b>Manufacturing</b>	<b>Mining</b>	<b>Construction</b>
United States	4.4	22.6	0.8	4.9
New York State	0.9	22.3	0.1	3.8
Western New York	2.1	31.0	0.1	4.1
<i>Local Communities</i>				
Erie County	0.5	28.7	0.1	4.3
<i>Host Communities</i>				
Niagara County	1.7	44.2	0.0	4.0
<i>Preference Customers</i>				
Chautauqua County	5.2	32.8	0.1	3.5
Wyoming County	13.3	26.6	-	3.1

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**TABLE 2.2.2.2-2 (CONT.)**  
**EMPLOYMENT BY INDUSTRY (PERCENT), 1969**

Place	Transportation and Public utilities	Finance, Insurance, and Real Estate	Retail Trade	Wholesale Trade
United States	5.3	6.5	14.8	4.5
New York State	6.3	9.9	13.9	5.9
Western New York	5.4	5.9	15.9	4.2
<i>Local Communities</i>				
Erie County	6.4	6.4	16.6	5.1
<i>Host Communities</i>				
Niagara County	2.5	3.9	14.0	1.6
<i>Preference Customers</i>				
Chautauqua County	4.4	5.8	16.0	3.1
Wyoming County	3.7	5.2	13.0	1.0

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**TABLE 2.2.2.2-2 (CONT.)**  
**EMPLOYMENT BY INDUSTRY (PERCENT), 1969**

Place	Services	Agricultural, Forestry and Fishing Services	Government
United States	18.4	0.6	17.4
New York State	21.2	0.3	15.2
Western New York	15.5	0.3	15.5
<i>Local Communities</i>			
Erie County	16.5	0.3	15.2
<i>Host Communities</i>			
Niagara County	13.1	0.2	14.6
<i>Preference Customers</i>			
Chautauqua County	13.6	0.5	14.9
Wyoming County	10.2	1.0	22.9

Notes: Data from Bureau of Economic Analysis (see <http://www.bea.doc.gov/bea/regional/reis/default.cfm>)

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**TABLE 2.2.2.2-3  
EMPLOYMENT BY INDUSTRY, 2000**

Place	Farm	Durables Manufacturing	Non-Durables Manufacturing	Mining
United States	3,103,000	11,525,700	7,585,202	795,403
New York State	58,297	484,286	419,541	9,084
Western New York	10,721	76,394	43,992	1,625
<i>Local Communities</i>				
Erie County	1,874	42,351	27,232	557
Buffalo City	350	10,377	8,973	52
<i>Host Communities</i>				
Niagara County	1,392	10,783	7,717	155
Town of Lewiston	60	405	476	0
Lewiston Village	5	126	136	0
Lewiston-Porter SD	113	787	832	0
Niagara Falls City / SD	99	1,839	2,512	0
Town of Niagara	58	451	445	0
Niagara-Wheatfield SD	116	1,167	1,062	0
<i>Additional Stakeholders</i>				
Niagara University	0	0	0	0
<i>Preference Customers</i>				
Akron Village	9	215	90	0
Arcade Village	112	219	58	0
Jamestown City	85	3,244	482	50

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**TABLE 2.2.2.2-3 (CONT.)**  
**EMPLOYMENT BY INDUSTRY, 2000**

Place	Construction	Transportation and Public Utilities	Financial, Insurance and Real Estate	Retail Trade
United States	9,604,300	8,250,101	13,500,100	27,350,100
New York State	458,925	520,968	1,142,705	1,480,740
Western New York	36,364	37,522	60,356	150,772
<i>Local Communities</i>				
Erie County	23,241	24,549	46,732	96,906
Buffalo City	5,411	6,833	13,851	26,464
<i>Host Communities</i>				
Niagara County	4,465	5,339	4,397	18,296
Town of Lewiston	273	432	299	923
Lewiston Village	75	54	66	307
Lewiston-Porter SD	434	679	429	1,610
Niagara Falls City / SD	956	1,363	997	5,070
Town of Niagara	273	229	197	1,062
Niagara-Wheatfield SD	576	573	426	2,317
<i>Additional Stakeholders</i>				
Niagara University	0	0	0	0
<i>Preference Customers</i>				
Akron Village	79	57	99	302
Arcade Village	77	78	96	402
Jamestown City	495	589	852	3,353

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**TABLE 2.2.2-3 (CONT.)**  
**EMPLOYMENT BY INDUSTRY, 2000**

Place	Wholesale Trade	Services	Agricultural, Forestry and Fishing Services	Government	Total
United States	7,588,900	53,301,695	2,166,800	22,740,000	167,511,297
New York State	481,765	3,932,500	74,860	1,482,769	10,485,174
Western New York	36,186	266,111	6,756	127,480	856,015
<i>Local Communities</i>					
Erie County	27,922	186,319	3,584	76,571	557,847
Buffalo City	6,827	61,697	666	27,218	168,720
<i>Host Communities</i>					
Niagara County	2,526	26,199	776	13,613	95,661
Town of Lewiston	154	2,037	34	466	5,558
Lewiston Village	19	382	3	246	1,421
Lewiston-Porter SD	240	3,104	63	1,101	4,697
Niagara Falls City / SD	486	6,977	55	3,940	24,294
Town of Niagara	146	968	32	836	9,395
Niagara-Wheatfield SD	347	2,502	65	1,293	10,444
<i>Additional Stakeholders</i>					
Niagara University	0	713	0	0	0
<i>Preference Customers</i>					
Akron Village	28	375	17	153	1,423
Arcade Village	22	295	22	99	1,479
Jamestown City	606	5,316	29	1,755	16,855

Notes: Sectors listed are an aggregation of the 53 REMI sectors. These data are from Regional Economic Models, Inc., while data in the previous tables (for 1969) were from BEA. BEA data are not available for sub-county regions. Due to rounding, totals may not match those in [Table 2.2.3.1-1](#).

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**TABLE 2.2.2.2-4  
EMPLOYMENT BY INDUSTRY (PERCENT), 2000**

Place	Farm	Durables Manufacturing	Non-Durables Manufacturing	Mining
United States	1.9	6.9	4.5	0.5
New York State	0.6	4.6	4.0	0.1
Western New York	1.3	8.9	5.1	0.2
<i>Local Communities</i>				
Erie County	0.3	7.6	4.9	0.1
Buffalo City	0.2	6.2	5.3	0.0
<i>Host Communities</i>				
Niagara County	1.5	11.3	8.1	0.2
Town of Lewiston	1.1	7.3	8.6	0.0
Lewiston Village	0.4	8.9	9.6	0.0
Lewiston-Porter SD	2.4	16.8	17.7	0.0
Niagara Falls City / SD	0.4	7.6	10.3	0.0
Town of Niagara	0.6	4.8	4.7	0.0
Niagara-Wheatfield SD	1.1	11.2	10.2	0.0
<i>Additional Stakeholders</i>				
Niagara University	0.0	0.0	0.0	0.0
<i>Preference Customers</i>				
Akron Village	0.6	15.1	6.3	0.0
Arcade Village	7.6	14.8	3.9	0.0
Jamestown City	0.5	19.2	2.9	0.3

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**TABLE 2.2.2.2-4 (CONT.)  
EMPLOYMENT BY INDUSTRY (PERCENT), 2000**

Place	Construction	Transportation and Public Utilities	Financial, Insurance and Real Estate	Retail Trade
United States	5.7	4.9	8.1	16.3
New York State	4.4	5.0	10.9	14.1
Western New York	4.2	4.4	7.1	17.6
<i>Local Communities</i>				
Erie County	4.2	4.4	8.4	17.4
Buffalo City	3.2	4.0	8.2	15.7
<i>Host Communities</i>				
Niagara County	4.7	5.6	4.6	19.1
Town of Lewiston	4.9	7.8	5.4	16.6
Lewiston Village	5.3	3.8	4.6	21.6
Lewiston-Porter SD	9.2	14.5	9.1	34.3
Niagara Falls City / SD	3.9	5.6	4.1	20.9
Town of Niagara	2.9	2.4	2.1	11.3
Niagara-Wheatfield SD	5.5	5.5	4.1	22.2
<i>Additional Stakeholders</i>				
Niagara University	0.0	0.0	0.0	0.0
<i>Preference Customers</i>				
Akron Village				
Arcade Village	5.6	4.0	7.0	21.2
Jamestown City	5.2	5.3	6.5	27.2

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**TABLE 2.2.2.2-4 (CONT.)**  
**EMPLOYMENT BY INDUSTRY (PERCENT), 2000**

Place	Wholesale Trade	Services	Agricultural, Forestry and Fishing Services	Government
United States	4.5	31.8	1.3	13.6
New York State	4.6	37.5	0.7	14.1
Western New York	4.2	31.1	0.8	14.9
<i>Local Communities</i>				
Erie County	5.0	33.4	0.6	13.7
Buffalo City	4.0	36.6	0.4	16.1
<i>Host Communities</i>				
Niagara County	2.6	27.4	0.8	14.2
Town of Lewiston	2.8	36.6	0.6	8.4
Lewiston Village	1.3	26.9	0.2	17.3
Lewiston-Porter SD	5.1	66.1	1.3	23.4
Niagara Falls City / SD	2.0	28.7	0.2	16.2
Town of Niagara	1.6	10.3	0.3	8.9
Niagara-Wheatfield SD	3.3	24.0	0.6	12.4
<i>Additional Stakeholders</i>				
Niagara University	0.0	100.0	0.0	0.0
<i>Preference Customers</i>				
Akron Village	2.0	26.4	1.2	10.8
Arcade Village	1.5	19.9	1.5	6.7
Jamestown City	3.6	31.5	0.2	10.4

Notes: Sectors listed are an aggregation of the 53 REMI sectors. These data are from Regional Economic Models, Inc., while data in the previous tables (for 1969) were from BEA. BEA data are not available for sub-county regions.

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**TABLE 2.2.2.2-5**  
**PERCENT CHANGE IN EMPLOYMENT FROM 1969-2000**

Industry	United States	New York State	Western New York	Erie County	Niagara County	Chautauqua County	Wyoming County
Total full-time and part-time employment	84	24	16	16	-2	22	30
Farm employment	-22	-22	-17	-26	-18	-20	-5
Private employment	99	26	17	18	-1	25	31
Ag. services, forestry, fishing and other	323	159	141	192	N/A	156	164
Mining	6	-16	60	85	N/A	754	N/A
Construction	113	40	14	13	12	35	83
Manufacturing	-7	-52	-47	-49	-57	-28	-29
Transportation and public utilities	72	-3	-7	-21	117	5	37
Wholesale trade	85	-4	19	14	59	21	154
Retail trade	104	26	29	23	35	36	56
Finance, insurance, and real estate	123	29	30	44	3	-14	15
Services	220	118	131	136	107	156	122
Government and government enterprises	44	15	13	5	-3	19	46

Notes: BEA estimate of employment in 1969 vs. BEA estimate of employment in 2000. Data taken from Bureau of Economic Analysis (see <http://www.bea.doc.gov/bea/regional/reis/default.cfm>)

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**TABLE 2.2.2.2-6  
TOP TEN WESTERN NEW YORK EMPLOYERS**

<b>Company</b>	<b>City</b>	<b>Full-Time Employees</b>	<b>Business Description</b>	<b>Project Customer?</b>
HSBC Bank USA	Buffalo	5,500	Commercial bank	No
Kaleida Health	Buffalo	5,243	Health care system	No
Delphi Harrison Thermal Systems	Lockport	5,000	Manufacturer of radiators and heat exchangers	No
Catholic Health System	Buffalo	4,314	Health care system	No
M & T Bank	Buffalo	4,300	Commercial bank	No
Tops Markets Inc.	Williamsville	4,253	Supermarket retailer	EP (NYSEG)
General Motors	Tonawanda	4,000	Manufacturer of car and boat engines	RP (NIMO)
American Axle & Manufacturing Inc.	Buffalo	2,500	Manufacturer of axle assemblies, linkages and forgings	EP (NIMO)
Verizon	Buffalo	2,000	Telecommunications company/internet access	No
Moog Inc.	East Aurora	1,958	Manufacturer of precision-control components and defense systems	EP (NYSEG)

Notes: Data taken from Business First Book of Lists, 2002 (see <http://www.buffaloniagara.org/employers/employers.asp>)

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**TABLE 2.2.3.1-1**  
**EMPLOYMENT BY OCCUPATION, 2000**

Place	Management, Business & Financial	Computer and Mathematical	Architectural and Engineering	Life, Physical and Social Science
United States	16,853,736	3,575,341	3,298,605	1,349,434
New York State	1,139,311	238,823	201,291	91,092
Western New York	81,381	15,968	15,390	6,683
<i>Local Communities</i>				
Erie County	56,312	11,956	10,828	4,547
Buffalo City	17,454	3,555	3,266	1,618
<i>Host Communities</i>				
Niagara County	8,340	1,393	1,611	849
Town of Lewiston	498	69	99	42
Lewiston Village	122	29	21	8
Lewiston-Porter SD	847	133	187	65
Niagara Falls City / SD	2,107	392	396	298
Town of Niagara	423	53	77	61
Niagara-Wheatfield SD	896	121	176	87
<i>Preference Customers</i>				
Akron Village	156	29	53	16
Arcade Village	140	20	41	7
Jamestown City	1,499	308	260	97

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**TABLE 2.2.3.1-1 (CONT.)**  
**EMPLOYMENT BY OCCUPATION, 2000**

Place	Education, Library, and Social Service	Legal	Arts, Entertainment and Sports	Healthcare Practitioner
United States	8,063,478	1,497,142	2,048,468	10,198,418
New York State	695,652	108,018	151,412	777,832
Western New York	48,787	6,619	9,651	59,396
<i>Local Communities</i>				
Erie County	30,832	4,983	6,693	39,253
Buffalo City	11,964	1,724	1,925	14,674
<i>Host Communities</i>				
Niagara County	5,309	497	935	7,222
Town of Lewiston	717	47	61	168
Lewiston Village	78	7	24	137
Lewiston-Porter SD	963	62	114	402
Niagara Falls City / SD	1,348	126	221	1,986
Town of Niagara	254	29	34	292
Niagara-Wheatfield SD	509	50	111	590
<i>Preference Customers</i>				
Akron Village	50	28	14	30
Arcade Village	61	9	12	48
Jamestown City	807	92	201	1,362

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**TABLE 2.2.3.1-1 (CONT.)**  
**EMPLOYMENT BY OCCUPATION, 2000**

<b>Place</b>	<b>Protective Service</b>	<b>Food Preparation and Serving</b>	<b>Building, Grounds and Maintenance</b>	<b>Personal Care and Service</b>	<b>Sales, Office and Administrative Support</b>
United States	4,744,878	11,089,660	7,016,243	4,425,570	46,843,658
New York State	325,339	630,405	437,803	321,050	3,063,737
Western New York	25,466	61,016	31,952	23,299	230,380
<i>Local Communities</i>					
Erie County	16,457	40,087	20,521	15,168	160,616
Buffalo City	5,461	12,764	5,947	4,391	46,265
<i>Host Communities</i>					
Niagara County	2,657	6,975	3,433	2,475	24,219
Town of Lewiston	101	387	236	200	1,322
Lewiston Village	51	125	46	28	399
Lewiston-Porter SD	230	801	409	338	2,194
Niagara Falls City / SD	797	2,087	923	540	6,472
Town of Niagara	149	378	139	114	1,236
Niagara-Wheatfield SD	247	742	371	335	2,806
<i>Preference Customers</i>					
Akron Village	31	149	39	24	367
Arcade Village	20	125	55	38	412
Jamestown City	434	1,362	533	461	4,464

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**TABLE 2.2.3.1-1 (CONT.)**  
**EMPLOYMENT BY OCCUPATION, 2000**

Place	Farming, Fishing and Forestry	Construction, Installation, Maintenance and Repair	Production	Transportation and Material Moving	Total
United States	2,679,499	15,837,621	14,148,806	11,765,748	165,436,305
New York State	74,457	840,713	699,678	674,988	10,471,601
Western New York	9,145	68,257	80,224	59,599	833,213
<i>Local Communities</i>					
Erie County	3,306	44,719	49,941	39,411	555,630
Buffalo City	712	11,903	13,862	10,442	167,927
<i>Host Communities</i>					
Niagara County	1,125	8,341	10,711	7,716	93,808
Town of Lewiston	51	440	531	575	5,544
Lewiston Village	5	112	143	81	1,416
Lewiston-Porter SD	96	755	971	796	9,363
Niagara Falls City / SD	93	1,977	2,348	2,059	24,170
Town of Niagara	47	513	502	369	4,670
Niagara-Wheatfield SD	99	1,012	1,280	966	10,398
<i>Preference Customers</i>					
Akron Village	16	126	187	103	1,418
Arcade Village	62	126	178	120	1,474
Jamestown City	73	1,111	2,591	1,157	16,812

Notes: Data from Regional Economic Models, Inc. and U.S. Census Bureau. Due to rounding, totals may not match those in [Table 2.2.2.2-3](#).

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**TABLE 2.2.3.1-2**  
**EMPLOYMENT BY OCCUPATION (PERCENT), 2000**

Place	Management, Business & Financial	Computer and Mathematical	Architectural and Engineering	Life, Physical and Social Science
United States	10.2	2.2	2.0	0.8
New York State	10.9	2.3	1.9	0.9
Western New York	9.8	1.9	1.8	0.8
<i>Local Communities</i>				
Erie County	10.1	2.2	1.9	0.8
Buffalo City	10.4	2.1	1.9	1.0
<i>Host Communities</i>				
Niagara County	8.9	1.5	1.7	0.9
Town of Lewiston	9.0	1.2	1.8	0.8
Lewiston Village	8.6	2.0	1.5	0.6
Lewiston-Porter SD	9.0	1.4	2.0	0.7
Niagara Falls City / SD	8.7	1.6	1.6	1.2
Town of Niagara	9.1	1.1	1.6	1.3
Niagara-Wheatfield SD	8.6	1.2	1.7	0.8
<i>Preference Customers</i>				
Akron Village	11.0	2.0	3.7	1.1
Arcade Village	9.5	1.4	2.8	0.5
Jamestown City	8.9	1.8	1.5	0.6

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
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**TABLE 2.2.3.1-2 (CONT.)**  
**EMPLOYMENT BY OCCUPATION (PERCENT), 2000**

Place	Education, Library, and Social Service	Legal	Arts, Entertainment and Sports	Healthcare Practitioner
United States	4.9	0.9	1.2	6.2
New York State	6.6	1.0	1.4	7.4
Western New York	5.9	0.8	1.2	7.1
<i>Local Communities</i>				
Erie County	5.5	0.9	1.2	7.1
Buffalo City	7.1	1.0	1.1	8.7
<i>Host Communities</i>				
Niagara County	5.7	0.5	1.0	7.7
Town of Lewiston	12.9	0.8	1.1	3.0
Lewiston Village	5.5	0.5	1.7	9.7
Lewiston-Porter SD	10.3	0.7	1.2	4.3
Niagara Falls City / SD	5.6	0.5	0.9	8.2
Town of Niagara	5.4	0.6	0.7	6.3
Niagara-Wheatfield SD	4.9	0.5	1.1	5.7
<i>Preference Customers</i>				
Akron Village	3.5	2.0	1.0	2.1
Arcade Village	4.1	0.6	0.8	3.3
Jamestown City	4.8	0.5	1.2	8.1

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**TABLE 2.2.3.1-2 (CONT.)**  
**EMPLOYMENT BY OCCUPATION (PERCENT), 2000**

<b>Place</b>	<b>Protective Service</b>	<b>Food Preparation and Serving</b>	<b>Building, Grounds and Maintenance</b>	<b>Personal Care and Service</b>	<b>Sales, Office and Administrative Support</b>
United States	2.9	6.7	4.2	2.7	28.3
New York State	3.1	6.0	4.2	3.1	29.3
Western New York	3.1	7.3	3.8	2.8	27.6
<i>Local Communities</i>					
Erie County	3.0	7.2	3.7	2.7	28.9
Buffalo City	3.3	7.6	3.5	2.6	27.6
<i>Host Communities</i>					
Niagara County	2.8	7.4	3.7	2.6	25.8
Town of Lewiston	1.8	7.0	4.3	3.6	23.8
Lewiston Village	3.6	8.8	3.2	2.0	28.2
Lewiston-Porter SD	2.5	8.6	4.4	3.6	23.4
Niagara Falls City / SD	3.3	8.6	3.8	2.2	26.8
Town of Niagara	3.2	8.1	3.0	2.4	26.5
Niagara-Wheatfield SD	2.4	7.1	3.6	3.2	27.0
<i>Preference Customers</i>					
Akron Village	2.2	10.5	2.8	1.7	25.9
Arcade Village	1.4	8.5	3.7	2.6	28.0
Jamestown City	2.6	8.1	3.2	2.7	26.6

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**TABLE 2.2.3.1-2 (CONT.)**  
**EMPLOYMENT BY OCCUPATION (PERCENT), 2000**

Place	Farming, Fishing and Forestry	Construction, Installation, Maintenance and Repair	Production	Transportation and Material Moving
United States	1.6	9.6	8.6	7.1
New York State	0.7	8.0	6.7	6.4
Western New York	1.1	8.2	9.6	7.2
<i>Local Communities</i>				
Erie County	0.6	8.0	9.0	7.1
Buffalo City	0.4	7.1	8.3	6.2
<i>Host Communities</i>				
Niagara County	1.2	8.9	11.4	8.2
Town of Lewiston	0.9	7.9	9.6	10.4
Lewiston Village	0.4	7.9	10.1	5.7
Lewiston-Porter SD	1.0	8.1	10.4	8.5
Niagara Falls City / SD	0.4	8.2	9.7	8.5
Town of Niagara	1.0	11.0	10.7	7.9
Niagara-Wheatfield SD	1.0	9.7	12.3	9.3
<i>Preference Customers</i>				
Akron Village	1.1	8.9	13.2	7.3
Arcade Village	4.2	8.5	12.1	8.1
Jamestown City	0.4	6.6	15.4	6.9

Notes: Data from Regional Economic Models, Inc. and U.S. Census Bureau.

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**TABLE 2.2.3.1-3**  
**NIAGARA UNIVERSITY EMPLOYMENT BY OCCUPATION**

Year	Full Time				Part Time			
	Faculty	Administration	Professional & Technical	Clerical & Support (hourly)	Faculty	Administration	Professional & Technical	Clerical & Support (hourly)
1990	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1991	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1992	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1993	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1994	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1995	116	44	59	94	151	0	5	25
1996	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1997	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1998	117	50	56	97	166	0	9	29
1999	121	50	63	94	149	0	9	20
2000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2001	135	53	72	88	181	2	24	18
2002	133	56	78	85	154	2	22	25
2003	133	56	69	100	156	3	22	25

Notes: Data provided by Niagara University.

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**TABLE 2.2.3.2-1**  
**MEAN HOURLY WAGES, 2001 (2002 DOLLARS)**

Occupation	U.S.	New York State	Buffalo-Niagara MSA	
			Wages	% Difference from National
All Occupations	16.60	19.11	15.78	-4.9
Management Occupations	34.56	43.29	35.01	1.3
Chief Executives	52.57	60.45	53.92	2.6
Business and Financial Operations Occupations	24.69	28.70	22.11	-10.4
Financial Analysts	30.48	39.04	26.08	-14.4
Computer and Mathematical Occupations	29.47	31.20	24.85	-15.7
Computer Programmers	30.69	33.06	24.88	-18.9
Statisticians	27.86	26.32	26.00	-6.7
Architecture and Engineering Occupations	27.50	28.51	24.87	-9.6
Electrical Engineers	33.50	33.88	29.02	-13.4
Mechanical Engineers	31.01	30.23	28.86	-6.9
Life, Physical, and Social Science Occupations	24.27	26.80	24.18	-0.4
Community and Social Services Occupations	16.69	18.86	16.35	-2.0
Legal Occupations	33.70	41.14	27.03	-19.8
Education, Training, and Library Occupations	19.10	23.42	19.04	-0.3
Arts, Design, Entertainment, Sports, and Media Occupations	19.41	21.38	16.59	-14.5
Healthcare Practitioners and Technical Occupations	24.38	26.90	23.02	-5.6
Healthcare Support Occupations	10.69	11.49	10.94	2.3
Protective Service Occupations	15.88	18.11	16.55	4.2
Food Preparation and Serving Related Occupations	8.16	9.14	7.83	-4.0
Building and Grounds Cleaning and Maintenance Occupations	9.95	12.17	10.05	1.0
Personal Care and Service Occupations	10.26	10.56	8.63	-15.9
Sales and Related Occupations	14.12	17.59	12.97	-8.1
Office and Administrative Support Occupations	13.29	14.88	12.82	-3.5
Farming, Fishing, and Forestry Occupations	9.59	11.54	11.06	15.3
Construction and Extraction Occupations	17.31	21.86	18.79	8.5
Installation, Maintenance, and Repair Occupations	17.07	18.68	16.78	-1.7
Production Occupations	13.47	13.56	14.90	10.6
Transportation and Material Moving Occupations	12.97	14.32	13.12	1.2

Notes: Data from Bureau of Labor Statistics: [http://www.bls.gov/oes/2001/oes\\_dl.htm](http://www.bls.gov/oes/2001/oes_dl.htm).

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**TABLE 2.2.3.2-2**  
**ANNUAL AVERAGE WAGES BY INDUSTRY, 1975-2000 (2002 DOLLARS)**

Place	1975	1980	1990	2000
New York State				
All Industries	37,622	34,244	39,736	47,385
Total Private	37,318	34,332	39,361	48,291
Construction	46,680	40,312	43,947	45,726
Finance, Insurance, Real Estate	41,216	40,685	61,341	118,192
Manufacturing	41,976	40,309	45,096	53,752
Services	32,743	29,240	35,618	40,030
Transportation and Public Utilities	48,757	47,593	47,173	51,046
Wholesale and Retail Trade	30,777	27,105	28,166	30,062
All Other Industries	34,796	28,288	28,368	27,504
Total Government	41,638	33,829	41,509	42,804
Local	38,093	32,539	40,788	41,513
State	38,745	33,428	43,893	45,959
Federal	45,791	40,722	41,926	46,594
Western New York				
All Industries	33,276	30,142	29,625	31,495
Total Private	32,870	30,238	28,161	30,441
Construction	45,854	39,161	35,437	36,019
Finance, Insurance, Real Estate	31,112	28,301	33,130	41,743
Manufacturing	42,545	42,321	40,976	45,839
Services	23,032	21,214	23,912	26,030
Transportation and Public Utilities	40,889	40,183	37,624	39,416
Wholesale and Retail Trade	22,891	19,549	18,252	19,964
All Other Industries	33,742	26,209	27,935	26,074
Total Government	40,314	30,088	36,997	36,808
Local	25,339	27,583	33,969	33,147
State	38,199	32,257	40,334	42,384
Federal	42,590	38,057	37,066	38,194

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**TABLE 2.2.3.2-2 (CONT.)**

**ANNUAL AVERAGE WAGES BY INDUSTRY, 1975-2000 (2002 DOLLARS)**

Place/Industry	1975	1980	1990	2000
<i>Local Communities</i>				
Erie County				
All Industries	33,897	30,729	30,506	32,897
Total Private	33,372	30,524	28,741	31,797
Construction	47,128	40,488	36,414	37,963
Finance, Insurance, Real Estate	31,713	28,922	34,144	43,884
Manufacturing	43,952	43,589	42,591	48,345
Services	23,962	22,182	24,985	27,771
Transportation and Public Utilities	44,453	43,514	39,712	40,626
Wholesale and Retail Trade	23,785	20,247	19,208	21,231
All Other Industries	33,469	24,909	22,364	22,427
Total Government	40,120	31,696	39,599	38,706
Local	19,384	29,465	38,319	35,868
State	37,943	32,550	41,333	43,122
Federal	46,232	41,951	41,895	43,923
<i>Host Communities</i>				
Niagara County				
All Industries	35,616	32,917	30,527	32,503
Total Private	35,418	33,314	29,575	31,316
Construction	47,102	39,368	36,145	33,294
Finance, Insurance, Real Estate	29,356	25,974	27,284	33,927
Manufacturing	45,463	46,311	46,438	52,518
Services	21,514	19,658	21,101	22,406
Transportation and Public Utilities	37,458	35,430	35,783	38,443
Wholesale and Retail Trade	20,053	17,680	15,980	17,321
All Other Industries	29,352	22,322	24,638	21,335
Total Government	41,437	30,635	35,904	38,439
Local	N/R	29,522	35,238	37,307
State	38,893	27,574	38,623	45,792
Federal	43,888	42,180	38,943	42,419

Notes: Data from New York Department of Labor, based on reports submitted quarterly by employers subject to the New York State Unemployment Insurance Law (see [http://www.labor.state.ny.us/labor\\_market/lmi\\_business/insured/search.htm](http://www.labor.state.ny.us/labor_market/lmi_business/insured/search.htm)). Data are only available at the county and state level. "N/R" indicates "none reported".

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**TABLE 2.2.3.2-3  
PERCENTAGE OF TOTAL WAGES BY INDUSTRY, 1975-2000**

Place	1975	1980	1990	2000
New York State				
Total Private	92.2	82.6	81.8	85.1
Construction	4.5	3.5	4.3	3.7
Finance, Insurance, Real Estate	10.8	10.4	14.7	21.9
Manufacturing	27.1	23.9	15.8	11.7
Services	20.4	19.7	25.4	28.8
Transportation and Public Utilities	9.2	8.1	6.1	5.4
Wholesale and Retail Trade	19.7	16.3	14.8	13.0
All Other Industries	0.6	0.7	0.5	0.5
Total Government	7.8	17.4	18.2	14.9
Local	0.6	11.3	12.4	10.5
State	3.7	3.2	3.6	2.7
Federal	3.6	2.9	2.2	1.7
Western New York				
Total Private	90.6	81.0	77.5	78.4
Construction	5.2	4.1	4.6	4.0
Finance, Insurance, Real Estate	4.1	3.8	5.3	6.4
Manufacturing	44.5	39.0	27.0	24.3
Services	12.9	13.3	19.8	23.4
Transportation and Public Utilities	7.1	6.6	6.0	5.9
Wholesale and Retail Trade	17.0	14.3	14.9	14.5
All Other Industries	0.9	1.0	1.1	1.2
Total Government	8.3	18.1	21.6	20.6
Local	1.2	12.2	14.0	13.6
State	5.1	4.0	5.5	5.1
Federal	3.1	2.6	2.6	2.5

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**TABLE 2.2.3.2-3 (CONT.)**  
**PERCENTAGE OF TOTAL WAGES BY INDUSTRY, 1975-2000**

Place	1975	1980	1990	2000
<i>Local Communities</i>				
Erie County				
Total Private	90.8	81.8	78.9	81.3
Construction	5.4	4.4	4.8	4.3
Finance, Insurance, Real Estate	4.8	4.6	6.6	8.1
Manufacturing	40.2	35.2	23.2	21.7
Services	14.0	14.6	21.8	25.9
Transportation and Public Utilities	7.5	7.0	6.1	5.5
Wholesale and Retail Trade	18.4	15.5	15.9	15.2
All Other Industries	0.5	0.5	0.5	0.5
Total Government	9.2	18.2	21.1	18.7
Local	0.1	10.7	12.2	10.8
State	5.8	4.7	6.2	5.3
Federal	3.3	2.8	2.7	2.6
<i>Host Communities</i>				
Niagara County				
Total Private	96.2	86.3	82.3	80.3
Construction	5.2	3.8	5.2	4.0
Finance, Insurance, Real Estate	2.0	1.8	2.1	2.4
Manufacturing	63.9	56.4	41.8	37.4
Services	9.9	9.7	14.2	16.7
Transportation and Public Utilities	3.3	3.7	5.2	6.8
Wholesale and Retail Trade	11.3	10.3	12.9	12.0
All Other Industries	0.4	0.6	1.0	1.0
Total Government	3.8	13.7	17.7	19.7
Local	0.0	10.9	14.1	15.9
State	1.5	0.9	1.7	1.8
Federal	2.3	1.9	1.9	2.0

Notes: Data from New York Department of Labor, based on reports submitted quarterly by employers subject to the New York State Unemployment Insurance Law. (See [http://www.labor.state.ny.us/labor\\_market/lmi\\_business/insured/search.htm](http://www.labor.state.ny.us/labor_market/lmi_business/insured/search.htm).) Data are only available at the county and state level.

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**TABLE 2.2.4-1  
CONTRIBUTIONS OF PROJECT INDUSTRIAL CUSTOMERS, BY SECTOR**

Place	EP/RP Companies	Committed Jobs	Income (Thousands of \$2002)	Output (Thousands of \$2002)
Farm	0	0	0	0
Durables Manufacturing	52	23,703	1,296,656	8,238,638
Non-Durables Manufacturing	45	15,028	605,235	4,906,902
Mining	0	0	0	0
Construction	1	199	5,797	21,937
Transportation and Public Utilities	2	732	22,955	88,934
Finance, Insurance, and Real Estate	1	736	14,671	87,744
Retail Trade	0	0	0	0
Wholesale Trade	5	2,763	104,136	437,342
Services	2	261	5,620	19,245
Agricultural, Forestry and Fishing Services	0	0	0	0
Government	0	0	0	0
<b>Totals</b>	<b>108</b>	<b>43,422</b>	<b>2,055,070</b>	<b>13,800,741</b>

Note: Developed from NERA/REMI calculations, as explained in text. “Committed jobs” are jobs contractually tied to the low-cost power allocation from the Project.

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**TABLE 2.2.4-2  
CONTRIBUTIONS OF PROJECT INDUSTRIAL CUSTOMERS, BY REGION**

Place	EP/RP Companies	Committed Jobs	Income (Thousands of \$2002)	Output (Thousands of \$2002)
New York State	108	43,422	2,055,070	13,800,741
Western NY	108	43,422	2,055,070	13,800,741
<i>Local Communities</i>				
Erie County	67	36,015	1,689,198	10,990,958
Buffalo City	36	15,899	708,791	4,617,373
<i>Host Communities</i>				
Niagara County	31	3,927	211,274	1,471,876
Lewiston Town	0	0	0	0
Lewiston Village	0	0	0	0
Lewiston-Porter SD	0	0	0	0
Niagara Falls City/SD	23	3,064	169,938	1,165,892
Niagara Town	0	0	0	0
Niagara-Wheatfield SD	1	29	1,423	14,687
<i>Preference Customers</i>				
Akron Village	1	60	2,408	8,624
Arcade Village	0	0	0	0
Jamestown City	1	500	25,298	326,585

Note: Developed from NERA/REMI calculations, as explained in text. "Committed jobs" are jobs contractually tied to the low-cost power allocation from the Project.

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**TABLE 2.3.1-1**

**ERIE COUNTY PUBLIC SECTOR REVENUE (THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Revenue	1,392,347	1,432,341	1,444,585	1,464,453	1,414,582
Percent Change in Total Revenue	-	2.9	0.9	1.4	-3.4
Per Capita Revenue	1.5	1.5	1.5	1.5	1.5
General Revenue	1,349,884	1,387,405	1,397,716	1,417,084	1,365,999
Intergovernmental Revenue	344,708	339,238	360,226	357,630	342,292
Federal Government	7,496	6,005	7,175	7,665	6,979
State Government	324,324	321,232	341,572	339,492	323,992
From Local Governments	12,887	12,002	11,480	10,473	11,321
General Revenue from Own Sources	1,005,176	1,048,167	1,037,490	1,059,453	1,023,707
Taxes	591,925	608,275	605,739	616,411	567,283
Property	235,207	245,166	253,600	251,658	195,357
General Sales	340,727	343,151	327,792	348,210	362,870
Selective Sales	5,259	5,132	5,054	5,160	5,607
Income	0	0	0	0	0
All Other Taxes	10,732	14,827	19,294	11,382	3,449
Current Charges	325,614	348,788	329,960	369,826	381,903
Miscellaneous Revenue	87,637	91,103	101,792	73,216	74,521
Utility & Liquor Store Revenue	42,463	44,936	46,869	47,370	48,583

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data. All other taxes include any taxes that are not property, sales, or income taxes.

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**TABLE 2.3.1-2**

**CITY OF BUFFALO PUBLIC SECTOR REVENUE (THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Revenue	942,591	911,197	946,327	994,215	1,026,564
Percent Change in Total Revenue	-	-3.3	3.9	5.1	3.3
Per Capita Revenue	3.2	3.1	3.2	3.4	3.5
General Revenue	911,591	875,082	911,195	959,225	993,320
Intergovernmental Revenue	612,545	621,859	671,774	735,257	735,765
Federal Government	61,409	48,290	55,464	62,064	59,422
State Government	459,988	470,780	525,196	576,998	583,624
From Local Governments	91,148	102,789	91,114	96,195	92,719
General Revenue from Own Sources	299,046	253,223	239,421	223,967	257,555
Taxes	127,835	133,059	125,622	121,115	156,405
Property	102,962	109,763	102,288	98,885	133,927
General Sales	0	0	0	0	0
Selective Sales	18,005	17,040	17,056	15,746	16,397
Income	0	0	0	0	0
All Other Taxes	6,868	6,256	6,278	6,484	6,081
Current Charges	142,570	71,020	72,950	66,099	65,874
Miscellaneous Revenue	28,641	49,143	40,850	36,753	35,277
Utility & Liquor Store Revenue	31,000	36,115	35,132	34,990	33,244

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.1-3**

**NIAGARA COUNTY PUBLIC SECTOR REVENUE (THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Revenue	311,778	328,269	301,554	307,079	308,438
Percent Change in Total Revenue	-	5.3	-8.1	1.8	0.4
Per Capita Revenue	1.4	1.5	1.4	1.4	1.4
General Revenue	307,571	323,978	297,102	302,589	304,263
Intergovernmental Revenue	87,630	95,950	93,614	88,462	89,144
Federal Government	1,732	4,538	1,697	1,495	1,538
State Government	82,494	79,028	80,732	75,636	77,807
From Local Governments	3,405	12,383	11,185	11,330	9,798
General Revenue from Own Sources	219,941	228,028	203,488	214,128	215,119
Taxes	126,281	125,566	120,709	123,055	122,797
Property	66,162	65,471	61,139	60,919	59,794
General Sales	60,120	60,095	58,311	60,727	60,562
Selective Sales	0	0	0	0	0
Income	0	0	0	0	0
All Other Taxes	0	0	1,260	1,409	2,441
Current Charges	45,974	46,958	46,913	49,011	48,634
Miscellaneous Revenue	47,685	55,504	35,865	42,062	43,688
Utility & Liquor Store Revenue	4,207	4,290	4,451	4,490	4,175

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.1-4**  
**TOWN OF LEWISTON PUBLIC SECTOR REVENUE**  
**(THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Revenue	10,504	9,872	10,626	11,412	N/A
Percent Change in Total Revenue	-	-6.0	7.6	7.4	N/A
Per Capita Revenue	0.6	0.6	0.7	0.7	N/A
General Revenue	9,681	9,184	9,763	10,517	N/A
Intergovernmental Revenue	3,038	2,598	2,633	2,602	N/A
Federal Government	0	0	13	0	N/A
State Government	210	193	236	200	N/A
From Local Governments	2,828	2,405	2,384	2,402	N/A
General Revenue from Own Sources	6,642	6,587	7,130	7,915	N/A
Taxes	4,225	1,109	1,826	1,773	N/A
Property	1,796	882	1,446	1,384	N/A
General Sales	0	0	0	0	N/A
Selective Sales	61	64	69	74	N/A
Income	0	0	0	0	N/A
All Other Taxes	2,367	163	311	316	N/A
Current Charges	1,814	3,402	3,679	3,552	N/A
Miscellaneous Revenue	604	2,076	1,625	2,589	N/A
Utility & Liquor Store Revenue	824	687	862	895	N/A

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.1-5**

**VILLAGE OF LEWISTON SECTOR REVENUE (THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Revenue	2,098	N/A	N/A	N/A	N/A
Percent Change in Total Revenue	N/A	N/A	N/A	N/A	N/A
Per Capita Revenue	0.8	N/A	N/A	N/A	N/A
General Revenue	1,909	N/A	N/A	N/A	N/A
Intergovernmental Revenue	744	N/A	N/A	N/A	N/A
Federal Government	0	N/A	N/A	N/A	N/A
State Government	62	N/A	N/A	N/A	N/A
From Local Governments	682	N/A	N/A	N/A	N/A
General Revenue from Own Sources	1,165	N/A	N/A	N/A	N/A
Taxes	636	N/A	N/A	N/A	N/A
Property	534	N/A	N/A	N/A	N/A
General Sales	0	N/A	N/A	N/A	N/A
Selective Sales	72	N/A	N/A	N/A	N/A
Income	0	N/A	N/A	N/A	N/A
All Other Taxes	31	N/A	N/A	N/A	N/A
Current Charges	503	N/A	N/A	N/A	N/A
Miscellaneous Revenue	25	N/A	N/A	N/A	N/A
Utility & Liquor Store Revenue	190	N/A	N/A	N/A	N/A

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.1-6**

**LEWISTON-PORTER SCHOOL DISTRICT PUBLIC SECTOR REVENUE (THOUSANDS OF**  
**2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Revenue	27,949	28,627	28,942	30,001	30,434
Percent Change in Total Revenue	-	2.4	1.1	3.7	1.4
Per Capita Revenue	1.3	1.4	1.4	1.4	1.4
General Revenue	27,949	28,627	28,942	30,001	30,434
Intergovernmental Revenue	10,837	10,999	12,381	13,211	14,258
Federal Government	0	0	0	0	0
State Government	10,818	10,978	12,381	13,211	14,258
From Local Governments	19	20	0	0	0
General Revenue from Own Sources	17,112	17,629	16,561	16,790	16,176
Taxes	16,115	16,430	15,475	15,622	14,865
Property	15,523	15,980	15,104	15,622	14,495
General Sales	0	0	0	0	370
Selective Sales	592	450	372	0	0
Income	0	0	0	0	0
All Other Taxes	0	0	0	0	0
Current Charges	306	291	264	347	332
Miscellaneous Revenue	691	907	821	820	979
Utility & Liquor Store Revenue	0	0	0	0	0

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.1-7**

**CITY OF NIAGARA FALLS PUBLIC SECTOR REVENUE (THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Revenue	111,403	103,811	101,979	97,651	N/A
Percent Change in Total Revenue	-	-6.8	-1.8	-4.2	N/A
Per Capita Revenue	2.0	1.9	1.8	1.8	N/A
General Revenue	103,771	97,118	94,976	90,749	N/A
Intergovernmental Revenue	36,180	32,475	31,143	30,198	N/A
Federal Government	7,594	7,414	7,515	7,443	N/A
State Government	19,628	16,142	11,871	12,410	N/A
From Local Governments	8,957	8,919	11,757	10,345	N/A
General Revenue from Own Sources	67,591	64,643	63,833	60,550	N/A
Taxes	30,982	33,153	33,268	31,039	N/A
Property	21,769	23,503	24,288	22,199	N/A
General Sales	0	0	0	0	N/A
Selective Sales	8,458	8,931	8,140	7,938	N/A
Income	0	0	0	0	N/A
All Other Taxes	754	719	840	902	N/A
Current Charges	18,418	16,381	18,105	17,818	N/A
Miscellaneous Revenue	18,191	15,109	12,460	11,693	N/A
Utility & Liquor Store Revenue	7,632	6,693	7,003	6,902	N/A

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.1-8**

**NIAGARA FALLS CITY SCHOOL DISTRICT PUBLIC SECTOR REVENUE (THOUSANDS**  
**OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Revenue	100,346	106,378	117,054	116,503	118,435
Percent Change in Total Revenue	-	6.0	10.0	-0.5	1.7
Per Capita Revenue	1.8	1.9	2.1	2.1	2.1
General Revenue	100,346	106,378	117,054	116,503	118,435
Intergovernmental Revenue	66,384	71,831	84,371	84,534	90,224
Federal Government	0	0	0	0	0
State Government	66,319	71,772	84,371	84,534	90,224
From Local Governments	65	58	0	0	0
General Revenue from Own Sources	33,962	34,547	32,683	31,968	28,211
Taxes	30,404	29,556	26,941	25,017	23,897
Property	27,928	27,338	24,635	22,926	21,379
General Sales	0	0	0	0	0
Selective Sales	2,476	2,219	2,306	2,091	2,518
Income	0	0	0	0	0
All Other Taxes	0	0	0	0	0
Current Charges	752	1,785	1,351	4,518	1,009
Miscellaneous Revenue	2,806	3,205	4,391	2,433	3,305
Utility & Liquor Store Revenue	0	0	0	0	0

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.1-9**

**TOWN OF NIAGARA PUBLIC SECTOR REVENUE (THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Revenue	6,871	N/A	N/A	7,599	7,412
Percent Change in Total Revenue	-	N/A	N/A	N/A	-2.5
Per Capita Revenue	0.8	N/A	N/A	0.9	0.8
General Revenue	6,283	N/A	N/A	7,004	6,842
Intergovernmental Revenue	1,916	N/A	N/A	2,017	1,982
Federal Government	0	N/A	N/A	4	0
State Government	96	N/A	N/A	293	184
From Local Governments	1,820	N/A	N/A	1,719	1,798
General Revenue from Own Sources	4,366	N/A	N/A	4,987	4,860
Taxes	1,800	N/A	N/A	2,648	2,317
Property	1,489	N/A	N/A	2,061	2,041
General Sales	0	N/A	N/A	0	0
Selective Sales	66	N/A	N/A	75	78
Income	0	N/A	N/A	0	0
All Other Taxes	244	N/A	N/A	511	198
Current Charges	1,479	N/A	N/A	1,644	1,515
Miscellaneous Revenue	1,087	N/A	N/A	695	1,028
Utility & Liquor Store Revenue	588	N/A	N/A	595	571

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.1-10**

**NIAGARA-WHEATFIELD SCHOOL DISTRICT PUBLIC SECTOR REVENUE (THOUSANDS**  
**OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Revenue	42,458	43,571	45,717	46,267	47,936
Percent Change in Total Revenue	-	2.6	4.9	1.2	3.6
Per Capita Revenue	1.7	1.7	1.8	1.9	1.9
General Revenue	42,458	43,571	45,717	46,267	47,936
Intergovernmental Revenue	23,017	23,781	25,606	27,380	28,623
Federal Government	9	2	7	0	0
State Government	22,788	23,351	25,599	27,380	28,623
From Local Governments	220	428	0	0	0
General Revenue from Own Sources	19,441	19,790	20,112	18,886	19,313
Taxes	16,278	16,545	15,816	15,585	16,208
Property	16,130	16,420	15,710	15,585	16,109
General Sales	0	0	0	0	100
Selective Sales	148	125	106	0	0
Income	0	0	0	0	0
All Other Taxes	0	0	0	0	0
Current Charges	548	470	456	517	495
Miscellaneous Revenue	2,615	2,776	3,840	2,785	2,609
Utility & Liquor Store Revenue	0	0	0	0	0

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
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**TABLE 2.3.2-1**

**ERIE COUNTY PUBLIC SECTOR EXPENDITURES (THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Expenditure	1,366,947	1,383,222	1,401,972	1,444,370	1,424,798
Percent Change in Total Revenue	-	1.2	1.4	3.0	-1.4
Per Capita Revenue	1.4	1.5	1.5	1.5	1.5
Education Services:					
Education	73,841	80,992	117,759	114,551	70,342
Elementary & Secondary	0	0	37,139	36,995	0
Higher Education	73,841	80,992	80,620	77,555	70,342
Libraries	563	225	1,235	2,217	1,309
Social Services & Income Maintenance:					
Public Welfare	532,598	540,026	490,601	511,373	524,422
Hospitals	197,925	194,858	228,673	234,741	237,832
Health	46,848	45,781	48,227	52,187	54,605
Transportation:					
Highways	41,659	40,457	39,249	54,985	63,799
Air Transportation	0	0	0	0	0
Parking	0	0	0	0	0
Other Transportation	17,280	17,386	16,375	18,016	17,940
Public safety:					
Police Protection	31,504	29,361	31,675	33,195	33,597
Fire Protection	684	728	1,156	971	3,202
Correction	50,156	51,755	55,651	59,317	60,885
Protective Inspection & Regulation	0	0	0	0	0
Environment & Housing:					
Natural Resources	19	0	21	90	20
Sewerage	33,314	33,669	28,664	22,872	29,634
Solid Waste Management	0	0	0	0	0
Parks & Recreation	12,931	13,964	12,406	16,514	15,674
Housing & Community Development	3,870	7,467	4,221	3,370	3,508
Governmental Administration:					
Financial Administration	12,179	8,947	18,033	8,891	7,609
Judicial & Legal	18,961	18,777	19,657	19,666	19,764
General Public Buildings	14,504	13,183	14,012	14,927	14,303
Other Government Administration	14,388	14,863	13,679	13,369	13,897
Interest on General Debt	56,941	53,179	43,167	45,300	39,495
Other & Unallocable	168,801	179,344	184,076	184,173	178,478
Utility & Liquor Store Expenditure	37,981	38,259	33,435	33,645	34,479

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
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**TABLE 2.3.2-2**

**CITY OF BUFFALO PUBLIC SECTOR EXPENDITURES (THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Expenditure	1,034,517	1,032,929	1,041,487	1,072,657	1,136,562
Percent Change in Total Expenditure	-	-0.2	0.8	3.0	6.0
Per Capita Expenditure	3.5	3.5	3.6	3.7	3.9
Education Services:					
Education	483,640	503,684	529,605	574,972	604,238
Elementary & Secondary	483,640	503,684	529,605	574,972	604,238
Higher Education	0	0	0	0	0
Libraries	0	0	0	0	129
Social Services & Income Maintenance:					
Public Welfare	70	68	71	18	25
Hospitals	0	0	0	0	0
Health	2,525	2,578	2,571	2,524	1,854
Transportation:					
Highways	36,287	39,839	39,711	43,338	46,611
Air Transportation	0	0	0	0	0
Parking	2,602	2,672	4,414	2,289	2,949
Other Transportation	0	0	0	0	0
Public safety:					
Police Protection	62,306	64,494	64,406	73,056	74,617
Fire Protection	48,422	46,606	49,072	52,777	56,357
Correction	0	0	0	0	0
Protective Inspection & Regulation	4,042	7,020	5,864	5,813	5,672
Environment & Housing:					
Natural Resources	0	0	0	0	0
Sewerage	33,085	0	0	0	0
Solid Waste Management	14,261	16,336	13,764	16,654	16,718
Parks & Recreation	6,089	6,370	6,959	10,917	23,475
Housing & Community Development	40,040	5,739	66,747	64,696	64,881
Governmental Administration:					
Financial Administration	5,935	5,982	7,135	6,185	5,601
Judicial & Legal	1,691	2,050	2,174	2,125	2,397
General Public Buildings	19,289	17,612	26,835	24,555	10,076
Other Government Administration	9,231	5,579	5,953	6,286	6,387
Interest on General Debt	40,784	44,010	25,779	14,405	22,508
Other & Unallocable	203,999	233,627	159,758	143,919	172,021
Utility & Liquor Store Expenditure	20,219	28,662	30,668	28,129	20,046

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.2-3**

**NIAGARA COUNTY PUBLIC SECTOR EXPENDITURES (THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Expenditure	299,888	300,493	295,965	303,388	311,425
Percent Change in Total Expenditure	-	0.2	-1.5	2.5	2.6
Per Capita Expenditure	1.4	1.4	1.3	1.4	1.4
Education Services:					
Education	36,227	42,445	41,177	43,195	36,685
Elementary & Secondary	0	0	4,739	5,771	0
Higher Education	36,227	42,445	36,438	37,424	36,685
Libraries	300	0	0	0	0
Social Services & Income Maintenance:					
Public Welfare	96,853	100,955	96,923	96,006	98,264
Hospitals	0	0	0	0	0
Health	22,084	21,305	21,207	20,822	19,030
Transportation:					
Highways	7,544	8,358	6,702	9,092	7,937
Air Transportation	84	83	260	93	85
Parking	0	0	0	0	0
Other Transportation	483	477	471	460	0
Public safety:					
Police Protection	10,373	10,916	12,476	13,199	12,963
Fire Protection	184	168	144	149	146
Correction	26,145	17,102	17,014	16,253	14,717
Protective Inspection & Regulation	39	46	38	48	78
Environment & Housing:					
Natural Resources	575	0	0	0	0
Sewerage	2,396	2,637	2,392	4,594	3,763
Solid Waste Management	1,380	1,351	1,942	9,018	9,249
Parks & Recreation	3,216	3,633	3,353	3,618	3,336
Housing & Community Development	149	196	259	220	285
Governmental Administration:					
Financial Administration	1,754	1,755	1,760	1,864	4,818
Judicial & Legal	3,562	3,479	3,268	3,335	3,348
General Public Buildings	3,317	3,503	3,492	3,657	3,704
Other Government Administration	3,271	3,260	3,443	3,601	5,400
Interest on General Debt	14,345	11,006	10,973	4,214	12,547
Other & Unallocable	60,224	62,277	63,098	63,940	68,602
Utility & Liquor Store Expenditure	5,382	5,540	5,572	6,009	6,467

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.2-4**

**TOWN OF LEWISTON PUBLIC SECTOR EXPENDITURES (THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Expenditure	10,239	9,769	10,522	11,040	N/A
Percent Change in Total Expenditure	-	-4.6	7.7	4.9	N/A
Per Capita Expenditure	0.6	0.6	0.6	0.7	N/A
Education Services:					
Education	0	0	80	727	N/A
Elementary & Secondary	0	0	80	727	N/A
Higher Education	0	0	0	0	N/A
Libraries	308	788	844	467	N/A
Social Services & Income Maintenance:					
Public Welfare	0	0	0	0	N/A
Hospitals	0	0	0	0	N/A
Health	17	20	20	52	N/A
Transportation:					
Highways	1,444	1,207	1,193	1,467	N/A
Air Transportation	0	0	0	0	N/A
Parking	0	0	0	0	N/A
Other Transportation	0	0	0	0	N/A
Public safety:					
Police Protection	381	379	449	453	N/A
Fire Protection	574	574	565	570	N/A
Correction	0	0	0	0	N/A
Protective Inspection & Regulation	77	72	71	73	N/A
Environment & Housing:					
Natural Resources	139	151	167	252	N/A
Sewerage	3,108	2,188	1,543	1,385	N/A
Solid Waste Management	0	0	25	0	N/A
Parks & Recreation	267	254	1,424	1,141	N/A
Housing & Community Development	0	0	0	0	N/A
Governmental Administration:					
Financial Administration	273	303	289	202	N/A
Judicial & Legal	215	201	171	215	N/A
General Public Buildings	167	145	166	158	N/A
Other Government Administration	156	159	163	207	N/A
Interest on General Debt	840	861	384	307	N/A
Other & Unallocable	1,148	1,425	1,975	2,447	N/A
Utility & Liquor Store Expenditure	1,123	1,040	992	920	N/A

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.2-5**

**VILLAGE OF LEWISTON PUBLIC SECTOR EXPENDITURES (THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Expenditure	2,034	N/A	N/A	N/A	N/A
Percent Change in Total Expenditure	-	N/A	N/A	N/A	N/A
Per Capita Expenditure	0.7	N/A	N/A	N/A	N/A
Education Services:					
Education	0	N/A	N/A	N/A	N/A
Elementary & Secondary	0	N/A	N/A	N/A	N/A
Higher Education	0	N/A	N/A	N/A	N/A
Libraries	0	N/A	N/A	N/A	N/A
Social Services & Income Maintenance:					
Public Welfare	0	N/A	N/A	N/A	N/A
Hospitals	0	N/A	N/A	N/A	N/A
Health	1	N/A	N/A	N/A	N/A
Transportation:					
Highways	271	N/A	N/A	N/A	N/A
Air Transportation	0	N/A	N/A	N/A	N/A
Parking	0	N/A	N/A	N/A	N/A
Other Transportation	0	N/A	N/A	N/A	N/A
Public safety:					
Police Protection	170	N/A	N/A	N/A	N/A
Fire Protection	220	N/A	N/A	N/A	N/A
Correction	0	N/A	N/A	N/A	N/A
Protective Inspection & Regulation	12	N/A	N/A	N/A	N/A
Environment & Housing:					
Natural Resources	0	N/A	N/A	N/A	N/A
Sewerage	394	N/A	N/A	N/A	N/A
Solid Waste Management	72	N/A	N/A	N/A	N/A
Parks & Recreation	101	N/A	N/A	N/A	N/A
Housing & Community Development	0	N/A	N/A	N/A	N/A
Governmental Administration:					
Financial Administration	107	N/A	N/A	N/A	N/A
Judicial & Legal	22	N/A	N/A	N/A	N/A
General Public Buildings	60	N/A	N/A	N/A	N/A
Other Government Administration	27	N/A	N/A	N/A	N/A
Interest on General Debt	35	N/A	N/A	N/A	N/A
Other & Unallocable	321	N/A	N/A	N/A	N/A
Utility & Liquor Store Expenditure	220	N/A	N/A	N/A	N/A

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.2-6**  
**LEWISTON-PORTER SCHOOL DISTRICT PUBLIC SECTOR EXPENDITURES**  
**(THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Expenditure	26,944	29,745	28,676	28,076	30,117
Percent Change in Total Expenditure	-	10.4	-3.6	-2.1	7.3
Per Capita Expenditure	1.3	1.4	1.4	1.3	1.4
Education Services:					
Education	26,536	29,393	28,355	27,790	29,885
Elementary & Secondary	26,536	29,393	28,355	27,790	29,885
Higher Education	0	0	0	0	0
Libraries	0	0	0	0	0
Interest on General Debt	409	351	321	286	232

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.2-7**

**CITY OF NIAGARA FALLS PUBLIC SECTOR EXPENDITURES (THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Expenditure	139,122	105,698	96,980	104,162	N/A
Percent Change in Total Expenditure	-	-24.0	-8.2	7.4	N/A
Per Capita Expenditure	2.5	1.9	1.7	1.9	N/A
Education Services:					
Education	0	0	0	0	N/A
Elementary & Secondary	0	0	0	0	N/A
Higher Education	0	0	0	0	N/A
Libraries	1,702	1,733	1,612	1,794	N/A
Social Services & Income Maintenance:					
Public Welfare	3,932	3,516	3,243	3,201	N/A
Hospitals	0	0	0	0	N/A
Health	0	0	0	0	N/A
Transportation:					
Highways	4,022	3,858	5,323	5,157	N/A
Air Transportation	0	0	0	0	N/A
Parking	496	482	386	328	N/A
Other Transportation	0	0	0	0	N/A
Public safety:					
Police Protection	11,491	12,145	12,618	13,568	N/A
Fire Protection	10,315	9,968	10,298	11,183	N/A
Correction	0	0	0	0	N/A
Protective Inspection & Regulation	641	14	8	663	N/A
Environment & Housing:					
Natural Resources	0	0	0	0	N/A
Sewerage	13,425	10,842	10,078	9,762	N/A
Solid Waste Management	3,245	2,798	2,810	3,871	N/A
Parks & Recreation	9,131	9,080	9,810	9,655	N/A
Housing & Community Development	3,206	2,464	2,012	3,532	N/A
Governmental Administration:					
Financial Administration	5,111	2,859	2,832	2,502	N/A
Judicial & Legal	657	651	535	460	N/A
General Public Buildings	1,265	1,164	1,116	1,186	N/A
Other Government Administration	1,160	1,441	1,362	1,301	N/A
Interest on General Debt	17,927	14,232	8,851	2,908	N/A
Other & Unallocable	18,276	16,824	17,043	19,890	N/A
Utility & Liquor Store Expenditure	33,120	11,629	7,043	13,199	N/A

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.2-8**

**NIAGARA FALLS CITY SCHOOL DISTRICT PUBLIC SECTOR EXPENDITURES (2002  
DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Expenditure	113,230	105,197	184,466	113,413	122,759
Percent Change in Total Expenditure	-	-7.1	75.4	-38.5	8.2
Per Capita Expenditure	2.0	1.9	3.3	2.0	5.8
Education Services:					
Education	111,216	102,062	177,957	106,785	115,543
Elementary & Secondary	111,216	102,062	177,957	106,785	115,543
Higher Education	0	0	0	0	0
Libraries	0	0	0	0	0
Interest on General Debt	2,014	3,134	6,509	6,628	7,215

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.2-9**

**TOWN OF NIAGARA PUBLIC SECTOR EXPENDITURES (THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Expenditure	7,656	N/A	N/A	6,393	6,271
Percent Change in Total Expenditure	-	N/A	N/A	N/A	-1.9
Per Capita Expenditure	0.9	N/A	N/A	0.7	0.7
Education Services:					
Education	8	N/A	N/A	3	4
Elementary & Secondary	8	N/A	N/A	3	4
Higher Education	0	N/A	N/A	0	0
Libraries	0	N/A	N/A	0	0
Social Services & Income Maintenance:					
Public Welfare	0	N/A	N/A	0	0
Hospitals	0	N/A	N/A	0	0
Health	1	N/A	N/A	19	1
Transportation:					
Highways	702	N/A	N/A	837	751
Air Transportation	0	N/A	N/A	0	0
Parking	0	N/A	N/A	0	0
Other Transportation	0	N/A	N/A	0	0
Public safety:					
Police Protection	328	N/A	N/A	424	409
Fire Protection	278	N/A	N/A	253	277
Correction	0	N/A	N/A	0	0
Protective Inspection & Regulation	88	N/A	N/A	93	92
Environment & Housing:					
Natural Resources	36	N/A	N/A	77	14
Sewerage	3,282	N/A	N/A	1,525	1,434
Solid Waste Management	317	N/A	N/A	326	405
Parks & Recreation	106	N/A	N/A	146	116
Housing & Community Development	0	N/A	N/A	0	0
Governmental Administration:					
Financial Administration	185	N/A	N/A	96	198
Judicial & Legal	169	N/A	N/A	234	226
General Public Buildings	100	N/A	N/A	119	194
Other Government Administration	109	N/A	N/A	237	123
Interest on General Debt	611	N/A	N/A	180	280
Other & Unallocable	699	N/A	N/A	905	996
Utility & Liquor Store Expenditure	636	N/A	N/A	921	749

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.2-10**

**NIAGARA-WHEATFIELD SCHOOL DISTRICT PUBLIC SECTOR EXPENDITURES**  
**(THOUSANDS OF 2002 DOLLARS)**

Description	1997	1998	1999	2000	2001
Total Expenditure	42,883	53,835	52,449	46,295	51,265
Percent Change in Total Expenditure	-	25.5	-2.6	-11.7	10.7
Per Capita Expenditure	1.7	2.2	2.1	1.9	2.1
Education Services:					
Education	42,333	52,833	50,811	44,968	49,729
Elementary & Secondary	42,333	52,833	50,811	44,968	49,729
Higher Education	0	0	0	0	0
Libraries	0	0	0	0	0
Interest on General Debt	549	1,002	1,638	1,326	1,536

Notes: Data from U.S. Census Bureau. Per capita values calculated using year 2000 population data.

