BLACK RIVER WATERSHED SOCIOECONOMIC CHARACTERIZATION AND ASSESSMENT

November 2008

Prepared By

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ECONOMIC DEVELOPMENT

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ACKNOWLEDGEMENTS

Funding for this report was generously provided by the National Fish & Wildlife Foundation, the Natural Resources Conservation Service, and the US Fish & Wildlife Service, through a grant to the NYS Tug Hill Commission. The Town of Greig, the Lewis County Soil & Water Conservation District, and the NYS Department of Environmental Conservation also provided significant technical assistance during the development of this document.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY 2

INTRODUCTION 6

STUDY AREAS & DATA SOURCES 6

DEMOGRAPHICS 9

POPULATION 9
SEASONAL USE 10
AGE 11
EDUCATIONAL ATTAINMENT 14

EMPLOYMENT DATA 16

OVERVIEW 16
STUDY AREA 1 19
STUDY AREA 2 23
STUDY AREA 3 27

TAX PARCEL DATA ANALYSIS 30

OVERVIEW 32
STUDY AREA 1 33
STUDY AREA 2 38
STUDY AREA 3 42

SWOT ASSESSMENT 45

MAPS APPENDIX A

EXECUTIVE SUMMARY

Camoin Associates was retained by Bergmann Associates to prepare this Socioeconomic Characterization and Assessment as part of a series of on-going planning initiatives associated with the Black River Watershed. The purpose of this socioeconomic study is to provide an understanding of demographic and economic trends in the Black River Watershed that will inform these other planning processes, including the Black River Watershed Management Plan.

Because the Black River Watershed crosses the boundaries of numerous towns and counties and is not necessarily contiguous with any political boundaries, there is no readily available data set that reflects socioeconomic trends within the exact physical boundaries of the Watershed. To overcome this challenge, Camoin Associates worked with the project steering committee to develop three study areas that capture the economies within the Black River Watershed using local zip codes. See the map on page 6 showing the three study areas and the Watershed boundary.

In general, the Black River Watershed is characterized by low population densities, limited commercial development, high levels of environmental conservation, and a somewhat slow-growing population. However, when data for each of the three study areas is analyzed separately, it becomes evident that each area exhibits very different demographic trends and is characterized by its own distinct local economy.

- The data show that Fort Drum unquestionably has a dramatic impact on demographics and employment in Study Area 1, with a relatively young and fast-growing population and a very high concentration of government and military jobs. In addition, Watertown is clearly a regional center for health care services and shopping that serves a good portion of the Watershed population.

- Study Area 2's more rural economy relies on agriculture, forestry, manufacturing, and local government services to provide the employment base. Demographic trends here reveal an older population that somewhat mirrors the national age distribution, but is growing at a slower rate than the national average and has lower income levels than in Study Area 1.

- Study Area 3 is characterized by very low population density, a higher concentration of people ages 50-74 than the national average, and a very high proportion of seasonal households. Study Area 3 also has an employment base in forestry and tourism. Because most of Study Area 3 is within the Adirondack Park, it attracts recreational users, part-time and seasonal residents, and has a lower proportion of working age adults and young families.

Based on the data analysis presented in this report, in conjunction with the results of a series of focus groups conducted by Bergmann Associates with key stakeholders from the region, Camoin Associates developed the following brief SWOT assessments for each of the three study areas for

consideration in the development of the Black River Watershed Management Plan. This assessment was conducted from a socio-economic perspective.

Study Area 1

Strengths	Weaknesses
▪ Fort Drum drives significant economic growth (construction, retail, services) ▪ Young families (military) are attracted to the area ▪ Role as regional health care center offers quality private sector job opportunities	▪ Rapid development has likely resulted in increased runoff and negatively impacted Black River water quality ▪ Lack of growth in higher paying private sector industries (i.e., manufacturing, finance & insurance, professional & technical services) ▪ Private sector growth concentrated in low-wage service sectors ▪ River is perceived as "dirty" and "unattractive" – limits recreation potential ▪ Lack of amenities, promotion and signage for recreational use of river
Opportunities	**Threats**
▪ Partnership with Fort Drum to explore opportunities for related private sector companies to locate in region (military contractors) and invest in infrastructure necessary to get them there ▪ Build tourism in area around rafting, other recreation on river	▪ Local economy heavily dependent on federal government plans ▪ Continued development impacting water quality for the Black River and its outflow into Lake Ontario.

Study Area 2

Strengths	Weaknesses
▪ Natural resource base supports agriculture, forestry and tourism ▪ Significant manufacturing base provides relatively high paying jobs for local residents ▪ Agriculture sector remains stable, especially dairy, and is diversifying in small niche markets and maple syrup	▪ Aging workforce ▪ Young people leaving the region ▪ Agriculture industry consolidation and need to increase productivity will increase risk for water quality contamination events ▪ Agriculture sector not able to offer living wage jobs for local residents ▪ Local workforce has much lower levels of post-secondary education than state and nation ▪ Rising property taxes puts pressure on large landowners to sell off parcels – takes land out of use for agriculture and forestry without any planning for how this affects those industries

	▪ Lack of tourism infrastructure to expand this sector ▪ Lack of shovel-ready industrial park
Opportunities	**Threats**
▪ Build on growth in alternative energy sector ▪ Build manure digesters to assist local farms with waste management and reduce the risk of water quality deterioration ▪ Establish training programs tailored to needs of local manufacturers ▪ Establish outreach programs with local manufacturers, alternative energy producers and local agribusiness to educate young people about the more sophisticated job opportunities available in the region ▪ Create programs/facilities that increase local value added processing of local agricultural products (Maple processing facility being studied, shared commercial kitchen for small food processing businesses)	▪ Rising energy costs continue to make the region less competitive, especially for industries in its economic base (agriculture & forestry, manufacturing) ▪ CAFO regulations keep farmers from expanding to avoid more regulation ▪ Demand for wood products in general is decreasing ▪ DEC continues to make it slow/difficult to get stream crossing permits ▪ State acquires more private forest land, taking it out of production ▪ Tighter restrictions on immigrant labor could reduce workforce for agriculture

Study Area 3

Strengths	**Weaknesses**
▪ Adirondack Park location and natural features create tourism market	▪ Lack of job opportunities outside tourism ▪ Rising housing costs due to growth in second home ownership ▪ Young families leaving region ▪ Lack of coordinated tourism promotion
Opportunities	**Threats**
▪ Growth in second homeowners represents an opportunity to recruit new entrepreneurs to the region ▪ Market exists for high-end tourism products (customized Adirondack adventure trips, upscale lodging/rentals)	▪ Adirondack Park Agency regulations ▪ Same threats listed under Study Area 2 regarding forestry

These differences between the three study areas mean that issues related to the long-term health of the Watershed may be very different in each, including the scale of economic growth that is considered appropriate. For example, given the faster economic growth in Study Area 1, the highest priority planning strategies for that area may need to focus on managing growth there, including:

- Stormwater management
- Wastewater management

- Integration of watershed plans with waterfront revitalization plans and plans at Fort Drum.

Study Areas 2 and 3, which are more rural in nature with a smaller scale of economic growth, may lend themselves more readily to conservation because of lower land prices, slow-growing or emigrating populations, and the presence of already existing protected areas. These areas are also characterized by weaker or declining economies that may need to further leverage the natural resources they have, including the Black River, for purposes of economic development, especially tourism development. For example, planning strategies in these areas may need to focus on:

- Connecting new conservation areas with existing conservation areas
- Ensuring that the long-term viability of the river is consistent with its utilization as an economic resource for rural populations and small communities
- Managing agricultural runoff.

INTRODUCTION

The Black River Watershed covers an extensive area from its origins in the Adirondack Mountains to its terminus into Black River Bay on Lake Ontario. The Watershed covers a wide range of physical features as well as a diversity of economies, land uses, and demographics.

Camoin Associates was retained by Bergmann Associates to prepare this Socioeconomic Characterization and Assessment as part of a series of on-going planning initiatives associated with the Black River Watershed. The purpose of this socioeconomic study is to provide an understanding of demographic and economic trends in the Black River Watershed that will inform these other planning processes, including the Black River Watershed Management Plan. This study highlights economic strengths the region can build on and outlines challenges the region faces as it seeks to improve quality of life and employment opportunities for residents.

Study Areas & Data Sources

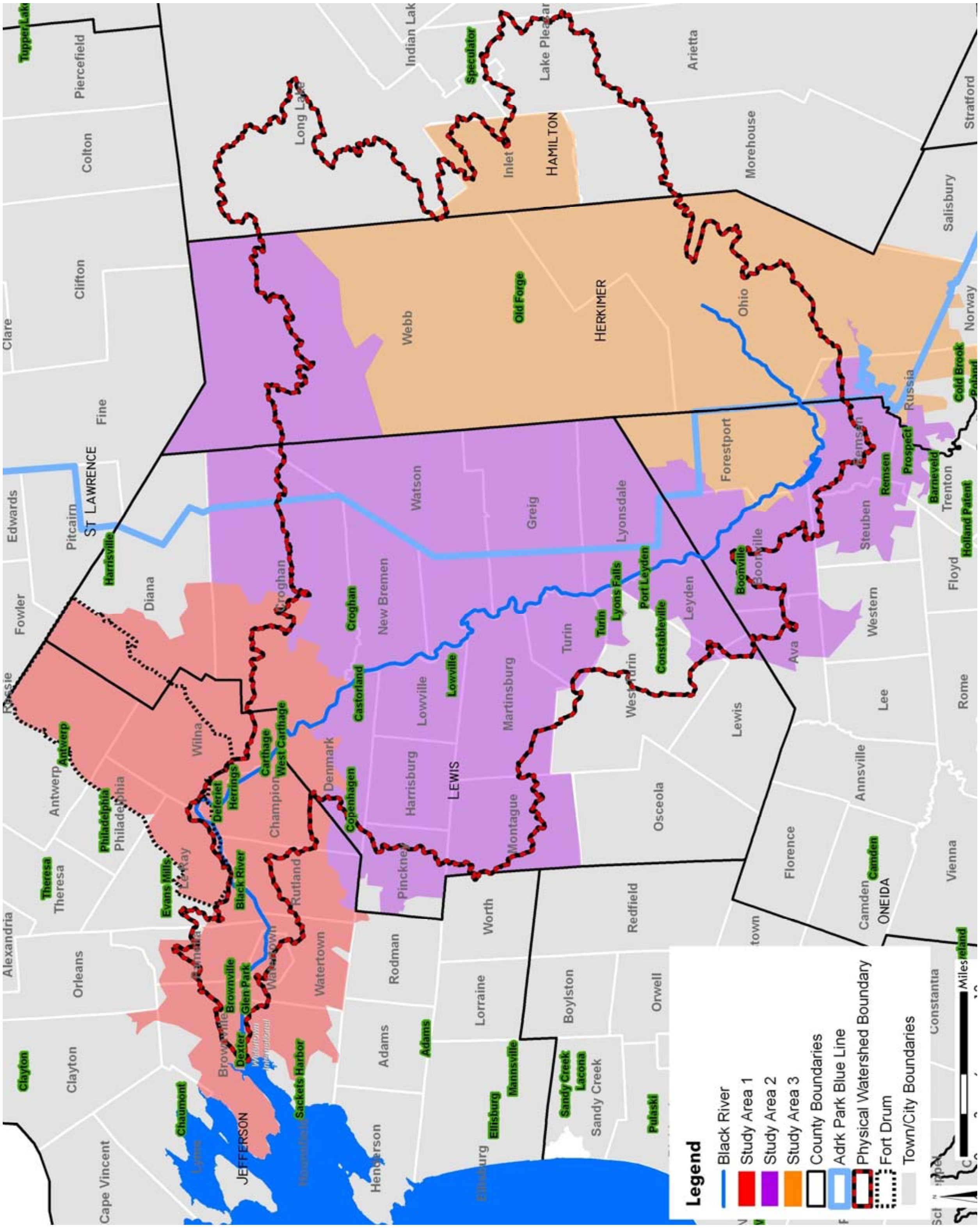
The Black River Watershed encompasses land in Lewis, Jefferson, Hamilton, Herkimer, and Oneida Counties. The biggest challenge in collecting and analyzing socio-economic data for a boundary defined by natural features is that most socio-economic data are collected on the basis of political boundaries. Because the Black River Watershed crosses the boundaries of numerous towns and counties and is not necessarily contiguous with any political boundaries, there is no readily available data set that reflects socioeconomic trends within the exact physical boundaries of the Watershed. To overcome this challenge, Camoin Associates worked with the project steering committee to develop three study areas that capture the economies within the Black River Watershed using local zip codes. See the map on page 6 showing the three study areas and the Watershed boundary.

> **Study Area 1**: Includes Watertown and Fort Drum, as well as the growing areas in and around Carthage.
>
> **Study Area 2:** Includes the mostly rural and small town areas in and around Lewis County.
>
> **Study Area 3:** Includes the portion of the Watershed in the Adirondack Park.

Using the three study areas, Camoin Associates obtained demographic and employment data from Economic Modeling Specialists, Inc. (www.economicmodeling.com) and ESRI Business Analyst On-line (www.esri.com), both leading national providers of demographic and employment statistics derived from Census and Bureau of Labor Statistics data and projected for user-defined study areas. The demographic data presented cover permanent residents in the Watershed. The employment data cover jobs located in the Watershed.

In addition, Camoin Associates combined tax parcel data from the numerous local assessing units within the three study areas and conducted an analysis of land use and land values by use to augment the analysis of demographic and employment trends conducted with the EMSI and ESRI data.

Another objective of this Socioeconomic Characterization and Assessment is to highlight strengths, weaknesses, opportunities and threats from a socio-economic perspective that should be considered in the context of the Black River Watershed Management Plan. Based on the data analysis presented in the report, in conjunction with the results of focus groups conducted by Bergmann Associates with key stakeholders from the region, Camoin Associates developed brief SWOT assessments for each of the three study areas to highlight priority issues and opportunities for the Watershed Management Plan.


Legend
Black River
Study Area 1
Study Area 2
Study Area 3
County Boundaries
Adrk Park Blue Line
Physical Watershed Boundary
Fort Drum
Town/City Boundaries
Miles
ST LAWRENCE
HAMILTON
HERKIMER
LEWIS
JEFFERSON
ONEIDA

DEMOGRAPHICS

Population

As noted in the introduction, the demographic data presented in the following section cover year-round permanent residents in the Watershed.

The Black River watershed is characterized by low population densities (Table 1), and a somewhat slow growing population (Figure 1). The 2007 population for the Black River Watershed Socioeconomic Study Area as a whole was 112,005, with a population density of 44 people per square mile. This is half (50.5%) the national population density of 87 people per square mile.

