

# **Do New Highways Attract Businesses? The North Country (NY) Case Study**

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### **Do New Highways Attract Businesses? The North Country (NY) Case Study**

A frequently heard argument regarding new highways, especially those to be located in rural regions, is that it will directly lead to new business attraction and expansion opportunities (i.e., expanding from a 2-lane road to a 4-lane expressway will be what is needed to jump start lagging economic regions). The industrial site location literature commonly sites transportation infrastructure and access to markets as key determinants of business location. Meanwhile, many prospective studies are undertaken (major investments studies, environmental impact statements, etc.) that include analyses to try to estimate the economic impacts of new highway investments. The problem is that most transportation-based analysis tools, e.g., travel network and user benefit models, are not designed to answer the question regarding the potential for a highway investment to lead to business attraction (which is inherently speculative). Rather, they focus on quantifying current and future traffic patterns and how they will be affected by a highway improvement. The North Country Transportation Study examined these traditional benefits, but perhaps more importantly, carefully studied the potential for business attraction to the region. This effort provides a substantial advance in the economic development analysis of transportation investments because of the thoroughness of sources and methodologies undertaken to understand and quantify this impact in the relatively rural and isolated region of northern New York. A combination of local interviews and surveys, state business attraction and retention trend analysis, and a specially designed business attraction model were used to transform a typically speculative concept into a tangible one.

#### **1. Introduction**

The most difficult aspect of analyzing the economic development impacts of a highway investment is trying to assess the potential for business attraction. Few models have been developed for this purpose as the analysis is inherently speculative by nature. A fairly common practice of estimating the economic impacts of prospective transportation improvements is to use a travel model to determine user benefits (travel time savings, operating costs, etc.) which can then be translated into business cost savings. Business cost savings (allocated to industries and regions) form the core of many previous efforts to model economic impacts. However, this analytical procedure, while still an appropriate one especially in congested urban areas, often proves insufficient for analyses focused on more rural and less densely populated regions. A more appropriate line of analysis is to examine the extent to which a transportation investment will improve access to markets and encourage firms to change location decisions.

The economic impact analysis of North Country transportation improvements was one of the key components of the North Country Transportation Study (NCTS).<sup>1</sup> In particular, the NCTS was designed differently from traditional transportation analyses to add a focus on the economic opportunities that will be possible with improvements to transportation access for the region. In order to demonstrate this potential, the economic development impact analysis has two primary components. The first component concentrates on traditional techniques to measure the value to the regional economy of efficiency gains to travelers through user benefits (covered in the study's technical report). Given the lack of congestion and trips in the region, this impact alone is not very substantial. The second component focuses on the potential for a lagging economic region to gain increased economic development opportunities due to transportation access improvements. It emphasizes a thorough analysis of how an expanded

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<sup>1</sup> This federally funded study was administered by the Development Authority of the North Country. The lead project consultant was Wilbur Smith Associates, and Cambridge Systematics, Inc. led the economic analysis. The authors received substantial help from Branner Stewart and Chris Wornum of Cambridge Systematics

highway could spur business attraction and industrial recruitment for the North Country and is the topic of the remainder of this paper.

The North Country of New York is a fairly isolated region bound by the St. Lawrence Seaway to the north, the Adirondack Park to the south and Interstate 81 on the west and I-87 on the east. The study area consisted of five counties – Clinton, Franklin, Jefferson, Lewis, and St. Lawrence – three of which have no easy access to 4-lane highways. The economic impact analysis assessed three potential highway alignments in the North Country (two of them east-west, one north-south) at expressway and freeway speeds (See **Exhibit 1**). In addition, other modal impacts were considered to the extent that highway improvements led to increased accessibility to airports, intermodal yards, and seaports.<sup>2</sup> Though there are some highway safety and village by-pass issues, the primary transportation issue is that the region is quite inaccessible to key markets such as Syracuse, Albany, and Ottawa, due to a lack of 4-lane highways. This study demonstrates that through a combination of local interviews and surveys, state business attraction and retention trend analysis, and a specially designed business attraction model, a typically speculative concept can be translated into a tangible one.

There are examples of regions that are fairly isolated based on geographic location and transportation infrastructure that still enjoy economic prosperity, such as the Outer Banks in North Carolina or some villages and towns in the mountains of Georgia. In addition, it is never the case that transportation improvements alone are the solution to economic woes since labor force, utilities, land use planning and other factors also need to be healthy for economic development success. However, this is a case where transportation improvements can play a significant role as a facilitator, enabler and accelerator of economic development opportunities.

The next section provides background on the North Country economy and how its performance lags the state and nation, and has suffered through multiple layoffs and plant closings in recent years. Section 3 focuses on the estimation of business attraction impacts to the region due to highway investments. The analysis includes an industrial profile of the region, the state's industrial recruitment environment relevant to the North Country, results from private-sector interviews of local firms, and a quantification of likely benefits from a business attraction model focused on competitive cost factors and changes in market accessibility. It concludes with some notes about the strengths and limitations of the analysis.

