

## **Appendix B.2**

### **Evaluation of Economic Impacts of the Proposed Belleayre Resort Using the REMI Model**

## **Project Technical Memorandum**

To: NYCDEP – OEPA  
Subject: Crossroads DEIS Review -Deliverable B.3 – Evaluation of Economic Impacts of the Proposed Belleayre Resort Using the REMI Model  
Date: January 30, 2004 (Finalized April 2004)

### **Introduction**

This Technical Memorandum summarizes the findings of RKG’s analysis of the economic impacts of the proposed Belleayre Resort at Catskill Park. The purpose of this analysis was to evaluate the reasonableness of impacts claimed in the DEIS and to identify additional economic impacts that may result from the proposed Belleayre Resort. In general, the DEIS did not adequately identify or describe the induced economic changes associated with the construction and operation of the Belleayre Resort. In particular, in-migration because of increased employment opportunities and the demand for new housing that this would generate were dismissed, and induced commercial development along the Route 28 corridor was not identified.

RKG utilized the REMI Policy Insight model<sup>1</sup> to forecast key social and economic indicators resulting from the proposed development and to forecast potential induced development in the primary and secondary study areas (as defined by RKG in Appendix A.1). Inputs to the model were taken directly from the DEIS in order to compare findings from RKG’s econometric modeling with REMI and the econometric modeling in the DEIS using RIMS II. Inputs were also taken from follow-on analyses conducted as part of RKG’s scope of work (see Appendix B.1, Evaluation of Current Socioeconomic and Market Conditions Data). This Technical Memorandum begins with an overview of the REMI model, followed by a summary of the results of simulations run through the model utilizing the information and data provided in the DEIS, as well as utilizing separate assumptions and inputs developed by RKG in its independent review of socioeconomic and market conditions.

### **The REMI Model (used by RKG) versus the RIMS II Model (used in the DEIS)**

*REMI Policy Insight* is a structural economic forecasting and policy analysis model that integrates traditional input-output, general equilibrium, econometric and economic geography methodologies. The model is dynamic, with forecasts and simulations generated on an annual basis with behavioral responses to wage, price and other economic factors. Unlike static models (e.g. RIMS II or IMPLAN), REMI tracks the effects of an economic event over multiple time periods, calculating the interrelated impacts as the local and regional economies adapt to the initial change. For example, an increase in wages in a particular area might result in migration of workers over a period of time to that region, leading to population growth, new demand for

---

<sup>1</sup> Regional Economic Models, Inc., Amherst, MA., Policy Insight Version 5.5

housing and increased competition for existing jobs. The REMI model forecasts changes across a wide range of demographic and economic variables, which can then be utilized to predict possible impacts. It is the most appropriate economic modeling tool for predicting economic impacts of the proposed Belleayre Resort because it tracks complex economic changes over time and across geographies. Using REMI, RKG could analyze the short and long-term economic impacts of the proposed development within communities in the New York City watershed in greater detail than with other models.

The REMI model consists of thousands of simultaneous equations that use data from a variety of sources, including the Bureau of Economic Analysis (BEA) and the U.S. Census. The model is multi-regional to the county level, and is based on a comprehensive model of the national economy, developed and maintained by Regional Economic Models, Inc. of Amherst, Massachusetts. It is a proprietary software system, available on a contractual basis, which is used extensively by public and private agencies around the country to provide reliable strategic decision support.

The DEIS utilized the RIMS II (*Regional Input-Output Modeling System*, available from the U.S. Department of Commerce, Bureau of Economic Analysis) economic impact methodology to estimate the “multiplier” effect of increases in employment and spending resulting from the proposed Belleayre Resort development. This approach, which relies on national input-output tables published by BEA, and which estimates inter-industry monetary flows (purchase and sales of goods and services between different sectors of the economy), provides a “snapshot” in time of how expenditures or employment in one industry “ripples” through the economy in multiple spending cycles. This type of analysis provides the basis for calculating how expenditures in one sector of the economy are multiplied as the original dollars are circulated. For example, some of the wages paid to a construction worker are spent in the local economy on goods and services provided by businesses, which in turn provide wages to their employees, who then spend a portion of their wages on other goods and services. For a given change in employment or economic output within a particular industry sector, RIMS II calculates a cumulative “multiplier” in terms of dollars (output) and jobs.

