



## ASSUMPTIONS AND TERMS

# Mille Lacs Emergency EIA

Economic impact analysis is based on several critical assumptions. An understanding of the assumptions ensures the results are interpreted properly. Here are the key assumptions made in the analysis for Mille Lacs County.

First, there are assumptions that are standard for all economic impact analyses using the IMPLAN model. They are:

- One job is on job, regardless if the job is full-time, part-time, or seasonal. The jobs considered here are not full-time equivalents. Therefore, it isn't unusual for industries with high levels of part-time employment to experience higher employment impacts.
- The model is linear. Changes in output or employment can be modeled in a linear fashion. For example, if the facility opens at 50 percent of current size, one could multiply the current output figures by 50 percent.
- The model assumes all employees of the facility live in the county. It does make adjustments to where their incomes are spent. If the regional hub is located in a nearby county, it will adjust to assume employees spend some of their wages and salaries in the nearby county.
- The database is built on publicly-available data. When data is not available for a specific industry, say due to data disclosure issues, econometric models are used to create estimates for the industry.

Second, there are assumptions unique to the analysis in Mille Lacs County. They are:

- The company provided estimates of employment to Extension. The IMPLAN model estimated the amount of output and labor income created by those employees based on national and state benchmarks for the industry.
- Wages earned by independent contractors were estimated by Extension. An independent contractor shared with Extension the approximate hours he/she logged for the company. We assumed all independent contractors worked a similar number of hours. We assumed the independent contractors were paid the state minimum wage rate.
- The analysis assumes if the plant closes, all economic ties to Mille Lacs County will be cut. If the plant reopens in another county, it is possible current employees may commute, thus mitigating income losses. Some suppliers, such as wholesale trade, may continue to provide goods/services to the company in its new location, thus offsetting their losses.

The following are a few key terms used in economic impact analysis.

### **Output**

Output is measured in dollars and is equivalent to total sales. The output measure can include significant double counting. For example, think of corn. The value of the corn is counted when it is sold to the mill, again when it is sold to the dairy farmer, again as part of the price of fluid milk, and then yet again when it is sold as cheese. The value of the corn is built into the price of each of these items and then the sales of each of these items are added up to get total sales (or output).

### **Employment**

Employment includes full- and part-time workers and is measured in annual average jobs. Total wage and salaried employees as well as the self-employed are included in employment estimates in IMPLAN. Because employment is measured in jobs and not in dollar values, it tends to be a very stable metric.

In the model, one job is one job, regardless if the job is full-time, part-time, and seasonal.

### **Labor Income**

Labor income measures the value that is added to the product by the labor component. For example, in the corn example, when the corn is sold, a certain percentage of the sale goes to the farmer for his/her labor. Then when the mill sells the corn as feed to the dairy farmer it includes in the price some markup for its labor costs. When the dairy farmer sells the milk to the cheese manufacturer, he/she includes a value for his/her labor. These individual value increments for labor can be measured. This is labor income. Labor income does not include double counting.

### **Property Income**

Property income is a computation of the value that accrues due to ownership of property. This includes payments for rents, royalties, and dividends.

### **Direct Impact**

The direct impact is equivalent to the initial change in the economy.

### **Indirect Impact**

The indirect impact is the summation of changes in the local economy that occur due to **spending for inputs** (goods and services) by the industry or industries directly impacted. For instance, if employment in a manufacturing plant increases by 100 jobs, this implies a corresponding increase in output by the plant. As the plant increases output, it must also purchase more of its inputs, such as electricity, steel, and equipment. As it increases its purchase of these items, its suppliers must also increase its production, and so forth. As these ripples move through the economy, they can be captured and measured. Ripples related to the purchase of goods and services are indirect impacts.

### **Induced Impact**

The induced impact is the summation of changes in the local economy that occur due to **spending by labor** by the employees in the industry or industries directly impacted. For instance, if employment in a manufacturing plant increases by 100 jobs, the new employees will have more money to spend to purchase housing, buy groceries, and go out to dinner. As they spend their new income, more activity occurs in the local economy. This can be quantified and is called the induced impact.

### **Total Impact**

The total impact is the summation of the direct, indirect and induced impacts.