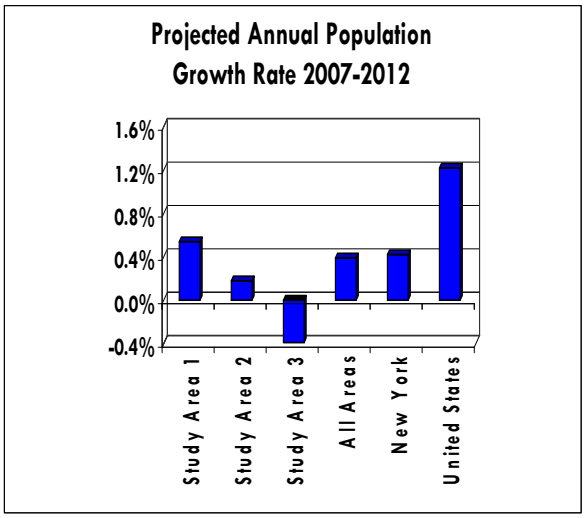
The most densely populated sections of the Watershed are in the north around Watertown. Moving south and east along the Watershed from Watertown towards the Adirondack Park, the populations grow smaller and less dense. Table 1 shows a comparison of population size and density for the three study areas.

Table 1: Population Totals and Density

	2007 Population Totals	Square Miles	Population per square mile
Study Area 1	74,050	552	134
Study Area 2	32,267	1,213	27
Study Area 3	5,688	782	7
All Areas	112,005	2,547	44
New York State	19,581,872	47,214	415
United States	306,348,230	3,537,438	87

As a whole, the Black River Watershed is expected to grow at a rate that is similar to the state average over the next five years (Figure 1). Most of this growth will be concentrated in Study Area 1. Study Area 2 will grow rather slowly, and Study Area 3 is projected to decrease in population.

Figure 1: Projected Annual Growth Rate



These variations mean that issues related to the long-term health of the Watershed may be very different in each of the study areas, including the scale of economic growth that is appropriate for each. Given the faster growth in Study Area 1, the highest priority planning strategies for that area may need to focus on managing growth there, including:

- Stormwater management
- Wastewater management
- Integration of watershed plans with waterfront revitalization plans.

Study Areas 2 and 3 may lend themselves more readily to conservation because of lower land prices, emigrating populations, and the presence of already existing protected areas. These areas are also characterized by weaker or declining economies that may seek to leverage the resources they have, including the Black River, for purposes of economic development. Examples of the focus of planning in these areas may include:

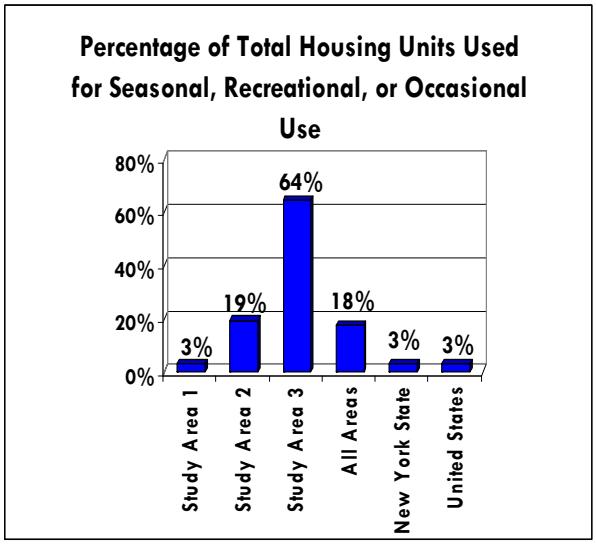
- Connecting new conservation areas with existing conservation areas
- Ensuring that the long-term viability of the river is consistent with its utilization as an economic resource for rural populations and small communities
- Managing agricultural runoff.

Seasonal Use

The population figures and projections above refer to the permanent population in each study area, but there are also many seasonal and occasional use residents who visit the Black River Watershed. This seasonal use creates a human impact that is actually larger than the population numbers indicate. This affect is most pronounced in Study Ares 2 and 3. Figure 2 below shows the percentage of housing units that are for seasonal, recreational, or occasional use in the

Watershed. Both Study Area 2 and Study Area 3 have high percentages of seasonal and recreational housing units.

Figure 2: Seasonal Housing Units



Study Area 3 in particular has an extraordinarily high proportion of these homes. In fact, there are more seasonal and recreation homes than permanently occupied homes in Study Area 3. The proportion of seasonal homes has grown over time, and as the population section of this report indicates, the permanent population is expected to decrease in the future. The implication is that the permanent population has been steadily replaced by a seasonal population over time. Seasonal residents and users can be a benefit to the local economy by bringing outside dollars into the community, but may also be less involved in community planning and events.

Age

In the largely rural areas of the Black River Watershed (Study Areas 2 and 3), the population tends to be older than in the more developed Study Area 1. The high median age and small average family size in Study Area 3 suggests that there are a number of retired and empty nester households that live there.

Figure 3: Median Age

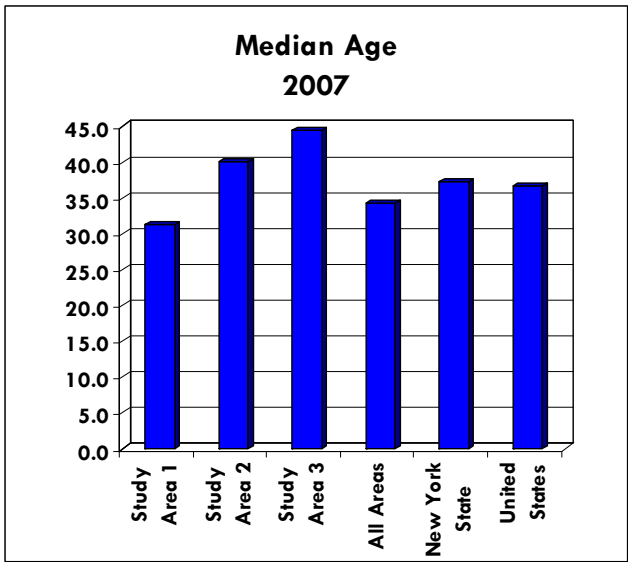
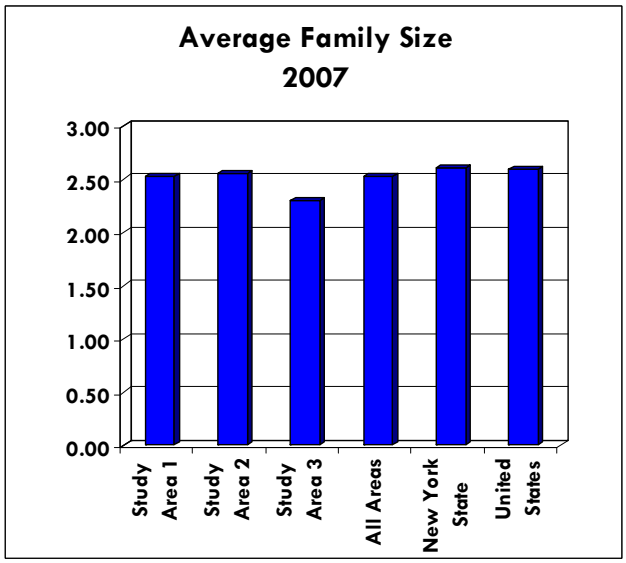


Figure 4: Average Family Size



The median age in Study Area 1 is no doubt driven down by the presence of Fort Drum. Nationally, urbanized areas have a higher proportion of young professionals and young families than rural areas. The combination of these two factors leads to Study Area 1 having an extremely high number of young adults, which lowers the median age of the entire Watershed below state and national averages.

A more detailed view of the age demographics by region can be seen by looking at the age cohorts for each study area. Figures 5 through 7 display the location quotient of age cohorts in each study area.

A *location quotient* (LQ) is a quantitative tool used to determine the relative concentration of a sector of the local population compared to the concentration of that same group at a larger level (state or nation). In this case, LQ is being used to analyze age cohorts (a cohort is the number of people within a certain age range) and is calculated as the ratio of two percentages: the percentage of the local population within that cohort divided by the percentage of the national population within that cohort. A value of 1.00 demonstrates that the proportion of a particular cohort is the same at the local level as it is at the national level. An LQ *greater* than 1.00 indicates that a cohort makes up a larger proportion of the local population than of the national population. An LQ *less* than 1.00 indicates that the cohort's share of local population is less than that cohort's share of national population. LQs above 1.2 or below 0.8 are considered significantly different than the comparison population.

Figure 5: Location Quotient for Age Cohort Study Area 1, 2007

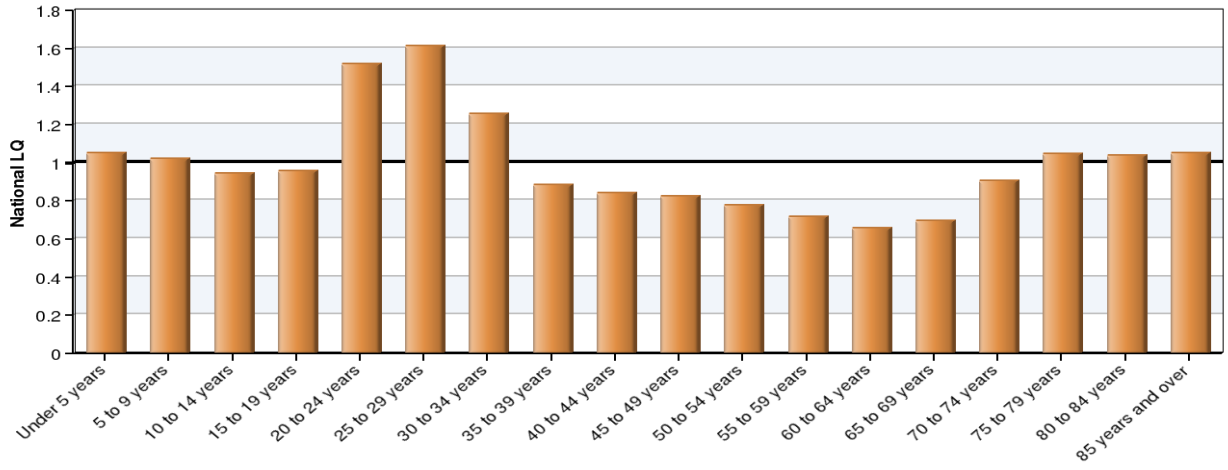


Figure 6: Location Quotient for Age Cohorts Study Area 2, 2007

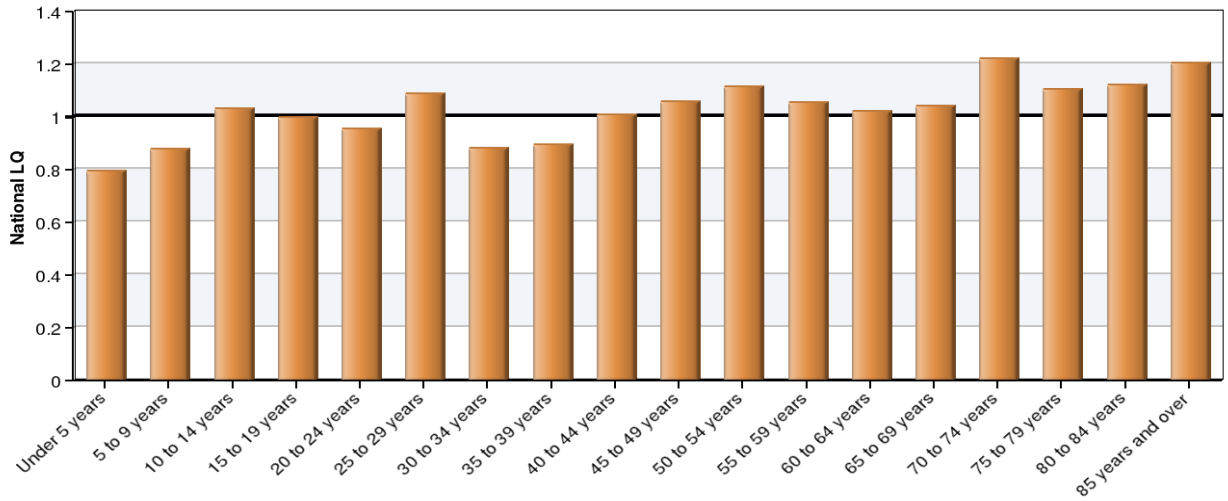
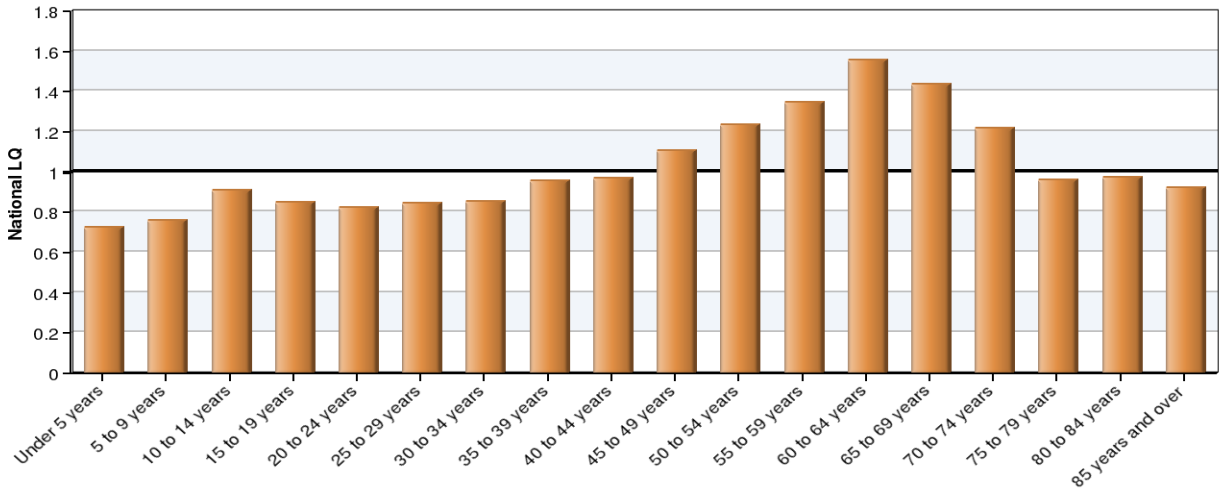


Figure 7: Location Quotient for Age Cohorts Study Area 3, 2007



There are some very clear differences between the concentrations of age cohorts in each study area. Study Area 1 has a high LQ for cohorts 20-24, 25-29, and 30-34. The military population accounts for a large portion of these young adult age cohorts. The data also show that there is a high concentration of people aged 75 and older in Study Area 1. As the employment data will show later on, there has been growth in the number of jobs in the elderly and disabled services fields in Study Area 1, which has contributed to strong growth in the health care and social services industry.

Study Area 2 has an age composition more similar to the national averages than the other two study areas, but generally speaking has a higher proportion of persons 70 or older, and a lower proportion of young families than the national average.

Study Area 3's population is concentrated in the 45 to 74 age ranges, with the 60 to 64 age cohort having the highest LQ. Study Area 3's population has more people of retirement age, and fewer young families.