The RIMS II results in the DEIS indicate that construction of the resort (at a total cost of \$241.03 million) would generate an annual average of 264 direct and 221 indirect jobs and result in a total economic output of \$451.08 million throughout the New York state economy over the eight-year period of construction. In addition, the DEIS estimated that the 665 full-time equivalent jobs involved in the operation of the resort would generate another 211 jobs off-site within the Delaware/Ulster/Greene County Catskill region<sup>2</sup>. This employment would generate total wages and salaries of \$26.24 million. These estimates give a generalized “snapshot” perspective of the resort’s economic impact on the state or region, based on the average annual level of construction employment, or on the operation of the resort at full build-out.

---

<sup>2</sup> DEIS page 4-5. The number of full time employee equivalents involved in the operations of the resort was subsequently increased to 747 in the DEIS, however, the additional impacts were not calculated or reported.

The REMI model, because it is time-dependent, permits a more precise analysis of impacts that takes into account not only changes in output over time, but also the changes throughout the regional economy that occur in response to the sudden economic shock that the proposed Belleayre Resort represents. In addition to jobs, wages and total economic output, it allows for a much more detailed look at specific economic activities within the local and state economies by detailed industry sector over a long forecast period (30+ years), including investment spending and capital investments in the residential, non-residential and government sectors.

### **Approach**

The REMI model was used by the consultants to test the findings presented in the DEIS and to provide additional data regarding the social and economic impacts resulting from the proposed development. The methodology utilized in developing the model for application to this particular project included the following:

### **Study Area**

The REMI model is available at the national, state and county level. Based on information collected and analyzed as part of its scope of work, RKG selected a three-region model geography that included Ulster and Delaware counties and the Rest of New York State. This allowed the impacts to be localized to the extent possible while also analyzing the extent that economic activity generated by the resort is “exported” out of the region. The REMI model first generates a Regional Control Forecast for the study areas, based on a large array of economic data at the national, state and county level. Simulations are then run (based on the project parameters) and compared to this control.

The REMI model does not specifically allocate economic impacts within or between portions of counties, except to the extent that these inter-county relationships have existed in the past. It views a “county” as a single point, and although it can forecast the economic changes that occur in other counties as a result of an economic change in one county<sup>3</sup> it cannot calculate impacts within sub-areas. Since the proposed Belleayre Resort lies mostly in Ulster County but straddles the border with Delaware County, impacts would occur in both. However, accurately estimating the combined changes to the economy of either county is not possible using REMI. Therefore a series of simulations were run for the proposed Belleayre Resort that allocated all of the economic inputs into each county individually as well as splitting the inputs between the counties to determine the relative effects (which are discussed in the Simulations section that follows).

---

<sup>3</sup> The REMI model knows the levels of economic activity that take place between counties (trade flows, employment, migration, etc.) and can calculate a relative distance between them. However, intra-regional activities and economic shares must be allocated extraneously.

## Forecast Period

The REMI model permits forecasting out 35 years into the future. However, for the purposes of this analysis, a 20 year time frame was utilized with most results reported as of 10 years from the estimated date of initial activity (2004 – 2013). For purposes of this analysis, it was assumed that the proposed Belleayre Resort will begin construction in 2004 with activity (sales, occupancy) occurring in 2006 and construction continuing through 2011.

## Control Forecast

The baseline forecast provided by the model includes hundreds of economic variables and indicators based on 53 industry sectors (equivalent to 3-digit Standard Industrial Codes). These include population, employment, gross regional product, personal incomes, migration, costs of production, investment, output and demand.

## Inputs

The inputs used in the initial REMI simulation were identical to those reported in the DEIS and used as inputs to the RIMS II analysis. However, the RIMS II evaluation of the proposed Belleayre Resort assumed a “lump sum” project, that is, all expenditures and employment impacts were assumed to occur at one time. Inputs to the REMI model are made as changes to “policy variables” that are then reflected in a new forecast that can be compared to the Regional Control Forecast. The REMI model allows for making specific assumptions regarding the timing of investments or jobs.

The actual allocation of expenditures and employment levels to specific industry sectors in the RIMS II methodology used in the DEIS was not explicitly indicated, therefore certain assumptions needed to be made for the REMI simulations. The key model inputs included the following:

- Construction expenditures totaling \$241.03 million (in 2001 dollars) were input over an eight-year development period. Based on the information presented in the DEIS<sup>4</sup>, it was assumed that construction of the infrastructure (roads, utilities) would start in 2004 along with one of the golf courses and one of the hotels. The remaining commercial buildings and the second golf course would follow along with the timeshare units. The residential component would be the last to be built, with full build-out in 2011. Table 1 describes the assumed construction expenditure pattern utilized in evaluating the project with the REMI model..