## **2. Background: North Country Economy in Decline**

The North Country lacks the economic vitality of the State of New York, the United States, and neighboring Canadian regions just to the north. While other areas enjoyed a period of unprecedented economic expansion during the 1990s, the North Country was largely left behind with little, or no growth. The relative stagnation of the region is captured by a number of key economic indicators, including declines in employment, persistently high unemployment rates, lagging income growth, and continued layoffs in key industries. The economic conditions

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<sup>2</sup> The NCTS also demonstrated the importance of improving air transportation for the region. This is particularly true for the emerging high-tech sector and universities. The comprehensive transportation development plan calls for two regional airports, at the western and eastern edges of the study area.

of the region profiled in this section lay the groundwork for the business attraction analysis that follows.

**Employment growth.** Neither the State of New York nor the North Country matched the nation's performance in employment growth during the 1990s (see **Exhibit 2**). However, the State of New York did manage to show a dynamic rebound from the early 1990's recession and completely recovered from a large job loss posted early in the decade. By contrast, the North Country displayed evidence of a stalled economy, actually showing a slight decline in employment between 1997 and 2000.

**Per capita income** levels are an indicator of the relative financial well-being of people in a region, and the North Country has very low per capita income. The North Country, as reflected in per capita income trends for the 1990 to 1999 period, remained well behind both the United States and New York (see **Exhibit 3**). In addition, per capita income grew more slowly in the North Country than in the U.S. and New York, so the gap is worsening.

The **unemployment rates** recorded in the North Country throughout the 1990s far exceeded those for the United States and State of New York (see **Exhibit 4**). The persistently high unemployment levels are largely due to a lack of year-round job opportunities for North Country residents.

**Job Losses.** Layoffs and closures have buffeted the North Country's employment base, resulting in significant job losses in recent years (see **Exhibit 5**). The North Country's traditional manufacturing industries such as paper mills and leather products have been particularly impacted by downsizing and closures during the past two years. In fact, paper industry officials actually estimate that recent closings and layoffs result in \$100 million in lost payroll and a loss of 1,340 jobs for the region.

### 3. Business Attraction Impacts

North Country highway improvements will not only benefit existing firms but also improve access to strategic markets and make the region more attractive as a place to do business. This attractiveness may result in the formation of new business in the study region, the relocation of outside business to the region, or the decision to expand activity at an existing local business rather than at a competing outside location. This direct impact is estimated only as a benefit for the North Country and is an additional impact to the local economy beyond traditional transportation efficiency benefits since rather than focusing on existing firms, it assesses the potential for highway improvements to lead to the attraction of new firms.

#### ***Industry Development Context***

The business attraction potential of a highway improvement must be understood in the context of the existing economic condition and performance of the study area's key industries. Detailed employment data were analyzed for the study area, the regional market in which the study area competes for most business locations (defined as the rest of New York; Vermont and New Hampshire; and Ontario and Quebec), and the rest of the United States. The key findings of this analysis are as follows:

- **Business mix.** The North Country as a whole is particularly concentrated in industries related to farming, retail trade, and government services. None of these industries combine strong growth and high wages. In addition, there are clusters of aluminum manufacturing (Massena) and higher education (Canton/Potsdam). The study area is underrepresented in industries such as wholesale trade; transportation and public utilities; finance, insurance, and real estate; and services.
- **Business growth trends.** The study area was outperformed by the United States in every major industry during the 1990s.<sup>3</sup> Almost all the private employment growth in the North Country was due to the services industry (as indicated by over 5,000 additional jobs); however, this industry still was out-performed at both the national and state levels. The largest private sector employment losses in the North Country occurred in the farming and manufacturing industries, both of which are non-growth industries at the national level. Farming employment, which declined at the national and state level, declined even more dramatically in the North Country. The construction, manufacturing, wholesale trade, and FIRE industries, while out-performed by the U.S., fared better in the North Country than in New York State.

### ***Supporting Industrial Recruitment Issues***

The analyses below regarding the North Country Economic Development Survey, Empire State Development, and information culled from industrial recruiters provide further support to the idea that the region lags in terms of industrial recruitment opportunities, that transportation access is one of the reasons, and that transportation improvements could have positive business attraction/expansion impacts to the region.

### **North Country Economic Development Survey**

As part of an effort to identify key economic development issues affecting business attraction and expansion decisions, all five study area county economic development organizations responded to a survey administered by Cambridge Systematics, Inc. in February 2001. The top issues identified in the survey concerning why companies chose not to expand or relocate in the North Country included the following:

- Transportation access/infrastructure
- Building availability (office, manufacturing space, etc.)
- Labor force (worker availability)

Other major concerns included poor telecommunications (access to Internet and broadband width), lack of natural gas, taxes, and utility costs. The lack of telecommunications infrastructure has hindered the expansion of data processing/high tech companies. The North Country's transportation system (highway, rail, and air were all cited by various respondents as deficient) has created difficulties in attracting manufacturing, warehouse, and distribution industries.

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<sup>3</sup> Analysis was from 1990 to 1998 using U.S. Bureau of Economic Analysis one-digit SIC code data.

