



ECONOMIC IMPACT ASSESSMENT: SANDIA SCIENCE & TECHNOLOGY PARK

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Mid-Region Council of Governments
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Introduction

The Mid-Region Council of Governments (MRCOG) provides a biennial economic impact report to the Sandia Science & Technology Park (SS&TP) per a request from the city of Albuquerque. The SS&TP was established in southeast Albuquerque in May of 1998 and is a major contributor to the economy of the Albuquerque metropolitan area.

MRCOG receives employment figures, industrial categories, payroll data, and private and public investment dollars from the SS&TP Program Office. MRCOG inputs this data to the Regional Economic Models Inc (REMI) economic impact model to produce the numbers presented in Tables 4-7 of this report. More detailed information on REMI is provided at the end of this report in Appendix A.

Sandia Science & Technology Park

The SS&TP is a master-planned, 340-acre technology community established in 1998 by a partnership between the nonprofit Sandia Science & Technology Park Development Corporation (SSTPDC) and Sandia National Laboratories. The collaboration fosters high-wage private-sector job creation through economic partnerships among companies in the Park, Sandia, the Air Force Research Laboratory, and the U.S. Space Force. The SS&TP is an anchor for the Kirtland National Security Complex that generates a broad assortment of technologies, products, and services, enhancing the missions of all involved.

The SS&TP boasts state-of-the-art fiber optic communications and a full-time team for support and customer service. This dynamic environment creates a synergy of innovation and collaboration, fueling the development of groundbreaking technologies and solutions to pressing national security challenges.

More background information about the SS&TP is provided in Appendix B.

Economic Impacts

The following tables report highlights of the impact of the SS&TP for the years 2022 and 2023, along with cumulative data since the Park's inception in 1998. At the end of 2023, there were 2,003 employees and 40 companies operating in the Park. At the time of publication in June 2024, there are 2,038 employees and 42 companies located in the Park.

Historic annual employment within the Park is shown in Table 1.

Table 1: End of Year Employment

Year	Employment
2010	2,360
2011	2,470
2012	2,414
2013	2,287
2014	2,292
2015	2,155
2016	2,008
2017	2,059
2018	2,194
2019	2,369
2020	2,018
2021	1,786
2022	1,805
2023	2,003

Source: Sandia Science &
Technology Park

SS&TP employment is categorized into eleven industry subsectors according to the three-digit North American Industry Classification System (NAICS). The breakdown of employment by subsector is presented in Table 2.

Table 2: 2022 and 2023 Employment by Industry Subsector

Industry Subsector	2022	2023
Administrative and Support Services	9	14
Chemical Manufacturing	41	49
Computer and Electronic Product Manufacturing	485	399
Educational Services; Private	150	152
Funds, Trusts, other Financial Vehicles	12	13
Miscellaneous Manufacturing	9	26
Museums, Historical Sites, and Similar Institutions	26	28
Professional, Scientific, and Technical Services	1,040	1,242
Religious, Grantmaking, Civic, Professional, and Similar Orgs.	2	1
Social Assistance	28	76
Telecommunications	3	3
Total	1,805	2,003

Source: Sandia Science & Technology Park

Private and public financial investment in the SS&TP is another input to REMI. These dollars have an impact on the overall economy by creating direct and indirect jobs, and generating other spending that ripples throughout the regional economy.

Table 3: Investment Spending – Construction, Equipment Purchases, and Building Maintenance

	2022	2023	Since Inception (1998)
Private	\$33,291,812	\$38,760,192	\$386,060,000
Public	\$170,000	\$250,000	\$99,517,439
Total	\$33,461,812	\$39,010,192	\$485,577,439

Source: Sandia Science & Technology Park

Economic impacts from the REMI model are presented below in Tables 4 through 7. Although the SS&TP only directly impacts employment in east Albuquerque due to its physical location, indirect impacts are prominent well beyond its immediate boundaries. To demonstrate this, economic figures are presented for three regions: the MRCOG region (Table 4), the city of Albuquerque (Table 5), and the remainder of Bernalillo County (Table 6). As Table 4 indicates, while the Park is host to 2,003 jobs in 2023, its total impact in the MRCOG Region amounts to 4,528 jobs.