---

<sup>4</sup> see DEIS Table 3-60 and Section 3.10.2.1

<b>TABLE 1</b>									
<b>Construction Inputs</b>									
<b><u>YEAR</u></b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>Total</b>
<b>Construction Spending<sup>1</sup></b>	\$32.38	\$42.78	\$38.84	\$44.43	\$19.34	\$20.39	\$20.92	\$21.97	\$241.03
<b>Percent of Total</b>	13.4%	17.7%	16.1%	18.4%	8.0%	8.5%	8.7%	9.1%	100.0%

1. millions of 2001 dollars  
Source: DEIS and RKG Associates, Inc.

The construction expenditures were entered into the REMI model as an increase in the “Exogenous Final Demand – Construction” policy variable for the years indicated. This approach recognizes the proposed Belleayre Resort as a new economic activity, rather than an incremental expansion of existing construction industry demand.

- Operational impacts were input based on the anticipated employment generated by the various resort components, i.e. hotels, golf courses, restaurants, retail and sales<sup>5</sup>. The total employment of 747 full-time equivalent workers, as detailed in the DEIS, were distributed among various economic sectors in the REMI model and introduced in a staggered fashion to reflect the on-going construction and completion of the various elements as described in the construction description. Employment was allocated to specific categories based on the breakdowns provided in the DEIS and translated into corresponding REMI policy variable categories, beginning in 2006. Approximately one-half of the 747 jobs were counted in the first two years, rising to full employment in 2009, as shown in Table 2 below.

---

<sup>5</sup> see DEIS Table 3-64 and Section 3.10.2.2.

<b>TABLE 2</b>						
<b>Operations Employment Forecast – Belleayre Resort</b>						
<b><u>DEIS</u></b>	<b><u>REMI EQUIVALENT</u></b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b><u>CATEGORY</u></b>	<b><u>REMI EQUIVALENT</u></b>					
Golf	Amusement & recreation	34	34	68	68	68
Hotels	Hotel	0	167	334	334	334
Retail	Other Retail	14	14	14	14	14
Restaurants	Eating & Drinking	130	130	260	260	260
Timeshares	Hotel	10	20	30	41	41
Timeshares	Real Estate	2	3	4	5	5
Wilderness Center	Education		5	5	5	5
Children’s Center	Education		20	20	20	20
		190	393	735	747	747
Percent of Full Employment		25%	53%	98%	100%	100%

Source: DEIS and RKG Associates, Inc.

In addition to the total number of employees anticipated to work at the resort, the DEIS indicates that the median annual wage for employees would be \$27,272, well above the median wages in both Ulster and Delaware counties<sup>6</sup>. According to the REMI Regional Control forecast, these wage rates are more in line with those elsewhere in New York, but not in Ulster or Delaware counties, where the annual wages may reflect the seasonality of the hospitality and service businesses on which they depend. In order to reflect the economic impacts of higher wages, an adjustment was made to the REMI model to reflect these differences<sup>7</sup>.

- The last series of inputs to the REMI model involved expenditures made in the local economy by visitors to the resort. These include people coming to play golf or stay overnight (at one of the hotels or in a condo/timeshare unit). The DEIS estimated the total number of visitor days and expenditures both on and off the property. The economic impacts of the on-site expenditures are captured in the analysis of operations as described in the previous paragraph. Therefore, only the estimated off-site expenditures are used as inputs to the model. These amounts totaled \$11.81 million based on 205,535 visitor parties per year spread among the resort’s components<sup>8</sup> (hotels, golf/timeshares

<sup>6</sup> See DEIS Table 3-65 and Section 3.10.2.2 (B)(2), page 3-195 ....”Overall, the median annual wages per full-time-equivalent position at the Resort would be approximately \$27,272, well above the 1999 average annual wage for both Delaware (\$18,993) and Ulster (\$23,220) Counties <no source given>.” The REMI Regional Control forecast indicates that the 1999 average annual wage in Services was \$15,166 in Ulster County, \$8,135 in Delaware County and \$28,672 in the Rest of New York.

<sup>7</sup> Through an adjustment to the model’s Wage Bill policy variable.

