A Summary of
The Economic Impact of
The Proposed
West Georgia Regional Science Center

By: William J. Smith, Ph.D.
Chair of the Department of Economics

Hilde Patron, Ph.D.
Director of the Center for Business and Economic Research

Department of Economics
University of West Georgia
Richards College of Business[1]

---

[1] The information above is for affiliation purposes only. The analysis contained is not the position of the College of Business or the University of West Georgia.

Introduction

The proposed West Georgia Regional Science Center will be located in Carrollton, Georgia. It is designed to serve Carroll and surrounding counties within a 50-mile radius of the center, which includes counties in both western Georgia and eastern Alabama. The proposed development will consist of an approximately $1.86 million facility that will be capable of seating up to 250. The impact is assumed to occur in in two distinct stages, the construction phase and the operational phase of the development. Data for both the construction and expected operational phases were provided by Dr. Benjamin DeMayo and Alan Bell.

Description of Methodology

Industry-standard input-output software and data developed by the Minnesota IMPLAN Group (MIG) is used to estimate the economic impact of the proposed West Georgia Regional Science Center development on the economy of Carroll County. Input-output models use industry-level monetary transactions data to measure the degree to which industries and institutions in the economy interact with one another, and the extent to which changes in final consumption ripple through the rest of the economy (see e.g., Miller and Blair, 1985).

Input-output models can be *descriptive* and *predictive*. Descriptive models estimate the degree to which different industries rely on one another. The relationships are tabulated in tables that summarize the flow of dollars and goods between industries and institutions. As an example of a descriptive model consider a builder, who in order to construct x houses must buy y units of nails from a nail manufacturer, who in turn must purchase z units of steel from metals supplier. The values x, y, and z describe the relationships between these three industries, measured in units of output. The relationships can also be described in terms of value added (payments to workers, taxes, interests, profits, and other income) and employment.

The predictive models utilize the interdependence between industries to predict how changes in final consumption by households, industries, or governments affect other

sectors of the economy. The extent to which an initial stimulus impacts all other parts of the economy is summarized with quantitative expressions called *multipliers* (see Leontief 1936)*. Multiplier effects can be divided into *direct*, *indirect*, and *induced* effects. The original change in final consumption, i.e., the number of new houses sold, is the actual *direct* effect. The *indirect* effects are the changes in all production processes in the economy needed to meet the new consumption needs. In the builder's example, this would be the new production of lumber, nails, windows, etc., used in the new houses built. Finally, the *induced* effects are the changes in household spending derived from the increases (or decreases) in households' incomes. In the example above, this would not only include new wages from the carpenters and materials suppliers in the construction industry, but also includes new wages generated from other businesses, such as restaurants and grocery stores, at which these new wage dollars are spent.

The IMPLAN model provides estimates of these three effects in terms of output, wages, and number of jobs created or destroyed throughout the economy (employment). All dollar figures are expressed in employment positions (not full-time equivalence) and in current dollars.

Construction Phase

The assumption regarding the construction phase is that 100% of the work is performed locally. In other words, the building is not pre-built at another location and moved to the site (which could be the case for pre-fabricated buildings). See Table 1 below for more details.

Table 1: Impacts of the Construction Phase

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	21.2	$679,112	$753,334	$1,862,800
Indirect Effect	2.5	$87,116	$160,311	$288,425
Induced Effect	3.9	$127,012	$267,352	$442,508
Total Effect	27.6	$893,239	$1,180,997	$2,593,732

The construction phase of the West Georgia Regional Science Center is expected to employ about 21.2 new workers, and generate an additional 7.4 jobs within the county. The initial expenditures on the building ($1.86 million) will generate an additional $730,932 in total output in Carroll County. This means for every local dollar spent in the construction phase another $0.39 are generated in Carroll County expenditures.

Operational Phase

Table 2 depicts the impacts accruing to Carroll County during the operational phase of the proposed West Georgia Regional Science Center.

Table 2: Impacts of the Operational Phase

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	9.1	$166,304	$526,939	$1,007,750
Indirect Effect	3	$63,496	$155,943	$264,790
Induced Effect	0.3	$10,564	$22,236	$36,808
Total Effect	12.4	$240,364	$705,119	$1,309,348

In data provided, the direct increase in economic activity through admissions is estimated to be $1 million per year (see Table 2). Based on these total direct expenditures of $1 million, Carroll County will experience a total economic impact of $1.31 million dollars of new economic activity, or an additional $309,348 in local spending related to the new facility. It is estimated that the new facility will employ approximately 9.1 workers, and this employment will generate another 3.3 employees within Carroll County.

The estimates for the operational phase are based on the assumption that the activities provided by the new West Georgia Regional Science Center are new to the region and do not offset other sales/purchases made in Carroll County or by Carroll County residents. According to the most recent information, this project represents the first of its type in Carroll County, thus, any sales or services provided would be new to

the county. Its geographic location and the nature of the services provided suggest that a large share of the customers are likely to come from outside Carroll County or outside the state, and thus represent, in large part, new dollars flowing into the county.

Remarks

The extent to which these results accurately reflect the economic impacts from the new West Georgia Regional Science Center development is based on the information provided. Finally, these estimates are made using the best data available; however, as always, changing economic conditions may adversely impact any new development, resulting than lower than expected sales or fewer than expected customers.

References

Leontief, Wassily. (1936). "Quantitative Input-Output Relations in the Economic System of the United States." *The Review of Economics and Statistics.* 21, 105-125.

Miller, Ronald E. and Peter Blair. (1985). *Input-Output Analysis: Foundations and Extensions.* New Jersey: Prentice Hall.