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**TABLE 2.3.3-1**  
**COMPETITIVE POSITION OF BUFFALO METROPOLITAN AREA**

<b>Industry</b>	<b>Index Rating (U.S.=100)</b>	<b>Percent Cost Advantage/Disadvantage Relative to U.S.</b>
Manufacturing Average	99.8	0.2
R&D Average	101.5	-1.5
Software Average	100.9	-0.9
Back Office/Call Centers	102.4	-2.4
Overall Result	100.3	-0.3

Notes: Data from KPMG (2004). Comparisons are based on the after-tax cost of start-up and operations over ten years.

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**TABLE 2.3.3-2**  
**CORPORATE TAXES AS A PERCENT OF TOTAL COSTS**

<b>Corporate Tax</b>	<b>Buffalo Region</b>	<b>U.S. Average</b>
Income tax, national	3.03	3.09
Income tax, regional	0.17	0.46
Capital tax, regional	0.01	0.01
Sales tax	0.78	0.73
Property tax	0.41	0.54

Notes: Data from KPMG (2004).

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**TABLE 2.3.3-3**  
**CORPORATE TAXES AS A PERCENT OF TOTAL REVENUES**

Corporate Tax	Buffalo Region	U.S. Average
Income tax, national	2.84	2.90
Income tax, regional	0.16	0.43
Capital tax, regional	0.01	0.01
Sales tax	0.73	0.68
Property tax	0.38	0.51

Notes: Data from KPMG (2004).

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**TABLE 2.3.3-4**  
**UNEMPLOYMENT TAX PER WORKER**

<b>2004 State Unemployment Tax (SUTA)</b>	<b>New York State</b>	<b>U.S. Average</b>
Taxable Wage Base	\$8,500	\$13,171
New Employer Rate	4.1%	2.5%
New Employer Tax per Worker	\$349	\$327
Minimum Rate	1.5%	0.5%
Minimum Tax per Worker	\$128	\$67
Maximum Rate	9.9%	7.2%
Maximum Tax per Worker	\$842	\$944

Notes: Data from U.S. Department of Labor: <http://atlas.doleta.gov/unemploy/statetax2004.asp>. U.S. average does not include states that use industry average rates for new employers. Taxable wage base is defined as the maximum dollar amount of wages that is subject to unemployment taxes.

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**TABLE 2.5.1-1**  
**LAND USE IN THE HOST AND LOCAL COMMUNITIES, 2004 (ACRES)**

<b>Region</b>	<b>Agricultural</b>	<b>Commercial</b>	<b>Community Service</b>	<b>Industrial</b>	<b>Public Parks</b>	<b>Public Service</b>	<b>Recreation</b>	<b>Residential</b>	<b>Unknown</b>	<b>Vacant Land</b>
<i>Local Communities</i>										
Erie County	98,287	22,699	28,221	10,557	20,447	11,346	16,343	245,175	47,684	125,846
Buffalo City	0	3,386	1,810	1,463	1,223	500	794	7,287	1,930	2,656
<i>Host Communities</i>										
Niagara County	111,403	7,559	12,906	5,578	6,372	10,941	5,838	103,040	5,319	54,867
Lewiston Town	6,279	195	1,148	45	556	3,981	1,101	6,617	693	3,703
Lewiston Village	0	55	22	0	0	2	178	241	16	28
Lewiston-Porter SD	10,131	333	1,618	1,015	969	2,906	1,711	7,903	849	6,230
Niagara Falls City / SD	0	834	568	672	451	254	396	2,254	878	1,189
Niagara Town	56	744	650	343	36	1,556	86	916	4	1,196
Niagara-Wheatfield SD	6,618	1,450	1,397	613	277	3,182	189	6,759	407	4,545
<i>Preference Customers</i>										
Akron Village	60	173	39	45	157	35	3	349	57	199
Arcade Village	122	111	57	81	0	20	34	330	207	301
Jamestown	81	386	530	199	436	100	30	1,738	232	1,023

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**TABLE 2.5.1-1 (CONT.)**  
**LAND USE IN THE HOST AND LOCAL COMMUNITIES, 2004 (IN ACRES)**

<b>Region</b>	<b>Total Acreage</b>	
	<b>Including Niagara River</b>	<b>Excluding Niagara River</b>
<i>Local Communities</i>		
Erie County	675,395	669,873
Buffalo City	27,057	26,458
<i>Host Communities</i>		
Niagara County	340,452	337,047
Lewiston Town	25,654	25,203
Lewiston Village	762	663
Lewiston-Porter SD	35,953	34,988
Niagara Falls City / SD	10,796	9,033
Niagara Town	5,973	5,973
Niagara-Wheatfield SD	27,147	26,697
<i>Preference Customers</i>		
Akron Village	1,227	1,227
Arcade Village	1,262	1,262
Jamestown	4,754	4,754

Notes: Data provided by URS. Totals may not sum to full land area because some land (e.g., some roads and water features) is unclassified. Note that “Community Service” land can include community centers, churches, etc., while “Public Services” land includes utilities right of way, transportation corridors, sewer plants, etc. “Public Parks” land would include public golf courses and fishing areas, while “Recreation” land would include marinas and private golf courses.

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**TABLE 2.5.1-2**  
**PROPORTION OF TOTAL LAND USE, 2004 (PERCENT)**

Region	Agricultural	Commercial	Community Service	Industrial	Public Parks	Public Service	Recreation	Residential	Unknown	Vacant Land
<i>Local Communities</i>										
Erie County	14.7	3.4	4.2	1.6	3.1	1.7	2.4	36.6	7.1	18.8
Buffalo City	0.0	12.8	6.8	5.5	4.6	1.9	3.0	27.5	7.3	10.0
<i>Host Communities</i>										
Niagara County	33.1	2.2	3.8	1.7	1.9	3.2	1.7	30.6	1.6	16.3
Lewiston Town	24.9	0.8	4.6	0.2	2.2	15.8	4.4	26.3	2.7	14.7
Lewiston Village	0.0	8.2	3.4	0.0	0.0	0.3	26.9	36.4	2.4	4.2
Lewiston-Porter SD	29.0	1.0	4.6	2.9	2.8	8.3	4.9	22.6	2.4	17.8
Niagara Falls City / SD	0.0	9.2	6.3	7.4	5.0	2.8	4.4	25.0	9.7	13.2
Niagara Town	0.9	12.5	10.9	5.7	0.6	26.1	1.4	15.3	0.1	20.0
Niagara-Wheatfield SD	24.8	5.4	5.2	2.3	1.0	11.9	0.7	25.3	1.5	17.0
<i>Preference Customers</i>										
Akron Village	4.9	14.1	3.1	3.6	12.8	2.9	0.3	28.4	4.7	16.2
Arcade Village	9.7	8.8	4.5	6.4	0.0	1.5	2.7	26.2	16.4	23.8
Jamestown	1.7	8.1	11.1	4.2	9.2	2.1	0.6	36.6	4.9	21.5

Notes: Data from URS. Totals may not sum to 100 because some land (e.g., some roads and water features) is unclassified.

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**TABLE 2.5.3-1**  
**HOUSING UNITS, 1950-2000**

Place	1950	1960	1970	1980	1990	2000
United States	45,983,398	58,326,357	68,679,030	88,411,263	102,263,678	115,904,641
New York State	4,633,806	5,695,880	6,298,663	6,867,638	7,226,891	7,679,307
Western NY	435,846	540,865	579,252	642,118	668,777	699,304
<i>Local Communities</i>						
Erie County	261,157	331,941	360,893	389,039	402,131	415,868
Buffalo City	166,743	177,224	166,142	156,470	151,971	145,574
<i>Host Communities</i>						
Niagara County	56,266	74,824	74,695	85,209	90,385	95,715
Lewiston Town	N/A	4,213	4,204	4,948	5,390	6,147
Lewiston Village	496	981	1,032	1,292	1,337	1,351
Lewiston-Porter SD	N/A	5,926	5,913	6,737	7,449	8,236
Niagara Falls City/SD	26,202	32,214	28,915	29,504	28,635	27,836
Niagara Town	N/A	2,081	2,273	3,488	3,960	3,880
Niagara-Wheatfield SD	N/A	4,833	5,658	7,329	8,837	10,192
<i>Preference Customers</i>						
Akron Village	769	942	882	1,170	1,232	1,374
Arcade Village	592	662	691	825	817	873
Jamestown	14,562	15,494	15,172	15,484	15,461	15,027

Notes: Data from U.S. Census Bureau..

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**TABLE 2.5.3-2**  
**RESIDENTIAL VACANCY RATE (PERCENT), 1950-2000**

<b>Place</b>	<b>1950</b>	<b>1960</b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
United States	1.6	9.1	7.6	9.1	10.1	9.0
New York State	1.2	7.9	6.1	7.7	8.1	8.1
Western NY	0.9	6.9	6.1	8.1	8.4	10.4
<i>Local Communities</i>						
Erie County	0.8	4.7	4.0	6.1	6.3	8.4
Buffalo City	0.5	4.6	4.9	9.9	10.2	15.7
<i>Host Communities</i>						
Niagara County	0.9	6.3	3.8	5.8	6.2	8.2
Lewiston Town	N/A	5.6	2.1	2.7	3.1	4.3
Lewiston Village	3.0	6.8	3.2	2.8	3.9	6.1
Lewiston-Porter SD	N/A	9.4	2.8	3.1	4.8	5.8
Niagara Falls City/SD	0.8	4.3	3.0	7.6	9.3	13.4
Niagara Town	N/A	8.6	3.8	4.4	4.1	7.0
Niagara-Wheatfield SD	N/A	6.3	2.4	3.6	3.9	5.3
<i>Preference Customers</i>						
Akron Village	2.2	5.2	2.0	4.2	3.8	4.1
Arcade Village	3.0	6.6	6.5	4.4	3.9	6.2
Jamestown	0.8	5.7	6.1	8.3	7.7	9.8

Notes: Data from U.S. Census Bureau.

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**TABLE 2.5.3-3**  
**TENURE (PERCENT OF OCCUPIED HOUSING THAT IS OWNER OCCUPIED), 1950-2000**

<b>Place</b>	<b>1950</b>	<b>1960</b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
United States	55.0	61.9	62.9	64.4	64.2	66.2
New York State	37.9	44.8	47.3	48.6	52.2	53.0
Western NY	57.5	59.4	63.4	60.6	60.8	67.8
<i>Local Communities</i>						
Erie County	52.5	59.8	64.1	62.6	63.7	65.3
Buffalo City	43.6	44.3	44.0	44.5	43.2	43.5
<i>Host Communities</i>						
Niagara County	60.0	66.1	72.6	68.8	68.1	69.9
Lewiston Town	N/A	84.3	85.8	82.8	83.4	79.6
Lewiston Village	68.6	75.2	73.3	56.8	61.6	62.4
Lewiston-Porter SD	N/A	77.0	79.7	80.5	80.8	78.9
Niagara Falls City/SD	49.8	54.9	59.1	57.5	56.0	42.3
Niagara Town	N/A	71.8	73.0	72.6	73.6	75.0
Niagara-Wheatfield SD	N/A	80.6	80.9	80.0	77.6	78.6
<i>Preference Customers</i>						
Akron Village	70.2	73.8	74.1	51.1	64.4	64.4
Arcade Village	57.7	66.2	62.8	62.4	61.7	63.4
Jamestown	52.9	58.3	58.3	55.3	51.9	51.3

Notes: Data from U.S. Census Bureau.

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**TABLE 2.5.3-4**  
**REAL MEDIAN VALUE, OWNER-OCCUPIED HOUSING, 1950-2000 (2002 DOLLARS)**

Place	1950	1960	1970	1980	1990	2000
United States	54,896	72,325	78,822	103,050	108,050	124,948
New York State	75,782	92,989	104,323	99,556	179,487	155,349
<i>Local Communities</i>						
Erie County	73,565	91,166	85,777	87,548	101,306	94,860
Buffalo City	65,809	71,109	59,348	48,687	64,142	61,952
<i>Host Communities</i>						
Niagara County	67,802	85,088	73,258	82,964	85,614	86,293
Lewiston Town	N/A	115,476	N/A	111,346	114,382	104,158
Lewiston Village	98,430	107,575	88,559	98,246	98,553	91,935
Lewiston-Porter SD	N/A	N/A	N/A	N/A	N/A	N/A
Niagara Falls City/SD	77,663	91,166	68,158	67,899	61,802	63,519
Niagara Town	N/A	74,148	74,649	86,457	85,752	85,458
Niagara-Wheatfield SD	N/A	N/A	N/A	N/A	N/A	N/A
<i>Preference Customers</i>						
Akron Village	52,776	75,971	76,968	82,090	90,156	96,845
Arcade Village	52,783	N/A	68,158	76,196	75,429	81,488
Jamestown	55,493	65,639	59,812	60,039	58,361	54,743

Notes: Data from U.S. Census Bureau. Housing value figures are presented in terms of 2002 dollars. The CPI-U was used to adjust the figures.

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**TABLE 2.5.3-5  
REAL MEDIAN RENT, RENTER-OCCUPIED HOUSING, 1950-2000 (2002 DOLLARS)**

Place	1950	1960	1970	1980	1990	2000
United States	317	432	413	432	615	629
New York State	361	450	440	458	669	702
Western NY	N/A	N/A	N/A	N/A	N/A	N/A
<i>Local Communities</i>						
Erie County	336	444	352	338	529	539
Buffalo City	329	425	325	293	485	493
<i>Host Communities</i>						
Niagara County	355	492	380	356	498	500
Lewiston Town	N/A	462	N/A	522	659	637
Lewiston Village	271	328	538	568	655	610
Lewiston-Porter SD	N/A	N/A	N/A	N/A	N/A	N/A
Niagara Falls City/SD	358	492	371	334	454	455
Niagara Town	N/A	468	450	463	592	652
Niagara-Wheatfield SD	N/A	N/A	N/A	N/A	N/A	N/A
<i>Preference Customers</i>						
Akron Village	206	365	352	349	438	457
Arcade Village	230	N/A	334	306	413	407
Jamestown	251	359	292	308	428	425

Notes: Data from U.S. Census Bureau. Rent figures are presented in terms of 2002 dollars. The CPI-U was used to adjust the figures.

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**TABLE 2.5.3-6  
RESIDENTIAL REAL ESTATE TRANSACTIONS IN TOWN OF LEWISTON, 2003**

Description	2003 Median Sales Price/Home	2003 Median Sales Price/Acre	Arm's-Length Transactions <sup>27</sup>	Acres Sold
One-Family Residential	\$110,000	\$302,952	176	109.69
Two-Family Residential	\$103,000	\$395,365	9	3.37
Residential Vacant Land	N/A	\$48,689	26	36.90

Notes: Data from Niagara County Real Property Tax Services Department.

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<sup>27</sup> Arm's-length transactions exclude sales to relatives, transfers to estates, and donations to charity.

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**TABLE 2.5.4-1**  
**BUFFALO-NIAGARA MSA COMMERCIAL RENTAL AND VACANCY RATES, 2003**

Category	Average Square Footage Rent		Average Vacancy Rate (Percent)	
	United States	Buffalo-Niagara MSA	United States	Buffalo-Niagara MSA
Downtown Office (Class A)	31.95	18.75	13.0	11.0
Suburban Office (Class A)	22.10	23.00	17.4	8.0
Warehouse	4.01	3.50	10.7	7.0
Manufacturing	4.46	3.00	9.9	7.0
R&D/Flex	9.44	6.00	13.3	8.0
Downtown Retail	39.24	8.00	12.3	N/A
Service Centers	17.43	11.50	10.2	10.0
Power Centers	20.42	22.00	7.6	10.0
Regional Malls	40.12	N/A	7.68	9.0

Notes: Data from NAI 2004 Planning Guide (see [http://www.naiweb.com/market\\_research/pguide2004/USmarkets.aspx](http://www.naiweb.com/market_research/pguide2004/USmarkets.aspx)). Shopping center types are based on the International Council of Shopping Centers (ICSC) classification system (<http://www.icsc.org>). *Neighborhood Centers* – 18,000 to 150,000 SF, focusing on convenience. *Community Centers* – 100,000 to 350,000 SF with convenience plus general merchandise stores. *Power Centers* – 250,000 to 600,000 SF with category-dominant retailers. *Regional Centers* – 400,000 SF and up including general merchandise and fashion retail (usually enclosed malls). *Outlet Centers* – 50,000 to 400,000 SF containing manufacturer outlets.

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**TABLE 2.5.4-2**  
**DEVELOPMENT LAND VALUES, 2003**

Development Land	Low (Price/Acre)	High (Price/Acre)
United States (Median of 131 Regions)		
Office in CBD (*per buildable square foot)	\$ 20*	\$ 41*
Land in Office Parks	\$ 160,000	\$ 350,000
Land in Industrial Parks	\$ 65,000	\$ 150,000
Office/Industrial Land – Non Park	\$ 60,000	\$ 175,000
Retail/Commercial Land	\$ 200,000	\$ 745,260
Residential	\$ 25,000	\$ 127,500
Buffalo-Niagara, MSA		
Office in CBD (*per buildable square foot)	\$ 12*	\$ 20*
Land in Office Parks	\$ 80,000	\$ 125,000
Land in Industrial Parks	\$ 30,000	\$ 100,000
Office/Industrial Land – Non Park	\$ 60,000	\$ 120,000
Retail/Commercial Land	\$ 60,000	\$ 1,100,000
Residential	\$ 20,000	\$ 120,000

Notes: Data from NAI 2004 Planning Guide (see [http://www.naiweb.com/market\\_research/pguide2004/USmarkets.aspx](http://www.naiweb.com/market_research/pguide2004/USmarkets.aspx)).

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**TABLE 2.6.1-1**  
**LENGTH OF STAY AND EXPENDITURES FOR VISITORS**  
**TO BUFFALO-NIAGARA MSA, 2001-2002**

<b>Trip Length</b>	<b>2001</b>	<b>2002</b>
Average Days (for Overnight Visitors)	3.01	3.01
1-3 nights	38 %	40 %
4-7 nights	10 %	11 %
8+ nights	3 %	3 %
Day Trip	49 %	46 %
Average length of day trip (days)	0.75	0.75
<b>Trip Expenditures</b>		
Average per Person/per Day	\$76.70	\$83.50
Transportation	30.6 %	27.9 %
Restaurants/Food	22.8 %	23.9 %
Lodging	22.5 %	20.4 %
Shopping/Retail	17.7 %	16.9 %
Entertainment/Recreation	12.9 %	14.8 %
Other	4.9 %	6.4 %

Notes: Expenditures include both overnight visitors and daytrippers. Data from Top Line Travel Profile Report by D.K Shifflet & Associates ([Shifflet 2003](#)).

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**TABLE 2.6.1-2**  
**PURPOSE OF VISIT AND ACTIVITIES FOR VISITORS**  
**TO BUFFALO-NIAGARA MSA, 2001-2002 (PERCENT)**

<b>Business</b>	<b>2001</b>	<b>2002</b>
Convention	4	4
Seminar/Training	3	1
Other Group Meetings	4	3
Client Services/Consulting	2	1
Inspect/ Audit	1	2
Construction/ repair	0	0
Sales/Purchasing	1	3
Government/ Military	1	0
Other Business	7	9
<b>Leisure</b>		
Sightseeing	24	30
Dining	31	28
Entertainment	26	26
Shopping	22	22
Theme/Amusement Park	5	10
Parks (national/state)	7	9
Night Life	5	7
Concert, Play, Dance	7	6
Visit Historic Sight	6	6
Gamble	4	6
Nature/Culture	1	6

Notes: Values not equal to 100 percent, because many visitors report multiple purposes. Data from Top Line Travel Profile Report by D.K Shifflet & Associates ([Shifflet 2003](#))

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**TABLE 2.6.1-3**  
**DEMOGRAPHICS OF VISITORS TO BUFFALO-NIAGARA MSA, 2002**

<b>Party Composition</b>	<b>2001</b>	<b>2002</b>
Average Persons per Trip	2.07	2.08
1 Adult	43 %	46 %
Couples	23 %	21 %
2 Males or 2 Females	6 %	5 %
3 or More adults	4 %	4 %
Families	24 %	24 %
<b>Occupation</b>		
Manager, Professional	45 %	47 %
Tech, Sales, Admin	18 %	18 %
Service	3 %	6 %
Other Occupation	11 %	7 %
Retired	7 %	9 %
Other/Not Priv. Employed	16 %	12 %
<b>Education</b>		
No College	29 %	26 %
Attend College	20 %	26 %
College Graduate	51 %	49 %

Notes: Data from Top Line Travel Profile Report by D.K Shifflet & Associates ([Shifflet 2003.](#)) These figures include both business and leisure visitors.

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**TABLE 2.6.1-4**  
**ESTIMATED ECONOMIC IMPACT OF THE TOURISM INDUSTRY ON THE BUFFALO-**  
**NIAGARA REGION IN 2004**

Place	Employment	Gross Regional Product (Thousands of 2002 Dollars)	Personal Income (Thousands of 2002 Dollars)	Population
New York State	36,567	1,590,041	1,197,687	52,207
Western NY	36,042	1,448,937	1,191,489	54,338
<i>Local Communities</i>				
Erie County	30,745	1,274,532	983,237	43,888
Buffalo City	7,062	297,464	181,820	10,099
<i>Host Communities</i>				
Niagara County	5,342	181,064	187,232	9,630
Lewiston Town	356	12,082	10,963	611
Lewiston Village	48	1,703	1,026	74
Lewiston-Porter SD	499	17,301	17,544	889
Niagara Falls City / SD	1,209	44,228	36,906	2,142
Niagara Town	232	8,982	7,500	360
Niagara-Wheatfield SD	600	19,677	19,447	1,141

Note: NERA calculations as explained in text.

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**TABLE 2.6.1-5**

**ESTIMATED ECONOMIC IMPACT OF THE TOURISM INDUSTRY ON PUBLIC REVENUES IN THE BUFFALO-NIAGARA REGION (THOUSANDS OF 2002 DOLLARS)**

<b>Place</b>	<b>Total Revenue</b>	<b>Federal Intergovernmental</b>	<b>Local Intergovernmental</b>	<b>Property Taxes</b>	<b>General Sales Taxes</b>	<b>Selective Sales Taxes</b>	<b>Income Taxes</b>	<b>Utility &amp; Liquor Store Revenue</b>	<b>All Other Taxes, Charges, and Revenue</b>
New York State	105,669	-	-	-	15,539	11,630	48,366	8,296	21,838
<i>Local Communities</i>									
Erie County	38,980	328	526	6,859	10,565	177	0	1,548	18,977
Buffalo City	13,716	2,141	3,340	3,548	0	411	0	909	3,367
<i>Host Communities</i>									
Niagara County	6,339	69	438	1,767	1,203	0	0	121	2,741
Lewiston Town	307	0	85	24	0	1	0	22	174
Lewiston Village	43	0	19	9	0	1	0	3	10
Lewiston-Porter SD	381	0	0	332	7	0	0	0	42
Niagara Falls City / SD	2,523	302	420	536	0	157	0	181	928
Niagara Town	697	0	0	516	0	50	0	0	132
Niagara-Wheatfield SD	228	0	75	50	0	2	0	17	85

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**TABLE 2.6.1-6**  
**OCCUPANCY AND ROOM RATES, YEAR-TO-DATE AS OF OCTOBER 2003**

<b>Segment</b>	<b>Occupancy (%)</b>	<b>Average Room Rate (\$)</b>
United States	60.9	83.61
Buffalo-Niagara MSA	58.4	72.51
Niagara Falls, NY	46.8	69.88

Notes: Data from Smith Travel Research Report ([Smith Travel 2003](#)).

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**TABLE 2.6.1-7**  
**NUMBER OF PEOPLE EMPLOYED IN HOTELS, 2000**

<b>Place</b>	<b>Number Employed in Hotels</b>	<b>Proportion of Total Employed (%)</b>
United States	2,113,400	1.26
New York State	95,764	0.91
Western New York	7,616	0.89
Erie County	3,944	0.71
Buffalo City	1,009	0.60
Niagara County	1,144	1.20
Niagara Falls City / SD	924	3.80

Notes: Data from Regional Economic Models, Inc.

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**TABLE 2.6.3  
MAJOR DEVELOPMENTS IN NIAGARA FALLS, CANADA COMPLETED BETWEEN 2000  
AND 2002**

Project	Cost in U.S. Dollars
Skyline Foxhead Hotel Expansion	28,000,000
Marriott Courtyards Hotel	17,000,000
Peace Bridge Processing Centre	30,000,000
Hilton Hotel	28,000,000
Sheraton Fallsview Hotel Expansion	14,000,000
NF Bridge Commission Renovation	114,000,000
Marriott Fallsview Hotel – Phase II	27,000,000
Pen Centre Redevelopment	9,000,000
Sheraton Conference & Entertainment Centre	8,000,000+
Gateway Niagara Welcome Centre	5,000,000

Notes: Data from *2003 Advantage Niagara, Tourism Investment Update* (<http://www.niagaracanada.com/news/reports.cfm>). Converted from Canadian to U.S. dollars using exchange rate of 0.7578.

**NIAGARA POWER PROJECT (FERC NO. 2216)  
THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA  
POWER PROJECT**

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**TABLE 2.6.3-2  
MAJOR DEVELOPMENTS IN NIAGARA FALLS, CANADA UNDER CONSTRUCTION AS OF  
2003**

Project	Cost in U.S. Dollars
Niagara Falls Casino/Gateway Project	606,000,000
Marineland Aquarium Complex	121,000,000
HOCO-Cifton Hill Entertainment Centre	8,000,000 +

Notes: Data from *2003 Advantage Niagara, Tourism Investment Update* (see: <http://www.niagaracanada.com/news/reports.cfm>). Converted from Canadian to U.S. dollars using exchange rate of 0.7578.

**NIAGARA POWER PROJECT (FERC NO. 2216)  
THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA  
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**TABLE 2.6.3-3  
MAJOR DEVELOPMENTS IN NIAGARA FALLS, CANADA UNDER CONSIDERATION AS  
OF 2003**

Project	Cost in U.S. Dollars (Millions)
New Highway Mid-Peninsula Corridor	758
Peace Bridge Redevelopment	76
People Mover System	152
Heartland Forest Resort	117
Grand Niagara Resort	114
Year Round Lake Ferry Service to Toronto	117
Great Lakes Resort	23
Remainder of Niagara Parks Commission Capital Expansion Plans	38

Notes: Data from 2003 Advantage Niagara, Tourism Investment Update (see <http://www.niagaracanada.com/news/reports.cfm>). Converted from Canadian to U.S. dollars using exchange rate of 0.7578.

**NIAGARA POWER PROJECT (FERC NO. 2216)  
THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA  
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**TABLE 2.6.3-4  
NUMBER OF VISITORS TO THE NIAGARA REGION (CANADA), 2002**

Visitors Origin	Visitors (million)
Canada	4.1
United States	9.4
Other International	0.7
Total	14.2

Notes: Data from the *Economic Impact of Tourism Development in the Niagara Region for 2001, 2002 and Projections to 2007* citing Canadian Tourism Research Institute (see <http://www.niagaracanada.com/news/reports.cfm>).

**NIAGARA POWER PROJECT (FERC NO. 2216)  
THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA  
POWER PROJECT**

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**TABLE 2.6.3-5  
VISITORS TO THE NIAGARA REGION (CANADA) BY LENGTHS OF STAY, 2002**

Length of Stay	Millions of Person Trips
Same Day	10.3
Overnight	3.9
Total	14.2

Notes: Data from the *Economic Impact of Tourism Development in the Niagara Region for 2001, 2002 and Projections to 2007* citing Canadian Tourism Research Institute (<http://www.niagaracanada.com/news/reports.cfm>).

**NIAGARA POWER PROJECT (FERC NO. 2216)  
THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA  
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**TABLE 2.6.3-6  
TOTAL TOURIST SPENDING IN THE NIAGARA REGION (CANADA), 2002**

Expenditure Category	Total Spending (in U.S. Dollars)
Transportation	\$122,000,000
Accommodation	\$328,000,000
Food and Beverage	\$260,000,000
Entertainment and Recreation	\$510,000,000
Retail and Miscellaneous	\$211,000,000
Total	\$1,431,000,000

Notes: Data from the *Economic Impact of Tourism Development in the Niagara Region for 2001, 2002 and Projections to 2007* citing Canadian Tourism Research Institute (<http://www.niagaracanada.com/news/reports.cfm>). Converted from Canadian to U.S. dollars using exchange rate of 0.7578.

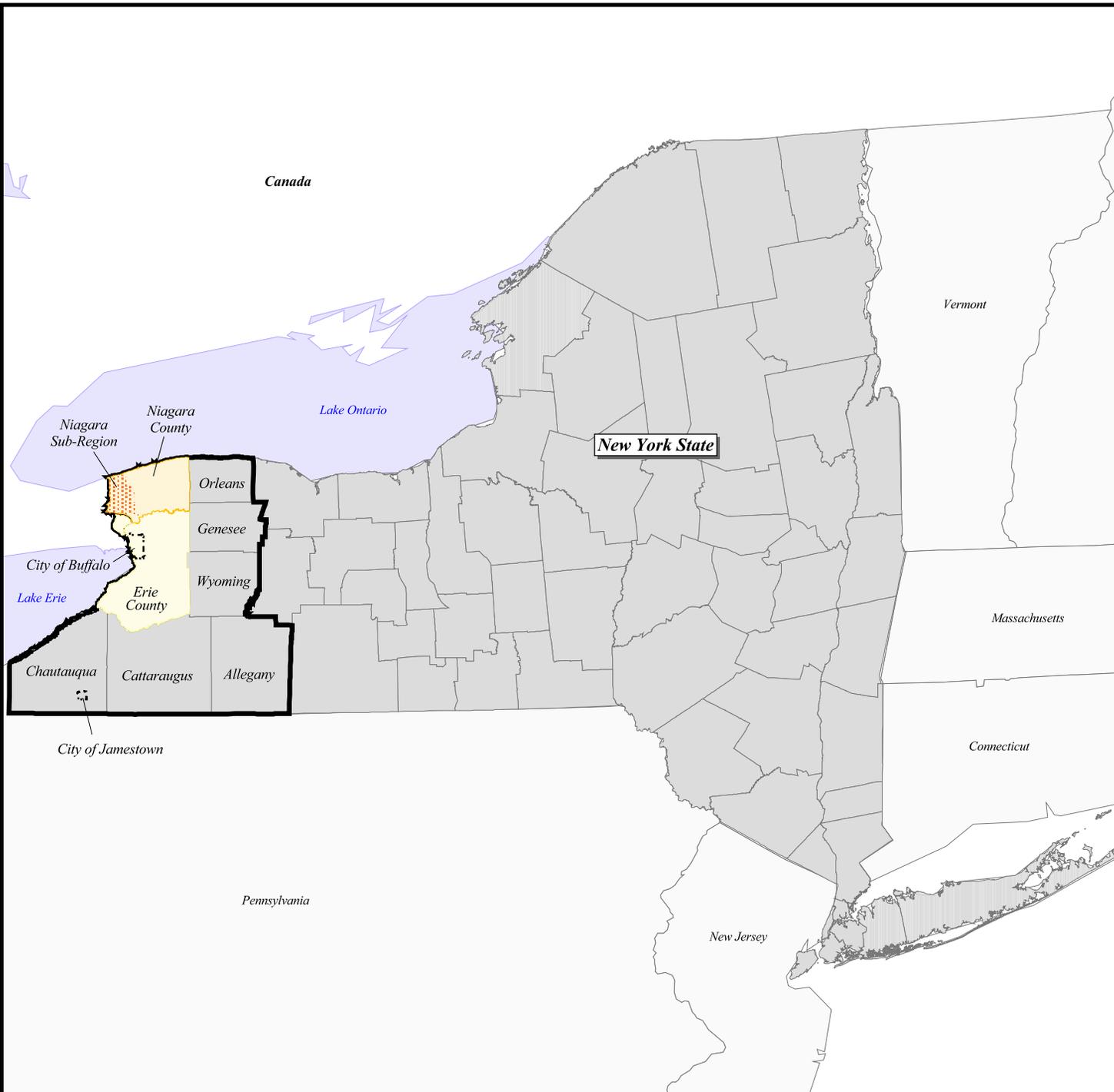


NIAGARA POWER PROJECT (FERC NO. 2216)  
 SOCIOECONOMIC EFFECTS OF THE  
 NIAGARA POWER PROJECT

New York State

LEGEND

-  Municipal Boundary
-  Western New York
-  County Boundary



0 286300 572600 Feet



1" = 286,300'

FIGURE 2.0-1





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**Volume 2**

**Section: The Past, Present, and Future Socioeconomic Effects of the Niagara Power Project**

**NIAGARA POWER PROJECT (FERC NO. 2216)  
THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA  
POWER PROJECT**

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**FIGURE 2.0-2  
HOST COMMUNITIES**

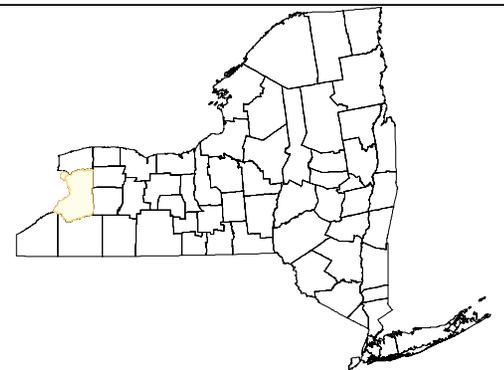
[NIP – General Location Maps]

NIAGARA POWER PROJECT (FERC NO. 2216)  
 SOCIOECONOMIC EFFECTS OF THE  
 NIAGARA POWER PROJECT

Erie County

LEGEND

-  Municipal Boundary
-  County Boundary



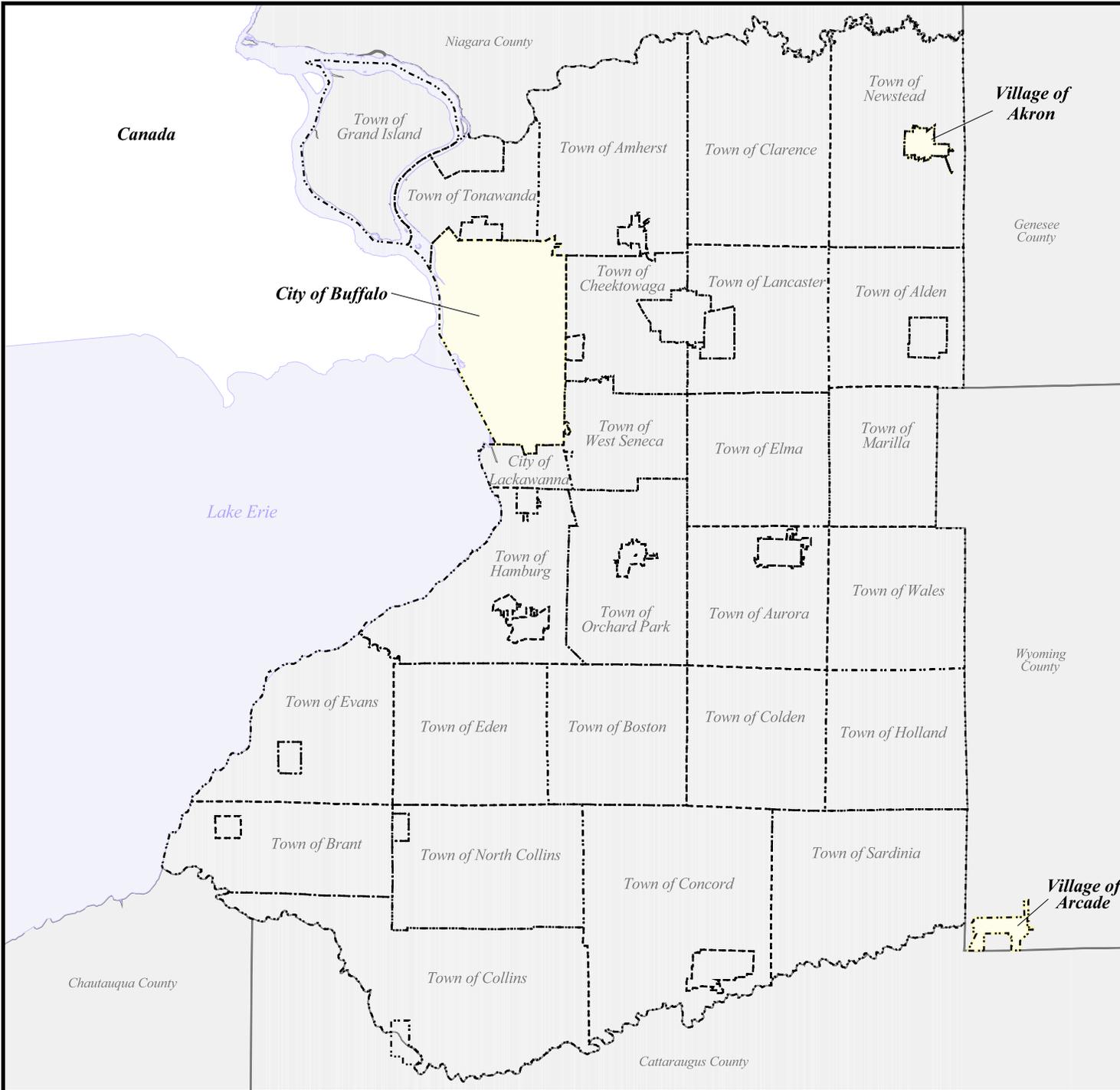
0 33000 66000 Feet



1" = 33,000'



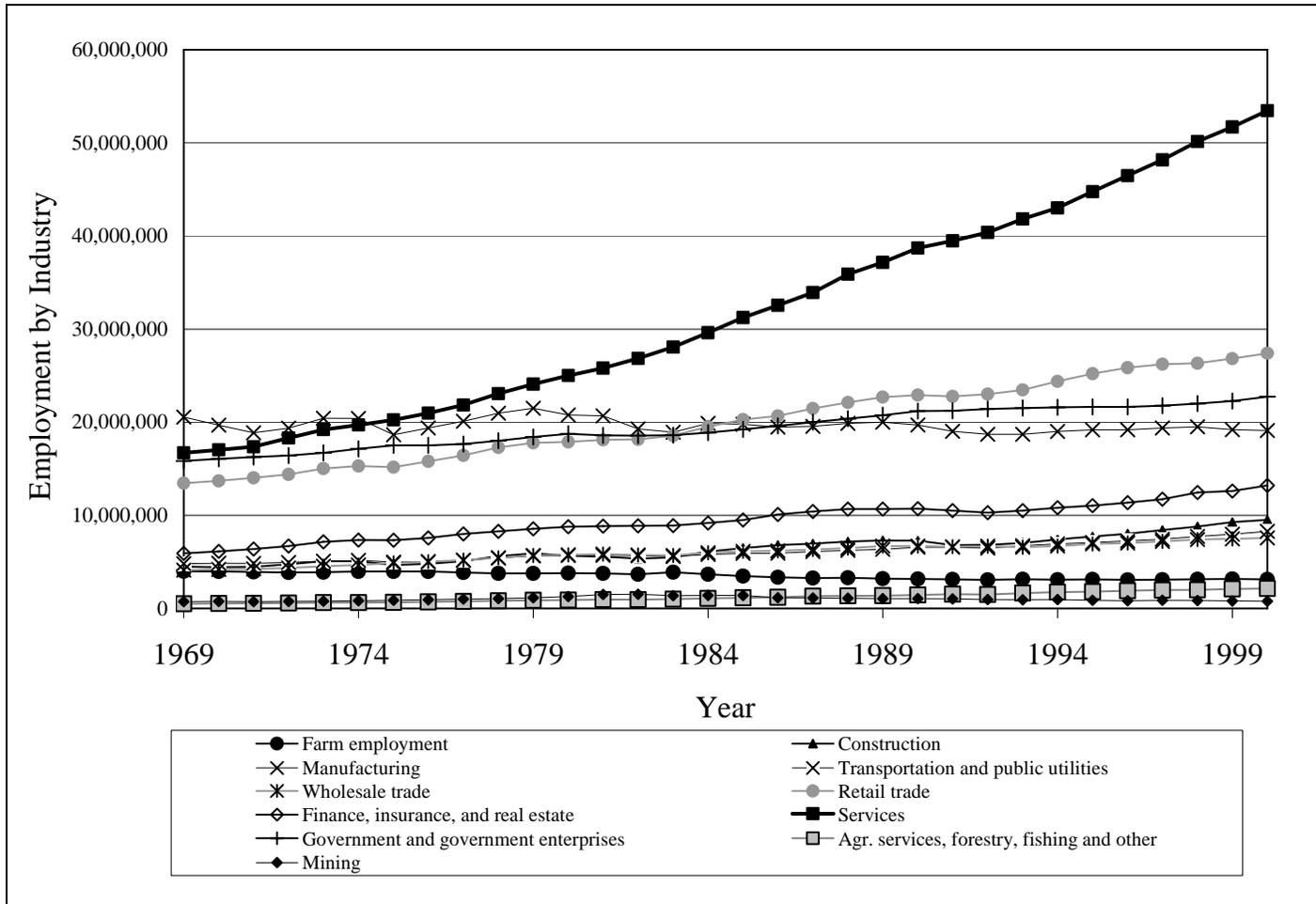
FIGURE 2.0-3





**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

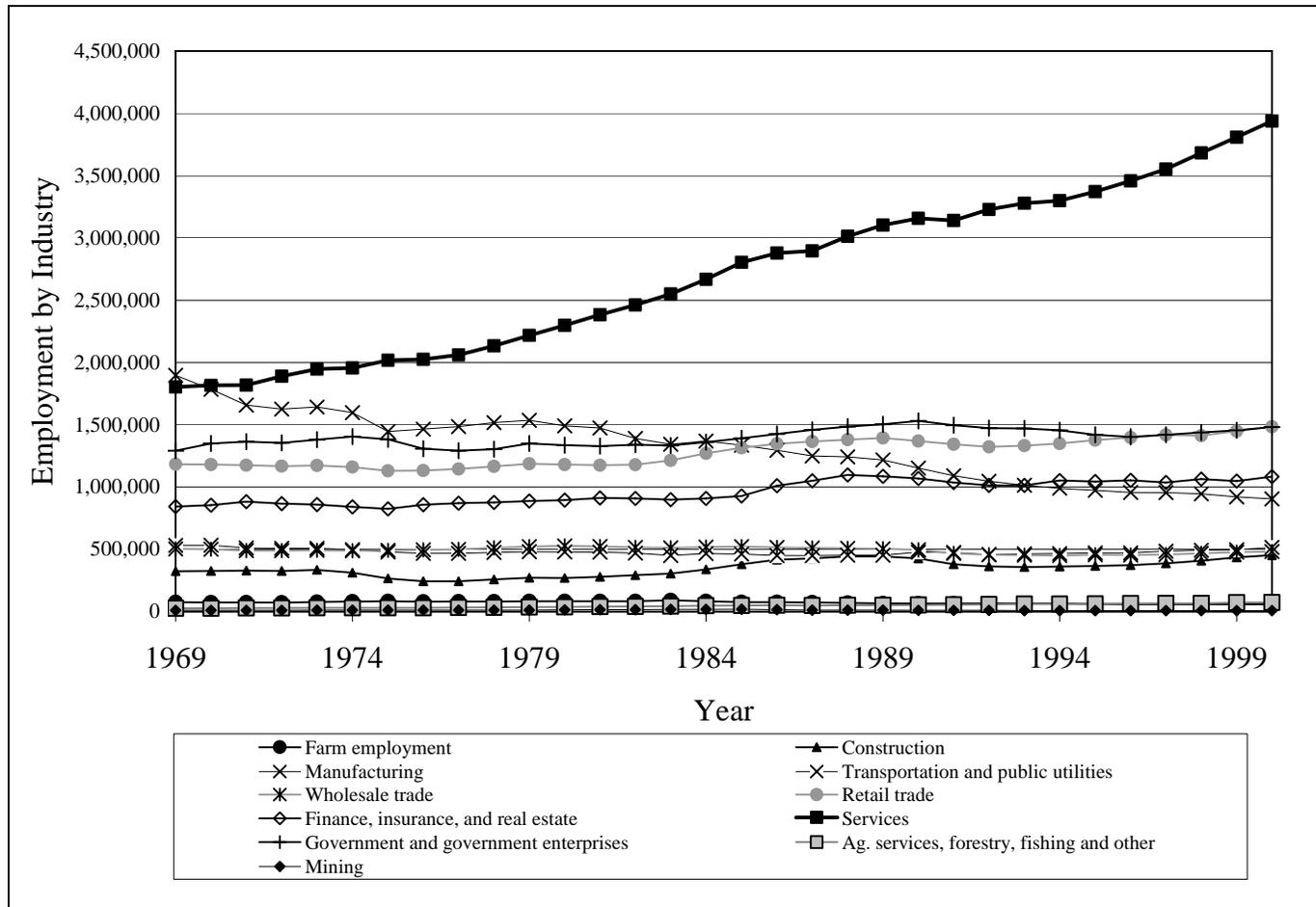
**FIGURE 2.2.2.2-1**  
**CHANGE IN U.S. EMPLOYMENT BY INDUSTRY FROM 1969-2000**



Notes: Data from Bureau of Economic Analysis (see <http://www.bea.doc.gov/bea/regional/reis/default.cfm>)

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**FIGURE 2.2.2.2-2**  
**CHANGE IN NEW YORK STATE EMPLOYMENT BY INDUSTRY FROM 1969-2000**

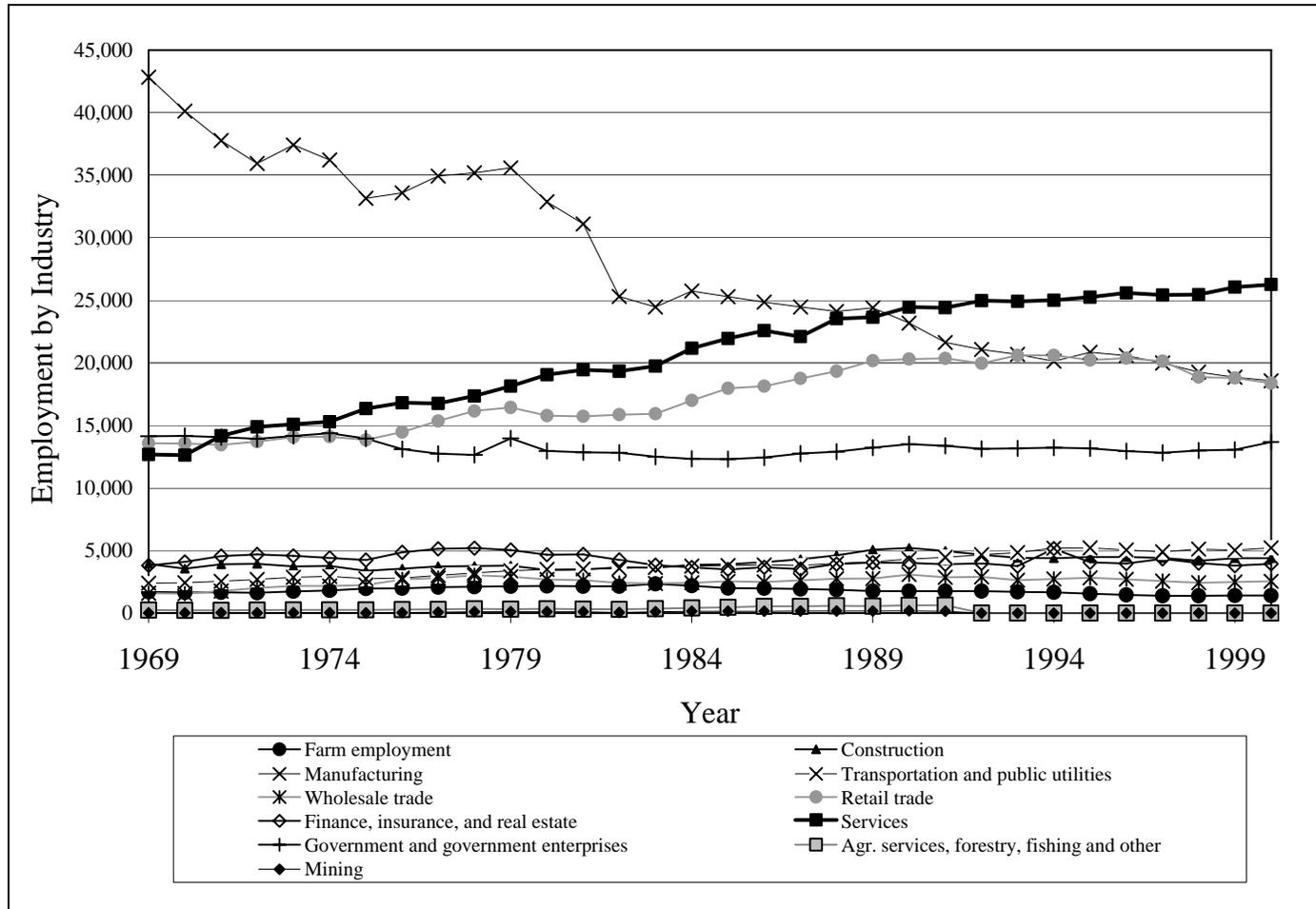


Notes: Data from Bureau of Economic Analysis (see <http://www.bea.doc.gov/bea/regional/reis/default.cfm>)

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**FIGURE 2.2.2.2-3**

**CHANGE IN WESTERN NEW YORK EMPLOYMENT BY INDUSTRY FROM 1969-2000**

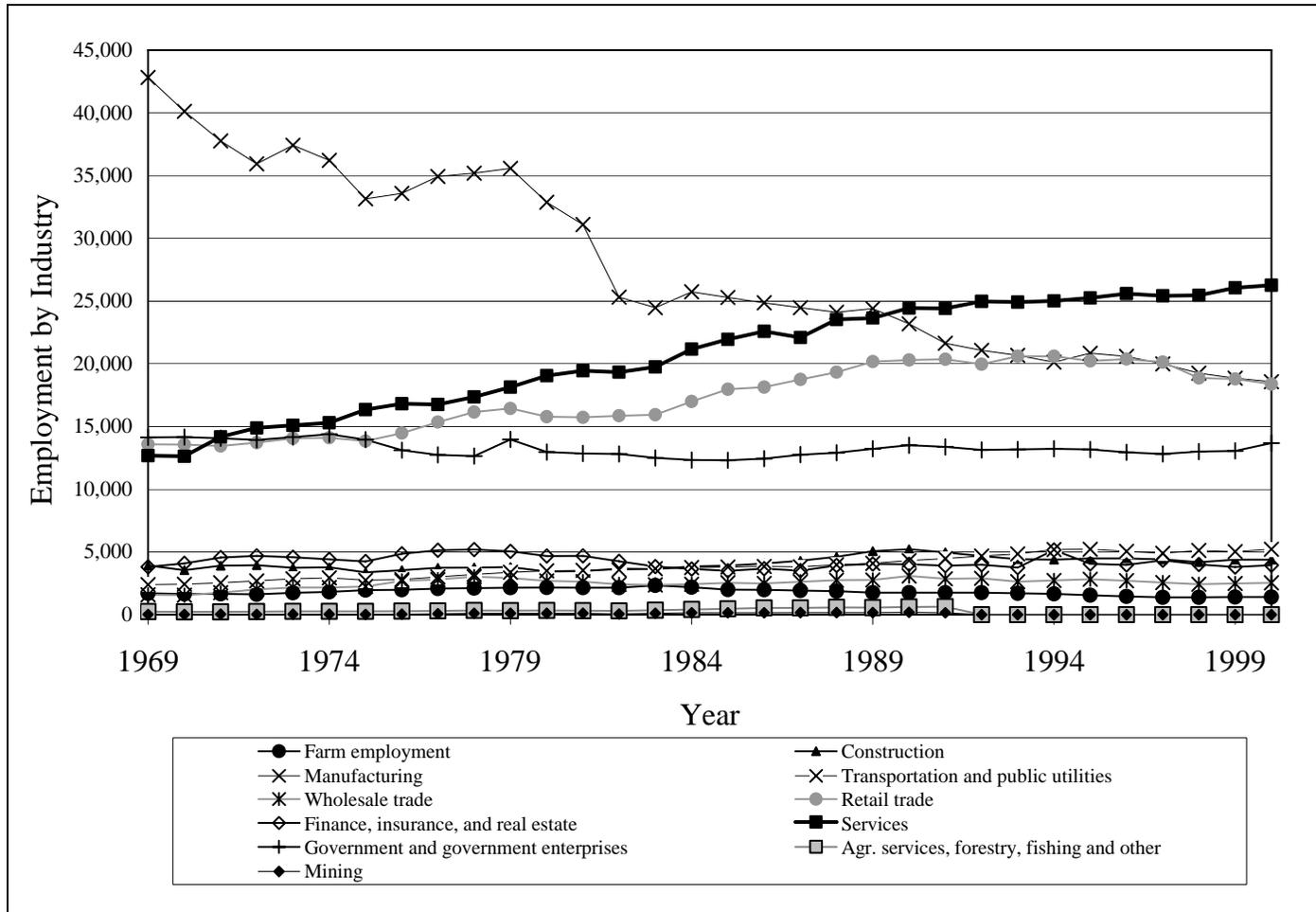


Notes: Data from Bureau of Economic Analysis (see <http://www.bea.doc.gov/bea/regional/reis/default.cfm>)

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**FIGURE 2.2.2.2-4**

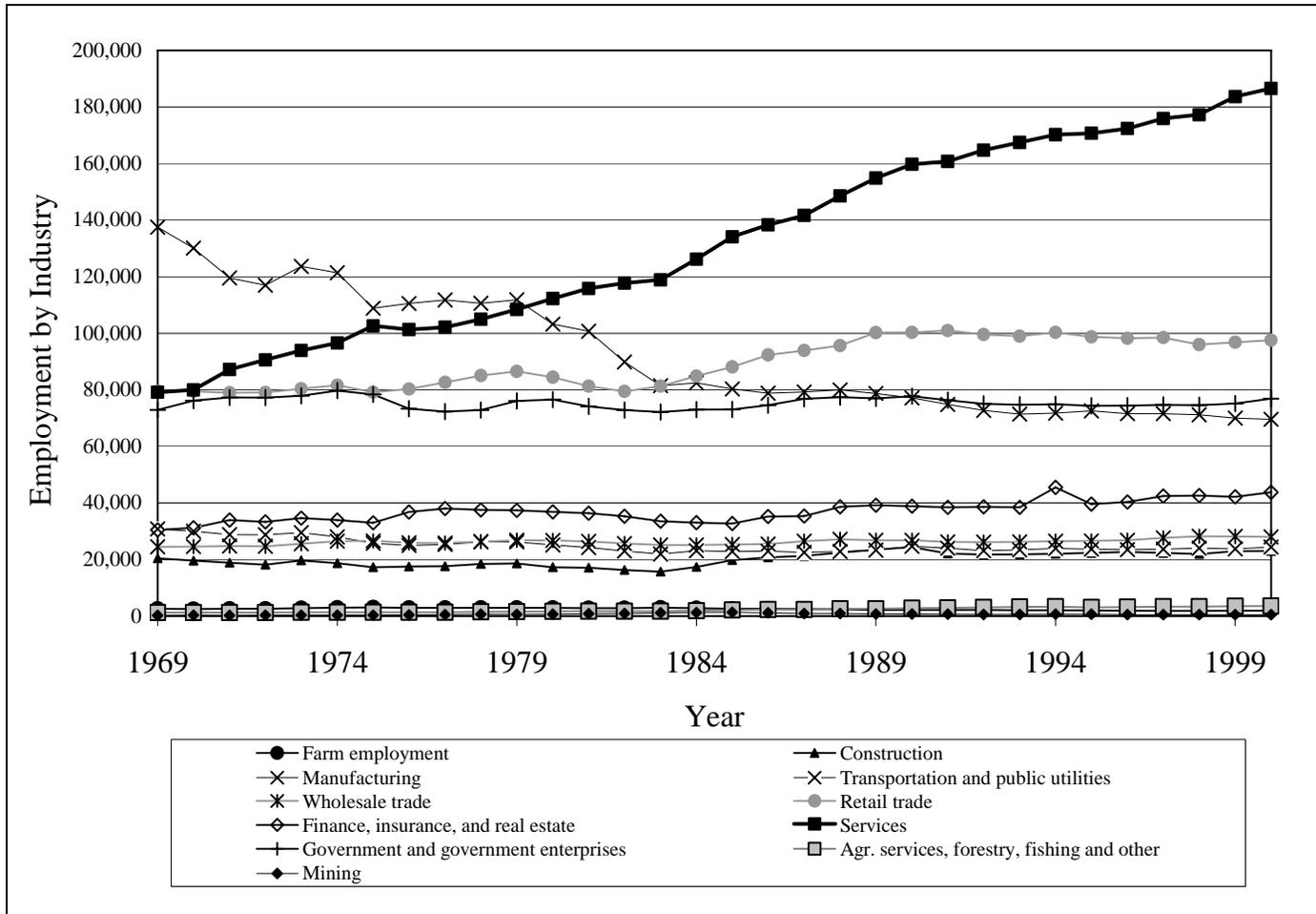
**CHANGE IN NIAGARA COUNTY EMPLOYMENT BY INDUSTRY FROM 1969-2000**



Notes: Data from Bureau of Economic Analysis (see <http://www.bea.doc.gov/bea/regional/reis/default.cfm>)

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**FIGURE 2.2.2.2-5**  
**CHANGE IN ERIE COUNTY EMPLOYMENT BY INDUSTRY FROM 1969-2000**