<sup>8</sup> See DEIS Table 3-85.

and seasonal homes). These were further allocated into various retail and service sectors<sup>9</sup> such as groceries, gas and oil, etc. For the REMI model, the expenditures were put into corresponding economic sectors and phased in over a period of four years beginning in 2006 based on the assumption of a gradual build-up of visitors once the initial golf course and hotel construction is completed, as shown in Table 3.

<b>TABLE 3</b>				
<b>Phase-In of Visitor Spending Belleayre Resort</b>				
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Number of Visitor Parties	51,400	102,800	154,200	205,500
Percent of Visitors	25%	50%	75%	100%
<b>REMI Category</b>	<b>Visitor Spending (millions 2001\$)</b>			
Eating & Drinking (Restaurants)	0.813	1.625	2.438	3.250
Rest of Retail (Groceries)	0.448	0.895	1.343	1.790
Auto Repair & Service	0.443	0.885	1.328	1.770
Amusement & Recreation	0.240	0.480	0.720	0.960
Rest of Retail (Souvenirs, etc.)	0.488	0.975	1.463	1.950
Rest of Retail (Other)	<u>0.523</u>	<u>1.045</u>	<u>1.568</u>	<u>2.090</u>
<b>Total</b>	<b>2.953</b>	<b>5.905</b>	<b>8.858</b>	<b>11.810</b>
Source: DEIS Table 4-23 and RKG Associates, Inc.				

## Simulations

The REMI model was used to run several simulations using the inputs described above to emulate the DEIS methodology as closely as possible. Each of the inputs (construction, operations and visitor spending) was first run as a separate simulation with the results added together, and then combined as a single “run”. The results were very similar. Other simulations were then run using different geographies and development time frames in order to test the sensitivity of the project to different assumptions.

### Simulation 1 – Using Parameters from the DEIS

This forecast utilizes the same economic parameters that the DEIS utilized to estimate the direct and indirect economic impacts of the proposed resort, including construction spending, operational employment at an enhanced average wage rate and off-site visitor spending. For the simulation, all of the economic “shocks” were assumed to occur in Ulster County alone. While a small portion of the proposed Belleayre Resort is physically located in Delaware County (the Highmount Estates residential area) as are some of the nearby communities that will be

<sup>9</sup> See DEIS Table 3-86.

impacted, the REMI model cannot allocate economic impacts within or between portions of counties<sup>10</sup>. One reason why the results of the REMI simulation differ from those reported in the DEIS is due to the limited information that the RIMS II methodology provides (direct and indirect employment and total output only) as well as the difference in model construction and methodology. For example, the RIMS II approach used in the DEIS assumes that all of the changes occur at one moment in time, while REMI allows for a more realistic build up of activity.

For the construction component, the DEIS estimated that a total of 3,875 direct and indirect jobs would be created statewide during the eight year period (an average of 485 jobs per year)<sup>11</sup>. The REMI simulation for the construction phase of the proposed Belleayre Resort indicates a lower employment level statewide at 2,848 direct and indirect jobs over the eight years. Seventy percent of these jobs are forecast to occur in the region, with the remainder created elsewhere in the state<sup>12</sup>.

The DEIS estimate of direct and indirect employment within the region resulting from the operations of the resort was 876 (based on the initial direct employment estimate of 665)<sup>13</sup>. The REMI model estimates a total of 859 jobs in the region, with an additional 163 jobs created elsewhere in New York. Although the DEIS did not estimate the employment levels generated by off-site visitor spending (it only reported estimated sales), the REMI model predicts that 251 jobs will be created statewide with 188 occurring in the region. In general, the DEIS and REMI results compare reasonably well.

Table 4 below summarizes some of the key economic activity indicators that are forecast by the REMI model to result from the construction and operation of the Belleayre Resort over the next ten years in the region. The economic “shock” of developing a new resort will create a demand for workers, some of whom will come from the local economy while others will come from other communities outside the immediate study area or from outside the region, attracted to the employment opportunities and high (relative) wages at the resort as well as to other employment opportunities in the study area that are created as a result of the increase in economic activity. Some of these workers will bring families with them, thus increasing the population over time.

---

<sup>10</sup> Alternative simulations that split the economic activity between counties in varying proportions resulted in overall impacts (employment, population, output, etc.) that were smaller than when all impacts were assigned to Ulster County. Therefore, applying the impacts to Ulster County alone is the most conservative approach.

<sup>11</sup> See DEIS Table 3-2.

