Handbook for Assessing Economic Opportunities from Appalachian Development Highways

prepared for the
Appalachian Regional Commission
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CONTENTS

ACKNOWLEDGEMENTS iii

1. INTRODUCTION
1.1 Motivation 1-1
1.2 Organization of the Handbook 1-1
1.3 Data and Data Resources 1-3
1.4 Overview of Analysis Steps 1-5
1.5 Economic Development Motivations and Limitations 1-5

2. FIRST STEPS
2.1 Overview 2-1
2.2 Identify the Target Area 2-1
2.3 Identify New Linkages 2-2
2.4 Identify Stakeholders 2-3
2.5 Summary 2-5

3. LOCAL ECONOMIC PERFORMANCE ANALYSIS
3.1 Overview 3-1
3.2 Employment Data 3-1
2.3 Business Mix Analysis 3-3
3.4 Business Trend Analysis 3-6
3.5 Interpretation of Economic Base Analysis 3-8
3.6 Summary 3-9

4. MARKET ACCESSIBILITY
4.1 Overview 4-1
4.2 Types of Market Accessibility Effects 4-1
4.3 Measurement of Accessibility Changes 4-2
4.4 Interpretation and Analysis of Changes in Economic Opportunities 4-7
4.5 Summary 4-10

5. ECONOMIC DEVELOPMENT RESOURCE ANALYSIS
5.1 Overview 5-1
5.2 Determining Your Economic Development Focus 5-1
5.3 Economic Development Programs 5-2
5.4 Facility Resource Assessment 5-2
5.5 Labor Force Assessment 5-6
5.6 Commercial Business District Assessment 5-8
5.7 Tourism Assessment 5-8
5.8 Interpretation and Use of These Results 5-11

6. CALCULATION OF OPPORTUNITIES
6.1 Overview 6-1
6.2 Business Costs 6-1
6.3 Development Constraints and Incentives 6-3
6.4 Complementary Industries 6-4
6.5 Calculation and Interpretation of Changes in Economic Opportunities 6-5
6.6 Summary 6-6

7. PROCESS FOR DEVELOPING A STRATEGIC PLAN
7.1 Overview 7-1
7.2 SWOT Review: Where are we now? 7-1
7.3 Vision and Goal Formulation: Where are we going? 7-2
7.4 Strategy Development: How do we get there? 7-4
7.5 Monitoring and Evaluation 7-6

APPENDIX A BLANK WORKSHEETS A-1
APPENDIX B CASE STUDY - CORRIDOR T B-1
APPENDIX C CASE STUDY – CORRIDOR V C-1

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CHAPTER ONE
INTRODUCTION

1.1 Motivation

This handbook is designed to help economic development practitioners in Appalachian Region communities to identify and pursue economic opportunities, specifically including those made possible by newly-completed segments of the Appalachian Development Highway System (ADHS).

The 1964 President's Appalachian Regional Commission (PARC) reported to Congress that economic growth in Appalachia would not be possible until the Region's isolation had been overcome. Much of the region was bypassed when the Interstate highway system was built because it was costly to build roads through the mountains. The ADHS now has top priority as a key to economic development in the region, because it can link previously-isolated areas to broader labor, supplier and customer markets. By providing direct links and reducing travel times, new segments of the ADHS effectively can improve accessibility to and from those areas and make them more attractive for economic development.

However, a transportation project, such as the completion of a new highway segment, does not automatically result in economic growth and development. It merely overcomes one barrier to economic growth, and thus increases potential opportunities for additional economic growth. For that reason, it is important for development practitioners to have the tools to identify and take advantage of local opportunities for economic development that arise from a transportation project. Accordingly, this handbook is designed for the use of local planners who do not necessarily have much prior experience in economic development analysis, and is designed to help them identify targets and strategies for business attraction and growth.

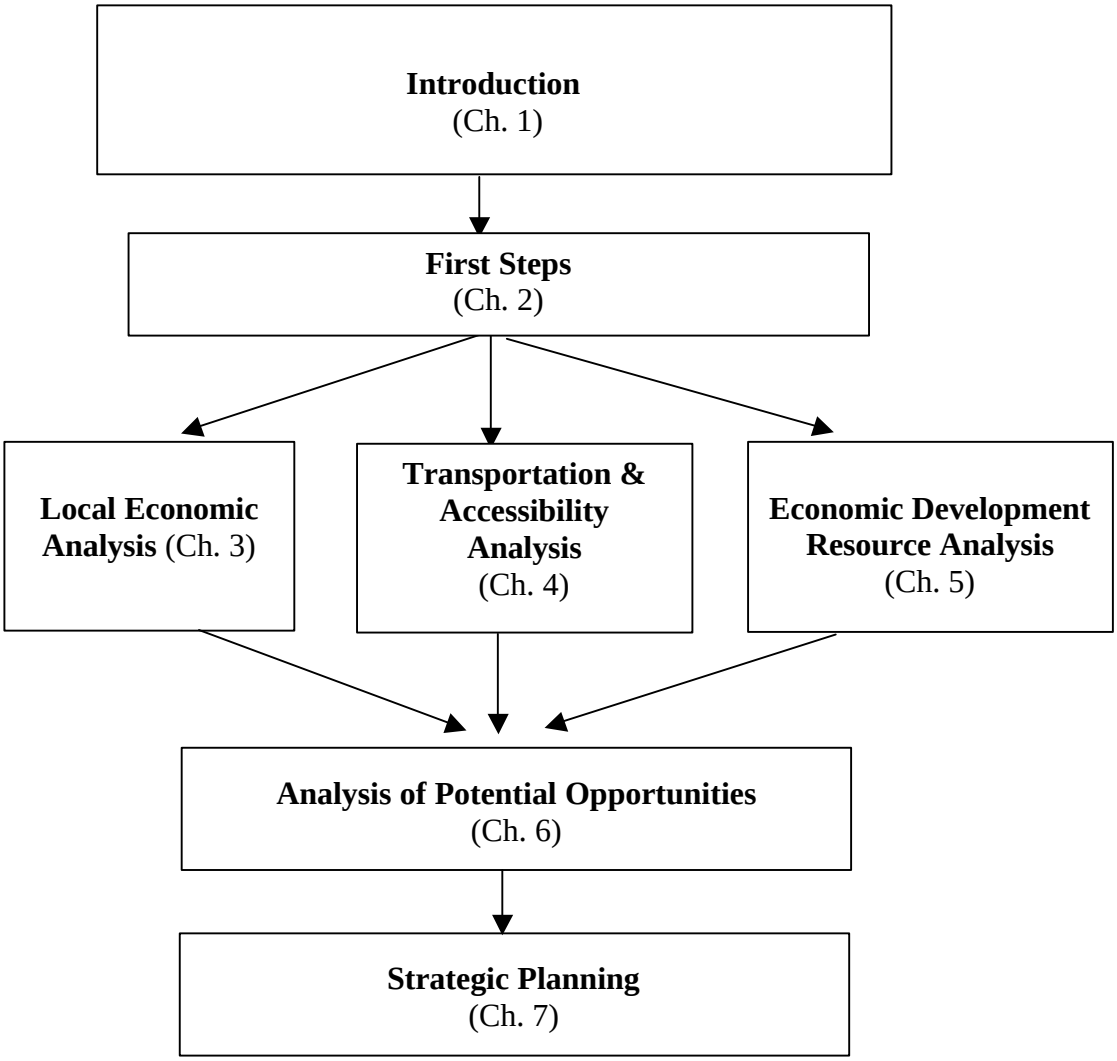
This introductory chapter has three parts. The first gives an overview of how the handbook is organized. The second discusses data requirements and the role of the electronic spreadsheets and paper worksheets that are included with the handbook. The third summarizes basic economic development motivations and goals. It is important to understand why you are pursuing economic development as this will affect how you interpret the analysis that this handbook outlines.

1.2 Organization of the Handbook

This handbook is organized into six chapters, accompanied by a series of paper worksheets and an electronic spreadsheet analysis tool. You can use the handbook with the spreadsheet tool, to help you identify economic opportunities and potential business growth. The organization of the handbook is shown in the figure on the next page.

The basic premise of this handbook is that the amount and type of economic opportunities that can result from a transportation project (such as the completion of a highway link) will depend on a number of factors which you can identify and analyze. Most simply, the economic opportunities that you can identify depend on what your area of analysis is (e.g., a town, city or county), and what areas you are now linked to by the new highway segment. These basic factors are considered further in Chapter 2. Another important factor is the local economic performance of the area and its relative strengths and weaknesses, which are evaluated in Chapter 3. The extent to which the transportation project improves travel times and expands market areas also has a large influence on the potential growth in different sectors; this is discussed in Chapter 4. The availability of local resources to support economic opportunities is also important; you will assess local economic development resources and constraints in Chapters 5 and 6.

Figure 1-1. Flowchart: Logic of Guidebook Order



The spreadsheet analysis tool that accompanies this handbook is used for data input and analysis of the issues covered in Chapters 2, 3, 4 and 6. Paper worksheets are used in Chapter 5; illustrations of their use are provided where they are referenced within this report and blank copies are provided in the Appendix. Throughout the text, sample tables are used to describe the spreadsheet inputs and outputs. These will help you find your place in the spreadsheet tool and will also allow you to browse through the handbook without needing to have the spreadsheet open.

Although the focus of the handbook is on identifying economic opportunities from transportation projects, the last chapter goes further by providing you with the basic steps in building an economic development strategy to take advantage of potential new opportunities of any kind.

Each chapter will begin with a brief review of what has been covered in previous chapters and how the current chapter fits in with the overall process of assessing new economic opportunities and determining which ones you will pursue.

1.3 Overview of Analysis Steps

Define Study Area and Relevant Agencies. A first step is to define the area of analysis - the area that you want to identify economic opportunities for - and the areas to which you are now better linked because of the transportation project. You will collect data about these areas, which will be used in a spreadsheet tool to identify potential growth in your economy. You must also initiate contact with other economic development practitioners and stakeholders in your area. They may have useful data and resources, and they will be involved later on in the process of pursuing economic opportunities. The process of identifying your study area and the linkage areas, and contacting stakeholders, is discussed in Chapter 2.

Economic Base Analysis. The next step is to identify existing economic opportunities by analyzing your local economy and its strengths and weaknesses, particularly as compared to other communities. In Chapter 3 you will perform a local economic analysis in which you compare the local mix and growth of industries with other areas. The purpose of the local economic analysis is to identify industries that: (1) are underrepresented relative to the newly linked areas, (2) are growing slower than same industries elsewhere.