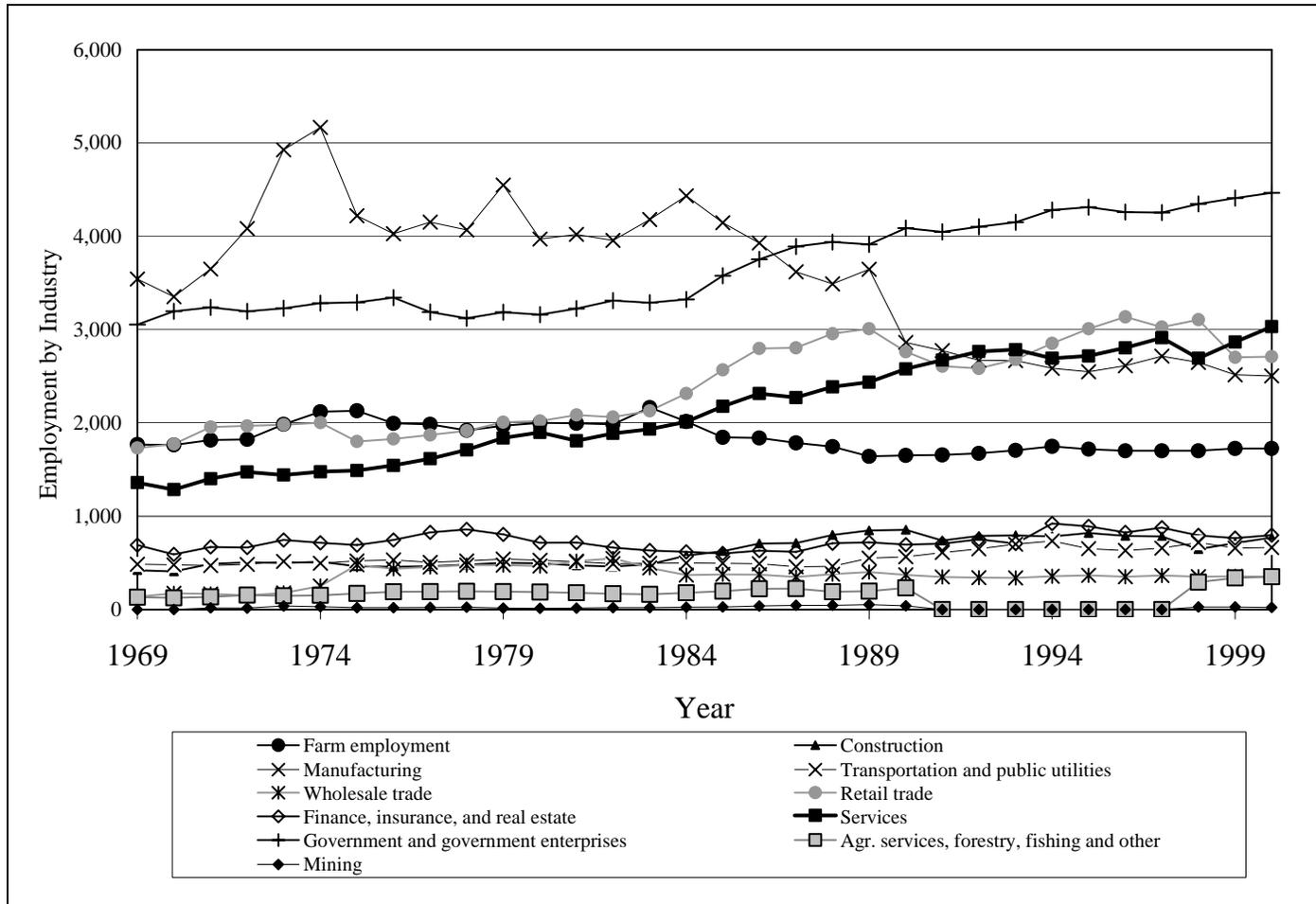


Notes: Data from Bureau of Economic Analysis (see <http://www.bea.doc.gov/bea/regional/reis/default.cfm>)

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**FIGURE 2.2.2.2-6**

**CHANGE IN WYOMING COUNTY EMPLOYMENT BY INDUSTRY FROM 1969-2000**

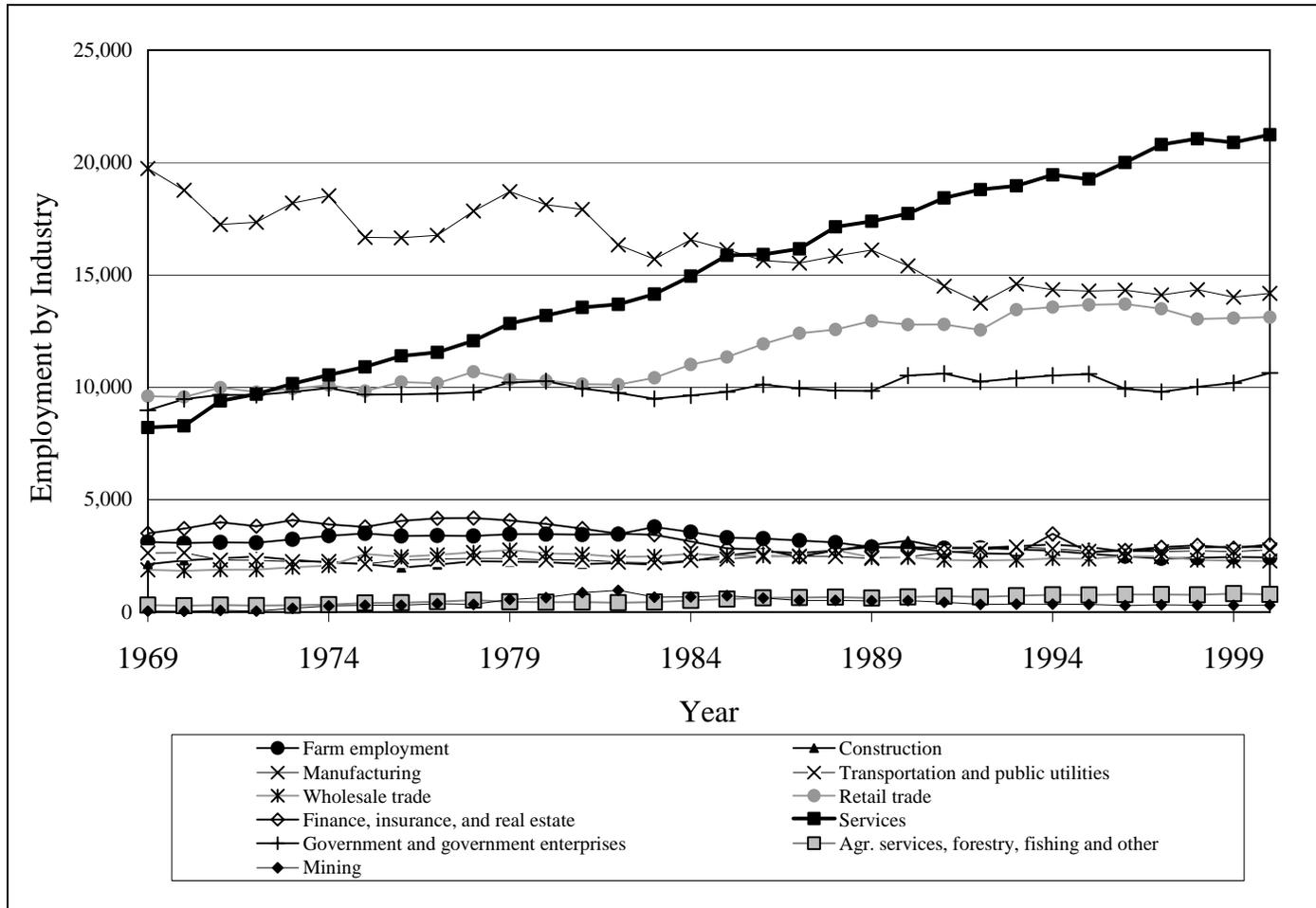


Notes: Data from Bureau of Economic Analysis (see <http://www.bea.doc.gov/bea/regional/reis/default.cfm>)

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**FIGURE 2.2.2.2-7**

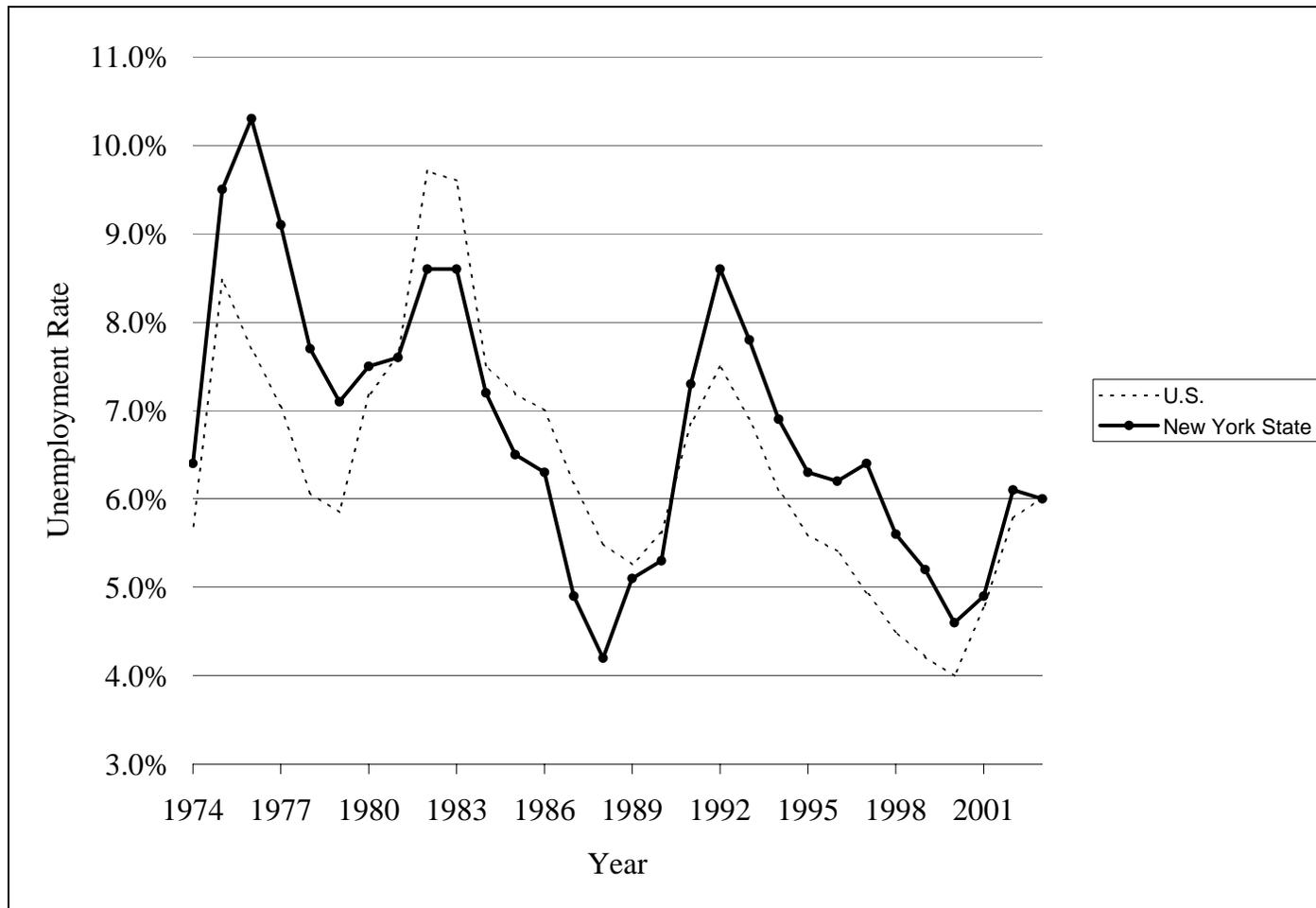
**CHANGE IN CHAUTAUQUA COUNTY EMPLOYMENT BY INDUSTRY FROM 1969-2000**



Notes: Data from Bureau of Economic Analysis (see <http://www.bea.doc.gov/bea/regional/reis/default.cfm>)

NIAGARA POWER PROJECT (FERC NO. 2216)  
THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT

FIGURE 2.2.2.3-1  
NEW YORK STATE UNEMPLOYMENT RATE

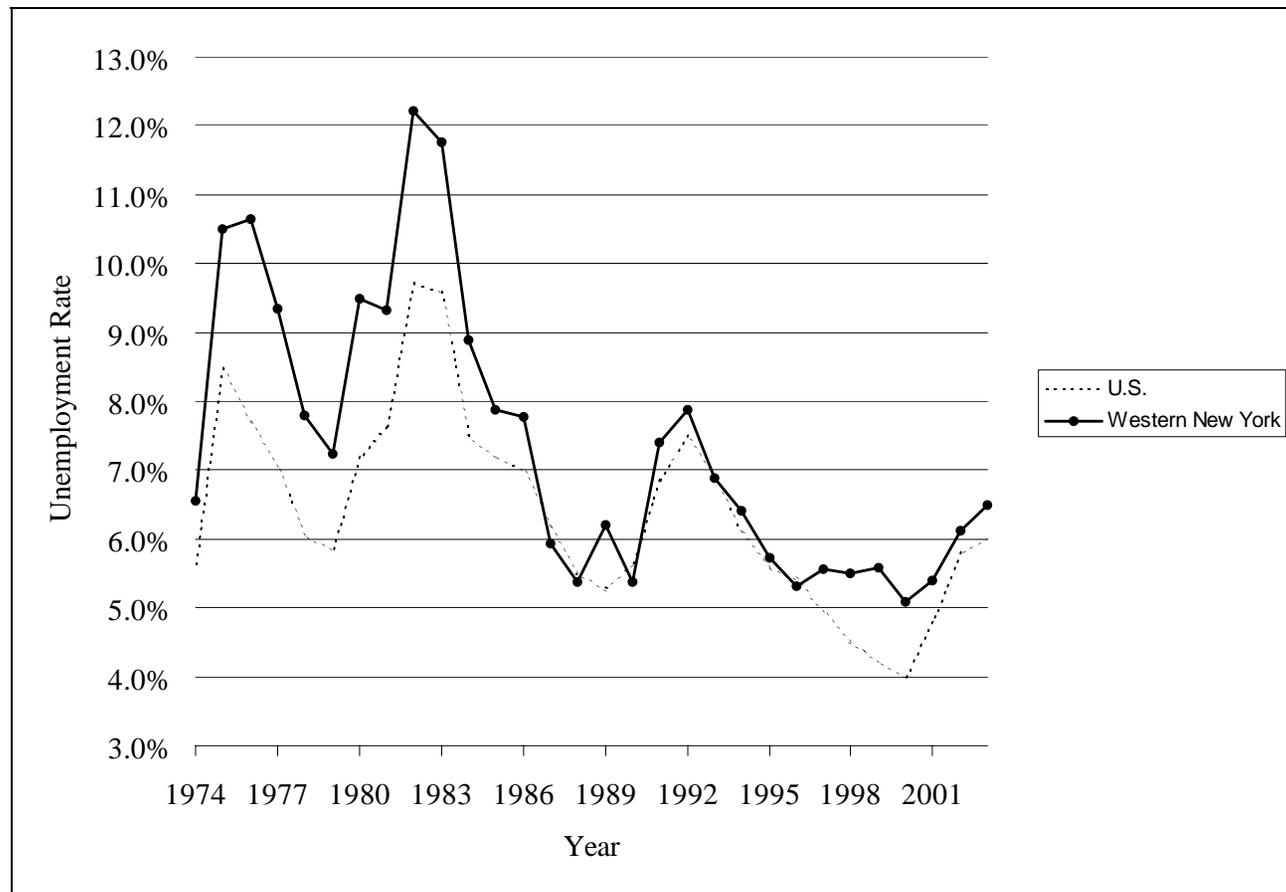


Notes: Data from the Bureau of Labor Statistics (see <http://www.bls.gov/>).

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

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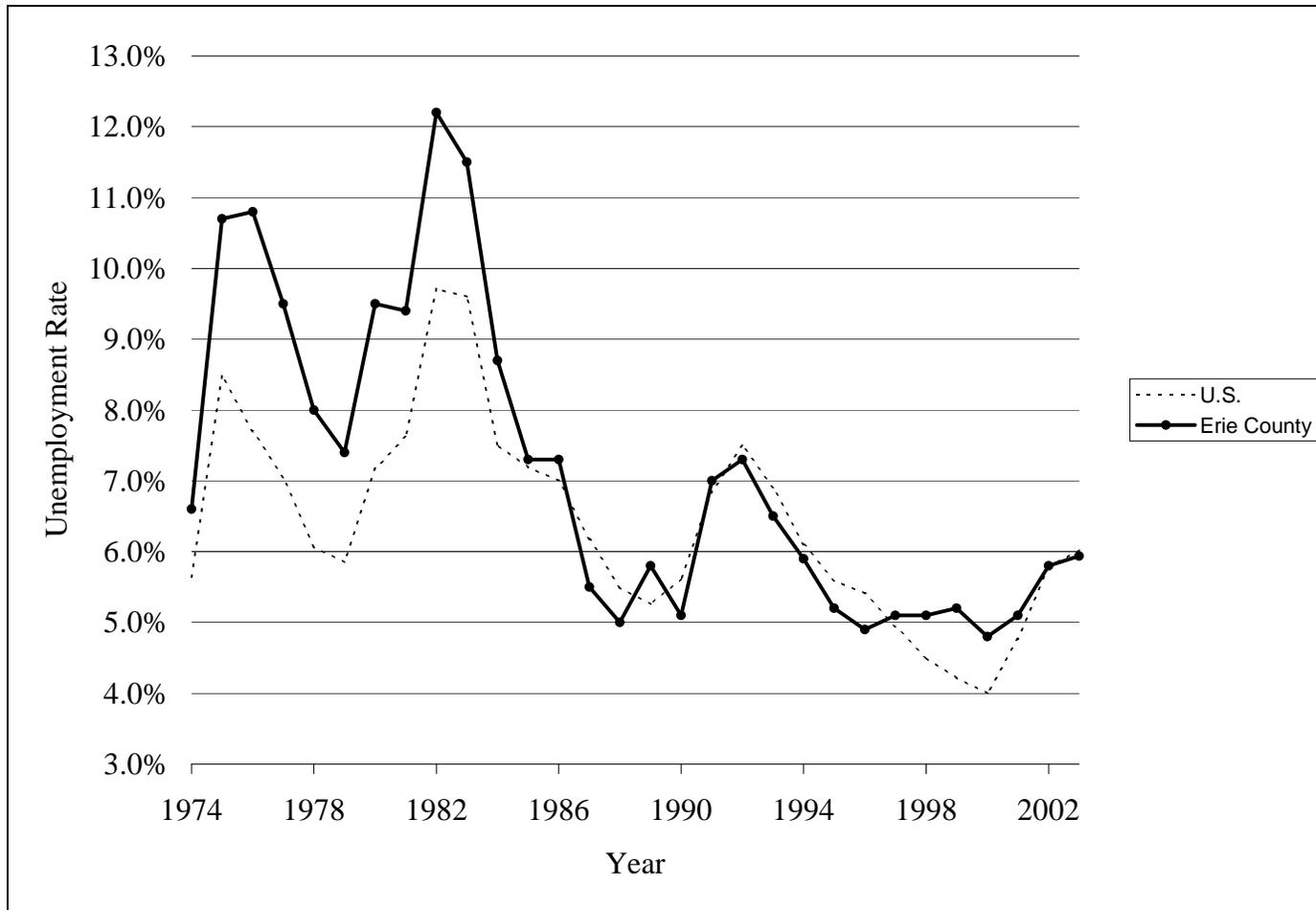
**FIGURE 2.2.2.3-2**  
**WESTERN NEW YORK UNEMPLOYMENT RATE**



Notes: Data from the Bureau of Labor Statistics (see <http://www.bls.gov/>).

NIAGARA POWER PROJECT (FERC NO. 2216)  
THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT

FIGURE 2.2.2.3-3  
ERIE COUNTY UNEMPLOYMENT RATE

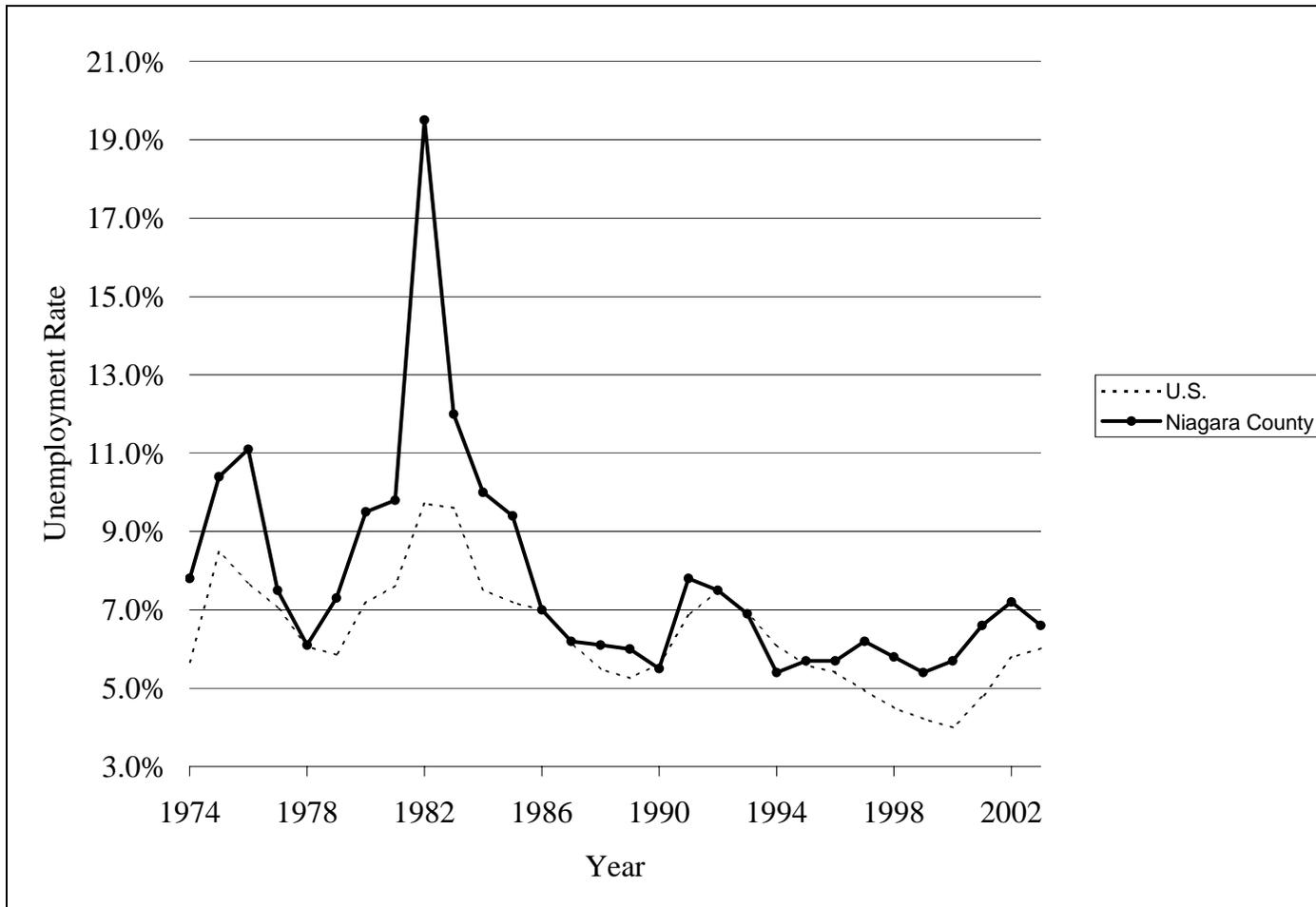


Notes: Data from the Bureau of Labor Statistics (see <http://www.bls.gov/>).

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

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**FIGURE 2.2.2.3-4**  
**NIAGARA COUNTY UNEMPLOYMENT RATE**

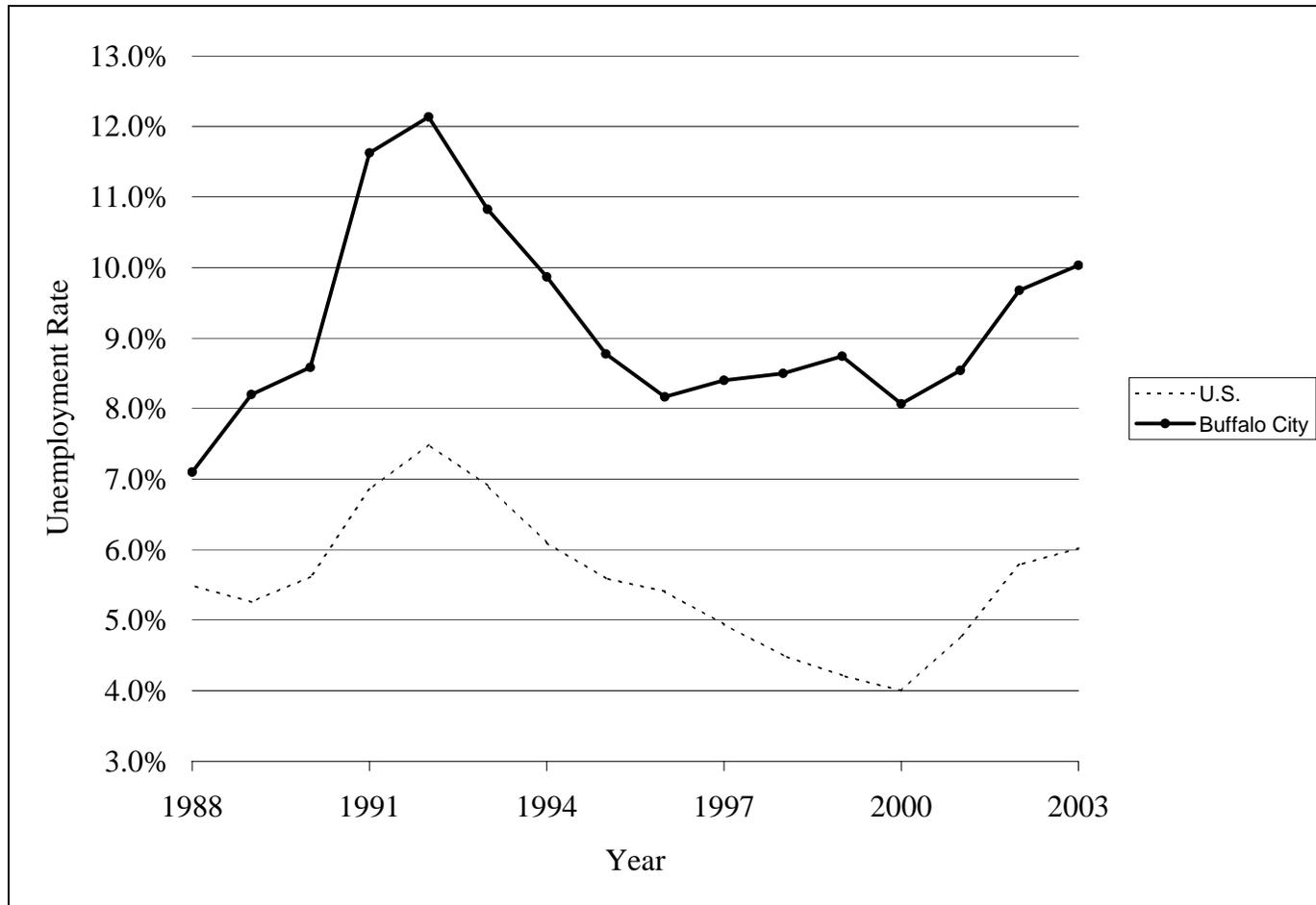


Notes: Data from the Bureau of Labor Statistics (see <http://www.bls.gov/>).

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

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**FIGURE 2.2.2.3-5**  
**CITY OF BUFFALO UNEMPLOYMENT RATE**

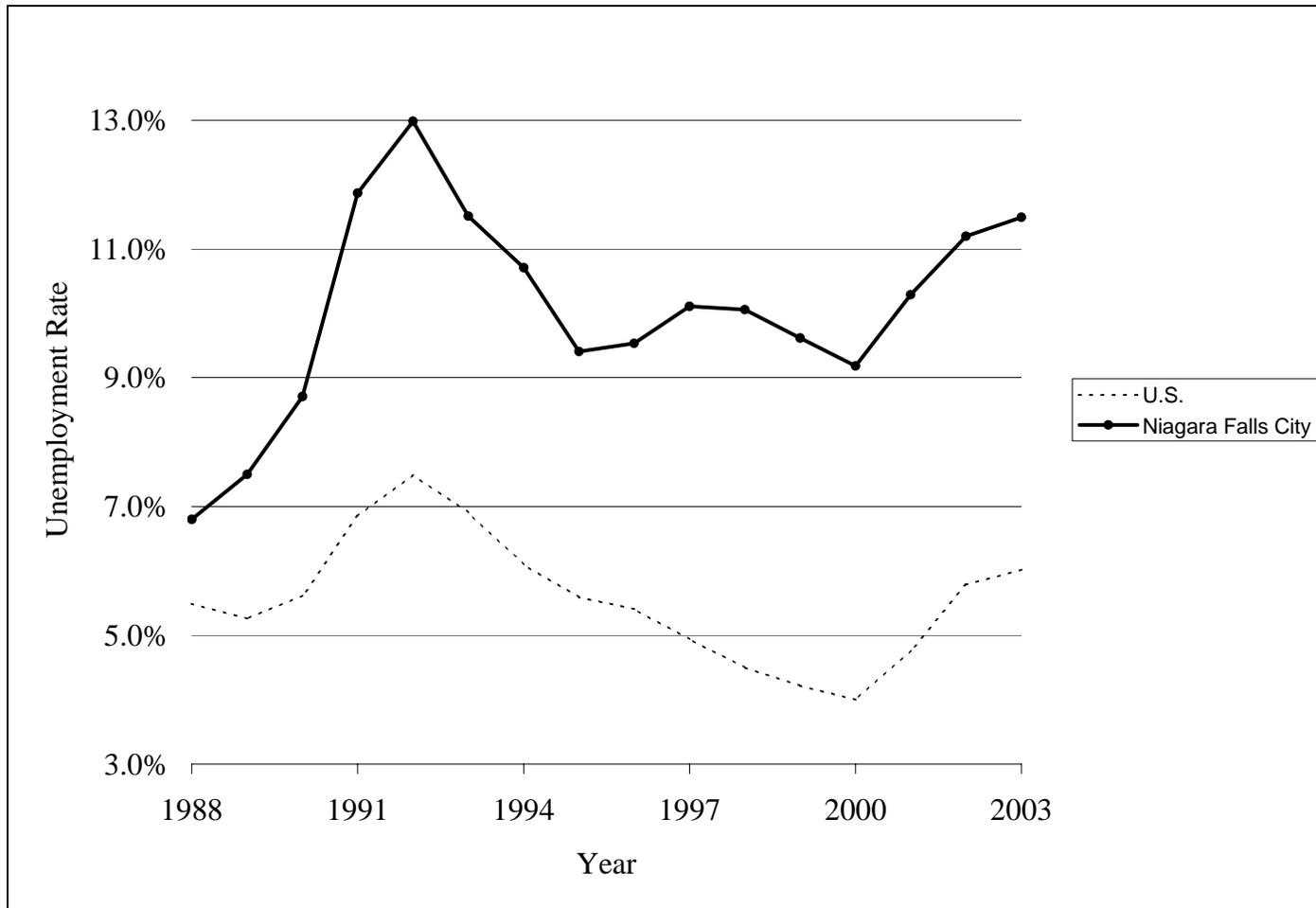


Notes: Data from the Bureau of Labor Statistics (see <http://www.bls.gov/>).

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

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**FIGURE 2.2.2.3-6**  
**CITY OF NIAGARA FALLS UNEMPLOYMENT RATE**

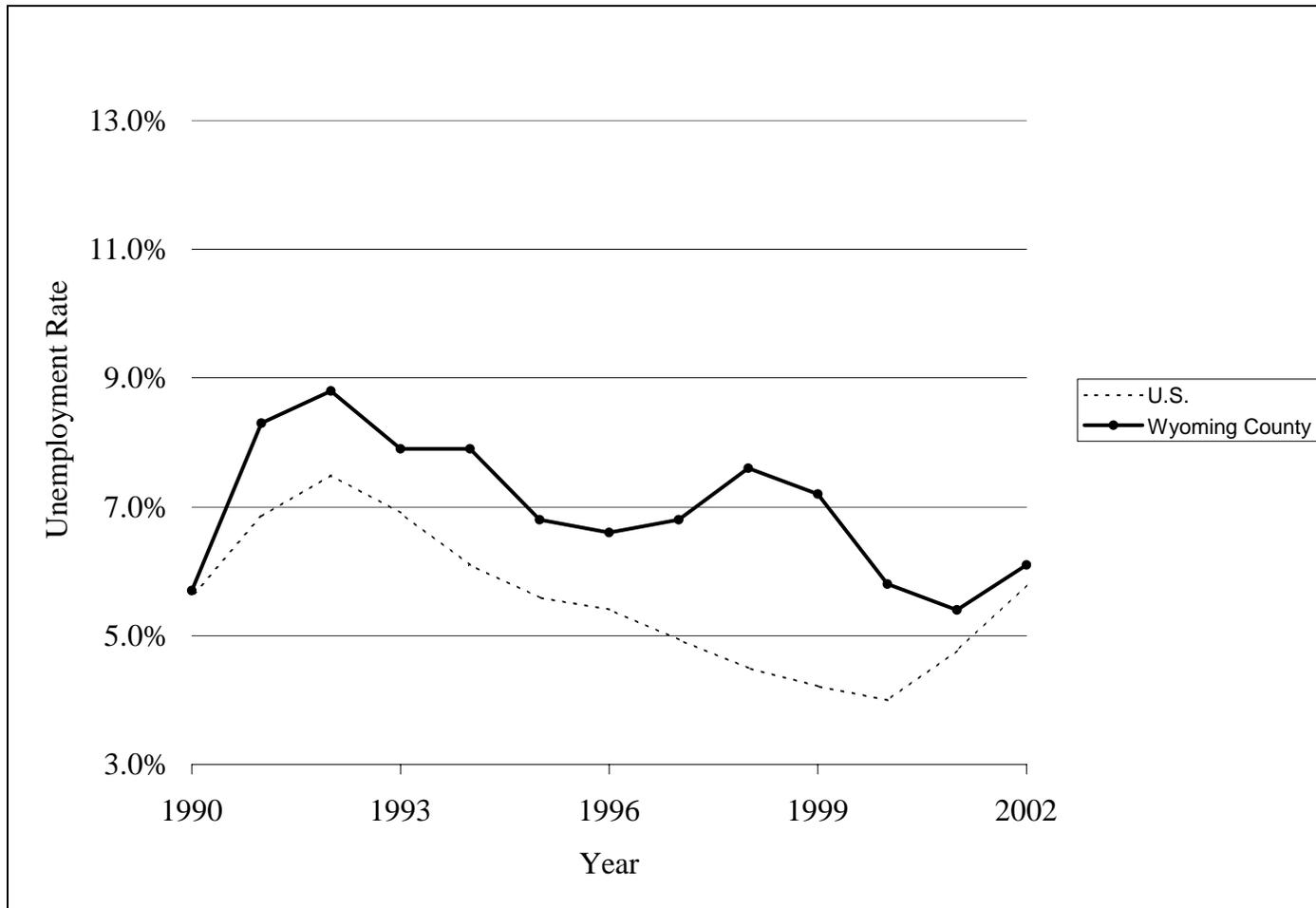


Notes: Data from the Bureau of Labor Statistics (see <http://www.bls.gov/>).

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

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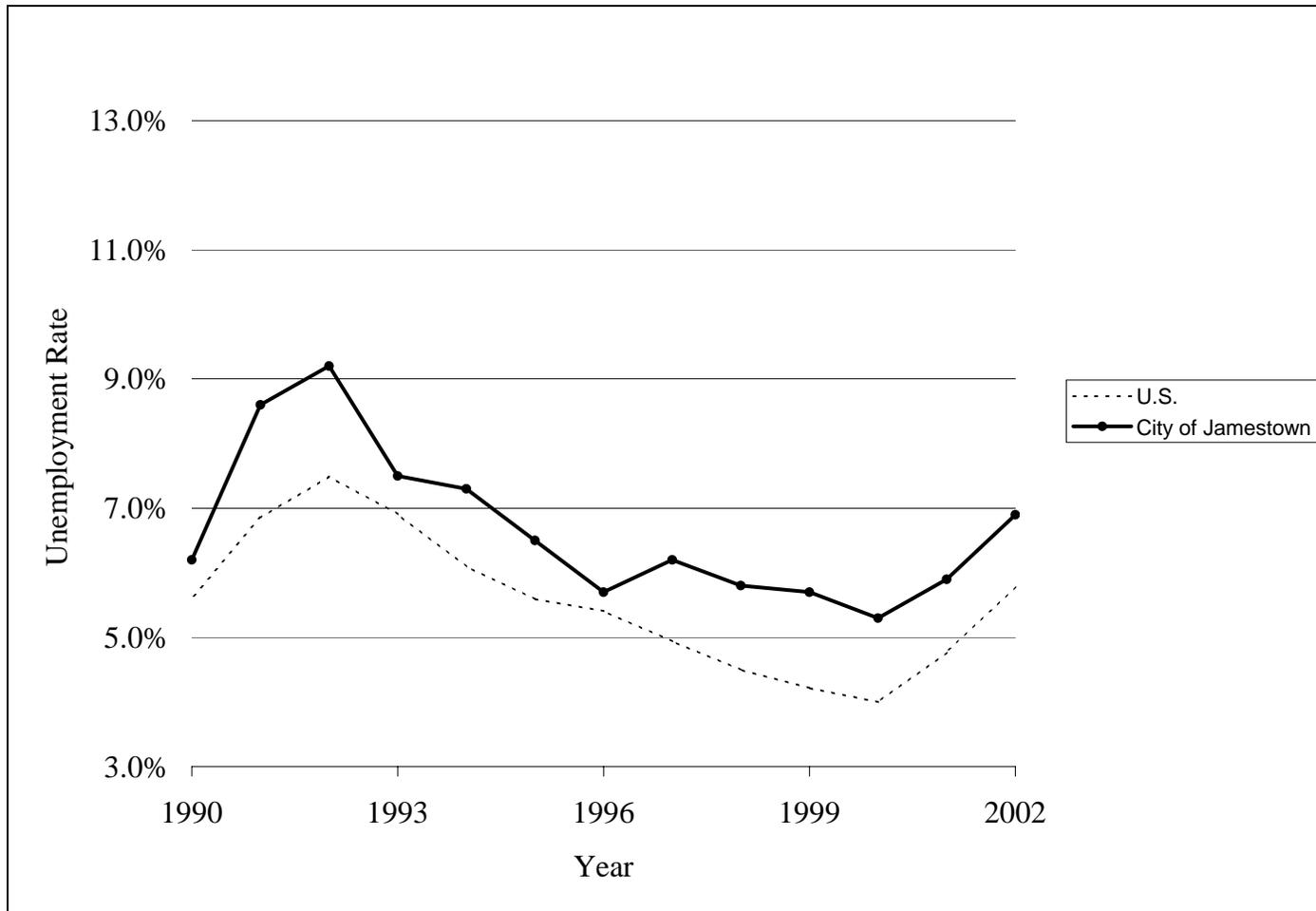
**FIGURE 2.2.2.3-7**  
**WYOMING COUNTY UNEMPLOYMENT RATE**



Notes: Data from the Bureau of Labor Statistics (see <http://www.bls.gov/>).

NIAGARA POWER PROJECT (FERC NO. 2216)  
THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT

FIGURE 2.2.2.3-8  
CITY OF JAMESTOWN UNEMPLOYMENT RATE

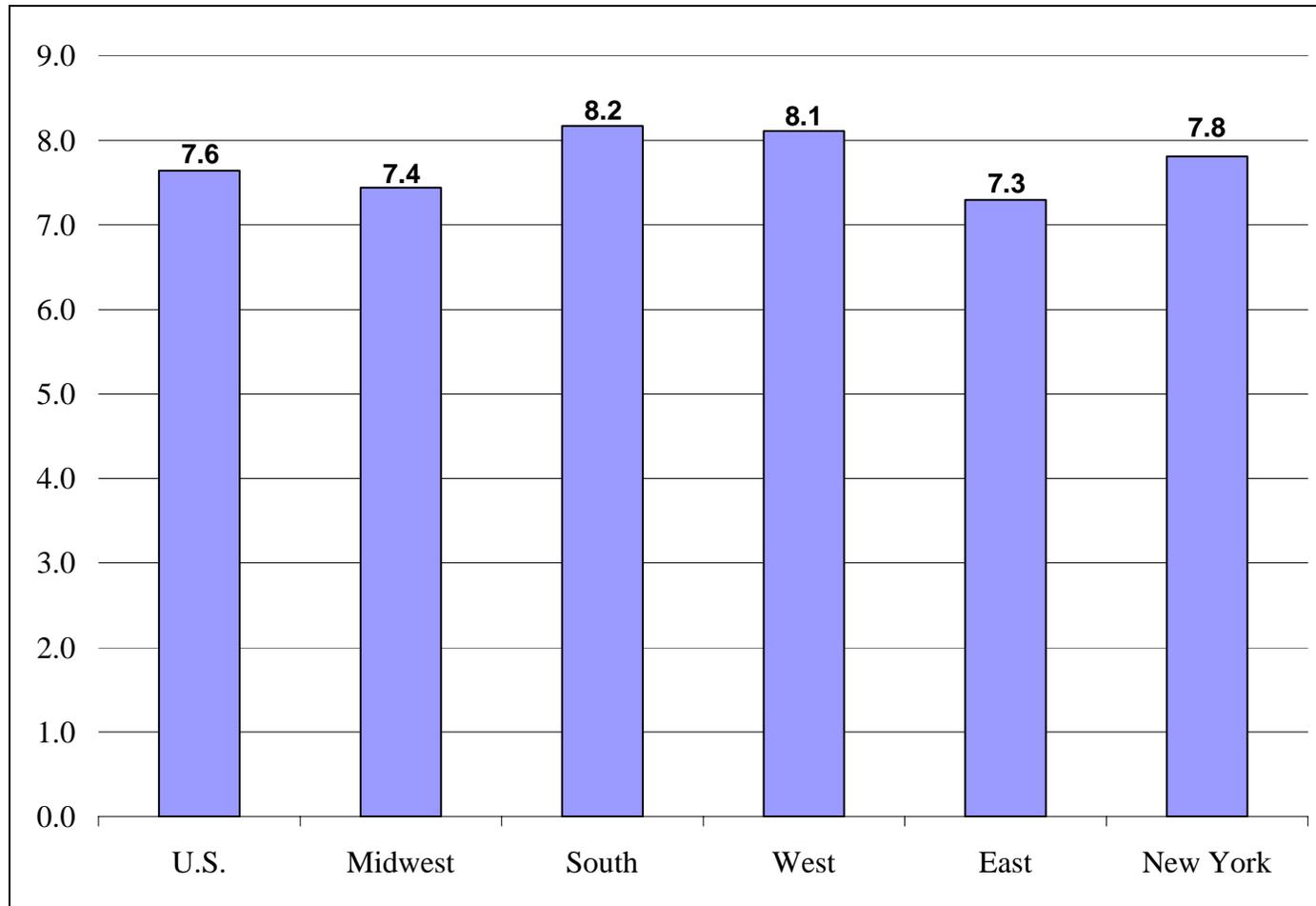


Notes: Data from the Bureau of Labor Statistics (see <http://www.bls.gov/>).

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

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**FIGURE 2.3.3-1**  
**INDIRECT BUSINESS TAXES AS A PERCENT OF GDP**

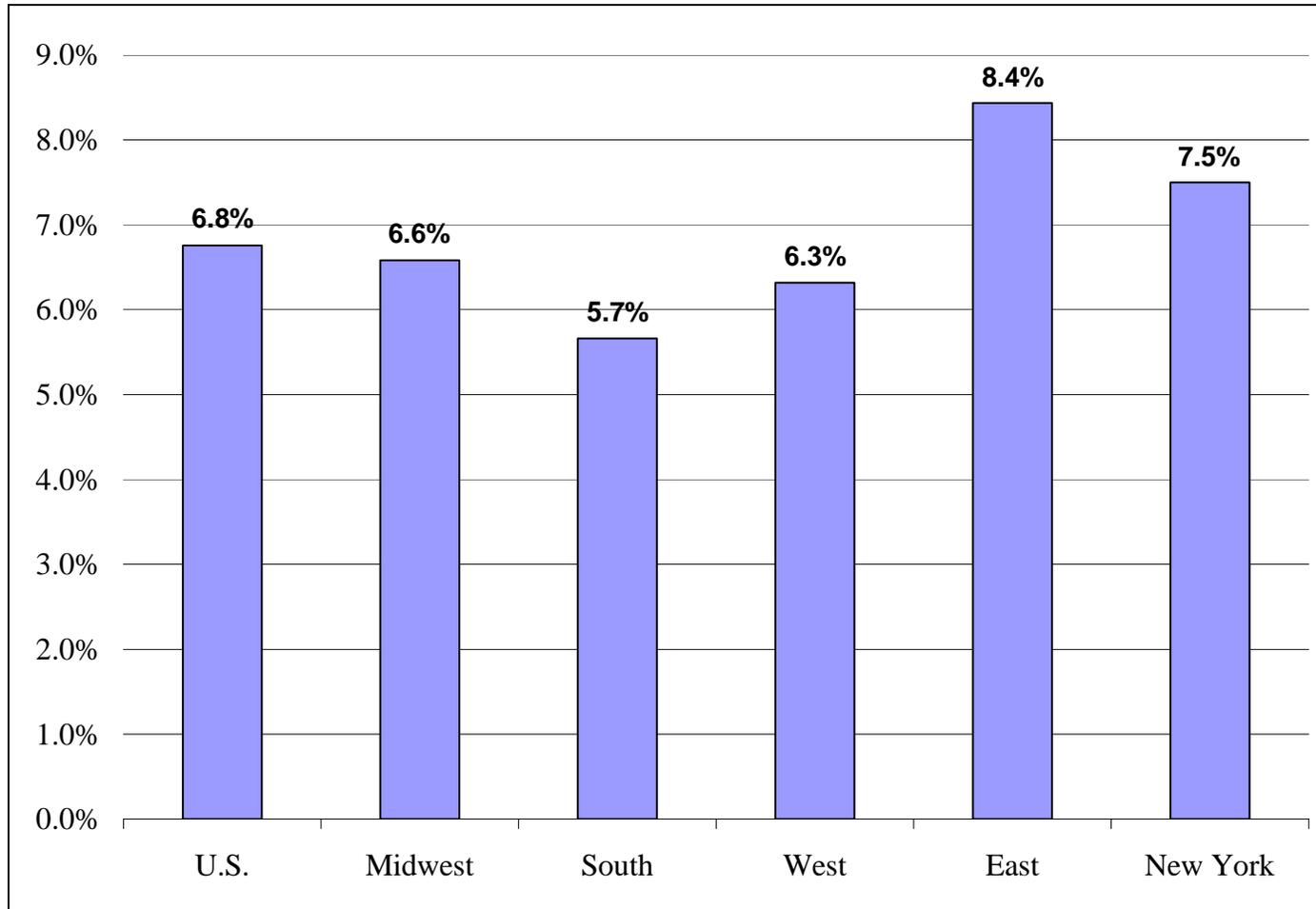


Notes: Data from BEA: <http://www.bea.gov/bea/regional/gsp/default.cfm>.

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

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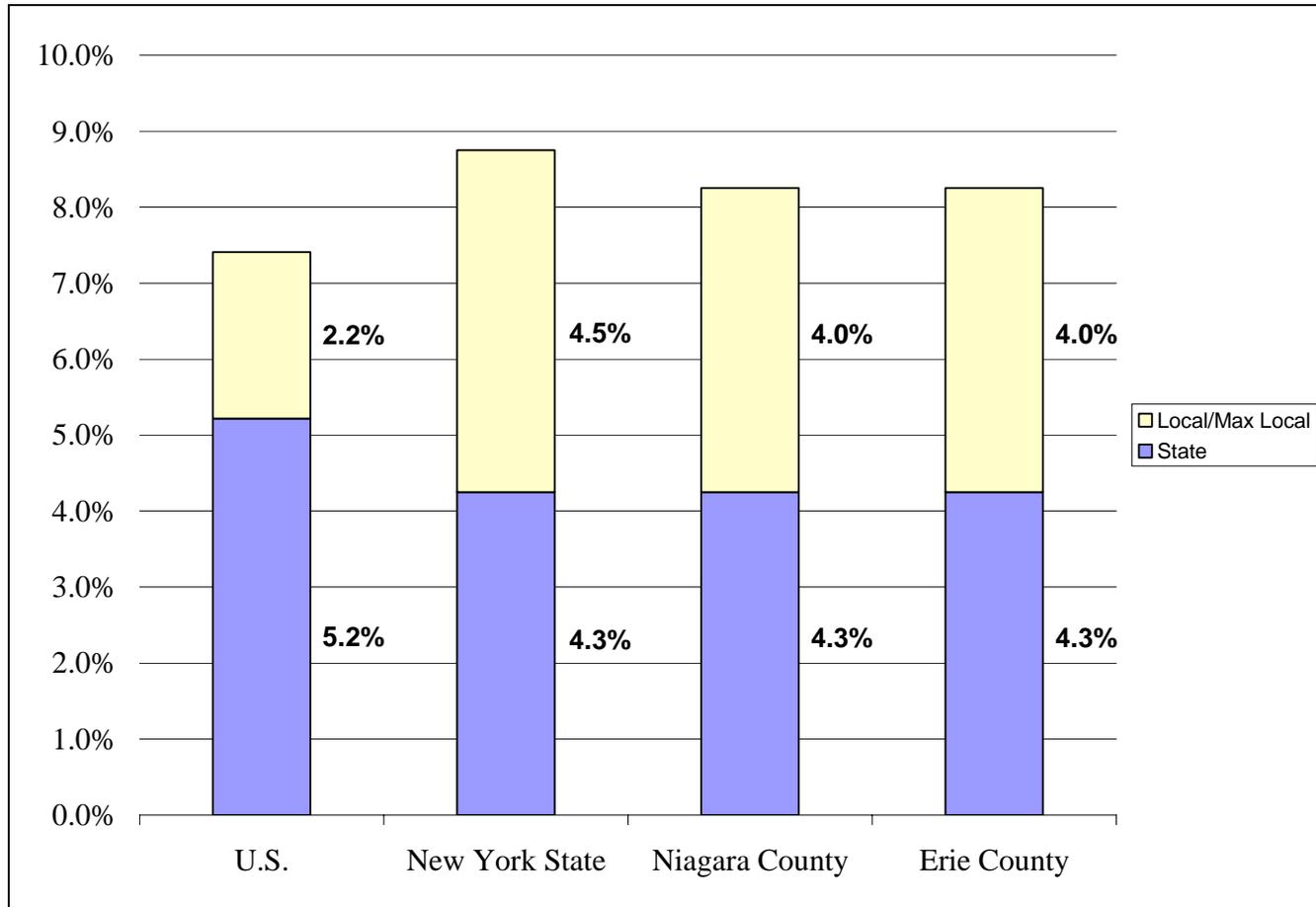
**FIGURE 2.3.3-2**  
**STATE CORPORATE INCOME TAX RATES**



Notes: Data as of January 1, 2004 taken from Federation of Tax Administrators. [http://www.taxadmin.org/fta/rate/corp\\_inc.html](http://www.taxadmin.org/fta/rate/corp_inc.html)

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**FIGURE 2.3.3-3**  
**SALES TAX RATES**

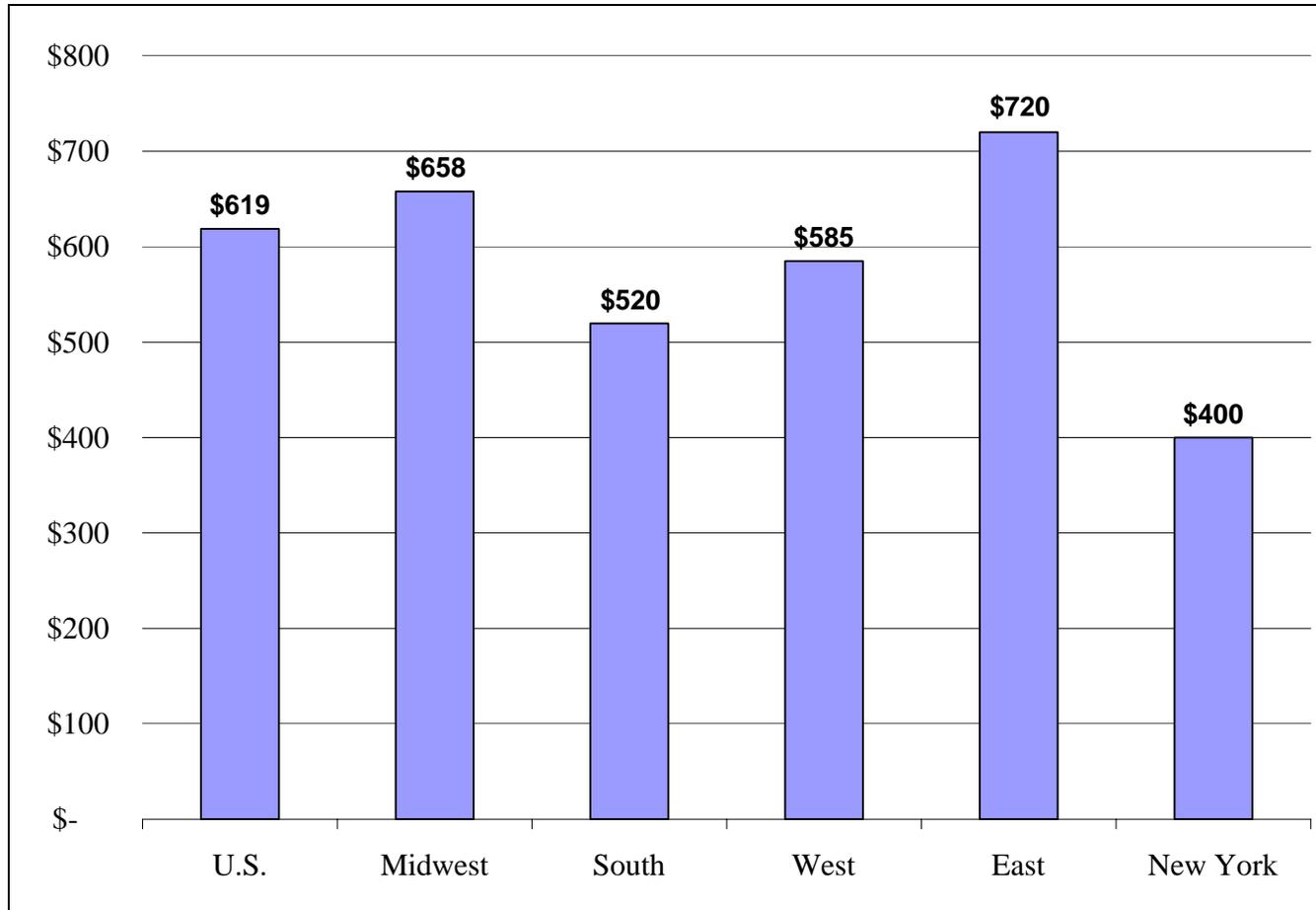


Notes: Data as of January 1, 2004 taken from Federation of Tax Administrators (see [http://www.taxadmin.org/fta/rate/sl\\_sales.html](http://www.taxadmin.org/fta/rate/sl_sales.html)) and New York State Department of Taxation and Finance (see [http://www.nystax.gov/pdf/publications/Sales/pub718a\\_304.pdf](http://www.nystax.gov/pdf/publications/Sales/pub718a_304.pdf))

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

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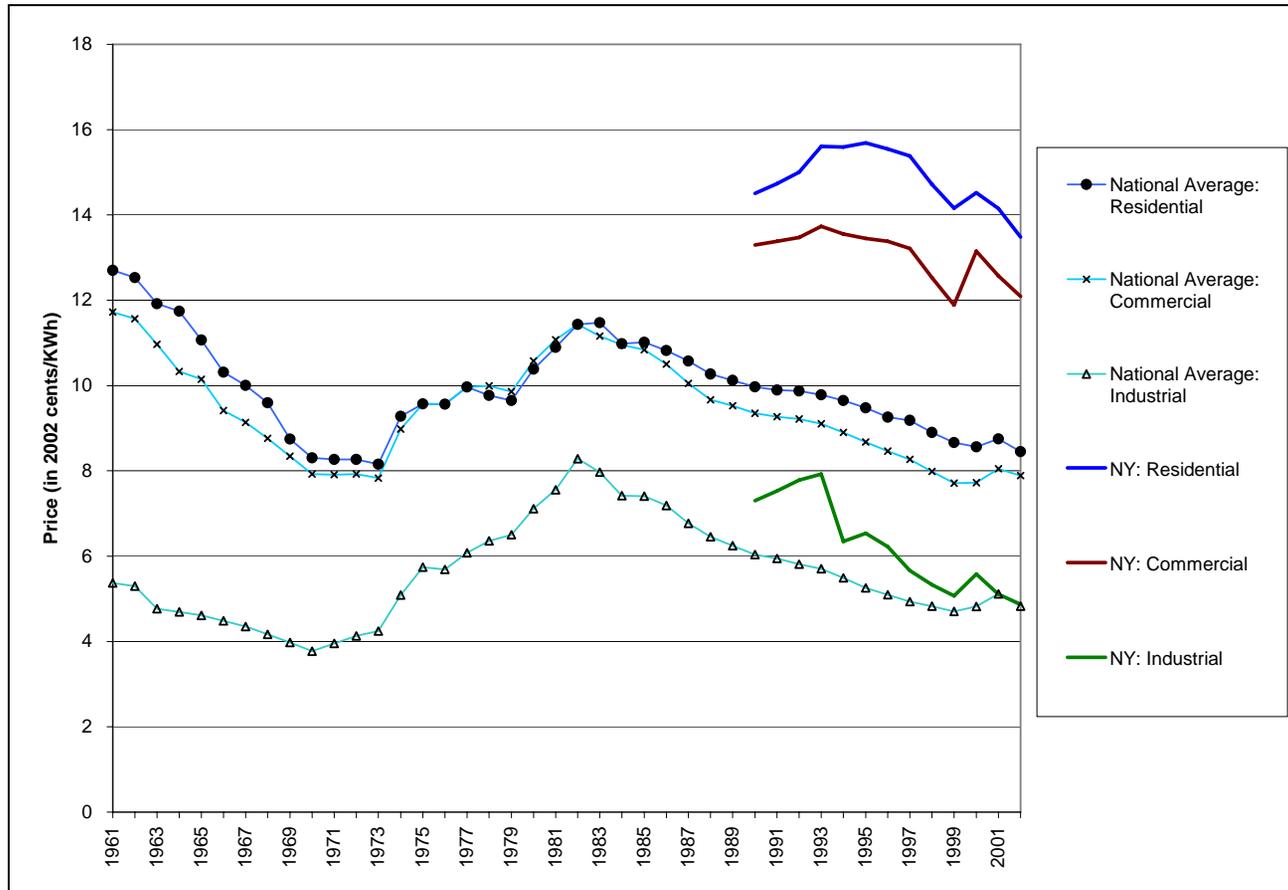
**FIGURE 2.3.3-4**  
**PERMANENT TOTAL DISABILITY (“PTD”):**  
**MAXIMUM WEEKLY BENEFIT**



Note: Data as of January 1, 2003 taken from AFL-CIO (see <http://www.aflcio.org/yourjobeconomy/safety/wc/upload/unemploy.pdf>).