Educational Attainment

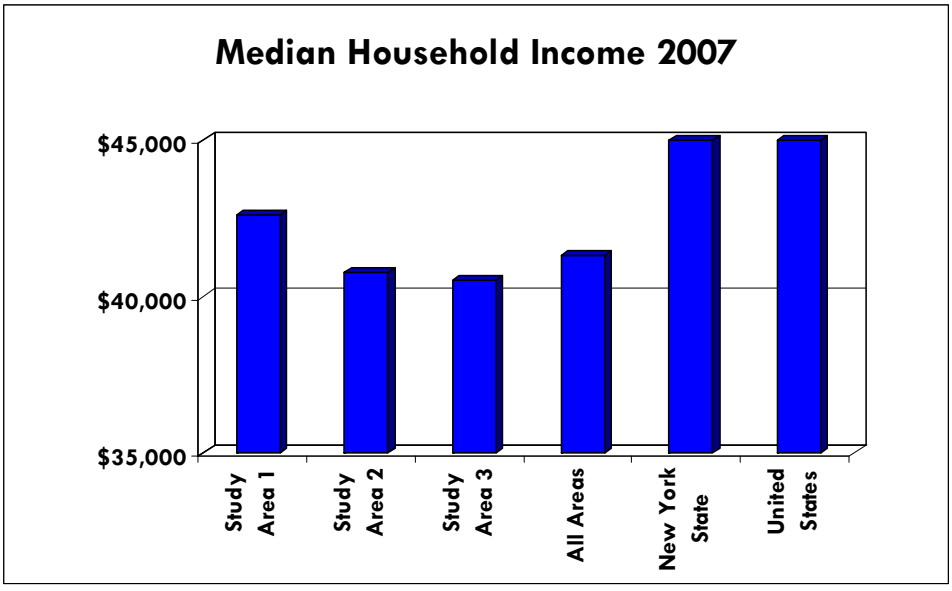
Table 2 shows the educational attainment levels for all three study areas, which have a higher rate of high school graduation than the State of New York and the United States. However, all three study sreas have significantly lower rates of college graduation than the State of New York or the United States. It appears that high school graduates are either leaving the area to go to college and not returning, or they are entering the work force directly out of high school.

Table 2: Educational Attainment 2000

	Percent of Population with High School Diploma or Higher	Percent of Population with Bachelors Degree or Higher
Study Area 1	84%	16%
Study Area 2	82%	13%
Study Area 3	86%	19%
All Areas	83%	15%
New York State	79%	27%
United States	80%	24%

Level of education is a strong predictor of income. Strong high school graduation rates are positive indicators for the area, but improving the post-secondary graduation rate for the Watershed and increasing the number of jobs available to college graduates would have positive impacts on income levels in the Watershed. As shown in the graph below, median household income for all three study areas is lower than state and national median household income. The higher median income for Study Area 1 shown in Figure 8 below is largely attributable to the significant concentration of higher paying government sector jobs in that study area, as discussed in the following section.

Figure 8: Median Household Income



EMPLOYMENT DATA

Overview

Table 3 below shows the five largest industry sectors in each of the three study areas with average earnings per worker for each sector. The three study areas are characterized by distinct local economies. Study Area 1's economy is largely built around Fort Drum and Watertown's presence as a regional center for health care and retail shopping. Study Area 2's more rural economy relies on agriculture, forestry, manufacturing, and local government services to provide the economic base. Study Area 3 has a base in forestry, but also relies on the tourism industry, which is reflected in the relatively high employment figures for accommodation and food services. As noted in the introduction, the employment data presented in the following sections cover jobs located in the Watershed, not necessarily the jobs held by all Watershed residents, as some may commute out of the Watershed for work.

Table 3: Five Largest Industry Sectors by Employment, All Study Areas 2007

Study Area 1	Industry	Government	Health care & social assistance	Retail trade	Accommodation & food services	Manufacturing
	Employment	17,637	6,932	6,182	2,820	2,192
	Earnings per Worker	$72,380	$38,520	$24,786	$15,378	$47,131
Study Area 2	Industry	Government	Agriculture, forestry, fishing, & hunting	Retail trade	Manufacturing	Construction
	Employment	2,880	1,824	1,572	1,484	1,106
	Earnings per Worker	$48,414	$15,739	$21,854	$49,864	$26,411
Study Area 3	Industry	Agriculture, forestry, fishing & hunting	Accommodation & food services	Construction	Retail Trade	Government
	Employment	667	428	408	392	311
	Earnings per Worker	$14,143	$16,925	$36,008	$21,369	$49,431

Table 4 below shows total job growth in each of the study areas, in all study areas combined, and in New York State and the U.S. As shown in Table 4, the rate of overall job growth in Study Area 1 between 2002 and 2007 was much higher than in the other two study areas and even higher than the rate of job growth at the state and national level.

Projections show that the rate of job growth in Study Area 3 will outpace the other two study areas, even though the new job numbers for Study Area 3 are significantly smaller than for Study Areas 1 and 2. Projected growth in Study Area 3 is largely based on previously expected growth in the residential remodeling, construction finishing, and real estate trades. However, this could be seriously tempered by the continued downturn in the housing market. Job growth in Study Area 2 is projected to continue at a healthy rate of about 7%. Future employment growth in Study Area 1 is heavily dependent on activities at Fort Drum. The projections shown below assume a slight decrease in military employment, and thus slower growth in overall employment than was seen between 2002 and 2007.

Table 4: Job Growth 2002 – 2012, All Study Areas

	2002 Jobs	2007 Jobs	Change 2002-07	% Change	Projected 2012 jobs	Change 2007-12	% Change
Study Area 1	43,385	50,270	6,885	15.87%	52,758	2,488	4.95%
Study Area 2	12,687	13,440	753	5.94%	14,409	969	7.21%
Study Area 3	3,222	3,385	163	5.06%	3,677	292	8.63%
All Study Areas Combined	59,294	67,095	7,801	13.16%	70,844	3,749	5.59%
New York State	10,247,433	10,912,066	664,633	6.49%	11,543,877	631,811	5.79%
U.S.	164,244,206	177,734,597	13,490,391	8.21%	193,443,047	15,708,450	8.84%

Figure 9 below shows the results of a shift share analysis for all study areas in the Black River Watershed combined. Shift share analysis measures the competitiveness of an industry within a region by comparing the expected change in jobs in that industry with the actual change in jobs over a given period of time. The expected regional change is based on national growth trends for that industry and regional growth trends for all industries. If the actual regional change in an industry was higher than the expected regional change, then the region may have a competitive advantage in attracting businesses in that industry due to factors such as workforce, access to resources, or the existence of a complementary business cluster. If the actual regional change is lower than the expected regional change, then the competitive effect is negative, and may indicate the region is lacking the workforce or amenities necessary to attract businesses in that industry.

The main insight to be gained from the shift share analysis for the entire Watershed is that growth in the region is largely being driven by growth in the government sector, namely the Fort Drum expansion. As shown below, apart from the government sector, the industries that are classified as showing "competitive effects" are industries that follow growth, not those that drive it. Those include administrative and waste services, construction, retail, and real estate. The growth in administrative and waste services was due almost entirely to growth of telemarketing services, which added over 400 jobs in the Watershed from 2002 to 2007. Telemarketing is an exporting industry that tends to locate in low wage areas. Transportation and warehousing is not necessarily related to population growth, but in this case it is as the jobs created were primarily school bus drivers and couriers[1]. Even though these industries show up in the shift share analysis as being "competitive," they are not typically considered industries that a region would focus business attraction efforts on because they will naturally follow growth that occurs as a result of new job creation in other sectors.

The one interesting exception is the manufacturing sector, which added a small number of jobs (approximately 100) between 2002 and 2007. Since the continued decline of manufacturing at the national level creates an expected loss of jobs in this sector, the actual increase in manufacturing employment experienced in the Watershed translates into a strong competitive effect in the shift share analysis. As shown in Figure 10 below, many of the largest manufacturing subsectors lost jobs from 2002-2007, but new growth in smaller subsectors offset these losses.

[1] There were also over 100 private sector jobs created in air support services associated with contracting at Fort Drum.

Unlike the other "competitive" industries in the Watershed, manufacturing is a potential driver of growth that officials in the region would pay particular attention to.

Figure 9: Shift Share of Most Competitive Industry Sectors All Study Areas 2002-2007

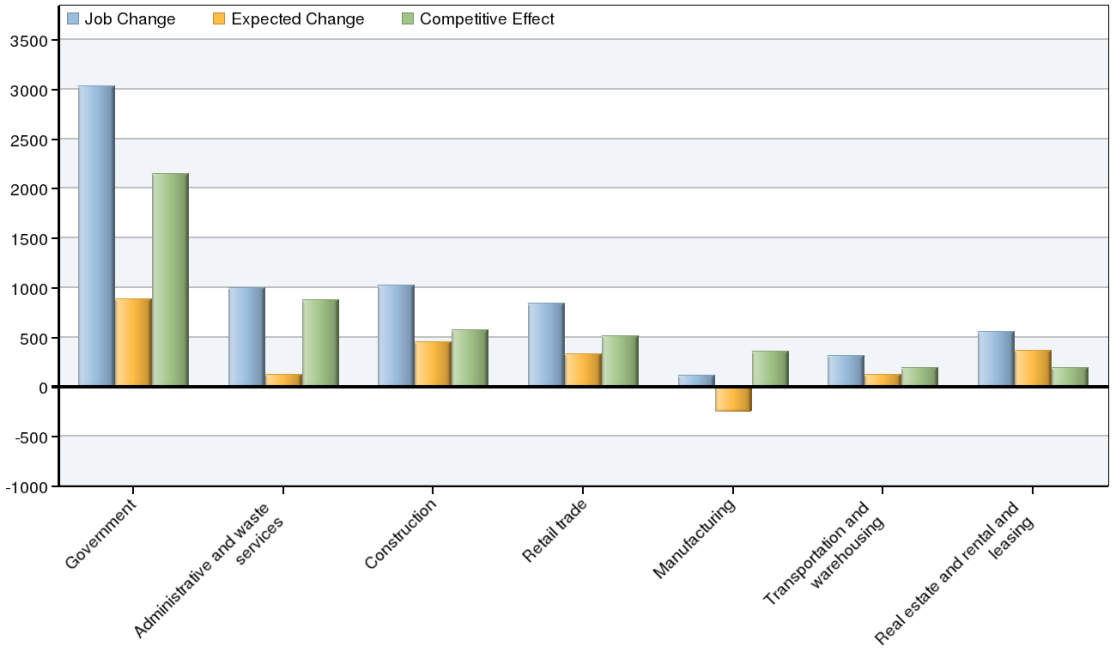
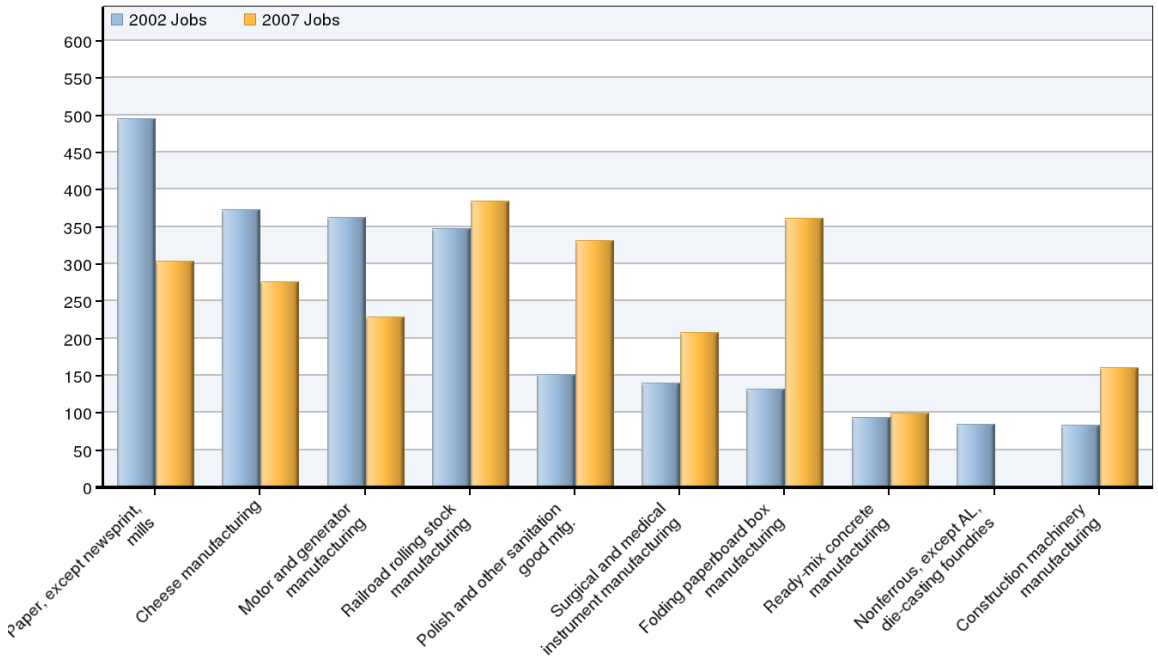


Figure 10: Manufacturing Job Growth, All Study Areas 2002-2007



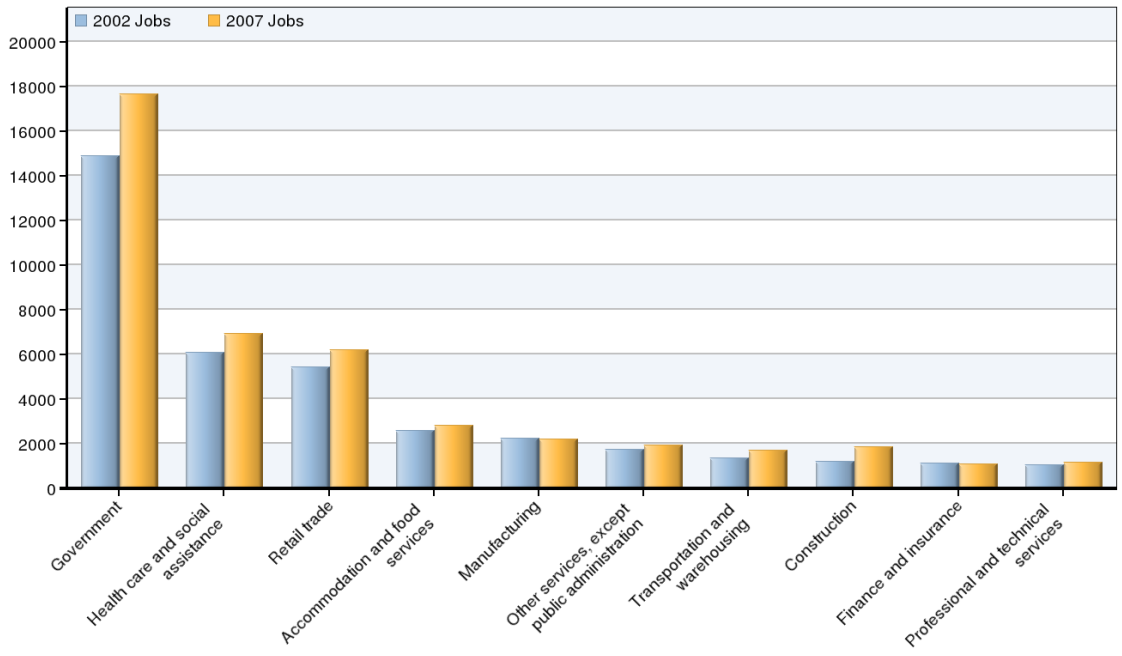
Also of interest may be the fact that industries considered to be a significant part of the Watershed's overall economy, such as agriculture, forestry and tourism, do not show up as "competitive" industries in the shift share analysis. As discussed in the following sections, which examine the industry mix in each of the three study areas individually, those industries have either lost employment over time or have not gained as much employment as national and regional growth trends would expect. So while they continue to constitute a large and important part of the local economy, they may not necessarily be significant sources of future employment growth.