Transportation Access Changes. The new highway segment itself may help generate opportunities for economic growth by reaching and serving new or expanded markets.[1] In general there are four types of markets that can be served or expanded due to a new highway link: labor markets, sales markets, business-to-business markets, and pass-by traffic. Labor markets can be made more available for businesses (which also means that people have more job opportunities) when a new highway link makes it possible for a larger number of people to reach a business or business district in a reasonable amount of time. The market for business sales can increase when the population that can reach a business or business district

[1] It also may create threats of local loss if it shifts local workers and shoppers to businesses outside the area.

within a reasonable amount of time is increased. The market for business-to-business sales can increase when a highway link reduces the amount of time it takes suppliers to deliver to producers. Finally, pass-by traffic may increase in some areas and decrease in others, leading to some new and some lost business opportunities.

Any reduction in travel times between people and places can be thought of as an increase in the accessibility of various markets. Chapter 4 of this handbook will show you how to measure the accessibility improvements that result from a transportation project. The spreadsheet tool will identify the local industries that have growth opportunities due to the new link.

Relative Costs and Supporting Resources. The remaining step in identifying potential new economic opportunities is to assess how competitive your area is in terms of costs of doing business, available infrastructure, and opportunities to build upon growth industries in surrounding areas.

Chapter 5 provides worksheets to assess the extent of local resources to support economic development in various sectors of the economy. For example, if you are thinking of pursuing an industrial development strategy, you will need to know what resources, such as industrial parks and buildings, are available to pursue this kind of development strategy. If you are thinking of pursuing tourism, recreation or natural resource extraction, you will want to know what resources already exist in those areas. You will also want to know what sort of economic growth can be supported by the local workforce size and skills, as you may find that your preferred strategy requires more attention to workforce training and development.

You can then apply this information to derive ratings of your area's relative infrastructure and land constraints in Chapter 6. Additional worksheet forms provide a basis for rating relative costs of doing business, as well as opportunities to expand suppliers to other emerging industries. These are the remaining factors needed to complete a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis of your area, and thus to identify the nature of business expansion and attraction opportunities for your area. The spreadsheet tool automatically provides estimates of the magnitude of potential highway-related opportunities for various industries in your area.

Strategy Plan. Once you have identified your target industries and assessed your available resources, it is time to make a strategic plan for economic development to take advantage of new opportunities. Chapter 7 will take you and other stakeholders through additional steps to develop a mission statement based on this analysis and the community's goals, and to form a strategic plan for how to achieve the goals set forth in the mission statement. The nature of this process may depend significantly on the nature of the economic opportunities that were identified, and on the differing action needs associated with focusing on different business segments for economic expansion or attraction.

1.4 Data Requirements and Resources

The data you will need to use the methods set forth in this guidebook include data about your local economy, data about the economies of the areas you are now linked to, regional and national economic data (for purposes of comparison to the local area), transportation / accessibility data, and local area data pertaining to labor force, facilities and resources. The guidebook will explain how to obtain the data that you need for each section, when you reach that section.

These data will be used in two ways. The first way it will be used is by you and other stakeholders. As you go through the handbook you will develop a picture of your economy and the opportunities that are opened up by the new transportation link. You can use this picture to make informed decisions about what opportunities to pursue and what sectors of the economy to target with your economic development efforts. The data will also be used by the spreadsheet tool that accompanies this handbook. The spreadsheet will calculate the growth opportunities for each sector of your economy, and can suggest areas that you should target with your economic development efforts.

1.5 Economic Development Motivations and Limitations

This section provides an overview of the motivations for applying this handbook and some of the constraints associated with it or any other analytic process for identifying economic opportunities.

Motivations for Using the Handbook. In general, the goal of economic development is to improve the quality of life for an area's residents. Quality of life has many dimensions; in terms of economic opportunities it means real increases in income, a broader range of employment opportunities, and greater choices for shopping and recreation. These aspects of quality of life are generally associated with economic growth, which is in turn related to transportation and access to and within an area.

A transportation project can open up opportunities for economic growth leading to improved quality of life, by improving local access for customer markets, labor markets, and business-to-business delivery markets. The local community's motivations and goals for pursuing economic development will influence which types of economic opportunities you focus on and pursue in your strategic plan.

Local and regional efforts to stimulate economic development are typically driven by one of three motives:

(1) **Motivation: to eliminate an existing economic constraint.** Existing economic problems include a wide range of conditions, some of which primarily affect people, and some of which primarily affect businesses.

- ***High unemployment*** and ***low wages*** are the economic problems that most directly affect an area's residents. High unemployment and low wage rates may be a result of low skill levels, a mature or declining economic base, a narrow economic base which is highly dependent on one or a few sectors, poor access to jobs, or competition from other regions. Economic development efforts in a region with high unemployment might focus on employment and training programs to increase the skills of the labor force.

- ***Seasonal fluctuations in employment*** also affect an area's population. Seasonal fluctuations generally result when an area's economy is reliant on seasonal tourism and recreation (e.g., skiing, boating, etc.), or resource-based (e.g., agriculture) industries that experience high demand for products or services during one or two seasons, and then experience a significant drop in demand in the "off-season". During the "off-season", unemployment increases substantially, income levels decline, and ripple effects, such as declining retail sales, are felt throughout the local economy. An economic development program in a region with seasonal fluctuations in employment due to a season-based tourist market might focus on efforts to expand the tourist season or to diversify the local economy.

- A third problem that may exist in areas with a small population base or poor access is a ***lack of local services and retail opportunities***. Limited options for shopping and services may force residents to travel to other areas to purchase goods and services, thus resulting in an outflow of income from a region.

- Two problems that affect the ability of businesses to operate successfully in a region include ***isolation from labor, inputs and markets***, and ***out-migration of population*** (which may result when employment opportunities and access to goods and services decline). Isolation from labor, production inputs and markets will prevent a region from successfully competing to retain businesses, grow businesses, and attract new businesses. Out-migration of population reduces the local labor pool and thereby impedes access to labor. Problems related to isolation and access to suppliers, labor and market might be addressed through a program aimed at improving transportation access to the region.

(2) Motivation: to reduce risk of economic decline. Regions that appear to be economically strong still might be at risk of economic decline.

- This is particularly true of regions that are characterized by ***over-dependence on a particular industry or a few large employers*** to sustain their economic vitality. In these cases, an industry downturn caused by external factors (such as changes in the cost of production inputs, changes in technology, changes in consumer tastes or increased foreign competition) or by internal factors (such as poor management, or company restructuring) can have devastating impacts on a community. In regions that rely on a single industry, an economic development strategy focused on attracting more employment in a broader range of industries (i.e. diversification) may be appropriate.

- Another risk factor, which regions are often unprepared to address, is ***competition from other areas***. Frequently, the risk of competition is not identified until after a region begins to lose businesses to a competing area. An economic development strategy aimed at sustaining a competitive business climate can offset this threat. Maintaining and improving reliable, cost-competitive transportation access to the region may be part of such a strategy.

(3) Motivation: to capitalize on opportunities for improvement. Not all regions pursue economic development to solve existing problems or reduce risk. Even regions with a strong economy may wish to pursue economic development activities as a means to sustain growth of the local economy and retain industries. Economic growth can also lead to expanded employment opportunities, choices in housing, services and shopping, and other improvements in the quality of life in the region.

Limitations. The premise of this handbook is that in order to expand and attract business to your area, it is necessary to address the constraints that now hold back such economic growth from occurring. The constraints may relate to many factors, including (but not limited to):

(1) available workforce size and skills;
(2) costs of obtaining materials;
(3) costs and reliability of providing goods to markets;
(4) taxes and utility costs;
(5) range and cost of housing available;
(6) availability of supporting infrastructure;
(7) availability and cost of industrial parks and business sites; and
(8) business climate.

New highway links and improved highway segments can help address some but not all of these factors. They cannot by themselves overcome a lack of skilled workers, or housing, or industrial parks with sufficient supporting infrastructure, or reasonable utility costs. In some communities, a highway will help bring economic development only when remaining constraints are also addressed.

The screening methods provided in this handbook are designed to help identify those additional constraints to economic development, as well as to identify the potential opportunities associated highway improvements, for Appalachian communities. The discussion of strategy at the end of this handbook is also designed to help communities and regions develop plans to address their remaining needs.

CHAPTER TWO
FIRST STEPS

2.1 Overview

This chapter is dedicated to gathering the basic information you will need to analyze the types of economic opportunities made possible by completion of a new highway link to your area. You will identify your study area and the location of new and improved linkage areas, and you will make initial contact with key stakeholders. This requires three steps. First, it is important to clearly define your area of analysis both to focus your analysis on the area you care about and in order to collect the appropriate data. Second, you will need to identify the other areas to which you will have improved access upon completion of the highway project. Third, you will want to contact other local and regional individuals and organizations who have an impact on your area's economic development, as they may be able to help with data and resources. In addition, they will be involved later on in the strategic planning process (discussed in Chapter 6).

Preview. In this chapter, you will:

- Identify the target area for your analysis (generally a county or group of counties)
- Identify the areas to which your target area is linked by the new highway segment
- Identify and contact the key stakeholders involved in economic development and ascertain their role in economic development
- Identify data and resources available from stakeholders

2.2 Identify the Target Area (***Spreadsheet "Input 1"***)

The first step is to identify the target area for your analysis. There are three aspects to consider in choosing your target area: a) choosing the area that your economic development efforts are focused on, b) choosing an area for which it is possible to obtain data, and c) considering the scope of influence of the new highway segment.

(a) *Choose your economic development area.* First of all, you want to choose the area that your economic development efforts are focused on. If you are a town planner, this may be a town or the town plus the rest of the surrounding county. If you are a regional planner, then the area may be an aggregation of counties. The larger the area you choose for your analysis the more other economic development stakeholders that will likely be included within the area. This may mean that they will be more willing to support your analysis with data and/or resources.

(b) *Consider availability of data.* Another aspect of choosing your target area is the issue of data availability. There is a trade-off between accuracy and effort in choosing a geographic area for organizing your data. It is much easier to collect population data

by county than by census tract, just as it is much easier to estimate travel times between two counties than it is between the hundreds of census tracts that make up the two counties. However, using one time to represent travel between two counties fails to capture much of the variation in travel between within the two areas. In general, the larger the area, the less data you will need to collect, and the less work you will do to estimate travel times.

(c) *Determine the impact area.* The new highway segment's area of influence may be a factor to consider in choosing your target area of analysis. You are going to analyze the economic opportunities that arise from the new highway link, so you might consider using for your target area the broader area that is influenced by the highway.

The spreadsheet assumes that you will use a one or two-county target area, which is also referred to as the study area. The name of the study corridor and the counties comprising the Study Area should be listed in entered into the spreadsheet as shown in Table 2-1.