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**FIGURE 2.4.1-1**  
**ELECTRICITY PRICES BY SECTOR, 1961-2002 (2002 CENTS/KWH)**

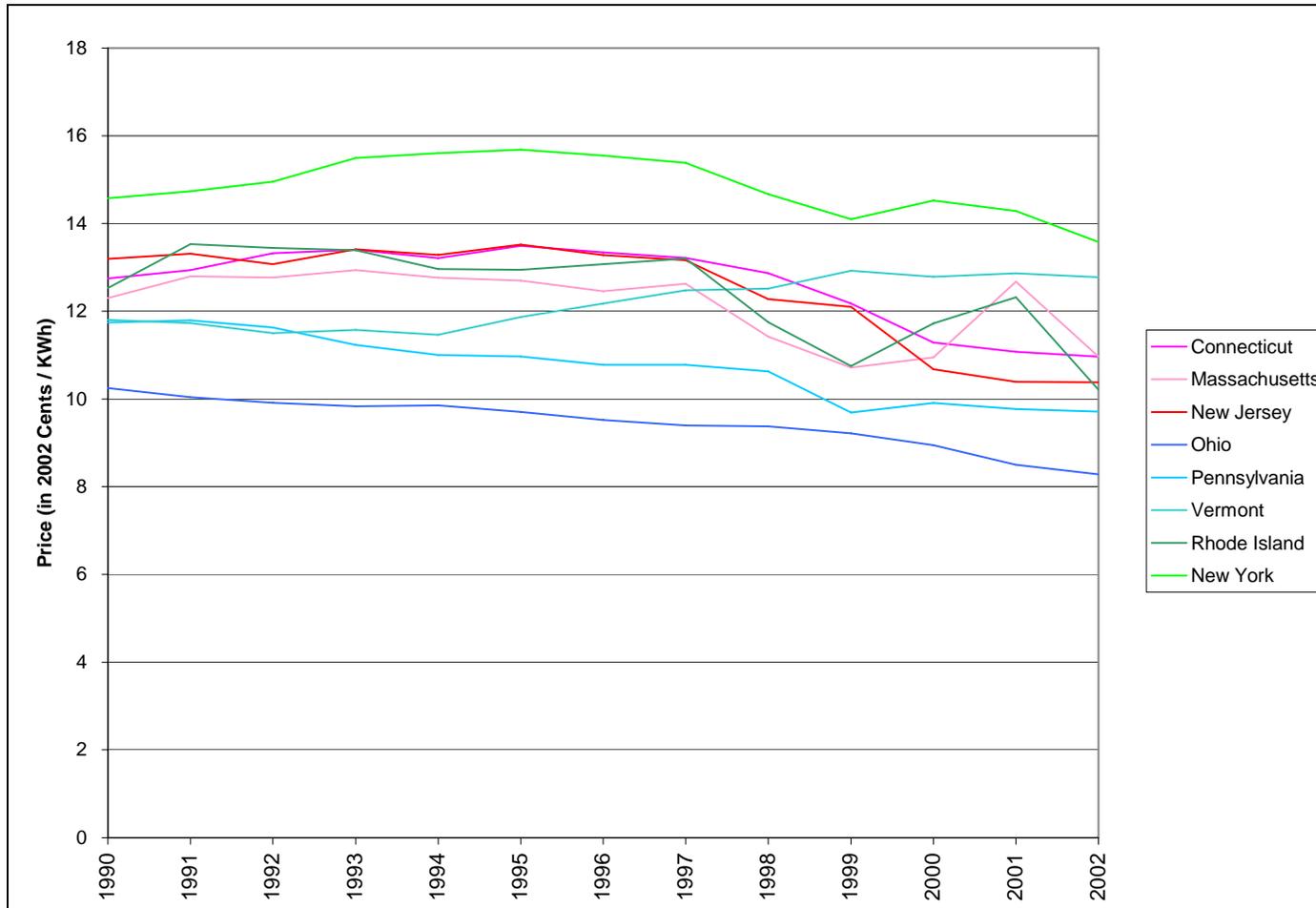


Notes: Data from NYPA and the U.S. Energy Information Administration (see <http://www.eia.doe.gov/fuelelectric.html>). Note that the New York prices include customers who receive discounted NYPA power. (The EIA data for New York State was not available prior to 1990.)

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**FIGURE 2.4.1-2**

**RESIDENTIAL ELECTRICITY PRICES FOR STATES RECEIVING NYPA POWER, 1990-2002 (2002 CENTS/KWH)**

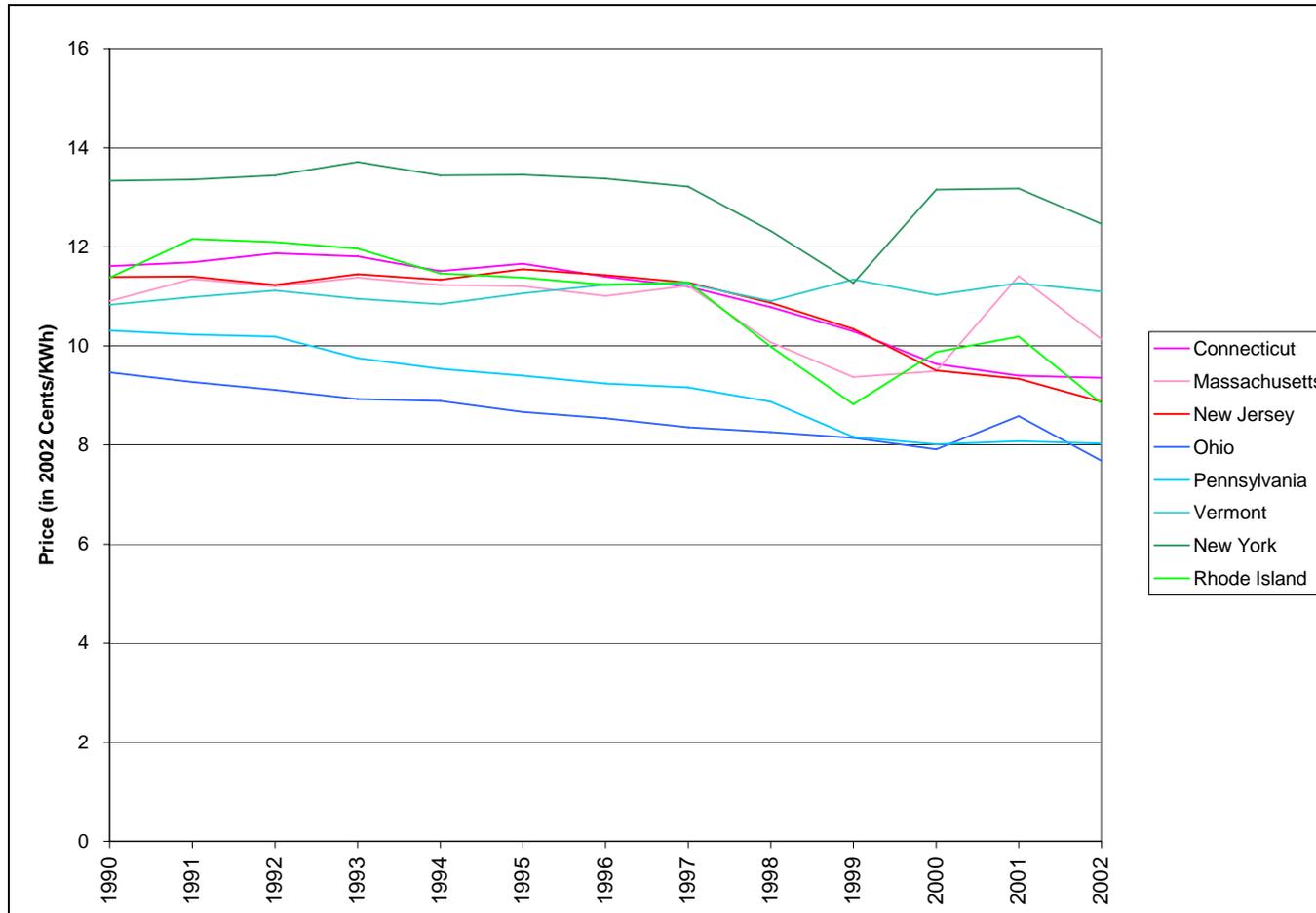


Notes: Data from Energy Information Administration (see [http://www.eia.doe.gov/cneaf/electricity/page/at\\_a\\_glance/sales\\_tabs.html](http://www.eia.doe.gov/cneaf/electricity/page/at_a_glance/sales_tabs.html)).

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**FIGURE 2.4.1-3**

**COMMERCIAL ELECTRICITY PRICES FOR STATES RECEIVING NYPA POWER, 1990-2002 (2002 CENTS/KWH)**

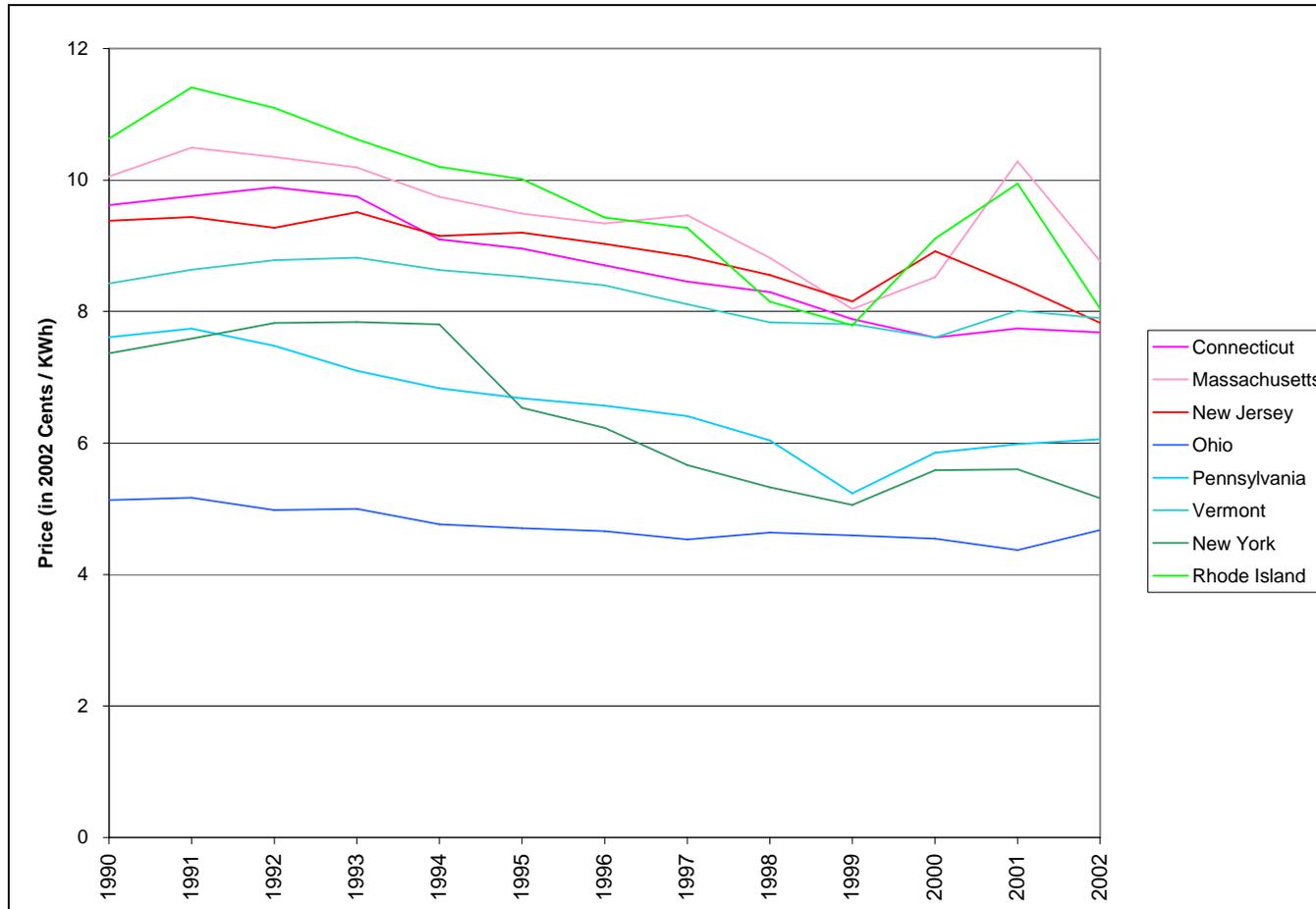


Notes: Data from Energy Information Administration: [http://www.eia.doe.gov/cneaf/electricity/page/at\\_a\\_glance/sales\\_tabs.html](http://www.eia.doe.gov/cneaf/electricity/page/at_a_glance/sales_tabs.html).

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**FIGURE 2.4.1-4**

**INDUSTRIAL ELECTRICITY PRICES FOR STATES RECEIVING NYPA POWER, 1990-2002 (2002 CENTS/KWH)**

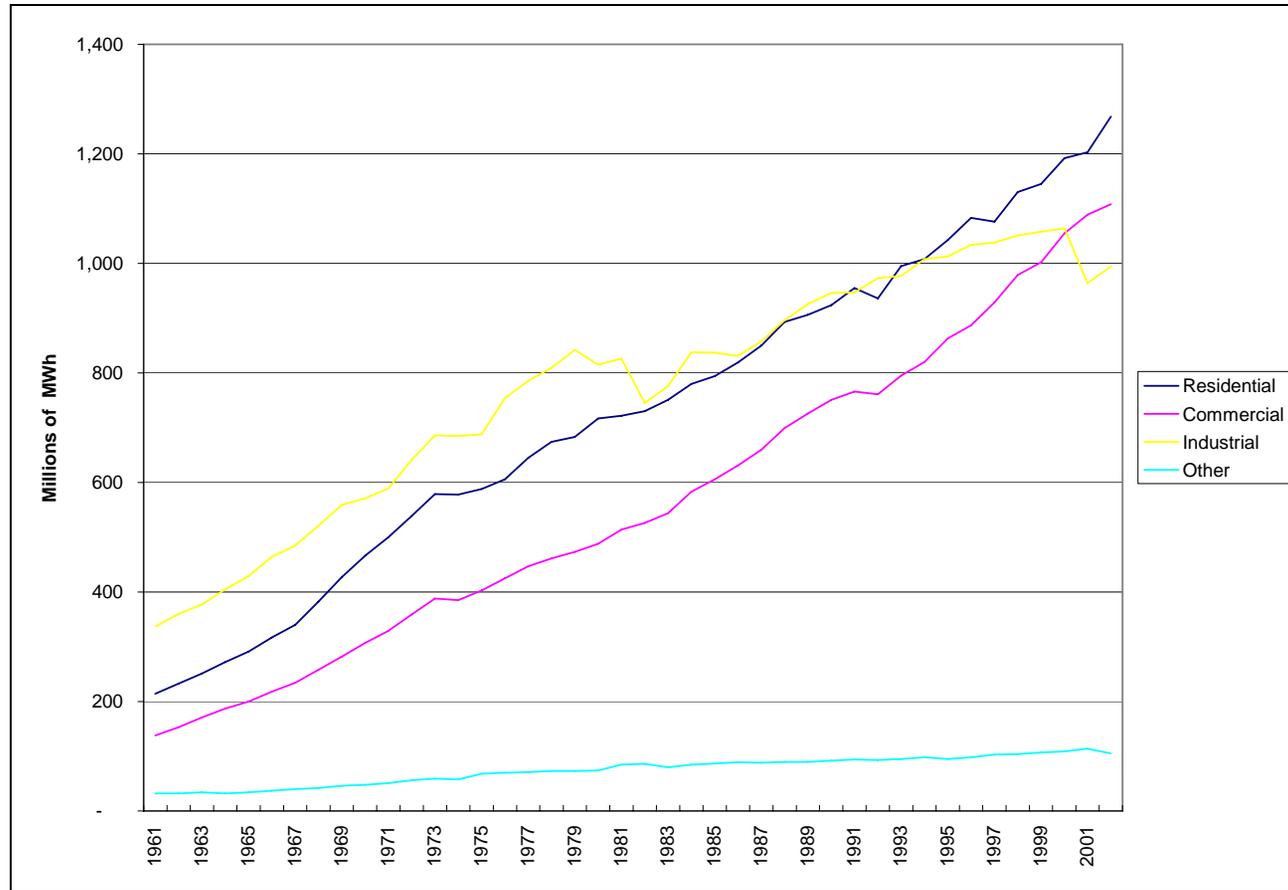


Notes: Data from the U.S. Energy Information Administration:  
 (see <http://www.eia.doe.gov/fuelelectric.html>).

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

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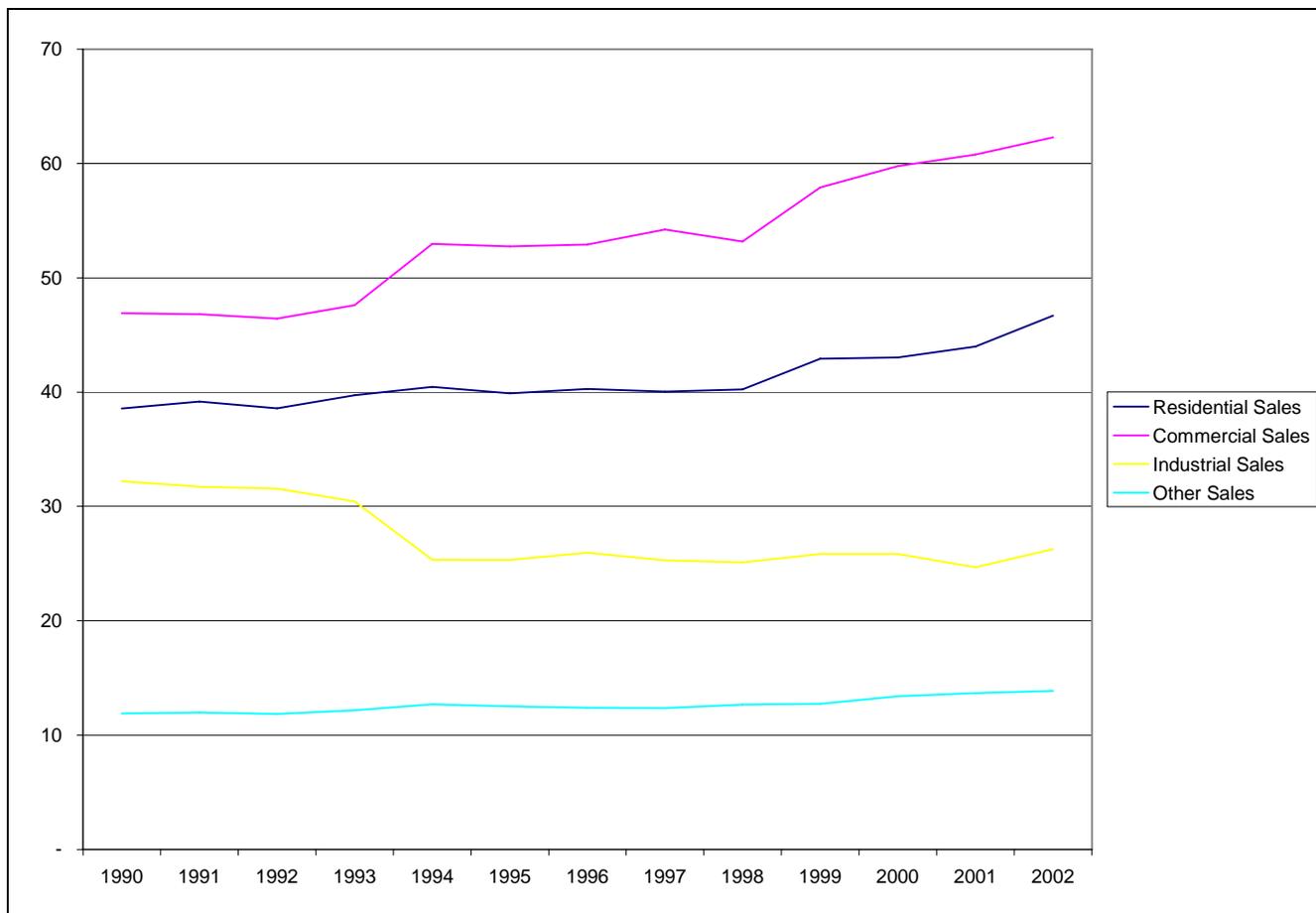
**FIGURE 2.4.2-1**  
**NATIONAL ELECTRICITY CONSUMPTION BY SECTOR, 1961-2001**  
**(MILLIONS OF MWH)**



Notes: Data from the U.S. Energy Information Administration  
(see [http://www.eia.doe.gov/emeu/aer/t\\_b0805.html](http://www.eia.doe.gov/emeu/aer/t_b0805.html)).

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**FIGURE 2.4.2-2**  
**NEW YORK STATE ELECTRICITY CONSUMPTION BY SECTOR, 1990-2002**  
**(MILLIONS OF MWH)**

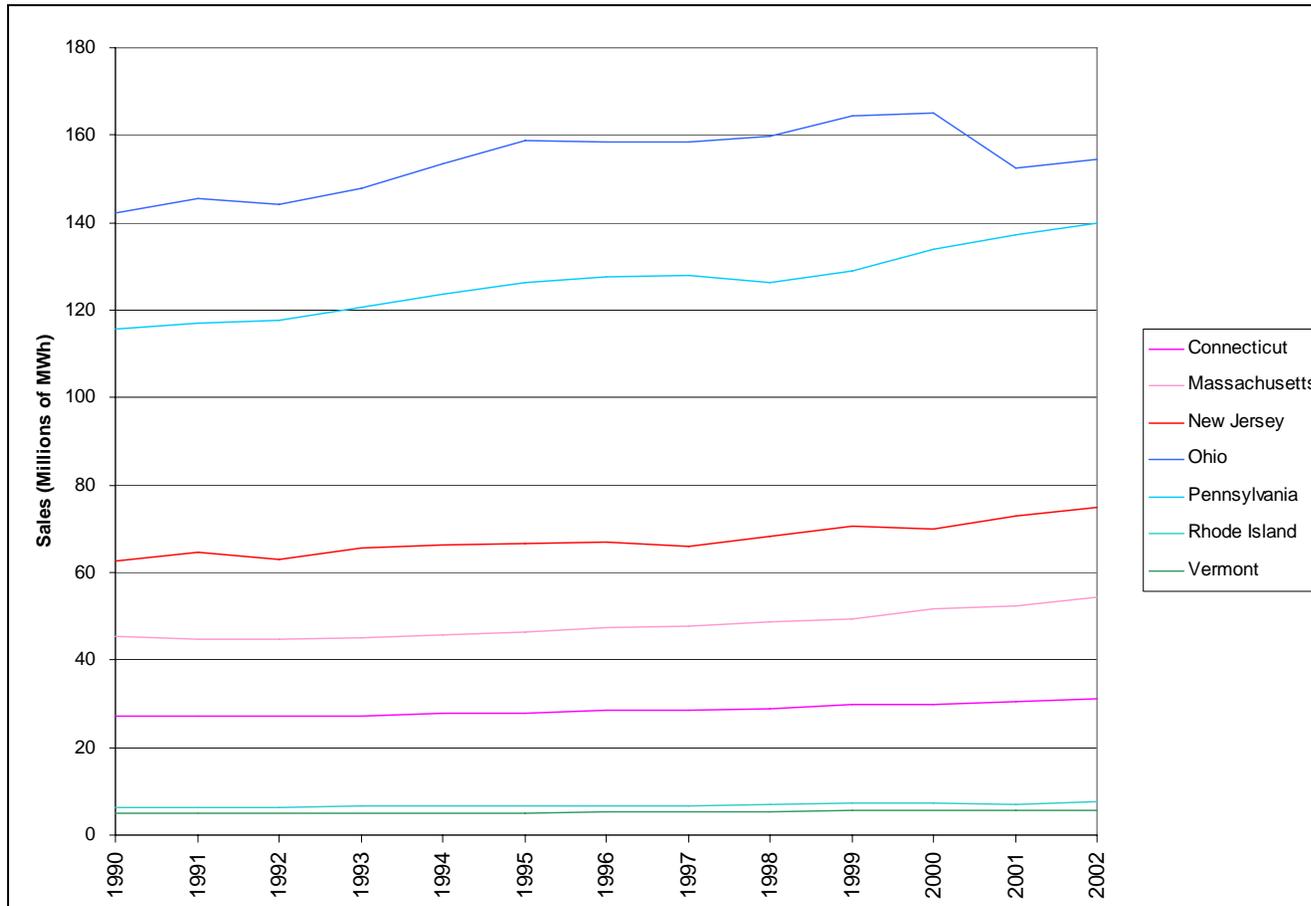


Notes: Data from Energy Information Administration: [http://www.eia.doe.gov/cneaf/electricity/page/sales\\_revenue.xls](http://www.eia.doe.gov/cneaf/electricity/page/sales_revenue.xls).

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**FIGURE 2.4.2-3**

**TOTAL ELECTRICITY CONSUMPTION FOR STATES RECEIVING NYPA POWER, 1990-2002 (MILLIONS OF MWH)**

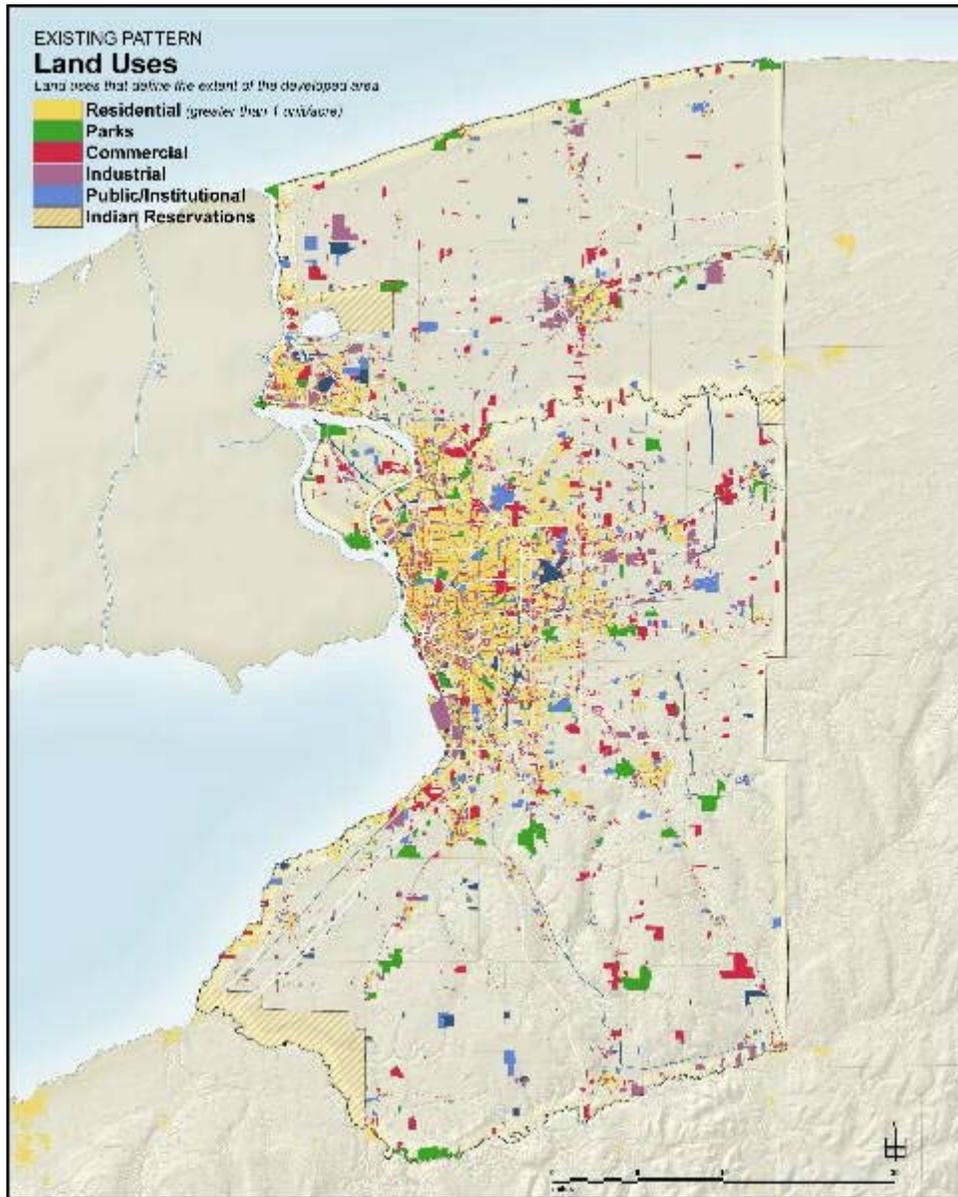


Notes: Data from Energy Information Administration: [http://www.eia.doe.gov/cneaf/electricity/page/at\\_a\\_glance/sales\\_tabs.html](http://www.eia.doe.gov/cneaf/electricity/page/at_a_glance/sales_tabs.html).

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA**  
**POWER PROJECT**

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**FIGURE 2.5.1-1**  
**EXISTING LAND USE PATTERNS IN ERIE AND NIAGARA COUNTIES**



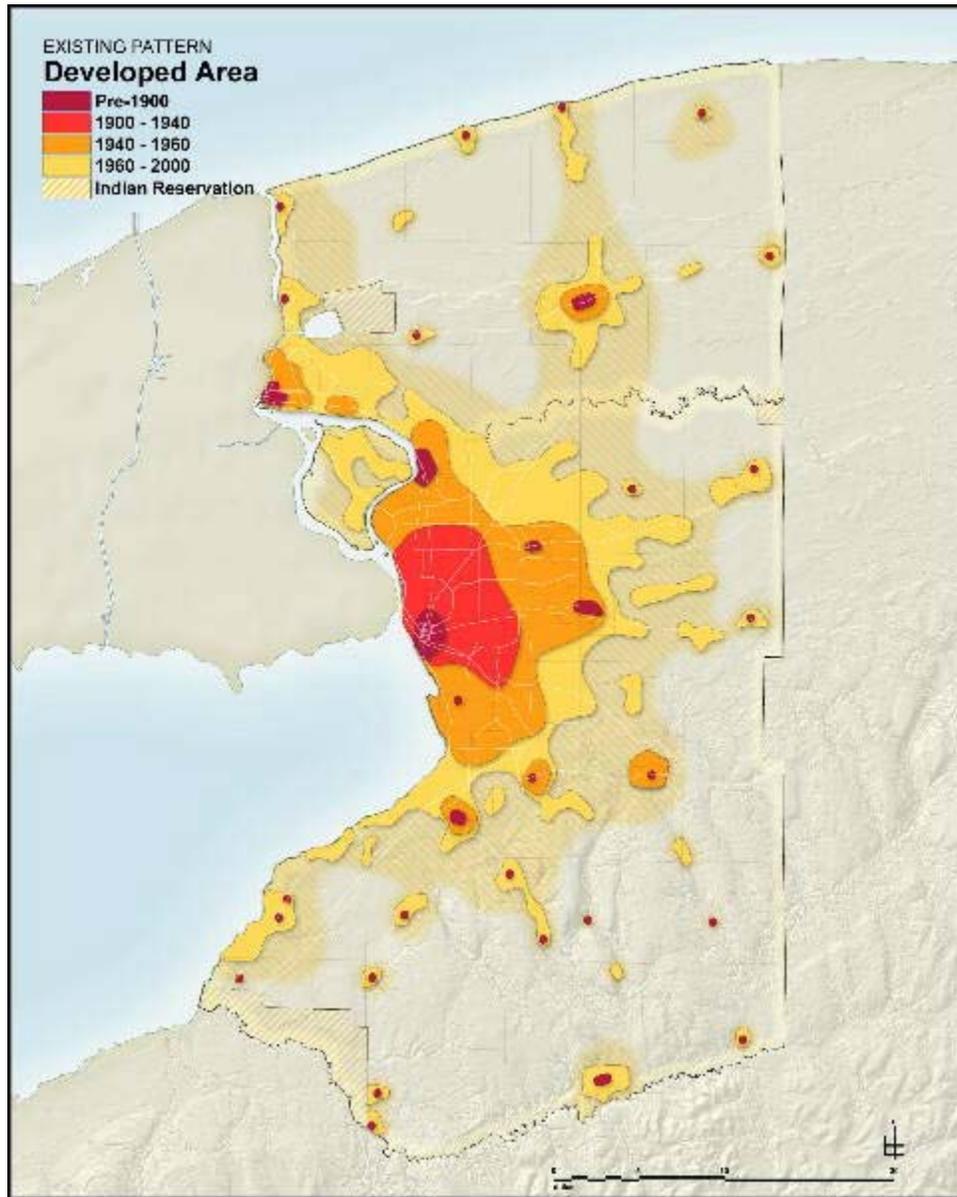
Note: Data from <http://www.regionalframework.com>.



**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA**  
**POWER PROJECT**

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**FIGURE 2.5.1-2**  
**DEVELOPMENT PATTERNS IN ERIE AND NIAGARA COUNTIES**



Note: Data from <http://www.regionalframework.com>.



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**Section: The Past, Present, and Future Socioeconomic Effects of the Niagara Power Project**

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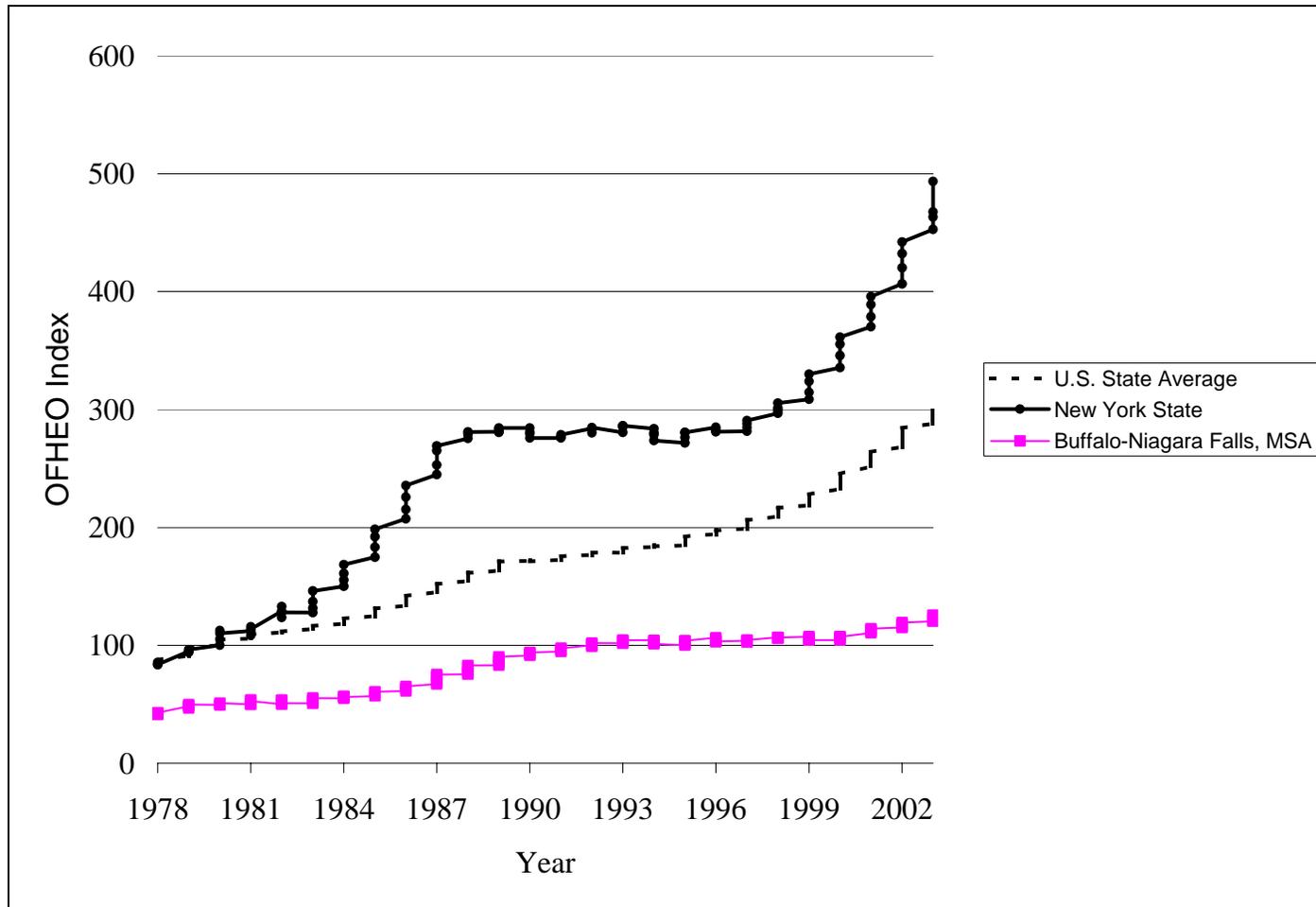
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**FIGURE 2.5.2-1  
POPULATION DENSITY IN THE LOCAL AND HOST COMMUNITIES**

**[NIP – General Location Maps]**

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**FIGURE 2.5.3-1**  
**OFHEO HOUSING PRICE INDEX, 1978-2003 (NOMINAL DOLLARS)**



Notes: Data taken from the Office of Federal Housing Enterprise Oversight (OFHEO): <http://www.ofheo.gov/download.asp>.



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### **3.0 DIRECT SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

This section quantifies the direct impacts of the Project. The information developed in this section serves as the starting point for the comprehensive economic modeling in [Section 4.0](#).

#### **3.1 Overview of Project Related Impacts**

The Project affects the economies of Western New York and the Host and Local Communities in many ways. Following the structure outlined in [Section 1.0](#), we develop estimates of the *direct* impacts of the Project in the following categories:

- Demographic;
- Economic/employment;
- Public sector (taxes and services);
- Electricity;
- Real estate;
- Tourism; and
- Sociological/Cultural.

#### **3.2 Direct Demographic Impacts**

The Project has no *direct* impacts on demographics. Any effects of the Project on the region's demographics stem from its impact on the local and regional economy, which can, in turn, influence various population characteristics. For example, changes in the local economy can lead to changes in migration patterns and population levels. Such impacts are discussed in the following section when we consider the *overall* socioeconomic effect of the Project.

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### **3.3 Direct Economic/Employment Impacts**

Major components of the Project's *direct impacts* on the economy are its direct employment—that is, employees working for the Project and their associated wage income—and its expenditures on goods and services in the region.

#### **3.3.1 Employees**

The Project has a direct effect on regional employment through the workers that it employs. [Table 3.3.1-1](#) shows employment at the Project at the end of 2003, broken out by seven categories of employees—salaried non-union, hourly, seasonal, co-ops, contractors, temps, and others. At the end of 2003, the Project was employing 341 workers, the majority of whom were hourly workers. This level of employment is projected to remain relatively constant.

#### **3.3.2 Project Payroll**

Another direct effect of the Project on the economy is the wages paid to Project workers. These wages increase income in the area and allow workers to spend in the local economy. (Workers' spending leads to multiplier effects in the local economy, which are captured in the modeling described in the following section.) Total wages and salaries paid in 2003 were roughly \$25 million, while benefits totaled over \$6 million (in 2002 dollars).

#### **3.3.3 Project Expenditures**

In addition to employment, the Niagara Project also contributes directly to the local economy through expenditures on goods and services. [Table 3.3.3-1](#) presents total Project spending since 1983, broken out into construction expenditures and operations and maintenance. (Note that these expenditures include expenditures on wages.) The table shows that the Project spent a total \$82.3 million in 2003 (in 2002 dollars). Thus, total spending on goods and services (i.e., less wage spending) in 2003 was approximately \$56.2 million. The table also shows that Project spending has ranged from a low of \$39.2

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million in 1987 to a high of \$82.3 million in 2003. Spending in the first two years reported—1983 and 1984—was substantially higher, well over \$100 million in 1984 and roughly \$250 million in 1983. Increased spending in these early years reflects NYPA’s expenditures on facility upgrades, which included runner replacement and the construction of a transmission line inter-connection to Ontario Hydro.

### **3.4 Direct Impacts on Public Sector (Taxes and Services)**

This section considers the direct impacts of the Project on local tax revenues and on the level of services/expenditures provided by the Host Communities.

#### **3.4.1 Direct Project Impacts on Local Tax Payments**

Under Section 1012 of the New York State Public Authorities Law and other provisions of law, NYPA is exempt from state and local taxation. As a result, the Project does not pay New York State sales tax or local property taxes (although it does pay payroll taxes such as the unemployment tax). Thus, one direct effect of the Project is that it occupies some lands that might otherwise generate property tax revenues for the Host Communities.

Taxes for very large industrial properties are often negotiated with the local taxing jurisdictions. Consequently, we cannot be certain regarding the amount of property taxes the Project would be required to pay in each jurisdiction if NYPA’s exemption did not apply. Moreover, the actual impact of removing the Project’s tax exemption would depend on both the outcome of negotiations between NYPA and the taxing authorities as well as policy decisions by those elected officials regarding the tax rates applied to other local property owners as well as associated expenditures on local services.

In order to assess the impact on the local economies of the Project’s exemption from property taxes, we estimate taxes based on the assumption that each jurisdiction would keep its existing budget constant, and thus adding the Project to local tax bases would result in lower rates for all property owners. As specified in the Scope of Services, we evaluate the Project’s direct effect on taxes based on both

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*improved* and *unimproved* assessments. The *improved* scenario considers the taxable base to be equal to the complete value of the Project, including land and facilities. The *unimproved* scenario considers the taxable base to be equal to only the value of the land occupied by the Project.

In the following subsections of this section, we describe the methodology for developing estimates of the current and historical impact of the Project's property tax exemption on local tax rates and revenues under these two alternatives. In [Section 4.3.6](#), these direct effects are then used as inputs to the REMI model to develop estimates of the impact of the Project's property tax exemption on the economies of the Host and Local Communities. In these scenarios, we assume that the Project's operation would be unaffected by the change in NYPA's tax status—no other direct effects are considered. Note, however, that since NYPA's power rates are cost-based, an increase in taxes paid by the Project would result in higher electricity prices to its customers. We account for this factor in our modeling of the impact of the property tax exemption on the economies of the local communities.

Finally, we develop one additional property tax scenario that we use in our modeling of the Project's economic impacts. As described previously, in this study we consider the impact on local economies of the Project producing low-cost electricity, employing workers at the facility, and spending money on local goods and services. As part of this modeling, we also consider the effects of the Project's tax exemption. To develop direct property tax effects as modeling inputs, we assume that the Project land would be taxed at its unimproved value. Since we are attempting to capture the impacts of the facility as a whole, we consider the implications of the tax exemption relative to a scenario where the facility did not exist at all. Consequently, this scenario differs from those described previously in that we assume the Project's lands would be taxable based on the relevant jurisdictions prior to construction of the facility, rather than based on current jurisdictions. For example, in the two property tax impact scenarios discussed above (improved and unimproved), the Project land that was originally Tuscarora Nation property is considered to be part of the Town of Lewiston for the purpose of calculating potential tax effects (based on the current designation of other Town of Lewiston property), but for the purpose of modeling economic impacts of the Project, the Project land that was originally Tuscarora Nation property is treated as Tuscarora Nation property. However, in the economic impact assessment, this land is assumed not to generate any property tax revenues. These issues are discussed in more detail below.

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**3.4.1.1 Methodology for Developing Property Tax Estimates**

In this section, we describe the methodology for developing estimates of the impacts of the Project on property taxes. We follow four steps in developing these estimates. We first identify the amount of Project property within each of the Host Communities. We then develop estimates of the taxable value for this property for each of the relevant cases—i.e., unimproved (vacant) land and improved (based upon the various facilities that are currently located on Project lands). Third, we identify current and historical property tax rates for each of the jurisdictions. Finally, we calculate estimates of total hypothetical property taxes on Project lands.

**3.4.1.1.1 Project Property by Community**

The Host Communities represent the taxing entities in which NYPA owns Project lands. These include three local jurisdictions—the Town of Lewiston, the Town of Niagara, and the City of Niagara Falls (which is coincident with the school district)—as well as Niagara County, the Village of Lewiston, and the three independent school districts. In addition, the City of Buffalo contains 13 acres of NYPA property for storage of the ice boom, which is also included in this analysis, although Buffalo is not technically a Host Community and this property is not part of the Project as defined by the FERC boundary.

[Table 3.4.1.1.1-1](#) shows the Project acreage that could be potentially subject to property taxation in each of the Host Communities. The Project lands include 3,455 acres in the region, the vast majority of which (3,008 acres) is located in the Town of Lewiston. Note that property taxes are levied independently by counties, towns and cities, villages, and school districts, which in many cases consist of overlapping jurisdictions. Thus, a property owner in the Village of Lewiston, for example, would pay property taxes to the Village of Lewiston, Niagara County, and the Lewiston-Porter School District.

The table also shows the Project property as a percent of total current tax-exempt land in each region. Note that the Project represents a significant portion of tax-exempt land in the Village of Lewiston and the Town of Lewiston. The table does not, however, show the percentage of the Project's

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holding that was tax exempt prior to NYPA's acquisition of those lands. In fact, roughly 995 acres (almost 29 percent) of the Project's 3,455 acres were tax-exempt before NYPA acquired the land.

**3.4.1.1.2 Assessments of Project Land by Host Community**

Property is typically assessed on a periodic basis to determine its value so that the appropriate taxes can be levied. However, because NYPA is tax-exempt, the Project has not been assessed on a regular basis using recognized valuation methods. Thus, it was necessary to develop estimates of the value of the Project lands and facilities. As required by the Scope of Services, we have developed two sets of estimates of the value of the Project land:

1. *Unimproved.* This set of estimates is based on the taxable value the land would have if it were unimproved, i.e., vacant. We develop these estimates from data on the average value of unimproved land in each Host Community.
  
2. *Improved.* This set of estimates is based upon the taxable value of the property with improvements (i.e., the Project facilities that currently are in place), including the value of the land itself.

For the unimproved scenario, we estimated the taxable value of the land using the average published taxable values for land in each Host Community. These values exclude the value of any buildings—thus, the “unimproved value.” We developed these estimates separately for each Host Community. For most Host Communities, these values were taken from annual reports produced by the Niagara County Real Property Tax Services ([Niagara County 2003](#)). For the Town of Lewiston and the Village of Lewiston, however, direct quotes of the unimproved value of Project lands were obtained from the town assessor. These estimates yielded the average unimproved value per acre, by Host Community. To estimate the total unimproved value of the Project lands, we multiplied the value per acre by the number of Project acres in each Host Community. [Table 3.4.1.1.2-1](#) presents the results of these estimates. We estimate the total unimproved value of Project lands to be approximately \$54 million.

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The improved values are based upon a *replacement cost* method of valuation. This is a standard methodology for calculating the potential assessed value of industrial facilities, including electric utilities. To calculate the total replacement cost of the Project's facilities, we obtained data on annual capital expenditures on Project facilities, including initial outlays for construction, as shown in [Table 3.4.1.1.2-2](#).<sup>28</sup> Using this information, we calculated the total replacement cost of the Project for each year since construction (i.e., since 1957) by aggregating total cumulative expenditures prior to that year and then depreciating the aggregate expenditures at an annual rate of 2 percent.<sup>29</sup> This value was then inflated to 2002 dollars using an appropriate price index. The resulting value in each year represents the replacement value of the Project's facilities in that year.

As shown in [Table 3.4.1.1.2-3](#), we estimate the 2003 replacement value of the Project to be \$2.81 billion. We allocate this value across the Host Communities in proportion to the Project's acreages in each community (in 2003), which were presented above.<sup>30</sup> We then add to this the value of the unimproved land in each jurisdiction to get the total value of facilities and land (the *improved* value) in each jurisdiction. The total improved value of the Project resulting from these calculations is \$2.86 billion, as indicated in the table.

### 3.4.1.1.3 Property Tax Rates by Host Community

In order to estimate property taxes from the property values calculated in the previous section, we then developed information on tax rates in all of the Host Communities over the period from 1982 to

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<sup>28</sup> Estimated future capital expenditures are also included in this table and are used to develop the forecasts for the REMI model. These estimated expenditures were obtained from NYPA.

<sup>29</sup> The appropriate depreciation rate was determined through discussions with NYPA personnel.

<sup>30</sup> It is clear that the economic value of the Project's facilities is not distributed evenly based on acreage. However, data were not available to assess the Project on a component level. Thus, this information should be considered approximate and should not be relied upon as an exact representation of the taxes that might actually be paid, by jurisdiction, if the Project were taxed.

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2003. These rates were taken from the annual reports of Niagara County Real Property Tax Services (see, e.g., [Niagara County 2003](#)) and Erie County's property tax division (see, e.g., [Erie County 2003](#)).<sup>31</sup>

[Table 3.4.1.1.3-1](#) provides information on the most recently published property tax rates for the various Host Communities. As the table indicates, many of the towns or cities have different rates for "homestead" or "non-homestead" property owners, terms used to distinguish between commercial/non-owner-occupied-residential and residential/owner-occupied landowners. For all hypothetical Project property taxes, both future and historical, non-homestead (or commercial/non-owner-occupied-residential) rates were used, because the Project would likely be classified as commercial property.

#### **3.4.1.1.4 Calculation of Hypothetical Property Taxes by Community**

To estimate total hypothetical Project taxes, we first multiply the actual property tax rate in the area by the total assessed value of the Project lands (improved and unimproved) in each year. Were these taxes actually collected, a net increase in tax revenue for local jurisdiction would result. To keep tax revenue constant, we reduce property tax rates by the appropriate amount in each jurisdiction in each year. Applying the adjusted property tax rate to the assessed value of Project lands yields estimated hypothetical Project property taxes in each jurisdiction in each year, with total property tax collections in each jurisdiction in each year unchanged.

#### **3.4.1.2 Estimates of Historical Property Tax Impacts on Host Communities**

##### **3.4.1.2.1 Effect on Property Tax Revenues**

[Table 3.4.1.2-1](#) and [Table 3.4.1.2-2](#) show the amount each taxing jurisdiction would have collected from NYPA under the unimproved and improved scenarios. The jurisdictions with the largest property tax impacts are Niagara County, the City of Niagara Falls and the three school districts in

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<sup>31</sup> Property tax reports from Niagara County were not available prior to 1982 and from Erie County (footnote continued)

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Niagara County. The Town of Lewiston, however, has a lower absolute property tax impact than the City of Niagara Falls even though a larger proportion of Project land falls within its borders. This is the result of Lewiston's low tax rates compared with those of the City of Niagara Falls.

The results for the unimproved scenario are presented in [Table 3.4.1.2-1](#). The table indicates that, in 2003, this scenario would result in the Project paying over \$500,000 to Niagara County and nearly \$730,000 to the Lewiston-Porter School District. This results in a 0.7 percent and 4 percent increase in tax revenues for Niagara County and Lewiston-Porter, respectively. In total, the Project would pay just over \$2 million in taxes if the assessed value of unimproved Project lands were taxed.

As one would expect, the improved scenario results in the substantially larger hypothetical Project property taxes, as shown in [Table 3.4.1.2-2](#). If the assessed value of improved Project lands were taxed, Project property taxes in 2003 would total approximately \$53 million, with \$8.3 million going to Niagara-Wheatfield School District, \$19.8 million to Niagara County and \$12.2 million to the Lewiston-Porter School District.

In all scenarios, real property taxes do vary substantially through time. However, while these variations are partly due to changes in the Project's improved and unimproved values, the main component driving these variations is changing tax rates, which are largely set based on the budgetary requirements of the taxing jurisdictions. Thus, the hypothetical nature of these tax levies should be stressed since both total taxing revenues and tax rates would likely have been different had the taxing authorities been able to tax Project property.

#### **3.4.1.2.2 Effect on Property Tax Rates**

Since we assume that total tax revenues in each jurisdiction in each year are unchanged in the hypothetical scenarios discussed above, the addition of the Project to the property tax rolls would result in

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prior to 1988. In addition, Erie County was unable to provide a report for 1991.

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a decrease in the rates levied on all property owners. [Table 3.4.1.2.1-1](#) presents the new tax rates under the unimproved valuation scenario. The unimproved land valuation yields relatively low tax levies, which in turn have little effect in lowering rates. Indeed, the differences in these rates and the original tax rates in [Table 3.4.1.1.3-1](#) are negligible. In contrast, as shown in [Table 3.4.1.2.1-2](#), the reductions in the property tax rates under the improved valuation scenario are substantial. For example, Niagara County tax rates drop by 29 percent. Property tax rates in the Town of Lewiston, which contains most of the Project property, drop by 79 percent.

### **3.4.1.3 Direct Property Tax Effects for Central Case REMI Modeling**

We also develop a separate set of property tax impacts that we use in our central case REMI scenario, described in the next section. Since we cannot evaluate the likely use of the Project's lands if the Project did not exist, these estimates are based on the assumption that taxes would be collected by the local governments based on the *unimproved* value of the land. Thus, these estimates are similar to the first scenario described above. However, we assume that in this scenario, taxes would be levied based on the original tax status of the property (prior to construction of the Project in 1957), rather than the current status. In particular, any property that was tax-exempt prior to the construction of the Project is also treated as tax-exempt in these property tax estimates. In particular, the 495 acres acquired from the Tuscarora Nation for the Project is assumed to retain its tax-exempt status in the economic impact scenario, whereas the other scenarios treated this land as taxable. Other jurisdictions also have additional acreage that is assumed to be tax-exempt in this scenario. [Table 3.4.1.3-1](#) provides the total taxable acreage in each jurisdiction, excluding the acreage of the formerly tax-exempt land.

### **3.4.2 Project Impacts on Local Services and Expenditures**

Although the Project does not pay taxes, its facilities are located within the jurisdictions of the Host Communities, meaning that the Host Communities are responsible for providing some services to the Project. For example, local jurisdictions would be responsible for fire and police in the event of an emergency at the Project, though Project security is provided on a regular basis by NYPA security

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officers. In a report published in February of 2004, the Town of Niagara listed the following three categories of services that the Town provides for the Project ([Urban Engineers 2004](#)):

- *Assuring Roadway Access to NYPA Properties and Easements.* The Town provides snow removal and weed trimming services to keep Project properties in the Town accessible, according to the report.
- *Water and Sewer Service.* The report indicates that the Town provides water and sewer service including storm drainage from transformer stations. (Note that the Project does pay an annual fee for water and sewer services.)
- *Fire Protection and Emergency Response Service.* The Town's police and fire are first responders to emergencies that might occur on Town property on Project property or easements. The report also notes that Town responders serve as backup for the Town of Lewiston's, who have primary responsibility for any emergencies at the RMNPP, LPGP, the reservoir, the forebay, and administration buildings.

Although this list is specific to the Town of Niagara, the other Host Communities have expressed similar concerns relative to the type of services they provide to the Project. Unfortunately, it is difficult to quantify the level of services they provide in dollar terms. Thus, we provide this information only in qualitative form. For contextual purposes, however, it is important to note that the Host Communities would likely need to provide some services regardless of who owned the Project's lands.

The Project does not pay taxes, but it does make other financial contributions to local jurisdictions. Although these expenditures were included in the estimates of total spending provided above, these contributions provide some context for the Project's use of services in the region. Indeed, these contributions serve to offset some of the expenses borne by Host Communities in providing services. We present information on Project contributions in three specific categories, focusing on the period from 1990-2001 because the best data are available for those years. In addition to Project contributions in these specific categories, the Project made roughly \$50,000 in miscellaneous charitable contributions over the period.

[Figure 3.4.2-1](#) provides a summary of Project contributions over the years. (Note that the figure only shows Project contributions since 1990 since the best data were available for those years.)

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**3.4.2.1 Contributions to Economic Development and Tourism**

Since 1990, NYPA has contributed over \$11 million (in 2002 dollars) to economic development in local communities. Contributions have been made to numerous development groups, including the New York State Office of Parks for projects ranging from the refurbishment of an observation tower to the renovation of the Schoellkopf Geological Museum. Other payments have included contributions to the Economic Development Loan Fund, the annual Festival of Lights and the Niagara Falls Chamber of Commerce.

**3.4.2.2 Contributions to Education**

The Project contributed over \$7.6 million between 1990 and 2001 to education in the local communities. Although these contributions include payments to a variety of area groups, by far the largest payment from the Project came in conjunction with the construction of the new high school in the City of Niagara Falls in 1999. This payment from the Project was earmarked for the development and refurbishment of recreational facilities owned by the City of Niagara Falls. Other recipients have included local school districts, private schools, and other educational institutions in the region.

**3.4.2.3 Contributions to Fire and Rescue Support**

The Project has made significant contribution to local fire and rescue operations. Most contributions have been made directly to local fire companies, including the Lewiston #1 Fire Company, Niagara #1 Fire Company, Niagara Active Hose Fire Company, and the Upper Mountain Fire Company. Other contributions to local rescue support operations (e.g., Mercy Flight, Mt. St. Mary's Hospital and Niagara Falls Memorial Medical Center) have been earmarked for the purchase of emergency equipment.

**3.5 Direct Impacts on Electricity Costs**

A significant component of the economic impacts of the Project and, indeed, its primary purpose, relates to the low-cost electric power provided to customers in Western New York and neighboring

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regions. ([Appendix D](#) provides a list of the Project’s customers.) This power, which has been provided historically at rates significantly below market prices, has provided an economic benefit to residential, commercial, and industrial customers. As described in [Section 2.0](#), this power is contractually linked to over 40,000 jobs at the Project’s industrial customers.

### **3.5.1 Allocation of Project Power**

As described in the first section of this report, the regulatory framework in place at the time of the Project’s initiation in 1957, and as later amended, specified the allocation of Project power. Later legislation provided further adjustments to the allocation. Currently, the output of the facility is allocated into four general categories:

- “Preference power”—one-half of total Project output, whether measured as firm capacity, peaking power, interruptible energy, or various forms of Project output in combination, is allocated to public bodies and non-profit cooperatives (otherwise known as municipal electric utilities and rural electric cooperatives) within “economic transmission distance,” including a “reasonable portion” to be sold out-of-state. The reasonable portion applies to the 50 percent of Project power made available to preference customers established in Section 836 (b) (1) of the Niagara Redevelopment Act, but no more than 20 percent of the 50 percent (or 10 percent) of total Project power is required to be allocated to out-of-state recipients.
- “Replacement power”— 445 MW of firm capacity is allocated to the businesses (or their successors) that were the customers of the Schoellkopf and Adams Generating Stations that formerly utilized the United States share of the water available for power production from the Niagara River. All replacement power is transmitted through NiMo.
- “Expansion power”—250 MW of firm capacity from the NPP is allocated for sale to businesses located within 30 miles of the Project or in Chautauqua County on the basis of increased demand resulting from expansion of local production facilities. Expansion power is transmitted through both NiMo and NYSEG.

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- “Residential power”—the remaining firm capacity, about 13 percent of the total, is allocated to investor-owned utilities in New York for resale to the companies’ residential customers. (Note that these customers pay the same cost-based rates as the preference customers.)

[Table 3.5.1-1](#) reports energy use for each of the four customer classes in 2003.<sup>32</sup>

Actual shares of Project power consumed by each of these customer classes have fluctuated over time somewhat due to changes in energy demanded by individual customers, additions or subtractions from the lists of preferred, replacement, and expansion customers, and fluctuations in the overall availability of power from the Project. [Table 3.5.1-2](#) presents historical energy use from 1984 to 2002 for the investor-owned utility (IOU) category (which includes replacement, expansion and residential power) and preference power customers, which are broken out into out-of-state customers and municipals and cooperatives. As the table shows, the IOUs have consistently distributed the largest share of energy, though their allocation is only half of Project output. However, due to a FERC order requiring a reallocation of Project power from IOU’s to the municipals and cooperatives, from 1984 through 2002, annual energy use for IOU’s has dropped by more than 3 million MWh. Accordingly, municipals and cooperatives have increased their annual use of Project power from 2.4 million MWh in 1985 to 4.3 million MWh in 2002. Out-of-state Project power use has been fairly constant over these years, totaling 1.2 million MWh in 2002.

### **3.5.2 Price of Project Power**

In [Section 2.0](#), we provided a general overview of electricity prices in the U.S., New York State and neighboring states over the period from 1961 through the present. In this section, we present the prices of Project power and compare it to the following four customer categories: preference power customers (broken out into municipals and cooperatives and out-of-state customers), residential customers, replacement customers, and expansion customers. The prices presented here do not represent the retail rates actually paid by Project customers. Rather, these prices represent an approximation of the

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<sup>32</sup> Note, any excess power, available over the firm-capacity commitments, is sold at market rates.

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energy and demand component of total price—i.e., prior to the addition of transmission, distribution, and certain ancillary services charges. These prices are then compared to national and New York historical wholesale prices. These comparisons are appropriate because it is reasonable to expect that customers currently receiving Project power would pay similar transmission and distribution charges if they were receiving power from some other source.