Study Area 1

Growth in employment in Study Area 1 is driven heavily by Fort Drum, which is included in the employment numbers for the government industry sector. Government jobs (see Figure 11) account for 34% of the total job growth in Study Area 1. The government sector is made up of four subsectors:

- local government
- state government
- federal civilian government (not including postal service)
- federal military occupations.

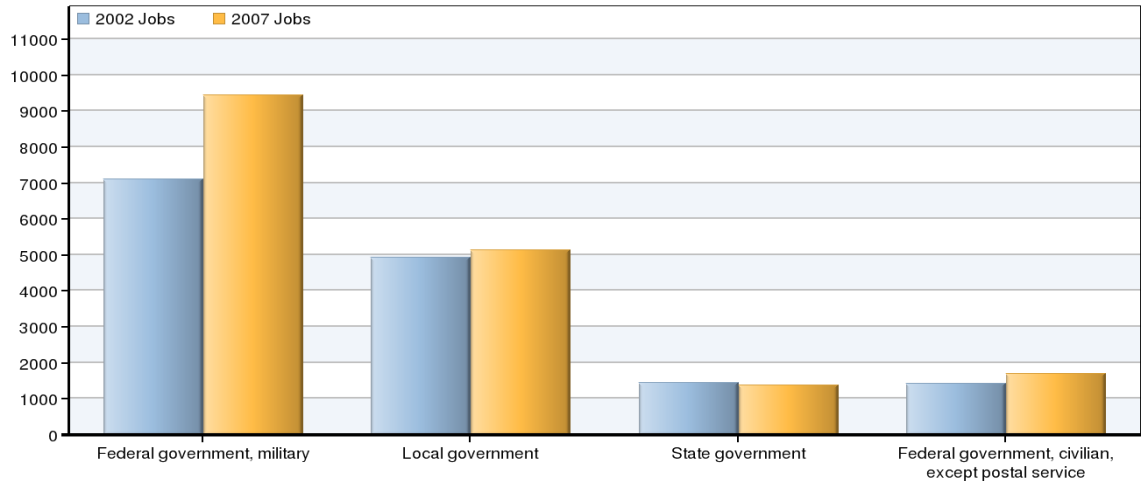
Figure 11: Job Growth Top Industry Sectors Study Area 1 2002-2007



As stated above, Fort Drum has a major impact on the job figures for the government sector. Federal military jobs (which are assumed to be attributable to Fort Drum) account for 9,434 (or

53%) of the 17,637 government jobs in 2007 (Figure 12)[2]. Local government still makes up a significant portion of all government jobs. If separated out from other government occupations, local government would be the fourth largest industry in Study Area 1. Unfortunately, it is not possible to get a detailed breakdown of local government jobs (i.e., public school teachers, local government administrators, police officers, etc.) from the industry data.

Figure 12: Job Growth in Government Sector Study Area 1 2002-2007

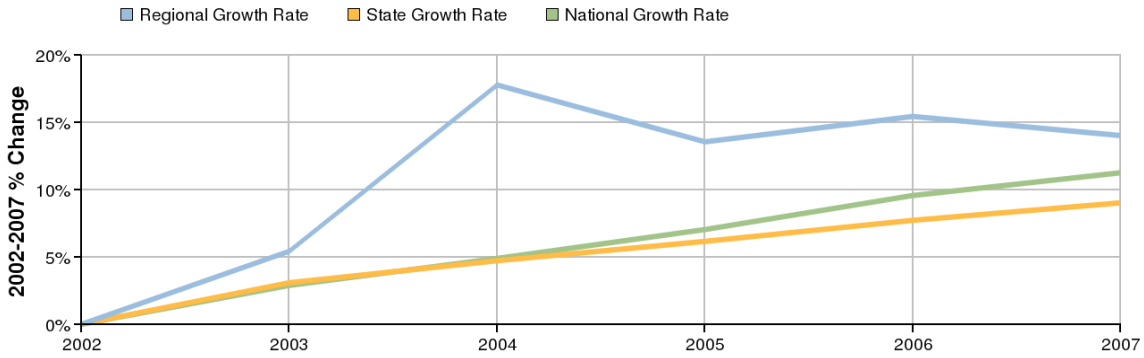


The retail and health care sectors also expanded in Study Area 1 between 2002 and 2007. Much of this has to do with Study Area 1's role as a regional retail and health care center. A brief look at retail spending data for Study Area 1 (not included here) reveal a surplus, meaning that people who live outside the area come into the area to shop. The growth in retail jobs in Study Area 1 outpaced national trends (14% increase in Study Area 1 compared to 5% for the nation). Of the total 747 new retail sector jobs created between 2002 and 2007, 276 fall under the warehouse club and supercenter designation, which probably represents the opening of a Sam's Club or similar business.

Employment in health care in Study Area 1 also outpaced national trends from 2002 to 2007 (Figure 13). The location quotient for health care was 1.39 in 2007, indicating a significant concentration of health care jobs compared to the nation. Particularly large employment gains occurred in services for the elderly and facilities for the disabled.

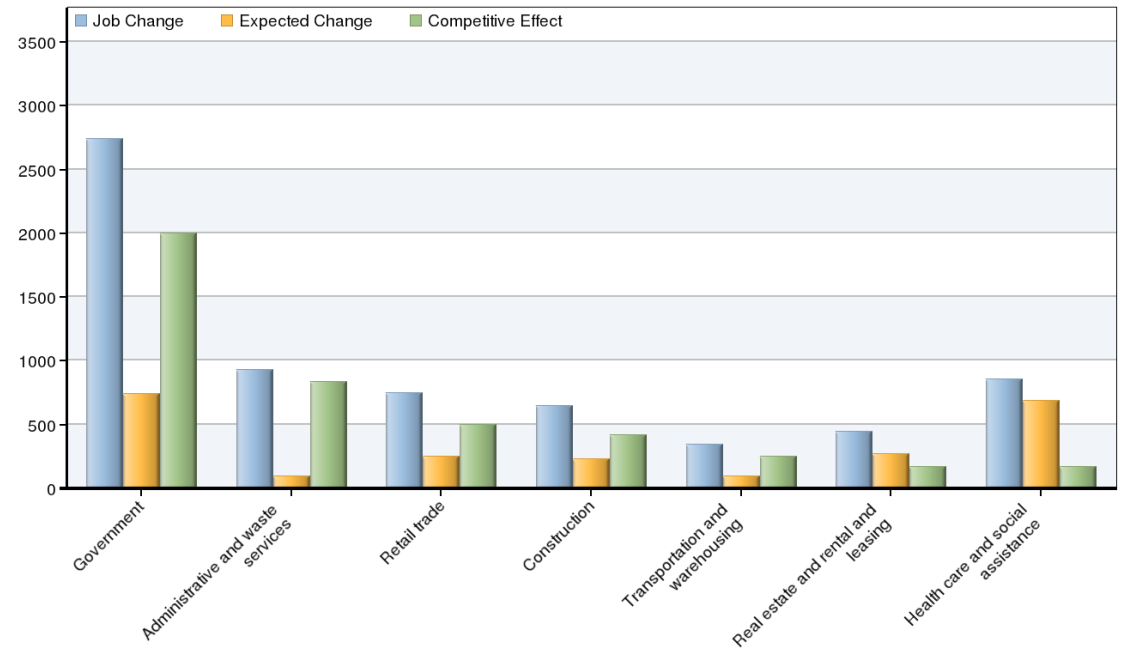
[2] It should be noted that in a published Economic Impact Statement, Fort Drum United States Army Garrison listed 16,950 employed soldiers and 3,960 employed civilians in September of 2007 at the Fort Drum location. The absolute number for soldier employment (16,950) reported by Fort Drum differs from the Federal Military employment reported in this report (9,434). There are various reasons for the under reporting of military employment figures in Study Area 1, the most important being the necessary disaggregating of county employment data to zip code level data. Total employment figures reported by Fort Drum United States Army Garrison should be considered to be correct.

Figure 13: Job Growth in Health Care Sector Study Area 1 2002-2007



The shift share analysis for Study Area 1 (Figure 14) produces results similar to those for the Watershed as a whole (Figure 9). The major differences are that manufacturing does not have a strong competitive effect in Study Area 1 as it does in the entire Watershed, and health care and social assistance has a stronger competitive effect in Study Area 1 than in the Watershed as a whole. This is due to the fact that most of the health care jobs in the Watershed are located in Study Area 1, while most of the manufacturing jobs are located in Study Area 2.

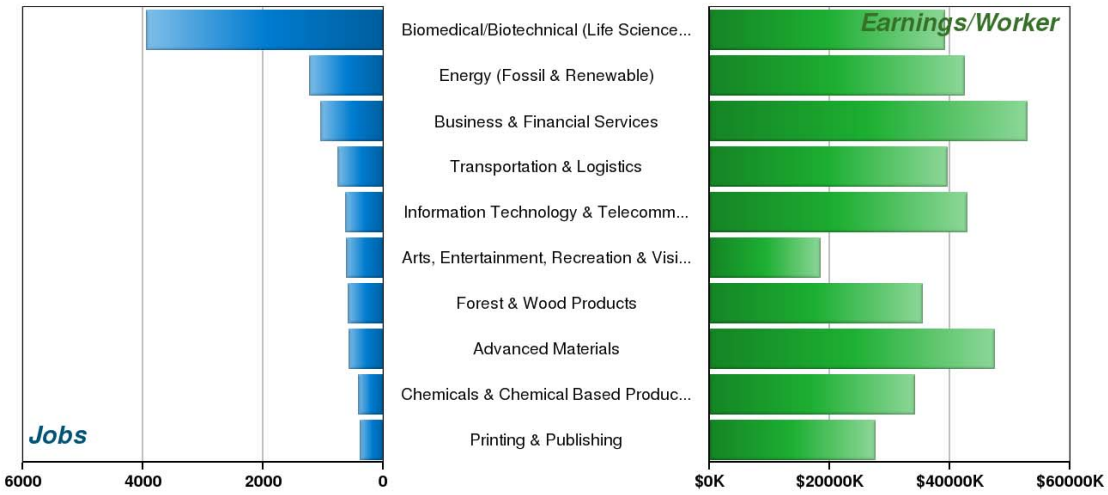
Figure 14: Shift Share for Industry Sectors with Highest Competitive Effect Study Area 1 2002-2007



Another way to look at a region's economic base is to break employment into industry clusters. Clusters define groups of closely related and interconnected businesses. A key component of an industry cluster is that the output of one business will in turn be used as an input for another. For example: the output of a logging company is cut timber, which is the input for a sawing company that produces lumber, which is used as an input for a wood furniture manufacturer. All these companies would be grouped together through industry *cluster* analysis, while they are categorized separately in the industry *sectors* analysis.

Figure 15 below shows how many jobs are in each of the top 10 industry clusters in Study Area 1, as well as the average earnings per worker in each cluster. Of note is that this analysis does not include government sector employment, so the largest employment group is unfortunately not represented in the graph below. Nevertheless, the analysis does show the importance of the biomedical/biotechnical (life sciences) cluster to Study Area 1. This cluster includes all businesses related to the medical field, including medical centers, nursing homes, and doctors' offices, as well as manufacturers of medical devices and retailers of medical or health care related goods (drug stores, wholesalers, etc.). In terms of private sector employment, this is the largest cluster by far and provides a relatively high average earnings per worker.

Figure 15: Jobs and Earnings per Worker for Top Industry Clusters, Study Area 1 2007

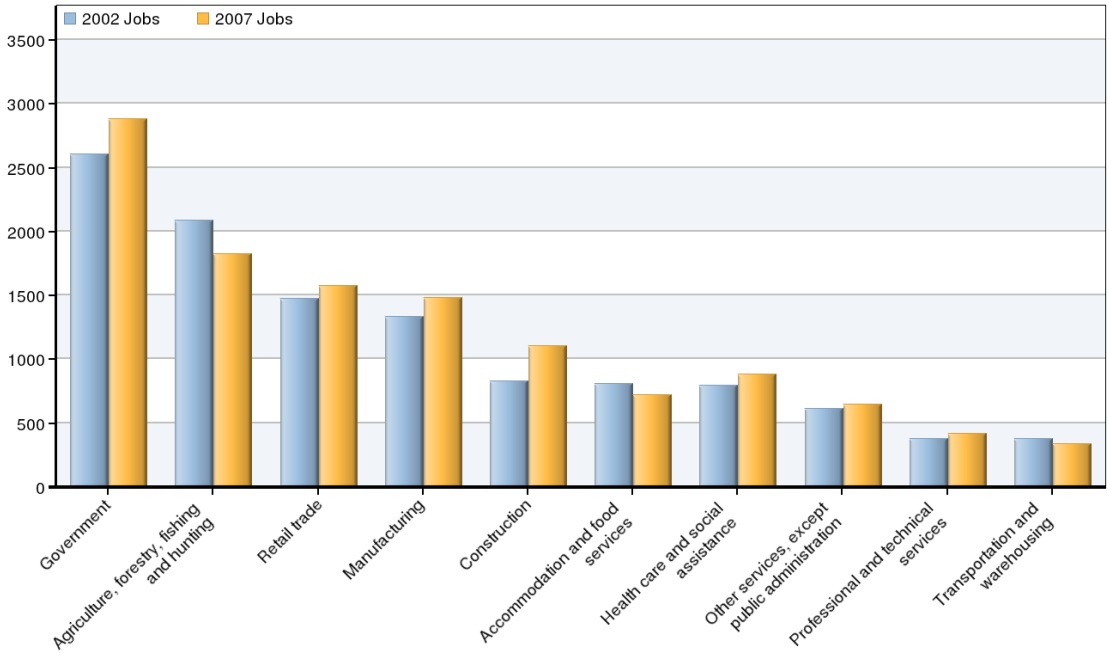


To summarize the socioeconomic analysis for Study Area 1, it is the most urbanized and developed of the three study areas. The data show that Fort Drum unquestionably has a dramatic impact on the economy and demographics of Study Area 1 and that the Watertown area clearly serves as a regional center for health care services and shopping for the Watershed population. These characteristics should be taken into account as long-term planning strategies are developed for the Black River Watershed. For example, local officials may need to utilize managed growth strategies to minimize negative impacts of development on the Watershed. Planners may also need to work closely with officials at Fort Drum to keep Watershed management goals consistent with the operational goals of Fort Drum.