Table 4: Economic Impacts in the MRCOG Region (Bernalillo, Sandoval, Torrance, Valencia, and Southern Santa Fe Counties)

Measure	Estimated 2022 Impact	Estimated 2023 Impact
Impact on Total Employment	4,375	4,528
Construction	437	376
Manufacturing	589	504
Retail Trade	288	280
Professional and Technical Services	1,250	1,462
Health Care and Social Assistance	297	337
Accommodation and Food Services	134	137
Other Industries	1,379	1,432
Direct Employment (Employment at the SS&TP)	1,805	2,003
Indirect Employment	2,570	2,525
Gross Regional Product	\$429,607,667	\$421,134,757
Wage and Salary Disbursements	\$208,125,203	\$204,266,237
Increase in Consumer Spending	\$185,677,275	\$169,624,605
Increase in Taxable Consumer Spending	\$96,909,342	\$74,868,278
Increase in Tax Revenue Generated from Consumer Spending to the State of New Mexico	\$7,418,350	\$7,458,738
Impact on Population	1,084	1,012

Source: Regional Economic Models, Inc., MRCOG

Table 5: Economic Impacts in the City of Albuquerque

Measure	Estimated 2022 Impact	Estimated 2023 Impact
Impact on Total Employment	3,753	3,932
Construction	270	232
Manufacturing	569	486
Retail Trade	223	218
Professional and Technical Services	1164	1,372
Health Care and Social Assistance	253	294
Accommodation and Food Services	111	113
Other Industries	1,164	1,217
Direct Employment (Employment at the SS&TP)	1,805	2,003
Indirect Employment	1,948	1,929
Gross Regional Product	\$382,873,803	\$384,860,652
Wage and Salary Disbursements	\$176,954,106	\$173,519,352
Increase in Consumer Spending	\$115,907,668	\$113,443,854
Increase in Taxable Consumer Spending	\$59,837,524	\$48,872,591
Increase in Tax Revenue Generated from Consumer Spending to the City of Albuquerque	\$4,706,745	\$3,865,827
Impact on Population	685	765

Source: Regional Economic Models, Inc., MRCOG

Table 6: Economic Impacts in the Rest of Bernalillo County (Area outside the City of Albuquerque)

Measure	Estimated 2022 Impact	Estimated 2023 Impact
Impact on Total Employment	395	378
Construction	125	103
Manufacturing	13	12
Retail Trade	28	28
Professional and Technical Services	78	83
Health Care and Social Assistance	20	20
Accommodation and Food Services	7	7
Other Industries	124	126
Direct Employment (Employment at the SS&TP)	0	0
Indirect Employment	395	378
Gross Regional Product	\$28,894,962	\$28,162,356
Wage and Salary Disbursements	\$22,699,377	\$22,487,626
Increase in Consumer Spending	\$22,748,367	\$21,605,689
Increase in Taxable Consumer Spending	\$12,365,709	\$9,653,952
Increase in Tax Revenue Generated from Consumer Spending to Bernalillo County	\$796,043	\$636,230
Impact on Population	145	134

Source: Regional Economic Models, Inc., MRCOG

The SS&TP has been a significant contributor to the regional economy over the past 25 years, through both direct and indirect impacts. That is, the direct job creation of higher paying jobs, combined with investment spending on primarily construction and equipment at the Park, has had a sizable impact on overall wage and salaries, consumer spending, and tax revenues generated throughout the region.

Table 7 presents an estimate of cumulative economic impacts of the SS&TP in the MRCOG Region since the inception of the Park in 1998.

Table 7: Impacts of Sandia Science & Technology Park

Economic Indicator	Economic Value
Peak** Number of Jobs Created (2011)	
Direct Jobs Created	2,470
Indirect Jobs Created	4,123
Total Jobs Created	6,593
Indirect Jobs to Direct Jobs	1.7
Increase in Tax Revenue Since Inception (1998-2023)	
Cumulative Impact on Taxable Consumer Spending	\$4,382,505,264
Cumulative Increase in Revenue Generated from Taxable Consumer Spending to the City of Albuquerque	\$45,861,750
Cumulative Increase in Revenue Generated from Taxable Consumer Spending to the State of New Mexico	\$182,778,950
Wage and Salary Impacts	
Cumulative Impact on Wage and Salary Disbursements (1998-2023)	\$7,728,304,021
Average Salary for All Park Employees (2023)	\$92,336
Average Salary for Non-Sandia/Industry Employees in Park (2023)	\$68,912
Average Salary for the Albuquerque Metropolitan Area (2023)	\$59,730

Source: Regional Economic Models, Inc., MRCOG

Notes:

** The SS&TP had their highest levels of employment in 2011. The 'peak number of jobs' presented in this table reflect employment impacts from that year.