The Project charges customers by both the amount of energy used (measured in kWh) and demand (the peak instantaneous energy use, by month, measured in kW). Energy and demand charges are identical for customers within each class (i.e., preference, expansion, replacement and residential). However, the average price may vary due to difference in load factors among customers and differences in the classes of power sold to customers. As a result, customers with little variation in their energy use typically pay less per kWh than those whose peak use is significantly higher than their average use. One can determine the overall price a customer pays, accounting for both the demand and energy rates, by applying the customer's load factor (a measurement that relates a customer's peak demand to their average hourly demand) to the demand charge and then multiplying the energy rate by actual consumption. To calculate prices for each of the customer types listed above, we use historical sales data to determine average load factors by customer class. [Table 3.5.2-1](#) presents the resulting prices (in 2002 dollars).<sup>33</sup>

As this table shows, municipals and cooperatives and out-of-state customers have similar prices for Project power. This is because they all pay preference power rates and have relatively similar load factors. (The differing load factors are the source of the variation.) Residential customers also pay preference rates, though a lower estimated load factor results in slightly higher rates than the other preference customers. Until the mid-1980's, replacement and expansion customers paid lower rates than preference customers. Subsequently, replacement and expansion customers have paid higher rates than the preference customers.

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<sup>33</sup> An alternative way to calculate prices would be to divide annual revenues from demand and energy charges for each customer type by annual MWh. This method was not employed because data were unavailable for years prior to 1995.

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Real Project power prices for all customers declined from 1961 until the mid- to late-1980s as a result of unchanging nominal rates during those years. For preference customers, the lowest Project prices occurred in 1986, at which time they were being charged roughly 0.55 cents per kWh (in 2002 dollars). Expansion and replacement customers' lowest prices were 0.63 cents in 1987 and 0.55 cents in 1989, respectively. From these years, expansion and replacement customers have seen an increase in real prices. In 2003, expansion customers paid 1.40 cents per kWh and replacement customers paid 1.14 cents per kWh. In contrast, preference power customers saw slower growth in their prices from the mid-eighties to the present, with prices in 2003 at approximately 0.74 cents per kWh.

Notwithstanding the differences in prices paid by Project customers in the various rate classes, they have all seen rates far below market levels. [Figure 3.5.2-1](#) shows the historical prices of Project power since 1961 for the three customer types, providing comparisons to average national and New York State wholesale prices. As shown in this figure, the price of Project power was initially about 55 percent below national wholesale prices. This differential persisted through the early 1970s.

However, despite the rise in electricity prices around the U.S. due to the oil price shocks of the 1970s, NYPA kept its nominal rates fixed. Thus, the Project's customers began to reap an even greater economic benefit beginning in the mid-1970s. By the late 1980s, the price of Project power had fallen to about 90 percent below the national average for wholesale electricity.

In 1982, NYPA began to introduce some year-to-year variability in its pricing, which resulted in preference rates dropping below expansion and replacement rates. By the mid- to late-1980s, all rates began to increase (though in real terms, preference and expansion rates have declined slightly since the mid-nineties). During all years however, Project prices have remained substantially below average state and national wholesale prices.<sup>34</sup>

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<sup>34</sup> Information pertaining to rates and rate setting will be discussed in the ALP studies developed under Scopes of Services 3 and 4.

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The difference between the actual rates paid by the Project's customers and the wholesale price of power in New York and the neighboring states represents the primary source of benefits from the Project. [Table 3.5.2-2](#) reports these benefits to NYPA's customers, based on current levels of energy use and price differences. As shown in this table, the benefit of below-market power for all Project customers is approximately \$538 million annually.

### 3.6 Direct Impacts on Real Estate

The Project's direct impact on real estate stems from the land it occupies. As noted above, the Project occupies 3,422 acres of land within the Niagara region.<sup>35</sup> Because of the Project, this land is not available for other uses. Moreover, as discussed in [Section 4.0](#), the presence of the Project could affect the levels of land prices in the area. These potential impacts are evaluated in [Section 4.0](#).

[Table 3.6-1](#) reviews the history of the Project's land ownership in the region. The table distinguishes between land acquired by the Project "in fee" (i.e., land purchased and owned by the Project) and land acquired "as easement" (i.e., land to which the Project has temporary or permanent usage rights). In addition to the Project's initial acquisitions, some land has been "conveyed" to various municipalities. The table distinguishes lands conveyed to the host communities by the same categories—"in fee" and "as easement." As the table shows, the Project originally acquired 4,454 acres of land "in fee" in six jurisdictions—the City of Niagara Falls, the Town of Lewiston, the Town of Niagara, the Tuscarora Nation, the Village of Lewiston, and the City of Buffalo. The vast majority of the land (2,840 acres) was acquired from within the Town of Lewiston (including land acquired from the Village of Lewiston). In addition, 479 acres were acquired as easement from within the six jurisdictions.

The table also shows lands returned to the jurisdiction of these six municipalities, either through easement or sale to private individuals or entities. As the table indicates, the Project has conveyed almost

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<sup>35</sup> As described previously, this figure includes the 13 acres used for the storage of the ice boom in the City of Buffalo, although, technically, this property is not within the FERC boundary of the Project.

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1,500 acres of land to the six municipalities from which land was originally acquired—the majority in fee. Currently, the Project owns 3,455 acres in the six entities.

[Table 3.6-2](#) presents information on NYPA’s land holdings as a percentage of each region’s total land. As the table shows, NYPA owns by far the highest percentage of land in the Village of Lewiston (16.9 percent) and by far the lowest percentage in the City of Buffalo (less than 0.1 percent). The Project also owns a substantial proportion of land in the Town of Lewiston (9.5 percent) and lower portions in the other Host Communities.

NYPA acquired these lands in the Host Communities in the late 1950s and early 1960s by purchase and under the auspices of eminent domain, which allows public authorities to acquire land from private individuals and entities, in exchange for compensation, when public exigency requires it. Thus, when the land was acquired, NYPA compensated the individuals who owned the land.

[Table 3.6-3](#) presents data on the compensation that NYPA provided to landowners, by community. (Note that, although the table presents data by community, payments were made directly to landowners.) As the table shows, payments per acre varied greatly by location, reflecting the variation in market values and existing activities. Landowners in Niagara County were collectively compensated with nearly \$136 million (in 2002 dollars) for 4,441 acres. Among the Host Communities, residents of the City of Niagara Falls received the greatest compensation—both in total and per acre—receiving almost \$90 million for 556 acres, amounting to approximately \$161,000 per acre. Village of Lewiston landowners were compensated the second most per acre, receiving a total of \$7.8 million for 119 acres. For their 2,721 acres, Town of Lewiston landowners received \$38.6 million—or about \$14,000 per acre (this does not include Project land in the Village of Lewiston). Finally, Town of Niagara landowners were paid over \$5,500 per acre for their 548 acres.

The City of Buffalo, in which only 13 acres were acquired in 1975 for storage of the ice boom, received roughly \$14,500 per acre. Niagara University received a relatively large payment per acre—about \$114,000.

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**3.7 Direct Impacts on Tourism**

The Project's direct effects on tourism include any impacts on the total number of tourists coming to the region. The Project could in theory have both positive and negative effects on the overall level of tourism. The Project may encourage greater regional tourism, for example, if some tourists are attracted to the Project because of its status as one of the largest non-federal hydroelectric facility in the United States. Indeed, the Project maintains the Power Vista, a visitor's center that attracts a steady number of visitors throughout the year. Perched over the Niagara Gorge 4.5 miles downstream from the Falls, the Power Vista opened in 1963 and recently underwent a major renovation to update its facilities and add interactive exhibits. [Table 3.7-1](#) presents information on the annual attendance at the visitor's center. As the table shows, the visitor's center has attracted over six million visitors since it opened in 1963.<sup>36</sup> The table also shows that the visitor's center has attracted between about 30,000 and 95,000 visitors annually since 1996. (Note that annual visits were down slightly between September 1998 and June 2001 when the regular visitor's center was closed for renovations and only a temporary facility was available.)

In contrast, the Project might discourage regional tourism if it resulted in reduced attractiveness or reduced accessibility of other attractions, notably the Falls. Note that because the plant itself is located well downstream of the Falls, it does not infringe aesthetically on the Falls. Thus, concerns about the Project's effects on tourism typically do not center on LPGP or RMNPP but rather on associated facilities. Stakeholders have raised various concerns about ways in which the Project and its associated facilities may negatively impact tourism. In particular, conversations with local tourism officials as well as documents prepared by local jurisdictions ([Urban Engineers 2004](#)) suggest the following three primary concerns related to the potential direct effects on tourism.

- The Robert Moses Parkway, built in conjunction with the Project, impedes access to the waterfront and the Niagara gorge.
- The Project diverts water from the Falls (limiting total flow to 100,000 cubic feet per second, consistent with international treaty), reducing the experience of the Falls.

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<sup>36</sup> Note that visitors include tourists from outside the region and local residents.

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- Power lines associated with the Project make the region less appealing for visitors.

It is not possible to estimate the effects that these various factors may have on tourism, either positive or negative. Nonetheless, it is helpful to develop some *purely illustrative* estimates of possible effects on tourism. Thus, for the purpose of this study, we consider two illustrative cases—a 5 percent increase in the number of tourists/visitors to the region and a 5 percent decrease. Given that there are approximately 6.5 million leisure visitors to the region each year, this means we consider a change of approximately 325,000 visitors. These provide the basis for illustrative calculations in the following section of potential overall economic effects of the Project on tourism.

### **3.8 Direct Impacts on Sociological\Cultural Factors**

This report focuses primarily on the economic and demographic impacts of the Project on the Western New York region, in particular the Host and Local Communities. However, the Project also has a significant physical footprint in many of these communities. The process of its construction as well as its ongoing presence could affect the sociological and cultural aspects of these communities in various ways.

Although we have not developed data or qualitative information on these issues independently, we have reviewed three other studies that were undertaken by NYPA as part of the relicensing process. We also reviewed information provided by the Town of Niagara. In this section, we summarize the findings of these other studies that relate to socioeconomic issues. We reviewed the following documents:

- “Phase 1A Cultural Resources Investigation,” prepared for NYPA by Panamerican Consultants, URS Corporation, and E/PRO Engineering & Environmental Consulting;
- “Visual Assessment” study, prepared for NYPA by Saratoga Associates;

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- “Construction Effects” study, prepared for NYPA by URS Corporation, Gomez and Sullivan Engineers, and E/PRO Engineering & Environmental Consulting;<sup>37</sup> and
- “Impacts of the Niagara Power Project on the Town of Niagara,” prepared by Urban Engineers of New York, February 2004

### **3.8.1 Background**

As described in [Section 2.0](#) of this report, the Buffalo-Niagara region has undergone extensive changes over the last century. Like many other similar regions throughout the country, following a period of rapid growth and industrialization through approximately 1960, the Buffalo-Niagara region has since declined in both population and manufacturing intensity. The construction of the Project took place in the same general time frame as this massive demographic and economic shift began to take place.

### **3.8.2 Impacts During Construction**

Construction of the Project began in 1958 and continued through 1962-1963. The construction activities related to the Project included: 1) two Niagara River intake structures; 2) two underground conduits and associated pump stations; 3) the forebay; 4) the Lewiston Reservoir and Lewiston Pump Generating Plant; 5) the Robert Moses Niagara Power Plant; and 6) the Niagara switchyard. NYPA also undertook construction on numerous projects that were not directly related to the Project itself, including: 1) development of the Power Vista, 2) construction of a 9.3-mile section of the Robert Moses Parkway; 3) enhancements to Goat Island, Niagara Reservation State Park, Whirlpool State Park, and Hyde Park in the City of Niagara Falls. Additionally, land was allocated by NYPA to local and state agencies for a number of parks and other recreational uses.

Prior to 1958, the land acquired by NYPA for the Project was a mix of developed and undeveloped property. Most of the shoreline near the intakes, the upper portion of the Robert Moses

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<sup>37</sup> We reviewed drafts of the three studies prepared for NYPA available in May-July 2004.

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Parkway, and the southern portion of the conduits was heavily developed, mixed-use property. The land near the forebay, reservoir, and northern portion of the conduits was generally used for less intensive purposes, including agricultural and recreational (golf) uses. In total, 119 homes were relocated from the land acquired for the Project.

During construction of the major Project elements, soil and rock were stored in stockpiles and spoils areas. Combined with the construction activities themselves, this caused some temporary dislocation of commerce and communication. Construction of the conduit, in particular, reduced roadway access, although this was essentially restored subsequent to the construction period. Construction of the conduits also caused groundwater levels to fall significantly. The Town of Niagara states that this necessitated additional expenditures of \$800,000 on its water system.

The process of constructing the Project also had positive economic effects. At the peak of construction activities in 1960, NYPA employed approximately 11,700 people at the site ([Spieler and Hewitt 1960](#)).

### **3.8.3 Ongoing Impacts**

The Project is located in the midst of a region that has both heavily developed industrial components as well as rural, agricultural, and undeveloped components. Consequently, the visual impacts of the Project must be considered in this context.

Areas with cited aesthetic impacts include Niagara University, and parts of the various Host Communities. Views from vantage points within Niagara University property include the Project's switchyard, communications tower, and other facilities, which may be considered undesirable. Other vantage points within and surrounding the Project offer both positive aesthetics, such as the Power Vista and Intake Overlook, as well as negative, such as points in the Host Communities near the switchyard and some of the other Project facilities. The impacts of these aspects of the Project on the Host Communities and Niagara University are difficult to identify, since there can be many different reactions to the same

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visual setting. The “Visual Assessment” study does offer some suggestions regarding potential mitigation of the adverse aesthetic components of the Project.

As a result of the placement of the Project facilities, a number of small communities were isolated from other nearby developments, particularly in the Town of Niagara. The Town has identified five such neighborhoods, including Veterans Heights, Belden Center, Creekside-John Street, Maple Avenue-Pennsylvania Avenue, and Grauer Road. The Town of Niagara believes that this division and separation of neighborhoods has made governing the Town more difficult and expensive.



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**TABLE 3.3.1-1  
NIAGARA PROJECT EMPLOYEES**

Year	Employees
Salaried Non-Union	77
Hourly	225
Seasonal	3
Co-ops	7
Other	22
Contractors	6
Temp. Retirees	1
<b>Total</b>	<b>341</b>

Notes: Data provided by NYPA. Employment as of December 31, 2003. Excludes support personnel residing outside Western New York.

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**TABLE 3.3.3-1  
NIAGARA PROJECT SPENDING (THOUSANDS OF 2002 DOLLARS), 1983-2003**

	<b>Construction</b>	<b>Operations and Maintenance</b>	<b>Total</b>
2003	41,344	40,914	<b>82,258</b>
2002	42,601	34,436	<b>77,037</b>
2001	31,821	29,708	<b>61,528</b>
2000	21,279	29,822	<b>51,101</b>
1999	23,296	31,780	<b>55,076</b>
1998	22,422	31,566	<b>53,988</b>
1997	21,710	37,631	<b>59,342</b>
1996	14,424	37,951	<b>52,375</b>
1995	19,546	45,089	<b>64,635</b>
1994	14,499	45,179	<b>59,678</b>
1993	10,153	34,299	<b>44,451</b>
1992	13,667	40,365	<b>54,032</b>
1991	19,535	43,214	<b>62,749</b>
1990	18,127	34,313	<b>52,439</b>
1989	9,261	36,088	<b>45,349</b>
1988	4,815	37,903	<b>42,719</b>
1987	362	38,875	<b>39,237</b>
1986	2,022	63,754	<b>65,776</b>
1985	392	72,566	<b>72,958</b>
1984	43,164	69,950	<b>113,114</b>
1983	184,251	69,213	<b>253,465</b>

Notes: Data provided by NYPA.

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**TABLE 3.4.1.1.1-1**

**PROJECT LAND HOLDINGS AS PORTIONS OF COMMUNITIES' TAX-EXEMPT LANDS**

Region	NYPA Land Holdings (Acres)	Share of Total NYPA Land Holdings (%)	Total Tax-Exempt Land in Region (Acres)	NYPA Holdings as Percent of Tax-Exempt Land (%)
<i>Local Communities</i>				
Erie County	13	0.4	76,357	0.0
Buffalo City	13	0.4	4,328	0.3
<i>Host Communities</i>				
Niagara County	3,442	99.6	36,056	9.5
Lewiston Town	3,008	87.1	6,786	44.3
Lewiston Village	108	3.1	203	53.3
Lewiston-Porter SD	2,052	59.4	7,204	28.5
Niagara Falls City / SD	261	7.5	1,668	15.6
Niagara Town	174	5.0	2,327	7.5
Niagara-Wheatfield SD	635	18.4	5,045	12.6
<b>Total – Erie and Niagara Counties</b>	<b>3,455</b>	<b>100</b>	<b>112,413</b>	<b>3.1</b>

Notes: Data provided by URS. Tax-exempt land was approximated by assuming that land classified as “Community Service,” “Public Service,” “Public Parks,” or “Recreation” was tax exempt. The regional quantities do not sum to the total because many regions overlap.

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**TABLE 3.4.1.1.2-1**  
**ESTIMATED PROJECT ASSESSED VALUES BY REGION**

Place	Unimproved		
	Unimproved Land Value (\$ per Acre)	Total Estimated Assessed Value (\$)	Share of Total Project Land Value (%)
<i>Local Communities</i>			
Erie County	17,000	221,003	0.4
Buffalo City	17,000	221,003	0.4
<i>Host Communities</i>			
Lewiston Town	14,781	44,455,617	83
Lewiston Village	14,781	1,600,444	3
Lewiston-Porter SD	14,781	30,328,245	56
Niagara Falls City SD	27,854	7,267,521	14
Niagara Town	10,198	1,769,587	3
Niagara-Wheatfield SD	14,077	15,896,959	30
<b>Total – Erie and Niagara Counties</b>		<b>53,713,728</b>	<b>100</b>

Notes: Data provided by NYPA and NERA calculations as explained in text. The regional quantities do not sum to the total because many regions overlap. In addition, the total estimated assessed value in the Town of Lewiston includes the Project property in the Village of Lewiston.

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**TABLE 3.4.1.1.2-2**  
**ANNUAL CAPITAL EXPENDITURES AND DEPRECIATED FACILITY VALUE**  
**(THOUSANDS OF 2002 DOLLARS)**

Year	Annual Capital Expenditures	Total Depreciated Facility Value
1958	514,811	514,811
1959	1,121,643	1,639,454
1960	1,368,887	2,982,715
1961	477,171	3,367,679
1962	100,224	3,415,225
1963	49,798	3,420,701
1964	29,117	3,446,825
1965	5,060	3,378,624
1966	1,830	3,382,145
1967	3,184	3,320,304
1968	3,538	3,268,397
1969	1,538	3,277,446
1970	0	3,301,072
1971	-4	3,353,869
1972	153,988	3,597,092
1973	0	3,552,021
1974	0	3,672,579
1975	0	3,659,637
1976	0	3,576,052
1977	0	3,490,297
1978	0	3,419,450
1979	0	3,438,546
1980	0	3,379,425
1981	343,275	3,582,999
1982	-13,775	3,445,185
1983	184,251	3,572,887
1984	43,164	3,604,428
1985	392	3,548,123

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**TABLE 3.4.1.1.2-2 (CONT.)**

**ANNUAL CAPITAL EXPENDITURES AND FACILITY VALUE (IN THOUSANDS OF 2002  
DOLLARS)**

<b>Year</b>	<b>Capital Expenditures</b>	<b>Facility Value</b>
1986	2,022	3,489,924
1987	362	3,398,596
1988	4,815	3,407,172
1989	9,261	3,324,857
1990	18,127	3,178,154
1991	19,535	3,128,870
1992	13,667	3,064,266
1993	10,153	3,058,494
1994	14,499	3,068,150
1995	19,546	3,061,299
1996	14,424	2,995,672
1997	21,710	2,999,002
1998	22,422	2,972,797
1999	23,296	2,886,673
2000	21,279	2,880,276
2001	31,821	2,852,364
2002	42,601	2,857,484
2003	41,459	2,808,440
2004	55,261	N/A
2005	44,672	N/A
2006	40,255	N/A
2007	23,241	N/A
2008	70,987	N/A
2009	63,042	N/A
2010	26,547	N/A
2011	21,538	N/A
2012	20,830	N/A
2013	19,177	N/A

Notes: Data from NYPA (including estimates of future expenditures) and NERA calculations as described in text. Note that the negative entries reported in this table reflect accounting adjustments between years and should not be considered actual negative expenditures.

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**TABLE 3.4.1.1.2-3  
ESTIMATED PROJECT ASSESSED VALUES BY REGION**

Place	Assessed Facility Value (\$)	Assessed Land Value (\$)	Total Assessed Project Value (\$)	Percent of Total Project Value
<i>Local Communities</i>				
Erie County	10,566,892	221,003	10,787,895	0.38%
Buffalo City	10,566,892	221,003	10,787,895	0.38%
<i>Host Communities</i>				
Lewiston Town	2,444,749,726	44,455,617	2,489,205,342	87%
Lewiston Village	88,013,273	1,600,444	89,613,716	3%
Lewiston-Porter SD	1,667,842,533	30,328,245	1,698,170,778	59%
Niagara Falls City SD	212,080,782	7,267,521	219,348,303	8%
Niagara Town	141,042,816	1,769,587	142,812,403	5%
Niagara-Wheatfield SD	917,950,008	15,896,959	933,846,967	33%
<b>Total</b>	<b>2,808,440,216</b>	<b>53,713,728</b>	<b>2,862,153,944</b>	<b>100%</b>

Notes: Data provided by NYPA and NERA calculations as explained in text. Note that since regions are overlapping, the rows are not intended to be summed to calculate total assessed values.

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**TABLE 3.4.1.1.3-1**  
**2003 PROPERTY TAX RATES (PERCENT OF ASSESSED VALUE)**

	<b>Rate Type</b>	<b>County Rate</b>	<b>Town/City Rate</b>	<b>Village Rate</b>	<b>Town Use Tax Rate</b>	<b>County Use Tax</b>	<b>School Rate</b>
<i>Local Communities</i>							
Buffalo City	Homestead	0.481	0.955	N/R	0.173	-	0.950
	Non-Homestead	0.481	1.762	N/R	0.173	-	1.804
<i>Host Communities</i>							
Lewiston Town	Homestead	0.855	0.068	N/R	0.196	0.133	1.668 (NW) / 2.098(LP)
	Non-Homestead	0.855	0.068	N/R	0.196	0.133	2.304 (NW) / 2.098 (LP)
Lewiston Village	All	0.855	N/A	0.443	0.196	0.133	2.098
Niagara Falls City / SD	Homestead	0.861	1.616	N/R	0.009	-	1.578
	Non-Homestead	0.861	2.756	N/R	0.009	-	2.713
Niagara Town	Homestead	0.863	0.000	N/R	0.582	0.061	1.663
	Non-Homestead	0.863	0.000	N/R	0.582	0.061	2.310

Note: The Town of Lewiston has two school rates because part of the Town is located in Niagara-Wheatfield School (NW) District, with the other part located in the Lewiston-Porter (LP) School District. Homestead rates are used for owner-occupied residential land. The homestead tax rate is applied to up to 10 acres of the land. Any portion of land over 10 acres is taxed using non-homestead rates.

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**TABLE 3.4.1.2-1**

**HYPOTHETICAL PROJECT PROPERTY TAX PAYMENTS, 1982-2003 (UNIMPROVED PROPERTY VALUATION)**

<b>Place</b>	<b>2003</b>	<b>2002</b>	<b>2001</b>	<b>2000</b>	<b>1999</b>	<b>1998</b>	<b>1997</b>	<b>1996</b>	<b>1995</b>
<i>Local Communities</i>									
Erie County	1,064	737	686	873	1,061	1,206	1,209	1,123	1,152
City of Buffalo	4,278	1,579	1,722	1,747	1,765	1,865	1,998	1,877	1,791
Buffalo City School District	3,987	4,334	3,949	4,111	4,153	3,867	3,511	3,256	3,348
<i>Host Communities</i>									
Niagara County	503,014	516,711	442,436	423,228	415,321	403,589	427,359	456,815	462,888
Town of Lewiston	109,980	75,720	94,067	46,126	77,166	77,895	98,764	96,764	111,865
Village of Lewiston	6,992	7,003	6,991	6,685	6,884	6,868	6,848	5,457	4,471
Lewiston-Porter SD	728,128	722,738	729,136	749,120	675,129	643,413	635,586	646,342	584,134
City of Niagara Falls	199,316	213,881	221,934	227,579	234,378	237,212	226,325	208,245	212,013
Niagara Falls City SD	195,597	206,115	217,474	232,583	257,447	244,152	251,707	256,845	264,984
Town of Niagara	12,786	14,928	10,589	13,160	13,640	13,486	14,390	10,436	10,117
Niagara-Wheatfield SD	237,640	230,522	219,514	215,132	206,717	193,924	204,375	204,407	200,349
<b>Total</b>	<b>2,002,781</b>	<b>1,994,268</b>	<b>1,948,499</b>	<b>1,920,343</b>	<b>1,893,660</b>	<b>1,827,477</b>	<b>1,872,072</b>	<b>1,891,567</b>	<b>1,857,112</b>

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**TABLE 3.4.1.2-1 (CONT.)**

**HYPOTHETICAL PROJECT PROPERTY TAX PAYMENTS, 1982-2003 (UNIMPROVED PROPERTY VALUATION)**

<b>Place</b>	<b>1994</b>	<b>1993</b>	<b>1992</b>	<b>1991</b>	<b>1990</b>	<b>1989</b>	<b>1988</b>	<b>1987</b>	<b>1986</b>
<i>Local Communities</i>									
Erie County	1,103	1,360	1,287	N/A	1,157	1,063	898	N/A	N/A
City of Buffalo	1,712	2,414	1,783	N/A	1,389	1,417	1,046	N/A	N/A
Buffalo City School District	3,578	3,520	3,428	N/A	3,038	3,020	3,101	N/A	N/A
<i>Host Communities</i>									
Niagara County	476,935	487,138	494,423	505,304	498,793	499,480	474,944	516,317	542,577
Town of Lewiston	121,725	123,240	132,860	143,315	207,870	168,150	212,579	175,532	169,694
Village of Lewiston	2,293	2,106	1,870	1,789	1,449	1,268	1,112	1,181	1,226
Lewiston-Porter SD	911,851	902,698	892,107	853,830	814,267	749,673	706,390	696,629	605,250
City of Niagara Falls	285,289	237,340	257,816	250,767	250,808	256,636	233,932	210,890	196,868
Niagara Falls City SD	278,375	269,532	260,880	245,651	237,173	222,511	203,396	188,789	170,277
Town of Niagara	10,439	10,690	10,005	10,456	9,203	9,290	8,696	7,881	7,835
Niagara-Wheatfield SD	304,296	297,902	291,617	273,123	256,542	234,705	221,597	28,698	28,902
<b>Total</b>	<b>2,397,594</b>	<b>2,337,940</b>	<b>2,348,078</b>	<b>N/A</b>	<b>2,281,691</b>	<b>2,147,212</b>	<b>2,067,690</b>	<b>N/A</b>	<b>N/A</b>

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
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**TABLE 3.4.1.2-1 (CONT.)**

**HYPOTHETICAL PROJECT PROPERTY TAX PAYMENTS, 1982-2003 (UNIMPROVED PROPERTY VALUATION)**

Place	1985	1984	1983	1982
<i>Local Communities</i>				
Erie County	N/A	N/A	N/A	N/A
City of Buffalo	N/A	N/A	N/A	N/A
Buffalo City School District	N/A	N/A	N/A	N/A
<i>Host Communities</i>				
Niagara County	535,736	524,940	639,694	466,538
Town of Lewiston	166,699	169,914	166,159	89,156
Village of Lewiston	N/A	N/A	N/A	N/A
Lewiston-Porter SD	574,899	564,521	497,549	1,184,864
City of Niagara Falls	183,078	188,981	187,587	0
Niagara Falls City SD	159,743	185,238	354,041	240,719
Town of Niagara	7,725	8,694	10,641	14,969
Niagara-Wheatfield SD	27,896	30,794	26,623	363,774
<b>Total</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

Notes: Data from [Niagara County 2003](#), [Erie County 2003](#), and NERA calculations.

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
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**TABLE 3.4.1.2-2**

**HYPOTHETICAL PROJECT PROPERTY TAX PAYMENTS, 1982-2003 (IMPROVED PROPERTY VALUATION)**

Place	2003	2002	2001	2000	1999	1998	1997	1996	1995
<i>Local Communities</i>									
Erie County	51,908	53,791	53,299	62,556	75,665	79,260	80,382	79,808	83,881
City of Buffalo	208,154	213,006	251,695	246,338	247,829	240,681	235,642	248,678	261,903
Buffalo City School District	194,069	211,785	213,316	203,352	204,616	175,330	161,383	157,738	164,919
<i>Host Communities</i>									
Niagara County	19,821,446	20,593,604	17,715,379	17,149,946	17,021,104	16,867,228	17,872,334	18,885,057	19,447,383
Town of Lewiston	1,362,132	1,008,186	1,226,223	693,770	1,045,566	1,060,358	1,275,283	1,297,747	1,830,210
Village of Lewiston	221,959	236,437	222,920	220,895	227,580	232,739	232,710	190,165	158,234
Lewiston-Porter SD	12,237,390	12,229,301	12,391,195	12,557,983	11,545,821	11,370,899	11,127,430	11,110,852	10,241,007
City of Niagara Falls	4,860,066	5,537,714	5,699,999	5,527,095	5,418,823	5,469,340	5,016,147	4,576,585	4,773,748
Niagara Falls City SD	4,795,722	5,407,858	5,633,149	5,632,111	5,940,430	5,774,456	5,601,121	5,673,998	6,008,497
Town of Niagara	582,609	605,451	520,580	615,683	637,055	641,348	669,415	481,109	477,787
Niagara-Wheatfield SD	8,255,733	7,901,893	7,672,576	7,253,452	7,084,324	7,055,153	7,097,891	7,015,767	7,014,253
<b>Total</b>	<b>52,591,188</b>	<b>53,999,026</b>	<b>51,600,329</b>	<b>50,163,180</b>	<b>49,448,813</b>	<b>48,966,794</b>	<b>49,369,738</b>	<b>49,717,505</b>	<b>50,461,821</b>

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

**TABLE 3.4.1.2-2 (CONT.)**

**HYPOTHETICAL PROJECT PROPERTY TAX PAYMENTS, 1982-2003 (IMPROVED PROPERTY VALUATION)**

<b>Place</b>	<b>1994</b>	<b>1993</b>	<b>1992</b>	<b>1991</b>	<b>1990</b>	<b>1989</b>	<b>1988</b>	<b>1987</b>	<b>1986</b>
<i>Local Communities</i>									
Erie County	91,816	96,255	105,776	N/A	117,715	121,914	109,324	N/A	N/A
City of Buffalo	305,075	242,414	202,052	N/A	178,477	200,131	157,473	N/A	N/A
Buffalo City School District	204,995	139,250	154,423	N/A	162,684	182,026	198,282	N/A	N/A
<i>Host Communities</i>									
Niagara County	20,011,122	19,812,842	19,815,582	19,654,190	19,655,659	20,034,511	19,242,625	20,656,053	22,092,508
Town of Lewiston	1,920,897	1,957,498	1,996,823	1,996,979	2,383,393	1,751,159	2,134,783	1,743,711	1,299,932
Village of Lewiston	81,379	71,612	54,826	49,131	33,706	40,494	35,163	37,229	38,816
Lewiston-Porter SD	10,178,227	10,416,011	10,466,751	10,353,003	10,051,328	9,547,673	9,337,111	9,398,514	8,356,213
City of Niagara Falls	6,527,440	5,206,294	5,883,270	5,765,528	5,784,756	6,125,234	6,071,370	4,773,655	4,855,294
Niagara Falls City SD	6,288,140	5,911,045	5,980,520	5,674,647	5,487,256	5,354,173	5,308,461	4,897,191	4,863,421
Town of Niagara	493,634	526,846	497,990	587,745	508,805	522,023	500,410	493,188	522,987
Niagara-Wheatfield SD	7,143,881	7,416,244	7,614,416	7,666,912	7,312,013	7,123,311	6,903,602	2,447,078	2,664,498
<b>Total</b>	<b>53,246,606</b>	<b>51,796,311</b>	<b>52,772,429</b>	<b>N/A</b>	<b>51,675,791</b>	<b>51,002,649</b>	<b>49,998,605</b>	<b>N/A</b>	<b>N/A</b>

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
**THE PAST, PRESENT AND FUTURE SOCIOECONOMIC EFFECTS OF THE NIAGARA POWER PROJECT**

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**TABLE 3.4.1.2-2 (CONT.)**

**HYPOTHETICAL PROJECT PROPERTY TAX PAYMENTS, 1982-2003 (IMPROVED PROPERTY VALUATION)**

Place	1985	1984	1983	1982
<i>Local Communities</i>				
Erie County	N/A	N/A	N/A	N/A
City of Buffalo	N/A	N/A	N/A	N/A
Buffalo City School District	N/A	N/A	N/A	N/A
<i>Host Communities</i>				
Niagara County	22,340,706	21,515,095	20,097,576	19,221,375
Town of Lewiston	1,340,555	1,403,264	1,187,038	1,358,651
Village of Lewiston	N/A	N/A	N/A	N/A
Lewiston-Porter SD	8,116,773	8,178,029	5,899,710	3,898,792
City of Niagara Falls	4,672,259	4,738,489	1,991,801	0
Niagara Falls City SD	4,798,671	5,177,553	3,726,493	3,900,166
Town of Niagara	545,568	573,307	788,067	840,013
Niagara-Wheatfield SD	2,731,111	2,910,675	2,011,743	2,220,224
<b>Total</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

Notes: Data from [Niagara County 2003](#), [Erie County 2003](#), and NERA calculations.

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**TABLE 3.4.1.2.1-1  
2003 HYPOTHETICAL PROPERTY TAX RATES UNDER UNIMPROVED VALUATION  
SCENARIO**

	<b>Rate Type</b>	<b>County Rate</b>	<b>Town/City Rate</b>	<b>Village Rate</b>	<b>Town Use Tax Rate</b>	<b>County Use Tax</b>	<b>School Rate</b>
<i>Local Communities</i>							
Buffalo City	Homestead	0.481	0.955	N/R	0.173		0.949
	Non-Homestead	0.481	1.762	N/R	0.173		1.804
<i>Host Communities</i>							
Lewiston Town	Homestead	0.849	0.064	N/R	0.184	0.132	1.649 (NW) / 2.009 (LP)
	Non-Homestead	0.849	0.064	N/R	0.184	0.132	2.227(NW) / 2.009 (LP)
Lewiston Village	All	0.849	N/A	0.437	0.184	0.132	2.009
Niagara Falls City / SD	Homestead	0.854	1.603	N/R	0.009		1.556
	Non-Homestead	0.854	2.734	N/R	0.009		2.691
Niagara Town	Homestead	0.857	0.000	N/R	0.578	0.060	1.644
	Non-Homestead	0.857	0.000	N/R	0.578	0.060	2.283

Note: This table represents the tax rates that would yield the same total property tax revenues had the project been taxable using the unimproved land valuation scenario. Note, the Town of Lewiston has two school rates because part of the Town is located in Niagara-Wheatfield School (NW) District, with the other part located in the Lewiston-Porter (LP) School District.

**NIAGARA POWER PROJECT (FERC NO. 2216)  
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**TABLE 3.4.1.2.1-2  
2003 HYPOTHETICAL PROPERTY TAX RATES UNDER IMPROVED VALUATION  
SCENARIO**

	<b>Rate Type</b>	<b>County Rate</b>	<b>Town/City Rate</b>	<b>Village Rate</b>	<b>Town Use Tax Rate</b>	<b>County Use Tax</b>	<b>School Rate</b>
<i>Local Communities</i>							
Buffalo City	Homestead	0.481	0.952	N/R	0.173		0.947
	Non-Homestead	0.481	1.757	N/R	0.173		1.799
<i>Host Communities</i>							
Lewiston Town	Homestead	0.609	0.014	N/R	0.041	0.095	0.991 (NW) / 0.603(LP)
	Non-Homestead	0.609	0.014	N/R	0.041	0.095	1.368 (NW) / 0.603 (LP)
Lewiston Village	All	0.609	N/A	0.248	0.041	0.095	0.603
Niagara Falls City / SD	Homestead	0.613	1.295	N/R	0.007		1.272
	Non-Homestead	0.613	2.208	N/R	0.007		2.186
Niagara Town	Homestead	0.615	0.000	N/R	0.407	0.043	0.988
	Non-Homestead	0.615	0.000	N/R	0.407	0.043	1.372

Note: This table represents the tax rates that would yield the same total property tax revenues had the project been taxable using the improved land valuation scenario. Note, the Town of Lewiston has two school rates because part of the Town is located in Niagara-Wheatfield School (NW) District, with the other part located in the Lewiston-Porter (LP) School District.

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**TABLE 3.4.1.3-1**  
**ACREAGE USED IN PROPERTY TAX SCENARIO**  
**EXCLUDING FORMERLY TAX-EXEMPT LAND**

<b>Region</b>	<b>Acres</b>
<i>Local Communities</i>	
Erie County	13
Buffalo City	13
<i>Host Communities</i>	
Niagara County	2,694
Lewiston Town	2,296
Lewiston Village	98
Lewiston-Porter SD	1,875
Niagara Falls City / SD	244
Niagara Town	154
Niagara-Wheatfield SD	575
<b>Total</b>	<b>2,707</b>

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**TABLE 3.5.1-1  
2003 PROJECT ENERGY USE BY CUSTOMER**

<b>Customer (by Rate Type)</b>	<b>Customer (by Category)</b>	<b>Energy (MWh)</b>	<b>Percent of Total</b>
Preference	Full Requirement	1,507,362	12.1%
	Partial Requirement	2,725,332	21.9%
	Out-of-State	1,148,708	9.2%
Residential	NiMo Residential	931,727	7.5%
	NYSEG Residential	757,287	6.1%
	RGE Residential	445,234	3.6%
Expansion	NiMo Expansion	1,182,039	9.5%
	NYSEG Expansion	235,653	1.9%
	Other	18,377	0.1%
Replacement	NiMo Replacement	3,494,739	28.1%
<b>Total</b>		<b>12,446,458</b>	

Notes: Data from Project sales books. “Full requirement” refers to those municipal electric utilities and rural electric cooperatives that receive all their power from NYPA while “partial requirement” refers to municipal agencies and cooperatives that also receive power from sources other than NYPA.

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**TABLE 3.5.1-2**  
**ANNUAL ENERGY SALES BY CUSTOMER TYPE (MWH)**

Year	Preference		IOUs (Replacement, Expansion and Residential)
	Munis and Co-ops	Out-of-State	
2002	4,340,133	1,182,807	7,222,318
2001	4,132,105	1,142,086	7,230,030
2000	4,259,926	1,176,353	7,654,033
1999	4,275,526	1,355,288	7,648,106
1998	4,295,710	1,530,344	7,687,537
1997	4,269,344	1,649,151	7,771,892
1996	4,198,433	1,352,004	7,668,026
1995	4,082,955	1,403,962	7,736,279
1994	4,038,641	1,380,553	7,487,705
1993	3,942,386	1,818,907	7,395,311
1992	3,667,821	1,339,775	7,378,577
1991	3,596,413	1,524,276	7,391,555
1990	3,513,348	1,476,633	7,611,764
1989	2,266,869	1,469,593	9,464,481
1988	2,256,556	1,280,502	9,553,193
1987	2,432,618	1,511,657	9,731,529
1986	2,374,044	1,788,918	10,582,891
1985	2,370,160	1,292,898	10,358,726
1984	2,320,233	936,290	10,945,794

Notes: Data provided by NYPA annual reports and Project sales data.

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**TABLE 3.5.2-1  
PROJECT EFFECTIVE RATES (INCLUDING LOAD FACTOR ADJUSTMENTS) BY  
CUSTOMER TYPE (2002 CENTS/KWH)**

Year	Preference		Replacement	Expansion	Residential
	Munis and Co-ops	Out-of-state			
2003	0.74	0.75	1.14	1.40	0.83
2002	0.69	0.70	1.10	1.42	0.76
2001	0.70	0.71	1.04	1.39	0.77
2000	0.72	0.73	1.01	1.39	0.79
1999	0.73	0.74	1.00	1.43	0.81
1998	0.75	0.75	0.98	1.45	0.82
1997	0.75	0.76	0.94	1.44	0.83
1996	0.77	0.77	0.91	1.44	0.84
1995	0.78	0.79	0.89	1.46	0.86
1994	0.77	0.78	0.88	1.31	0.85
1993	0.73	0.73	0.82	1.28	0.80
1992	0.68	0.69	0.75	1.05	0.76
1991	0.64	0.65	0.67	0.94	0.72
1990	0.62	0.63	0.61	0.85	0.70
1989	0.60	0.61	0.55	0.77	0.69
1988	0.58	0.58	0.58	0.70	0.67
1987	0.55	0.56	0.60	0.63	0.65
1986	0.54	0.55	0.61	0.64	0.64
1985	0.55	0.56	0.63	0.66	0.65
1984	0.57	0.58	0.64	0.68	0.67
1983	0.59	0.60	0.67	0.70	0.70
1982	0.61	0.63	0.69	0.73	0.73
1981	0.82	0.83	0.74	0.78	0.94
1980	0.90	0.91	0.81	0.85	1.03
1979	0.98	0.99	0.88	0.93	1.12
1978	1.06	1.08	0.95	1.00	1.21
1977	1.13	1.15	1.02	1.07	1.30
1976	1.21	1.23	1.08	1.14	1.38
1975	1.28	1.30	1.15	1.21	1.46
1974	1.40	1.42	1.26	1.32	1.60
1973	1.52	1.55	1.37	1.44	1.74

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**TABLE 3.5.2-1 (CONT.)**  
**PROJECT RATES BY CUSTOMER TYPE (2002 CENTS/KWH)**

Year	Preference		Replacement	Expansion	Residential
	Munis and Co-ops	Out-of-state			
1972	1.61	1.63	1.44	1.52	1.84
1971	1.68	1.70	1.51	1.59	1.92
1970	1.76	1.79	1.58	1.67	2.02
1969	1.86	1.88	1.67	1.76	2.12
1968	1.95	1.98	1.75	1.84	2.23
1967	2.03	2.06	1.82	1.92	2.32
1966	2.09	2.12	1.88	1.98	2.40
1965	2.15	2.19	1.93	2.04	2.46
1964	2.19	2.23	1.97	2.08	2.51
1963	2.23	2.26	2.00	2.11	2.55
1962	2.25	2.28	2.02	2.13	2.57
1961	2.28	2.31	2.05	2.16	2.61

Notes: Data provided by NYPA. These rates include both capacity and energy charges and are calculated using estimated load factors for each customer type.

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**TABLE 3.5.2-2  
BENEFITS FROM PROJECT POWER IN 2003 BY CUSTOMER (2002 DOLLARS)**

<b>Customer (by Rate Type)</b>	<b>Customer (by Category)</b>		<b>Benefits</b>
Preference	Munis and Co-ops	Full Requirement	66,134,122
		Partial Requirement	119,074,467
	Out-of-State	Connecticut Municipal Electric Energy Coop.	16,435,165
		Massachusetts Department of Public Utilities	24,647,041
		Public Power Association of New Jersey	5,667,628
		City of Cleveland, Ohio	14,586,668
		Allegheny Electric Cooperative, Pennsylvania	3,123,054
		Rhode Island Public Utilities Commission	316,248
		Vermont Department of Public Service	4,646,593
	Residential	NiMo	38,860,339
		NYSEG	32,572,057
		RGE	19,150,186
Expansion		NiMo	44,015,998
		NYSEG	8,775,093
		Other	684,311
Replacement		NiMo	139,468,561
Total			538,157,531

Notes: Data from Project sales books. “Full requirement” refers to those municipal utilities and cooperatives that receive all their power from NYPA while “partial requirement” refers to customers who also receive power from sources other than NYPA. Benefits are calculated by multiplying the total amount of Project energy purchased from NYPA in 2003 (data obtained from Project sales books) by the difference between the relevant wholesale electricity price and the prices actually paid for Project power. For the purposes of this table, the relevant wholesale electricity price was assumed to be the average price for electricity sold to industrial users in each state, as reported by the EIA for 2003.

**NIAGARA POWER PROJECT (FERC NO. 2216)**  
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**TABLE 3.6-1**  
**PROJECT LAND ACQUISITIONS AND HOLDINGS (ACRES)**

<b>Municipality</b>	<b>Acquired in Fee*</b>	<b>Acquired as Easement*</b>	<b>Total Acquired Lands*</b>	<b>Conveyed in Fee**</b>	<b>Conveyed as Easement**</b>	<b>Total Conveyed Lands **</b>	<b>NYPA Owned Lands */**</b>
<i>Local Communities</i>							
Erie County	13	0	13	0	0	0	13
Buffalo City	13	0	13	0	0	0	13
<i>Host Communities</i>							
Niagara County	4,441	479	4,920	1,064	356	1,420	3,442
Niagara Falls City / SD	2840	121	2,962	338	241	579	2,513
Lewiston Town	119	0.3	120	11	54	65	108
Lewiston Village	556	286	842	344	56	400	261
Niagara Town	548	11	559	379	3		174
<i>Other</i>							
Niagara University	214	0	214	0	0	0	214
<b>Total</b>	<b>4,454</b>	<b>479</b>	<b>4,933</b>	<b>1,064</b>	<b>356</b>	<b>1,420</b>	<b>3,455</b>

Note: Numbers do not sum to total because some regions overlap. Acreage for the Town of Lewiston includes the Village of Lewiston. Data provided by URS. \* - Does not include Void Parcels or Parcels for which only a map was prepared. \*\* - Does not include Expired, Void or Map Prep Easements.

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**TABLE 3.6-2**  
**PROJECT LAND HOLDINGS AS PORTIONS OF COMMUNITIES' TOTAL LANDS**

<b>Region</b>	<b>NYPA Land Holdings (in Acres)</b>	<b>Size of Region (in Acres)</b>	<b>NYPA Holdings as Percent of Region (%)</b>
<i>Local Communities</i>			
Erie County	13	669,873	0.0
Buffalo City	13	26,458	0.05
<i>Host Communities</i>			
Niagara County	3,442	337,047	1.0
Lewiston Town	2,405	25,203	9.5
Lewiston Village	108	662.98	16.3
Lewiston-Porter SD	2,052	34,988	5.9
Niagara Falls City / SD	261	9,033	2.9
Niagara Town	174	5,973	2.9
Niagara-Wheatfield SD	635	26,697	2.4
<i>Other</i>			
Niagara University	214	357*	60.0
<b>Total</b>	<b>3,455</b>	<b>363,505</b>	<b>N/R</b>

Note: Data provided by URS. Acreage for the Town of Lewiston includes the Village of Lewiston. For NU, size of region includes pre-Project acreage.

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**TABLE 3.6-3**  
**PROJECT LAND PAYMENTS**

Region	NYPA Originally Acquired Land (in Acres)	Payments Made to Landowners (in 2002 Dollars)	Average Price per Acre (in 2002 Dollars)
Local Communities			
Erie County	13	187,684	14,437
Buffalo City	13	187,684	14,437
Host Communities			
Niagara County	4,441	135,918,615	30,606
Lewiston Town	2,721	38,624,749	14,195
Lewiston Village	119	7,802,745	65,391
Niagara Falls City / SD	556	89,491,121	161,098
Niagara Town	548	3,055,410	5,576
Other			
Niagara University	214	24,422,959	114,126

Note: Data provided by URS and NYPA. Payments were inflated using the GDP deflator. Payments were assumed to be in 1961 dollars for all entities except the City of Buffalo, for which payments were assumed to be in 1975 dollars. These payments do not include any payments that were made for relocations. Acreage presented here for the Town of Lewiston excludes the Village of Lewiston.

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**TABLE 3.7-1**  
**POWER VISTA ATTENDANCE, 1963-PRESENT**

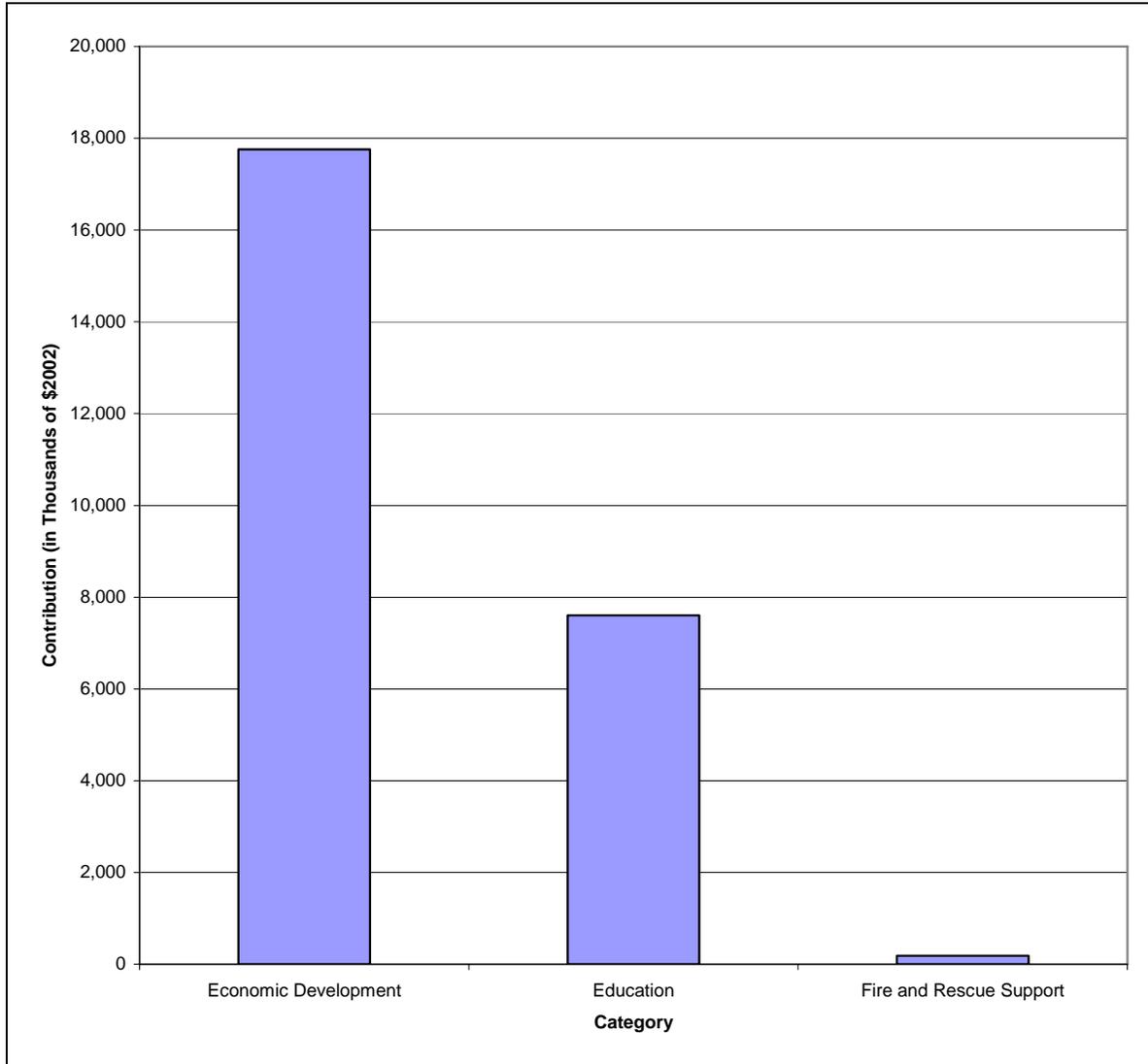
Year	Attendance
1963 - 1995	5,755,768
1996	93,018
1997	63,353
1998	68,502
1999	30,774
2000	31,375
2001	44,697
2002	89,349
2003	66,055
Jan. – Feb. 15, 2004	1,955
<b>Total to Date</b>	<b>6,244,846</b>

Note: Between 1996 and 2001, the Power Vista building was periodically closed to accommodate renovations for ADA and fire protection code compliance and exhibit remodeling. From September 1998 through June 2001, a temporary visitors center was open with modest exhibits and programming. July 7, 2001 was the grand re-opening of the newly renovated Power Vista. Since the September 11, 2001 attacks on the World Trade Center and Pentagon, the Power Vista has periodically been closed due to heightened threat levels. This occurred four times in 2003. Note that the attendance includes both tourists from outside the region and local residents. Data provided by NYPA.

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**FIGURE 3.4.2-1**  
**SUMMARY OF NIAGARA CONTRIBUTIONS TO HOST AND LOCAL COMMUNITIES (2002**  
**DOLLARS)**

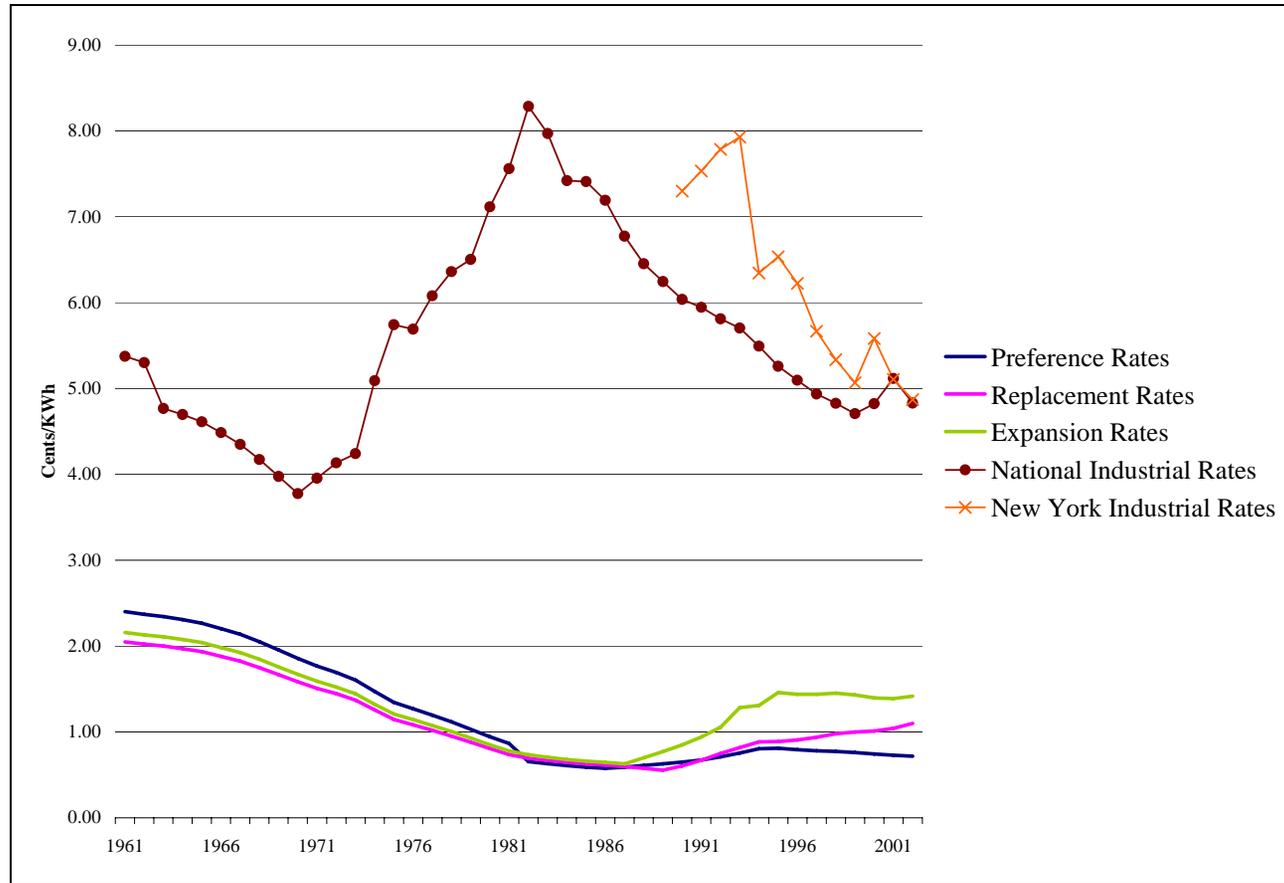


Note: Data provided by NYPA. NERA calculations as explained in text.

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**FIGURE 3.5.2-1**

**HISTORICAL PRICES OF PROJECT POWER COMPARED TO NATIONAL AND NEW YORK WHOLESALE PRICES, 1961-2001, (2002 CENTS/KWH)**



Notes: NYPA rates include demand and energy charges and were calculated using the estimated load factors for each customer type. Data from U.S. Energy Information Administration and NYPA. (EIA data for New York State prior to 1990 were unavailable.)

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#### **4.0 MODELING THE SOCIOECONOMIC IMPACTS OF THE NIAGARA PROJECT AND THE NYPA PRESENCE**

This section develops estimates of the socioeconomic effects of the Project, based upon the results of the REMI modeling. We begin by describing the economic methodology we use, including a discussion of the REMI model and its merits. We then describe the process for developing the inputs to the model, using the data developed in the previous section as a starting point for the various effects. Subsequent sections present the results of the REMI modeling for effects on individual entities in the various impact categories that we have discussed throughout the report.

#### **4.1 Overview of Economic Impact Methodology**

This section provides background on the methods economists have developed to assess the economic impacts of business activity—such as a major hydroelectric facility—on local or regional economies. The section begins with an overview of the types of economic impacts that typically are distinguished in regional economic assessments. We then provide an overview of the REMI model, including the model developed specifically for this study. We also provide a description of the overall approach that we have taken in this study. Finally, we discuss the limitations of regional economic models such as REMI.

##### **4.1.1 Categorization of Economic Impacts**

The economic impacts of a hydroelectric facility on the regional economy can be classified in various ways, depending on the specific methodology used. One common approach is to group impacts into two broad categories:

1. *Direct impacts* include all of the categories described in the previous section, including the Project's direct employment and expenditures in the relevant jurisdictions as well as

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the other direct effects the Project has on various economic variables. As noted in the previous section, in addition to employment and expenditures, these direct impacts include the Project's effects on electricity rates, taxes, tourism, and other categories.

2. *Indirect and multiplier impacts* represent the effects of these direct actions as well as the subsequent rounds of economic activity as the direct effects percolate through the economy. Key elements include effects of employee spending in the region as well as the subsequent rounds of spending for those receiving income from Project expenditures. Complex economic impact models, including REMI, also include in these *multiplier effects* the subsequent effects on local wage rates, prices, and other economic variables. The results of these subsequent multiplier effects are estimates of the additional effects of the Project on employment, GRP, population, income, and overall economic activity.

Direct effects are usually estimated through a detailed process of data gathering. As discussed below, multiplier effects can be estimated using a regional model of the local economy.

#### **4.1.2 Overview of the Basic REMI Model**

The REMI model is a state-of-the-art regional model that provides a detailed characterization of the regional economy. [Appendix E](#) contains a description of the REMI model. The REMI model has been in use since 1980 and has been well received by independent reviewers, who have cited the model's rigorous use of economic theory in its development and the resulting confidence in its simulation results.

The REMI model has been used in many studies including applications to major projects and policies including forecasting and planning, economic development, transportation, energy and natural resources, taxation, budget and welfare, and environmental policies ([Treyz 1993](#), [Harrison and Nichols 1993](#) and [Treyz 1995](#)).

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The core of the REMI model is a set of input/output (“I/O”) relationships among different industries. As noted, these relationships show how industries are related to one another, in terms of both inputs and outputs. Thus, they allow one to estimate how changes in one industry will affect *demand* for other industries (those that provide inputs to the industry in question) or *supply* (those that purchase outputs from the industry). In addition, as noted, I/O models can be used to trace the effects that result from changes in the incomes of workers in the affected industries.

The REMI model, however, goes well beyond the standard I/O relationships to incorporate other important feedback effects. The model includes demographic components, because the population of an area over the longer run depends in part on the available economic opportunities. Changes in population in turn have feedback effects on the local economy, affecting the demand for housing and other goods. Other feedback effects include changes in wages as the result of changes in economic activity. If employment increases, for example, wages will tend to rise, affecting the competitive position of the region relative to other areas.

REMI has been regularly updated both to include the newest empirical information and to integrate the most up-to-date theoretical framework. For example, REMI recently incorporated a component known as the “new economic geography,” which allows different sub-regions in the model to interact in a manner consistent with the most recent theory.<sup>38</sup> These additions to the model provide even greater abilities to capture the complicated geographic interactions that influence the levels of economic activity in various regions.