Study Area 2

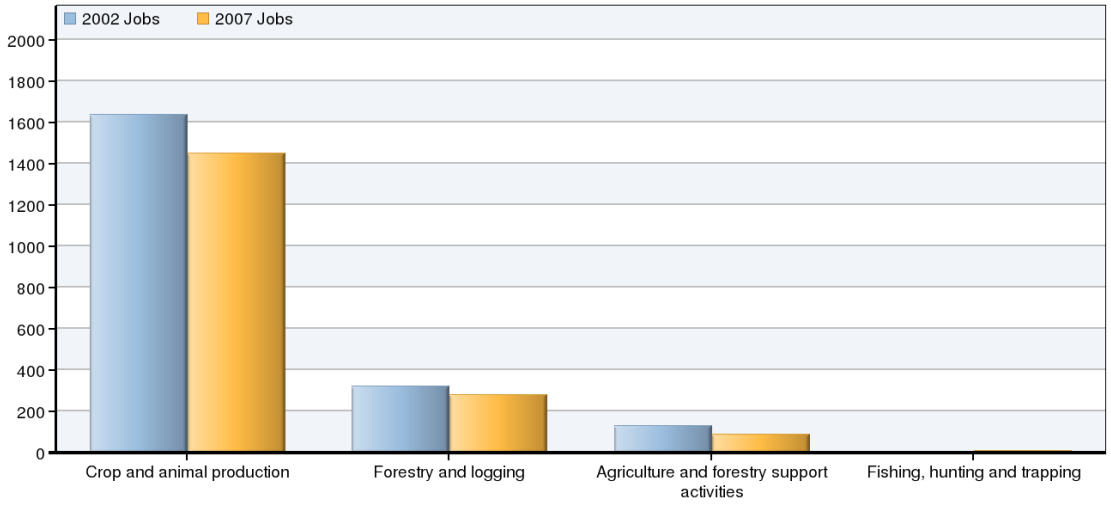
Study Area 2 has an economic base and employment pattern that differs substantially from that of Study Area 1. Study Area 2 is an agriculture and forestry based economy, also with significant employment in retail trade, manufacturing and local government. Agriculture and forestry and manufacturing are industry sectors that are losing employment at the national level, which places difficult employment pressures on the region. The agriculture and forestry sector in Study Area 2 lost employment over the time period 2002-2007, but manufacturing was able to increase employment. This is the only study area in the Watershed that added manufacturing jobs from 2002 to 2007. The gains in manufacturing jobs in Study Area 2 outpaced the loss of manufacturing jobs in Study Areas 1 and 3, creating the net gain of manufacturing jobs for the Watershed as a whole as discussed above.

Figure 16: Job Growth for Top Industry Sectors Study Area 2 2002-2007



Agriculture and forestry are a major part of the Black River's history, particularly in Study Area 2. The lands along the banks of the river have provided fertile farm land for generations. While this sector lost employment from 2002 to 2007 as the trend toward farm consolidation continued, the location quotient for this industry sector in Study Area 2 was 6.32 in 2007. This means that the proportion of the local workforce engaged in this industry sector is over six times the national average. Within the agriculture and forestry sector, crop and animal production is the subsector showing the most employment (Figure 17). However, the importance of forestry should not be over looked. While the employment numbers for the forestry and logging subsector are much lower than crop and animal production, the location quotient for forestry and logging was 29.10 in 2007, which is extraordinarily high.

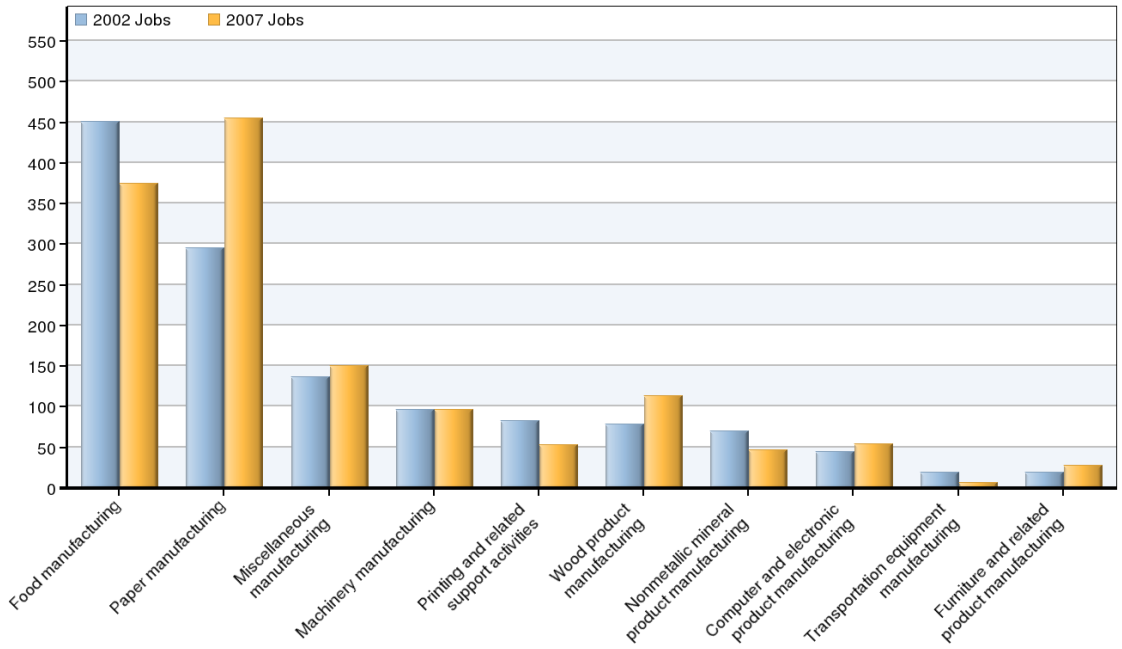
Figure 17: Job Growth Agriculture, Forestry, Hunting, and Fishing Industry Sector Study Area 2 2002-2007



Manufacturing also plays a significant role in Study Area 2 and is based heavily on creating value-added products from the local resources. The largest manufacturing industries are food manufacturing and paper manufacturing (Figure 18). Despite national trends, the manufacturing sector added jobs in Study Area 2 from 2002-2007.

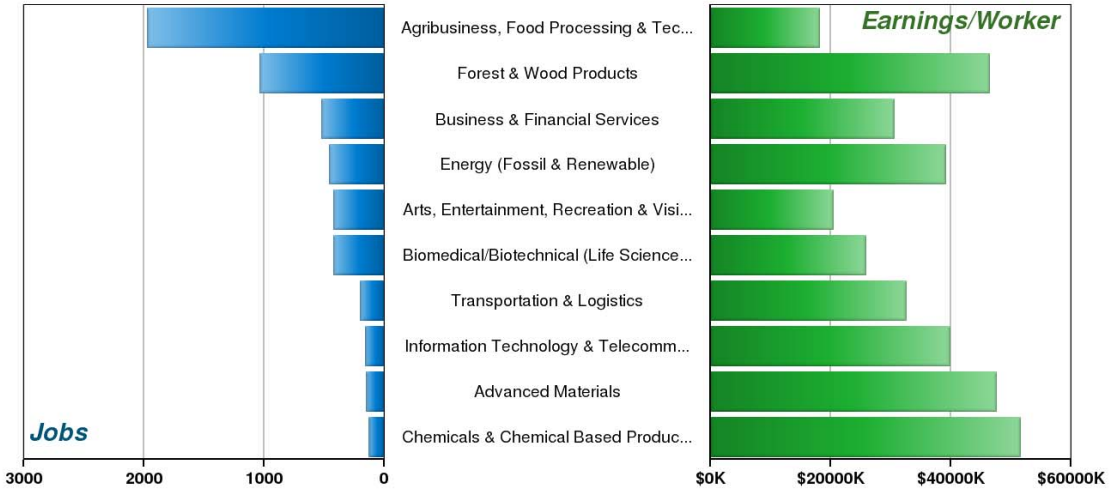
Figure 18 shows employment growth in the top manufacturing subsectors in Study Area 2. The paper manufacturing subsector includes both paper box manufacturing and paper mills. There was a decrease in paper mill employment, and an increase in paper box production employment. The increase in paper box production was high enough to yield a net increase in the paper manufacturing subsector, and can most likely be attributable to one or two employers.

Figure 18: Job Growth Manufacturing Subsectors Study Area 2 2002-2007



Not surprisingly, Figure 19 below shows that the two largest private sector industry clusters in Study Area 2 are agribusiness, food processing & technology and forest and wood products. These clusters include producers of raw materials, businesses that process raw materials and businesses that distribute finished food or wood/paper products. Of note is the significant difference in the average earnings per worker for these two clusters. This may be impacted by the seasonality of jobs in the agricultural sector and the fact that food processing jobs tend to be some of the lower paying manufacturing jobs nation-wide.

Figure 19: Jobs and Earnings per Worker for Top Industry Clusters, Study Area 2 2007



In sum, Study Area 2 is facing similar economic issues to that of rural and small town economies across the country. Study Area 2's economy has historically been founded in agriculture, other resource based industries such as forestry, and manufacturing. Macro-level economic forces have caused farms to consolidate and manufacturing to shift out of the United States, creating job losses in those sectors. Study Area 2 has lost agricultural jobs, and while the manufacturing sector has gained jobs in the short term, the longer term trend has been a net loss of jobs[3]. This has left economic development authorities in Study Area 2 scrambling to identify other industries to focus on for future economic growth, such as tourism. Similar to the area's historic industries, tourism also relies heavily on the natural environment and natural resources of the area.

The localities within Study Area 2 may always rely on their natural resource base to provide the foundation of their economy, whether it is for agriculture, tourism or another industry such as alternative energy production. The long-term planning process should acknowledge this and manage the lands within the Watershed in a manner that preserves the long-term health of the river so that future generations will be able to utilize this key natural resource for their own economic well-being.

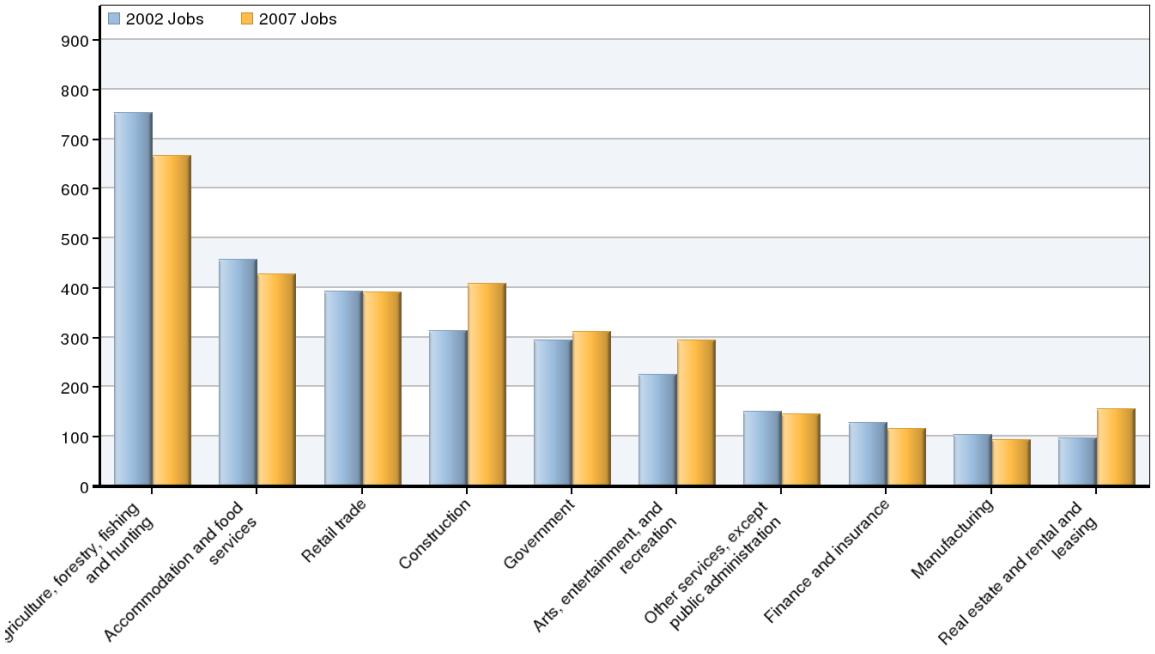
[3] Lewis County's manufacturing employment in 1997 was 1,775, compared to 1,484 for the entire study area in 2007. Source: Bureau of Labor Statistics

Study Area 3

As noted in the introduction, the employment data presented here covers jobs that are located within the study area, not necessarily jobs held by all study area residents. Given Study Area 3's smaller concentration of employment opportunities, the influence of the Utica area on employment options for Study Area 3 residents is worth noting, even though Utica falls outside of the study area. While it is not possible to tell how many residents of Study Area 3 may work in the Utica area based on available data, it is possible to look at commute times of Study Area 3 residents. According to 2000 Census data, over 33% of working age adults in Study Area 3 commute outside their county of residence to get to work, and the average commute time is 27 minutes. In comparison, only 5% of working age residents commute outside their county of residence in Study Area 1 and 25% in Study Area 2. It is safe to assume that a large portion of these out-of-county commuters in Study Area 3 are traveling to jobs in the Utica area.

In terms of the employment actually located within Study Area 3, the relatively high concentration of jobs in accommodations and food service, and arts, entertainment and recreation are indicators of the importance of the tourist market in this economy. The data also show that the agriculture and forestry industry is the leading employment sector, but Camoin Associates' experience analyzing employment data in other Adirondack communities indicates that employment in this sector in very rural areas is sometimes over-counted in the data. While we know anecdotally that forestry is an important sector in Study Area 3, the actual job numbers here may be somewhat higher than in reality. Also of note is that this is the only study area where government is not the leading industry sector.

