The Economic Impact of the Proposed Northgate Transfer Center Construction on El Paso, Texas

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Introduction

The Institute for Policy and Economic Development (IPED) at the University of Texas at El Paso (UTEP) was contracted by the Planning Division of City of El Paso to conduct an economic impact analysis of the proposed construction of the Northgate Transfer Center (NTC) that will accommodate a bus rapid transit system. This report is generated for the purpose of supporting a submission for funding to the U.S. Department of Transportation's National Infrastructure Investments (TIGER Discretionary Grants). Therefore, this study quantifies the economic impacts of the proposed construction of the NTC on the County of El Paso, Texas. Specifically, this report estimates the effects that the NTC construction would have on output (business volume), labor income, employment, and tax revenues within the county.

Methodology

To estimate the economic impact of the proposed construction of the Northgate Transfer Center on El Paso County, a modeling technique known as Input-Output (I-O) analysis is utilized. I-O analysis illustrates how industries and institutions are linked by the intermediate inputs they provide one another to produce the final output in a given economy. For example, in order to produce a good or provide a service, an industry or institution requires materials, products and services from other supplier industries or institutions. Similarly, these supplier industries require materials, products and services to produce the intermediate inputs that will be used for the provision of the final product or service. Essentially, an I-O model captures all rounds of inter-industry/institutional relationships that make up the production processes of industries in a given economy. Therefore, an I-O model can be used to estimate the regional effects of a particular change or shock to that region's economy.

Inter-industry/institutional relationships and their overall economic effects on a region are measured using ***multipliers***. ***Multipliers*** estimate the total change in an economy resulting from a one unit change in production, employment, income, or some other component of value added. For example, an employment multiplier of 2.1 suggests that for every one job created by a given industry, an additional 1.1 jobs will be generated within the region. However, it is important to note that different industries or sectors will vary in multiplier size. For instance, industries exhibiting higher levels of interdependence with other industries in a given economy will typically be characterized by larger multipliers. Thus, industries relying less heavily on imports will generally have larger multipliers relative to those requiring commodities and services produced outside the given economy.[1] Consequently, larger regions will often have larger multipliers than smaller regions.

[1] Miernyk, W. H. (1965). *Elements of Input-Output Analysis.* New York: Random House.

There are several I-O commercial software packages available, each of which provides its own unique regionalized multipliers. The model chosen for this study is the ***IMPLAN*** or ***IM***pact analysis for ***PLAN***ning system.[2] Similar to traditional regional economic modeling techniques, IMPLAN employs a top-down approach, using national data as a control total for state data, and state data, in turn is used as a control total for county data. In addition of being flexible and relatively easy to modify, IMPLAN explicitly breaks out impacts into three types of effects measured by its multipliers, making this an attractive I-O software package.[3] The three types of effects measured by the IMPLAN multipliers used in this report include the ***direct***, the ***indirect***, and the ***induced*** effects.

The ***direct*** effect refers to the initial change in demand resulting from new or current expenditures or current employment levels. This effect is the impact that is actually applied to the predictive model for analysis. I-O multipliers are then used to generate changes in other regional economic sectors given the expenditure or employment value of interest. Examples of a direct effect include increases in construction expenditures, decreases in manufacturing employment levels, and changes in the amount of tourist spending.

Indirect effects represent all changes in regional industry activity, such as increases or decreases in production and employment that result from the direct effect. For example, increases in construction expenditures for non-residential structures will result in increased sales of steel, concrete, windows, and other necessary materials and equipment from supplier industries within the region. This increased supplier industry activity is captured by the indirect economic impact.

Finally, the ***induced*** effect measures the impact of household spending within a region due to changes in labor income, or compensation received by business proprietors and workers for both the directly and indirectly impacted regional industries. Continuing with our previous example, increases in construction expenditures and supplier industry output generate increases in labor income to support this additional construction and supplier industry activity. Households then spend a portion of this income on various goods and services produced within the economy, further increasing regional sales, employment, and income for other local economic sectors. The sum of these three effects represents the total impact of the new or current expenditure value or employment level of interest.