According to one respondent, “Transportation, worker availability, and existing structures are the first three questions potential relocates want answered.” Another economic development organization added that it does not make the first review of site selectors owing to a location that is over 35 miles from the nearest freeway and lost a manufacturing prospect to a city that could offer proximity to a freeway. While transportation is not the only concern among economic development practitioners in the North Country, it is consistently cited as a key consideration among companies contemplating an expansion or relocation and has influenced companies to locate elsewhere.

### **Empire State Development, Expansions and New Locations Database**

Empire State Development (ESD) is New York’s primary state agency responsible for economic development and business site location activity. Their “Build Now NY” industrial recruitment program includes specific language about proximity to an interstate or limited access four-lane highway. The “project musts and wants” for manufacturing, light industrial, and warehouse/distribution site categories state that the site “must be within 20 miles, via truck route, of an Interstate or limited access, four-lane highway.” Clearly, this limits the North Country’s opportunities for industrial recruitment through ESD’s program.

In addition, ESD maintains a database of business expansions and new locations that is tabulated by region within the state of New York. The North Country is included as its own region and is comprised of Clinton, Essex, Franklin, Jefferson, Lewis, and St. Lawrence County. The database includes figures for new jobs and capital investment associated with each expansion or new location project. For consistency with the rest of this study, job and investment figures for Essex County have been omitted. The ESD database affords an opportunity to compare the North Country with Upstate New York in terms of its relative success in attracting new locations and business expansions for the 1996-2000 period.<sup>4</sup> The comparisons are made using per capita new jobs and per capita investment resulting from new locations and expansions.

**New Locations.** When Clinton County is included, the North Country performed well compared to the rest of Upstate New York in terms of the number of new jobs per capita associated with new locations during the 1996-2000 periods. However, if Clinton County is removed from the tabulation, the remaining four North Country counties fare poorly.<sup>5</sup> In fact, if these four counties had the same rate of job creation (associated with new locations) as the rest of Upstate New York, the North Country would have added an additional 3,066 jobs from new locations during the 1996-2000 periods. These data underline the contention that the North Country did not participate in as robust an economic expansion during the 1990s as most parts of the United States, and that transportation access could be one of reasons.

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<sup>4</sup> The analysis of new locations and expansions is based on 161 activities in the North Country and 2,794 activities in the rest of Upstate New York. While substantial, this does not represent the universe of such activities that would have occurred during the 5-year period. The Empire State Development database should not be considered as either comprehensive or unconditionally accurate as it is dependent on media and field reports which have not been independently verified, but rather considered another piece of evidence supporting the contention that business attraction and expansion activity is currently limited in the North Country.

<sup>5</sup> Justification for excluding Clinton County from this analysis is based on: the comparatively strong economic conditions in the county relative to the other counties; I-87 runs north-south through the county; and local interviews in Clinton County suggested that transportation infrastructure was not inhibiting economic prospects for the county.

**Expansions.** With the exception of Clinton County, the ESD database also shows that the North Country had a deficit in new jobs associated with expansions of existing businesses during the 1996-2000 periods. If expanding companies in the North Country (excluding Clinton County) had added new jobs at the same pace as the rest of Upstate New York, the North Country would have grown by an additional 3,261 jobs. The deficits recorded by the North Country in new jobs tied to business expansions and new locations signal potential weaknesses in the region's ability to attract site locations and to cultivate the growth of its existing businesses.

### **Industrial Recruiters**

Private consultants working directly with firms looking to expand and relocate operations are constantly in contact with state and local industrial development authorities, trying to find the proper site location match for the firm they represent. A few consultants from a May, 2000 Site Selector Roundtable for Upstate New York were surveyed on their impressions of the North Country. Their thoughts included:

- Two-thirds of industrial projects require immediate highway access (1 to 2 miles), and of the remaining, most of those demand one hour access to an Interstate via a good two lane road. In other words, despite the digital age and new economy, transportation is still crucial for economic development.
- The biggest negative factor for the North Country is isolation from markets in the U.S. The isolation causes the time-to-market and production costs to increase. Transportation improvements that improve access would help mitigate this issue.

### ***Highway Impacts on Regional Attractiveness***

To quantify the business attraction impacts of highway improvements, a business attraction model developed by Economic Development Research Group and Cambridge Systematics, Inc. was employed. The foundation of this model was originally developed for a major highway corridor study in Indiana.<sup>6</sup> A revised version developed for the Appalachian Regional Commission was used in this study after being tailored to unique North Country conditions. The model incorporates multiple categories of data and assumptions to develop estimates of business attraction opportunities due to highway investments. Key components include:

- Comparative employment data for industry mix and industry trends;
- Competitive cost factors such as manufacturing labor wages and utility costs;
- Industry-specific highway, rail, air, water transportation usage; and
- Accessibility impacts to labor, customer, tourism, product delivery markets and intermodal facilities.

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<sup>6</sup> For a more complete review of the economic modeling of highway investments in Indiana see "Major Corridor Investment-Benefit Analysis System" by John Kaliski, Steve Smith and Glen Weisbrod, Transportation Research Board 79<sup>th</sup> Annual Meeting, January 2000.