<sup>12</sup> The lower construction employment estimate from REMI is likely due to the model’s use of the aggregated construction industry as its baseline. The DEIS may have used more labor intensive types of construction inputs.

<sup>13</sup> The direct operational employment level used in the DEIS was subsequently increased to 747 full-time equivalent positions, however, the indirect impacts were not re-calculated.

When the construction period is over, many of the construction-related jobs will disappear and those workers with specialized skills will leave. However, the employees operating the resort and the additional employees added by other firms to support the economic growth that results from the direct expenditures of visitors at the resort and in the local economy, will result in a permanent increase in overall employment and investment levels.

The results of the REMI simulation shown in Table 4 are based on all economic inputs occurring in Ulster County. Because the economic impacts of the proposed Belleayre Resort will be distributed differently throughout the County based on population patterns, the transportation network, location of suppliers, etc., it is necessary to allocate these impacts to the immediate study area. The individual impacts from each of the three main input components were allocated differently based on the RKG's opinion of the relative degree of economic activity that would take place in the NYS Route 28 corridor in proximity to the proposed Belleayre Resort.

Construction impacts, which result from both employment (wages) and the purchase of goods and services by contractors, is anticipated to have the least impact on the study area. Because of the relatively high skill levels involved in major commercial construction and the short-term nature of the construction process<sup>14</sup>, many of the workers employed by contractors will come from outside the study area and possibly from outside Ulster and Delaware counties. Some of these individuals will commute long distances or stay in the area during the week, staying at local motels or taking short-term rentals of local homes or apartments, then return to their homes on weekends. For those that do not live in the area, the bulk of the economic impacts associated with their subsequent spending of wages occur where they live, not in the study area, even if they spend 4-5 days per week in the region over several months.

---

<sup>14</sup> The construction process includes many independent (from a labor and contracting perspective) activities including site preparation, foundation work, framing, roofing and finish carpentry. Construction labor tends to be specialized by trade, therefore construction workers will come in and work on a portion of the project and leave when finished, going on to other jobs. This relatively high turnover of workers results in lower permanent migration rates and higher demand for short-term accommodations.

Similarly, because of its limited population and economic base, the immediate study area does not provide many of the goods and services used in the construction of a major commercial project such as the resort. Many of the materials and the specialized services (e.g. design and engineering) will be purchased from vendors outside of the study area and/or the region, thus diluting the associated economic impacts. Based on this rationale, RKG estimates that approximately 35% of the direct and indirect economic impacts resulting from the construction of the resort will occur in the study area, with the remaining impacts accruing to the rest of Ulster County, New York State or the rest of the country or World. As shown in Table 4, the construction effort results in a maximum employment in the region of 369 jobs in 2007. Applying the 35% factor yields an average of 129 study area direct and indirect jobs in that year.<sup>15</sup> Similarly, the induced population growth in the region resulting from this project component grows to 245 in 2011, before declining slightly in subsequent years, with local impact

---

<sup>15</sup> Actual employment levels are likely to fluctuate depending on the stage of construction and the season.