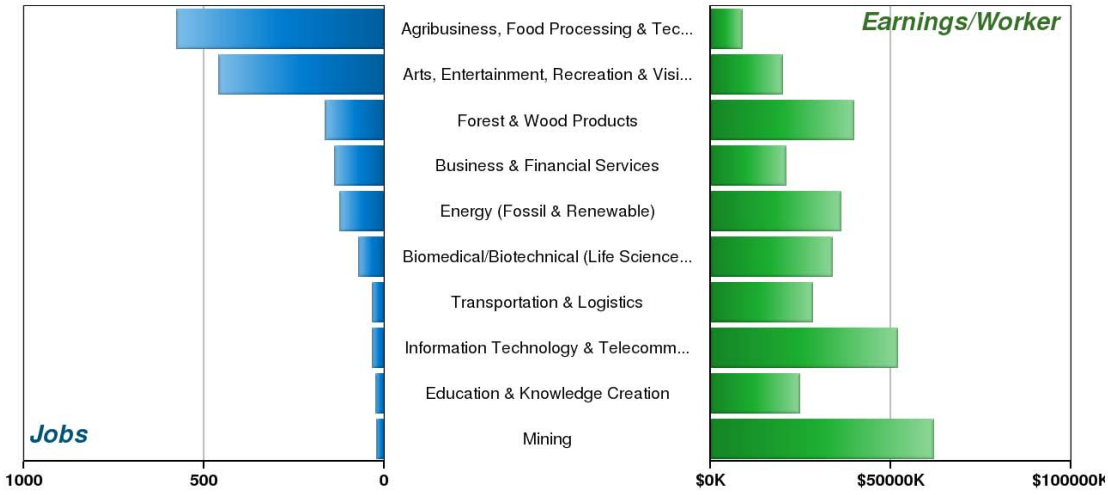
Figure 20: Job Growth in Top Industry Sectors Study Area 3 2002-2007



The construction and real estate sectors exhibited strong growth between 2002 and 2007. This growth was concentrated in residential remodeling, construction finishing (such as drywall installation and electrical installation) and residential real estate. An active housing market drove this growth in recent history. The slowdown in the housing market may affect projected future growth.

A cluster analysis of Study Area 3 shows that jobs are highly concentrated in the agribusiness, food processing, and technology cluster and the arts, entertainment, recreation, and visitor cluster (Figure 21). As noted above, the job numbers in the agribusiness cluster are likely to be higher than in actuality, due to data discrepancies with job reporting in the agriculture sector in some rural areas. While these two industry clusters are the highest ranked for employment numbers, they are the two lowest ranked clusters for earnings per worker.

Figure 21: Jobs and Earnings per Worker for Top Industry Clusters, Study Area 3 2007



Study Area 3 shares many similarities to Study Area 2, in that it is a historically resource based economy, and historically characterized by rural and small town populations. The major difference, and it is an obvious one, is the presence of the Adirondack Park. The presence of the Park affects both the economy and demographics of the localities within Study Area 3. The Adirondack Park is intended to be used primarily for conservation and recreation purposes. Heavy industry is restricted, and land-use planning, zoning and permitting is used to protect open space. While the area has the physical resources for forestry and mining, much of this activity is limited, and the resulting economy is based primarily on tourism.

From a demographic perspective, this means that the area attracts recreational users, part-time and seasonal residents, and has a lower proportion of working age adults and young families. The Park is often characterized as a region experiencing gentrification, as more affluent populations locate there to utilize the park for its recreational purposes, and the less affluent

working age population moves out to areas with more affordable housing or leaves the area all together to find better employment opportunities.

Long-term plans for the Watershed in Study Area 3 should be consistent with the legislative documents used by the Adirondack Park Agency:

- The Adirondack Park Agency Act
- The New York State Freshwater Wetlands Act and
- The New York State Wild, Scenic, and Recreational Rivers System Act.

Watershed planning should also take into account the needs of the permanent residents of the area, and the long history of many of the communities there.

TAX PARCEL DATA ANALYSIS

Tax parcel data for the three Black River Watershed study areas were analyzed to gain an understanding of the significant land uses that comprise the Watershed economies and the value of land by use in each of the study areas. The tax parcel data analyzed here are 2007 data provided by the various county offices of real property services within the study areas.

While the State of New York regulates how tax parcel information is collected and provides a uniform method of recording information, individual municipalities are ultimately responsible for maintaining the assessment roles. Therefore, the quality of information varies from location to location. It is important to be aware of the following considerations when reviewing the tax parcel data analysis:

- Due to local assessment methods 579 parcels in Watertown (Study Area 1) totaling 217 acres did not have an assessed value assigned to them. The vast majority of these parcels appear to be vacant land or land with an accessory structure adjacent to other parcels of varying uses. While this is not likely a significant data problem (there were nearly 26,000 tax parcels in Study Area 1), there is really no way to determine the impact it has on the analysis.

- In all three study areas, there were many parcels that did not have any acreage assigned to them. In these cases, GIS data on the square footage of parcels were converted to acreage to facilitate data analysis. For this reason, the acreage data presented here is approximate, not exact.

- Each municipality assesses property differently. For example, one town may assess at 100% of market value, while another may assess at only 60% of market value. In order to facilitate the comparison of land values by use throughout the three study areas, Camoin Associates converted assessed values provided in the data sets to market values by applying the state equalization rate for each municipality to the assessed values.

- Some non-taxable properties have dubious assessed values assigned to them. This is particularly true in the case of parcels in the "Community Services" land use category. Certain inter-municipal tax distribution formulas take into consideration non-taxable land values, so municipalities have an incentive to "over assess" those properties. Since the owners are exempt from taxation, the over-assessment is not typically challenged. This should be remembered in particular while reviewing the analysis for Study Area 1, which contains a much more significant amount of land in the community service category than the other two study areas.

- There may also be other inconsistencies in the data that are not identified in this list.

The following is a list of the nine general property classes that make up the State of New York's Property Type Classification and Ownership Codes. Within each of these general classes, there

are numerous detailed sub-categories. In each of the three study areas, we first analyzed the breakdown of land use and land values by general property classes. The most significant general land use categories in each study area were then broken down into the detailed sub-categories for further analysis.

Agricultural Land
Property classification codes: 100-199
Definition: Property used for the production of crops or livestock.

Residential Land
Property classification codes: 200-299
Definition: Property used for human habitation. Living accommodations such as hotels, motels, and apartments are in the "Commercial" category (400).

Vacant Land
Property classification codes: 300-399
Definition: Property that is not in use, is in temporary use, or lacks permanent improvement.

Commercial
Property classification codes: 400-499
Definition: Property used for the sale of goods and/or services.

Recreation & Entertainment
Property classification codes: 500-599
Definition: Property used by groups for recreation, amusement, or entertainment. This category includes theaters, sports assemblies, racetracks, game farms, indoor sports facilities, golf courses, improved beaches, marinas and camping facilities.

Community Services
Property classification codes: 600-699
Definition: Property used for the well being of the community. This category includes libraries, schools, hospitals, government, parking lots, police and fire facilities, certain recreational facilities (nature trails, bike paths), roads, highways and cemeteries.

Industrial
Property classification codes: 700-799
Definition: Property used for the production and fabrication of durable and nondurable man-made goods.

Public Services
Property classification codes: 800-899
Definition: Property used to provide services to the general public. This category includes property used for the distribution, storage and/or other of the following: water, communication infrastructure, motor vehicle facilities (e.g., bus terminals, truck terminals), railroad, bridges, pipelines, waste disposal, electric and gas.

Public Parks, Wild and Forested
Property classification codes: 900-999
Definition: Property classified as wild, forested, or set aside as conservation lands and public parks. This includes reforested lands, wildlife preserves, and private hunting and fishing clubs.

Overview

Table 5 below shows the breakdown of land uses in all three Watershed study areas combined. From this perspective, the largest land use in terms of acreage is Wild, Forested, Conservation Lands & Public Parks, which accounts for approximately 55% of all acreage. The second largest land use is agricultural, followed closely by residential.

In terms of land value, commercial property ranks highest in market value per acre. The Waterfront land use classification, which is no longer being used by the state but which has not yet been phased out in some of the assessing units under study here, gives the next highest market value per acre. This is assumed to be waterfront residential property, but the data do not provide the level of detail needed to confirm that. The two largest land uses (Wild, Forested, Conservation Land & Public Parks and Agriculture) exhibit the lowest market value per acre of all the land uses in the Watershed.

Table 5: Land Use & Market Values – All Study Areas

All Areas - Land Use & Market Values (MV)						
Property Class	# Parcels	Total Acres	% of Total Acres	Total MV	% of Total MV	MV per Acre
Agricultural	2,480	230,224	14.05%	187,372,301	2.43%	$814
Residential	35,990	223,565	13.65%	4,256,068,416	55.12%	$19,037
Vacant Land	14,157	136,711	8.35%	316,784,568	4.10%	$2,317
Commercial	2,502	7,680	0.47%	867,591,629	11.24%	$112,962
Recreation & Entertainment	197	10,271	0.63%	70,384,831	0.91%	$6,853
Community Services	815	111,303	6.79%	744,736,110	9.65%	$6,691
Industrial	201	5,984	0.37%	112,386,709	1.46%	$18,781
Public Services	581	19,100	1.17%	588,223,875	7.62%	$30,797
Wild, Forested, Conservation Lands & Public Parks	4,813	893,191	54.53%	572,256,943	7.41%	$641
Waterfront	70	68	0.00%	5,615,200	0.07%	$82,590
Total	61,806	1,638,098	100.00%	7,721,420,581	100.00%	$4,714

Note: The Waterfront land use classification was supposed to have been phased out a few years ago. Only one jurisdiction in Study Area 3 still has parcels under this classification, but there are only a few of them and they represent a small portion of land. They are most likely residential parcels on waterfront, although there is no way to confirm that within the context of this study.

Next, we examine each of the three study areas individually to understand the land use base within each and how they each compare to one another. This analysis augments the demographic and employment data analyzed in previous sections of this report.

Study Area 1

Table 6 shows the breakdown of land uses by general property class in Study Area 1, which includes the City of Watertown and Fort Drum. The largest general property class (30.5% of acreage within the study area) is "Community Services," which includes military facilities. The vast majority of this acreage is Fort Drum.

The second largest land use in terms of acreage is agricultural, but it has the lowest market value per acre of all the general property classes in this study area. Residential land is the third largest use acreage-wise and it has a relatively high market value per acre. Commercial land shows the highest market value per acre, but it comprises only 1.5% of total acreage in the study area.

Table 6: Land Use and Market Value Study Area 1

Study Area 1 - Land Use & Market Values (MV)						
Property Class	# Parcels	Total Acres	% of Acres	Total MV	% of Total MV	MV per Acre
Agricultural	820	83,320	23.69%	$65,464,116	1.95%	$786
Residential	16,448	72,307	20.56%	$1,662,208,648	49.50%	$22,988
Vacant Land	4,677	45,446	12.92%	$85,787,915	2.55%	$1,888
Commercial	1,578	5,220	1.48%	$659,780,762	19.65%	$126,391
Recreation & Entertainment	79	1,442	0.41%	$27,826,342	0.83%	$19,294
Community Services	356	107,308	30.51%	$555,849,367	16.55%	$5,180
Industrial	112	3,026	0.86%	$59,341,994	1.77%	$19,613
Public Services	261	5,711	1.62%	$217,646,154	6.48%	$38,108
Wild, Forested, Conservation Lands & Public Parks	263	27,893	7.93%	$23,834,682	0.71%	$854
Total	24,594	351,674	100.00%	$3,357,739,981	100.00%	N/A

Table 7 shows the breakdown of the largest land use in Study Area 1, which is Community Services. As shown in the table, the sub-category for Armed Forces contains almost 98% of the acreage in this category, which is attributable to Fort Drum.

Table 7: Community Services Uses Study Area 1

Study Area 1 - Community Services Uses						
Specific Use	# Parcels	Acres	% of Acres	Market Value	% of MV	MV per Acre
Unspecified Community Services Use	1	0.1	0.00%	$5,600	0.00%	$38,322
Libraries	6	20.3	0.02%	$6,901,080	1.24%	$340,606
Schools	25	447.1	0.42%	$139,593,782	25.11%	$312,243
Colleges and Universities	1	55.5	0.05%	$12,113,000	2.18%	$218,174
Special Schools and Institutions	7	30.9	0.03%	$5,055,209	0.91%	$163,440
Other Educational Facilities	1	10.5	0.01%	$473,800	0.09%	$45,124
Religious	92	224.9	0.21%	$52,956,089	9.53%	$235,485
Benevolent and Moral Associations	4	1.1	0.00%	$426,814	0.08%	$404,733
Homes for the Aged	3	40.0	0.04%	$4,830,714	0.87%	$120,677
Health	1	5.6	0.01%	$9,000,000	1.62%	$1,612,903
Hospitals	2	11.1	0.01%	$32,849,357	5.91%	$2,964,743
All Other Health Facilities	4	70.0	0.07%	$23,506,381	4.23%	$335,901
Government	1	9.7	0.01%	$980,000	0.18%	$100,719
Highway Garage	17	166.0	0.15%	$17,749,015	3.19%	$106,928
Office Building	11	48.9	0.05%	$53,705,651	9.66%	$1,098,275
Parking Lots	15	12.8	0.01%	$3,430,500	0.62%	$267,590
Armed Forces*	25	105,140.7	97.98%	$53,438,648	9.61%	$508
Police and Fire	29	67.6	0.06%	$27,431,704	4.94%	$405,751
Correctional Facility	4	116.4	0.11%	$104,374,800	18.78%	$896,768
Cultural Facilities (Museums, art galleries, etc.)	5	9.1	0.01%	$1,172,229	0.21%	$128,946
Recreational Facilities (trails, etc.)	6	59.8	0.06%	$427,670	0.08%	$7,147
Professional Associations	1	0.5	0.00%	$313,178	0.06%	$663,112
Roads, Streets, Highways and Parkways	22	22.5	0.02%	$1,144,180	0.21%	$50,774
Animal Welfare Shelters	1	10.1	0.01%	$403,876	0.07%	$40,027
Cemeteries	72	727.3	0.68%	$3,566,089	0.64%	$4,903
Total	356	107,308.5	100.00%	$555,849,367	100.00%	N/A

**Market Value for this use category may be undercounted because values for many of these parcels were not included in the assessors data.*

Next, we explore the various agricultural uses in Study Area 1. As shown in Table 8, over 42% of agricultural acreage in the study area is devoted to dairy production and another 27% is used in the production of field crops. The market value per acre of land in dairy production ($1,070) is significantly higher than that of land used for field crops ($569). The agricultural lands with the highest market values per acre appear to be used for specialty crop production, including honey and beeswax and production of animals for fur.