#### **4.1.3 REMI Model Developed for This Study**

A detailed, multi-region REMI model was developed specifically for this study. It was compiled in January 2004 and includes actual data through 2000 based upon the most recent U.S. Census (2000) and other data. The REMI model typically is available at the county or state levels. Because of the

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importance of evaluating effects on individual entities within the Buffalo-Niagara area, however, REMI used detailed sub-county data on employment, population, and other economic variables to develop a multi-region model for the following geographic areas:

- New York State
- Western New York
- Erie County
- City of Buffalo
- Niagara County
- Town of Lewiston (includes Niagara University)
- Village of Lewiston
- Lewiston-Porter School District
- Niagara Falls City/School District
- Town of Niagara
- Niagara-Wheatfield School District
- Village of Akron
- Village of Arcade
- City of Jamestown

The REMI model generates forecasts as far into the future as 2035 for each of these geographic regions. We then use these forecasts to generate estimates of the “long-term” economic impacts of the Project.

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<sup>38</sup> The revisions to the REMI model are described in ([Treyz, Fan and Treyz 2000](#)). For detailed descriptions of the new economic geography, see [Fujita, Krugman and Venables 2001](#).

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It is important to emphasize that this is a multi-region model rather than a model that disaggregates results from a larger region to subregions. The multi-region model takes into account interactions among the various regions. Thus, for example, the REMI model accounts for effects of changes in employment conditions in Niagara County not just on Niagara County but also on Erie County and the other regions included in the multi-region model.

#### **4.1.4 Overview of Modeling Approach in REMI**

This section provides a general overview of the methodology used to model the socioeconomic effects of the Project using the REMI model. We begin with the basic methodology and then discuss the additional steps taken to measure the long-term effects of current operations and construction-related effects.

The use of the REMI model to estimate the socioeconomic effects of the Project can be viewed as a two-step process, as shown in [Figure 4.1.4-1](#). The first step—represented by the right side of [Figure 4.1.4-1](#)—is a baseline forecast of the economy. This baseline forecast assumes that the Project is in place, including the operations and economic activity related to the Project. The baseline forecast includes values for the principle economic variables, including jobs, population, personal income, and gross regional product.

The second step—represented by the left side of [Figure 4.1.4-1](#)—is to develop an alternative forecast based upon a simulation in which we change the inputs to the REMI model to remove the direct effects of the Project. We then use the REMI model to forecast economic activity based on these changes. The difference between that alternative forecast and the control forecast provides an estimate of the overall effects of the Project.

There is, however, an additional complication involved in assessing the *long-term* effects of the Project. The forecasted results for 2004, for example, do not reflect the long-term effects of the Project because the economy would still be experiencing various short-term effects in 2004. For example, reduced

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employment and expenditures in Niagara County would reduce population as residents seek opportunities elsewhere. But the full adjustment would take several years.

To account for these long-term effects, we adjust the REMI results for earlier years based upon the results obtained in the long-term (2020 in our modeling). We cannot use the 2020 results directly, however, because they reflect growth in the economy and not just the adjustments to the changes in direct and indirect economic inputs. Thus, we develop the following four-step procedure.

1. Develop a control forecast from 2004 to 2020, as noted above.
2. Develop an alternative forecast based upon changing the various direct effects of the Project.
3. Calculate the percentage effects on the various economic variables in 2020 due to these direct effects.
4. Apply the 2020 percentage to the 2004 control forecast socioeconomic variables (e.g., population) to calculate the long-term effects of the Project.

The third step removes the effects of growth in the economy and population by using the long-term 2020 projected percentage impact and applying it to the 2004 values for each entity. For example, if the Project's impact on employment in Niagara County were 5 percent in 2020 and Niagara County had 100,000 jobs in 2004, the long-run effect of the Project in 2004 would be to increase employment by 5,000 jobs. These estimates are presented for all of the socioeconomic categories considered in this study.

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#### **4.2 Direct Impacts of the Project as Inputs to the REMI Model**

This section uses data from the previous section to develop the inputs to the REMI modeling. The major inputs are in the following categories:

- Project and related NYPA employment and wages;
- Project and related NYPA expenditures;
- Property tax impacts;
- Electricity rate effects of low-cost Project power; and
- Potential effects on tourism.

We developed two alternatives to modeling the electricity rate impacts of the Project for Expansion and Replacement power (“EP/RP”) customers. The approach we label the “cost approach” modeled the effects of increased electricity costs for EP/RP customers using REMI. The approach we label the “jobs approach” assumed that all of the EP/RP jobs at the facilities that are contractually tied to the Project power would not be located in Western New York absent the Project. (The specifics of these two approaches are discussed below.) Note that in all other respects, the inputs and modeling under the approaches are the same.

##### **4.2.1 Project and Related NYPA Employment and Wages**

[Section 3.0](#) reported data on Project employment in recent years. Because the REMI model is forward-looking, it was necessary to develop estimates of Project employment in the study region over the period from 2004 through 2035. For this purpose, we assume that the Project’s employment will remain constant at its end-of-2003 level. (While it is of course unlikely that employment will remain constant over the period, this assumption reflects a reasonable average case.) This estimate of

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employment was then converted into an effect on output<sup>39</sup> in the Public Utilities sector by multiplying the employment effect by the REMI estimate of average output per Public Utilities worker in each year. This effect was input as a negative value in the “Industry Sales – Public Utilities” REMI variable for the Town of Lewiston region for the period 2004-2035. (As described above, inputting this value as a negative simulates the effect of removing the Project from the economy.)

Note that when a change in employment is input into the REMI Model, the model automatically assumes that there is an accompanying change in total wages. That is, the model accounts for the fact that, when jobs are removed from the economy, those workers no longer receive wages. Consequently, the model accounts for the effects of employee spending in the local economy.

#### **4.2.2 Project and Related NYPA Expenditures**

When a change in employment is input into the REMI Model, the model automatically assumes that there is an accompanying change in expenditures by the industry. That is, the model assumes that an industry needs to purchase a certain number of dollars worth of goods per employee. So, when an industry’s employment is changed (via the output variable), the model automatically adjusts the industry’s expenditures as well.

In simulating the effects of the Project, the model would generate an automatic reduction in spending by the Public Utilities sector when the reduction in employment is input into the model, based on industry average expenditure data (reflected in the I/O table). However, NYPA provided detailed data on the amount and location of Project expenditures over the period from 1999 through 2003, and we were able to use this information to develop detailed forecasts of Project expenditures. Thus, rather than rely on REMI’s industry average data, we chose to override REMI’s automatic change in expenditures and directly input the detailed expenditure data.

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<sup>39</sup> Output is the total dollar value of goods and services generated by a particular entity. Thus, the total output of the Project would be the total market value of the electricity it generates.

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Detailed forecasts of Project expenditures were developed using a NYPA database of all Project expenditures over the period from 1999-2003. (A summary of these data was provided in the previous section.) These data included information on the amount of expenditures, as well their location and the type of good or service that was purchased. These data incorporated all NYPA expenditures on goods and services, as well as the contributions to various causes (e.g., economic development), which were described in the previous section. Using these data, we categorized all Project expenditures into REMI sectors and regions. Total annual purchases by region and sector were then summed up and represented as a proportion of total Project spending in each year. We assumed that spending in each sector and region would represent a constant proportion of total spending over the 2004-2035 period, based on the average proportion of Project spending in each sector and region over the 1999-2003 period. Thus, for example, if Project spending on construction in the Town of Niagara represented 1 percent of total Project expenditures over the period from 1999-2003, then we assumed that it would represent 1 percent of total expenditures going forward. This information was then supplemented with projections of total Project spending, provided by NYPA.

Once estimates of Project spending by region and sector had been developed, these values were input into the “Industry Sales” REMI variables for the relevant regions and sectors. As with employment, these were input as negative values to simulate the effect of removing the Project from the local economy.

#### **4.2.3 Property Tax Impacts**

As described in the previous section, we measure the Project’s impact on local property taxes by considering the impact of local jurisdictions collecting taxes based on the unimproved land valuation scenario.<sup>40</sup> We use these direct effects as inputs to the overall model that considers the total impact of the Project on the local economies. We also generate a separate set of property tax projections that we use for modeling only the impacts of the Project’s tax-exempt status isolated from other direct effects of the Project. In contrast to the assumptions used in the model that considers the total impact of the Project, in

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these scenarios we assume that all land owned by the Project would be taxable, including land which had been tax-exempt when it was initially acquired. These projections are discussed below in [Section 4.2.6](#). See [Section 3.4.1.3](#) for further explanation of the differences in assumptions in the property tax scenarios. This section describes the methodology for projecting future Project property tax levies and translating them into REMI variables for the central-case scenario.

To develop the appropriate REMI inputs, we followed four steps:

1. Estimate future property tax rates
2. Estimate future property values
3. Estimate total Project tax levies
4. Translate into REMI variables.

These steps are described in detail in the sections below.

#### **4.2.3.1 Step 1: Estimate Future Property Tax Rates**

To generate estimates of future property tax rates, we relied on data from the most recent year (2003) for which tax rates were available. These estimates were based on the assumption that the best predictors of future property tax rates are the most recent rates published by the taxing authorities. (Forecasting the variables that drive these rates such as future government budgets is beyond the scope of

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<sup>40</sup> Clearly, the Project lands would not necessarily all remain unimproved if the Project did not exist. We have no basis, however, to assume any particular value for the property in this alternative.

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this analysis.) Thus, we assume property tax rates will remain constant; these rates were described in [Section 3.0](#).

#### **4.2.3.2 Step 2: Estimate Future Property Values**

To estimate future Project property values based on unimproved assessments, we assumed that the average value of unimproved land would remain constant (in real terms) at 2003 levels over the period through 2035. Data on the value of unimproved land suggests that there has been little change in the value of land in the Lewiston area in recent years. Indeed, over the last 10 years, the value of unimproved land in the area has actually fallen slightly, declining at a rate of approximately 0.5 percent per year over this period. Thus, we assumed that unimproved land would have a constant value over the period.

#### **4.2.3.3 Step 3: Estimate Total Project Tax Levies**

Multiplying the projected tax rates of each taxing jurisdiction (Step 1) by the projections of future land values in each jurisdiction (Step 2) yields the estimated tax levy from Project lands in each jurisdiction for the period from 2004 through 2035.

#### **4.2.3.4 Step 4: Translate Estimates into REMI Variables**

The result of Step 3 is an estimate, by community, of the change in the amount of taxes collected from non-Project landholders. Because both residents and businesses pay property taxes, it was necessary to translate these estimates into two separate REMI variables. To split the effect of reduced tax rates between residents and businesses, we estimated the proportion of taxes currently paid by businesses and consumers, using data from Erie and Niagara County 2003 tax reports ([Erie County 2003](#) & [Niagara County 2003](#)). Then, to estimate the impact on consumers, the proportion collected from residents was multiplied by the estimate of Project tax payments for each community (from Step 3). This value was then input into the “Consumer Price—Housing” variable, and the inverse of this value was input into the

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“Consumer Reallocation—All Consumption Sectors” variable to reflect consumers’ ability to purchase other goods when their property taxes are reduced.

Finally, to determine the input for business costs, the proportion collected by businesses was multiplied by the estimate of Project tax payments for each community. This amount was input into the “Production Cost—All Industries” variable to reflect the reduction in the cost of doing business when tax payments are reduced.

#### **4.2.4 Electricity Rate Effects of Low-Cost Power**

As discussed in the previous section, the Project sells electricity to its customers at rates well below market prices. This section develops estimates of the effects of the reduced electricity rates on various customer groups. As noted above, we developed two approaches for estimating effects on EP/RP customers: a cost approach (which is the approach used for the other customer groups) and a jobs approach. Under the cost approach, the direct impact on customers is the difference between the amount Project customers spend on electricity (at Project rates) and the amount they would spend if they had to pay wholesale market rates. To develop REMI inputs representing these effects, we follow five steps:

1. Forecast annual energy usage, by customer.
2. Forecast the price of Project power, by customer category.
3. Forecast the market price of power.
4. Subtract the projected amount paid by each customer at Project rates from the amount that would be paid at market rates to determine the total effect on each customer.
5. Translate these effects into REMI variables.

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Each of these steps is described in detail below.

**4.2.4.1 Step 1: Forecast Annual Energy Usage, by Customer**

Each customer's expected annual use of Project power was based on 10 years of historical data reported in NYPA sales books, supplemented with sales data provided to NYPA by NIMO and NYSEG for the expansion and replacement customers. These data were used to calculate the average annual share of total Project generation used by each customer in recent years.<sup>41</sup> To estimate the average generation we use the following steps:

1. Calculate the average net generation by the Project from 1994 to 2003.
2. Calculate a new average replacing actual generation with the average generation calculated in Step 1 for years in which generation exceeds the average value. This adjustment is made to reflect the fact that Project customers are typically allocated a fixed amount of power each year—the Project sells any surplus power into the New York wholesale market. This step adjusts for years in which excess generation is sold at market prices and not at below-market prices to the Project's customers.
3. Subtract the average calculated in Step 1 by the adjusted average calculated in Step 2. This yields the average amount of excess power sold on the market. Revenue from this excess power sold at market rates is translated into benefits for all New York State residents through a reduction in their income taxes. See [Section 4.2.4.5.4](#) for a more detailed explanation.

The customer shares of power use were then multiplied by adjusted average developed in Step 2 to determine annual energy use by customer over the 2004-2035 period.

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<sup>41</sup> Due to limitations in available data, only one year of sales information was used to estimate the shares of expansion and replacement customers.

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**4.2.4.2 Step 2: Forecast the Price of Project Power by Customer Category**

Prices for Project customers were projected using a two-step process. We first developed information about actual prices paid by customers in 2003. We then projected these prices forward. These two steps are described in the subsections below.

**4.2.4.2.1 2003 Project Electricity Prices**

The prices charged to each customer in 2003 were used as the baseline from which future prices were projected. (Background on prices of Project power over time was provided in the previous section.) The average price (per kWh) paid by each customer other than expansion and replacement customers was calculated by dividing the sum of that customer's demand and energy payments for the entire year by total energy use during the year. The average price (per kWh) paid by expansion and replacement customers was calculated by multiplying the posted NYPA energy and demand rates by total energy and demand use to calculate total expenditures for the year, and then dividing this amount by total energy use. Note, because of the varying load factors across customers, there was substantial variation in the average per-kWh price paid by customers, even within the same rate class.

**4.2.4.2.2 Future Project Electricity Prices**

The 2003 prices described above were used as the baseline for projecting future prices over the period through 2035. Price projections were determined for the following eight customer classes:

1. Full requirement municipal cooperatives
2. Partial requirement municipal cooperatives
3. NIMO expansion customers

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4. NIMO replacement customers
  
5. NYSEG expansion customers
  
6. NIMO residential customers
  
7. NYSEG residential customers
  
8. RGE residential customers

Future rates were estimated by first calculating historical effective rates for each customer class, accounting for the average load factor of each customer class and applying the appropriate demand and energy charges. Historical trends were then established for the rates of each of the eight customer classes.<sup>42</sup> The 2003 effective rate for each customer was then projected to 2035 based on the trends established for the relevant customer class.

#### **4.2.4.3 Step 3: Forecast the Market Price of Power**

If Project customers did not have access to Project power at below-market rates, they would have to purchase electricity from the grid (if they chose to remain in the region). We assume that customers would be able to replace Project power with wholesale power priced at market rates. Thus, we developed

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<sup>42</sup> Preference rates have been established through 2006; these future rates were accounted for in developing the trends. Other than the preference rates through 2006, the assumptions regarding future rates are based solely on the projection forward of historic trends. Linear trends were fitted to historical and future data for preference customers from 1992 through 2006. Forecasts for replacement and expansion customers were based on historical data from 1995 through 2003. Based on these calculations, annual growth rates for all customer classes ranged from 0.8 percent to 1.3 percent. Note, the Power Authority's Trustees will set the actual future prices for Project power, which will likely be different from the future rates used in this analysis.

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detailed wholesale electricity price projections through 2035, which include both energy and demand charges. The methodology for developing these inputs is described in [Appendix F](#).

#### **4.2.4.4 Step 4: Determine the Total Effect on Each Customer**

The total *direct* economic impact on each customer is equal to the difference between each customer's price for Project power (Step 2) and the market price of power (Step 3), multiplied by each customer's total energy use (Step 1). Thus, to develop the total effect for each customer, this calculation was performed for every customer, relying on the data developed in the previous three steps.

#### **4.2.4.5 Step 5: Translate Effects into REMI Variables**

For the purposes of the REMI modeling, it was necessary to estimate benefits separately for the following three customer categories: (1) Expansion and replacement customers; (2) municipal customers; and (3) residential customers. In addition, as described above, the years in which the Project generates power in excess of the total amount contracted to its customers, this excess power is sold at New York wholesale market prices; these effects also need to be included. The sections below describe how estimates were developed for each of these groups.

##### **4.2.4.5.1 Expansion and Replacement Customers**

For EP/RP customers, as noted above, we develop two approaches to estimating the direct impacts of the Project.

Under the cost approach, estimates of the total electricity cost savings by EP/RP customers were translated into REMI variables using information on each customer's location and industry category. Once total dollars of benefit for each customer had been developed (in Step 4 above), these effects were summed up for each industry category and region. (For example, if there were two customers in the City of Buffalo in the same industry category, the benefits to them were summed.) These values were then

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input into the REMI variable “Production Cost” for each REMI region and industry category. (Note that these were input as positive values because removing the benefit of Project power would lead to an *increase* in the cost of production for Project customers.)

Although the cost approach is based upon a state-of-the-art regional economic model, it is important to note the inherent limitations of regional economic modeling in estimating the economic impacts of reduced electricity costs. Even the complex and detailed REMI model cannot reflect the detailed circumstances of the individual businesses that receive power from the Project. Thus, the REMI model may not reflect the particular importance of low-cost electricity to the individual facilities and thus the potentially larger role the low-cost power has in a given facility’s competitive cost structure. These considerations mean that the actual economic benefits of the Project may be greater than those estimated using the cost approach (or that could be estimated using any regional economic model absent very costly and time-intensive plant-level modeling, which would rely on proprietary data).

Under the jobs approach, we assumed that the direct impact of the Project on the EP/RP customers would be equal to the jobs at these facilities that are contractually tied to the Project. That is, we assumed that, if not for the Project, none of the EP/RP jobs that are contractually tied to Project power would be located in Western New York. We relied on information supplied by NYPA describing the 43,422 EP/RP jobs that are contractually linked to Project power. We used this information to categorize the EP/RP jobs into the relevant REMI sectors and regions, as shown in [Table 2.2.4-1](#) above. These employment estimates were then converted into equivalent amounts of industrial output in the relevant sectors by multiplying the employment figures by the REMI estimates of average production per worker in each industry in each year. The resulting production quantities were then used as inputs to the REMI model.<sup>43</sup>

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<sup>43</sup> These figures were input as negative values in the “Industry Sales [for individual industries]” REMI variable for the relevant regions for each year from 2004 to 2035. (As described above, these values were input as negatives to simulate the effect of removing the Project from the economy.)

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**4.2.4.5.2 Municipal Customers**

For power sold to municipal customers, estimates of the impact of this power were translated into effects on consumer prices and costs to business, because both residents and businesses in municipalities served by the Project pay lower electricity prices. Benefits were first split between residential and commercial/industrial customers using the average proportion of electricity consumption in New York State by each group. Then, benefits to residents were summed up by REMI region and input in the REMI variable “Consumer Price—Household Operations.” To reflect consumers’ need to reduce consumption of other goods when prices of certain goods increase, the inverse of the value entered into the “Consumer Price—Household Operations” variable was entered into the REMI variable “Consumer Reallocation—All Consumption Sectors.” Finally, benefits to businesses were treated as a change in production costs for all industries. Thus, benefits to businesses were summed up by REMI region and input into the model as a percentage change in the REMI variable “Production Cost—All Industries.” (Again, these changes in production and consumer prices were input as positive values because removing the benefit of Project power would lead to an *increase* in the cost of electricity for Project customers.)

**4.2.4.5.3 Residential Customers**

Residential customers of NIMO, NYSEG, and RGE were modeled in REMI using an approach similar to that used for the residential customers of municipals. However, because these utilities’ residential customers are spread out across the state, it was first necessary to determine the location of benefits. To accomplish this, we relied on rate schedules for each utility, which describe the utilities’ service territories. Total benefits to each of these three utilities were then apportioned out across each utility’s service territory on the basis of population. (For example, if total benefits to NIMO customers were \$100 and Albany had 10 percent of the population of NIMO’s service territory, then Albany would receive \$10 in benefits.) Finally, as for the residential customers of municipals, benefits to residents were summed up by REMI region in the REMI variable “Consumer Price—Household Operations” (again, as an increase in prices). To reflect consumers’ need to reduce consumption of other goods when prices of certain goods increase, the inverse of the value entered into the “Consumer Price—Household

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Operations” variable was entered into the REMI variable “Consumer Reallocation—All Consumption Sectors.”

#### **4.2.4.5.4 New York State Residents**

As noted, during years in which the Project generates power in excess of the total amount contracted to its customers, this excess power is sold at New York wholesale market prices. For the purposes of this analysis, the revenues from this excess power were assumed to accrue to all New York residents equally. Thus, the total value of these revenues was estimated and allocated to the regions within the State of New York on the basis of population. For each region, the value was input as a change in the REMI variable “Personal Taxes—Applicable Personal Income.”

#### **4.2.5 Potential Tourism Impacts**

As discussed in the previous section, it is nearly impossible to quantify the direct effects of the Project on tourism. There are only a few recent studies of tourism in the Niagara region, and none have quantified the nature of the Project’s direct effects on tourism. Thus, we provide some sensitivity analyses of tourism, looking at the possible overall economic impacts if tourism in the region were increased or decreased by 5 percent. Note that these calculations are purely illustrative and are intended to provide a sense of the nature of the effects the Project might have on tourism.

[Appendix A](#) describes the overall methodology for translating tourism effects into REMI variables. The appendix describes the approach for estimating the economic impact of the entire tourism industry. The approach for estimating these sensitivity analyses followed essentially the same approach as that described in the appendix, only the number of visitors used was 5 percent of the total annual leisure visitors to the region—i.e., 325,000 visitors (5 percent of the 6.5 million<sup>44</sup>). (See [Section 2.0](#) for a

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<sup>44</sup> As estimated by NERA, relying on data from the Buffalo Niagara Convention and Visitors Bureau and [Shifflet 2003](#).

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broader discussion of tourism in the region.) As described in the appendix, these effects were then translated into REMI inputs for the appropriate sectors and regions.

#### **4.2.6 Impact of Removing the Project's Tax-Exempt Status**

As discussed previously, in addition to the central-case scenario, which considers the overall impact of the Project on the local economies, we also developed two additional scenarios that consider only the impact of removing the tax-exempt status of the Project. In these scenarios, we consider the possibility that the Project could be assessed on either an improved or unimproved basis.

To estimate future Project property values for these scenarios, we relied on separate methodologies for the improved and unimproved scenarios. For the unimproved scenario, we used the same methodology as described above in [Section 4.2.3.2](#), with the exception, as discussed, that land which was tax-exempt prior to acquisition by NYPA is included in these scenarios rather than excluded as in the central-case scenario.

For the improved land scenario, we used the replacement valuation methodology that was described in the previous section, which incorporates the Project's annual capital spending and an annual depreciation rate of 2 percent. As described in the previous section, annual capital spending was based on actual historical Project spending. For future years, we used capital spending projections from 2004 to 2013, which were provided by NYPA. For the subsequent years of 2014 to 2035, we assumed that capital spending would grow at the average annual rate derived from the 2004 to 2013 projections. As described in the previous section, these capital spending estimates were combined with the depreciation rate to generate the annual change in the total improved value of the Project lands through 2035. The other steps used in developing the REMI inputs for these scenarios are the same as described in [Section 4.2.3](#).

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**4.3 Socioeconomic Effects of the Project and the NYPA Presence Based Upon REMI Modeling**

This section provides the results of the REMI modeling. As noted, this modeling estimates the current, or ongoing, impact of the Project on the economies of New York State and the various communities in the study area. Thus, these results provide an estimate of what components of the current socioeconomic character of the region are currently due to the Project.

However, as described above, the REMI modeling methodology distinguishes between short-run and long-run effects. Since the Project has been in operation for almost 45 years, with essentially no change in its major functions, all ongoing effects of the Project on the regional economies should be viewed as long-run effects. Moreover, these same effects will likely continue essentially unchanged into the future (with the exceptions of potential Project expansions or changes in its pricing structure, which we have not considered in this study). Thus, the “long-run” impacts measured by the REMI model and reported below can be seen to represent not only the current impact of the Project but also the likely impact of the Project over time.

As we have done throughout the report, we present overall effects in the following categories:

- Demographic;
- Economic/employment;
- Public sector (taxes and services);
- Electricity;
- Real estate;
- Tourism; and
- Sociological/Cultural.

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The sections below describe the impacts in each of these categories for the “cost approach.” In addition, we provide a section that focuses on the impacts on Niagara University. We also provide a final section that presents the overall estimates under the “jobs approach.”

#### **4.3.1 Effects on Demographics**

Through its various direct economic effects, the Project generates effects on the population of the study region. As described above, the Project generates jobs in the local economy and reduces the cost of doing business in Western New York through the provision of low-cost power. As these impacts percolate through the economy, they lead more people to live in the region than would without the Project.

[Table 4.3.1-1](#) shows the current overall effect of the Project on population, by community. The modeling results indicate that the Project affects the population of the State as a whole. Although more than half of the effects are in Western New York, the effects of low-cost Project power and other economic activity related to the Project extend across the State, leading to an overall population that is more than 24,000 greater than it would be without the Project. Of these over 24,000 people, more than 12,000 reside in Western New York, with almost 10,000 in Erie and Niagara Counties.

On a proportional basis, the most substantial impacts of the Project are in the Host and Local Communities the Town of Lewiston, where the Project is responsible for 1,688 people. The Project also substantially impacts the populations of the other Host and Local Communities, for example, generating over 1,100 residents additional in the City of Niagara Falls (and the School District, which has the same boundaries).

Among the three Preference Customer communities studied, the Project’s largest impacts are in Jamestown, which is of course the largest of the three Preference Customer communities considered. The REMI modeling indicated that the Project currently results in over 500 additional residents in the City of Jamestown, with fewer in the Villages of Akron (43) and Arcade (59).

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The section below provides estimates of these effects on population, broken down by age.

#### **4.3.1.1 Effects on Population by Age Group**

[Table 4.3.1.1-1](#) presents the effects of the Project on the population, broken out by age cohort. The table shows that, across the board, the impacts are most significant for the population ages 25 through 64. This is of course not surprising since this group represents the largest portion of the population.

In the State as a whole, the Project generates over 12,500 additional residents between the ages of 25 and 64. For age groups 0-14, 15-24, and over 65, the Project generates 7,534, 3,592, and 413 additional residents, respectively. The trends were roughly similar for Western New York, with the Project adding 6,328 people to the working-age population and less to the other age groups. The results also followed a similar trend among the Preference Customer communities and the Host and Local Communities, as shown in the table.

#### **4.3.2 Effects on Economy/Employment**

As noted, the Project's direct effects on employment and the economy lead to a far broader series of impacts as these effects percolate through the economy. The overall economic impacts reported here include both the Project's direct effects (e.g., Project employment) and its multiplier effects (e.g., changes in employment in other industries due to spending by Project employees and the reduction in the cost of doing business in Western New York). In this section, we present results in the following three major categories:

- Employment;
- Gross regional product ("GRP"); and
- Personal income.

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As [Table 4.3.2-1](#) illustrates, the Project has a positive effect as measured by all of these major economic barometers. The Project generates over 12,000 jobs and over \$1 billion for the economy of New York State (as measured by GRP). In addition, the Project is responsible for over half a billion dollars in income for residents of New York State.

The Project's impacts are concentrated in Western New York, where it is responsible for over 6,500 jobs and more than half a billion dollars in GRP. In Erie and Niagara Counties, the Project generates 3,003 and 2,478 additional jobs, respectively, and \$234 million and almost \$239 million, respectively, in GRP.

For the other Host and Local Communities, many of which are quite small, the impacts of the Project on employment and the economy are often significant. The table indicates that the Project generates the most jobs in Buffalo (911, or 0.5 percent), the City of Niagara Falls (818, or 3.4 percent), and the Town of Lewiston (917, or 16.5 percent). The greatest relative impact is in the Lewiston-Porter School District, where the Project generates 17.8 percent (836) of the jobs. The Project also contributes significantly to GRP and personal income in these areas.

The Project significantly impacts the economies of the Preference Customer communities. The table shows that the Project generates almost 300 jobs and over \$17 million in GRP in Jamestown, with smaller effects in the other communities.

The sections that follow provide more detailed results, breaking down the various effects by sector and occupation. As discussed below, the Project often affects different sectors/occupations in the various regions differently. This is primarily a reflection of the baseline conditions. For example, if a particular region has a substantial services sector in the baseline, the service sector in that region is likely to be significantly affected by the Project, whereas other, smaller sectors in that region would likely see less of an impact.

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#### **4.3.2.1 Effects on Employment by Sector**

[Table 4.3.2.1-1](#) presents data on the effects of the Project on employment, broken out for 10 industrial sectors and government employment.

The table shows that the most significant impacts of the Project are in the retail trade and services sectors. For the State as a whole, the Project is responsible for over 2,000 jobs to the retail trade sector and over 3,500 jobs to the services sector. In Erie County, the most significant effects are also on these sectors, with the Project generating 503 and 994 jobs, respectively, to each of these sectors. In Niagara County, the Project generates the most jobs in the services sector (562) and the construction sector (406).

For the City of Buffalo, the most significant impacts are on the services sector, following the broader county trend. Among the remaining Host and Local Communities, the most significant effects are in various sectors. In the Town of Lewiston, for example, the most significant employment impacts are in the Public Utilities sector. This result is of course not surprising, given that the Project is located in the Town of Lewiston. For the City of Niagara Falls, on the other hand, the greatest impacts are in the non-durables manufacturing sector, where the Project generates 290 jobs.

Because the Preference Customer communities are relatively small, the sectoral employment impacts are smaller in absolute terms than for many of the Host and Local Communities. In the City of Jamestown, for example, there are notable impacts in some sectors, including retail trade (81 jobs) and services (71 jobs).

#### **4.3.2.2 Effects on Employment by Occupation**

Above, we presented estimates of the Project's effect on employment by various industrial sectors; here, we consider the impact of the Project on employment by occupation. Information on impacts by occupation is presented in [Table 4.3.2.2-1](#).

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In the State as a whole, there are four occupational groups in which the Project generates over 1,000 jobs—sales/administrative (3,432 jobs), construction/installation (1,446 jobs), management/business (1,244 jobs), and production (1,209 jobs). The Project makes similar contributions in Western New York, where the same four occupational groups are most affected by the Project.

The trends are roughly similar across all of the Host and Local Communities. As elsewhere, the largest impacts on occupations in Erie and Niagara Counties are on sales/administrative jobs. The other Host and Local Communities tend to follow this trend. The one exception is the Town of Lewiston, where the occupation most affected by the Project is construction/installation (317 jobs).

As for the employment impacts by sector discussed above in the Preference Customer communities, the Preference Customer communities are so small that the impacts on any single occupation are often minimal. Nonetheless, these communities seem to follow the broader trends of the region and the State. An interesting exception is that the food preparation and serving occupation is among the most affected occupations for all three communities.

#### **4.3.2.3 Effects on GRP by Sector**

[Table 4.3.2.3-1](#) presents the impacts of the Project on Gross Regional Product for 10 industrial sectors, farm, and government. As described above, GRP is a measure of the value added in production by the labor and capital located in a region. Here, then, we present estimates of the Project's effect on the value added in New York State and Western New York.

The Project generates the largest increases in State GRP (also known as “Gross State Product” or “GSP”) in the services industry (\$186.0 million), non-durables manufacturing (\$136.9 million), and transportation and public utilities (\$156.0 million). For Western New York, the sector most affected by the Project is non-durables manufacturing (\$136.9 million); indeed, effects on non-durables manufacturing GRP in Western New York account for the majority of the Project's statewide impact.

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In Erie County, the Project's most significant effects are in the services sector and both manufacturing sectors, and Buffalo mirrors these impacts. The Project's impacts on Niagara County, on the other hand, are more heavily weighted toward non-durables manufacturing and transportation and public utilities. As noted above, this impact on the public utilities sector is mostly due to the Project itself, which is categorized in public utilities, as opposed to multiplier effects. Not surprisingly, the vast majority of the effect on Niagara County's public utilities GRP stems from impacts in the Town of Lewiston, where the Project is located.

The Project affects the Preference Customer communities primarily in the durables manufacturing and finance/insurance/real estate sectors. In Jamestown and the Village of Akron, there are also significant effects on the services sector, while the Project has a significant effect on the retail trade sector in the Village of Arcade.

#### **4.3.2.4 Effects on Wage and Salary Income by Sector<sup>45</sup>**

The Project's impacts on employment and GRP lead to effects on income as well. That is, with more individuals employed because of the Project, people are also earning more wage and salary income. [Table 4.3.2.4-1](#) breaks down these effects on income, based on the sector in which individuals earn their income.

In New York State, the largest impacts of the Project on wage and salary income are in the services and government sectors. As reflected in the table, our analysis indicates that the Project leads to economic activity that generates over \$97 million in wage and salary income for services sector employees and over \$50 million for government workers. These sectors also dominate the income effects in Western New York, though there are also significant effects in manufacturing and transportation and public utilities.

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<sup>45</sup> Note that, while the personal income figures presented above are "place of residence" figures, this section presents wage and salary, which is "place of work" figure and does not include non-wage income.

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The Project has significant effects on the same sectors in the Host and Local Communities as it does in the broader region. In Erie County, the most substantial income effects are in the services and durables manufacturing sectors, while, in Niagara County, the Project has the greatest impact on income received by public utilities and transportation employees.

The effects of the Project on the Preference Customer communities also follow income trends similar to the broader region, though, unlike other areas, income in the retail trade sector is a significant component of the Project's impact for these three communities.

#### **4.3.3 Effects on the Public Sector (Taxes and Services)**

The Project affects the public sector in a number of ways. As described in detail in [Section 3.4.1](#), the Project's direct impacts on public sector revenues derive from the Project's property tax exemption. (We assess the overall economic impact of the Project's tax exemption separately in [Section 4.3.6](#) below.) In addition, as described in [Section 3.4.2](#), the Project may affect service expenditures in the region through its use of various local public services.

In addition to these direct effects, the Project also has multiplier (indirect) effects on local public revenues and expenditures. As described above, the Project leads to increased population and economic activity in the region. The additional economic activity leads to increases in tax revenues for local jurisdictions, while the increased population linked to the Project also generates additional demand for local public services. Overall, however, it is reasonable to expect that these effects would offset one another. That is, to the extent that local governments generally run balanced budgets, the increases in expenditures necessary to accommodate additional population should be approximately offset by increases in tax receipts from additional economic activity. To the extent that these effects do not offset one another precisely, this would be more a function of policy decisions by local governments rather than any specific economic relationships that could be analyzed in a model such as REMI.

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#### **4.3.4 Effects on Electricity**

The Project's impacts on electricity prices are almost exclusively *direct* effects (i.e., any multiplier effects on electricity prices are likely to be negligible). Thus, the Project's impacts on electricity prices were described in the previous section.

#### **4.3.5 Effects on Real Estate**

By generating increased economic activity in the area, the Project increases the demand for land in the region. In addition to the land that the Project itself occupies, the Project also has multiplier effects that further increase demand for both commercial/industrial and residential land. The sections that follow present these overall effects on the price of residential land as well as estimated effects on residential, commercial and industrial land use.

##### **4.3.5.1 Effects on Residential Land Prices**

The Project affects the price of land throughout the study area. The Project leads to increases in population and disposable income in the study region, which in turn generate effects on the market for residential land. [Table 4.3.5.1-1](#) presents the estimated effect of the Project on the price of housing in each of the study area communities.<sup>46</sup> As the table shows, the effects on housing prices are relatively minimal in all of the communities. Not surprisingly, the impacts are most significant in the Town of Lewiston (2.06 percent), but they are still relatively minimal. For many of the communities, the effects are essentially negligible.

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<sup>46</sup> The impacts on housing prices shown are the results from a scenario that adjusts government spending instead of tax rates. The central case, which includes the direct effects of the Project on property taxes, makes it difficult to distinguish between effects on land prices and effects on property taxes.

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#### **4.3.5.2 Effects on Land Use**

As noted above, the Project leads to increases in the demand for land and thus affects the total quantity of land consumed in the study region. [Table 4.3.5.2-1](#) presents estimates of the number of acres of residential, commercial, and industrial land use that are due to the Project's effects on the regional economies.<sup>47</sup> As the table shows, the Project leads to the most significant increases in residential land use, generating over 1,100 acres of additional residential land use in Erie County and over 1,400 in Niagara County. In the Town of Lewiston, the Project generates over 300 acres of additional residential land use.

The Project also generates changes in commercial and industrial land use, generating over 1,300 acres of additional commercial land use and just over 1,000 acres of industrial land use in Niagara County. In the Town of Lewiston, where the impacts are also significant, the Project generates over 150 acres of commercial land use and 37 acres of industrial land use.

Note that this does not imply that the land on which the Project is built would be vacant but rather that overall land use in the region is higher because of the Project's economic impacts.

#### **4.3.6 Effects of the Project's Tax-Exempt Status on the Local Economies**

As described above, in addition to assessing the overall impact of the Project on the local economies, we also investigated two separate scenarios under which the Project lands were taxable, but the facility continued to operate as it does currently. These two scenarios were based on two assumptions regarding the NYPA tax base: (1) unimproved land valuation and (2) improved land valuation.

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<sup>47</sup> These estimates were developed by taking the central case REMI model's estimate of the effect on residential and non-residential capital stock and multiplying by current estimates of land use in the study region.

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In this section, we provide estimates of how these two scenarios would affect the Host and Local Communities. For these scenarios, the property tax impacts developed in [Section 3.0](#) were translated into REMI inputs in the manner described in [Section 4.2.3](#). However, if the Project paid taxes, the increase in tax payments would not be the only economic impact; it would also cause the Project to increase its electricity rates, which are based on the costs of operating the hydroelectric facility. To estimate this impact, we assumed that the amount of tax payments made by the Project in each scenario would be exactly recovered by a proportional increase in electricity prices to all customers. For example, if the Project's total revenues from electricity sales were \$200 million and it faced a \$20 million increase in tax payments, then prices to all customers would rise by 10 percent to cover these tax payments. [Table 4.3.6-1](#) lists the amount of taxes paid under each of the scenarios and [Table 4.3.6-2](#) shows the resulting increase in electricity prices in both scenarios. As [Table 4.3.6-2](#) shows, the scenario in which the larger tax payments are levied—the improved valuation scenario—leads to a larger increase in electricity rates. In addition, for each scenario the proportional increase in electricity rates decreases over time. This is due to central case forecast of rising Project electricity rates. For the improved scenario, this also reflects the depreciating value of the improved property over time.

[Table 4.3.6-3](#) and [Table 4.3.6-4](#) present the results from the REMI modeling for the two property tax scenarios. Both scenarios show that tax payments by the Project would lead to positive economic impacts for the Host Communities and negative economic impacts for the Local Communities. This reflects the fact that the Host Communities would receive the majority of gains from the increased Project tax levies. The Local Communities, on the other hand, would benefit only minimally from increased tax revenues but would face higher electricity prices from the Project, leading to net negative economic impacts.

The primary difference among the scenarios, then, is the magnitude of these effects, with the improved scenario having more significant impacts than the unimproved scenario. The unimproved scenario leads to Niagara County gaining about 19 jobs and Erie County losing about 11. In the improved scenario, Niagara County gains approximately 514 jobs and Erie County loses approximately 122 jobs.

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#### **4.3.7 Effects on Tourism**

As described above, we have estimated two illustrative tourism scenarios. In the first, we increase the level of leisure tourism by 5 percent, and in the second we reduce the level by 5 percent.<sup>48</sup> These scenarios generate effects on the local economy in the study region, as [Table 4.3.7-1](#) and [Table 4.3.7-2](#) show.

The results presented in the tables indicate that a 5 percent increase in Buffalo-Niagara tourism would generate substantial economic impacts. Among the Host and Local Communities, a 5 percent increase in tourism would mean a substantial increase in economic activity, the majority of which would be in Erie County, with the City of Buffalo experiencing almost a quarter of the total county impact. In Niagara County, this increase in tourism would generate over 200 additional jobs and around \$7 million in GRP and personal income.

[Table 4.3.7-2](#) shows the impact that a 5 percent decrease in tourism could have on the economies in the study region. These negative impacts essentially mirror the positive effects generated by the increase-in-tourism scenario that was considered above. However, these negative impacts are slightly lower, which reflects increasing returns to scale in some local industries.

#### **4.3.8 Sociological/Cultural Effects**

To the extent that sociological and cultural issues are related to demographics and land use, we have described the results of the REMI model in these categories previously in this section. However, the REMI model is not designed to estimate other categories of sociological and cultural effects, because these issues are not typically seen as having “multiplier effects” in the way that many socioeconomic effects do. Moreover, these effects are not readily quantifiable in a way that would make them suitable as

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<sup>48</sup> For these calculations, we include only 5 percent of total leisure tourism. Leisure tourism is assumed to represent 77 percent of total tourism, based on [Shifflet 2003](#).

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inputs to any numerical modeling. Thus, the effects on other sociological\cultural categories are primarily *direct* and were covered in the previous section.

#### **4.3.9 Effects on Niagara University**

Up until this point in the section, we have focused on the 12 major REMI sectors; these sectors are, of course, composed of smaller sectors. Among the smaller sectors for which REMI provides results is “educational services,” a component of the larger services sector. Impacts on this sector serves to shed some light on the possible effects of the Project on Niagara University, which is classified within this sector in the REMI model. Indeed, employees at NU represent roughly 90 percent of the educational services sector in the Town of Lewiston.<sup>49</sup>

[Table 4.3.9-1](#) presents effects of the Project on the educational services sector in the Town of Lewiston. Unlike all of the major sectors in the study region—and indeed the region as a whole—the REMI modeling results indicate that the presence of the Project leads to a slight decline in employment and GRP in the educational services sector. This can be explained by the fact that the Project generates additional economic activity in the region, making the demand for—and thus the cost of—labor higher in the Niagara region than it would be without the Project. That is, higher labor costs put pressure on tuition, which leads to fewer students and, thus, fewer employees. Because the educational services sector—more than most other sectors—draws consumers (i.e., students) from a distance, this increase in costs is not offset by a substantial increase in demand

Nonetheless, the table shows that the Project has only minimal effects on the sector, leading to four fewer employees and close to \$175,000 less in GRP from the sector. At the same time, the Project also leads to a slight positive impact on the total wage and salary income received by employees working in the sector in the Town of Lewiston, which reflects higher wages even though there are slightly fewer

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<sup>49</sup> There are two other private schools located in Lewiston—Saint Peter School and Sacred Heart Villa School.

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workers in the sector. The table indicates that the Project leads to roughly \$25,000 more in income for employees in the educational services sector.

#### **4.3.10 Overall Socioeconomic Impacts of the Project Under the Jobs Approach**

As noted above, we also modeled an alternative assumption regarding the direct impacts of the Project on employment at the Expansion and Replacement Power customers. As described above, under the jobs approach, we assumed that the direct impact of the Project on the EP/RP customers would be equal to the jobs at these firms that are contractually tied to the Project.

[Table 4.3.10-1](#) shows the impacts of the Project under the jobs approach on population, employment, GRP, and personal income. The overall impacts include the 43,422 EP/RP jobs as well as the other impacts of the Project, including associated multiplier impacts. In Western New York, the impacts of the Project under the jobs approach are over 160,000 employees, almost \$16 billion in GRP, and population change of roughly 260,000.

The impacts under the jobs approach are largely concentrated in Erie County, though the Project is responsible for nearly 15,000 jobs in Niagara County as well. Under the jobs approach, the Project is estimated to contribute over 135,000 jobs to the economy of Erie County, including almost 35,000 jobs within the City of Buffalo. The Project is also responsible for \$13.5 billion worth of GDP and over \$6 billion of personal income in Erie County as determined under the jobs approach.

In Niagara County, the Project contributes almost 15,000 jobs and over \$1.4 billion in GDP under the jobs approach. The largest impacts are in the City of Niagara Falls, where 23 EP/RP customers are located. The impacts on the City of Niagara Falls are 5,900 jobs and almost \$130 million in GRP. Note that although there are no additional EP/RP jobs in the other Host Communities, the Project still is predicted to have sizeable effects in these areas under the jobs approach, reflecting multiplier impacts as well as the other impacts of the Project (e.g., employment and spending at the facility).

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[Table 4.3.10-2](#) shows the Project's impacts on employment in individual industries under the jobs approach. Because the majority of the EP/RP jobs are in the durables and non-durables manufacturing sectors, the Project is projected to have substantial impacts on manufacturing employment. Between the two manufacturing sectors, the Project is responsible for almost 57,000 jobs in Western New York and almost 50,000 jobs in Erie County under the jobs approach. The effects in the service sector are also significant, reflecting the substantial portion of baseline service sector employment. Under the jobs approach, the Project is responsible for over 35,000 jobs in the service sector in Western New York.



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**TABLE 4.3.1-1**  
**PROJECT'S EFFECTS ON POPULATION**

Place	Population
New York State	24,078
Western NY	12,425
<i>Local Communities</i>	
Erie County	5,255
Buffalo City	1,523
<i>Host Communities</i>	
Niagara County	4,728
Lewiston Town	1,688
Lewiston Village	76
Lewiston-Porter SD	1,662
Niagara Falls City/SD	1,118
Niagara Town	243
Niagara-Wheatfield SD	315
<i>Preference Customers</i>	
Akron Village	43
Arcade Village	59
Jamestown City	532

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.1.1-1**  
**PROJECT'S EFFECTS ON POPULATION, BY AGE**

Place	Ages 0-14	Ages 15-24	Ages 25-64	Ages 65+
New York State	7,534	3,592	12,539	413
Western NY	3,791	2,065	6,328	240
<i>Local Communities</i>				
Erie County	1,623	839	2,687	105
Buffalo City	462	248	782	31
<i>Host Communities</i>				
Niagara County	1,419	803	2,415	91
Lewiston Town	512	273	872	31
Lewiston Village	21	14	39	2
Lewiston-Porter SD	496	279	855	32
Niagara Falls City/SD	330	201	566	22
Niagara Town	72	43	123	5
Niagara-Wheatfield SD	95	52	162	6
<i>Preference Customers</i>				
Akron Village	13	7	22	1
Arcade Village	17	12	30	1
Jamestown City	153	90	277	11

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.2-1**  
**PROJECT'S ANNUAL EFFECT ON EMPLOYMENT AND ECONOMY**

Place	Employment	GRP (Thousands of 2002 Dollars)	Personal Income (Thousands of 2002 Dollars)
New York State	12,273	1,007,137	591,335
Western NY	6,616	562,191	278,199
<i>Local Communities</i>			
Erie County	3,003	234,040	129,441
Buffalo City	911	78,375	28,298
<i>Host Communities</i>			
Niagara County	2,478	239,035	110,667
Lewiston Town	917	107,636	26,576
Lewiston Village	36	2,071	1,200
Lewiston-Porter SD	836	93,283	30,386
Niagara Falls City/SD	818	93,904	31,508
Niagara Town	127	8,467	7,081
Niagara-Wheatfield SD	122	8,965	5,875
<i>Preference Customers</i>			
Akron Village	20	1,287	582
Arcade Village	25	1,556	371
Jamestown City	264	17,106	5,179

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.2.1-1**  
**PROJECT'S EFFECT ON EMPLOYMENT BY INDUSTRY**

Place	Farm	Durables Manufacturing	Non-Durables Manufacturing	Mining
New York State	0	736	910	5
Western NY	0	554	649	3
<i>Local Communities</i>				
Erie County	0	349	239	1
Buffalo City	0	85	114	0
<i>Host Communities</i>				
Niagara County	0	109	331	0
Lewiston Town	0	11	8	0
Lewiston Village	0	1	1	0
Lewiston-Porter SD	0	9	11	0
Niagara Falls City/SD	0	46	290	0
Niagara Town	0	10	4	0
Niagara-Wheatfield SD	0	7	3	0
<i>Preference Customers</i>				
Akron Village	0	2	1	0
Arcade Village	0	2	1	0
Jamestown City	0	36	7	0

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**TABLE 4.3.2.1-1 (CONT.)**  
**PROJECT'S EFFECT ON EMPLOYMENT BY INDUSTRY**

Place	Construction	Transportation and Public Utilities	Financial, Insurance and Real Estate	Retail Trade
New York State	982	789	781	2,290
Western NY	647	535	234	1,144
<i>Local Communities</i>				
Erie County	159	85	130	503
Buffalo City	36	25	36	135
<i>Host Communities</i>				
Niagara County	406	354	33	386
Lewiston Town	280	299	9	118
Lewiston Village	5	0	0	6
Lewiston-Porter SD	230	170	9	125
Niagara Falls City/SD	42	16	10	112
Niagara Town	40	4	1	25
Niagara-Wheatfield SD	34	24	1	19
<i>Preference Customers</i>				
Akron Village	1	0	2	6
Arcade Village	1	0	2	12
Jamestown City	5	6	22	81

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**TABLE 4.3.2.1-1 (CONT.)  
PROJECT'S EFFECT ON EMPLOYMENT BY INDUSTRY**

Place	Wholesale Trade	Services	Agricultural, Forestry and Fishing Services	Government
New York State	502	3,734	102	1,443
Western NY	287	1,805	50	709
<i>Local Communities</i>				
Erie County	191	994	23	330
Buffalo City	48	318	4	110
<i>Host Communities</i>				
Niagara County	65	562	15	216
Lewiston Town	22	120	4	48
Lewiston Village	0	16	0	5
Lewiston-Porter SD	24	186	5	67
Niagara Falls City/SD	18	214	2	69
Niagara Town	4	18	1	19
Niagara-Wheatfield SD	4	18	1	12
<i>Preference Customers</i>				
Akron Village	0	6	0	2
Arcade Village	0	5	0	1
Jamestown City	8	71	0	26

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.2.2-1**  
**PROJECT'S EFFECT ON EMPLOYMENT BY OCCUPATION**

<b>Place</b>	<b>Management, Business &amp; Financial</b>	<b>Computer and Mathematical</b>	<b>Architectural and Engineering</b>	<b>Life, Physical and Social Science</b>
New York State	1,244	346	257	125
Western NY	651	185	163	84
<i>Local Communities</i>				
Erie County	292	101	67	28
Buffalo City	93	32	23	13
<i>Host Communities</i>				
Niagara County	252	60	72	45
Lewiston Town	96	14	33	9
Lewiston Village	3	2	0	0
Lewiston-Porter SD	92	17	27	9
Niagara Falls City/SD	81	24	23	29
Niagara Town	11	2	2	1
Niagara-Wheatfield SD	12	2	4	1
<i>Preference Customers</i>				
Akron Village	2	1	1	0
Arcade Village	2	0	0	0
Jamestown City	25	6	4	1

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**TABLE 4.3.2.2-1 (CONT.)**  
**PROJECT'S EFFECT ON EMPLOYMENT BY OCCUPATION**

<b>Place</b>	<b>Education, Library, and Social Services</b>	<b>Legal</b>	<b>Arts, Entertainment and Sports</b>	<b>Healthcare Practitioner</b>
New York State	631	107	163	357
Western NY	280	56	75	161
<i>Local Communities</i>				
Erie County	130	28	40	79
Buffalo City	46	10	12	25
<i>Host Communities</i>				
Niagara County	89	20	23	51
Lewiston Town	15	9	6	10
Lewiston Village	1	0	1	1
Lewiston-Porter SD	20	13	7	13
Niagara Falls City/SD	46	4	8	15
Niagara Town	5	1	1	3
Niagara-Wheatfield SD	3	1	1	2
<i>Preference Customers</i>				
Akron Village	1	0	0	0
Arcade Village	1	0	0	1
Jamestown City	12	2	3	13

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**TABLE 4.3.2.2-1 (CONT.)**  
**PROJECT'S EFFECT ON EMPLOYMENT BY OCCUPATION**

<b>Place</b>	<b>Protective Service</b>	<b>Food Preparation and Serving</b>	<b>Building, Grounds and Maintenance</b>	<b>Personal Care and Service</b>	<b>Sales, Office and Administrative Support</b>
New York State	403	812	506	344	3,432
Western NY	208	388	220	135	1,746
<i>Local Communities</i>					
Erie County	105	183	113	69	828
Buffalo City	34	55	33	19	241
<i>Host Communities</i>					
Niagara County	66	105	63	33	621
Lewiston Town	13	25	16	7	215
Lewiston Village	2	2	2	1	11
Lewiston-Porter SD	19	29	20	9	216
Niagara Falls City/SD	24	35	21	9	192
Niagara Town	4	7	3	2	29
Niagara-Wheatfield SD	3	5	3	2	30
<i>Preference Customers</i>					
Akron Village	1	3	1	0	6
Arcade Village	0	3	1	1	9
Jamestown City	7	31	8	7	80

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**TABLE 4.3.2.2-1 (CONT.)**  
**PROJECT'S EFFECT ON EMPLOYMENT BY OCCUPATION**

Place	Production	Transportation and Material Moving	Construction, Installation, Maintenance and Repair	Farming, Fishing and Forestry
New York State	1,209	823	1,446	68
Western NY	814	496	917	37
<i>Local Communities</i>				
Erie County	411	232	282	15
Buffalo City	129	66	77	3
<i>Host Communities</i>				
Niagara County	279	187	502	11
Lewiston Town	55	75	317	3
Lewiston Village	2	2	5	0
Lewiston-Porter SD	47	70	223	4
Niagara Falls City/SD	166	58	80	2
Niagara Town	11	7	37	1
Niagara-Wheatfield SD	11	9	32	1
<i>Preference Customers</i>				
Akron Village	2	1	2	0
Arcade Village	2	1	2	0
Jamestown City	32	16	16	1

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.2.3-1**  
**PROJECT'S EFFECT ON GRP BY INDUSTRY**

Place	Farm	Durables Manufacturing	Non-Durables Manufacturing	Mining
New York State	0	125,577,111	136,932,990	1,017,379
Western NY	0	75,476,616	107,318,412	547,196
<i>Local Communities</i>				
Erie County	0	45,297,673	35,073,028	226,482
Buffalo City	0	11,094,139	20,866,112	21,094
<i>Host Communities</i>				
Niagara County	0	15,506,316	58,898,756	60,194
Lewiston Town	0	872,297	723,615	0
Lewiston Village	0	227,803	106,962	0
Lewiston-Porter SD	0	1,240,360	1,358,091	0
Niagara Falls City/SD	0	6,809,926	59,231,915	0
Niagara Town	0	1,463,033	878,828	0
Niagara-Wheatfield SD	0	1,139,126	497,859	0
<i>Preference Customers</i>				
Akron Village	0	275,106	83,778	0
Arcade Village	0	499,077	73,833	0
Jamestown City	0	4,212,083	897,334	52,651

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**TABLE 4.3.2.3-1 (CONT.)**  
**PROJECT'S EFFECT ON GRP BY INDUSTRY**

Place	Construction	Transportation and Public Utilities	Financial, Insurance and Real Estate	Retail Trade
New York State	50,676,950	155,973,570	123,260,103	88,083,050
Western NY	31,521,826	109,311,305	35,614,699	42,601,861
<i>Local Communities</i>				
Erie County	8,120,932	12,588,481	22,093,902	18,817,316
Buffalo City	1,833,801	4,991,004	6,047,242	5,022,061
<i>Host Communities</i>				
Niagara County	18,347,191	82,699,934	4,951,887	14,358,648
Lewiston Town	11,421,962	80,519,364	547,465	4,352,451
Lewiston Village	210,301	911	98,915	219,475
Lewiston-Porter SD	12,366,608	54,434,970	777,320	6,063,385
Niagara Falls City/SD	2,069,344	2,649,534	2,214,091	4,387,926
Niagara Town	1,919,858	728,550	305,372	909,187
Niagara-Wheatfield SD	1,253,555	3,454,135	151,465	773,540
<i>Preference Customers</i>				
Akron Village	61,197	12,316	246,316	191,450
Arcade Village	51,043	36,958	271,988	361,901
Jamestown City	273,636	647,655	2,808,440	2,768,186

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**TABLE 4.3.2.3-1 (CONT.)**  
**PROJECT'S EFFECT ON GRP BY INDUSTRY**

Place	Wholesale Trade	Services	Agricultural, Forestry and Fishing Services	Government
New York State	60,771,045	186,004,874	2,191,815	76,648,300
Western NY	32,719,054	89,852,242	996,554	36,230,916
<i>Local Communities</i>				
Erie County	22,346,020	51,647,206	484,733	17,344,578
Buffalo City	5,621,871	16,968,319	100,579	5,809,227
<i>Host Communities</i>				
Niagara County	6,869,358	26,806,918	254,018	10,281,784
Lewiston Town	2,059,768	4,992,613	52,438	2,094,110
Lewiston Village	50,662	919,226	1,394	235,169
Lewiston-Porter SD	3,044,954	10,070,927	93,812	3,832,187
Niagara Falls City/SD	2,054,989	10,889,568	48,215	3,548,524
Niagara Town	420,580	862,347	18,624	960,971
Niagara-Wheatfield SD	394,415	820,533	11,758	468,512
<i>Preference Customers</i>				
Akron Village	35,542	280,642	5,589	95,064
Arcade Village	27,900	164,050	6,667	62,846
Jamestown City	897,726	3,199,805	9,028	1,339,451

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.2.4-1**  
**PROJECT'S EFFECT ON WAGE AND SALARY INCOME BY INDUSTRY**

Place	Farm	Durables Manufacturing	Non-Durables Manufacturing	Mining
New York State	0	39,358,867	39,586,333	136,111
Western NY	0	30,729,163	27,548,772	64,253
<i>Local Communities</i>				
Erie County	0	19,597,778	10,885,179	34,027
Buffalo City	0	4,936,194	5,459,048	2,935
<i>Host Communities</i>				
Niagara County	0	8,003,388	13,305,108	12,138
Lewiston Town	0	776,238	106,471	0
Lewiston Village	0	126,892	41,585	0
Lewiston-Porter SD	0	507,236	173,665	0
Niagara Falls City/SD	0	3,691,127	11,486,282	0
Niagara Town	0	650,939	179,067	0
Niagara-Wheatfield SD	0	1,716,379	380,200	0
<i>Preference Customers</i>				
Akron Village	0	90,962	25,692	0
Arcade Village	0	80,662	13,405	0
Jamestown City	0	1,006,556	211,725	3,563

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**TABLE 4.3.2.4-1 (CONT.)**  
**PROJECT'S EFFECT ON WAGE AND SALARY INCOME BY INDUSTRY**

Place	Construction	Transportation and Public Utilities	Financial, Insurance and Real Estate	Retail Trade
New York State	30,195,890	50,313,425	42,928,708	41,558,778
Western NY	18,212,088	33,451,699	3,926,592	17,811,248
<i>Local Communities</i>				
Erie County	5,064,462	4,119,735	2,862,976	8,409,333
Buffalo City	1,140,204	1,417,322	846,795	2,233,977
<i>Host Communities</i>				
Niagara County	11,034,393	21,654,400	455,235	6,246,274
Lewiston Town	8,370,998	23,651,260	124,609	1,976,677
Lewiston Village	148,267	2,321	4,827	121,119
Lewiston-Porter SD	5,811,946	8,869,780	104,205	1,772,234
Niagara Falls City/SD	1,182,912	997,832	156,744	1,944,218
Niagara Town	1,086,017	239,065	13,327	398,322
Niagara-Wheatfield SD	2,568,830	3,231,301	58,754	1,138,793
<i>Preference Customers</i>				
Akron Village	38,044	4,606	32,895	90,986
Arcade Village	20,409	4,970	22,707	112,352
Jamestown City	99,424	170,407	211,294	1,013,847

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**TABLE 4.3.2.4-1 (CONT.)**  
**PROJECT'S EFFECT ON WAGE AND SALARY INCOME BY INDUSTRY**

Place	Wholesale Trade	Services	Agricultural, Forestry and Fishing Services	Government
New York State	21,921,782	97,341,318	2,287,908	53,401,060
Western NY	10,481,526	37,011,057	773,209	19,453,866
<i>Local Communities</i>				
Erie County	7,434,308	22,858,326	420,838	10,177,258
Buffalo City	1,863,941	7,478,753	78,672	3,502,797
<i>Host Communities</i>				
Niagara County	2,156,578	10,841,596	179,408	5,467,683
Lewiston Town	755,277	2,319,687	47,503	1,073,400
Lewiston Village	19,021	353,082	1,150	175,553
Lewiston-Porter SD	724,400	3,186,077	53,537	1,318,201
Niagara Falls City/SD	608,946	4,263,442	31,281	1,883,954
Niagara Town	126,835	332,541	12,193	450,736
Niagara-Wheatfield SD	418,603	1,161,912	28,194	688,406
<i>Preference Customers</i>				
Akron Village	11,547	134,641	4,972	50,084
Arcade Village	6,312	53,688	6,348	21,999
Jamestown City	205,297	939,597	5,885	475,194

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.5.1-1  
PROJECT'S EFFECT ON HOUSING PRICES (PERCENT)**

Place	Change in Housing Price (Percent)
New York State	0.01
Western NY	0.09
<i>Local Communities</i>	
Erie County	0.04
Buffalo City	0.05
<i>Host Communities</i>	
Niagara County	0.45
Lewiston Town	2.06
Lewiston Village	1.73
Lewiston-Porter SD	0.97
Niagara Falls City/SD	0.50
Niagara Town	0.58
Niagara-Wheatfield SD	0.48
<i>Preference Customers</i>	
Akron Village	0.10
Arcade Village	0.04
Jamestown City	0.11

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.5.2-1  
PROJECT'S EFFECT ON LAND USE (ACRES)**

Place	Residential	Commercial	Industrial
<i>Local Communities</i>			
Erie County	1,158	131	61
Buffalo City	35	22	9
<i>Host Communities</i>			
Niagara County	1,677	1,389	1,025
Lewiston Town	308	161	37
Lewiston Village	4	1	0
Lewiston-Porter SD	272	12	37
Niagara Falls City/SD	45	40	32
Niagara Town	23	16	7
Niagara-Wheatfield SD	90	24	10
<i>Preference Customers</i>			
Akron Village	4	2	0
Arcade Village	10	3	2
Jamestown City	10	1	0

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.6-1**  
**TOTAL PROJECT PROPERTY TAX LEVIES BY YEAR AND SCENARIO (2002 DOLLARS)**

Year	Unimproved Valuation	Improved Valuation
2005	1,972,474	51,566,911
2006	1,972,474	51,277,982
2007	1,972,474	50,681,056
2008	1,972,474	50,976,624
2009	1,972,474	51,119,752
2010	1,972,474	50,586,963
2011	1,972,474	49,972,447
2012	1,972,474	49,357,158
2013	1,972,474	48,723,698
2014	1,972,474	48,460,284
2015	1,972,474	48,202,138
2016	1,972,474	47,949,156
2017	1,972,474	47,701,232
2018	1,972,474	47,458,268
2019	1,972,474	47,220,162
2020	1,972,474	46,986,819
2021	1,972,474	46,758,143
2022	1,972,474	46,534,040
2023	1,972,474	46,314,419
2024	1,972,474	46,099,190
2025	1,972,474	45,888,267
2026	1,972,474	45,681,561
2027	1,972,474	45,478,990
2028	1,972,474	45,280,470
2029	1,972,474	45,085,921
2030	1,972,474	44,895,262
2031	1,972,474	44,708,417
2032	1,972,474	44,525,308
2033	1,972,474	44,345,862
2034	1,972,474	44,170,005
2035	1,972,474	43,997,665

Notes: Developed from NERA calculations, as explained in text.