All dollar values are reported in 2022 inflation adjusted dollars.

The average salary for the Albuquerque Metropolitan Area is from the Bureau of Labor Statistics Occupational Employment Statistics Program (May 2023).

To maintain consistency with previous reports, the total estimate of the impact on gross receipts tax revenues for Albuquerque is calculated using the city-imposed tax rate and does not include the portion of the state revenues that is redistributed to the City.

Figures have been derived using a number of different versions of the REMI model. Each report contains the best available estimates of these impacts at the time, but summing results from different models may be problematic. Values presented in this table should be considered rough estimates.

Appendix A: Overview of the REMI Model¹

The REMI model incorporates aspects of four major modeling approaches: Input-Output, General Equilibrium, Econometric, and Economic Geography. Each of these methodologies has distinct advantages as well as limitations when used alone. The REMI integrated modeling approach builds on the strengths of each of these approaches.

The REMI model, at its core, has the inter-industry relationships found in Input-Output models. As a result, the industry structure of a particular region is captured within the model, as well as transactions between industries. Changes that affect industry sectors that are highly interconnected to the rest of the economy will often have a greater economic impact than those for industries that are not closely linked to the regional economy.

General Equilibrium is reached when supply and demand are balanced. This tends to occur in the long run, as prices, production, consumption, imports, exports, and other changes occur to stabilize the economic system. For example, if real wages in a region rise relative to the U.S., this will tend to attract economic migrants to the region until relative real wage rates equalize. The general equilibrium properties are necessary to evaluate changes such as tax policies that may have an effect on regional prices and competitiveness.

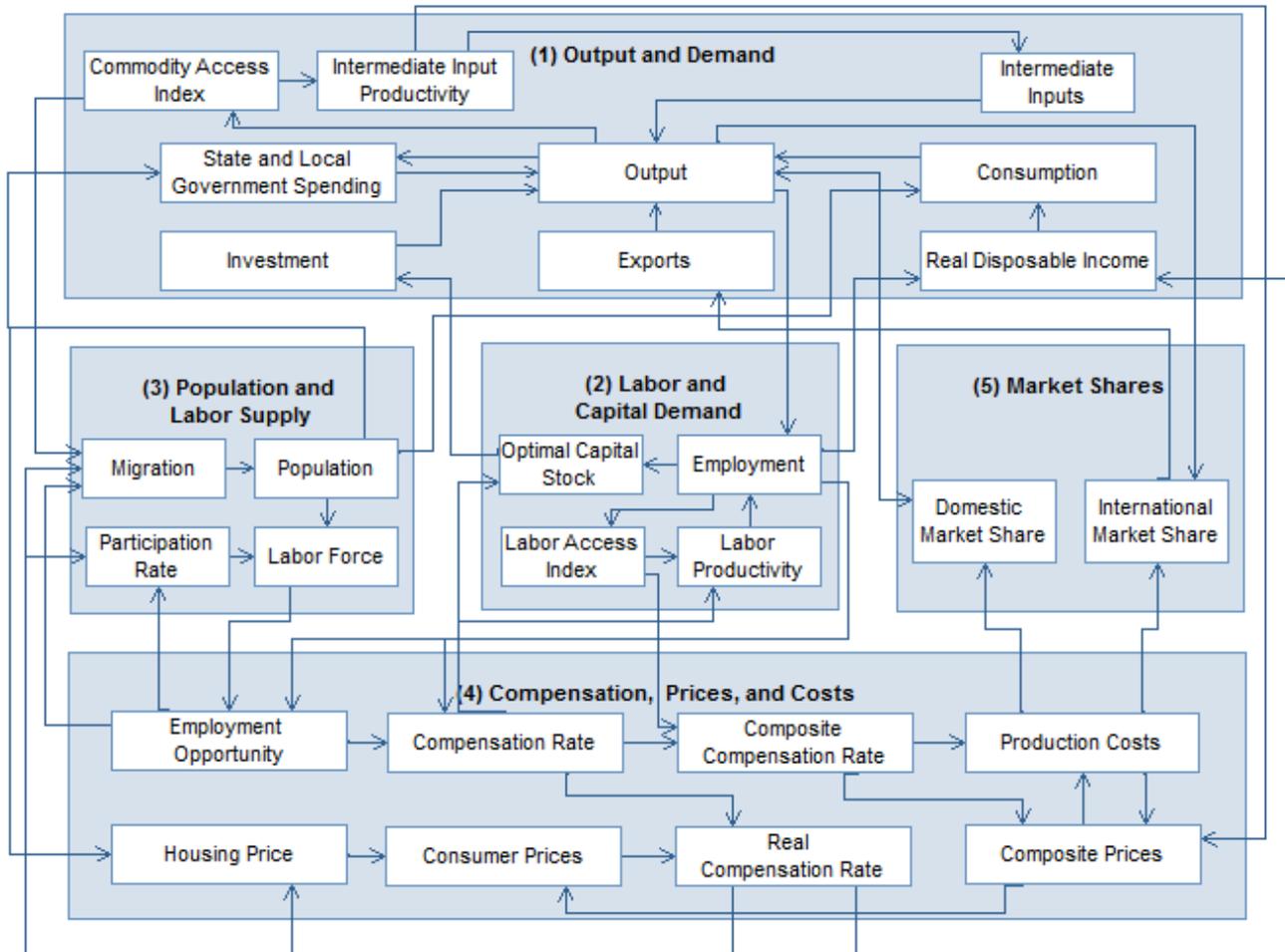
REMI is sometimes called an “Econometric model,” as the underlying equations and responses are estimated using advanced statistical techniques. The estimates are used to quantify the structural relationships in the model. The speed of economic responses is also estimated since different adjustment periods will result in different policy recommendations and even different economic outcomes.