Table 8: Agricultural Uses Study Area 1

Study Area 1 - Agricultural Uses						
Specific Use	# Parcels	Acres	% of Acres	Market Value	% of MV	MV per Acre
Unspecified Agricultural Use	6	63.4	0.08%	$66,899	0.10%	$1,055
Agricultural Vacant Land	275	19,697.2	23.64%	$7,840,864	11.98%	$398
Livestock and Products - General	3	498.2	0.60%	$188,892	0.29%	$379
Dairy Products: milk, butter and cheese	218	35,675.2	42.82%	$38,182,458	58.33%	$1,070
Cattle, Calves, Hogs	26	3,519.9	4.22%	$3,145,669	4.81%	$894
Sheep and Wool	1	46.2	0.06%	$97,674	0.15%	$2,116
Honey and Beeswax	4	16.8	0.02%	$213,034	0.33%	$12,681
Other Livestock: donkeys, goats	14	1,083.3	1.30%	$1,168,714	1.79%	$1,079
Horse Farms	12	541.6	0.65%	$1,871,888	2.86%	$3,456
Field Crops	260	22,173.1	26.61%	$12,618,624	19.28%	$569
Fur Products: mink, chinchilla, etc.	1	5.0	0.01%	$69,400	0.11%	$13,880
Total	820	83,319.8	100.00%	$65,464,116	100.00%	N/A

Table 9 below shows a breakdown of residential land use. While the largest number of residential parcels is under the category of One Family Year-Round Residences, most of the residential acreage in Study Area 1 falls under the category Rural Residence with Acreage, followed by One Family Year-Round Residences. There is a wide range of values of residential land by sub-category, with the highest market value per acre in One Family Year-Round Residences with an Accessory Apartment. However, there are only three parcels in that category. Property in the Two and Three Family Year-Round Residences categories have much higher market values per acre than single-family homes. The percentage of acreage for seasonal and recreational residential use is consistent with the number of seasonal and recreation homes reported in the U.S. census data and referenced under the *Seasonal Use* heading in the section of this report dedicated to analysis of demographic data.

Table 9: Residential Uses Study Area 1

Study Area 1 - Residential Uses						
Specific Use	# Parcels	Acres	% of Acres	Market Value	% of MV	MV per Acre
Unspecified Residential Use	4	18.0	0.02%	$28,801	0.00%	$1,601
One Family Year-Round Residence	12,431	22,852.1	31.60%	$1,318,922,348	79.35%	$57,716
One Family Year-Round Residence w/ Apt	3	1.5	0.00%	$504,100	0.03%	$338,322
Two Family Year-Round Residence	1,437	894.4	1.24%	$115,002,286	6.92%	$128,587
Three Family Year-Round Residence	234	94.3	0.13%	$21,182,238	1.27%	$224,701
Rural Residence with Acreage	680	35,118.7	48.57%	$91,726,253	5.52%	$2,612
With Agricultural Production	27	2,506.5	3.47%	$2,586,658	0.16%	$1,032
Recreational Use	2	71.6	0.10%	$255,312	0.02%	$3,566
Estate	2	151.8	0.21%	$585,000	0.04%	$3,855
Seasonal Residences	409	2,116.3	2.93%	$32,005,059	1.93%	$15,123
Mobile Homes	974	4,970.1	6.87%	$45,680,466	2.75%	$9,191
Multiple Mobile Homes	51	845.0	1.17%	$3,078,750	0.19%	$3,644
Residential - Multi-Purpose / Multi-Structure	172	2,291.1	3.17%	$27,279,352	1.64%	$11,907
Multiple Residences	5	5.3	0.01%	$481,075	0.03%	$91,015
Residence w Incidental Comm Use	17	370.9	0.51%	$2,890,950	0.17%	$7,795
Total	16,448	72,307.4	100.00%	$1,662,208,648	100.00%	N/A

One puzzling finding is that homes in the Estate sub-category, which is defined as "A residential property of not less than five acres with a luxurious residence and auxiliary buildings," have a very low market value per acre, lower even than property containing mobile homes. There are only two parcels in this land use category, so this outcome could be due to the condition of those parcels or may be an inconsistency in the data. Also of note is that Seasonal Residences in Study Area 1 have a market value per acre of less than half that of seasonal homes in Study Area 3, as discussed further below.

Table 10 shows a detailed breakdown of commercial land uses. While commercial uses make up a relatively small percentage of total acreage in Study Area 1, this overall category has the highest market value per acre. The relatively high value of commercial land does not appear to be due to any one use in particular. The commercial sub-category with the most acreage is Mobile Home Parks, which exhibits one of the lowest market value per acre figures of all sub-categories. Even though Mobile Home Parks constitutes over 17% of commercial land use in the study area, it is only 900 acres out of over 350,000 total acres in the study area. The sub-category with the second most acreage is Storage, Warehouse and Distribution Facilities, which also has a relatively low market value per acre. Many of the sub-categories that exhibit the highest market values per acre are retail-related, including Large Retail Outlets ($364,733); Restaurants ($302,899); and Area or Neighborhood Shopping Centers ($254,222).

Table 10: Commercial Uses Study Area 1

Study Area 1 - Commercial Uses						
Specific Use	# Parcels	Acres	% of Acres	Market Value	% of MV	MV per Acre
Apartments	315	599.6	11.49%	$179,564,642	27.22%	$299,473
Motel	20	71.6	1.37%	$12,893,455	1.95%	$180,146
Mobile Home Parks	33	909.9	17.43%	$19,515,312	2.96%	$21,448
Restaurants	34	53.3	1.02%	$16,146,308	2.45%	$302,899
Auto Dealers - Sales and Service	44	126.7	2.43%	$13,277,744	2.01%	$104,784
Auto Body, Tire Shops, Other Related Auto Sales	61	346.2	6.63%	$11,006,022	1.67%	$31,788
Parking Lot	56	92.0	1.76%	$2,763,442	0.42%	$30,038
Fuel Storage and Distribution Facilities	16	87.3	1.67%	$2,807,792	0.43%	$32,146
Trucking Terminals	14	84.6	1.62%	$5,168,228	0.78%	$61,107
Other Storage, Warehouse and Distribution Facilities	152	751.5	14.40%	$42,454,380	6.43%	$56,491
Area or Neighborhood Shopping Centers	12	50.4	0.96%	$12,804,111	1.94%	$254,222
Large Retail Outlets	12	110.7	2.12%	$40,364,961	6.12%	$364,733
Dealerships - Sales and Service (other than auto)	20	154.7	2.96%	$5,647,835	0.86%	$36,502
Office Building	95	370.0	7.09%	$55,221,595	8.37%	$149,261
Billboards	16	213.7	4.09%	$493,852	0.07%	$2,311
Multiple Use or Multipurpose	27	57.0	1.09%	$3,999,700	0.61%	$70,121
Converted Residence	90	189.8	3.64%	$12,954,346	1.96%	$68,244
One Story Small Structure Adapt for Several Uses	133	236.9	4.54%	$33,872,185	5.13%	$142,992
Minimart	29	59.2	1.13%	$12,377,506	1.88%	$208,959
Other Commercial Uses	399	655.0	12.55%	$176,447,344	26.74%	$269,397
Total	1,578	5,220.2	100.00%	$659,780,762	100.00%	N/A

Note: Only significant commercial uses (more than one parcel and more than 50 total acres) are displayed separately. All other commercial uses were combined into one line for ease of presentation.

Study Area 2

The two largest land uses in terms of acreage in Study Area 2 are Wild, Forested, Conservation Lands & Public Parks and Agricultural, as shown in Table 11. Together, these two general property types comprise nearly 75% of all land in the study area. Residential land is the third largest land use in acres and has a significantly higher market value per acre than the other two land uses.

Table 11: Land Use and Market Values Study Area 2

Study Area 2 - Land Use & Market Values (MV)						
Property Class	# Parcels	Total Acres	% of Total Acres	Total MV	% of Total MV	MV per Acre
Agricultural	1,646	144,899	18.39%	120,560,272	5.78%	$832
Residential	12,815	116,194	14.75%	988,052,600	47.39%	$8,503
Vacant Land	5,489	67,743	8.60%	70,147,120	3.36%	$1,035
Commercial	648	1,768	0.22%	97,762,829	4.69%	$55,287
Recreation & Entertainment	77	4,624	0.59%	19,858,296	0.95%	$4,295
Community Services	376	3,409	0.43%	156,685,310	7.51%	$45,960
Industrial	79	2,413	0.31%	49,753,591	2.39%	$20,623
Public Services	270	10,855	1.38%	361,952,561	17.36%	$33,345
Wild, Forested, Conservation Lands & Public Parks	2,664	436,082	55.34%	220,311,745	10.57%	$505
Total	24,064	787,987	100.00%	$2,085,084,324	100.00%	N/A

Table 12 provides a breakdown of the Wild, Forested, Conservation Lands & Public Parks property class in Study Area 2. As the table shows, the sub-category with the most acreage is Private Wild & Forest Land, Excluding Hunting & Fishing Clubs. The sub-category with the second most acreage is State Owned Forest Preserve Land in the Adirondack Park. Together, those two sub-categories make up about 75% of the land in this property class.

Almost all of the sub-categories shown in Table 11 exhibit relatively low market values per acre, with the exception of Black River Regulating District Land, City/Town/Village Public Parks and Recreation Areas and Other Wild or Conservation Lands. Because certain inter-municipal tax distribution formulas take into consideration non-taxable land values, municipalities have an incentive to "over assess" some tax-exempt properties. Land in these particular sub-categories is likely to be tax-exempt.

Table 12: Wild, Forested, Conservation Lands & Public Parks Study Area 2

Study Area 2 - Wild, Forested, Conservation Lands & Public Parks						
Specific Use	# Parcels	Acres	% of Acres	Market Value	% of MV	MV per Acre
Private Wild & Forest Land exc Private Hunting & Fishing Clubs	1,368	177,459	40.69%	71,052,691	32.25%	$400
Forest Land - Section 480 of RPTL	18	4,398	1.01%	1,554,375	0.71%	$353
Forest Land - Section 480-a of RPTL	4	263	0.06%	201,582	0.09%	$766
Private Hunting & Fishing Clubs	37	9,090	2.08%	2,964,080	1.35%	$326
State Owned Forest Lands	34	4,080	0.94%	2,471,565	1.12%	$606
State Owned Land (Forest Preserve) - Adirondack Park	646	149,660	34.32%	95,748,697	43.46%	$640
State Owned Land other than Forest Preserve	117	23,274	5.34%	13,133,910	5.96%	$564
Reforested Land and Other Related Conservation Purposes	8	491	0.11%	186,816	0.08%	$381
State Owned Reforested Land	320	55,682	12.77%	30,042,261	13.64%	$540
County Owned Reforested Land	80	7,461	1.71%	1,217,606	0.55%	$163
Black River Regulating District Land	2	10	0.00%	265,426	0.12%	$26,306
State Owned Public Parks, Recreation Areas	23	2,048	0.47%	772,140	0.35%	$377
City/Town/Village Public Parks and Recreation Areas	2	0	0.00%	10,300	0.00%	$32,043
Other Wild or Conservation Lands	1	1	0.00%	61,806	0.03%	$44,333
Land Under Water, Either Private or Government Owned	2	8	0.00%	800	0.00%	$100
Taxable State Owned Conservation Easements	2	2,156	0.49%	627,692	0.28%	$291
Total	2,664	436,082.3	100.00%	$220,311,745	100.00%	N/A

Agricultural land uses in Study Area 2 are analyzed at a more detailed level in Table 13. As in Study Area 1, the largest amount of agricultural acreage is dedicated to dairy production. However, in this case, the second largest amount of agricultural land is vacant productive land and the third largest is dedicated to production of field crops. The agricultural land with the highest market value per acre is horse farms. The second highest value per acre is land used for dairy production.

Table 13: Agricultural Uses Study Area 2

Study Area 2 - Agricultural Uses						
Specific Use	# Parcels	Acres	% of Acres	Market Value	% of MV	MV per Acre
Agriculture - General	28	1,363	0.94%	926,665	0.77%	$680
Agricultural Vacant Land (Productive)	743	43,454	29.99%	16,917,649	14.03%	$389
Livestock and Products	9	993	0.69%	1,067,330	0.89%	$1,075
Dairy Products: milk, butter and cheese	437	64,010	44.18%	81,481,878	67.59%	$1,273
Cattle, Calves, Hogs	51	5,771	3.98%	6,718,869	5.57%	$1,164
Other Livestock: donkeys, goats	3	208	0.14%	277,622	0.23%	$1,335
Horse Farms	9	420	0.29%	1,065,783	0.88%	$2,538
Field Crops	357	28,059	19.36%	11,702,300	9.71%	$417
Truck Crops - Not Mucklands	1	106	0.07%	54,200	0.04%	$512
Nursery and Greenhouse	3	147	0.10%	122,400	0.10%	$835
Specialty - Aquatic: oysterlands, fish, etc	1	36	0.02%	29,600	0.02%	$829
Specialty - Livestock: deer, moose, etc.	2	261	0.18%	174,875	0.15%	$670
Fish, Game and Wildlife Preserves	2	73	0.05%	21,100	0.02%	$290
Total	1,646	144,899	100.00%	$120,560,272	100.00%	N/A

Table 14 explores the breakdown in residential land use in Study Area 2. As in Study Area 1, the residential sub-category with the most acreage is Rural Residence with Acreage, followed by One Family Year-Round Residences. However, Study Area 2 has a significantly higher proportion of total residential acreage categorized as Seasonal Residences than Study Area 1. These properties exhibit a market value per acre that is much lower than year-round residential properties.

Table 14: Residential Uses Study Area 2

Study Area 2 - Residential Uses						
Specific Use	# Parcels	Acres	% Acres	Market Value	% of MV	MV per Acre
One Family Year-Round Residence	7,785	22,446	19.32%	642,720,148	65.05%	$28,635
Two Family Year-Round Residence	359	576	0.50%	23,672,887	2.40%	$41,127
Three Family Year-Round Residence	60	264	0.23%	3,789,138	0.38%	$14,334
Rural Residence with Acreage (10+ acres)	857	48,141	41.43%	90,700,339	9.18%	$1,884
With Agricultural Production	107	8,850	7.62%	14,259,018	1.44%	$1,611
Recreational	122	5,609	4.83%	18,416,218	1.86%	$3,284
Estate	5	247	0.21%	2,245,938	0.23%	$9,092
Seasonal Residence	1,909	17,652	15.19%	119,256,582	12.07%	$6,756
Mobile Homes	1,426	8,418	7.25%	51,099,337	5.17%	$6,070
Multiple Mobile Homes	60	1,096	0.94%	2,588,108	0.26%	$2,361
Residential - Multi-Purpose/Multi-Structure	104	2,681	2.31%	15,106,706	1.53%	$5,635
Multiple Residence	10	111	0.10%	2,790,309	0.28%	$25,176
Residence with Incidental Comm. Use	11	104	0.09%	1,407,872	0.14%	$13,601
Total	12,815	116,194	100.00%	$988,052,600	100.00%	N/A

Table 15 provides a breakdown of commercial land uses in Study Area 2. While not a very significant portion of land use in terms of acreage, commercial property exhibits the highest value per acre, warranting a closer look at its composition.

The table below shows commercial uses with at least 50 acres and more than one parcel. The largest subcategory of commercial property is Storage, Warehouse and Distribution, followed by Restaurants and then Converted Residences. Apartment buildings exhibit the highest commercial property value per acre by quite a large margin.