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**TABLE 4.3.6-2**  
**PERCENT INCREASE IN ELECTRICITY RATES FROM PROPERTY TAX PAYMENTS BY**  
**YEAR AND SCENARIO**

Year	Unimproved Valuation	Improved Valuation
2005	1.32%	34.56%
2006	1.28%	33.31%
2007	1.27%	32.57%
2008	1.25%	32.42%
2009	1.24%	32.17%
2010	1.23%	31.50%
2011	1.22%	30.79%
2012	1.20%	30.09%
2013	1.19%	29.40%
2014	1.18%	28.93%
2015	1.17%	28.47%
2016	1.15%	28.03%
2017	1.14%	27.59%
2018	1.13%	27.16%
2019	1.12%	26.74%
2020	1.11%	26.32%
2021	1.09%	25.92%
2022	1.08%	25.52%
2023	1.07%	25.14%
2024	1.06%	24.75%
2025	1.05%	24.38%
2026	1.04%	24.01%
2027	1.03%	23.66%
2028	1.01%	23.30%
2029	1.00%	22.96%
2030	0.99%	22.62%
2031	0.98%	22.28%
2032	0.97%	21.96%
2033	0.96%	21.64%
2034	0.95%	21.32%
2035	0.94%	21.01%

Notes: Developed from NERA calculations, as explained in text.

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**TABLE 4.3.6-3**  
**EFFECTS OF UNIMPROVED SCENARIO**

Place	Employment	GRP (2002 dollars)	Personal Income (2002 dollars)	Population
<i>Local Communities</i>				
Erie County	-11	-918	-426	-19
Buffalo City	-4	-357	-98	-6
<i>Host Communities</i>				
Niagara County	19	816	629	85
Lewiston Total	7	310	205	29
Lewiston Village	1	74	47	5
Lewiston-Porter SD	8	376	252	34
Niagara Falls City/SD	4	49	151	21
Niagara Town	2	131	29	4
Niagara-Wheatfield SD	3	156	100	15

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.6-4**  
**EFFECTS OF IMPROVED SCENARIO**

Place	Employment	GRP (2002 dollars)	Personal Income (2002 dollars)	Population
<i>Local Communities</i>				
Erie County	-122	-12,034	-5,918	-271
Buffalo City	-27	-3,785	-963	-58
<i>Host Communities</i>				
Niagara County	514	24,160	17,362	2,260
Lewiston Total	134	5,939	4,142	562
Lewiston Village	31	1,535	1,004	114
Lewiston-Porter SD	154	7,266	5,070	662
Niagara Falls City/SD	111	2,039	4,304	565
Niagara Town	53	3,993	1,001	152
Niagara-Wheatfield SD	125	6,751	3,261	498

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.7-1**  
**EFFECTS OF A 5 PERCENT INCREASE IN TOURISM ACTIVITY ON LOCAL AND HOST**  
**COMMUNITIES**

Place	Employment	GRP (Thousands of 2002 Dollars)	Personal Income (Thousands of 2002 Dollars)	Population
<i>Local Communities</i>				
Erie County	1,223	51,329	37,936	1,683
Buffalo City	275	11,604	6,973	387
<i>Host Communities</i>				
Niagara County	207	7,029	7,108	367
Lewiston Town	14	488	418	23
Lewiston Village	2	69	39	3
Lewiston-Porter SD	15	518	598	29
Niagara Falls City/SD	47	1,695	1,398	82
Niagara Town	9	359	285	14
Niagara-Wheatfield SD	3	39	98	14

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.7-2**  
**EFFECTS OF A 5 PERCENT DECREASE IN TOURISM ACTIVITY ON LOCAL AND HOST**  
**COMMUNITIES**

Place	Employment	GRP (Thousands of 2002 Dollars)	Personal Income (Thousands of 2002 Dollars)	Population
<i>Local Communities</i>				
Erie County	(1,135)	(45,149)	(34,987)	(1,633)
Buffalo City	(265)	(10,800)	(6,512)	(378)
<i>Host Communities</i>				
Niagara County	(201)	(6,600)	(6,732)	(361)
Lewiston Town	(13)	(423)	(392)	(23)
Lewiston Village	(2)	(57)	(37)	(3)
Lewiston-Porter SD	(15)	(550)	(596)	(27)
Niagara Falls City/SD	(46)	(1,631)	(1,332)	(81)
Niagara Town	(9)	(319)	(270)	(13)
Niagara-Wheatfield SD	(22)	(701)	(692)	(41)

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.9-1  
EDUCATIONAL SERVICES, TOWN OF LEWISTON**

<b>Employment</b>	<b>GRP (2002 dollars)</b>	<b>Personal Income (2002 dollars)</b>
(4)	(234,447)	57,837

Note: Niagara University is located in the Town of Lewiston and thus would be included in this sector. Sacred Heart Villa School and Saint Peter School, also located in Lewiston, would also be included in this sector. Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.10-1**  
**IMPACTS OF THE NIAGARA POWER PROJECT, JOBS APPROACH**

Place	Population	Employment	GRP (Thousands of 2002 Dollars)	Personal Income (Thousands of 2002 Dollars)
New York State	264,905	172,639	17,782,441	8,080,655
Western NY	259,682	162,835	15,781,062	7,623,644
<i>Local Communities</i>				
Erie County	202,156	136,738	13,507,534	6,106,068
Buffalo City	50,816	34,428	3,567,349	1,140,376
<i>Host Communities</i>				
Niagara County	31,967	14,801	1,442,876	966,549
Lewiston Town	2,971	1,340	130,713	70,688
Lewiston Village	253	108	6,825	4,183
Lewiston-Porter SD	3,283	1,413	129,540	93,249
Niagara Falls City/SD	10,904	5,900	709,773	250,389
Niagara Town	1,293	505	34,916	48,549
Niagara-Wheatfield SD	3,791	1,271	102,096	112,392
<i>Preference Customers</i>				
Akron Village	354	146	15,362	11,360
Arcade Village	422	85	5,567	5,698
Jamestown City	3,864	2,199	186,414	55,492

Notes: Developed from NERA/REMI calculations, as explained in text.

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**TABLE 4.3.10-2**  
**PROJECT'S EFFECT ON EMPLOYMENT BY INDUSTRY, JOBS APPROACH**

Place	Farm	Durables Manufacturing	Non-Durables Manufacturing	Mining
New York State	0	28,345	29,918	58
Western NY	0	29,829	27,239	44
<i>Local Communities</i>				
Erie County	0	26,389	22,362	22
Buffalo City	0	6,846	6,714	1
<i>Host Communities</i>				
Niagara County	0	1,827	3,127	8
Lewiston Town	0	25	43	0
Lewiston Village	0	4	9	0
Lewiston-Porter SD	0	20	63	0
Niagara Falls City/SD	0	1,194	1,699	0
Niagara Town	0	22	21	0
Niagara-Wheatfield SD	0	99	64	0
<i>Preference Customers</i>				
Akron Village	0	40	2	0
Arcade Village	0	8	2	0
Jamestown City	0	714	73	2

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**TABLE 4.3.10-2 (CONT.)**  
**PROJECT'S EFFECT ON EMPLOYMENT BY INDUSTRY, JOBS APPROACH**

Place	Construction	Transportation and Public Utilities	Financial, Insurance and Real Estate	Retail Trade
New York State	9,987	6,149	7,239	22,610
Western NY	8,857	5,526	5,631	20,837
<i>Local Communities</i>				
Erie County	6,789	4,337	4,728	16,641
Buffalo City	1,282	861	908	3,511
<i>Host Communities</i>				
Niagara County	1,266	750	341	2,518
Lewiston Town	335	312	19	220
Lewiston Village	14	0	5	24
Lewiston-Porter SD	286	197	26	244
Niagara Falls City/SD	265	140	104	762
Niagara Town	84	23	16	125
Niagara-Wheatfield SD	193	97	28	300
<i>Preference Customers</i>				
Akron Village	16	2	3	24
Arcade Village	7	2	5	32
Jamestown City	66	60	113	409

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**TABLE 4.3.10-2 (CONT.)**

**PROJECT'S EFFECT ON EMPLOYMENT BY INDUSTRY, JOBS APPROACH**

Place	Wholesale Trade	Services	Agricultural, Forestry and Fishing Services	Government
New York State	11,672	39,335	1,641	15,685
Western NY	10,963	37,014	1,532	15,362
<i>Local Communities</i>				
Erie County	10,257	32,261	1,204	11,748
Buffalo City	2,485	8,248	201	3,370
<i>Host Communities</i>				
Niagara County	338	2,815	146	1,665
Lewiston Town	35	252	8	91
Lewiston Village	2	32	0	17
Lewiston-Porter SD	42	382	15	137
Niagara Falls City/SD	103	971	16	645
Niagara Town	15	91	6	102
Niagara-Wheatfield SD	43	270	12	165
<i>Preference Customers</i>				
Akron Village	2	35	3	16
Arcade Village	1	15	1	9
Jamestown City	80	492	5	185

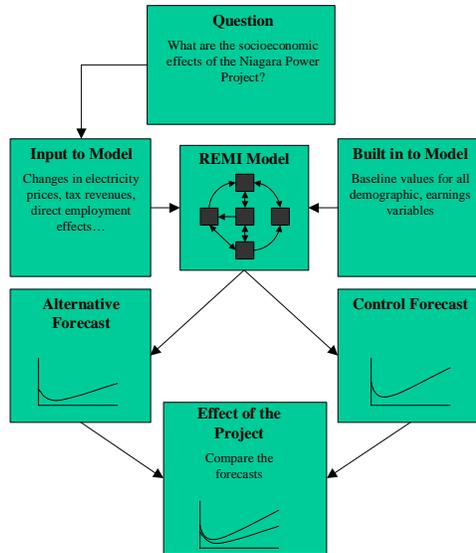
Notes: Developed from NERA/REMI calculations, as explained in text.



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**FIGURE 4.1.4-1**  
**REMI MODEL FLOW CHART**





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**5.0 SUMMARY OF THE OVERALL SOCIOECONOMIC IMPACTS OF THE NIAGARA  
PROJECT AND THE NYPA PRESENCE**

This section provides a summary of the overall socioeconomic effects of the Project. This section integrates the effects presented in the previous three sections, including the historical context, the direct effects, and the results of the REMI modeling. As we have done throughout the report, we provide a summary of effects in the following categories:

- Demographic;
- Economic/employment;
- Public sector (taxes and services);
- Electricity;
- Real estate;
- Tourism; and
- Sociological/Cultural.

The following sections provide summaries of each of these categories. For convenience, we focus on estimates of the long-term impacts of the Project in 2004, rather than the historical and future effects.

**5.1 Summary of Demographic Effects**

The Project is located in a region that has exhibited declining population since the 1950's. However, the low-cost power and direct spending from the Project have brought jobs, and with them an associated increase in residents relative to the situation if the Project were not present. This effect is most pronounced in the regions closest to the facility, resulting in an estimated long-term increase in 2004 of approximately 1,100 additional residents in the City of Niagara Falls and an increase of almost 1,700 residents in the Town of Lewiston. The Project is estimated to be responsible for approximately 10,000

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additional 2004 residents within all of Erie and Niagara Counties and 24,000 across New York State as a whole.

## **5.2 Summary of Economic/Employment Effects**

The direct payroll of the Project represents approximately 341 employees and \$26 million in salaries and benefits. (All values are in 2002 dollars.) In addition, the Project spends approximately \$56 million on other goods and services. The Project also contributes to local communities for economic development, education, and charitable causes. Since construction, the Project has contributed approximately \$140 million for various local purposes. However, the primary benefits that the Project brings to the region derive through the provision of low-cost power. An important purpose of the Project is to enhance the economic environment of Western New York by supporting electricity-intensive industries and other businesses.

A significant portion of the Project's electricity is sold directly to manufacturing companies, primarily located in Erie and Niagara Counties. Based on data provided to NYPA, these companies employ approximately 43,000 workers. These jobs are tied to the Project's low-cost electricity by contract with NYPA. The Project's low-cost hydropower is important to many of these companies' abilities to compete effectively in their markets. Based on average wage levels in these industries and regions, we calculate that these companies have a total annual payroll of approximately \$2.1 billion. Based on average levels of output per worker, we calculate that these companies generate approximately \$13.8 billion in output each year. These companies also contribute to the local economy through spending on goods and services as well as property taxes, sales taxes, and contributions to local non-profit organizations.

As our analysis using the REMI model demonstrates, the low-cost power and direct spending from the Project result in an increase in economic activity concentrated in the manufacturing sector, but that extends across a range of industries and occupations. Overall, the Project is estimated to generate approximately 12,300 jobs and \$1 billion in gross regional product in the New York State economy in

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2004 (based upon our long-term forecasts). These impacts are concentrated in Western New York, particularly Erie and Niagara Counties. The Project is responsible for roughly 5,500 jobs in these counties, and results in over \$200 million additional GRP for each. In Niagara County, this impact represents approximately 2 percent of all economic activity in the County. The impact of the Project on Erie County represents approximately 0.5 percent of all economic activity. The Project has a proportionately greater impact on the local communities, such as the Town of Lewiston and the City of Niagara Falls. The Project is responsible for 917 jobs (16.5 percent) and \$108 million in GRP (39 percent) in the Town of Lewiston and 818 jobs (3.4 percent) and \$94 million in GRP (5.7 percent) in the City of Niagara Falls.

The impact of the Project is strongest in the manufacturing sector (durables and non-durables), with an associated long-term increase of \$262 million in 2004 GRP across the State as a whole. Significant impacts also occur in the services sector (\$186 million) and transportation/utilities sector (\$156 million). The Project generates jobs across a range of occupational types as well, including almost 3,500 jobs in sales/admin, around 1,400 in construction/maintenance and over 1,200 jobs each in production and management statewide. Among the different geographic regions, sectors, and occupational groups modeled, the Project does not have any negative economic impacts.

### **5.3 Summary of Public Sector (Revenue and Expenditure) Effects**

The Project has a number of impacts on the public sector in Local and Host Communities. The economic activity generated by the Project likely results in both increased tax revenues for local jurisdictions and increased spending on education and other services. As noted, however, these effects are likely to largely offset one another. However, the Project also affects local jurisdictions through its exemption from taxation.

The impact of the Project's exemption from local property taxes depends on the taxable value of the land and facilities of the Project. If assessed as unimproved, the Project lands would generate approximately \$2.0 million in property taxes, with the greatest shares going to the school districts,

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Niagara County, and the Town of Lewiston. If the Project were assessed as improved (based on the replacement value of its facilities), annual tax revenues to all the Host Communities would be approximately \$53 million. This would include approximately \$4-12 million for each of the three school districts, \$20 million for Niagara County, and \$1 million for the Town of Lewiston.

#### **5.4 Summary of Electricity Effects**

The Project's impacts on electricity rates and consumption reflect the benefit that customers receive in the form of reduced rates relative to the market prices they otherwise would pay. The Project sells approximately 12 to 14 million MWh of power annually. This wholesale power is distributed to New York State municipal and cooperative utilities (approximately 34 percent), residents in NiMo, NYSEG, and RG&E service territories (approximately 17 percent), businesses in Western New York (approximately 40 percent), and out-of-state utilities (approximately 9 percent).

NYPA's 2004 wholesale rates for this power were approximately 0.7 to 0.8 cents per kWh for preference power customers, 1.1 to 1.3 cents per kWh for replacement customers, and 1.4 cents per kWh for expansion customers (based on average load factors for each customer group). These rates compare to 2004 wholesale electricity prices in Western New York of approximately four to five cents per kWh. Based on this price difference, we calculate that the annual 2004 benefit to all customers of the Project, both in state and out-of-state, is approximately \$538 million.

#### **5.5 Summary of Real Estate Effects**

The Project occupies 3,455 acres in the Host Communities, of which 87 percent is in the Town of Lewiston. In addition to this direct impact, the Project results in increased land use for residential, commercial, and industrial purposes, due to the overall increase in economic activity and population. Due to these effects, the Project results in approximately 1,300 additional acres of development in Erie County and 2,200 additional acres in Niagara County. The most significant impact at the municipal level occurs in the Town of Lewiston, which experiences an increase of about 360 acres.

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In addition, the presence of the Project affects the price of housing in the region. Specifically, because the presence of the Project leads to increased economic activity and population in the region, there is also an increased demand for housing. This increased demand, in turn, leads to higher housing prices. This effect is most significant in the Town of Lewiston, where the Project leads to an overall increase in the price of housing of over 2 percent. The effect is also significant in the Village of Lewiston, where the effect is nearly 2 percent as well. In Niagara County as a whole, the overall effect is roughly half a percent. Elsewhere in the state, the effect is negligible.

### **5.6 Summary of Tourism Effects**

Tourism is a major industry in the Buffalo-Niagara region. Approximately 8.4 million people visit the region (U.S.) each year, generating about 36,000 additional jobs in Western New York. However, the impact of the Project on the region's level of tourism is very difficult to estimate. The Project itself hosts between 30,000 and 95,000 tourists per year at its visitor center. On the other hand, concerns have been expressed regarding the Project's impact on local tourism due to reduced waterflow over the Falls and the placement of power lines and the Robert Moses Parkway.

Although we have not attempted to estimate these impacts, for purely illustrative purposes we have developed tourism impact scenarios using the RMEI model. Based on an assumption of a 5 percent positive or negative impact on tourism, we find that employment would rise (or fall) by approximately 1,100 jobs in Erie County and 200 jobs in Niagara County. Associated with such an impact would be roughly \$50 million of GRP within Erie County and close to \$7 million of GRP within Niagara County.

### **5.7 Summary of Sociological/Cultural Effects**

This report focuses primarily on the economic and demographic impacts of the Project on the Western New York region, in particular the Host and Local Communities. However, the Project also has a significant physical footprint in many of these communities. The process of its construction as well as

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its ongoing presence has affected the sociological and cultural aspects of these communities in both negative and positive ways.

A review of three separate ALP studies as well as documents provided by the Town of Niagara suggests that the primary sociological and cultural effects of the Project relate to its visual and physical impacts in the communities. For the Host and Local Communities and Niagara University, these impacts include the visibility of transmission wires and switching yards from various locations, any lasting effects from the relocation of people during the Project's construction, and effects on the continuity of the communities.

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**APPENDIX A: METHODOLOGY FOR DEVELOPING ESTIMATES OF THE ECONOMIC  
IMPACT OF TOURISM ON THE BUFFALO-NIAGARA REGION**

We use the REMI model to estimate the economic impacts of tourism on the economy of the Buffalo-Niagara region. The overall methodology for using REMI to estimate economic impacts is described elsewhere in the report. In this appendix, we describe the methodology used to determine the appropriate inputs to the REMI model. These inputs, which should reflect spending by visitors to the region, can be developed using the following steps.

- a. *Total Visitors to Region.* The first step is to develop information on the *number* of visitors to the Buffalo-Niagara region.
- b. *Types of Visitors.* The second step is to determine the composition of visitors to the region according to the type of visitor—specifically, broken out by day and overnight visitors.
- c. *Total Visitors by Type.* Combining the information developed in the first two steps results in estimates of the number of visitors in each category of the two categories.
- d. *Length of Stay.* The next step is to determine how long day and overnight visitors stay on average.
- e. *Average Expenditures per Day, by Spending Category.* The fifth step in calculating visitor expenditures is to determine the average level of spending per day, as well as the type of spending (whether on lodging, restaurants, transportation, or other categories). The type of spending is important in order to determine which sectors of the economy receive the visitor expenditures.

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- f. *Total Expenditures per Trip.* Combining the estimates in the previous two steps generates estimates of expenditures per trip, by type of visitor.
- g. *Total Annual Visitor Expenditures, by Spending Category.* Combining the information developed in steps (c) and (f) results in detailed information on the spending by visitors in any given year.
- h. *Translation into Appropriate REMI Variables.* Once estimates of total spending by type and location have been developed, they must be translated into REMI variables for the purpose of the economic impact analysis.
- i. *Location of Expenditures.* Finally, these input variables must be broken out by region within Buffalo-Niagara for input into the REMI model.

The following sections discuss each of these steps in turn.

### **A.1 Total Visitors to Region**

For an estimate of the total visitors to the Buffalo-Niagara region each year, we relied on an estimate of total visitors compiled by the Buffalo-Niagara Convention and Visitors Bureau.<sup>50</sup> According to this estimate, the region attracts approximately 8.4 million visitors each year.

### **A.2 Types of Visitors**

Because different types of visitors typically stay for different lengths of time and thus spend different amounts in the region, it is important to determine what categories visitors fall into. According

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<sup>50</sup> Note that this figure includes business travelers.

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to a recent survey by D.K. Shifflet & Associates ([Shifflet 2003](#)), approximately 46 percent of visitors to the region come on day trips, while the remaining 54 percent stay overnight.

### **A.3 Total Visitors by Type**

Combining the information developed in the previous two steps results in an estimate of how many visitors fall into each category. Of the approximately 8.4 million visitors to the region, 4.5 million are overnight visitors and 3.9 million are day visitors. These estimates are presented in [Table A-1](#). (It is possible to further adjust these numbers to account only for leisure travelers, which is done in certain instances in the report. However, this appendix includes all travelers to the region.)

### **A.4 Length of Stay**

The length of a visitor's stay in the region is closely linked to the total amount of spending. Thus, it is useful to develop estimates of the average length of trips, by visitor type. Among overnight visitors, the D.K. Shifflet study indicates that the average trip lasted 3.01 days in 2002 with the majority of overnight visitors staying between one and three nights. Based on a conversation with D.K. Shifflet, it is reasonable to assume that day visitors stay in the region for approximately three quarters of a day. [Table A-1](#) presents these estimates.

### **A.5 Average Expenditures per Day, by Spending Category**

This section discusses the procedures used to develop detailed spending profiles for the two categories of visitors. D.K. Shifflet reports that visitors spent an average of \$83.50 per day on trips to the Buffalo-Niagara region in 2002. The D.K. Shifflet report also provides information on the categories in which these expenditures were made, including transport (25.3 percent), food (21.7 percent), room (18.5

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percent), shopping (15.3 percent), entertainment (13.4 percent), and miscellaneous (5.8 percent), presented in [Table A-2](#).<sup>51</sup>

For the purposes of the REMI modeling, it was necessary to develop an estimate of total spending, by category, in the Buffalo-Niagara region. However, the estimate of total spending per trip averaging \$83.50 per day includes *all* trip expenditures—not just expenditures in Buffalo-Niagara. To adjust for this, we assumed that the majority of transportation spending—75 percent—was spent outside of the region. [Table A-2](#) provides total expenditures, by category, adjusted to include only those expenditures made in Buffalo-Niagara. This adjustment yields an estimate of \$67.66 spent per visitor per day.

#### **A.6 Total Visitor Expenditures per Trip**

Combining the information developed in the previous two steps yields an estimate of total visitor expenditures per trip for both overnight and day visitors. In addition, we calculate average expenditures for day visitors and overnighter visitors assuming that all lodging expenditures are made by overnight visitors. This calculation yields an average daily expenditure of \$80.81 for overnight visitors and \$52.22 for day visitors. Because overnight visitors stay an average of 3.01 days the average overnight visitor spends \$243.25 in the Buffalo-Niagara region. Day visitors, who stay for approximately 0.75 days, spend an average of \$39.16 per trip. These estimates, broken down by expenditure category, are provided in [Table A-3](#). In addition, all lodging expenses were allocated to overnight visitors.

#### **A.7 Total Annual Visitor Expenditures, by Spending Category**

Multiplying the total expenditures per trip in each spending category by the appropriate number of visitors yields estimates of total annual visitor expenditures by expenditure category. These estimates

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<sup>51</sup> Percentages in the D.K. Shifflet report summed to greater than 100 percent; these numbers have been normalized.

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are presented in [Table A-4](#). As the table shows, total visitor expenditures are estimated to be nearly \$1.3 billion annually, with day visitors responsible for approximately \$151 million and overnight visitors for roughly \$1.1 billion.

**A.8 Translation into Appropriate REMI Variables**

The expenditure information developed in the steps above was used as inputs into the REMI model. The expenditures were translated into effects on the REMI policy variable “Industry Sales” in the 13 REMI sectors corresponding to the industries (e.g., hotels) in the Buffalo-Niagara region that would be affected by visitor expenditures. Because there were no estimates available of projected growth in visitor expenditures, these estimates were grown such that they would represent a constant proportion of each REMI industry between 2004 and 2035.

**A.9 Location of Expenditures**

Because the REMI model developed for this study had numerous sub-county areas, it was necessary to determine in which regions visitor expenditures were made. The REMI model contains forecasts of baseline demand for all of the 53 industries in the model. NERA used these estimates of total demand for the 13 relevant industries (e.g., hotels) and assumed that visitor expenditures would be broken out geographically according to each sub-region’s proportion of total regional demand. Thus, for example, if 20 percent of the Buffalo-Niagara region’s hotel demand was located in the City of Niagara Falls, it was assumed that 20 percent of visitor expenditures on hotels were made in the City of Niagara Falls.



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**Table A- 1. Buffalo-Niagara Visitors, by Type**

	<b>Overnight Visitors</b>	<b>Day Visitors</b>
Percent of Visitors	54 %	46 %
Number of Visitors	4,536,000	3,864,000
Length of Stay (Days)	3.01	0.75

Note: Data from [Shifflet 2003](#) and the Buffalo Niagara Convention and Visitors Bureau.

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**Table A- 2. Visitor Expenditures per Day by Spending Category**

Spending Type	Percent of <i>Total</i> Expenditures	Percent of Total Expenditures <i>in Region</i>	Expenditures per Day <i>in Region</i>
Transportation	25.3%	7.8%	\$5.28
Restaurants/Food	21.7%	26.7%	\$18.09
Lodging	18.5%	22.8%	\$15.44
Shopping/Retail	15.3%	18.9%	\$12.79
Entertainment/Recreation	13.4%	16.6%	\$11.20
Other	5.8%	7.2%	\$4.84
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>\$67.66</b>

Note: Estimates developed by NERA, as explained in text.

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**Table A- 3. Visitor Expenditures per Trip by Spending Category**

Spending Category	Expenditures per Trip by Overnight Visitors	Expenditures per Trip by Day Visitors
Transportation	\$15.89	\$3.96
Restaurants/Food	\$54.46	\$13.57
Lodging	\$86.08	\$0
Shopping/Retail	\$38.51	\$9.60
Entertainment/Recreation	\$33.72	\$8.40
Other	\$14.58	\$3.63
<b>Total per Trip</b>	<b>\$243.25</b>	<b>\$39.16</b>

Note: Estimates developed by NERA, as explained in text

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**Table A- 4. Total Visitor Expenditures by Spending Category**

Spending Category	Total Annual Expenditures by Overnight Visitors	Total Annual Expenditures by Day Visitors	Total Annual Expenditures
Transportation	\$72,093,269	\$15,302,189	\$87,395,457
Restaurants/Food	\$247,029,265	\$52,433,306	\$299,462,571
Lodging	\$390,469,342	\$0	\$390,469,342
Shopping/Retail	\$174,677,597	\$37,076,271	\$211,753,868
Entertainment/Recreation	\$152,972,097	\$32,469,160	\$185,441,257
Other	\$66,150,096	\$14,040,718	\$80,190,814
<b>Total</b>	<b>\$1,103,391,665</b>	<b>\$151,321,645</b>	<b>\$1,254,713,310</b>

Note: Estimates developed by NERA, as explained in text.

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**APPENDIX B: RECOMMENDED PROJECTS RELATED TO DEVELOPING THE**  
**WATERFRONT AND NIAGARA’S CULTURE HERITAGE**

This appendix provides a list of recommended projects for the City of Niagara Falls discussed in Section 2.6.2.1. These descriptions are taken directly from “Achieving Niagara Falls’ Future” (see <http://urbandesignproject.ap.buffalo.edu/pub/pdf/niagfalls.book.pdf>).

**1. Bike and Pedestrian Trail System**

Direct access by pedestrians to the Niagara River waterfront is the foundation of this strategy. Therefore, as soon as possible, implement existing plans for a pedestrian and bike way to run continuously along the entire length of the Niagara Falls waterfront. It is important to make sure that the path is well connected to adjacent neighborhoods and the city street pattern for easy local access.

**2. Naturalize Niagara River Shoreline and Gorge**

The waterfront should be natural and beautiful. Therefore, areas adjacent to the river, including the rim of the gorge, the Reservation, and the upper rivers stream bank, should be naturalized as much as possible through removal of paved surfaces and new plantings of trees and native plants. This will improve the environment and enhance the quality of views. It is acceptable to mow where needed for picnickers and other users, but the use of natural plants will cut maintenance costs and add to the enjoyment of users. Naturalizing the gorge rim will also help strengthen the buffer between city and fragile gorge ecosystems.

**3. Reconfigure Robert Moses Parkway**

The Robert Moses Parkway presents an almost continuous barrier between the city and its waterfront. So egregious has been the intrusion that the most important planning efforts of the last two decades have all suggested ways to mitigate the impact of the Parkway. These include the Niagara Falls

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Waterfront Master Plan by Sasaki Associates (1992), the Citizens Map of Niagara Falls by the Waterfront Regeneration Trust (1997), the Jerde Partnership development plan for Niagara Falls Redevelopment Corp. (1998), and the Main Street Plan by the City of Niagara Falls. (2001).

A range of treatment options should be considered to reduce the negative impact of the Parkway on the waterfront environment and as a barrier between city neighborhoods and the river, falls, and gorge. These should include elimination of lanes, removal of sections of the highway, reduction of speed limits, and introduction of at-grade intersections with the intent of reducing or eliminating automobile traffic and increasing pedestrian access.

The issue requires a great deal of additional technical work, design study, and public discussion. It will almost surely involve different approaches in different locations and contexts. But given the Parkway's limited value for transportation and its substantial conflicts with the goals of waterfront redevelopment in Niagara Falls, a systematic reconfiguration of the Parkway is an absolute requirement of this strategy.

#### **4. Plan the Niagara Falls "Green Structure"**

Within the borders of Niagara Falls there are hundreds of acres of old industrial lands, disused railway rights of way, some New York Power Authority lands and other utility corridors, vacant lots, and otherwise unused urban land. In some ways, such lands are a burden, but they also offer a unique opportunity to expand and link the city's open space system in a way that better connects neighborhoods to the waterfront and repays the promise of the "City in the Park." These lands also extend beyond the Niagara Falls city line and thus hold out an opportunity to connect city "green structure" with the broader regional system of open space. The times to acquire, repair, and develop such lands for public uses may be long in the future. But the time is now right to survey, strategize, and plan for the recovery of these resources.

#### **5. The City of Niagara Falls Family Museum**

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Niagara Falls needs a world class visitor attraction in a world class building to be the centerpiece of a system of natural and cultural heritage attractions. We recommend a City of Niagara Falls Family Museum.

It would be located in a prime location downtown near the edge of the Niagara Reservation. The Family Museum would be the first place that visitors go when they come to Niagara Falls. It would be the place where they see exhibits to help them understand the geography of the park, the history of the place, and to orient them to other attractions in the vicinity.

The museum would be designed and programmed to appeal to visitors of all ages and family situation, and to visitors from around the world. Its exhibits would be "cutting edge" – high-tech and high-touch with maximum use of interactive computers and video.

The Family Museum would be the brightest star in a constellation of other museums and interpretive sites, including the "Niagara Discovery Center" (see below) and others throughout the city. The Family Museum would introduce visitors to the compelling stories of Niagara Falls and the region, and then direct them on to other sites where they can learn and experience more.

The City of Niagara Falls Family Museum should be in a building so wonderful that people come just to see it – the same way people flock to Bilbao, Spain to see Gehry's Guggenheim. The museum should also be located where it can best provide a point of reception and orientation for visitors. And it should stimulate active street life and help connect the city with the park. The Olmsted legacy is a keystone attraction for visitors. It should stimulate active street life and help connect the city with the park.

## **6. Frederick Law Olmsted Interpretive Center**

One of the primary stories to tell is about the Niagara Reservation itself and the inspiration of Frederick Law Olmsted that helped create it. We propose the renovation of either the current visitors

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center or the recently restored historic Horse Stable complex on Goat Island to accommodate anew Olmsted Interpretive Center. The center would explain how Olmsted's philosophy and designs influenced, not only our experience and understanding of Niagara, but also the development of landscapes throughout the nation. Olmsted understood that visitors to Niagara were motivated by a wish "to be astonished" as well as to enjoy the "pensive contemplation" of distinctive beauty. An exhibits area in the renovated facility would provide clear directional cues to the park, as well as interpretation of the Olmsted legacy. Placing the Olmsted exhibit in the Horse Stable will make it possible to consider other future uses for the current visitors center.

**7. History of Civil Engineering Exhibition**

Niagara Falls has a rich history of civil engineering feats in the service of transportation, from early portages, to gorge railroads, and successive international bridge crossings. An interpretive exhibit beneath the Rainbow Bridge plaza could reveal this history for visitors at the same time it draws them from Prospect Point toward Gorge View Park. Signage, lighting, pedestrian amenities, and exhibits would explain the history and encourage visitors to explore the variety of other educational and "discovery" opportunities along the Niagara River gorge such as the remnants of historic bridge crossings, or the site of the first railway in North America.

**8. Niagara Gorge Discovery Center Expansion and Trailhead**

The geological history of Niagara Falls is already interpreted through the facilities of the Schoellkopf Geological Museum. The richness of this story and the interest of the public, however, have suggested the need for the museum to be updated, expanded and revitalized. The New York State Office of Parks has renovated the Museum at its current location. The building, has been renamed the Niagara Gorge Discovery Center, has a magnificent view of the gorge, and is serving as a trailhead for explorations of the gorge itself.

**9. Early Hydroelectric Power and Industrial Heritage Museum**

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The development of hydroelectric power in Niagara Falls is a story of world significance warranting a major investment in interpretive facilities and program. We propose creation of a new museum to be located on the concrete platform that was the roof of the discharge tunnels of the Schoellkopf hydroelectric power plant. The museum would provide space for exhibits on the early history of electric power; provide views of the gorge and the 200-foot-high stone wall that hides the water conduits of the plant; and offer new access to industrial heritage trails in the gorge by way of an elevator built into the original elevator shaft. The programming of the museum should be developed in a way that complements interpretive programs provided at the New York Power Authority Power Vista in Lewiston.

**10. Natural History Interpretive and Visitor Amenity Center**

Whirlpool State Park is a popular site for people who want to hike and experience nature in the gorge. There is a great opportunity to make these visits easier and more enjoyable and, at the same time, lessen the impact visitors make on the natural setting itself. If we create a Natural History Interpretive and Visitor Amenity Center, adjacent to Whirlpool State Park on the DeVeaux campus, we can serve visitors better and soften our footprints in the gorge.

The location already offers visitors breathtaking vistas and physical access to gorge trails and fishing spots. A Visitor Amenity Center, outside of the natural gorge environment but nearby, would provide restrooms and concessions, tourist information and interactive destination planning.

A Natural History Interpretive Center, also located outside of the gorge, would tell the stories of the culture, environment and history of the Niagara eco-region. It would also teach visitors about rare plant and animal species – especially birds – found in the gorge.

The center would also serve as an additional trailhead or gateway for gorge hikers. Access to the gorge high-bank should be provided in the vicinity of the Whirlpool Bridge. Access into the gorge and the great rapids should also be considered, perhaps by elevators. The State Parks maintenance facility should be relocated away from the gorge rim.

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**11. Love Canal Education and Interpretation Center Movement**

Love Canal was a pivotal event in the history of the global environmental movement. It was the first federally declared "toxic waste disaster site," designated by President Carter in 1980. It was a tragic event in the lives of many individuals, but it also gave birth to a grassroots environmental movement that has had a tremendous impact on the world. Love Canal provided the catalyst for significant changes in the way the industry handles hazardous waste and initiated state and federal legislation resulting in more responsible management of these materials. It is an important story and needs to be told. The proposal for a Love Canal Education and Interpretation Center deserves public sector support to provide educational exhibits and programming on the role of Love Canal and Niagara Falls in the growth of the environmental movement.

**12. Develop Griffon Park Interpretive Materials**

In the late 17th century, the French explorer LaSalle built a ship, the Griffon, at a spot on the bank of the upper Niagara River. Today, the 20-acre park at the site, which was lost to the public during a decade of environmental remediation and litigation, is under redevelopment.

Planned work will restore access to the shore of the Little Niagara River, provide continuity for future trail extensions, ensure scenic vistas, and help meet local recreational needs. The site offers further potential for interpretation of early water-dependent industries, including shipbuilding, and the annals of explorers like LaSalle.

**13. Industrial Heritage Interpretation – Buffalo Avenue Route 18.**

Although, often understood as in conflict with the local aspiration for tourism development, the city's long and rich industrial heritage represents an important part of the story of Niagara Falls about which visitors may want to know more. From the earliest users of mechanical waterpower, to the growth

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of hydroelectric-powered manufacturers, and on to modern chemical making, the stories of Niagara Falls industry deserve to be researched, developed, and told.

One possibility would be to create a Buffalo Avenue industrial heritage route, which could be incorporated into a broader system of Niagara Falls heritage interpretation. New industries should be included along with older industries. Interpretation would be through kiosks and signage, supported by a map of a tour loop, with public tours of contemporary industry where possible.

**14. Intake Park Overlook and Fort Schlosser Interpretive Venue**

The Upper River water intakes for hydroelectric power generation provide a natural point of entry – substantively as well as logistically – to the story of electric power. We recommend the further development of Intake Park to provide both recreational access to the river and expanded interpretive opportunities.

For those entering the city from the south, Intake Park would be a logical point at which to orient visitors to a "Power Route" linking several sites related to the hydro-power story specifically and to the heritage interpretation system overall. It would also be the appropriate site to tell the story of Fort Schlosser, which was captured during British incursions in the region during the War of 1812.

Located at the proposed intersection of the Robert Moses Parkway and Hyde Park Boulevard, the park would also provide an additional point of access to the waterfront trail.

**15. Adams Power Plant Adaptive Reuse**

One of the earliest hydroelectric generation facilities in Niagara Falls was the Adams Power Plant along the upper Niagara River. It was featured in Lauren Belfer's historical novel, *City of Light*, as a symbol of the burgeoning hydroelectric industry at the beginning of the 20th century. It presents an extraordinary opportunity for reuse as an interpretive facility.

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The State should move immediately to purchase the old Adams Power Plant, and State and City should negotiate with Niagara Mohawk to improve surrounding properties. The facility should be restored and included in a "Power Route" interpretive trail. This visitor route would link the Adams Power Plant with Intake Park, River View Park, a "revealed" Hydraulic Canal, the Early Hydroelectric and Industrial Heritage Museum, and the Power Vista in Lewiston. Access to the Adams site could be from the Robert Moses Parkway and from a Portage Road extension.

**16. Reveal and Interpret the Hydraulic Canal**

The Hydraulic Canal was a significant element in the history of Niagara Falls. It connected the upper river with the gorge across the city. It helped provide power to industry, facilitated transportation, and gave form to the city. It deserves to be interpreted and "revealed."

While any sort of thorough reconstruction is clearly infeasible, there are a variety of ways that it could be marked, remembered, or celebrated. Its distinctive diagonal transection of the city could be marked by open space and plantings; it could be remembered simply through interpretive signage; or a small section of the canal could be recreated to show what it might have been like. Such a remembrance also has potential to serve as an important cross-town pedestrian link.

**17. Underground Railroad Interpretive Site**

Before the U.S. Civil War, thousands of fugitive slaves, escaping from the South, came through the Niagara Frontier on their way to freedom in Canada. Like a number of locations along the Niagara River and on both sides of the international border, Niagara Falls has a rich history of involvement in what became known as "the Underground Railroad."

A local organization has expressed strong interest in developing the resources to tell this story. The Customs House at the Whirlpool Bridge is one possible location for such exhibits, and which could be part of a larger tour extending from Buffalo through Niagara Falls and on to St. Catharine's.

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**18. (Old) Customs House Restoration and Reuse**

One of Niagara Falls' lesser-known treasures is the former U.S. Customs House. The stone edifice at the Whirlpool Bridge is listed on the National Register of Historic Places. It was built in 1863 as the point of entry for Niagara Falls and is now vacant.

It presents obvious possibilities for renovation and reuse, including as a site for a new Amtrak railway station, or as a place for interpretive exhibits perhaps on the Seaway Trail or Underground Railroad.

**19. Niagara Arts and Cultural Center**

The former Niagara Falls High School, built in 1924 and closed as a high school in 2000, is an important historic landmark and community asset. Located at the intersection of Pine Avenue and Portage Road, the building is minutes from the downtown tourist area and at the beginning of the city's "Little Italy" neighborhood. Its distinguished architecture, pleasant grounds, and gracious spaces make it an extraordinary resource for Niagara Falls.

Save Our Sites, Inc., a community-based grassroots organization in Niagara Falls, has mobilized to save the school and press for its regeneration as the Niagara Arts and Cultural Center. The anticipated program for the NACC includes performance, studio, and gallery space for visual and performing artists, as well as restaurants, shops, and other community uses.

The NACC offers an unusual opportunity, not only to provide for local arts and cultural activities, but also to make a connection between the local Niagara Falls community and large numbers of international visitors to the Falls. The Niagara Arts and Cultural Center needs and deserves public support to save a valuable building and bring this program to fruition.

**20. Bike and Pedestrian Trail System**

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Implementation of the bike and pedestrian trail plan in the upper river area will involve construction of the trail from the Niagara Reservation to the east city line and beyond. A major trailhead is located at the Century Club site at the Grand Island Bridge and is addressed below. The entire trail would also connect the Reservation with the proposed River View Park, the Intake Promenade, the 53rd Street Docks, Griffon Park, other city neighborhood parks, elements of the Niagara Discovery Center, and beyond to Erie Canal and Erie County pedestrian facilities.

**21. Naturalize Niagara River Shoreline**

The Upper River shoreline, as it exists today, is an artificial by-product of highway construction, without visual interest or natural function. Naturalization of the Upper River shoreline would improve the character of views and the quality of the waterfront environment through the introduction of native trees and plants.

Such plantings may be used to screen from view adjacent industrial facilities, but could also serve to highlight views of the Buffalo Avenue factories, as well as to frame views of the river.

These plantings would also improve habitat for waterfowl and other wildlife. Modification of the shoreline to provide current breaks and other "natural" features would improve fish habitat and increase sport fishing opportunities. Implementation of this element in the shorter term might involve participation by community groups or local youth organizations in volunteer planting projects.

**22. Reconfigure Parkway to "Boulevard"**

The Robert Moses Parkway should be reconfigured in boulevard-style from the Grand Island Bridge to Daly Boulevard in order to mitigate the negative impact of the highway on the waterfront environment, and to facilitate pedestrian access to the bike and pedestrian trail and to the river's edge.

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Reconfiguration might include two or four lanes of traffic, separated by a planted median in either case, but would necessarily involve a reduction in speed limit, introduction of new intersections as noted below, with an option for the provision of roadside parking.

**23. Preserve Century Club Trailhead**

The site of the former "Century Club" is a crucial location for the successful development and use of the waterfront pedestrian and bike trail and must be developed in a way consistent with preserving public waterfront access. The site is highly visible to northbound motorists on Interstate I-190 approaching the foot of the Grand Island Bridge. It should serve as gateway, announcement, and enticement to users of the trail.

This requirement is not necessarily in conflict with other proposals for the site, but any companion development should take into consideration the need to provide access to the trail and waterfront, services for cyclists, boaters, fishermen, pedestrians, and other users, and especially continuity for the trail itself and its operation and maintenance.

Consideration should be given to replacing the RMP overpass, across Buffalo Avenue, with a city-style at-grade intersection to reduce parkway speeds, while increasing access to new land for park/recreation way development and safety.

**24. Connect City to Trail and Parkway at 53rd Street**

Connect 53rd Street to the Robert Moses Parkway at a city-style at-grade intersection. This will create easy access to existing dock facilities from both the adjacent neighborhoods and the Parkway itself and create a new waterfront trailhead and fishing access point. At the same time, this will calm the flow of traffic on the reconfigured parkway.

**25. Connect City to Trail and Parkway at Hyde Park Boulevard**

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Extend Hyde Park Boulevard to connect with the Robert Moses Parkway at a city-style at-grade intersection. This will provide access to the proposed Intake Park, discussed above, as well as create another new access point for the waterfront trail, and connect the trail to adjacent neighborhood streets. The intersection will also help slow traffic on the reduced parkway.

**26. Connect City to Trail and Parkway at Portage Road**

Extend (and turn) Portage Road to connect with the Robert Moses Parkway and waterfront trailhead at a new city-style at-grade intersection. This extension and intersection will provide new access between the trail and city neighborhoods and further calm traffic on the downgraded Parkway. It will also provide access for interpretive facilities at the Adams Plant (above) and to the proposed RiverView Park (below).

**27. River View Park: Birding Area and Overlook**

One of the richest and most promising redevelopment sites on the upper river, ironically, is often referred to as the "spoils pile." The site is strategically located on the broad upper reach of the river, and it is large enough to accommodate an ambitious and varied program of recreation, education, historic interpretation, and visitor orientation.

This program should feature a proposal such as the Audubon Society/ Buffalo Ornithological Society's idea for The Bird Observatory, taking advantage of the Upper River's status as a world-class birding area. It can also accommodate historic interpretation of the Adams intake canal and "Old Stone Chimney" and interpretation of NYPA's working boat docks.

Recreational opportunities would be largely of a passive nature with facilities for picnicking and related activities. As a trailhead to the waterfront pedestrian and bikeway, it is a site capable of providing visitor orientation to the overall waterfront visitor experience.

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The processes of vegetative succession have already gone a long way toward recreating the "spoils pile" as a natural area, an evolution that should be encouraged and maintained. Overall, this must be considered a high priority project. Necessary negotiations with the Power Authority, which owns the site, should be opened as soon as possible.

**28. Remove Parkway from Daly Boulevard to Main Street**

Given the reconfigured through-connections from the Robert Moses Parkway to Daly Boulevard and Rainbow Boulevard, it is possible to consider the outright removal of the Parkway from Daly Boulevard to Main Street.

This would allow for the conversion of the highway-style fly-over interchange at Daly Boulevard to an at-grade connection. More importantly, it will make land available for re creation, public access, green space, waterfront housing, small hotels, and bed and breakfast lodging.

This will further emphasize Daly Boulevard as a city gateway at the same time it ameliorates a major negative impact on the waterfront environment. Accomplishing this will require careful rationalizing of arrival routes, traveler orientation, and access to parking facilities.

**29. Create New Pedestrian Connections to the Niagara Reservation**

Recovery of the Niagara Reservation from commerce and industry was one of the great achievements of the 19th century. The 20th century, unfortunately, has seen the continuing isolation of the city from the park by highways and other infrastructure. The most immediate need in this area is to reestablish simple pedestrian connections from the city of Niagara Falls to the water's edge.

There are several opportunities for near term remedies. Several streets that run perpendicular to the Niagara River rapids could be opened for pedestrians and cyclists through to the park. Other direct connections can be made from downtown into the park nearer the brink of the falls. Generally, all streets

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downtown should be made more pedestrian friendly. Over the longer term, it is critical that more formal connections are established between downtown and the edge of the gorge downstream from the Rainbow Bridge.

**30. Change Rainbow Boulevard North and South to Two-Way Streets**

As a pair of multi-lane one-way thoroughfares, Rainbow Boulevards North and South create a wall of traffic between the park and the rest of downtown. To calm traffic, increase pedestrian safety, and to increase local access (as opposed to through traffic) both Rainbow Boulevard North and South should be converted to two-way traffic.

In the current configuration these streets threaten pedestrians with too-fast traffic and constrain the options of motorists at the same time. The result is a traffic pattern that tends to direct motorists through and out of the downtown. The shift to two-way traffic will mitigate all of these effects.

**31. Remove Parkway Section Nearest the Niagara Reservation**

To bring the park farther into the city, and to encourage park visitors to patronize downtown businesses, the short section of Parkway that runs from the south end of the fragment of Main Street up to the bus loop near the State Park parking area should be removed. In place of the Parkway, create a pedestrian pathway wide enough to be used by emergency vehicles.

As a short-term measure, and to test the impact of this measure on traffic patterns, the Parkway could be left intact but altered using large planters to stop traffic and narrow the road for pedestrians.

Removal of this section of Parkway is likely to intensify and alter pedestrian traffic patterns from the city into the park. Design work should consider how best to connect pedestrian city paths and park paths, and more specifically, how to mitigate the possible barrier effect of the knoll at the park's edge.

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**32. Narrow Main Street Fragment**

Like other sites in downtown Niagara Falls, The Turtle museum is some what isolated by the effects of heavy traffic. To increase space around The Turtle and make it easier to reach the building, the east end of the fragment of Main Street should be narrowed.

This will increase pedestrian comfort and help connect park and city, yet allow for continued diagonal parking on the south side of the hotel. This is also a measure that can be implemented in the short term using large planters.

**33. Repave Rainbow Boulevard South for "Traffic Calming"**

Rainbow Boulevard South is forbidding to pedestrians in part because of the quality and design of paving materials. The expanse of blacktop says "cars come first; pedestrians beware." As a traffic-calming measure, and to increase pedestrian comfort, re-pave Rainbow Boulevard South with materials of distinctive color and/ or texture.

This will announce to motorists the priority of persons on foot, and visually unify the area. The area re-paved should extend from Niagara Street to south of The Turtle, as well as down the Old Falls Street pedestrian mall, and between the mall and The Turtle.

**34. Improve Landscaping of West Mall**

The West Mall provides a logical linkage between park and downtown but fails to meet its full potential. To further extend the park into the fabric of the city, and to provide a more formal entrance from the city into the park, re-landscape the pedestrian mall, beginning with work on the West Mall.

This would include replacing existing at-grade plantings (which restrict movement back and forth across the mall) with a more formal grid pattern of trees on pavement. The suggestion of a connection

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between the West Mall and the Wintergarden would be created by installation of a tree-planted median in Rainbow Boulevard South. This would calm traffic and increase pedestrian comfort and safety. It would also serve to funnel pedestrian traffic toward the western entrance of the Wintergarden (see below).

The West Mall tree pattern should be interrupted to make two public squares that would include seating and information kiosks. The kiosks would carry information about attractions, museums and tourist routes. They could also play an interim role in telling the many different stories of Niagara Falls before more elaborate interpretive infrastructure can be developed.

Finally, the redesigned West Mall would terminate at the park edge in a formal circle reminiscent of Olmsted's original plan for the Niagara Reservation.

**35. Modify Wintergarden for Visual and Pedestrian Access**

As it exists now, the Wintergarden presents a physical and visual barrier between the park and elements of the downtown cityscape. To further connect the city and the park to each other, we suggest that the Wintergarden be opened up, at least during high tourist season when weather allows.

This might be accomplished by retrofitting lower level windows to open, as glass garage doors do in many commercial storefronts. When security needs or weather conditions require it, the doors could be closed. This would be a minimum treatment with more thorough approaches being possible. Improved programming of the Wintergarden, itself, would also improve the sense of access into and through the building.

**36. Improve Landscaping and Pedestrian Connections at the Turtle**

Proposals to redevelop The Turtle as a major museum on Native American culture, possibly in partnership with the Smithsonian Institution, are worthy of support. Such efforts are more likely to

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succeed if the building can be better connected to adjacent pedestrian zones, the West Mall, and trails into the Niagara Reservation.

New paving patterns (discussed above) will contribute to achieving this goal. New plantings to help connect The Turtle back to the mall will help. So would creation of a more generous entrance facing Rainbow Mall South.

**37. Remove Parking and Restore Olmsted's "Upper Grove"**

The most important step in the restoration of Olmsted's original design for the park – and a crucial step in improving the environment of the park overall – would be to remove the existing parking lot and replace it with a replanted "Upper Grove."

This should be done, however, taking fully into consideration the importance of parking revenues for Office of Parks operations and of maintaining easy access to The Maid of the Mist. Negotiations toward an agreement between the Office of Parks and the City of Niagara Falls or others to share revenue for parking at a location outside of the park will be required.

This would allow most parking to be removed from the park, except for off-season parking, handicap-accessible spaces, operations and maintenance, and space for bus drop-off and people mover loading. A slight modification in the original design would allow the grove to be used as an amphitheater with a temporary stage such as the one used in Buffalo's Delaware Park for summer Shakespeare productions.

**38. Build a New Park Building on the Olmsted Inspiration**

If additional space for public amenities is required in the park, we strongly suggest a long, linear building to run along the northern edge of the Reservation. This would separate parkland from the

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Rainbow Bridge Plaza, creating a strong boundary to the park, and providing a barrier to noise and visual intrusions into the park.

This proposal is in the spirit of an original Olmsted idea for a building along the former Canal Street, also intended to shield the park from urban intrusions. In general, the park should be integrated with the city as much as possible, but not with the heavily trafficked bridge approach and inspections area.

**39. Redesign / Redevelop Street Level Retail in Buildings Next to Park**

As currently configured, many of the retail and commercial buildings adjacent to the park present a kind of impermeable wall to pedestrians and contribute to a hostile pedestrian environment. Where retail activities are already present, the City should work with building owners, particularly owners of the former Rainbow Center Mall, to redesign building facades and entrances to make these buildings more open, inviting, transparent and street-oriented. Where retail activities are absent, they should be encouraged, with a mix of goods and services pitched to existing and potential demand.

**40. Redevelop Buildings Adjacent to Park for Higher Quality**

Many of the buildings adjacent to the park (with the exception of the OxyChem building) are of low quality, image value, and intensity of use. The City should adopt a long-term strategy and policy to encourage property owners to redevelop these sites.

New structures should be of greater bulk-density (although not high-rise) and higher quality design and materials than those presently on those sites. With continued development of the local and visitor market, we assume that some of these projects will involve new and "higher and better" uses than currently exist. New urban design standards should be developed by the City to guide redevelopment.

**41. Continue Linear Park Along Hydraulic Canal Route**

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The recent development of a new linear park along Daly Boulevard has helped achieve the goal of bringing the park into the city. But the opportunity exists to extend the park and make a new cross-town connection between the upper river and the gorge rim trail going northbound. Starting from Main and Fourth Streets, and following generally the path of the old Hydraulic Canal, extend the linear park back to the Niagara Reservation.

**42. Gorge Trail System and Trailhead Improvements (Low-Bank)**

The condition of existing trails in the Niagara River gorge varies widely, impacting the accessibility of the gorge environment and the safety of users. Where necessary, gorge trails should be repaired or rebuilt. Enjoyment of gorge trails and fishing platforms at the water's edge also depends on providing access and visitor services – each appropriate to the natural condition of the gorge – at trailheads along the way. These are discussed under other elements of this strategy.

**43. "Gorge View" Hike & Bike Trail (High-Bank)**

Views from the top of the Niagara River gorge are spectacular in several directions and should be made more accessible to visitors and residents alike. A continuous system of hiking and biking trails along the gorge should be completed. Overlook facilities should be improved where appropriate. The end result should be a continuous open space system providing access from the city into and along the gorge.

**44. Reconfigure Parkway**

The Robert Moses Parkway presents an especially difficult barrier between the gorge and the neighborhoods adjacent to it. The recent closure of the Parkway is an important step toward satisfying the public's expressed aspiration to be reconnected with its waterfront.

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A longer-term solution to the issue requires a careful evaluation, not only of the provisional closure, but also a variety of possible alternatives. One of the most promising may be the most straightforward. North of the Rainbow Bridge, consider combining Whirlpool Street and the existing Parkway in a single boulevard configuration designed to allow the greatest park area. North of the city line, a redesign of the connection to Upper Mountain Road should be included in the evaluation.

It is crucial to remember that whatever option is adopted it allow connections between the gorge trailheads to and from adjoining neighborhoods via the Gorge View Hike & Bike Trail.

**45. New Amtrak Railroad Station**

Niagara Falls' current Amtrak passenger railroad station is a busy facility despite its isolation from the rest of the city (over 40,000 annual passengers). New facilities for rail passengers should be created in a location with proximity and visibility to Main Street and the waterfront tourist district, and in combination with appropriate tourist-related services. The proposed " Whirlpool Bridge" location will satisfy these goals while opening Niagara Falls to new cross - border markets that can dramatically increase ridership. The City's proposal will preserve the "Old Customs House," a significant historic resource, and create a new state-of-the-art, International Intermodal Transportation Facility to link rail, highway, and airline services with prime tourist and scenic areas. These will serve the city's transportation needs far into the 21st century.

**46. Devil 's Hole State Park Naturalization and Interpretation**

Devil's Hole State Park is another popular site for visitors seeking access to the Niagara gorge, but significant modifications and improvements to the park and roadway infrastructure are needed to make the most of this resource. These should include a reduction in paving, reconfiguration of entrance conditions, and increase in natural areas.

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**APPENDIX C. EFFORTS TO PROMOTE CULTURAL TOURISM IN THE NIAGARA REGION**

This appendix provides a list of completed and ongoing efforts taking place within Erie and Niagara Counties to promote and develop cultural tourism in the Buffalo-Niagara region and comes directly from Section 2.21 of “Cultural Tourism in the Buffalo-Niagara Region,” a report prepared by the Institute for Local Governance and Regional Growth (see <http://regional-institute.buffalo.edu/publ/cult.html>).