2.3 Identify New Linkages. (*Spreadsheet "Input 1")*

The new highway segment can open up economic opportunities by linking your area to areas it was previously unconnected to, or by reducing the time it takes to get between your area and other areas. There may be several distinct areas being linked by the new highway segment, representing different directions from your area. On the Spreadsheet page "Input 1" (illustrated in Table 2-1), you may list one to four most significant places outside your local area that the new highway segment makes more accessible to/from the local area. These can be counties or groups of counties.

Table 2-1 Sample Input Table for Impact and Linkage Areas
(Spreadsheet "Input 1")

ARC Handbook Spreadsheet - Input Form 1

ARC-OPPS Economic Development Opportunities Model

a. Header for Pages

Scenario Title	Corridor V
Today's Date	3/15/2001

b. Define Study Area

State	MS	**County**	Pontotoc
		County	

c. Hwy Linkages to Other Areas

1	Lee County
2	Lafayette County
3	Panola County
4	

2.4 Identify Stakeholders. *(Paper Worksheet 2-1)*

Stakeholders are people and organizations in your community that have an interest in economic development. They can include public sector representatives, such as state, regional, and local economic development agencies; elected officials; chambers of commerce; utilities; major employers; colleges and training institutions; tourism promotion groups; and realtors and developers.

It is important at the outset to identify and contact existing local and regional organizations and institutions that play a role in economic development, because they may have data and resources that you can use throughout the analysis process in this handbook, and because they will be involved in the strategic planning process at the conclusion of your analysis.

To begin the process of stakeholder identification, fill in Column 1 of Worksheet 2-1 (Table 2-2 on the next page) with the names of all stakeholder organizations and people that you know of who have a role in economic development in your area. These stakeholders will be engaged to help complete the remaining worksheets. Then contact them as necessary to fill in the remaining information about the activities of their organizations. This process should include the following steps:

- Identify yourself and briefly describe the purpose of your call and the analysis you are doing.
- In Column 2, enter information about the nature of any current role of the organization in marketing, promoting, or advertising the area.
- In Column 3, list and describe any business development and financing programs with which the organization is involved.
- In Column 4, record any other relevant economic development information/services that the organization provides.
- Ask what data they have on your target area and newly linked areas (listed in Worksheet 2-1) such as employment by 2-digit SIC or business costs. If they have relevant data you will call them when you get to Chapters 3 and 4.
- Ask what data they have on the target area's economic development resources (industrial parks and buildings, labor force, etc.). If they have relevant data you will contact them in Chapter 5.
- Ask who else in your area is involved in local economic development and add them to Column 1 of the worksheet. These additional stakeholders should then be contacted and asked the same set of questions.

Table 2-2 Sample Input Table for Key Stakeholders *(Paper Worksheet 2-1)*

Stakeholder Group	Organization Name, Address, Contact Person, Tel (1)	Marketing Role (describe) (2)	Business Development & Financing Programs (describe) (3)	Other Roles in Economic Development (describe) (4)	What data on target area / linked areas? (5)	What data on ED resources? (6)
State ED Agency	*State Econ Development Office , John Doe, <<contact, address, tel>>*	*press releases, newsletters, statewide marketing for business attraction*	*job creation tax credits, enterprise zones, training assistance, business loans*	*site inquiry referrals, planning information and public infrastructure investment*	*database of local and regional economic trends*	*statewide database of economic development programs*
County/ Regional ED Agency	*XX County Industrial Development Agency, James Jones , <<contact, address, tel>>*	--	*SBA revolving loan fund, Micro Loan program*	*technical support referral program*	--	--
Local ED Organization	--	--	--	--	--	--
Local Government	*XX County Planning Dept., Joanne Jones, <<contact, address, tel>>*	--	*property tax credits for reuse of distressed properties*	--	--	*community taxes, major employers, land use data*
Electric Utility	*XYZ Power Company, Roberta Jones, <<contact, address, tel>>*	*regional promotion via web site; inquiry referrals*	*negotiable electric rates*	--	--	*industrial park inventory*
Chamber of Commerce	*XX County Chamber, Doris Doe, <<contact, address, tel>>*	*promotional folder and brochure about the area*	*leadership training program*	*business appreciation dinners, networking guide and events*	--	*business directory and product/service purchasing guide*
State Trans Agency	*State DOT, Ron Doesen, <<contact, address, tel>>*	--	*grants and loans for local access roads*	*highway access policies and programs*	--	*traffic counts and speeds., for major roads*
Non-Profit	*Southern Tech College, Small Business Devel. Center, Joan Johnson, <<contact, address, tel>>*	--	*leadership training, business financing support, small business incubator*	*technical assistance [program.*	--	--

2.5 Summary

In this chapter you determined your area of analysis (which you will use to collect appropriate data for use in your analysis of economic opportunities) and you identified contacts among economic development stakeholders who may be sources of data and resources for the following chapters. In Chapter 3 you will use some of this information to analyze the performance of your local area economy relative to the linkage areas and other surrounding areas, and you will identify the types of business that represent strengths, weaknesses and sources of potential growth in your area's economy. Chapter 4 will then help you identify the types of business opportunities which are opened up by completion of the highway project, and in Chapter 5 you will be able to use your economic development contacts to help assess the economic development resources that are available in your area.

CHAPTER THREE
LOCAL ECONOMIC PERFORMANCE ANALYSIS

3.1 Overview

The data collection and spreadsheet analysis in this chapter focus on identifying industries that are underrepresented locally relative to surrounding areas, or lagging in growth compared to the same industry elsewhere. These industries can represent potential sources of economic growth for your area, though they will also need to be evaluated in terms of which ones will be most significantly helped by the new highway link (an issue addressed in Ch. 4), the extent of available infrastructure and business resources (an issue addressed in Ch. 5) and relative business costs (an issue addressed in Ch. 6).

Preview. In this chapter you will:

- Analyze and compare the local mix of industries with that of newly linked areas
- Analyze and compare the trends of local industries with those occurring nationally
- Compare the local cost of doing business with newly linked areas.

3.2 Employment Data

Analysis Tables. To compare industry mix and trends in the study area with other areas, you will need to collect data on the number of employees in each sector of each economy you are comparing. Online sources for this data are described later in this section. For the *mix analysis*, you will need data on current employment (for the most recently available year), broken down by industry, for the local area and for the linkage areas. For the *trend analysis*, you will need employment for the most recently-available year and for five years before then, also broken down by industry, for both the local area and for the nation. You may specify these *years* in spreadsheet page "Input 1" (illustrated in Table 3-1 below), and the *employment data* in spreadsheet page "Input 2" (illustrated in Table 3-2 on the next page).

Table 3-1. Sample Input Table for Employment Years *(Spreadsheet "Input 1")*

ARC Handbook Spreadsheet - Input Form 1

d. Years for Economic Data

Most Recent	1997
Earlier Time	1993

Table 3-2. Sample Input Table for Employment Data *(Spreadsheet "Input 2")*

		Study Area		Linkage Areas			United States	
Current Employment in Thousands		**1993**	**1998**	**1998**			**1993**	**1998**
SIC	**LABEL**	**Pontotoc**		**Lee County**	**Lafayette County**	**Panola County**	**United States**	
7	Agricultural services	*80*	*24*	*0*	*60*	*0*	*555,686*	*685,704*
8	Forestry	*10*	*0*	*0*	*0*	*0*	*17,716*	*26,530*
9	Fishing	*0*	*0*	*10*	*0*	*48*	*12,704*	*12,589*
10	Metal mining	*0*	*0*	*0*	*0*	*0*	*49,491*	*49,357*
12	Coal mining	*0*	*0*	*10*	*0*	*0*	*113,948*	*93,182*
13	Oil and gas extraction	*0*	*0*	*0*	*0*	*48*	*257,694*	*268,645*
14	Nonmetallic minerals, exc. fuels	*0*	*0*	*304*	*43*	*0*	*95,952*	*98,792*
15	General contractors	*56*	*60*	*175*	*101*	*77*	*1,096,289*	*1,274,707*
16	Heavy construction	*10*	*27*	*919*	*423*	*12*	*679,578*	*768,283*
17	Special trade contractors	*49*	*60*	*620*	*60*	*132*	*2,731,774*	*3,447,485*
20	Food and kindred products	*10*	*10*	*0*	*0*	*60*	*1,498,078*	*1,539,682*
21	Tobacco products	*0*	*0*	*369*	*0*	*0*	*37,189*	*34,166*
22	Textile mill products	*10*	*60*	*1,870*	*0*	*1,750*	*615,683*	*553,198*
23	Apparel and other textile products	*260*	*10*	*103*	*375*	*375*	*972,060*	*835,219*
24	Lumber and wood products	*320*	*500*	*4,309*	*10*	*109*	*675,081*	*745,254*
25	Furniture and fixtures	*3,291*	*4,231*	*670*	*0*	*60*	*476,488*	*514,504*
26	Paper and allied products	*10*	*60*	*276*	*86*	*0*	*627,746*	*621,072*
27	Printing and publishing	*10*	*60*	*22*	*0*	*35*	*1,500,580*	*1,501,714*
28	Chemicals and allied products	*0*	*0*	*10*	*0*	*0*	*851,720*	*832,546*
29	Petroleum and coal products	*0*	*0*	*3,237*	*60*	*10*	*112,984*	*107,829*
30	Rubber and misc. plastics products	*271*	*222*	*0*	*0*	*726*	*915,166*	*1,015,177*
31	Leather and leather products	*0*	*0*	*709*	*34*	*0*	*104,747*	*83,387*
32	Stone, Clay, and glass products	*10*	*10*	*175*	*0*	*44*	*471,639*	*500,828*
33	Primary metal industries	*175*	*175*	*1,155*	*60*	*0*	*655,556*	*686,161*
80	Health services	*252*	*277*	*244*	*168*	*639*	*10,403,118*	*11,348,141*
81	Legal services	*11*	*13*	*60*	*113*	*66*	*962,374*	*971,998*
82	Educational services	*10*	*10*	*674*	*123*	*175*	*1,967,024*	*2,183,438*
83	Social services	*123*	*143*	*0*	*0*	*53*	*2,028,694*	*2,246,164*
84	Museums, botanical, zoological gardens	*0*	*0*	*531*	*225*	*0*	*73,874*	*90,117*
86	Membership organizations	*77*	*74*	*536*	*88*	*71*	*2,062,501*	*2,207,886*
87	Engineering & management services	*69*	*32*	*10*	*10*	*49*	*2,589,839*	*3,181,353*
89	Services, other	*0*	*0*	*60*	*0*	*0*	*84,960*	*99,865*
99	Unclassified establishments	*10*	*0*	*39,995*	*8979*	*9,453*	*64,441*	*34,324*
SUBTOTAL		*7,774*	*7,240*	*79,866*	*17,898*	*18,894*	*91,596,939*	*101,971,746*

Data Sources. You can obtain the necessary employment data for non-agricultural industries using "County Business Patterns," which is an annual government data series that provides county-level economic data by industry[1]. Data on employment by 2-digit SIC are available online for the U.S., states, and counties; you can view the data on your web browser (and copy it into a spreadsheet) at http://www.census.gov/epcd/cbp/view/cbpview.html , or directly download it from http://www.census.gov/pub/epcd/cbp/download/cbpdownload.html . If you download the data, it should be saved as a "comma-delimited" text file, which can then be opened in Excel.