### **Comparative Employment Data**

North Country industry employment data was compared to industry employment data for surrounding regions and the U.S. As mentioned in the business mix and business trends sections above, this was performed over the 1990s. For the business attraction model, two comparisons were made. First, an analysis of current industry mix in the North Country compared to surrounding regions of: 1) rest of New York; 2) Vermont and New Hampshire; and 3) Ontario and Quebec. North Country industry employment reflected recent layoffs, especially in the paper industry, as provided by the New York Department of Labor.

The second comparison was based on projected employment growth trends by industry for the North Country compared to the U.S. and Ontario/Quebec from 1998 to 2020. Forecast data from the Regional Economic Models, Inc. (REMI) model was used for industry forecast growth rates in the North Country and U.S. Canadian forecast detail was provided by Informetrica Ltd. and converted to the 2-digit REMI industries. Comparisons to the U.S. and Ontario/Quebec were weighted evenly reflecting the importance of economic activity of both areas to the North Country. The comparison is largely used to form a maximum allowable business attraction impact by comparing differences in projected growth rates in each region to assess the magnitude of deficiencies in the North Country.

### **Competitive Cost Factors**

In addition to comparing North Country employment trends to surrounding regions, the business attraction model also incorporates cost comparisons. The comparison regions are the same as those used with the employment data and are presented in **Exhibit 6**. While the North Country has lower manufacturing labor costs than the rest of New York, they are roughly equal to the Vermont/New Hampshire region, and greater than the Canadian labor costs. High electricity costs are an issue for almost all of New York and are more than double the cost in Ontario/Quebec. Tax burdens in the North Country are slightly lower than in the rest of the state, slightly higher than in Vermont/New Hampshire, and less than in Canada due to lower federal taxes.

### **Transportation Usage by Industry**

Estimates of transportation usage by industry are important to determine the magnitude of industry impacts from improved highways and improved accessibility to rail, air, and water transportation. Data from the Transportation Satellite Accounts<sup>7</sup> (converted to the REMI industries) was used in the model to gauge the relative importance of each shipping mode in the production cycle of each industry.

### **Accessibility Impacts**

While the above indicators for business attraction opportunities are the same for each highway improvement alternative, the accessibility impacts vary greatly. Accessibility impacts were primarily determined by the traffic network model developed for this study. The methodology was to pick different points within the North Country to measure how much additional

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<sup>7</sup> Transportation Satellite Accounts data are jointly produced by the U.S. Bureau of Transportation Statistics and the U.S. Bureau of Economic Analysis.

employment and population was now accessible for certain length drives. For example, customer and labor market accessibility increases were estimated based on 1-hour drive times. Tourism market expansions were calculated based on 2 hour trips and product delivery accessibility impacts used a 3-hour one-way reach to businesses.<sup>8</sup> These thresholds will inevitably vary by industry and firm but are reasonable measures of accessibility to labor, buyer, and supplier markets. To be conservative, the additional benefit of pure proximity to a 4-lane highway (a common industrial recruitment criteria) was not included in the analysis.

Several locations within the North Country were used to produce accessibility impact estimates that are representative of the entire region. First, the geographic center of population in the North Country was found (south of Canton in St. Lawrence County) and used as an accessibility point. Since it denotes the average population location in the five-county region, it is the most representative single location to measure accessibility impacts. In addition, accessibility impacts were estimated for each highway alignment from three additional points: Massena, Canton/Potsdam, and East Fort Drum. Each of these three locations represent major economic trip generators in the region and each are located close to one of the three alignments. The final accessibility impacts used in the analysis averaged the economic trip generator estimates with the geographic center of population (see **Exhibit 7**).

The highway projects would enhance the attractiveness of business locations in the study area in several different ways, including the following:

- **Connections to outside areas.** Highway improvements in the North Country would significantly enhance travel within and through the area. It would provide improved connections from points throughout the study area to various cities and other trip attractions. Cities that become more accessible include Syracuse, Albany, Utica, and Ottawa.
- **Extension of labor market and shopping areas.** The potential North Country highway improvements would extend the effective labor and shopping market for businesses locating in the region. A rough definition of a labor or shopping market area is a 1-hour travel time between origin and destination. Using this rule-of-thumb, the reduction in travel times expected as a result of highway improvements would extend the labor market by 1 to 3 percent for the Rt. 37 and Rt. 12 alignments but by over 8 to 14 percent for the Rt. 11 alignment depending on expressway or freeway construction. The increase is most significant for Rt. 11 since much of the region's population is close to the current Rt. 11 (including Watertown, Gouverneur, Canton, Potsdam, and Malone). The expanded labor market would help attract labor-intensive businesses to these locations, overcoming some of the concerns re-locating firms have about labor availability. In addition, retail trade and eating/drinking establishment opportunities are expanded with increased customer markets.
- **Extension of delivery service areas.** An additional benefit of highway projects is the extension of the one-day delivery service area for truck trips moving into or out of the study area. A six hour round-trip assumption is used to capture the trips that can now safely be made in a single day. The change in the business to business market

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<sup>8</sup> "Handbook for Assessing Economic Opportunities from Appalachian Development Highways," Economic Development Research Group, March 2001.

accessibility is demonstrated by increased access to locations within New York state, such as Rochester and Albany, as well as locations in Vermont and Canada. The increase is greatest for Rt. 37 under expressway conditions for this accessibility measure (8 percent). However, there is a substantial increase in accessibility for Rt. 11 in moving from expressway to freeway conditions.