**1. A Blueprint for Marketing Niagara County as a Visitor Destination**

Prepared by OCG, a Florida-based tourism consulting firm, under contract with Niagara University, this report sets forth a plan for marketing Niagara County as a visitors’ destination. The first part of the report examines Niagara County’s strengths, weaknesses and opportunities for product development, marketing, visitor experience and industry/community relationships, while Part II presents a blueprint for billing Niagara County as a visitors’ destination. The plan calls for the creation of a new marketing organization and offers recommendations for the entity’s mission, objectives, organizational structure, governance and operational imperatives. The blueprint also outlines strategies for marketing, developing product and infrastructure, increasing visitation, securing funding, conducting research and building community support. A consolidation team, formed following the release of this report in early 2002, will work with OCG to implement the plan. State funds secured by New York State Senator George Maziarz have supported this initiative.

**2. Buffalo Inner Harbor Project**

This is a major public project designed to revitalize Buffalo’s waterfront and assist in improving the regional economy, including the tourism industry. The plan has several aspects, including the creation of a Hero’s Walk and wharf, movement of navel ships to enhance the view of the waterfront, excavation of two new canal slips to accommodate tourist and recreational ships and the development of a naval

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museum, a mixed-use waterfront building and a waterfront plaza for public events. Empire State Development is managing the project's design and construction. New York State and the federal government are funding the project, although Erie County and the City of Buffalo have committed some funding for project revisions. While construction is under way, the project's completion is still several years off.

**3. Buffalo Niagara Convention & Visitors Bureau's 2002 Marketing Plan**

This marketing plan reaffirms the Buffalo Niagara Convention & Visitors Bureau's ongoing effort to increase convention and tourism business and improve the image of the Buffalo-Niagara region. Enhancing cultural tourism marketing initiatives in the region is a major goal of the plan. The plan recommends collaboration between the Arts Council in Buffalo and Erie County and the Buffalo Niagara Convention & Visitors Bureau to develop and promote such initiatives as a means of achieving that goal. The development of consumer packages, an online calendar of cultural events, brochures with themed itineraries and cooperative marketing opportunities are among other plan highlights. It also proposes the coordination of a travel showcase, informational exchange meetings for cultural and tourism representatives and a training program for frontline hotel staff.

**4. Buffalo Niagara Cultural Tourism Marketing Program**

A newly formed cultural tourism committee at the Buffalo Niagara Convention & Visitors Bureau is developing a cultural tourism marketing plan for the Buffalo-Niagara region. The committee will recommend policies, broad strategies and priorities for cultural tourism development. It will attempt to ensure that initiatives are coordinated and that the promotion of cultural tourism is integrated within the Buffalo Niagara Convention & Visitors Bureau's overall marketing plan. While this planning effort is under way, it is in its initial stages. The Buffalo Niagara Convention & Visitors Bureau is funding the committee's work.

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**5. A Canal Conversation: A Community Forum on Buffalo's Inner Harbor  
Development and Erie Canal**

A community forum held in September 2000, A Canal Conversation convened a diverse group of experts to discuss the commercial slip and Erie Canal as well as Buffalo's potential for "heritage development." In addition to outlining the prospects for heritage tourism and development, the experts identified key issues to be resolved and highlighted roadblocks to that end. A transcript of the conference proceedings is contained in A Canal Conversation: Buffalo, New York The forum was planned and promoted by a 24-member conference steering committee. It was presented with the financial support of The National Trust for Historic Preservation, The Baird Foundation, The Paul J. Koessler Foundation, The Western New York Foundation, Fleet Bank, N.A. and Daemen College. Publication support was provided by The Koessler and Baird Foundations and Downtown Buffalo 2002.

**6. Cultural Alliance of Niagara**

More than a dozen arts and cultural organizations have united to form the Cultural Alliance with the intention of combining resources for marketing, promotion, fundraising and lobbying. The efforts of the Cultural Alliance are funded by the member organizations, which include the Amherst Museum; Aquarium of Niagara; Artpark; Carnegie Art Center; Castellani Art Museum of Niagara University; Herschell Carrousel Factory Museum; Kenan Center; Lewiston Council on the Arts; Niagara Aerospace Museum; Niagara Art Council; Niagara Power Project Power Vista; Niagara County Historical Society Inc.; Old Fort Niagara; Historic Riviera Theater and Schoellkopf Geological Museum. Some of these organizations are participating in an economic impact study being conducted by Americans for the Arts. For more information on this national initiative, see Arts and Economic Prosperity in this inventory.

**7. Cultural Tourism: A Discussion Paper with Respect to an Initiative for the Greater  
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This paper presents observations about the cultural tourism industry in Greater Buffalo as well as suggestions for future strategies. Ted Pietrzak, executive director of the Burchfield-Penney Art Center and Chair of the Buffalo Niagara Convention & Visitors Bureau's Cultural Tourism Committee, prepared the reporting 1998. According to the paper, Buffalo is rich in cultural resources but most cultural organizations see tourism as a low priority. Moreover, short-term returns almost always overshadow long-term views. In addition to proposing a number of marketing initiatives, the paper recommends that a special task force be established to develop a cultural tourism plan for the area. The task force would be composed of representatives from area cultural organizations, the Arts Council, Buffalo Niagara Convention & Visitors Bureau, Buffalo Niagara Partnership and an elected representative. In addition to developing a plan, the committee would be responsible for preparing a budget, retaining qualified staff, developing marketing initiatives and evaluating the program's results.

### **8. Cultural Tourism Report for Erie County**

This report was presented to the Erie County Legislature in 1998. It was prepared by Deborah Ann Trimble, Executive Director of the Buffalo Olmsted Parks Conservancy, while she was working at the Arts Council in Buffalo and Erie County. A draft of the report — the only version the Institute was able to obtain — examines the definition of cultural tourism as well as national trends within the cultural tourism industry. It presents successful cultural tourism initiatives from outside the region and provides a brief assessment of this region's cultural tourism assets. Broad strategies for strengthening the cultural tourism industry in Erie County, as well as the need for structure, timelines, budgets and measurements of success, are also discussed in the draft.

### **9. Important Bird Area Branding and Promotion**

In 1996 the Niagara River became internationally identified as an Important Bird Area. The Buffalo Audubon Society, in partnership with the Buffalo Niagara Convention & Visitors Bureau and the New York State Department of Parks, Recreation & Historic Preservation, is working to develop and market a birding corridor to coincide with the internationally recognized Important Bird Area. As part of this branding and promotional effort, interpretive signage has been posted along the birding corridor. In

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addition, the Buffalo Audubon Society has partnered with the Buffalo Niagara Convention & Visitors Bureau to produce Nature Tourism in Buffalo Niagara, a brochure promoting bird watching and nature trails in Erie and Niagara Counties. A grant from the Community Foundation of Greater Buffalo is supporting production of the brochure.

**10. Initiative to Get Buffalo Moving**

The events of September 11, 2001 precipitated decreased arts and cultural funding as well as reduced tourism activity. In response, representatives from the Buffalo Niagara Convention & Visitors Bureau, the Arts Council in Buffalo and Erie County, as well as area cultural organizations, formed an ad hoc committee to promote the arts, culture and other attractions within the region. They have proposed a multi-year marketing effort that will enhance and complement the marketing efforts of the Arts Council in Buffalo and Erie County, Buffalo Niagara Enterprise, Buffalo Niagara Partnership and the Buffalo Niagara Convention & Visitors Bureau. The committee produced Buffalo Cultural Events, a calendar of cultural events for winter 2002. Buffalo Niagara Convention & Visitors Bureau and Empire State Development are funding the committee's work.

**11. The John R. Oishei Foundation Cultural Tourism Initiative**

In fall 2001, The John R. Oishei Foundation convened an ad hoc Cultural Tourism Steering Committee to explore the coordination of existing cultural tourism planning efforts and develop a comprehensive, long-term cultural tourism plan for the region. The Cultural Tourism Steering Committee, co-chaired by Muriel Howard and Erland Kailbourne, retained the Institute for Local Governance and Regional Growth to complete Phase 1 of a two-phase process. Phase 1, which has culminated in this report, consists of an inventory of past and current cultural tourism planning initiatives, as well as recommendations for proceeding with a comprehensive cultural tourism plan.

**12. Memorandum of Understanding Regarding the Establishment of a Regional  
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A Memorandum of Understanding (MOU) was drafted in fall 2001 by Erie County; the Arts Council in Buffalo and Erie County; the Buffalo Niagara Convention & Visitors Bureau; Niagara County; Niagara Council of the Arts and Empire State Development. The parties agreed to work together to develop and implement a Regional Cultural Tourism Program. This initiative is founded upon the recognized need to develop, coordinate and implement a regional cultural tourism and marketing plan for the Buffalo-Niagara region. In support of the MOU a draft outline of a three-year cultural tourism plan — focusing on program structure, education, marketing and data tracking — was developed. A more comprehensive, three-year tactical plan was subsequently drafted. For more information on this plan, see Regional Cultural Tourism Program: Tactical Plan – 2001-2003 in this inventory.

**13. New Plan for a Bright Future: City of Lackawanna Comprehensive Plan**

This plan, prepared in 2000 by Peter J. Smith & Company Inc. and URS Greiner Woodward-Clyde, outlines a strategy for promoting cultural tourism in the City of Lackawanna. The strategy features the development of a brochure and tour packages, as well as the designation of a Civil War Museum and other significant sites as historic landmarks. Last year the City of Lackawanna adopted the plan, which was developed with input from the community as well as a steering committee composed of representatives of the City of Lackawanna and the business sector. A community development block grant from the Erie County Department of Environment & Planning supported the plan's development. A strategic area study, currently being conducted by Allee King Rosen & Fleming Inc., will build on this work. For more information on this latter initiative, see South Park/Botanical Gardens/Our Lady of Victory (OLV) Strategic Area Plan in this inventory.

**14. Olmsted Crescent Marketing Plan**

The objective of this plan is to brand and market the Olmsted Crescent area, which encompasses 10 of Buffalo's significant cultural attractions. These include the Albright-Knox Art Gallery; Buffalo and Erie County Historical Society; Burchfield-Penney Art Center; Buffalo Zoological Gardens; Shakespeare in Delaware Park; Buffalo Museum of Science; Tri-Main Center; Forest Lawn Cemetery; Buffalo Olmsted Parks Conservancy and Frank Lloyd Wright's Darwin D. Martin House Complex. This

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marketing initiative features a cultural pass offering seven-day access to attractions in the Crescent, a brochure and shuttle bus service to the Crescent. The Buffalo Olmsted Parks Conservancy is the lead partner of the initiative, which is being funded by a Cultural Tourism Initiative grant from the Arts & Business Council Inc. and the New York State Council on the Arts. A grant from The Baird Foundation and \$500 contributions from each of the 10 organizations located within the Crescent are also supporting the program.

**15. Olmsted Parks System Restoration Plan**

The Buffalo Olmsted Parks Conservancy will soon be developing a 20-year restoration plan for the Olmsted Parks system. The Central Park Conservancy, which developed a similar restoration plan for New York City's Central Park, will act as the project consultant. The plan will provide a framework for supporting and coordinating a variety of developmental and restorative initiatives such as the creation of a tunnel, bike path and cultural and educational corridor. The plan will also be coordinated with the Scajaquada study and potential expansions at the Buffalo Museum of Science. The entire planning process is expected to take 12-18 months and will begin in late spring 2002. Buffalo Olmsted Parks Conservancy, which has received funding from foundations and other private sources, is supporting the plan's development. Erie County also has committed some funding for the project.

**16. Regional Cultural Tourism Program - Cultural Tourism Retreat 2001**

In July 2001, the Arts Council in Buffalo and Erie County sponsored a one-day retreat as part of its Regional Cultural Tourism Program in order to stimulate dialogue among area arts, cultural and tourism organizations. Representatives from more than three-dozen organizations were invited to attend. Topics addressed included cultural tourism planning goals and priorities as well as strategies and timeframes for building a cultural tourism marketing strategy for the Buffalo-Niagara region. Trudy McNulty, President of Tourism Development Associates, led the retreat discussions. A grant from the National Endowment for the Arts funded the retreat.

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**17. Regional Cultural Tourism Program: Tactical Plan 2001-2003**

This plan presents the objectives, strategies and action steps that the Regional Cultural Tourism Program, directed by Patrick Keyes, proposes to pursue through 2003. The program establishes four goals: (1) build new and improved lines of communication between cultural and hospitality industries, (2) develop and nurture comprehensive and consistent promotional strategies, (3) support and enhance the tourism industry's best practices through the development of marketing knowledge, and (4) deliver quantifiable results and data. For each goal, the plan outlines several strategies. Action steps, potential partners, costs, timelines and expected outcomes are identified for each strategy. The total cost of implementing this three-year program is approximately \$620,900. For more information on the creation of the Regional Cultural Tourism Program, see Memorandum of Understanding Regarding the Establishment of a Regional Tourism Program in this inventory.

**18. A Report on Regional Tourism for Western New York State**

This report articulates opinions and ideas in order to spur discussion about, and catalyze planning for, tourism development in the region. The report was prepared by Trahan, Burden & Charles Inc., a Baltimore-based consulting firm, at the request of the Western New York Economic Development Corporation. The geographic focus of the report is Erie, Niagara and Chautauqua Counties. Among the issues addressed include potential opportunities, information and signage, literature and brochures, public-private partnerships, marketing, organization and budgeting. The report was submitted to The Western New York Economic Development Corporation in 1987.

**19. Return of Vehicular Traffic to Main Street Project**

This is an initiative to open up Main Street in Downtown Buffalo to automobile traffic. The City of Buffalo — in partnership with the Niagara Frontier Transportation Authority (NFTA), Erie County, Buffalo Place Inc. and the New York State Department of Transportation — is coordinating the project. The initiative is designed to stimulate economic development and improve the quality of life in downtown

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Buffalo. An engineering feasibility study, conducted in 1999, determined that it is possible to add automobiles and parking to Main Street while retaining Metro Rail operations. In August 2001, the City of Buffalo, Buffalo Place Inc., NFTA and Greater Buffalo Niagara Regional Transportation Council analyzed the benefits of adding cars to Main Street and made recommendations on how to proceed. Their analysis and recommendations are contained in Cars Sharing Main Street: Staff Analysis. The report recommends that an environmental review be conducted and used as a means to build public consensus on a favored design alternative. That review process is under way.

**20. Scajaquada Corridor Study**

This study is based on the premise that the Scajaquada is “not in harmony with adjacent land uses including educational and cultural institutions.” The roadway covers a 3.6-mile stretch from the Niagara Section of the New York State Thruway to the Kensington Expressway. This corridor, which has periods of congestion, as well as accident problems, is partly within the boundaries of Delaware Park. The study examines potential transportation improvements, as well as their impacts, and proposes to create “a unifying facility that enhances the ambience of the surrounding historic, cultural and educational environment.” The City of Buffalo — in partnership with the New York State Department of Transportation, Erie County and an Advisory Group composed of representatives from various interested agencies — is leading the study. A March 2003 completion date has been set.

**21. South Park/Botanical Gardens/Our Lady of Victory (OLV) Strategic Area Plan**

This is a strategic development and preservation plan for the South Park/Botanical Garden/OLV region. This area, proximate to the historic Basilica, the Frederick Law Olmsted-designed South Park and the Botanical Gardens, has the potential to serve as a significant cultural and heritage tourist destination, according to this plan. The plan intends to create a framework for addressing the area’s tourism, community and economic/business deficiencies. It is also designed to promote and accommodate increased visitation due to the expected canonization of Father Nelson H. Baker, as well as planned upgrades to the Botanical Gardens and South Park. The plan will set forth specific recommendations and detailed strategies. Such recommendations will be based on an ongoing study that is to examine issues

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such as projected visitation and related demand (e.g., for hotels and retail), parking needs, traffic circulation, neighborhood safety, streetscape and public amenity enhancements and protection of neighborhood integrity and livability. A completion date for the study has been set for spring 2002. Allee King Rosen & Fleming Inc. is developing the plan. The Lackawanna Community Development Corporation, Erie County and a New York State Quality Communities Grant are financially backing the plan. The partners in this effort include the Cities of Buffalo and Lackawanna; OLV Basilica; Buffalo and Erie County Botanical Gardens; Lackawanna Community Development Corporation; Buffalo Niagara Convention & Visitors Bureau; Buffalo Olmsted Parks Conservancy; Catholic Health System; Second Ward Alliance; Lackawanna Chamber of Commerce; Lackawanna Junior Chamber; Lackawanna Empire Zone; The Front Page; New York State Senator William T. Stachowski; New York State Assembly man Brian Higgins; New York State Assemblyman Richard A. Smith and Erie County Legislator Edward J. Kuwik.

## **22. South Towns Masterplans**

The towns of Boston, Evans, Hamburg, Orchard Park and West Seneca are currently developing a plan to stimulate economic development within the five-town area. Cultural tourism is the focus of one section of the plan. Other municipalities and/or collaborations among municipalities in the Buffalo-Niagara region also have master plans under way.

## **23. Summer of Monet Campaign**

The Summer of Monet Campaign was a major collaborative planning effort that convened leaders from area businesses, foundations and tourism agencies in order to capitalize on the influx of tourists into Buffalo for the Albright-Knox Art Gallery's Monet at Giverny exhibit. Approximately 70 not-for-profit cultural organizations showcased activities during the summer of 1999 as part of this initiative, which featured a cultural events brochure and hotel/cultural packages. The Albright-Knox Art Gallery was the effort's lead partner. Other partners included the Arts Council in Buffalo and Erie County and the Buffalo Niagara Convention & Visitors Bureau. Financial supporters included The John R. Oishei

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Foundation, Crowley Webb & Associates, the Community Foundation of Greater Buffalo, The Baird Foundation and M&T Bank.



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**APPENDIX D: NIAGARA POWER CUSTOMERS IN 2002**

This appendix lists the Project's customers in 2002.

**D.1 Municipal Customers**

The following is a list of the Project's 51 municipal customers in 2002:

Akron Village  
Andover Village  
Angelica Village  
Arcade Village  
Bath Village  
Bergen Village  
Boonville Village  
Brocton Village  
Castile Village  
Churchville Village  
Delaware County Rural Elec. Coop.  
Endicott Village  
Fairport Village  
Frankfort Village  
Freeport Village  
Greene Village  
Green Island Village  
Greenport Village  
Groton Village  
Hamilton Village  
Holley Village  
Ilion Village  
Jamestown City  
Lake Placid Village  
Little Valley Village  
Marathon Village  
Massena Town  
Mayville Village  
Mohawk Village  
Oneida-Madison Electric Coop.  
Oswego Electric Coop.  
Penn Yan Village  
Philadelphia Village  
Plattsburgh City  
Richmondville Village  
Rockville Centre Village

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Rouses Point Village  
Salamanca City  
Sherburne Village  
Sherrill City  
Silver Springs Village  
Skaneateles Village  
Solvay Village  
Spencerport Village  
Springville Village  
Steuben Rural Electric Coop.  
Theresa Village  
Tupper Lake Village  
Watkins Glen Village  
Wellsville Village  
Westfield Village

**D.2 Investor Owned Utility Customers**

The following is a list of the Investor Owned Utilities (IOUs) to which the Project sold power in 2002:

New York State Electricity & Gas  
Niagara Mohawk  
Rochester Gas and Electric

**D.3 Out-of-State Customers**

The following is a list of the Project's out-of-state customers in 2002:

Allegheny Electric Cooperative  
Cleveland, City of  
Connecticut Municipal Electric Cooperative  
Massachusetts Department of Public Utilities  
Public Power Association of New Jersey  
Rhode Island Public Utilities Commission  
Vermont Department of Public Service

**D.4 Replacement and Expansion Power Customers**

The following is a list of the Project's replacement and expansion power customers during 2003 (Obtained from monthly sales summaries provided to NYPA by NiMo and NYSEG):

3M  
ADM Milling Co.

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Advanced Refractory Technologies, Inc.  
Allied Signal, Inc.  
American Axle  
American Axle & Manufacturing  
Avery  
Bethlehem Steel  
BOC Gases  
Bristol Myers Squibb  
Brunner, Inc.  
Buffalo China, Inc.  
Buffalo Color Corp.  
Buffalo Newspress, Inc.  
Buffalo Paperboard Corp.  
Buffalo Tungsten, Inc.  
C&S Wholesale - Tops Markets  
C&S Wholesale Grocers, Inc.  
Carleton Tech.  
Ceres Corp.  
City of Niagara Falls - Water Treatment  
Client Logic  
Cliffstar Corp.  
Confer Plastics  
Coyne Textile Services  
CS Integrated  
Curtis Screw Co., Inc.  
Delphi Automotive Systems  
Dunkirk Specialty Steel  
E.I. Du Pont De Nemours & Co.  
Fairbank Farms Co.  
Ferro Electronic Materials, Inc.  
Fieldbrook Farms Ice Cream, Inc.  
FMC Corp.  
Ford Motor Company  
Freezer Queen Foods, Inc.  
General Mills, Inc.  
General Motors Corp.  
Globe Metallurgical, Inc.  
Goodyear Dunlop Tire North America  
Graphic Controls  
Habasit Globe, Inc.  
Harsco Corp.  
Hydro-Air Components, Inc.  
I Squared R Element Co.  
Ingram Micro, Inc.  
International Imaging Materials, Inc.  
International Multifoods

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Invitrogen Corp.  
Ivaco Steel Processing  
Kanthal Globar  
Lakeside Warehouse Corp.  
LEICA, Inc.  
Lockheed Martin  
McGard, Inc.  
Metaullics Systems Co.  
Monofrax  
Moog, Inc.  
Motorola  
Niacet Corp.  
Niagara Falls Wastewater Treatment  
Niagara Lasalle Corp.  
Norampac Industries, Inc.  
North American Hoganas, Inc.  
Now-Tech Industries  
Nuttall Gear Corp.  
Occidental Chemical Corp.  
Olin Corp.  
Outokumpu American Brass  
Praxair, Inc.  
Precious Plate, Inc.  
Precision Electro Minerals Co.  
Protective Closures Company, Inc.  
Quebecor Buffalo  
Ralston Purina  
Republic Engineered Products  
Rich Products Corp.  
Rosina  
Russer Foods  
Saint Gobain  
Saint Gobain Abrasives Co.  
Servotronics, Inc.  
SGL Carbon  
Sherwood, Harsco Corp.  
Sorento Lactalis, Inc.  
Special Metals Corp.  
Steuben Foods  
Stollberg, Inc.  
The Carbide/Graphite Group, Inc.  
The Red Wing Company  
Treibacher Schleifmittel  
Trico Products Corp.  
Tulip Corp.  
UCAR Carbon Company

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Ultra Tool & Plastics, Inc.  
Valeo Engine Cooling  
Viking Lockport  
Washington Mills Electro Minerals



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**APPENDIX E: OVERVIEW OF REMI MODEL**

This appendix provides background on the REMI modeling framework.

**E.1 Overview of the REMI Model**

The REMI model provides a representation of the regional economy organized into five key areas, or building blocks. The basic approach is to simulate the workings of the wide variety of markets in the economy and the basic logic of economic transactions. In the model, businesses produce goods to sell to other firms, consumers, investors, governments and purchasers outside the region. The output is produced using labor, capital, fuel and intermediate inputs.

**E.1.1 Basic Building Blocks of the REMI Model**

[Figure E-1](#) is a pictorial representation of the model. The Output block shows a factory that sells to all the sectors of final demand as well as to other industries. The Labor and Capital Demand block shows how labor and capital requirements depend both on output and their relative costs. Population and Labor Supply are shown as contributing to demand and to wage determination in the product and labor market. The feedback from this market shows that economic migrants respond to labor market conditions. Demand and supply interact in the Wage, Costs and Prices block. Once costs and prices are established, they determine the Market Shares block, which along with components of demand, determine output.

**E.1.2 Basic Building Blocks of the REMI Model**

The key relationships all follow basic economic logic. The demands for labor, capital and fuel per unit of output depend on their relative costs, since an increase in the price of any one of these inputs leads to substitution away from that input to other inputs. The productivities of labor and intermediate inputs depend on the access to them. The supply of labor in the model depends on the number of people in the population and the proportion of those people who participate in the labor force. Economic migration affects the population size. People will move into an area if the real after-tax wage rates, the likelihood of being employed, and the access to consumer goods increase in a region.

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Supply and demand for labor in the model determine the wage rates. These wage rates, along with other prices and productivity, determine the cost of doing business for every industry in the model. An increase in the cost of doing business causes an increase in production costs and the price of the goods or services, which would decrease the share of the domestic and foreign markets supplied by local firms. This market share combined with the demand described above determines the amount of local output. Of course, the model has many other feedbacks. For example, changes in wages and employment impact income and consumption, while economic expansion changes investment and population growth impacts government spending.

### **E.1.3 Additional Linkages**

In addition to the basic linkages shown in [Figure E-1](#), the model also contains linkages to account for the effects of agglomeration in both the labor and product markets, which are indicated by the dashed arrows in [Figure E-1](#). These effects help to explain why areas that have a concentration of similar businesses can prosper despite high wages and real estate costs. The reason is that by having a choice of suppliers and workers, each firm can obtain specialized labor and inputs that best fulfill their needs. These culminations increase productivity and efficiency.

The arrow from the Output block to the Cost block shows that more suppliers will add to the efficiency of inputs and then reduce production costs and increase competitiveness. The arrow from the labor block shows that more labor will increase the productivity of labor, thus reducing labor costs and making the area more competitive. The arrow from output to the population block show that the greater output provides more variety of choice and enhances consumer satisfaction, and thus inward migration. The arrow from the output to the shares block shows that the areas with higher concentration can offer more to purchasers, thus having an effect on market share in addition to the price advantages through the cost and price block.

The REMI model brings together all of these economic relationships to develop forecasts for each of the variables in the model for each year in the baseline forecasts. The model includes all the inter-industry relationships that are in an input-output model in the Output block, but goes well beyond the input-output model

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**E.1.4 Dynamic Properties of the REMI Model**

The REMI model provides for dynamic forecasts, i.e., the model forecasts not only what will happen but also *when* it will happen. This results in long-term predictions that have general equilibrium properties.

Then the long-term properties of general equilibrium models are preserved in the REMI model without sacrificing the accuracy of the short-term changes that occur.

**E.2 Detailed Descriptions of the Five Building Blocks**

The individual building blocks involve several linkages. Understanding how the model works involves understanding these internal linkages as well as the overall interrelationships among the elements.

**E.2.1 Output Block**

The Output block incorporates the regional product accounts. [Figure E-2](#) shows the internal linkages for this block. It includes output, demand, consumption, government spending, imports and exports. Economic geography concepts include the commodity access index, which determines the productivity of intermediate inputs. Output for each industry in each region is determined by industry demand in the region, the region's share of each market, and the region's exports.

The sources of demand for output are in the four areas: consumption, investment, government spending, and intermediate inputs.

**E.2.1.1 Consumption Determinations**

Consumption of each source depends on real disposable income per capita, relative prices, the income elasticity of demand, and population. Consumption for all goods and services increases proportionally with population. The consumption response to income is divided into high and low elasticity consumption components. For example, the demand for consumer goods such as vehicles, computers and furniture is highly responsive to income changes, while health services, tobacco and other expenditures have low income elasticities. Demand for individual consumption commodities are also

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affected by relative prices, with an econometrically estimated price elasticity for each consumption component. Changes in demand by consumption components are converted into industry demand changes by taking the proportion of each commodity for each industry.

**E.2.1.2 Real Disposable Income**

Real disposable income, which drives consumption, is determined by wages, employment, non-wage income and consumer prices. Labor income depends on employment and the wage rate, described in the Labor and Capital Demand Block ([Figure E-3](#)) and the Wages, Prices, and Costs Block ([Figure E-5](#)), respectively. Non-wage income includes commuter income, property income, transfers, taxes and social security payments. Disposable income is stated in real terms by dividing by the Consumer Price Index.

**E.2.1.3 Investment**

Investment occurs through the capital stock adjustment process. The stock adjustment process assumes that investment occurs in order to fill the gap between the “optimal” and actual level of capital. The investment in new housing, commercial and industrial buildings, and equipment is an important engine of economic development. New investment provides a strong feedback mechanism for further growth, since investment represents immediate demand for buildings and equipment that are to be used over a long period of time. The need for new construction begets further economic expansion as inputs into construction, especially additional employment in this industry, create new demand in the economy.

Investment is separated into residential, nonresidential, and equipment investment categories. In each case, the level of existing capital is calculated by starting with a base year estimate of capital stock, to which investment is added and depreciation is subtracted for each year. The desired level of capital is calculated in the capital demand equations, in block 2 (Labor and Capital Demand, as shown in [Figure E-3](#)). Investment occurs when the optimal level of capital is higher than the actual level of capital; the rate at which this investment occurs is determined by the speed of adjustment.

**E.2.1.4 Government Spending**

Government spending is primarily for the purpose of providing people with services such as schooling and police protection. Thus, changes in government spending are driven by changes in

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population. The government spending equation takes into account per capita government spending in the region.

**E.2.1.5 Intermediate Goods**

The demand for intermediate inputs depends on the requirements of industries that use inputs from other sectors. These inter-industry relationships are based on the input-output table for the economy. For example, a region with a large automobile assembly plant would have a correspondingly large demand for primary metals, since primary metals is a major supplier to the motor vehicles industry.

Thousands of specialized parts are needed to assemble an automobile, and the close proximity of the parts suppliers to the assembly plant is particularly significant under just-in-time inventory management procedures. More generally, the location of intermediate suppliers is important to at least some extent for every industry. Thus, the economic geography of the producer and input suppliers is a key aspect of regional productivity.

**E.2.1.6 Agglomeration Economies**

The agglomeration economies provided by the proximity of producers and suppliers is measured by the commodity access index. Intermediate input productivity is determined by this index. The commodity access index for each industry is determined by the use of intermediate inputs, the effective distance to the input suppliers, and a measure of the productivity advantage of specialization in intermediate inputs. This productivity advantage is the elasticity of substitution between varieties in the production function.

Although producers may be able to find a substitute for the precise component or service that they desire, access to the most favorable input provides a productivity advantage. When substitution between varieties is inelastic, then the productivity benefit of access to inputs is high. Thus, agglomeration economies are strong for the production of electrical equipment, computers and machinery, and other industries that require specialized types of inputs for which substitution is difficult.

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An increase in the output of an industry provides a larger pool of goods and/or services from which to choose. Since firms incur some fixed cost to produce a new variety, this increased pool of goods and services represents an increased availability of varieties. Therefore, an increase in industry output leads to a greater supply of differentiated goods and services which can in turn lead to higher productivity and increase output. This positive feedback between tightly related clusters of industries is one source of regional agglomeration.

**E.2.2 Labor and Capital Demand Block**

The labor and capital demand block includes employment, capital demand, labor productivity, and the substitution between labor, capital, and fuel. This block is summarized in [Figure E-3](#).

**E.2.2.1 Employment**

Total employment is made up of farm, government, and private, non-farm employment. Employment in private, non-farm industries depends on employment demand and the number of workers needed to produce a unit of output. Employment demand is built up from the separate components of employment due to intermediate demand, consumer demand, government demand, investment, and exports outside the region. The employment per dollar of output depends on the national employment per dollar of output, the cost of other factors, and the access to specialized workers.

**E.2.2.2 Labor Productivity**

The availability of a large pool of workers within a region contributes to the labor force productivity. Each worker brings a set of unique characteristics and skills, even within the same occupational category. More broadly, locations that can be easily reached by a large number of potential employees can better match jobs with workers. The equation for labor productivity due to labor access is calculated separately for each occupation. Occupational productivity in each location is based on the residential location of all potential workers and their actual or would-be commuting costs to that location.

The contribution of labor variety to productivity is measured by an occupation-specific and industry elasticity of substitution based on a study that considered wages and commuting patterns. While the match of workers in specialized roles that are consistent with their training has a large impact on productivity for medical occupations, for example, it is less important for workers in other sectors (e.g.,

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the food service sector). Industry productivity due to specialization is built up from occupational and industry productivity, using the proportionate number of workers in each occupation that are employed by a given industry.

The number of employees needed per unit of output depends on the use of other factors of production as well as labor access. Labor intensity, which measures the use of labor relative to other factors, is determined by the cost of labor relative to the cost of capital and fuel. The substitution between labor, capital, and fuel is based on a Cobb-Douglas production function, which implies constant factor shares.

#### **E.2.2.3 Capital Demand**

Demand for capital is driven by the optimal capital stock equation for industries and for housing. The optimal level of capital is determined for non-residential structures and equipment for each industry. The optimal capital stock is based on the industry size measured in capital-weighted employment terms, the cost of capital relative to labor, and a measure of the optimal capital stock on the national level.

The variable for employment weighted by capital use is determined by the capital weight, employment, and labor productivity. The capital weight is the ratio of industry capital to employment in the region compared to the capital to employment ratio for the United States as a whole. The optimal capital stock is based on the investment in the region, the actual capital stock, the speed of adjustment and the depreciation rate.

The optimal level of capital for residential housing is determined by the real disposable income in the region, the optimal residential capital stock for the region, and the price of housing.

#### **E.2.2.4 Fuel Costs**

To account for the cost of fuel, the fuel components of production (coal mining, petroleum refining, electric and natural gas utilities) are taken out of intermediate industry transactions and considered as a value-added factor of production. Then, firms substitute between labor, capital and fuel (for electric, natural gas, and residual fuel) as the relative cost of factor inputs changes.

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**E.2.3 Population and Labor Supply Block**

The population and labor force block includes detailed demographic information about the region. [Figure E-4](#) illustrates this block. The population is central to the region's economy, both as a source of demand for consumer and government spending, and as the determinant of labor supply. As the composition of the population changes through births, deaths, and migration, the labor supply is affected.

**E.2.3.1 Demographics**

The demographic block is based on the cohort-survival method. Population in any given year is determined by adding the net natural change and the migration change to the previous year's population. The natural change is caused by births and deaths, while migration occurs for economic and non-economic reasons. Population data is given for age, gender, and ethnic category.

Birth rates are the ratio of births to the number of women in each age group. The survival rate is equal to one minus the death rate, which is the ratio of deaths to population in each cohort. Since birth rates vary widely across age and ethnic groups, and survival rates vary widely for gender as well as age and ethnic category, the detailed demographic breakdown is needed to accurately capture the aggregate birth and survival rates.

**E.2.3.2 Migration**

Migration, economic or non-economic, also varies widely across population groups. Changes in retirement, international, and returning military migration are all assumed to occur for reasons that are not primarily due to changing regional economic conditions. Retirement migration depends on the retirement-age population in the region. The probability of losing or gaining a retiree is age and gender specific for each age group.

International migration is also based on previous patterns. Changes in political restrictions on immigration and the economy of the immigrants' country are more significant in determining international migration than are changes in the region's economy. Returning military migration patterns are also better explained by existing patterns than by regional economic conditions, so returning military is also an exogenous variable.

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Economic migration is the movement of people to regions with better economic conditions. Economic migrants are attracted to places with relatively high wages and employment opportunities. Migrants are also attracted to places with high amenities. Potential migrants value access to consumer commodities, which depend on economic conditions. Thus, as the output of consumer goods and services increase, the amenity attraction of the region increases. Other amenities are due to non-economic factors. These amenities or compensating differentials are measured indirectly by looking at migration patterns over the last 20 years. In this way, the compensating differential is calculated as the expected wage rate that would result in no net in- or out-migration.

### **E.2.3.3 Labor Force**

The labor force consists of unemployed individuals who are seeking work as well as employed workers. The labor force participation rate is thus the proportion of each population group that is working or looking for work. To predict the labor force, the model sums up the participation rate and cohort size for each demographic category. Participation rates vary widely across age, gender, and ethnic category; thus, the labor force depends in large part on the population structure of the region.

The willingness of individuals to participate in the labor force is also responsive to economic conditions. Higher wage rates and greater employment opportunities generally encourage higher labor force participation rates. The extent to which rates change in response to these economic factors, however, differs substantially for different population groups. For example, the willingness of men to enter the labor force is more influence by wages, while women are more sensitive to employment opportunities.

### **E.2.4 Wages Prices and Costs Block**

This block includes wages, consumer prices, production costs, housing prices, and composite wages and input costs. [Figure E-5](#) illustrates this block. Wages, prices, and costs are determined by the labor and housing markets.

#### **E.2.4.1 Wage Rates**

The labor market is central to the region's economy, and wage differences are the primary source of price and cost differentials between the region and other areas. Demand for labor, from block 2, and

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labor force supply, from block 3, interact to determine wage rates. Housing prices depend on the change in population density and changes in real disposable income.

Economic geography concepts account for productivity and corresponding price effects due to access to specialized labor and inputs into production. The labor access index from block 2, as well as the nominal wage rate, determines the composite wage rate. The composite cost of production depends on productivity-adjusted wage rate of the region, costs of structures, equipment, and fuel, and the delivered price of intermediate inputs.

#### **E.2.4.2 Prices**

The delivered price of a good or service is based on the cost of the commodity at the place of origin, and the transportation cost of providing the commodity to the place of destination. This price measure is calculated relative to delivered prices in all other areas, and weights the delivered price from all locations that ship to the region.

#### **E.2.5 Market Shares Block**

The market shares block represents the ability of a regional producer to sell their output in the region, in the surrounding regions, in the United States, and in the rest of the world. [Figure E-6](#) shows the market shares block.

##### **E.2.5.1 Share of Domestic Market**

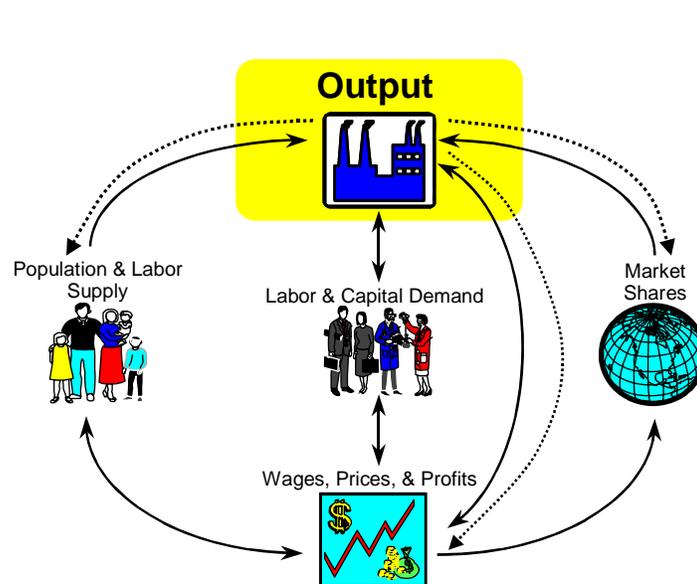
Although the share of the region's market is generally higher than any other market share, the equation for the market share in the region is the same as for other regions. The share of international exports from the region depends on exports overall, and relative cost and output changes of the home region.

Changes in markets shares depend on changes in industry production costs and output. Production cost increases lower market shares, but higher output raises market shares. Market shares rise with output increases, since higher output increases the ability to meet local and other regions' demand for goods and services by providing more choices.

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Figure E-1. Overview of Model

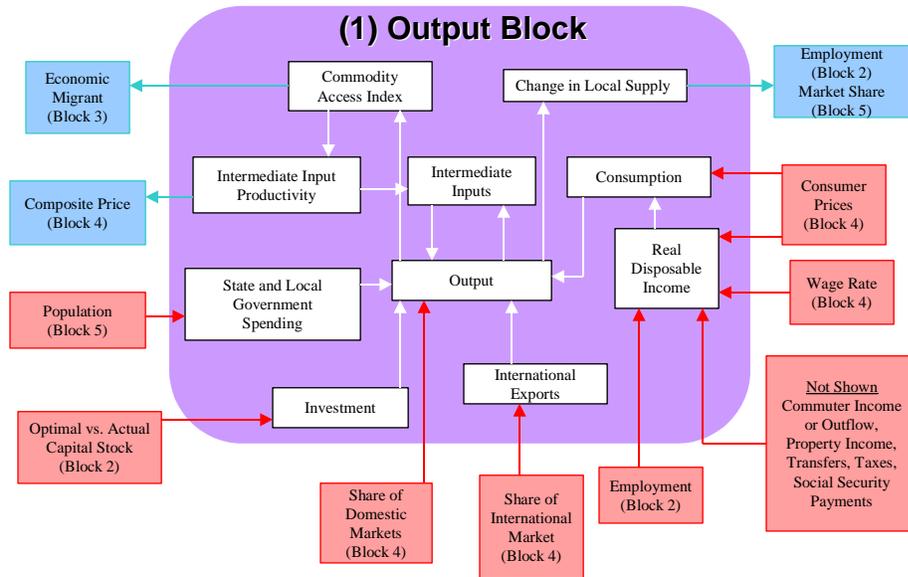


Source: REMI.

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**Figure E-2. Output Block**

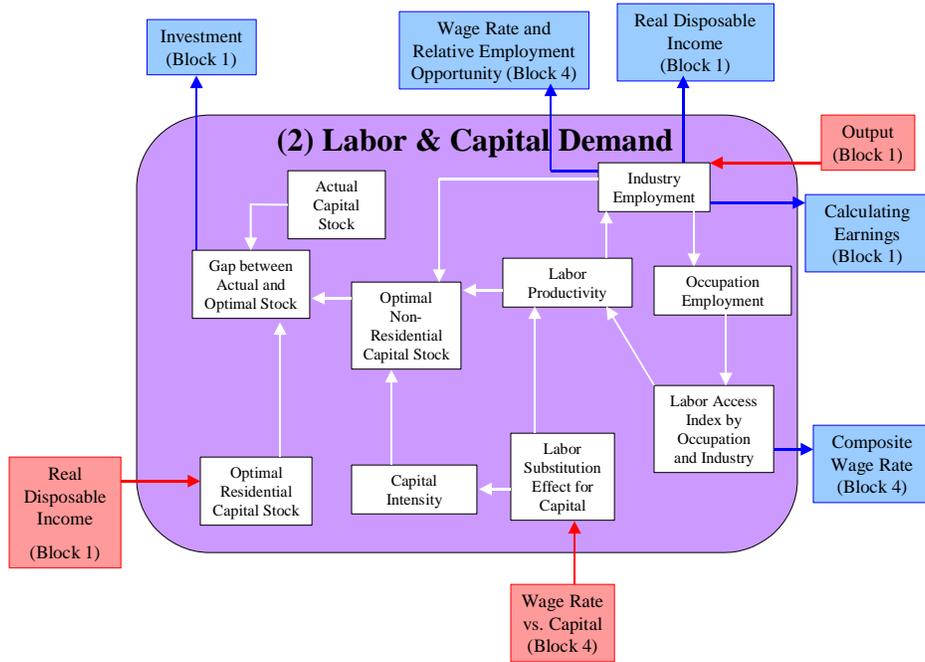


Source: REMI.

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**Figure E-3. Labor and Capital Demand**

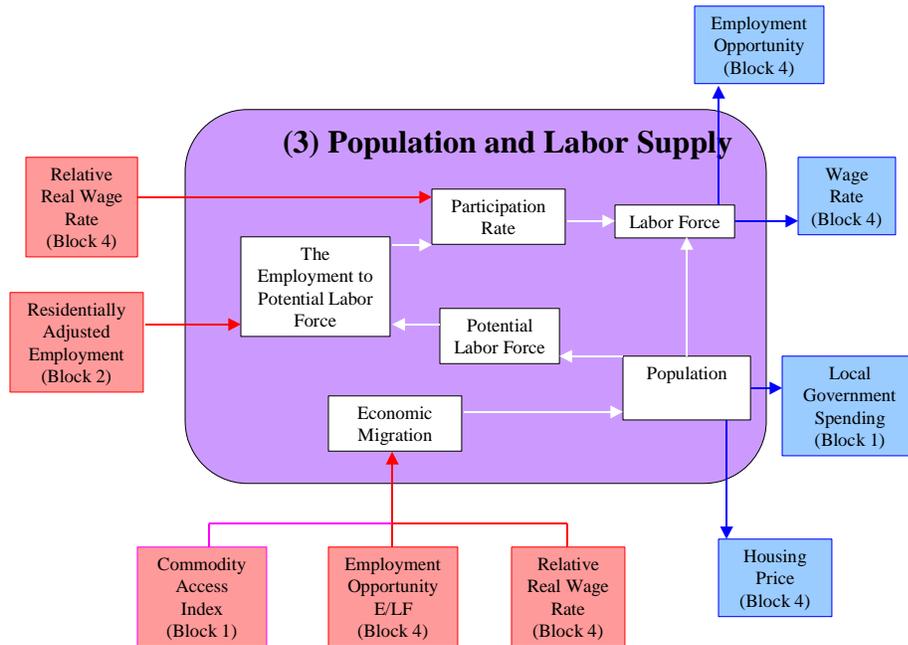


Source: REMI.

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**Figure E-4. Population and Labor Supply**

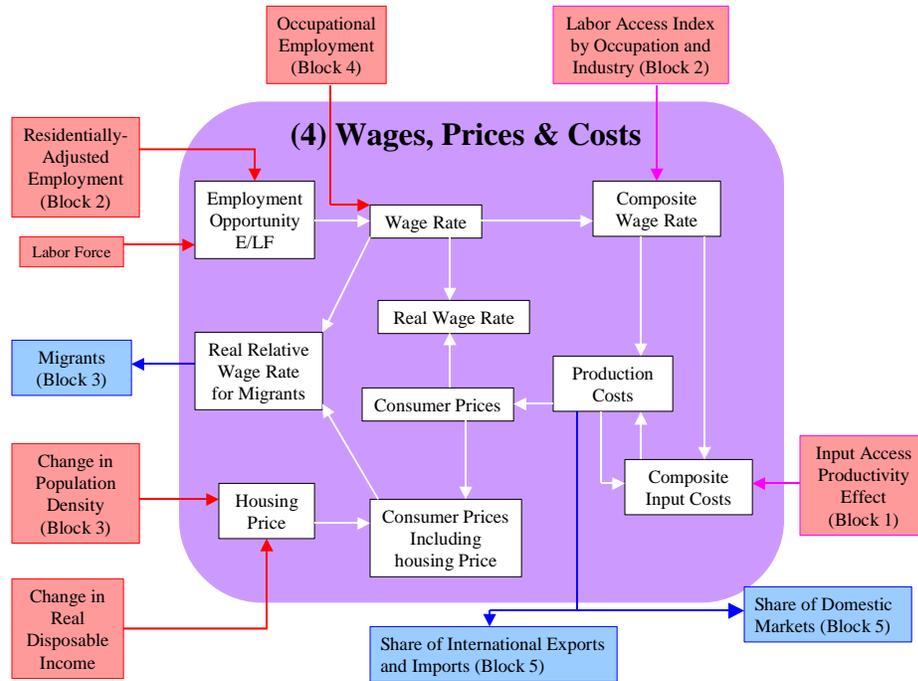


Source: REMI.

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**Figure E-5 Wages, Prices and Costs Block**

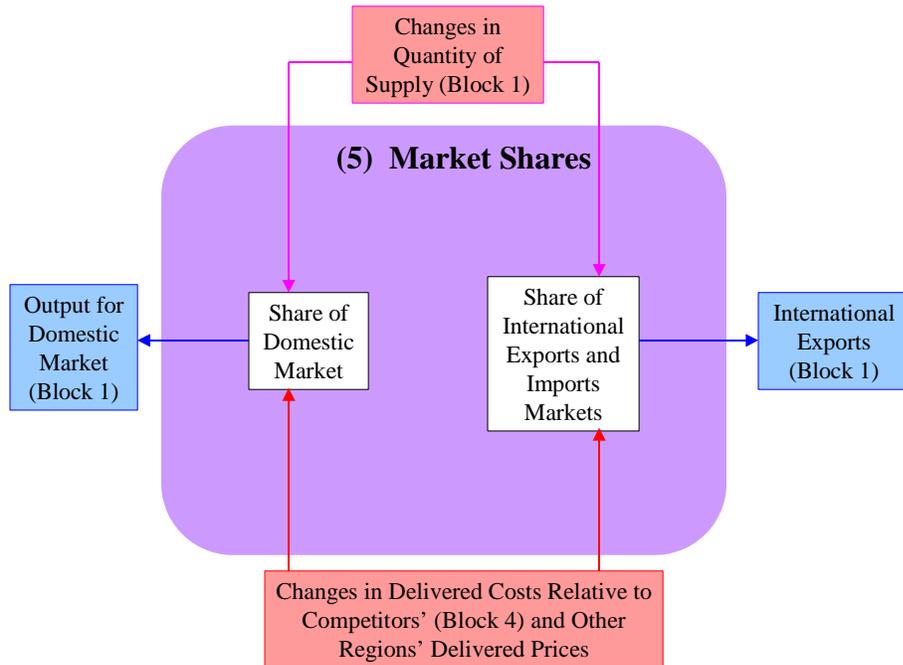


Source: REMI.

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**Figure E-6. Market Shares Block**



Source: REMI.

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**APPENDIX F: FORECASTING NEW YORK STATE ELECTRICITY PRICES**

This appendix summarizes the methodology used to forecast wholesale electricity prices in New York State from 2004 to 2035. These projections are used in evaluating the benefits to the Project's customers of receiving discounted power. Electricity prices are developed for both peak and off-peak periods because prices differ significantly during these two periods due to different levels of electricity demand. Peak electricity prices include both energy (in kWh) and capacity (in kW) charges. [Section F.1](#) describes the methodology for estimating peak electricity prices, [Section F.2](#) describes the methodology for estimating off-peak prices, and [Section F.3](#) details how we aggregate prices into annual averages.

**F.1 Methodology for Estimating Peak Prices**

This section describes the methodology used to calculate the all-in peak price projections in New York State, which includes both energy and capacity charges. On peak hours are taken to be 16 hours of each weekday, from the hour ending 8:00 AM through the hour ending 11:00 PM, referred to as the 5x16 peak. [Section F.1.1](#) describes how we estimate the energy and capacity components for the short-term (i.e. 2004-2005) peak price. [Section F.1.2](#) describes the methodology for estimating long-term peak prices in 2009 by calculating the price per MWh that a new combined-cycle gas turbine ("CCGT") would need to receive in order to recover all economic costs with no excess profits. [Section F.1.3](#) details how short-term peak electricity prices are escalated to 2009, and how peak prices are projected from 2009 to 2035.

**F.1.1 Methodology for Estimating Short-Term Peak Electricity Prices**

Short-term peak energy prices are taken directly from forwards quotes supplied by TFS Energy. These quotes, shown in [Table F.1.1-1](#), provide monthly peak prices through March 2005 for Zone A in

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New York State.<sup>52</sup> As shown in this table, peak prices vary by month. These variations are largely due to changes in demand for electricity that stem from seasonal temperature fluctuations.

To calculate short-term capacity prices we use capacity auction data published by the New York Independent Systems Operator (“NYISO”).<sup>53</sup> Capacity in these auctions is sold per kW in one-month and six-month blocks. Capacity prices are then converted from price per kW-month to price per kWh based on the number of peak hours in a given month. Adding these monthly capacity prices to the forwards prices yields the all-in short-term peak electricity price.

## **F.1.2 Methodology for Estimating Long-Term Peak Electricity Prices in 2009**

In order to estimate the long-run cost of electricity per MWh, we assume that new capacity will be added up to the point where a new generator is just able to recover the full plant cost including required return with no additional excess profit. Using NYISO forecast data for energy supply and demand growth in New York, these conditions are estimated to be met in 2009. It is further assumed that demand during peak (i.e. full-demand) periods will be met by new generating plants that will in turn set peak market prices from 2009 onward. Based on an evaluation of the New York energy market, this new generation capacity is assumed to be from combined cycle gas turbines.

Electricity prices in 2009 are estimated by calculating the price per MWh that would need to be charged for the new plant to just recoup its economic costs and return on capital. [Figure F.1.2-1](#) outlines the methodology and inputs used to calculate these prices. As shown in the figure, the peak price in 2009 can be broken down into three main components:

- Annualized construction cost of a CCGT per MWh.
- Annual fixed O&M cost of a CCGT per MWh.

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<sup>52</sup> Zone A is the western-most part of New York where the Project is located.

<sup>53</sup> See <http://www.nyiso.com/markets/icapinfo.html>

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- Variable cost of a CCGT per MWh. This includes variable O&M cost, fuel cost, and the cost of complying with NO<sub>x</sub> regulations.

Each of these components is, in turn, a function of a number of distinct elements, the costs or values of which are projected independently into 2009. Note that this methodology implicitly includes capacity costs because the final wholesale price is such that the entrant recoups its fixed costs. The following sub-sections provide details on the calculations for each of these price components.

#### **F.1.2.1 Annualized Cost of Construction**

The annual fixed cost for the CCGT consists of fixed O&M and a fixed carrying cost necessary to cover amortized construction investment, debt service, equity return and taxes. We base this cost on the total construction cost per MW for an advanced gas/oil combined-cycle plant in 2003, estimated by the Energy Information Administration (“EIA”). The cost per MW of capacity in 2003 is estimated to be \$615,000. However, this is an estimate for a plant built in 2003. Because construction costs change over time due to such factors as changes in technology, wages and capital costs, we need to estimate this value for a plant built in 2009. This is achieved by calculating an annual growth rate of construction costs based on EIA’s estimates of changes in real fixed costs of a combined-cycle plant from 2003 to 2020. Using these figures we calculate an annual growth rate of -0.3 percent for the fixed costs of the plant. Applying this to the 2003 construction cost yields \$603,187 (in 2002 dollars) per MW in 2009.

To annualize the cost of construction, we multiply the total cost per MW, \$603,187, by a carrying charge of 13.65 percent. This gives us the fixed percentage of initial capital cost that must be recovered each year over the life of the power plant, assuming a plant lifetime of 21 years. This is then converted into a dollar cost per MWh by dividing by 4,080, the expected annual operating hours. As shown in [Table F.1.2.1-1](#), this yields an annualized cost of construction of \$20.16 per MWh.

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**F.1.2.2 Fixed O&M Cost**

The fixed O&M cost is taken from EIA's Assumptions to the Annual Energy Outlook 2004 ("AAEO"), which provides an estimation of the fixed O&M costs of a CCGT in 2003. EIA estimates a per MW cost of \$10,340 (in 2002 dollars) per year. We forecast 2009 fixed O&M costs using EIA's estimates in changes in fixed costs of a CCGT as described in the previous section. This calculation yields \$10,141 per MW in 2009. This is converted into a dollar cost per MWh by dividing by the expected annual operating hours. This calculation yields \$2.48 per MWh, the portion of the peak price that will allow for the plant to recoup its fixed O&M costs.

**F.1.2.3 Variable Cost**

The variable cost component of the peak electricity price is the sum of the variable O&M cost per MWh, the cost of natural gas per MWh and the NO<sub>x</sub> price per MWh. The following describes each of these components:

- *Variable O&M Cost.* EIA estimates the variable cost of O&M for an advanced gas/oil combined-cycle plant in 2003 to be \$2.07 per MWh. To determine this cost in 2009, we calculate an annual growth rate based on EIA's estimates of changes in real variable O&M costs for a combined-cycle plant from 2003 to 2020 (see: [http://www.eia.doe.gov/oiaf/aeo/assumption/pdf/0554\(2004\).pdf](http://www.eia.doe.gov/oiaf/aeo/assumption/pdf/0554(2004).pdf) , Table 22).
- *Fuel Cost.* Natural gas prices for 2009 are taken from EIA's natural gas price forecasts presented in the Annual Energy Outlook (see [http://www.eia.doe.gov/oiaf/aeo/pdf/aeotab\\_14.pdf](http://www.eia.doe.gov/oiaf/aeo/pdf/aeotab_14.pdf)).
- *Price of NO<sub>x</sub>.* Evolution Markets, a broker of emissions permits, provides price quotes of traded NO<sub>x</sub> allowances through 2008 (see [www.evomarkets.com](http://www.evomarkets.com)). It is assumed that the 2008 NO<sub>x</sub> price is the best approximation to NO<sub>x</sub> prices in 2009.

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**F.1.3 Total All-In Peak Price in 2009**

[Table F.1.2.1-1](#) presents the different components of the peak electricity price in 2009 as described above. Adding these components yields a total price per MWh of \$52.86 in 2002 dollars. This annual price is translated into monthly prices using the monthly price patterns of the peak forwards prices presented in [Table F.1.1-1](#).

**F.1.4 Peak Energy Prices from 2005 to 2008 and 2010 Onwards**

Peak prices from 2005 to 2008 are linearly interpolated from the all-in short-term electricity prices described in [Section F.1.1](#) and the 2009 peak prices described in the previous section. Peak electricity prices projections in years after 2009 are grown at a constant rate based on the annual growth rate of the peak electricity prices from 2009 to 2025. To estimate prices in 2025 we use the same methodology used to calculate the 2009 electricity prices, but we forecast the cost of each input to 2025.

**F.2 Off-Peak Electricity Price Projections**

**F.2.1 Methodology for Estimating Short-Term Off-Peak Electricity Prices**

Off-peak hours in New York State occur from Monday through Friday from 11:00 PM to 7:00 A.M. and all day during weekends and holidays. To determine prices from 2005 to 2009 we performed a regression analysis to determine the relationship between historical Henry Hub gas prices and off-peak prices in Zone A of New York. We then use this relationship to forecast off-peak prices from 2005 to 2009 using projections of Henry Hub natural gas prices and 2005 forwards off-peak energy quotes from TFS Energy. The natural gas prices used in this projection come from two sources. For 2005 natural gas prices we use natural gas futures prices listed on the New York Mercantile Exchange. For 2009 natural gas prices we use EIA forecasts from the Annual Energy Outlook 2004.

**F.2.2 Methodology for Estimating Long-Term Off-Peak Electricity Prices**

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Long-term off-peak electricity prices are assumed to grow at the same rate as peak prices from 2009 to 2035. During this period, peak prices grow at an annual rate of 0.42 percent. This rate is used to escalate the 2009 price (determined using the methodology described above) to 2035.

**F.3 Average Annual Prices**

The peak prices are forecasted as the average monthly price in a given year. Since the other inputs to the REMI model are in annual terms (the Project rates and customer energy use), the monthly peak prices are translated into annual averages weighted by historical peak load data from NYISO. Next, annual average peak and off-peak prices are translated into a total annual weighted average using historical peak and off-peak load data. The final annual projections of annual wholesale electricity prices in the New York Zone A region are presented in [Table F.3-1](#).

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**Table F.1.1-1. Peak Forward Energy Quotes (in 2002 Dollars)**

New	\$/MWh
April-04	46.06
May-04	45.74
June-04	50.39
July-04	60.95
August-04	60.85
September-04	49.54
October-04	46.69
November-04	46.62
December-04	46.54
January-05	56.16
February-05	56.07
March-05	55.97

Notes: Data from TFS Energy quotes from March 22, 2004.

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**Table F-1.2.1-1. Total Peak Electricity Price per MWh in 2009 (in 2002 dollars)**

<b>Technology</b>	<b>\$/MWh</b>
Annualized Construction Cost	20.16
Fixed O&M Cost	2.48
Variable O&M Cost	1.93
Fuel Cost	27.22
Cost of NO <sub>x</sub>	1.06
<b>Total</b>	<b>52.86</b>

Source: NERA calculations

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**Table F.3-1. Annual All-Hour Wholesale Electricity Price Projections (2002 Dollars)**

Year	\$/MWh	Cents/kWh
2004	47.66	4.77
2005	48.49	4.85
2006	47.25	4.73
2007	46.11	4.61
2008	45.06	4.51
2009	44.09	4.41
2010	44.13	4.41
2011	44.32	4.43
2012	44.50	4.45
2013	44.69	4.47
2014	44.88	4.49
2015	45.07	4.51
2016	45.26	4.53
2017	45.45	4.55
2018	45.65	4.56
2019	45.84	4.58
2020	46.04	4.60
2021	46.23	4.62
2022	46.43	4.64
2023	46.63	4.66
2024	46.83	4.68
2025	47.03	4.70
2026	47.22	4.72
2027	47.42	4.74
2028	47.62	4.76
2029	47.82	4.78
2030	48.03	4.80
2031	48.23	4.82
2032	48.43	4.84
2033	48.64	4.86
2034	48.84	4.88
2035	49.05	4.91

Notes: Data developed from NERA calculations, as explained in text.



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**Figure F.1.2-1. Methodology for Calculating Peak Prices in Equilibrium**