Data for 1997 and earlier are based on SIC (Standard Industrial Classification) categories, while data for 1998 onward (including the most recent year for which data is currently available) is based on the new, NAICS (North American Industry Classification System) categories. It may be easier to use 1997 as your most recent year and compare 1997 data to data from 1992.

Sometimes data are withheld for certain industries due to confidentiality reasons (when there are a small number of firms in a given group). In the download version, such cases will have a letter from A to M to indicate the range of employment in that industrial sector. (You can replace the letter with the midpoint of the range, as follows: A = 10; B = 60; C = 175; E = 375; F = 750; G = 1,750; H = 3,750; I= 7,500; J = 17,500; K = 37,500; L = 75,000; M = 100,000.) If you view the data with your web browser, then the data observations will show an employment range where data is withheld. Again, you can assume the midpoint of the range.

3.3 Business Mix Analysis

A comparison of the "mix" of industries in your economy with that of other areas provides a way to identify the types of businesses that are particularly weak in your area and strong elsewhere. If the other areas are defined as those to which your area is being linked by the new highway segment, then we have a means of identifying possible strengths in the other areas which *might* become local growth opportunities in your area, as a result of the new highway links between them.

The spreadsheet automatically calculates the ratio of the concentration of each industry in your economy to the concentration of the same industry in the average of the linkage areas' economies. For example, if 10% of employment in your local area is food products, and 30% of employment in the linkage area is food products, then the ratio of local to linkage area concentrations would be 10/30 or 0.33. This means that your area has one-third the concentration of jobs in food products that exist in the linkage area. This ratio is sometimes referred to as the Location Quotient (LQ). We refer to it here as the "mix ratio" (to distinguish it from the "trend ratio" discussed later).

[1] The series excludes data on self-employed individuals, employees of private households, railroad employees, agricultural production employees, and most government employees.

For each specific industry sector, the mix ratio is interpreted as follows:

- If the mix ratio is > 1, then your local area has a higher concentration of employment in that industry than the average of the areas to which you are now better linked.

- If the mix ratio is < 1, then your local area has a lower concentration of employment in that industry than the average of the areas to which you are now better linked.

- If the mix ratio is = 1, then your local area and the average of the areas to which you are now better linked have equal concentration of employment in that industry.

The spreadsheet model automatically generates the business mix analysis in the spreadsheet "Output 1," which is illustrated in Table 3-3 on the next page. The spreadsheet also assigns each sector into a category (1, 2, or 3 for Low, Medium, or High concentration):

- Industrial sectors with mix ratios of 1.5 or higher are assigned a rating of "3" (high concentration rating) to show that the local economy is at least 50% above the concentration of those sectors in the linkage areas.

- Industry sectors with a mix ratio of 0.67 or lower are assigned a rating of "1" (low concentration rating) to show that the local economy is at least 50% below the concentration of those sectors in the linkage areas.

- The rest (with mix ratios in between 0.67 and 1.5) are in between those extremes and are assigned a rating of "2" (Medium concentration rating).

Sectors with a rating of 3 (high ratio) are already thriving in your local area, while those with a rating of 1 (low ratio) may be candidates for additional growth as a result of the new or improved highway linkage between the areas.

The spreadsheet model also calculates the "expected number" of jobs that would occur in your area <u>if</u> it had an industry mix identical to that of the linked areas (i.e., a mix ratio of 1, representing the same percent of your employees in each industry). In that case, the number of local jobs in each sector will be equal to the "Expected Jobs" column of the table. If the mix ratio is less than one, then there will be fewer jobs occurring locally than would be expected, and the shortfall will be calculated in the last column of the table. This difference between actual and expected numbers of jobs provides a sense of the magnitude of difference in industry concentration between your area and the areas to which you are now being linked by the highway.

Table 3-3. Sample Spreadsheet Output: Business Mix Analysis *(Spreadsheet "Output 1" Part A)*

SIC	LABEL	Percent of Total Employment		Mix/LQ Ratio: Study Area to	Mix Ratio	Expected Jobs	Actual Jobs	Local Shortfall
		Study Area	Linkage Area	Linkage Area	Classification	(Study Area)	(Study Area)	
7	Agricultural services	0.3%	0.1%	5.5	**3**	4	24	0
8	Forestry	0.0%	0.0%	0.0	**0**	0	0	0
9	Fishing	0.0%	0.0%	0.0	**0**	4	0	4
10	Metal mining	0.0%	0.0%	0.0	**0**	0	0	0
12	Coal mining	0.0%	0.0%	0.0	**0**	1	0	1
13	Oil and gas extraction	0.0%	0.0%	0.0	**0**	3	0	3
14	Nonmetallic minerals	0.0%	0.3%	0.0	**0**	25	0	25
15	General contractors	0.7%	0.3%	2.4	**3**	25	60	0
16	Heavy construction	0.3%	1.2%	0.3	**1**	97	27	70
17	Special trade contractors	0.7%	0.7%	1.0	**2**	58	60	0
20	Food and kindred products	0.1%	0.1%	2.3	**3**	4	10	0
21	Tobacco products	0.0%	0.3%	0.0	**0**	27	0	27
22	Textile mill products	0.7%	3.1%	0.2	**1**	260	60	200
23	Apparel and other textile	0.1%	0.7%	0.2	**0**	61	10	51
24	Lumber and wood products	6.0%	3.8%	1.6	**3**	319	500	0
25	Furniture and fixtures	50.4%	0.6%	80.5	**3**	53	4,231	0
26	Paper and allied products	0.7%	0.3%	2.3	**3**	26	60	0
27	Printing and publishing	0.7%	0.0%	14.6	**3**	4	60	0
28	Chemicals and allied products	0.0%	0.0%	0.0	**0**	1	0	1
29	Petroleum and coal products	0.0%	2.8%	0.0	**0**	238	0	238
30	Rubber and misc. plastics	2.6%	0.6%	4.2	**3**	52	222	0
31	Leather and leather products	0.0%	0.6%	0.0	**0**	53	0	53
32	Stone, Clay, and glass	0.1%	0.2%	0.6	**1**	16	10	6
33	Primary metal industries	2.1%	1.0%	2.0	**3**	87	175	0
Sectors 34 - 79 left out of this chart to save space - all sectors included in spreadsheet								
80	Health services	3.3%	0.9%	3.7	**3**	76	277	0
81	Legal services	0.2%	0.2%	0.8	**1**	17	13	4
82	Educational services	0.1%	0.8%	0.1	**0**	70	10	60
83	Social services	1.7%	0.0%	37.4	**3**	4	143	0
84	Museums, botanical	0.0%	0.6%	0.0	**0**	54	0	54
86	Membership organizations	0.9%	0.6%	1.5	**3**	50	74	0
87	Engineering & management	0.4%	0.1%	6.4	**3**	5	32	0
89	Services, other	0.0%	0.1%	0.0	**0**	4	0	4
99	Unclassified establishments	0.0%	50.1%	0.0	**0**	4,204	0	4,204

3.4 Business Trend Comparison

A comparison of the “trend” of industries in your economy compared with their national performance provides a way to identify the types of businesses that are particularly thriving or faltering in your area (compared to their performance elsewhere). Those industries are locally lagging in growth may be seen as local weaknesses and as potential future growth opportunities.

To do this comparison, the spreadsheet model automatically calculates the percent *change* in the number of employees in each sector for your local area and for the U.S. over the past five years. It then computes the ratio of these percentages, which tells you whether the local industry is growing or declining faster or slower than the national industry, or if it is moving in an opposite direction from the national industry (e.g., declining while the national industry is growing or vice versa). This is sometimes referred to as the "Shift Share Ratio," though we refer to it here as the “trend ratio” (to distinguish it from the “mix ratio,” previously discussed).

The spreadsheet model automatically generates the business trend analysis in the second page of spreadsheet “Output 1,” which is illustrated in Table 3-4 on the next page. The spreadsheet also assigns each sector into a trend category (from 1 to 6) depending on the relative growth rate of the local area to that of the industry nationwide. The categories are as follows:

Industry Growth Classification
1. industry growing faster locally than nationally
2. industry declining locally while growing nationally
3. industry growing locally while declining nationally
4. industry declining locally slower than nationally
5. industry growing locally slower than nationally
6. industry declining locally faster than nationally

The spreadsheet model also calculates the “expected change” (growth or decline) in local jobs that would occur in your area if it had the same trends as that of the national average for each industry (i.e., a trend ratio of 1, representing the identical percent change in employment for each industry in both places). In that case, the local change in number of local jobs in each sector will be equal to the "Expected Change" column of the table. This difference between actual and expected trends provides a sense of the magnitude of difference in industry growth between your area and industry averages.

Table 3-4.
Sample Spreadsheet Output: Business Trend Analysis *(Spreadsheet Tab "Output 1" Part B)*

