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LIVE zone
Logistics Innovation and
Vehicle Electrification Zone

LIVE Zone

Economic Impact Assessment

Prepared For:



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Governments

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Table of Contents

Overview	2
Economic Impact Analysis.....	3
The Multiplier Effect.....	3
Economic Impact Modeling Terminology	3
Economic Events	6
Economic Impacts	6
Baseline Comparison	9

List of Tables

Table 1. Projected LIVE Zone Employment.....	6
Table 2. Annual Economic Impacts (2022 dollars)	7
Table 3. Top-Five Employment Industries—High Scenario.....	8
Table 4. Top-Five Output Industries-High Scenario.....	8
Table 5. Population, Employment and Total Economic Output.....	9

List of Figures

Figure 1. Cost of Living Index Comparison	2
Figure 2. Historic and Project Population Mahoning and Trumbull Counties.....	2
Figure 3. Output Diagram	5

Overview

Stakeholder interviews were positive. There is interest and desire for investments in technology and infrastructure to create a LIVE Zone. Public agencies saw the potential in attracting new residents with new jobs. The existing industry saw immediate benefits from transit enhancements for workers and fulfilling a need for improved efficiencies in freight logistics.

According to Best Places®, the cost of living in Trumbull and Mahoning counties is well below the average of the United States and Ohio. In particular, median housing costs are around \$120,000, \$60,000 less than the State of Ohio. There are five school districts in Trumbull and Mahoning counties in the top 100 out of 607 districts in the State of Ohio.

The two counties have suffered a decline in population due to the loss of industries in the region. Compounding the population loss is a shift in demographics to an older population. LIVE Zone investments and the lower cost of living can reverse the downward population trends.

Along with strong interest and commitment from state and local agencies in redevelopment, infrastructure, workforce training, and housing development, the two counties will see a reverse of the downward trends.

Figure 1. Cost of Living Index Comparison

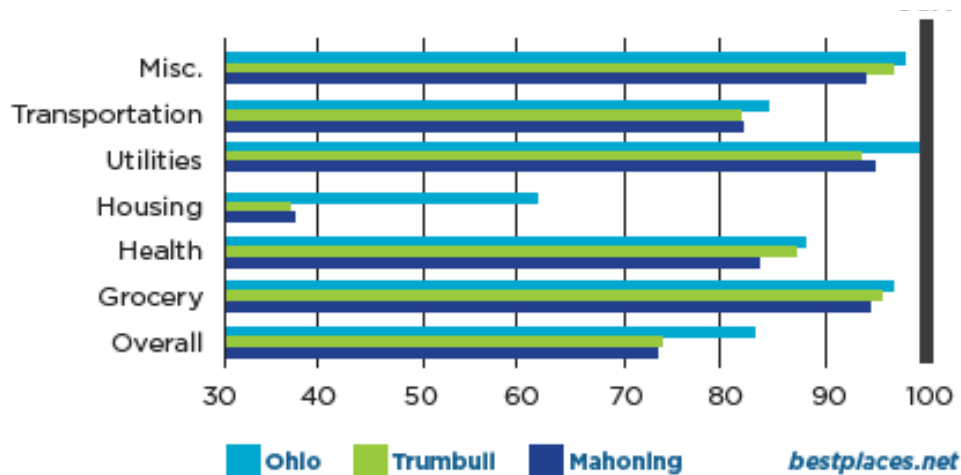
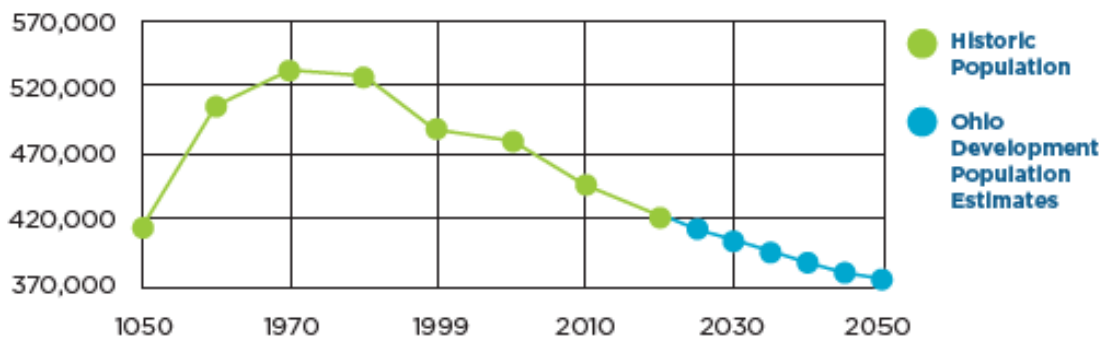


Figure 2. Historic and Project Population Mahoning and Trumbull Counties



Economic Impact Analysis

This economic impact analysis of potential employment growth in three industries: Warehousing and Distribution, Transportation Equipment Manufacturing and Miscellaneous Manufacturing. This economic impact analysis is based on the economies of the Trumbull and Mahoning Counties. These counties are analyzed in IMPLAN's Multi-Region Input-Output (MRIO) tool. The MRIO reports on the two-county region only and does not consider impacts to the larger economy of eastern Ohio. For that reason, inputs to these industries from areas outside the two-county region are not identified in the model. Significant inputs from outside the local region or "leakages" cannot be captured by direct growth because of a lack of supporting industries established in Trumbull and Mahoning Counties.