**Table 4**  
**SUMMARY OF SIMULATION RESULTS FOR ECONOMIC IMPACTS IN ULSTER COUNTY OVER A 10 YEAR PERIOD**  
(Change from Regional Control Forecast)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Construction</b>											
Employment	number of people	282	351	328	369	157	163	164	171	-2	-1
Population	number of people	53	111	160	211	219	228	236	245	221	200
Economic Migrants	number of people	52	57	46	48	4	5	5	5	-28	-24
Residential Capital Stock	Amount (in millions)	\$ 0.89	\$ 2.00	\$ 3.05	\$ 4.25	\$ 4.73	\$ 5.22	\$ 5.70	\$ 6.21	\$ 6.03	\$ 5.84
Non-Residential Capital Stock	Amount (in millions)	\$ 0.70	\$ 1.55	\$ 2.30	\$ 3.12	\$ 3.32	\$ 3.49	\$ 3.63	\$ 3.77	\$ 3.38	\$ 2.99
Assumes construction begins in 2004 with hotels and golf course completed in 2008, residential development continues through 2011.											
<b>Operations</b>											
Employment	number of people	0	0	410	457	844	859	857	854	852	850
Population	number of people	0	0	87	172	329	472	601	717	821	916
Economic Migrants	number of people	0	0	86	82	153	136	119	104	91	79
Residential Capital Stock	Amount (in millions)	\$ -	\$ -	\$ 1.49	\$ 3.18	\$ 6.31	\$ 9.50	\$ 12.70	\$ 15.88	\$ 19.01	\$ 22.11
Non-Residential Capital Stock	Amount (in millions)	\$ -	\$ -	\$ 0.51	\$ 1.06	\$ 2.09	\$ 3.08	\$ 3.99	\$ 4.80	\$ 5.50	\$ 6.09
Assumes resort employment begins in 2006 at 50% increasing to full level in 2008.											
<b>Visitors</b>											
Employment	number of people	0	0	49	96	143	188	185	182	179	176
Population	number of people	0	0	11	33	62	98	130	157	181	202
Economic Migrants	number of people	0	0	11	21	28	35	30	25	21	18
Residential Capital Stock	Amount (in millions)	\$ -	\$ -	\$ 0.11	\$ 0.34	\$ 0.71	\$ 1.20	\$ 1.72	\$ 2.26	\$ 2.80	\$ 3.34
Non-Residential Capital Stock	Amount (in millions)	\$ -	\$ -	\$ 0.23	\$ 0.67	\$ 1.32	\$ 2.15	\$ 2.93	\$ 3.63	\$ 4.27	\$ 4.85
Assumes off-site visitor expenditures begin in 2006 (partial completion of timeshares, hotels and golf)											
<b>TOTAL</b>											
Employment	number of people	282	351	786	922	1144	1209	1206	1207	1028	1025
Population	number of people	53	111	258	415	609	797	966	1119	1224	1318
Economic Migrants	number of people	52	57	143	151	185	176	153	134	85	73
Residential Capital Stock	Amount (in millions)	\$ 0.89	\$ 2.00	\$ 4.65	\$ 7.77	\$ 11.74	\$ 15.93	\$ 20.13	\$ 24.34	\$ 27.83	\$ 31.28
Non-Residential Capital Stock	Amount (in millions)	\$ 0.70	\$ 1.55	\$ 3.04	\$ 4.86	\$ 6.73	\$ 8.72	\$ 10.55	\$ 12.20	\$ 13.15	\$ 13.93

All economic activity placed in Ulster County (worst case scenario). Construction based on exogenous demand, operations on DEIS employment levels (adjusted for higher wages), visitor impacts based on off-site spending estimates provided in DEIS. Sources: RKG Associates, Inc.; Regional Economic Models, Inc. and DEIS.

factored to 86 people. Included in this population are people who move to the region for economic and/or amenity reasons. The net annual change of this component of the model is shown in Table 4 on the line labeled Economic Migrants.

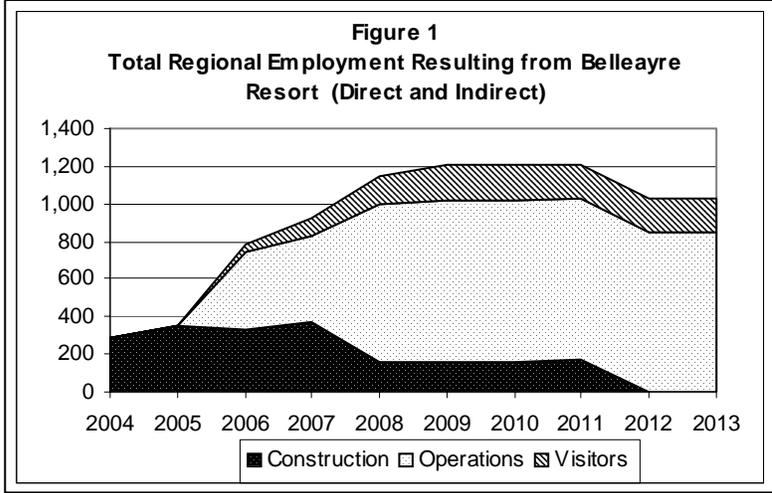
The REMI model estimates that ongoing operations at the resort will result in total direct and indirect employment of about 860 people throughout the region (along with another 150 -160 jobs elsewhere in New York State). The proposed Belleayre Resort will also lead to a gradual increase in population of approximately 900 people over and above the regional baseline forecast by 2013 (along with another 150 in the rest of the State). Because of the sudden demand for workers in the service and retail sectors, it is anticipated that only some of the jobs will be filled by local residents initially, with a large proportion commuting in from elsewhere in the region, or the sales or services will be provided by businesses outside of the study area. Therefore RKG anticipates that 50% of the economic impacts will occur within the primary economic impact area.