IMPLAN provides information and impact results for four key regional economic variables: ***output, employment, labor income, and total tax revenues***. Accordingly, economic impact values in these four

[2] IMPLAN Professional©, Version 3.0. (1993). *Minnesota IMPLAN Group, Inc.*

[3] Rickman, D. S., & Schwer, K. (Fall 1993). A Systematic Comparison of the REMI and IMPLAN Models: The Case of Southern Nevada. *The Review of Regional Studies* , 148-149.

categories are estimated for the proposed construction of the Northgate Transfer Center. Each of these four categories is defined below:

1. ***Output –*** represents the total value of industry production or the value of all goods and services produced within the local economy.[4] Output is an overall measure of economic activity and it is the sum of income paid to all factors of production as well as all inter-industry purchases.

2. ***Labor Income –*** represents the sum of compensation paid to workers as well as business proprietors. This value includes employer paid benefits and payroll taxes, in addition to wages and salaries.[5] Note that when interpreting the results of this study, labor income and output should not be added, as labor income is a component of output.

3. ***Employment –*** represents the average annual jobs within a sector and consists of both full-time and part-time positions.[6] This approach is consistent with the international standard for counting the number of jobs in an economic system.

4. ***Total Tax Revenues*** – represent the income received by the state/local governments, as well as the federal government.

The subsequent section reviews the data provided by the Planning Division of the City of El Paso. These data detail the estimated expenditures of the proposed Northgate Transfer Center construction. All data are used to adjust the IMPLAN sectors corresponding to these expenditures.

Data

To estimate the economic impact of the Northgate Transfer Center project, the Planning Division of the City of El Paso provided the project cost summary shown in Table 1; however, several assumptions and calculations were made by IPED. For instance, it is assumed that the total project cost will be spent during a two-year period, 60 percent the first year and 40 percent the second year. In addition, the project activities were categorized and aggregated into four main activities. These assumptions and calculations are presented in Table 2.

[4] Minnesota IMPLAN Group, Inc. *Glossary.* Retrieved April 17, 2010, from IMPLAN.com Economic Impact Modeling Solutions: http://implan.com/v3/index.php?option=com_glossary&Itemid=164

[5] Minnesota IMPLAN Group, Inc. *Glossary.* Retrieved April 17, 2010, from IMPLAN.com Economic Impact Modeling Solutions: http://implan.com/v3/index.php?option=com_glossary&Itemid=164.

[6] Ibid.

Table 1. Northgate Transfer Center Project - Cost Summary

Project Activity	Cost
Construction Cost	$ 16,225,100
Contingency	$1,622,500
Design Fees (Includes TDLR, Surveying, Geotechnical Investigation Fees)	$2,109,300
Boundary Survey	$0
Project Engineering	$162,000
Park's Project Coordinator	$0
Inspection	$300,000
Testing Cost	$324,500
Contract Compliance	$20,000
Public Arts Fee	$324,500
Utility Service Upgrade	$ 62,000
Total Project Budget	**$21,149,900**

Source: Planning Division, City of El Paso, TX

Table 2. Northgate Transfer Center Project - Direct Costs

Project Activity	Cost
Year - 1	
Construction	$10,745,760
Engineering Services	$1,737,480
Administravive Services	$12,000
Public Arts	$194,700
Total Year - 1	**$12,689,940**
Year - 2	
Construction	$7,163,840
Engineering Services	$1,158,320
Administravive Services	$8,000
Public Arts	$129,800
Total Year - 2	**$8,459,960**
Total Project Cost	**$21,149,900**

Source: IPED

Economic Impact Findings

The overall economic impact results of the proposed construction of the Northgate Transfer Center are presented in Table 3. However, it is important to note that all changes in economic activity related to this construction project represent temporary impacts that are generated only for the period in which construction activities take place; in this analysis, a two-year period. Also, all expenditures are assumed to be local; this implies that all projects' purchases of construction materials and related expenditures will be made within El Paso County.