The New Economic Geography features represent the spatial dimension of the economy. Transportation costs and accessibility are important economic determinants of interregional trade and the productivity benefits that occur due to industry clustering and labor market access. Firms benefit having access to a large, specialized labor pool and from having access to specialized intermediate inputs from supplying firms. The productivity and competitiveness benefits of labor and industry concentrations are called agglomeration economies and are modeled in the economic geography equations.

The REMI model consists of thousands of simultaneous equations with a structure that is relatively straightforward. The exact number of equations used varies depending on the extent of industry, demographic, demand, and other detail in the model. The overall structure of the model can be summarized in five major blocks: (1) Output and Demand, (2) Labor and Capital Demand, (3) Population and Labor Supply, (4) Compensation, Prices, and Costs, and (5) Market Shares. The blocks and their key interactions are shown in Figure 3.

¹ The information contained in this technical appendix largely comes from REMI directly either through their technical documents, their webpage (www.remi.com), or the REMI model itself.

Figure 3: REMI Model Linkages



Block 1. Output and Demand

This block includes output, demand, consumption, investment, government spending, import, commodity access, and export concepts. Output for each industry in the home region is determined by industry demand in all regions in the nation, the home region’s share of each market, and international exports from the region.

For each industry, demand is determined by the amount of output, consumption, investment, and capital demand on that industry. Consumption depends on real disposable income per capita, relative prices, differential income elasticities, and population. Input productivity depends on access to inputs because a larger choice set of inputs means it is more likely that the input with the specific characteristics required for the job will be found. In the capital stock adjustment process, investment occurs to fill the difference between optimal and actual capital stock for residential, non-residential, and equipment investment. Government spending changes are determined by changes in the population.

Block 2. Labor and Capital Demand

The Labor and Capital Demand block includes the determination of labor productivity, labor intensity, and the optimal capital stocks. Industry-specific labor productivity depends on the availability of workers with differentiated skills for the occupations used in each industry. The occupational labor supply and commuting costs determine firms' access to a specialized labor force.