The induced economic growth resulting from the off-site spending of visitors to the resort is forecast in the REMI model to increase employment by approximately 188 in 2009 before declining slowly in subsequent years as a result of the local economy absorbing this new activity. RKG estimates that 80% of this induced activity will be captured locally as visitors dine at local restaurants, purchase gifts and souvenirs and fill up their cars with gas. A small portion of this induced economic impact will occur outside the NYS Route 28 corridor study area, most likely elsewhere in the region. Table 5 summarizes the allocation of economic impacts to the NYS Route 28 study area corridor.

<b><u>TABLE 5</u></b>			
<b>ECONOMIC IMPACT WITHIN STUDY AREA</b>			
<b><u>PROJECT ELEMENT</u></b>	<b>Allocation</b>	<b>Employment</b>	<b>Population</b>
Construction	35%	129	86
Operations	50%	429	458
Visitor Spending	80%	150	162
<b>Total</b>		<b>709</b>	<b>705</b>
Employment and population levels based on maximum impacts over a 10-year time frame (2004-2013). Source: RKG Associates, Inc.			

The REMI model tracks economic activity over time, so that a specific event such as the construction and operation of a new hotel results in changing levels of employment, output and other economic variables as the regional and state economies adjust to the particular stimulus. Figures 1 and 2 provide a graphic perspective of the cumulative changes in regional employment and population forecast by the model over the first 10 years of the development. Once the proposed Belleayre Resort is up and running and the regional economy grows, the differences between the simulation outputs and the regional control forecast begin to diminish as the economy adjusts.

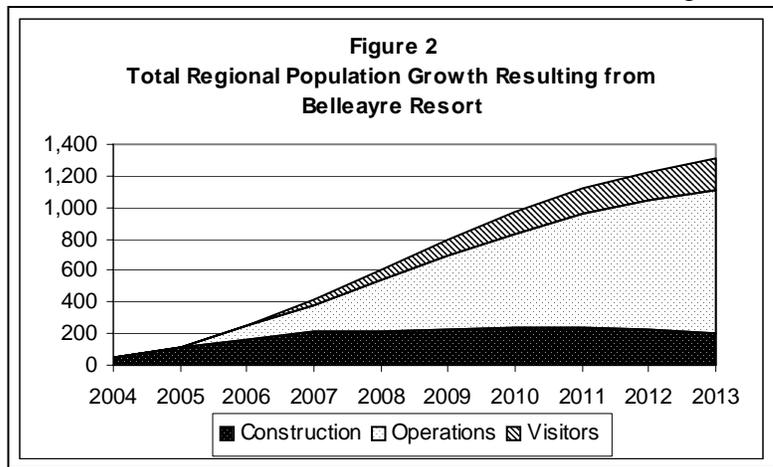
The principal focus of this analysis is on those economic factors that result in, or are a component of, induced growth in the local economy. Both employment and population changes increase demand for and may ultimately lead to increases in housing, services and commercial activity. The increased demand for goods and services creates the need for more employment and physical space. The REMI model calculates the increase in investment flows necessary to serve these increases in population and employment



(and the underlying increase in output), both directly from the new project and indirectly from other firms in the economy that benefit from the “trickle-down” effects. Among the REMI model’s thousands of policy variables that are calculated, the most appropriate indicator of induced *physical* growth is the level of actual Capital Stock for both residential and non-residential sectors.

Increases in economic output (in this case resulting from the expenditure of money that is brought into the region from outside) eventually result in increases in personal income and wealth, ultimately leading to new investment in homes, businesses and supporting infrastructure. The REMI model calculates these economic flows based on historic trends in the Regional Control forecast, and adjusts local spending and investment throughout all industry sectors.

As indicated in Table 4, the total regional Capital Stock (in nominal dollars) over 10 years increases by \$31.28 million for residential and \$13.93 million for non-residential. This represents the cumulative total new investment spending in these categories over the Regional Control forecast.<sup>16</sup> Applying the



<sup>16</sup> The total Capital Stock levels for Ulster County in 2013 are estimated in the control forecast in nominal dollars at \$9.1 billion for residential and \$5.1 billion for non-residential, therefore the Continued...

intra-regional allocation factors from Table 5 to the component sources of the capital stock increases, yields an estimate of the increases that will occur within the study area of \$15.76 million and \$7.97 million respectively. Capital Stock includes anticipated expenditures for new physical assets (excluding producers’ durable equipment).