Table 15: Commercial Uses Study Area 2

Study Area 2 - Commercial Uses						
Specific Use	# Parcels	Acres	% of Acres	Market Value	% of MV	MV per Acre
Apartments	75	100.35	5.68%	$17,839,874	18.25%	$177,776
Mobile Home Parks	20	91.309	5.16%	$2,166,124	2.22%	$23,723
Camps, Cottages, Bungalows	5	127.2	7.19%	$4,521,623	4.63%	$35,547
Restaurants	24	218.17	12.34%	$3,229,383	3.30%	$14,802
Storage, Warehouse and Distribution Facilities	6	78.534	4.44%	$276,578	0.28%	$3,522
Lumber Yards, Sawmills	11	152.3	8.61%	$1,977,364	2.02%	$12,983
Other Storage, Warehouse and Distribution	47	237.58	13.44%	$5,080,947	5.20%	$21,386
Dealerships - Sales and Service (other than auto)	15	77.947	4.41%	$2,353,747	2.41%	$30,197
Converted Residence to Office Space	39	145.08	8.20%	$3,124,767	3.20%	$21,538
All Other Commercial Parcels	406	539.8	30.53%	$57,192,420	58.50%	$105,951
Total	648	1,768.3	100.00%	$97,762,829	100.00%	N/A

Note: Only significant commercial uses (more than one parcel and more than 50 total acres) are displayed separately. All other commercial uses were combined into one line for ease of presentation.

Study Area 3

Study Area 3 is far less developed than the other two study areas due to the presence of the Adirondack Park. Land use inside the Park is restricted and, as noted in the analysis of employment data above, this has a major impact on the economy and demographics of the localities within Study Area 3. Over 86% of land in Study Area 3 is classified as Wild, Forested, Conservation Lands & Public Parks and there is a lower proportion of agricultural and residential land use in this study area compared to the other two (Table 16).

Table 16: Land Use & Market Values Study Area 3

Study Area 3 - Land Use & Market Values (MV)						
Property Class	# Parcels	Total Acres	% of Total Acres	Total MV	% of Total MV	MV per Acre
Agricultural	14	2,005	0.40%	1,347,912	0.06%	$672
Residential	6,727	35,064	7.03%	1,605,807,167	70.47%	$45,797
Vacant Land	3,991	23,522	4.72%	160,849,533	7.06%	$6,838
Commercial	276	692	0.14%	110,048,038	4.83%	$159,040
Recreation & Entertainment	41	4,205	0.84%	22,700,193	1.00%	$5,398
Community Services	83	586	0.12%	32,201,434	1.41%	$54,986
Industrial	10	546	0.11%	3,291,124	0.14%	$6,030
Public Services	50	2,534	0.51%	8,625,159	0.38%	$3,404
Wild, Forested, Conservation Lands & Public Parks*	1,886	429,216	86.11%	328,110,516	14.40%	$764
Waterfront	70	68	0.01%	5,615,200	0.25%	$82,590
Total	13,148	498,437	100.00%	$2,278,596,277	100.00%	N/A

* The GIS data for this category was missing a value for a 39,000 acre piece of land, so the actual MV for this category is probably higher.

Table 17 below shows the breakdown of land classified as Wild, Forested, Conservation Lands & Public Parks. Over 50% of land in this category is state owned forest land in the State Owned Forest Lands and Adirondack Park, Taxable categories combined. The Adirondack Park, Taxable category contains land that is owned by the state but subject to taxation for all purposes according to Section 532-a of the Real Property Tax Law. Another 30% of the property in this category is comprised of Private Wild & Forest Lands. Similar to what we saw in Study Area 2, the sub-categories containing public parks and recreation areas exhibit a much higher value per acre than other sub-categories, probably because they are tax-exempt lands and so their values are artificially inflated.

Table 17: Wild, Forested, Conservation Lands & Public Parks Study Area 3

Study Area 3 - Wild, Forested, Conservation Lands & Public Parks						
Specific Use	# Parcels	Total Acres	% of Acres	Market Value	% of MV	MV per Acre
Unknown Parcel(s)		39,620	9.23%	Unknown		
Private Wild & Forest Lands exc Hunting & Fishing Clubs	772	127,093	29.61%	118,927,246	36.25%	$935.75
Forest Land - Section 480 of RPTL	1	25	0.01%	9,091	0.00%	$369.55
Forest Land - Section 480-a of RPTL	21	6,110	1.42%	6,810,540	2.08%	$1,114.70
Private Hunting & Fishing Clubs	62	3,106	0.72%	6,099,760	1.86%	$1,963.83
State Owned Forest Lands	603	142,362	33.17%	106,458,177	32.45%	$747.80
Adirondack Park, Taxable	409	89,557	20.87%	78,551,564	23.94%	$877.11
State Owned Land other than Forest Preserve	3	418	0.10%	306,304	0.09%	$732.70
County-Owned Reforested Land	5	774	0.18%	453,276	0.14%	$585.26
State-Owned Public Parks, Recreation Areas	2	2	0.00%	135,458	0.04%	$57,641.70
City/Town/Village Public Parks and Recreation Areas	4	29	0.01%	1,318,145	0.40%	$45,928.40
Wetlands, Subject to Use Restrictions	1	2,204	0.51%	613,636	0.19%	$278.38
Land Under Water (non-residential)	1	129	0.03%	25,000	0.01%	$194.25
Other State Taxable Land Assessments - Adirondack Park	2	17,787	4.14%	8,402,319	2.56%	$472.38
Total	1,886	429,216	100.00%	$328,110,516	100.00%	N/A

The breakdown of residential property in Study Area 3 is shown below in Table 18. A marked difference in this study area is that the sub-category with the most acreage is Seasonal Residences, and these properties also exhibit a higher value per acre than Seasonal Residences in the other two study areas. In general, most residential property types in Study Area 3 exhibit higher values per acre than in the other study areas.

Table 18: Residential Land Use Study Area 3

Study Area 3 - Residential Land Use						
Specific Use	# Parcels	Total Acres	% of Acres	Market Value	% of MV	MV per Acre
Unspecified Residential Use	1	0	0.00%	$25,938	0.00%	$78,600
One Family Year-Round Residence	3,196	6,176	17.61%	$889,402,757	55.39%	$144,012
Two Family Year-Round Residence	47	42	0.12%	$12,621,417	0.79%	$301,142
Three Family Year-Round Residence	6	167	0.48%	$672,002	0.04%	$4,027
Rural Residence w/ Acreage	187	6,839	19.50%	$25,778,898	1.61%	$3,769
With Agricultural Production	2	52	0.15%	$343,466	0.02%	$6,631
Recreational Use	113	5,624	16.04%	$17,416,189	1.08%	$3,097
Estate	4	41	0.12%	$4,483,012	0.28%	$110,419
Seasonal Residences	2,497	13,100	37.36%	$443,675,473	27.63%	$33,867
Mobile Home	366	1,601	4.57%	$17,680,991	1.10%	$11,044
Multiple Mobile Homes on One Parcel	10	31	0.09%	$550,794	0.03%	$17,866
Residential - Multi-purpose / Multi-structure	16	144	0.41%	$3,855,419	0.24%	$26,794
Multiple Residences on One Parcel	252	978	2.79%	$182,407,301	11.36%	$186,495
Residence with Incidental Commercial Use	30	269	0.77%	$6,893,511	0.43%	$25,599
Total	6,727	35,063.8	100.00%	$1,605,807,167	100.00%	N/A

As for commercial land uses in Study Area 3 (shown in Table 19), the sub-category with the most acreage is Mobile Home Parks, followed by Camps, Cottages, Bungalows. The individual sub-categories with the highest market values per acre are Camps, Cottages, Bungalows and Restaurants.

Table 19: Commercial Uses Study Area 3

Study Area 3 - Commercial Uses						
Specific Use	# Parcels	Acres	% of Acres	Market Value	% of MV	MV per Acre
Mobile Home Parks	8	142.92	20.65%	$7,337,706	6.67%	$51,341
Camps, Cottages, Bungalows (for rental)	32	101.68	14.69%	$21,417,396	19.46%	$210,645
Restaurants	27	68.211	9.86%	$9,222,708	8.38%	$135,208
Storage, Warehouse and Distribution Facilities	2	52.394	7.57%	$504,160	0.46%	$9,622
One Story Small Structure Adaptable for Several Uses	36	69.571	10.05%	$5,954,266	5.41%	$85,585
Other Commercial Uses	171	257.18	37.17%	$65,611,802	59.62%	$255,120
Total	276	692	100.00%	$110,048,038	100.00%	N/A

Note: Only significant commercial uses (more than one parcel and more than 50 total acres) are displayed separately. All other commercial uses were combined into one line for ease of presentation.

SWOT ASSESSMENT

Another objective of this Socioeconomic Characterization and Assessment is to highlight strengths, weaknesses, opportunities and threats from a socio-economic perspective that should be considered in the context of the Black River Watershed Management Plan. Based on the data analysis presented above and summaries of focus groups conducted by Bergmann Associates with key stakeholders from the region, Camoin Associates developed the following priority SWOT assessments for each of the three study areas.

Study Area 1

Strengths	Weaknesses
▪ Fort Drum drives significant economic growth (construction, retail, services) ▪ Young families (military) are attracted to the area ▪ Role as regional health care center offers quality private sector job opportunities	▪ Rapid development has likely resulted in increased runoff and negatively impacted Black River water quality ▪ Lack of growth in higher paying private sector industries (i.e., manufacturing, finance & insurance, professional & technical services) ▪ Private sector growth concentrated in low-wage service sectors ▪ River is perceived as "dirty" and "unattractive" – limits recreation potential ▪ Lack of amenities, promotion and signage for recreational use of river
Opportunities	**Threats**
▪ Partnership with Fort Drum to explore opportunities for related private sector companies to locate in region (military contractors) and invest in infrastructure necessary to get them there ▪ Build tourism in area around rafting, other recreation on river	▪ Local economy heavily dependent on federal government plans ▪ Continued development impacting water quality for the Black River and its outflow into Lake Ontario.

Study Area 2

Strengths	Weaknesses
▪ Natural resource base supports agriculture, forestry and tourism ▪ Significant manufacturing base provides relatively high paying jobs for local residents ▪ Agriculture sector remains stable, especially dairy, and is diversifying in small niche markets and maple syrup	▪ Aging workforce ▪ Young people leaving the region ▪ Agriculture industry consolidation and need to increase productivity will increase risk for water quality contamination events ▪ Agriculture sector not able to offer living wage jobs for local residents ▪ Local workforce has much lower levels of post-secondary education than state and nation ▪ Rising property taxes puts pressure on large landowners to sell off parcels – takes land out of use for agriculture and forestry without any planning for how this affects those industries ▪ Lack of tourism infrastructure to expand this sector ▪ Lack of shovel-ready industrial park
Opportunities	**Threats**
▪ Build on growth in alternative energy sector ▪ Build manure digesters to assist local farms with waste management and reduce the risk of water quality deterioration ▪ Establish training programs tailored to needs of local manufacturers ▪ Establish outreach programs with local manufacturers, alternative energy producers and local agribusiness to educate young people about the more sophisticated job opportunities available in the region ▪ Create programs/facilities that increase local value added processing of local agricultural products (Maple processing facility being studied, shared commercial kitchen for small food processing businesses)	▪ Rising energy costs continue to make the region less competitive, especially for industries in its economic base (agriculture & forestry, manufacturing) ▪ CAFO regulations keep farmers from expanding to avoid more regulation ▪ Demand for wood products in general is decreasing ▪ DEC continues to make it slow/difficult to get stream crossing permits ▪ State acquires more private forest land, taking it out of production ▪ Tighter restrictions on immigrant labor could reduce workforce for agriculture

Study Area 3

Strengths	Weaknesses
▪ Adirondack Park location and natural features create tourism market ▪ Limited future development pressure will continue to eliminate concerns over water quality	▪ Lack of job opportunities outside tourism ▪ Rising housing costs due to growth in second home ownership ▪ Young families leaving region ▪ Lack of coordinated tourism promotion
Opportunities	**Threats**
▪ Growth in second homeowners represents an opportunity to recruit new entrepreneurs to the region ▪ Market exists for high-end tourism products (customized Adirondack adventure trips, upscale lodging/rentals)	▪ Adirondack Park Agency regulations ▪ Same threats listed under Study Area 2 regarding forestry

CONCLUSIONS

Historically, the Black River was the economic life blood of the entire watershed, providing energy for powering mills and fertile land and water for agricultural uses. As a result, the River spawned retail and other commercial uses that supported the residents that worked on local farms, in food processing plants, mills and manufacturing facilities. Its role over time, however, has been diminished as infrastructure development elsewhere (i.e. the expansion of Fort Drum), and the centralization of retail and health care services reduced the River's role in the watershed economy. For example, water, sewer, road and highway infrastructure now extends from the City of Watertown, allowing for greater residential and large retail development to occur in study area 1 of the watershed.

As industry statistics suggest, the increase in federal government employment in study area 1, with average wages and benefits over $75,000/yr., combined with the growing national trend of increased personnel consumption, has led to further commercial development within the most densely urbanized region of the watershed. While this development has contributed to greater water runoff and erosion issues for study area 1, the recent economic slowdown, resulting in limited credit availability and a decline in retail spending, is likely to slow or hinder further development in the foreseeable future. However, with government employment at Fort Drum driving the study area 1 economy over the past 8 years, future military personnel decisions by the new federal administration will determine the likelihood of sustained growth.

While government employment growth ignited increased demand for heath care and consumer products and services in the study area 1 economy, study area two's economic drivers continue to remain agriculture, more specifically dairy farming, and manufacturing. Unfortunately, agriculture wages have continued to remain low relative to most other industry sectors, even during a period of increased economic activity and rising commodity prices. One bright note for

study area 2 has been the stability of manufacturing employment and its relatively high average annual wages/benefits of $49,000. Should consumer spending and commodity prices continue to decline, a continuation of farm consolidation is likely to occur. In addition, the agriculture industry will continue to strive for greater efficiency by producing more product on fewer acres. While economic growth will remain slow, the effort to do more with less is likely to have even greater water quality implications in study area 2.

Study area three's primary economic drivers have included construction and tourism spending. Second home development occurring primarily around conservation areas (Adirondack Park) and resulting from the rapidly growing number of retirees contributed to economic expansion, albeit slow, in study area 3 since the early-1990's. The demand for seasonal homes, which now comprises 64% of all housing units in study area 3, produced a strong construction sector that has provided relatively well paying employment and business opportunities for this region's permanent residents. In fact, construction industry growth, combined with growing tourism spending, became the economic drivers that supported increased employment in accommodations, restaurant, retail, construction, and recreation industry sectors. Relative to study area 1 and 2, study area three's economic activity has been minimal over the past two decades. Furthermore, more stringent credit lending, dramatic reductions in retirement savings and a slowdown in tourism is likely to bring growth and development in study area 3 to halt by 2009. Changing demographics, combined with what is expected to be a long period of uncertain economic conditions, will likely reduce any water quality concerns that would have been anticipated to occur under normal study area 3 development scenarios.

In conclusion, future development pressure impacting water quality is most likely to be most relevant to study area 1, while the agriculture industry's effort to remain relevant in a period of slow economic growth, may threaten water quality as farms are forced to concentrate production. Finally, a lack of density, limited commercial activity and a significant decline in residential development will result in lower water quality risk than in prior years in study area 3.