The total project budget is estimated to be about $21.1 million, which will be spent over the course of two years. This expenditure is estimated to generate $12.2 million of additional output during this time period. This additional output represents increased sales of local suppliers (indirect effect) of about $5.7 million, and close to $6.5 million of increased household spending (induced effect). This implies that for every dollar spent in the construction of this project, an additional $0.60 of output is generated locally.

Table 3. Northgate Transfer Center TOTAL Impacts

Economic Impact

	Direct	Indirect	Induced	Total	Multiplier
Output	$21,149.9	$5,731.0	$6,472.0	$33,352.9	1.6
Employment	191	48	63	303	1.6
Labor Income	$7,969.804	$1,917.8	$2,032.9	$11,920.5	1.5

Tax Impact

	Direct	Indirect	Induced	Total	Multiplier
State/Local	$190.8	$304.2	$427.8	$922.7	4.8
Federal	$1,149.1	$342.6	$396.6	$1,888.2	1.6
Total	$1,339.8	$646.7	$824.4	$2,810.9	2.1

Source: IPED.

Notes: Dollar amounts are reported in thousands of 2011 dollars. All NTC expenditures are assumed to be local.

With respect to employment, the construction of the Northgate Transfer Center is expected to employ about 191 individuals and support about 111 additional jobs over the two-year time span. In other words, it is estimated that for every person directly employed by the construction of the Northgate terminal, an additional 0.6 jobs will be generated within El Paso County. Annual average wages are estimated to be around $41,000 per worker, including employer paid benefits. This adds to nearly $8.0 million of direct payroll that in turn contribute to additional indirect and induced labor income effects of about $3.9 million.

These findings indicate that for every dollar spent in direct payroll for the NTC construction project, approximately $0.50 are paid to other local workers and self-employed individuals.

To finalize this report, it is estimated that the proposed construction of the Northgate Transfer Terminal will generate over $1.3 million of direct tax revenues that will be paid by industries and residents located in El Paso County. Of these tax revenues, about 14 percent will go to state and local governments and the remaining 86 percent will be received by the federal government. After the two-year period, total tax revenues are expected to increase to $2.8 million; of this, nearly $1.9 million will be paid to the federal government and over $900 thousand to state and local governments.

Appendix

Annual Economic Impacts of the Northgate Transfer Center

Table A1. Northgate Transfer Center Year-1 Impacts

Economic Impact

	Direct	Indirect	Induced	Total	Multiplier
Output	$12,689.9	$3,438.6	$3,883.2	$20,011.7	1.6
Employment	115	29	38	182	1.6
Labor Income	$4,781.9	$1,150.7	$1,219.7	$7,152.3	1.5

Tax Impact

	Direct	Indirect	Induced	Total	Multiplier
State/Local	$114.5	$182.5	$256.7	$553.6	4.8
Federal	$689.4	$205.5	$238.0	$1,132.9	1.6
Total	$803.9	$388.0	$494.6	$1,686.6	2.1

Source: IPED.

Notes: Dollar amounts are reported in thousands of 2011 dollars. All NTC expenditures are assumed to be local.

Table A2. Northgate Transfer Center Year-2 Impacts

Economic Impact

	Direct	Indirect	Induced	Total	Multiplier
Output	$8,460	$2,292	$2,589	$13,341	1.6
Employment	77	19	25	121	1.6
Labor Income	$3,188	$767	$813	$4,768	1.5

Tax Impact

	Direct	Indirect	Induced	Total	Multiplier
State/Local	$76.3	$121.7	$171.1	$369.1	4.8
Federal	$459.6	$137.0	$158.6	$755.3	1.6
Total	$535.9	$258.7	$329.8	$1,124.4	2.1

Source: IPED.

Notes: Dollar amounts are reported in thousands of 2011 dollars. All NTC expenditures are assumed to be local.