SIC	LABEL	Percent Growth		Growth Ratio	Growth Ratio	Expected Change in Jobs	Actual Change in Jobs	Local Shortfall
		Study Area	U.S.	(Shift-Share)	Classification	(Study Area)	(Study Area)	
7	Agricultural services	-70.0%	23.4%	-3.0	**2**	19	-56	75
8	Forestry	-100.0%	49.8%	-2.0	**2**	5	-10	15
9	Fishing	0.0%	-0.9%	0.0	**4**	0	0	0
10	Metal mining	0.0%	-0.3%	0.0	**4**	0	0	0
12	Coal mining	0.0%	-18.2%	0.0	**4**	0	0	0
13	Oil and gas extraction	0.0%	4.2%	0.0	**5**	0	0	0
14	Nonmetallic minerals	0.0%	3.0%	0.0	**5**	0	0	0
15	General contractors	7.1%	16.3%	0.4	**5**	9	4	5
16	Heavy construction	170.0%	13.1%	13.0	**1**	1	17	0
17	Special trade contractors	22.4%	26.2%	0.9	**5**	13	11	2
20	Food and kindred products	0.0%	2.8%	0.0	**5**	0	0	0
21	Tobacco products	0.0%	-8.1%	0.0	**4**	0	0	0
22	Textile mill products	500.0%	-10.1%	-49.3	**3**	-1	50	0
23	Apparel and other textile	-96.2%	-14.1%	6.8	**6**	-37	-250	0
24	Lumber and wood products	56.2%	10.4%	5.4	**1**	33	180	0
25	Furniture and fixtures	28.6%	8.0%	3.6	**1**	263	940	0
26	Paper and allied products	500.0%	-1.1%	-470.3	**3**	0	50	0
27	Printing and publishing	500.0%	0.1%	6,616.3	**1**	0	50	0
28	Chemicals products	0.0%	-2.3%	0.0	**4**	0	0	0
29	Petroleum and coal	0.0%	-4.6%	0.0	**4**	0	0	0
30	Rubber and misc. plastics	-18.1%	10.9%	-1.7	**2**	30	-49	79
31	Leather products	0.0%	-20.4%	0.0	**4**	0	0	0
32	Stone, Clay, and glass	0.0%	6.2%	0.0	**5**	1	0	1
33	Primary metal industries	0.0%	4.7%	0.0	**5**	8	0	8
Sectors 34 - 79 left out of this chart to save space – all sectors included in spreadsheet								
80	Health services	9.9%	9.1%	1.1	**5**	23	25	0
81	Legal services	18.2%	1.0%	18.2	**1**	0	2	0
82	Educational services	0.0%	11.0%	0.0	**5**	1	0	1
83	Social services	16.3%	10.7%	1.5	**1**	13	20	0
84	Museums, botanical	0.0%	22.0%	0.0	**5**	0	0	0
86	Membership organizations	-3.9%	7.0%	-0.6	**2**	5	-3	8
87	Engineering & management	-53.6%	22.8%	-2.3	**2**	16	-37	53
89	Services, other	0.0%	17.5%	0.0	**5**	0	0	0
99	Unclassified establishments	-100.0%	-46.7%	2.1	**6**	-5	-10	0

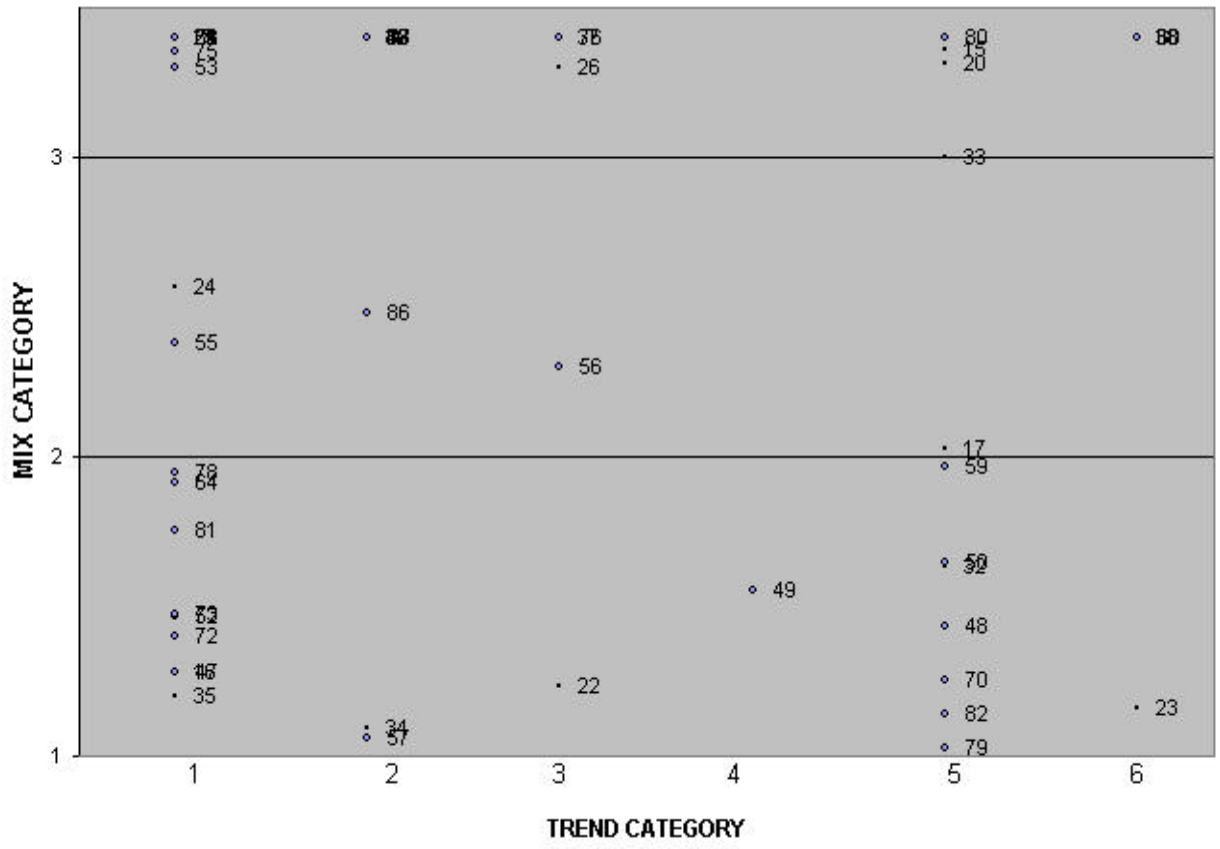
3.5 Interpretation of Economic Base Analysis

The third page of spreadsheet "Output 1" automatically shows a graph summarizing both mix and growth ratios by industry, as illustrated in Table/Graph 3-5. Each dot represents a different industry, and the numbers next to each dot represent the corresponding SIC group. (Refer to the first two pages of the spreadsheet, as illustrated in the prior two tables, to see the correspondence between SIC numbers and industry names). Industries that are very small locally are excluded from the graph.

Table/Graph 3-5.
Sample Spreadsheet Output: Mix/Trend Graph *(Spreadsheet "Output 1" Part C)*

c. Mix / Trend Analysis

Labels of Trend Categories	Labels of Mix Categories
1= local growth faster than national growth	1= Low: locally underrepresented
2=local decline while national growth	2= Medium: locally average
3=local growth while national decline	3= High: locally over-represented
4=local decline slower than national decline	
5=local growth slower than national growth	
6=local decline faster than national decline	



Based on the preceding graph, we can classify the various business sectors in your area as falling into nine basic categories:

Mix Ratio	Trend Ratio	Interpretation
3	1	Local industry is strong
3	2,5	Local industry is threatened locally, may need attention
3	3,4,6	Local industry is in national decline, should diversify
2	1	Local strength, should be supported
2	2,5	Possible opportunity for more growth
2	3,4,6	Unstable industry, focus efforts elsewhere
1	1	New emerging local industry, should be nurtured
1	2,5	Weak local sector, should be investigated as possible growth opportunity
1	3,4,6	Weak local sector, in national decline, focus efforts elsewhere

The analysis model automatically identifies which local industries fall into each of the nine categories, and lists those results in a separate spreadsheet page called “Output 2,” as illustrated in Table 3-6 (on the next page).

3.5 Summary

In this chapter you collected information on your area’s business mix and growth trends, and compared them to other areas to identify the types of businesses that represent local economic strengths and weaknesses. The analysis model uses this data to calculate measures of the relative concentration of industries in your area, and the relative growth rates of industries in your area. This information will help you identify potential target types of business for economic development. In the chapters that follow, you will develop additional data on how the new highway link can affect those business growth and attraction opportunities, as well as the roles of other factors such as relative costs and availability of supporting resources.

Table 3-6
Sample Spreadsheet Output: Local Industry Vitality *(Spreadsheet "Output 2")*

ARC Handbook Spreadsheet - Output Form 2 (Industry Vitality)

ARC-OPPS Economic Development Opportunities Model

Strong, Stable Local Industries
Mix Ratio of 3 and trend ratio of 1

SIC	LABEL
24	Lumber and wood
25	Furniture and fixtures
27	Printing and publishing
51	Wholesale – nondurables
53	General merchandise
54	Foods stores
55	Auto & service stations
61	Nondep. institutions
75	Auto repair and parking
83	Social services

Local Industries Under Threat - May Need Attention
Mix Ratio of 3 and trend ratio of 2 or 5

SIC	LABEL
7	Agricultural services
15	General contractors
20	Food products
30	Rubber and plastics
33	Primary metal industries
39	Misc. manufacturing
42	Trucking & warehousing
58	Eating and drinking
80	Health services
86	Membership orgs
87	Engineering & mgmt

Local Industries in National Decline - Diversify
Mix Ratio of 3 and trend ratio of 3,4 or 6

SIC	LABEL
26	Paper products
37	Transportation equip
38	Instruments
56	Apparel and accessories
60	Depository institutions
76	Misc. repair services

Local Industries with Strength - Support
Mix Ratio of 2 and trend ratio of 1

SIC	LABEL
64	Insurance agents, broker
78	Motion pictures

Medium Strength Local Industry with Possible Growth Opportunities
Mix Ratio of 2 and trend ratio of 2 or 5

SIC	LABEL
17	Special trade contractor
59	Miscellaneous retail

Unstable Local Industry - Focus Elsewhere
Mix Ratio of 2 and trend ratio of 3,4 or 6

SIC	LABEL

Emerging Local Industry - Nurture
Mix Ratio of 1 and trend ratio of 1

SIC	LABEL
16	Heavy construction
47	Transportation services
52	Building & garden supply
72	Personal services
73	Business services
81	Legal services

Weak Local Industry - Possible Growth Opportunity
Mix Ratio of 1 and trend ratio of 2 or 5

SIC	LABEL
32	Stone, Clay, glass
48	Communications
50	Wholesale - durables
70	Hotels, other lodging

Weak Local Industry in National Decline - Focus Elsewhere
Mix Ratio of 1 and trend ratio of 3,4, or 6

SIC	LABEL
22	Textile mill products
49	Electric, gas services

CHAPTER FOUR
MARKET ACCESSIBILITY

4.1 Overview

The unique impact of highway projects on economic development comes from changes they can cause in travel times between places. New and improved highways can expand job opportunities (for workers) and customer markets (for businesses), by reducing travel times to/from your area. We refer to this as "accessibility improvement." It can reduce business operating costs and increase business sales in a variety of ways. This chapter describes a process to (1) analyze how highway improvements in your area affect local accessibility, and (2) identify the resulting effects on expanding economic opportunities. This information is later used in Chapter 6 to assess overall economic development opportunities.