- **Expanded tourism catchment area.** Improved access to the North Country can result in increased tourism opportunities. Local interviews confirmed that transportation access (travel time) is a key detriment to tourist activity in the region, whether it is St. Lawrence Seaway, Adirondack Park, or snowmobile facilities. Increased tourism accessibility is experienced primarily by the Rt. 11 and Rt. 37 alignments that increase the east-west connectivity of the region.
- **Improved access to intermodal transportation facilities.** North Country highway improvements will also increase access to intermodal transportation facilities in the region. In particular, considerations were given to the alignments in terms of how the highway improvements would improve accessibility to potential airports at Fort Drum and the Plattsburgh Airbase Redevelopment Corporation (PARC), seaport activity along the St. Lawrence Seaway, and the rail center in Ogdensburg. Information collected through local interviews and expertise gained through multiple visits to the region led to the assumptions presented in Exhibit 7 above.
- **Increased pass-by traffic.** In addition to the accessibility impacts above, a major new highway will likely generate increased traffic along the chosen corridor. New pass-by traffic, much of which will likely be for trips originating or ending in Canada, will produce increased demand for eating and drinking establishments, gasoline stations, and other activity. A fairly conservative impact estimate of 5 percent was chosen for all alignments.

The results in Exhibit 7 clearly show that Route 11 provides the greatest benefits from a market accessibility standpoint. There are two reasons for this. First, the Route 11 alignment is host to the largest population and employment centers in the region, including Plattsburgh, Watertown, Canton, Potsdam, Malone, etc., as well as special traffic generators such as Fort Drum and PARC (the two proposed regional airports), and the universities. Second, the corridor provides the most direct connection (for the internal centers) to major markets (consumer, capital, labor, production inputs, etc.) outside the region. Therefore, any improvements to Route 11 (versus Route 37 and Route 12) results in substantially larger market expansion benefits. In other words, the combined effect of a larger constituency base and greater physical access results in larger market access benefits.

### ***Business Attraction Estimates***

The business attraction analysis identified industries that are dependent on highway access, and have the greatest potential for attraction to the study area based on the potential highway benefits. In general, these businesses depend on high volumes of truck shipments and timely delivery of supplies. In addition, many of the new jobs estimated are generated through expanded customer and labor markets (1 hour drive) and an increased tourism catchment area. Estimates of the potential for direct new jobs varies significantly by alignment and highway level of service as shown in **Exhibit 8**. In general, the Rt. 11 alignment generates the largest

estimate of business attraction jobs because it provides the greatest impact to market accessibility. Estimates for Rt. 37 and Rt. 12 are fairly similar. Impacts for freeway speeds are larger than expressway impacts because the only difference (by alignment) in the calculation is accessibility, which can only increase with higher speed assumptions. Some of the industries with substantial projected increases in employment opportunities due to highway improvements include:

- Primary metals;
- Electric equipment;
- Paper and Printing;
- Eating and drinking establishments;
- Retail trade;
- Business and professional services; and
- Medical care services.

The actual business attraction will depend on the extent to which the state and the region market the highway improvement and implement complementary economic development strategies. In particular, the potential to attract new manufacturing, high-tech, or distribution businesses to the region is also dependent upon the ability of the region to continue to improve its telecommunications infrastructure, provide reasonable utility resources, and locate appropriate building spaces.

In addition, these forecasts assume that, aside from the changes directly associated with the highway improvements, the study area will not experience significant changes in relative business costs, land use patterns, or availability of human, financial, and technological resources over the next 30 years. It is important to also keep in mind that these impacts represent opportunities for the region. Information collected in local interviews, surveys, and Empire State Development data help to verify that the impact potential exists, but given the risks inherent in these forecasts, the actual business attraction impact could vary by roughly 20 percent.

Moreover, it is important to note that these jobs will not necessarily be attracted immediately upon completion of North Country highway improvements. Based on studies of highway impacts in other states, it is assumed that the full business attraction impact will be phased in over a period of five to ten years once the improvement is completed.

Many of these additional jobs will represent jobs that otherwise would have been created in, or are relocated from, other states. This represents a net benefit to the North Country, although many of these gains would be eliminated if the project was viewed from a national perspective. It was assumed that new service sector jobs would be transfers from the rest of New York; Vermont, New Hampshire and Maine; Ohio, Pennsylvania, and West Virginia; the rest of the U.S.; and Canada. The shares are based on proximity to the region and size of economy. For manufacturing and export-based industry transfers, one-third of the transfer is expected to

come from Canadian firms seeking North Country sites for a U.S. operations base. This is consistent with the share of truck user benefits that were allocated to Canada. Transfers to other surrounding regions was also estimated based on origin-destination patterns for truck trips through the North Country. Finally, based on work by Nadiri on national level productivity growth from highway investments, it is assumed that 10 percent of the business attraction benefit to the North Country is also a benefit at the national level.<sup>9</sup> This is due to the fact that no business would rationally shift its location or expand elsewhere unless there was some additional productivity (and hence profitability) to be gained in doing so.