The Multiplier Effect

Economic impact analysis is driven by what is known as the multiplier effect. As money is spent on goods, services, and labor it circulates through the regional economy, beginning with the money spent on direct labor to produce goods and services in the local economies. Each initial dollar spent on inputs provided within the region is income that is expanded within the regional economy. The multiplier measures the growth of that initial dollar as it circulates through the local economy.

Since no local economy produces every good or service needed to conduct business, a "leakage" effect occurs as money leaves the local economy. The leakage effect counters the multiplier effect because only that portion of the money spent on goods or services that are produced locally can be recirculated to benefit the local economy. When there are leakages in local production, the multiplier effect is reduced, which will reduce the benefits to the local economy. IMPLAN uses imbedded multipliers determined specifically for the MRIO region to estimate the indirect and induced effects on output, employees, and employment income.

Economic Impact Modeling Terminology

- Direct impacts are those that result from the direct addition of jobs in the economy as the result of an economic event such opening a new business. These impacts consist of permanent jobs, wages, and the total output of the economic event.
- Indirect impacts are the jobs, wages, and output created by businesses, which provide goods and services essential to the initial economic stimulus. Supporting industries such as finance, construction, real estate services, maintenance, products, and supplies, each contribute to additional rounds of spending. Indirect impacts represent a cumulative total of several cycles of spending that work their way through the local economic supply chain until all remaining money from the initial stimulus leaks from the study area economy. For example, a series of factories making purchases from local suppliers of finished goods for assembly, would be an example of a portion of indirect impacts as defined in this analysis. Again, only the local impacts are reported.
- Induced impacts are those impacts that result from household spending by those impacted by the direct and indirect phases of economic activities. The spending of wages earned by employees working for industries impacted by economic events

represents the largest portion of induced impacts. This spending creates induced employment, especially in the service sectors.

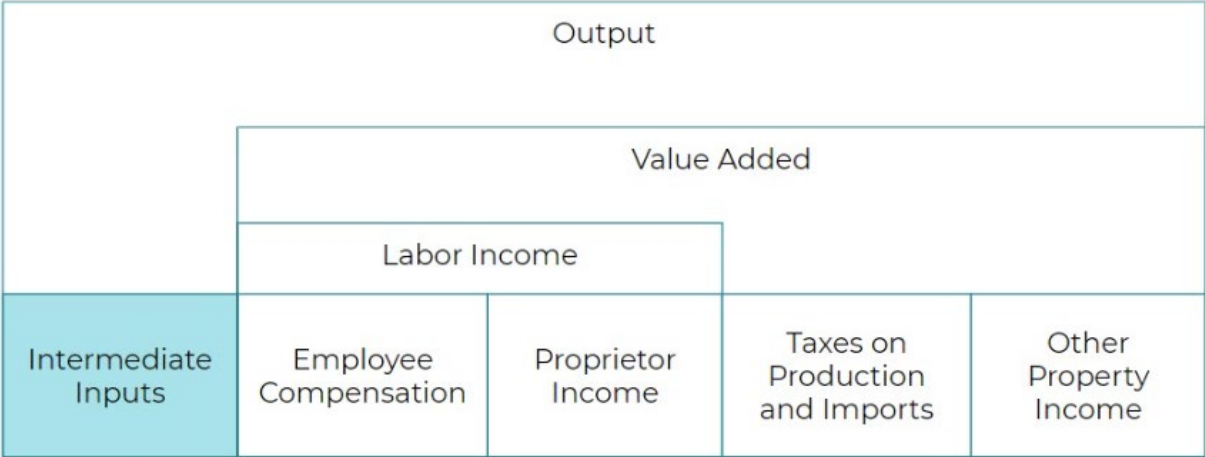
- Labor Income consists of two parts. The first, Employee Compensation (EC), is the total payroll cost of wage and salary employees to the employer. EC includes wages and salaries, all benefits (e.g., health, retirement) and payroll taxes (both sides of social security, unemployment insurance taxes, etc.). It is also referred to as fully-loaded payroll.

The second piece of Labor Income is Proprietor Income (PI). PI consists of payments received by self-employed individuals and unincorporated business owners. More specifically, it represents the current-production income of sole proprietorships, partnerships, and tax-exempt cooperatives. PI excludes dividends, monetary interest received by non-financial business, and rental income received by persons not primarily engaged in the real estate business.