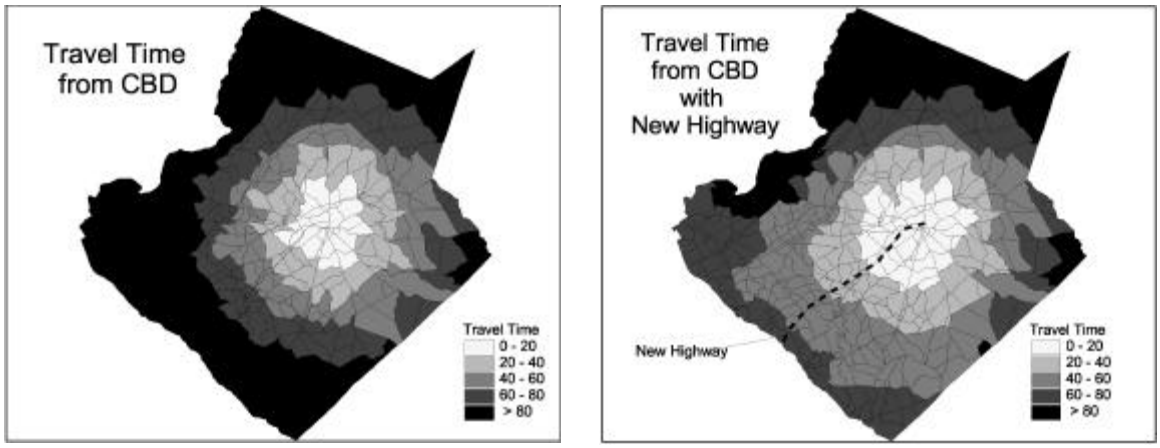
Preview. In this chapter you will:

- Identify different types of transportation accessibility improvements
- Measure accessibility improvements and enter this data to the spreadsheet model
- Interpret the results of the spreadsheet model findings on economic opportunities

4.2 Types of Market Accessibility Effects

Highway projects can create economic opportunities by expanding labor and supplier markets for businesses, as well as expand customer markets for business products and services. Figure 4-1 illustrates how a new highway segment can decrease the travel time within an area and thus increase the number of people and businesses that can access one another in a given period of time.

Figure 4-1. Accessibility Before and After a New Highway Segment



New projects may take many forms -- creating an entirely new connection between areas, improving an existing connection, bypassing certain areas, and/or improving access to certain areas. These changes can lead to any of six major economic market effects:

1. **Reach residential customer markets.** Highway projects may create economic opportunities for businesses by expanding the customer market that they can reach within a reasonable travel time. (Conversely, this may open up expanded and new shopping opportunities for consumers to shop elsewhere.) This may lead existing businesses to expand or new businesses to start up or move to the area. In general, this type of access improvement makes the area more attractive as a location for businesses whose market base is the surrounding residential population.

2. **Reach labor markets.** Highway projects may create economic opportunities for new or growing businesses by effectively increasing the local labor supply available within a reasonable commuting time. Many businesses that are considering expanding or deciding whether to establish a presence in a new location value access to a good pool of labor. All else equal, businesses view a larger labor force as increasing their chances of finding qualified workers. Local residents benefit from increased access to jobs just as businesses benefit from a larger available work force.

3. **Reach business supplier markets.** Highway projects may create economic opportunities by making it easier for suppliers and producers to reach one another. If it becomes easier for businesses to get supplies and distribute their product, existing businesses may be able to expand and new businesses may locate in the area.

4. **Reach recreation and tourism markets.** Highway projects can also increase the reach of tourism markets. A highway project can open up tourism markets in two ways. First, pass-by traffic on a new highway segment may be attracted to tourist sites by signs or attractions on the side of the road. Second, the transportation project may make it possible for people to travel to the local area for day trips, whereas before the project it may have taken too long to get to the area.

5. **Serve "passing through" traffic markets.** Highway projects may create economic opportunities for some businesses serving traffic passing through the area. They may also shift traffic away from other travel routes, decreasing traffic levels and business sales for businesses located along those routes. Any such shifts in traffic levels can have effects on growth or decline for specific types of businesses which cater to pass-by traffic, such as convenience stores, gas stations, motels tourist sites and gift shops.

6. **Access connections to other modes of transportation.** Highway projects may create economic opportunities by improving access to other transport modes (e.g. river/seaport, airport or rail facilities), and the broader markets which they serve.

4.3 Measurement of Accessibility Changes

In theory, the type of potential business growth opportunity created by a highway project may differ for every individual business, depending on the type of customers it serves, the type of jobs it provides and the type of input materials it needs. That brings a level of complexity that is not practical for this guide. So we simplify the process into two straightforward steps in a spreadsheet model: First you input your findings on the how the highway expands business markets for your area into Spreadsheet page "Input 3", as illustrated in Table 4-1. Then the spreadsheet automatically identifies the resulting magnitude of economic growth opportunities, by type of business. You can estimate values for the potential change in market access and inter-modal connections by using maps and public data sources in a five-step process, which is explained starting on the next page.

Table 4-1 Spreadsheet Model Inputs for Accessibility Changes *(Spreadsheet "Input 3b")*

ARC Handbook Spreadsheet - Input Form 3 **Corridor V**

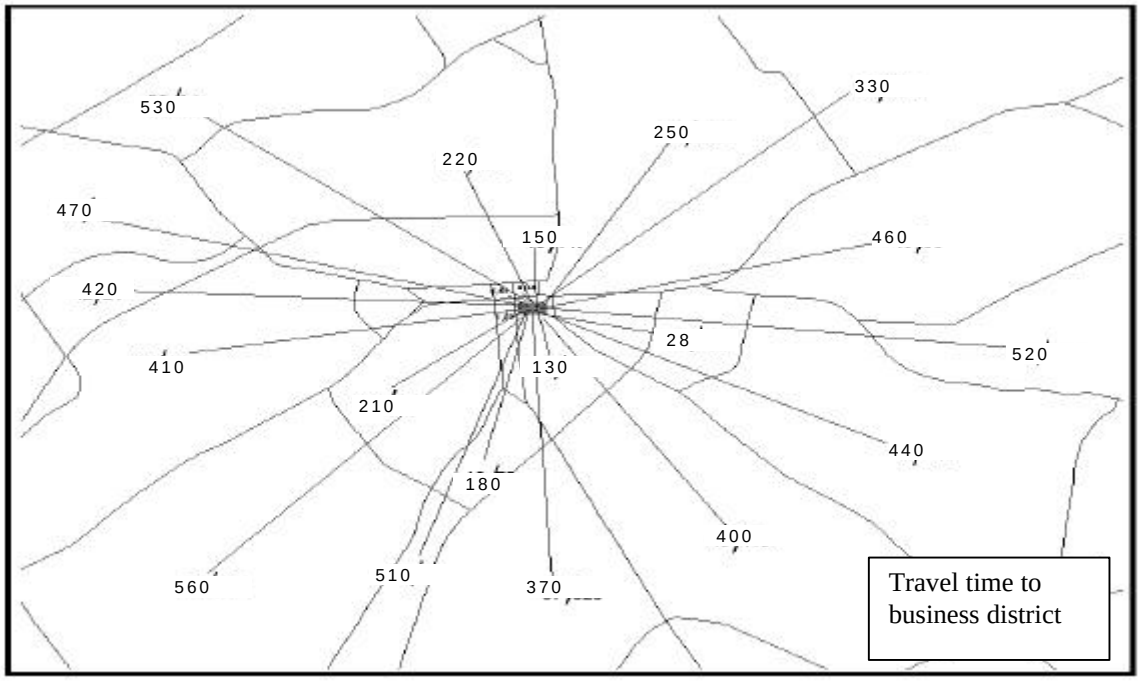
b. Changes in Accessibility & Market Access

Type of Change	Change %
Change in Labor Market	30.6%
Change in Customer Market	30.6%
Change in Business-to-Business Market	0.0%
Change in Tourism Market	0.0%
Change in Access to Airports	30.6%
Change in Access to River or Sea Ports	0.0%
Change in Access to Rail Centers	0.0%
Change in Pass-by Traffic	22.0%

Retail/Service Capture from Linkage Area	0.100

Step One: Estimate Changes in Travel Times from Your Area to Other Areas. Figure 4-2 shows a map in which a community and surrounding areas have been divided into zones. The scale of the map and the zones depends on the length of the highway project and the region affected by it. Accordingly, those "zones" may be counties, townships, census tracts or traffic analysis zones. In this example, there are lines from the core community (or study area) to each of the outside areas, with labels showing the travel time to that area. This analysis must be done twice, representing conditions before and after highway completion.

Figure 4-2. Sample Travel times from Outlying Areas to a Retail Center



The travel time measures can come from either of the following two alternative methods:

- **travel demand models.** Some state DOTs have travel demand models -- computer software systems which estimate travel times across an entire regional highway network system, using information about highway volumes, capacities and mathematical equations that express the relationship between them. They are typically complex systems requiring trained personnel. If your state DOT has a travel demand model and is willing to do a study for you, then this is the preferred approach. If that travel distance and time data is available in a Geographic Information System (GIS) that also includes zonal characteristics (useful for Step 2), then that would be even better. In most cases, though, this is not an available alternative.

- **"sketch planning" techniques.** These are rough ways to estimate changes in travel times based on (1) measuring changes in travel distances along the road network before and after the highway project, and (2) measuring changes in travel speeds before and after the highway project. Total travel time is then calculated as: T=60 * (D/S), where: T=Travel time (minutes), D=Distance (miles), S = Speed in (miles per hour).

  Measuring travel distance -- Engineers and planners at State DOTs often have information on road distances. Otherwise, you can measure road travel distances using a road map together with a planimeter (an electronic distance-measuring device) or a map wheel (a manual device). In either case, you need to set the map scale, trace

the roadway system on the map connecting the two points in the analysis with the device, and then record the distance. If the measurement covers very long distances, or if you are only interested in an approximation, you can measure the straight-line distance between two points, and then multiply that distance by the scale. To account for the fact that the straight-line distance is shorter than the actual distance over the road system, a convenient rule of thumb is to multiply the straight-line distance by a factor of 1.2.

Measuring travel speeds. Engineers and planners at State DOTs often collect information on speeds for individual highways. They are the first source of "expert" information on typical travel speeds for various kinds of roads. Alternatively, you can also directly measure travel speeds for existing conditions by driving on them, and you can estimate travel speeds for prior conditions or proposed future conditions based on speeds now existing on similar roads in your area.

Step Two: Collect Population and Employment Information.

All of the measures of market changes (i.e., customer markets, labor markets, business supplier markets and tourism markets) are based on some measures of the magnitude of either residential population or business activity (e.g., employment) in each zone. This information may be at the level of counties, townships, communities or census tracts, and should be obtained for the most recent available year. If your regional planning agency or state Department of Transportation has a GIS containing population and employment data for area communities and counties, then that information should be obtained. Otherwise, you can collect this information from available government data sources as specified in Table 4-2.