Assuming that the entire residential increase goes for new housing in the study area, the increase divided by an average cost per new housing unit yields an estimate of the number of new housing units that could result. Similarly, applying the non-residential capital stock increase to commercial (and industrial) buildings provides an estimate of new growth in this sector induced by the proposed Belleayre Resort development, as shown in Table 6.<sup>17</sup>

<b>TABLE 6</b>			
<b>Increase in Residential &amp; Non-Residential Density Resulting from Induced Growth at Belleayre Resort</b>			
	<b>Increase in Capital Stock (millions)</b>	<b>Average Unit Cost<sup>1</sup></b>	<b>Potential Number of Units</b>
Residential Units:	\$ 15.76	\$100,000	158
Non-residential (square feet):	\$ 7.97	\$100	79,678

1) Residential cost based on a typical unit of 1,250 square feet and hard costs of \$80 per square foot (excluding land and developer’s profit), non-residential based on typical hard construction costs for better quality office and/retail space.  
Source: RKG Associates, Inc.

The figures in Table 6 provide an order-of-magnitude estimate for the scale of potential growth under the assumptions used in the model simulation. The model does not provide information regarding where within the region or local area this growth will occur, only the relative scale of development. As indicated, the total number of potential new housing units induced by the resort development is a potentially significant impact that was not identified or described in the DEIS.

The 158 potential new units (an average annual rate of 16 units) is somewhat greater than the 137 new units that were added in the host communities during the 1990’s<sup>18</sup>. Therefore, if

---

increase attributable to the new development is very small, on the order of 0.3%. Also, the value of the resort itself has been factored out of the increase in Capital Stock.

<sup>17</sup> The increase in Capital Stock for residential and non-residential sectors includes investments in infrastructure and other assets to support these uses. Therefore, these estimates of development potential for the study area are conservative.

<sup>18</sup> See RKG’s Deliverable B.2 – Socioeconomic and Market Review, which provided detailed data on housing and population growth.

development were to increase at a similar rate as during the 1990's under a no-action scenario, the development of the resort could potentially more than double the rate of housing growth in the study area. The amount of new non-residential space, approximately 80,000 square feet, is approximately equal to the existing amount of vacant commercial space in the study area. However, new commercial growth may be more likely to be located in close proximity to the new development (on NYS Route 28 or the access roads), potentially on undeveloped land that does not currently have municipal water and sewer, rather than occupy existing vacant spaces that are scattered throughout the local communities.

### **Alternative Simulations**

RKG ran several additional simulations to evaluate the sensitivity of key outcomes to changes in the assumptions used for the inputs to the REMI model. These included changing the timing and magnitude of the resort development, increasing the intra-regional allocation factors, using alternative economic input data, as well as changing the model's geography inputs (as described earlier). Overall, the differences from the first simulation resulting from these input changes were considered relatively minor and did not substantially change the outcome described above.

Shortening or lengthening the development period by 2-3 years served to shift the timing of employment and population growth but did not significantly change the overall levels, thereby resulting in small changes to the induced development potential. Reducing the overall size of the proposed Belleayre Resort by approximately one-half resulted in less impact, as the smaller economic impacts were more quickly absorbed by the local economy. A substantially larger project would have a corresponding larger impact on employment, population and induced growth, and results in larger economic impacts for the rest of the state (due to the lack of capacity in the region). Changing the allocation factors (e.g. assuming that all of the regional impacts occur in the study area) has a proportionally larger effect on the results.

Using the resort's projected sales revenues (as provided in the DEIS) instead of the employment estimates (which is an alternative method for inputting new exogenous demand) resulted in a slightly lower level of impacts. In fact, using the DEIS revenue figures resulted in a combined direct and indirect employment total throughout the region that was less than the direct job numbers (747) provided. Similarly, not adjusting the input to the model for the additional wage levels that the DEIS stated would be paid, instead using the regional average wage levels by sector that are built into the Regional Control Forecast, resulted in an overall impact level that was approximately 10%-12% below what is reported above.

In summary, the simulation utilized in the previous section provides a conservative scenario (within the general guidelines and development parameters described in the DEIS) and results.

### **Conclusion**

In general, the DEIS did not adequately identify or describe the induced social and economic changes associated with the development and operation of the Belleayre Resort. Induced growth

has the potential to significantly impact demand for new housing and additional commercial development. Most notably, the DEIS ignored potential residential growth and population growth, which would have various long-term impacts on the study area communities.