- Value Added represents the difference between Output and the cost of intermediate inputs throughout a defined economy during a specified period. It equals gross Output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported). Value Added is equivalent to an industry's contribution to Gross Domestic Product. Value Added is a large portion of Output, as it encompasses Labor Income (LI), PI, EC, Other Property Income (OPI), and Taxes on Production and Imports (TOPI).
- Output represents the value of industry production. For manufacturers this would be sales plus or minus changes in inventory. For service sectors, output equals sales. For retail and wholesale trade, output equals gross margin (or marginal revenue) and not gross sales (total revenue), which includes the value of the goods sold.

For industries that do not hold inventory, output equals revenues (sales). For industries that do hold inventory, output equals revenues plus any net change in inventory (additions to inventory less sales out of inventory); for these industries, it is possible for a year's sales to exceed that year's value of production, if some of those sales came out of inventory (a previous year's production). In economic analysis models, what matters is the value of production that occurred in a year, since production is what drives the purchases of inputs. Sales of items that have been sitting in inventory do not generate indirect and induced impacts this year since they were produced in a previous year; thus, they are not counted as part of this year's output, to do so would overstate the indirect and induced impacts.

Figure 3. Output Diagram



Economic Events

IMPLAN builds the economic analysis of direct, induced, and indirect impacts from user-defined economic events, which are the initial direct inputs of employment, labor expenditures, and/or output (such as sales). Economic events represent exogenous investment in the regional economy, either money from outside the region or investment of savings and/or capital.

This economic analysis uses estimates of employment, the number of permanent, full-time jobs generated by new industries in the region.

Economic Impacts

An analysis of available industrially zoned parcels under low, medium, and high land use scenarios was conducted to estimate the potential employment in the three target industries shown in **Table 1**.

Table 1. Projected LIVE Zone Employment

Industry	Low	Medium	High
Warehousing, Storage and Wholesale Trade	1,063	1,914	3,042
Transportation Equipment Manufacturing	262	262	262
Miscellaneous Manufacturing	1,212	1,818	3,272
Total	2,537	3,994	6,576

The economic direct, indirect, and induced impacts of the new employment in each of the land-use scenarios is summarized in Table 2.

Table 2. Annual Economic Impacts (2022 dollars)

Impact	Employment	Labor Income	Value Added	Output
Low Scenario				
Direct	2,537	54,298,928	71,009,482	422,805,715
Indirect	704	35,091,538	56,876,899	119,582,956
Induced	402	16,946,497	30,980,283	54,977,585
Total Impact	3,643	106,336,962	158,866,663	597,366,255
Medium Scenario				
Direct	3,994	83,630,663	104,992,434	584,715,493
Indirect	1,030	49,726,417	80,436,112	170,621,508
Induced	595	25,044,235	45,870,660	81,340,331
Total Impact	5,619	158,401,316	231,299,206	836,677,331
High Scenario				
Direct	6,576	134,950,874	164,809,561	909,635,017
Indirect	1,620	77,223,761	124,432,938	264,759,076
Induced	942	39,601,597	72,632,416	128,724,256
Total Impact	9,138	251,776,232	361,874,915	1,303,118,349

IMPLAN provides a list of every industry in the two-county region that will be affected by the economic event. The top-five industry sectors that will benefit from the ongoing economic events defined for LIVE are given in the tables below. Low impacts in the indirect and induced effects relative to the direct impacts, indicate a low multiplier for that industry and a potential leakage exists in that industry—services and supplies (the intermediate inputs) will need to come from outside Trumbull and Mahoning Counties to support the projected direct employment.

Table 3. Top-Five Employment Industries—High Scenario

Industry	Direct Employment	Indirect Employment	Induced Employment	Total Employment
Miscellaneous manufacturing	3,272	<1	0	3,272
Warehousing and storage	3,042	101	4	3,147
Transportation Equipment Manufacturing	262	0	0	262
Other real estate	0	242	26	268
Employment Services	0	90	15	105
Total	6,606	433	45	7,054

Table 4. Top-Five Output Industries-High Scenario

Industry	Direct Output	Indirect Output	Induced Output	Total Output
Miscellaneous manufacturing	\$554,636,000	\$52,315	\$343	\$554,689,500
Warehousing and storage	\$211,569,000	\$7,110,000	\$297,000	\$218,977,000
Transportation Equipment Manufacturing	\$143,428,000	\$132	\$0	\$143,428,500
Owner-occupied Dwelling	\$0	\$0	\$16,868,000	\$16,868,000
Hospitals	\$0	\$0	\$10,116,000	\$10,116,000
Total	\$909,633,000	\$7,164,447	\$27,281,000	\$944,079,000

Baseline Comparison

To provide context for these results, the employment and output projections above may be compared with the 2010 and 2019 data for the two-county region summarized in Table 4.

Table 5. Population, Employment and Total Economic Output

Year	Population	Employment	Value Added (Gross Domestic Product) (\$billion)	Total Output (\$billion)
2010	442,500	216,400	\$14.4	\$32.6
2019	427,000	220,000	\$17.0	\$34.5