Table 4-2 Sources of Residential and Business Data for Areas

Data Series	***Spatial Detail***	***Update***	***Source of Data***
Sources of Residential Data			
Population Estimates Program, Bureau of the Census (population)	States, counties, metro areas; places and county subdivisions	Every year	http://www.census.gov/population/www/estimates/popest.html
Decennial Census (population, labor force)	Census tracts, towns, zip codes, counties, states, metro areas, U.S.	Every 10 years	http:// www.census.gov/
Sources of Business Data			
Local Area Unemployment Statistics	States, counties, large cities	Every month	Bureau of Labor Statistics (www.bls.gov) or State Labor Market Info. (LMI) agencies
Covered Employment and Wages (ES-202)	States, metro areas, labor market areas, counties, small cities and towns	Every quarter	www.bls.gov and State LMI agencies
County Business Patterns	Counties, metro areas, zip codes	Every year	www.census.gov/epcd/view/cbpview.html
Regional Economic Information System (employment, earnings)	States, metro areas, counties	Every year	http://fisher.lib.Virginia.edu/reis/

Step Three: Calculate Changes in Market Area Before and After the Highway Project

This step combines the zonal travel time information from Step 1 with the zonal population and business data from Step 2, to calculate the first four spreadsheet inputs on changes in economic market opportunities. These measures, which require comparison of market access *before* and *after* completion of the highway project, include:

- *change in customer markets* -- calculate the percentage increase in shoppers living within 45 minutes one-way driving time from your area (where 45 minutes represents a reasonable range of travel for home-to shopping trips). You can use the percentage change in population within that travel time, as a rough approximation of the change in shoppers.

- *change in labor markets* -- calculate the percentage increase in workers living within 45 minutes one-way commuting time from your area (where 45 minutes also represents a reasonable range of travel for home-to-work commuting trips; you may substitute other values in the 30-60 minutes range as deemed appropriate for your area). You can again use the percentage change in total population within that travel time, as a rough approximation of the change in labor market.

- *change in business supplier markets* – calculate the percentage increase in business supply purchases occurring within 3 hours one-way truck driving time of your area (where 3 hours represents a reasonable distance for same-day round trip deliveries; you may substitute other values if deemed appropriate for your area). You can again use the percentage change in total business employment or output within that travel time, as a rough approximation of the change in business supplier purchases.

- *change in regional tourism markets* – calculate the percentage increase in population living within 2 hours one-way travel time of your area (where 2 hours represents a reasonable level of attraction for day trip travelers and visitors coming from other population centers; you may substitute other values if deemed appropriate for your area). Note that tourism related to pass-through traffic will be covered in a separate analysis discussed later in this chapter.

Example -- Table 4-3 presents an example of how to compute these indicators of changes in market access. In this example, we have calculated the percentage change in households that can reach a community's retail district within forty minutes by car. After the travel times have been calculated, the number of households in the 40-minute market area are added up for both the before and after cases. The percentage change is then calculated. Since we only care about the *percentage* change in the market area, it usually makes little or no difference whether we are measuring changes in total population or in number of households.

Table 4-3: Change in Customer Market within 40 minutes of Local Business District

BASIC DATA		BEFORE CASE			AFTER CASE		
Zone	**Number of HH**	**Travel Time (min)**	**Within 40 min?**	**# HH within 40 min**	**Travel Time (min)**	**Within 40 min7?**	**# HH within 40 min**
1	68	6	Y	68	5	Y	68
2	40	6	Y	40	5	Y	40
3	29	9	Y	29	8	Y	29
4	225	22	Y	225	19	Y	225
5	436	25	Y	436	22	Y	436
6	309	28	Y	309	22	Y	309
7	135	33	Y	135	30	Y	135
8	320	37	Y	320	31	Y	320
9	416	40	N	0	34	Y	416
10	251	41	N	0	41	N	0
11	21	42	N	0	42	N	0
12	195	44	N	0	38	Y	195
13	86	46	N	0	25	Y	86
14	53	47	N	0	47	N	0
15	207	52	N	0	31	Y	207
16	24	53	N	0	53	N	0
17	423	56	N	0	56	N	0
18	36	61	N	0	51	N	0
TOTAL	**----**			**1562**			**2466**

In this example, the percentage increase in number of households within a 40-minute travel time is (2466 – 1562) / 1562 = 57.9%. You can then enter that percent increase in the spreadsheet input line for “Change in Customer Markets”.

Step Four: Estimate Changes in Pass-through Traffic.

Your state DOT probably has estimates of how much traffic there was passing through your community, region or local business area before and after the highway changes were made. This would normally be measured in terms of Average Daily Traffic (ADT), which counts the total number of vehicles passing through a given point (counting both directions) in a typical day. If not, then you will have to estimate this change yourself. Calculate the change in traffic as a percentage of the original traffic level. For instance, this number would be +100% if the amount of traffic passing through doubled, and it would be –100% if the amount of traffic passing through fell in half. You can then enter this number into the spreadsheet input line for “Change in Pass-through Traffic Markets.”

Step Five: Estimate Changes in Linkage Access to Air/Water/Rail Facilities.

If the highway project has significantly changed your access to air, water, or rail transit facilities, this may also influence the economic opportunities that are now available. You should assess whether the highway is likely to have significantly increased the use of any (1)

airport, (2) river or seaport and (3) train station or rail freight connection located within two hours driving time of the area. If not, then just enter zero into the spreadsheet input lines for "Change in linkage access to air, water and rail facilities." Otherwise, enter your estimate of the percentage increase (+ value) or decrease (- value) in likely use of those facilities which is due to the new highway.

4.4 Overall Impacts on Market Access for Individual Industries

The spreadsheet will combine your estimates of the changes in market access caused by the highway (as listed earlier in Table 4-3) with already-compiled information concerning the extent to which various types of businesses are dependent and sensitive to these factors. A typical set of default values for these business sensitivity factors are shown in the model's "Assumptions" spreadsheet, as shown in Table 4-4. These values were derived from surveys of business purchases and activities (as shown in the "Transportation Satellite Accounts" to the national input-output tables, prepared by the US Bureau of Economic Analysis and the Bureau of Transportation Statistics), together with additional data derived from studies of just-in-time processing and roadside surveys. This information is already built into the analysis model, so no action is needed to use it. However, users wishing to update its values for specific cases may due so by changing the numbers in the Assumptions page of the spreadsheet model.

By combining the market accessibility changes (as illustrated in Table 4-1) with the business sensitivity factors (as illustrated in Table 4-4), the spreadsheet system can calculate the extent of potential business cost reduction or revenue expansion for each type of business. For instance, improvements in *customer market* access (caused by the new highway link) are valued primarily by businesses that serve surrounding residential markets – particularly retail and personal services firms. On the other hand, improvements in *labor market* access are valued primarily by businesses that depend on workforce access – particularly office-based and service businesses.

4.5 Summary

In this chapter you collected information on how the new highway segment has (or will) affect your area. This included growth in the market area for labor, business suppliers, customers, and tourists. It also included changes in local access to airports, rail facilities and other multi-modal transportation facilities, and changes in pass-by traffic. The analysis model uses this data to calculate measures of the relative change in costs and revenues for various types of businesses. This information is a critical part of the process of identifying potential opportunities for local economic growth made possible by the highway system improvement. This information will be combined with the local economic performance analysis in Chapter 3, as well as the analysis of supporting resources and cost factors in Chapters 5-6.

Table 4-4 Typical Values for the Sensitivity of Businesses to Freight Access, Shopper Market and labor Market Access Factors *(Spreadsheet "Assumptions")*

		Cost Reliance		Customer Base		Dependence			Ratio
SIC	Sector	Truck Trans	Worker Base	Resid Based	Pass-through	Just-in-Time Delivery	Use of Rail	Use of Air Link	Value Added
7-9	Agric services & forestry	0.07	0.42	0	0	L	0.001	0.008	1.70
10-14	Mining	0.05	0.19	0	0	L	0.001	0.003	1.70
15-17	Construction	0.07	0.23	0	0	L	0.002	0.001	1.00
20	Food products	0.03	0.14	0	0	M	0.005	0.002	2.50
21	Tobacco products	0.01	0.08	0	0	L	0.001	0.004	0.66
22	Textile mill products	0.02	0.25	0	0	L	0.002	0.001	1.88
23	Apparel and other textile	0.05	0.29	0	0	L	0.000	0.003	2.20
24	Lumber and wood	0.04	0.25	0	0	L	0.008	0.002	2.70
25	Furniture and fixtures	0.04	0.30	0	0	L	0.003	0.004	2.41
26	Paper products	0.07	0.22	0	0	L	0.011	0.005	3.10
27	Printing and publishing	0.04	0.30	0	0	M	0.002	0.010	1.84
28	Chemical products	0.08	0.18	0	0	L	0.006	0.005	2.36
29	Petroleum and coal	0.04	0.03	0	0	L	0.002	0.002	2.78
30	Rubber and plastics	0.04	0.28	0	0	M	0.005	0.002	2.78
31	Leather products	0.03	0.26	0	0	L	0.001	0.003	1.85
32	Stone, Clay, glass	0.12	0.30	0	0	L	0.010	0.003	2.09
33	Primary metal industries	0.07	0.19	0	0	M	0.012	0.002	2.36
34	Fabricated metal prod	0.08	0.29	0	0	H	0.003	0.004	2.18
35	Industrial machinery	0.13	0.37	0	0	L	0.001	0.005	2.21
36	Electronic/electric equip	0.09	0.35	0	0	M	0.010	0.007	2.22
37	Transportation equip	0.09	0.21	0	0	H	0.002	0.002	2.22
38	Instruments	0.02	0.32	0	0	M	0.001	0.005	2.04
39	Misc. manufacturing	0.02	0.28	0	0	L	0.002	0.004	2.36
41	Passenger transit	0.01	0.43	0	0	L	0.001	0.001	0.26
42	Trucking & warehousing	0.20	0.38	0	0	M	0.003	0.002	1.70
44	Water transportation	0.05	0.03	0	0	M	0.001	0.011	1.31
45	Transportation by air	0.09	0.38	0	0	M	0.001	0.044	1.35
46	Pipelines, exc nat gas	0.03	0.30	0	0	L	0.001	0.011	1.31
47	Transportation services	0.03	0.30	0	0	L	0.001	0.011	1.31
48	Communications	0.01	0.35	0	0	L	0.000	0.002	1.93
49	Electric, gas services	0.03	0.19	0	0	L	0.009	0.002	2.60
50	Wholesale - durables	0.04	0.44	0	0	L	0.001	0.006	2.10
51	Wholesale - nondurables	0.04	0.44	0	0	L	0.001	0.006	2.10
52	Building & garden suppl	0.04	0.40	0.60	0.35	L	0.000	0.002	2.48
53	General merchandise	0.04	0.40	0.65	0.25	L	0.000	0.002	2.48
54	Foods stores	0.04	0.40	0.60	0.40	L	0.000	0.002	2.48
55	Auto & service stations	0.02	0.40	0.40	0.60	L	0.000	0.002	2.48
56	Apparel and accessories	0.04	0.40	0.65	0.25	L	0.000	0.002	2.48
57	Furniture, furnishings	0.04	0.40	0.70	0.30	L	0.000	0.002	2.48
58	Eating and drinking	0.04	0.29	0.50	0.40	L	0.001	0.003	2.29
59	Miscellaneous retail	0.04	0.40	0.65	0.25	L	0.000	0.002	2.48
60	Depository institutions	0.01	0.27	0.70	0.00	L	0.000	0.003	2.60
61	Nondep. institutions	0.01	0.57	0	0	L	0.000	0.012	1.71
62	Commodity brokers	0.01	0.57	0	0	L	0.000	0.012	1.71
63	Insurance carriers	0	0.35	0.10	0	L	0.000	0.003	2.56
64	Insurance agents, broker	0	0.35	0.30	0	L	0.000	0.003	2.56
65	Real estate	0	0.04	0.20	0	L	0.000	0.000	1.50
67	Holding and investments	0	0.57	0	0	L	0.000	0.012	1.71
70	Hotels, other lodging	0.04	0.42	1.00	0	L	0.001	0.001	2.84
72	Personal services	0.03	0.29	0.70	0.10	L	0.000	0.001	2.42
73	Business services	0.05	0.42	0.50	0	L	0.000	0.004	2.20
75	Auto repair and parking	0.02	0.21	0.50	0.20	L	0.001	0.001	2.44
76	Misc. repair services	0.03	0.57	0.80	0.20	L	0.001	0.001	2.42
78	Motion pictures	0.02	0.25	0.40	0.20	L	0.000	0.001	2.16
79	Amusement & recreation	0.02	0.37	0.60	0.20	L	0.001	0.002	3.08
80	Health services	0.02	0.49	0.40	0	L	0.001	0.003	1.31
81	Legal services	0.01	0.46	0.50	0	L	0.000	0.016	1.31
82	Educational services	0.04	0.52	0.90	0	L	0.000	0.013	1.31
83-86	Social services, orgs	0.04	0.47	0.50	0	L	0.000	0.007	1.31
87	Engineering & mgmt	0.01	0.46	0.50	0	L	0.000	0.016	1.31
89	Services, other	0.04	0.46	0.70	0	L	0.000	0.003	1.31