### ***Supporting Local Interview Findings***

Local interviews with individuals from key industries in the region, such as universities, aluminum companies, and paper mills help to verify and quantify the current detrimental impact of transportation access limitations and the potential for improved economic conditions given improved transportation facilities. A sample of the key findings from these interviews include:

- North Country colleges and universities are not at full student capacity and poor transportation access is one of the reasons. An additional 900 students in the region (the amount estimated by SUNY Potsdam, St. Lawrence University, Clarkson University, and SUNY Canton) would add roughly \$3 million in annual student expenditures, and allow the schools to hire more faculty which would have direct benefits in terms of more high-skilled jobs for the region and have multiplier spending impacts. In addition, transportation access improvements could reduce the excessive financial aid burden faced by the region's schools. For example, if St. Lawrence distributed financial aid at the same rate as competitor schools, it would save the school roughly \$4.5 million per year which could be used for increased investments to the campus and village of Canton.
- Estimates from the Cornell Cooperative Extension program imply production cost savings of \$2.2 million annually for dairy farmers in the North Country if a 4lane highway is constructed in the region.
- High trucking costs in the region due to "deadhead" trips (where a truck is empty for one leg of their trip) because of a deficiency of truck trips in the area are estimated to cost the aluminum companies in Massena approximately \$520,000 annually. Deadheading trips which raise trucking costs for North Country businesses would affect many other manufacturing firms as well. A steel manufacturer in the region estimates that they pay an additional \$750,000 per year in trucking because of poor highway access.
- An examination of New York State Department of Labor tourism-related employment and wage data confirms the view of tourist industry officials in the region that transportation access issues are limiting the success of their industry. If tourism-related employment and wages grew at the same rate in the North Country as they did in the rest of New York (excluding New York City) from 1992 to 1998, tourism activity

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<sup>9</sup> Ishaq Nadiri and Theofanis Mamuneas, "Contributions of Highway Capital to Output and Productivity Growth in the U.S. Economy and Industries," September 1998, FHWA Office of Policy Development.

would have increased by 400 more jobs and \$4.5 million more wages annually than it actually did.

It is difficult to directly translate the views and information shared by respondents in the North Country to the economic impacts expected due to improved transportation access in the region. In fact, some of the estimates provided above can be considered upper bounds on the possible impacts since they represent deficiencies (such as in the tourism example) and transportation improvements may not completely rectify the deficiency currently facing the region's businesses. However, the information does accomplish two things. First, primary data source collection lends credibility to the idea that there will be real economic development benefits to the North Country attached to transportation improvements. Second, the estimates above provide rough guidelines for the magnitudes of the business attraction analysis.

Because of uncertainty regarding the business attraction analysis, two sets of assumptions were generated, one with full business attraction impacts and the second with impacts at 50 percent of the total. The full impacts represent an upper bound on the potential for business attraction. It relies on the methodology inherent within the business attraction model, the accessibility impact estimates, economic development marketing in the region, and continued improvements in other areas of industrial recruitment. Because of these somewhat strong assumptions, the benefit-cost analysis that was performed for the study (included in the technical report) takes a more conservative approach by using 50 percent of the business attraction impacts.

**International Trade Considerations.** Given the proximity of the North Country to Canada (separated by the St. Lawrence Seaway) and its connectivity based on multiple border crossings, international trade and foreign investment are key considerations in any major transportation investment strategy for the region. The importance of international trade is highlighted in two ways in the current analysis.<sup>10</sup> First, significant efficiency benefits (cost savings) accrue to truck trips that either originate or end in Canada. Almost 34 percent of all truck trip efficiency benefits accrue to Canada (almost \$6 million in annual cost savings to Canada for the Rt. 11 freeway concept). In other words, a large component of truck trips in the North Country are related to international trade with Canada, and improvements to highway infrastructure in the region will make those trips more time and cost efficient.

Second, as was repeatedly found in the local interviewing process (on both the U.S. and Canadian sides), Canadian investment and business expansion in the North Country is a primary source of new business development for the region. Many Canadian firms prefer to have a U.S. presence for their operations, and improved transportation access in the North Country will increase the potential for this type of activity. Finally, future growth potential for the North Country is estimated from both U.S. and Canadian (Ontario and Quebec) industry growth trends.

**Alternatives to enhance economic development.** Many methods exist to try to enhance regional economic development beyond transportation investments. Examples include labor force training (often at community colleges and vocational schools), marketing, industrial attraction/retention tax incentives, technology/communications investments, small business

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<sup>10</sup> Improvements to border crossing facilities and processes are not explicitly examined in this portion of the study.

financing, etc. A study with regional economic development enhancement as one of its goals should consider the applicability of transportation investments compared to other methods. *The consistent finding throughout this study (supported by data, local interviews, surveys, etc.) is that improved transportation access/infrastructure is the most critical element to improve the economic competitiveness of the region.* While a new transportation facility alone will not guarantee economic success, it is a vital foundation to improve existing conditions. As mentioned earlier, the true economic success related to a highway investment depends on corresponding local economic development initiatives, but those initiatives, without significant transportation access improvements in the North Country, would likely be substantially less effective.