Labor intensity is determined by the cost of labor relative to the other factor inputs, capital, and fuel. Demand for capital is driven by the optimal capital stock equation for both non-residential capital and equipment. Optimal capital stock for each industry depends on the relative cost of labor and capital, and the employment weighted by capital use for each industry. Employment in private industries is determined by the value added and employment per unit of value added in each industry.

Block 3. Population and Labor Supply

The Population and Labor Supply block includes detailed demographic information about the region. Population data is given for age, gender, and ethnic category, with birth and survival rates for each group. The size and labor force participation rate of each group determines the labor supply. These participation rates respond to changes in employment relative to the potential labor force and to changes in the real after-tax compensation rate. Migration includes retirement, military, international, and economic migration. Economic migration is determined by the relative real after-tax compensation rate, relative employment opportunity, and consumer access to variety.

Block 4. Compensation, Prices, and Costs

This block includes delivered prices, production costs, equipment cost, the consumption deflator, consumer prices, the price of housing, and the compensation equation. Economic geography concepts account for the productivity and price effects of access to specialized labor, goods, and services.

These prices measure the price of the industry output, taking into account the access to production locations. This access is important due to the specialization of production that takes place within each industry, and because transportation and transaction costs of distance are significant. Composite prices for each industry are then calculated based on the production costs of supplying regions, the effective distance to these regions, and the index of access to the variety of outputs in the industry relative to the access by other uses of the product.

The cost of production for each industry is determined by the cost of labor, capital, fuel, and intermediate inputs. Labor costs reflect a productivity adjustment to account for access to specialized labor, as well as underlying compensation rates. Capital costs include costs of non-residential structures and equipment, while fuel costs incorporate electricity, natural gas, and residual fuels.

The consumption deflator converts industry prices to prices for consumption commodities. For potential migrants, the consumer price is additionally calculated to include housing prices. Housing prices change from their initial level depending on changes in income and population density.

Compensation changes are due to changes in labor demand and supply conditions and changes in the national compensation rate. Changes in employment opportunities relative to the labor force and occupational demand change determine compensation rates by industry.

Block 5. Market Shares

The market shares equations measure the proportion of local and export markets that are captured by each industry. These depend on relative production costs, the estimated price elasticity of demand, and the effective distance between the home region and each of the other regions. The change in share of a specific area in any region depends on changes in its delivered price and the quantity it produces compared with the same factors for competitors in that market. The share of local and external markets then drives the exports from and imports to the home economy.

Appendix B: SS&TP Background Information²

Located on south Eubank immediately east of the Kirtland National Security Complex is the SS&TP, an internationally recognized science and technology park. Also located on south Eubank Boulevard is the Center for Integrated Nanotechnologies, a U.S. Department of Energy-funded nanoscience research facility. And the National Museum of Nuclear Science & History, located at Eubank and Southern Boulevard, attracts national and international visitors to the southeast Albuquerque area.

As originally envisioned, the mission of the SS&TP was to provide the architecture for enhanced integration between private sector technology-based companies, Sandia National Laboratories, and multiple departments of the Air Force technology-based laboratories/operations on the Kirtland National Security Complex. Over the past 25 plus years this vision has created significant results.

The location of the SS&TP contributes to its success for several reasons. Sandia, the Air Force Research Laboratory, and the U.S. Space Force all have diverse and immediate access to technology-rich private sector organizations, and vice versa.

In addition to the economic benefit the SS&TP provides to the region, it improves the reputation of Albuquerque and New Mexico as a viable and attractive location for high-tech companies. The SS&TP has received numerous national and international awards such as:

- **Outstanding Research/Science Park Award**
(Association of University Research Parks)
- **Leadership Award**
(Association of University Research Parks)
- **Career Achievement Award**
(Association of University Research Parks)
- **Public-Private Partnership Award**
(International Economic Development Council)
- **Excellence in Technology-Led Economic Development Award**
(U.S. Department of Commerce, Economic Development Administration)
- **Star of the Southwest Award**
(U.S. Department of Commerce, Economic Development Administration)

Overall, growth of the SS&TP creates economic impact for the Park companies and organizations, city of Albuquerque, Bernalillo County, and state of New Mexico.

² Appendix B was provided by the SSTOPDC and SS&TP Program Office as additional information relevant to the Park and its impact on the surrounding area.