### 4. Conclusions

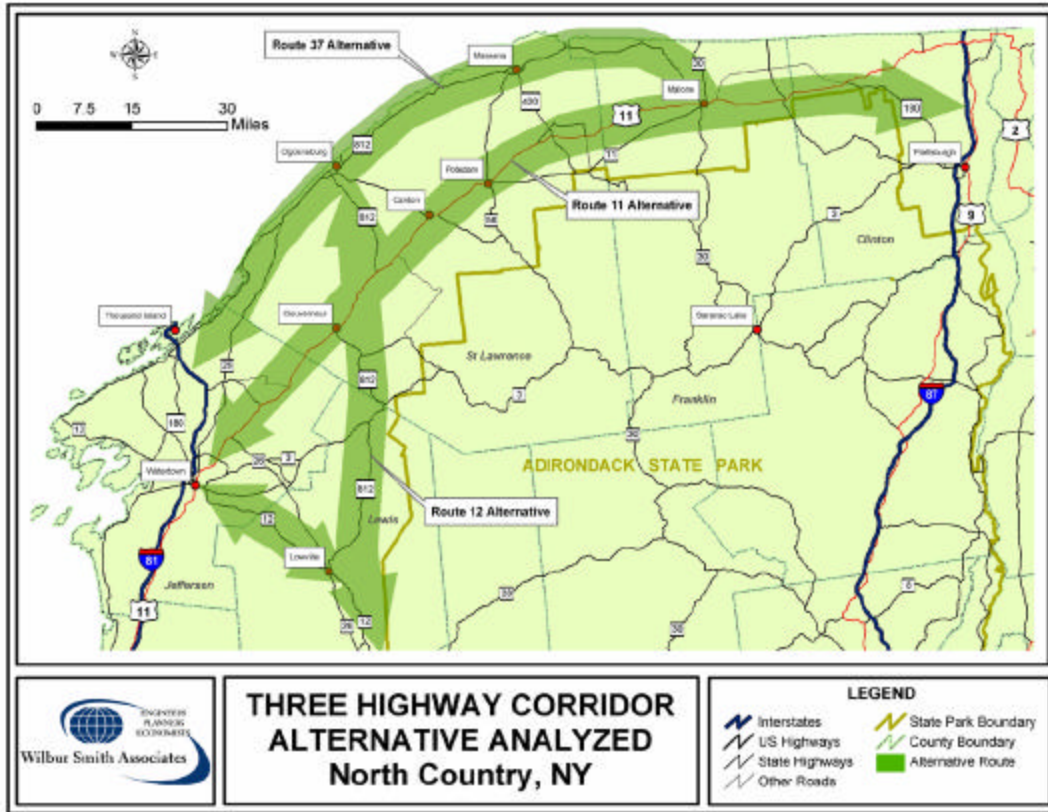
The analysis shown in this paper clearly demonstrates that there is potential for transportation improvements to lead to the attraction of business to the North Country region. The message is consistent throughout all sources that: 1) the economy is and has been struggling versus the rest of New York and other nearby regional economies; and 2) a lack of strong transportation access inhibits its chances for economic vitality. An elaborate effort was made to quantify this impact, and the results shown were estimated by taking into account industry strengths, transportation usage, relative costs, and market accessibility enhancements. Estimates ranged from roughly 750 new jobs to 4,000 depending on the alignment and highway design.

The strength of the analysis is that it attempts to move from an inherently speculative concept into one that can be reasonably believed and credibly defended. Based on the number of sources used in the analysis (local firms and economic development experts, state business attraction data, industrial recruiters, established business attraction model), confidence in the likelihood of the business attraction impact should increase. Future efforts to answer the question “if you build it, will they come?” for highway investments would be well-served by using multiple sources of data and information. A focus on identifying who “they” are and determining how accessibility to key markets can be improved is also vital.

This examination fully recognizes that the actual impact will vary depending on other factors such as the initiative and ability of local industrial developers, corresponding investments in other infrastructure (e.g., water/sewer, building space, telecommunications), labor force training, etc. Despite this uncertainty, the analysis method does allow for a framework to compare alternative investments. Plus, the emphasis placed on accessibility highlights the importance of improving the connections to labor, customer, tourism, buyer, and supplier markets. A “road to nowhere” would not fare well in this analysis, and therefore this framework can be used not only to understand the conditions in which a highway investment is likely to lead to business attraction, but also the conditions in which it will not.

**Maps and Tables**

**Exhibit 1 – North Country Highway Alternatives**



**Exhibit 2 – The North Country Missed 1990s Employment Boom**

*Employment growth, 1990-2000 (figures in thousands)*

	1990	1997	2000	Percent Change, 1990-2000	Percent Change, 1997-2000
North Country	156.6	155.9	155.1	-1.0%	-0.5%
New York	8,375.0	8,276.0	8,533.0	1.9%	3.1%
United States	118,793.0	129,558.0	135,208.0	13.8%	4.4%

Source: New York Department of Labor

**Exhibit 3 – Per Capita Income Levels in North Country Significantly Lag New York and the U.S.**

*Growth in per capita income, 1990-1999*

	1990	1999	Percent Change, 1990-1999
North Country	14,482	20,275	40.0%
New York	23,315	33,901	45.4%
United States	19,584	28,546	45.8%

Source: U.S. Bureau of Economic Analysis, Cambridge Systematics, Inc.

**Exhibit 4 – Unemployment Rates in North Country Exceed National and State Averages**

	1990	1995	2000
North Country	7.6	8.2	7.3
New York	5.3	6.3	4.6
United States	5.6	5.6	4.0

Source: New York Department of Labor

**Exhibit 5 – Weakness in Manufacturing Leads North Country Layoffs**

*Total Layoffs by Industry for 1999-2001*

Industry	1999-2001
Paper Mills	876
Chemicals	59
Leather Products	450
Primary Metals	117
Electronics	70
Other Manufacturing	70
<i>Manufacturing, Total</i>	<i>1642</i>
Retail	506
Services	54
Total	2202

Source: New York Department of Labor

Note: Layoff records are not maintained through an administrative reporting mechanism, figures are from news clippings

**Exhibit 6 – Cost Comparison of North Country to Surrounding Areas**

<b>Cost Categories</b>	<b>North Country</b>	<b>Rest of NY*</b>	<b>VT, NH</b>	<b>Ontario/Quebec</b>
Labor Cost (Mfg \$ / hr)	\$33.7	\$39.1	\$33.9	\$26.5
Electricity Cost (c/kwh)	7.4	7.4	7.0	3.5
Overall Tax (\$ of income) **	\$9,075	\$9,443	\$8,091	\$10,478

\* Excludes New York City

\*\* Accounts for difference in federal taxes between the US and Canada

Sources: US Census Bureau, 1997 Census of Manufacturers; Energy Information Administration EIA), Energy User News, and Ontario Power Generation; US Census Bureau, 1997 Census of Governments, Statistics Canada

**Exhibit 7 – Market Reach Accessibility Impacts and Assumptions**

<b>Accessibility Measure</b>	<b>Percent Increase</b>					
	<b>Expressway</b>			<b>Freeway</b>		
	<b>Rt. 37</b>	<b>Rt. 11</b>	<b>Rt. 12</b>	<b>Rt. 37</b>	<b>Rt. 11</b>	<b>Rt. 12</b>
Change in Labor Market	1.0%	8.8%	1.7%	2.0%	14.3%	2.8%
Change in Customer Market	1.0%	8.8%	1.7%	2.0%	14.3%	2.8%
Change in Business to Business Market	8.0%	5.3%	4.4%	9.9%	14.2%	8.8%
Change in Tourism Market	7.3%	8.7%	1.7%	18.8%	18.1%	5.9%
Change in Access to Airports	10.0%	10.0%	7.5%	10.0%	10.0%	7.5%
Change in Access to Riverports	10.0%	5.0%	7.5%	10.0%	5.0%	7.5%
Change in Access to Rail Centers	7.5%	5.0%	7.5%	7.5%	5.0%	7.5%
Change in Pass-by Traffic	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%

Source: Wilbur Smith Associates; Cambridge Systematics, Inc.

**Exhibit 8 – Direct Business Attraction Employment Impacts by Industry**

Industry	Expressway			Freeway		
	Rt. 37	Rt. 11	Rt. 12	Rt. 37	Rt. 11	Rt. 12
Lumber	5	27	6	8	44	10
Furniture	1	6	1	2	10	2
Stone/Clay	4	22	5	7	35	8
Primary Metals	42	52	27	54	110	51
Fabricated Metals	34	35	21	44	79	40
Non Elec Machinery	3	21	4	6	34	7
Elect Equipment	33	55	23	43	108	43
Motor Vehicles	0	0	0	0	1	0
Instruments	20	32	13	26	63	25
Misc Manufacturing	1	9	2	2	14	3
Food Products	43	48	27	55	105	51
Textiles	0	2	0	0	3	1
Apparel	2	11	2	3	18	4
Paper	20	96	24	31	145	38
Printing	41	64	28	54	128	52
Chemicals	9	44	11	14	71	17
Petro Products	0	1	0	0	1	0
Rubber	45	67	30	59	135	57
Leather	0	2	1	1	4	1
Trucking	27	47	19	36	90	35
Banking	14	91	20	25	150	32
Insurance	10	69	15	18	113	24
Credit & Finance	2	13	3	3	22	5
Real Estate	3	11	3	5	19	5
Eating/Drinking	125	213	86	228	345	132
Rest of Retail Trade	161	402	147	264	506	211
Wholesale Trade	15	104	22	27	170	36
Hotels	8	55	12	14	90	19
Pers Serv/Repair	29	109	34	40	170	47
Auto Repair	11	24	10	18	37	13
Misc Bus Services	21	145	31	38	237	50
Motion Pictures	6	12	5	10	19	7
Medical	20	142	30	36	232	48
Misc Professional	13	95	20	24	155	32
Education	20	146	30	37	238	49
Non-Profit Organizations	33	235	49	60	384	80
Total	824	2,505	762	1,292	4,084	1,239

Source: Economic Development Research Group; Cambridge Systematics, Inc.