CHAPTER FIVE
ECONOMIC DEVELOPMENT RESOURCE ANALYSIS

5.1 Overview

The empirical analysis in Chapters 3 and 4 provide you with a basis for assessing which sectors of the economy represent potential growth prospects for your area, and are most likely to be affected by completion of a new highway segment. However, there is a remaining need to assess local factors that may enable or constrain prospects for business attraction and growth – the nature of the local labor force, existing facilities such as industrial land and buildings, condition of the area's business district(s), extent of natural and recreational resources, and availability of local economic development support programs. Thus, you need to assess your area's relevant resources, and conduct an inventory of existing economic development programs in your area.

This chapter, unlike the preceding ones, relies on a series of self-assessment paper worksheets instead of using computerized spreadsheets. These paper worksheets provide a structure to help you identify: (a) local strengths upon which to build your business attraction and growth strategy, and (b) local weaknesses that must be addressed in focusing your economic development strategy. You can then use this information as a basis for completing the final steps of the computerized analysis in Chapter 6.

Preview. In this chapter, you will assess one or more categories of economic development resources:

1. Existing economic development programs
2. Local stock of industrial parcels and buildings
3. Characteristics of the labor force
4. Characteristics of the downtown area
5. Tourism potential

5.2 Determining Your Economic Development Focus

Table 5-1 is your guide to determining which parts of this chapter you will focus on, and which worksheets you will complete. If your economic development targets and interests include industrial development, you should complete the sections on industry and labor. If your interests are in commercial development, you may wish to complete the section on the local downtown. If you are interested in tourism and/or outdoor recreation (grouped as "Recreational" on the Table), you may wish to complete the sections on downtown and/or tourism attractions. Choose your target(s) and proceed to those sections of this chapter.

Table 5-1
Guide to Selecting Worksheets for Assessing Economic Development Resources

Target Sector	Resource Assessment				
	Econ. Devel. Programs (5.3)	Industrial Facilities (5.4)	Labor Force (5.5)	Downtown Resources (5.6)	Tourism Attraction Resources (5.7)
Industrial	*X*	*X*	*X*		
Commercial	*X*			*X*	
Recreational	*X*			*X*	*X*

5.3 Economic Development Programs. (Worksheet 5-1)

It is important to know what economic development programs exist in your area. Even though you have decided on particular target areas for your analysis, it is worth taking stock of all the different programs that exist, as you may find that some are receiving a lot of funding while not serving a high-priority purpose. In this section you will assess the economic development programs in your area.

Using your contact with other stakeholders and your combined knowledge, complete Worksheet 5-1. This worksheet lists the various types of programs by focus (existing business support, new business development, investment incentives, marketing and training) and by type of service (counseling, financing, training, land, building, etc.). For each type of program, list the names of specific programs related to economic development that exist in your area in the area along with information about their eligibility and loan funding levels (if applicable).

5.4 Industry Facilities Resource Assessment. (Worksheets 5-2 and 5-3)

This part need only be completed if your economic development targets include some industrial (manufacturing and/or distribution) types of businesses. To assess your area resources to accommodate industrial development, complete Worksheet 5-2 on the available industrial parks and industrial land in your area, and Worksheet 5-3 on the available stand-along industrial buildings in your area. You can often get the needed information from economic development agencies, commercial real estate brokers, industrial property developers or utility economic development staff. Details for filling out these two worksheets follow.

Worksheet 5-1. Economic Development Program Inventory

Program Type (1)	**Check if it Exists** (2)	**Name of Program** (3)	**Eligibility Rules / Target** (4)	**Potential Funding to Applicant ($)** (5)	**Importance (High, Medium, Low)** (6)
Support for Existing Businesses					
Counseling					
Financing	*X*	*State loan programs*	*Manufacturing only*	*$10-100 million*	*High*
Other					
Support for New Start-Up Businesses					
Counseling	*X*	*Small Business Development Center*	*entrepreneurship counseling program*	*NA*	*Medium*
Financing	*X*	*Micro Loan Program, Revolving Loan Fund*	*business must be <$1m annual revenue,*	*$-5 million*	*High*
Incubator Space	*X*	*Tech College Incubator*	*startups only, 2 years*	*$10 – 100k*	*Medium*
Other					
Investment Incentive Programs					
Land	*X*	*State land bank, brown-fields reuse program*	*existing buildings*	*variable, case by base basis*	*Medium*
Buildings					
Equipment					
Other					
Promotion & Marketing of the Area					
Tourism	*X*	*State Tourism Office*	*not applicable*	*NA*	*medium*
Industrial					
Downtown/Center					
Other					
Training Programs					
Vocation Education					
College	*X*	*entrepreneurship program*	*start-ups*	*NA*	*high*
Other Specialized Training					

Industrial Land Parcel Assessment -- Worksheet 5-2

Step 1: Identify industrial land parcels in your area. A supply of vacant land suited and zoned for industrial development is critical for attracting new businesses into your community. Therefore, it is necessary to identify and record parcels suitable for industrial uses. A detailed, up-to-date inventory of available industrial property, both publicly and privately-owned, is a fundamental tool for successfully implementing an economic development strategy. Enter the name and location of industrially zoned parcels should be recorded in Worksheet 5-2, Column 1.

Step 2: Assess whether your industrial land meets basic requirements needed to attract industry. Identify whether these industrial parks or land parcels meet all of the basic characteristics required by many larger businesses, and note it in Worksheet 5-2, Column 2. Any deficiencies should then be listed in Column 3. Key criteria are:

- Three or more acres zoned for industrial uses.
- Space for at least three industrial buildings of 20,000 sq. ft. each.
- At least one vacant lot or building.
- Paved roads leading into the park and to the sites and buildings within the park.
- Access to electricity, telephone lines, water, sewer or other wastewater facilities.

Step 3: Identify any special advantages of your industrial land parcels. Ask the appropriate stakeholders if the industrial land parcels in your area have any particular advantages, and fill this information in Worksheet 5-2, Column 4. Advantages are features above and beyond the basic requirements such as:

- Access to an active rail line with a siding or with space for a siding.
- Within 5 minutes drive time to a 4-lane highway.
- Within 40 minutes from airport with scheduled passenger service.
- Vacant building or shell structures already constructed.
- In-place sewer, septic, natural gas and/or fiber optic cabling.
- An incubator building for small businesses. An incubator is a building with small units, with shared facilities and services.
- Other special advantages.

Industrial building assessment - Worksheet 5-3

Step 1: Identify vacant, stand-alone industrial buildings. In today's fast-paced economy, many businesses do not have the time, financial resources, or the long-term commitment to build their own buildings. Businesses interested in renting or buying buildings look for areas with a choice of competitively priced vacant properties.

Stand-alone industrial buildings can be for sale or for lease. They may be designed to accommodate a single user, or they may be divided into a number of smaller units. They might be good "incubator" buildings (see definition under Step 6). They can contain a mix of industrial, office, and warehousing space. If there are vacant industrial buildings available in your area, list the major ones in Worksheet 5-3, Column 1.

Worksheet 5-2, Industrial Parks and Land Parcels

Do you have any industrial parks in your area? (circle one) Yes No (If yes, complete the rest of the worksheet)

Names & locations of industrial parks **(1)**	**Meet Standards? Yes / No** **(2)**	**Deficiencies** **(3)**	**Advantages** **(4)**
County Wood Products Industrial Park	*No*	*Access roads not paved, no sewer, no high speed telecom available*	*20 acres available, electricity service, rail siding, 2.5 miles from interstate*

Worksheet 5-3. Industrial Buildings Assessment

Are there any vacant industrial buildings in your area? (circle one) Yes No (If yes, complete the rest of the worksheet)

Names & Locations of Industrial Buildings **(1)**	**Meet Standards? Yes / No** **(2)**	**Deficiencies** **(3)**	**Advantages** **(4)**
American Twine Building	*no*	*slow elevators, insufficient parking*	*high ceilings, loading docks*
Tech incubator	*yes*	*limited space available, no rail access*	*close to interstate highway, fiber optic line available, fee-based shared services*

Step 2: Identify advantages and deficiencies of your industrial buildings. Identify whether these buildings meet all of the basic characteristics typically required by manufacturing and distribution facilities. This assessment should be noted in Worksheet 5-2, Column 2, and any deficiencies should then be listed in Column 3. Key criteria are:

- 10,000+ sq. ft. in one unit
- loading docks
- 10+ foot ceilings
- elevators if multi-floor
- basic utility services
- sprinkler systems

Step 3: Identify any special advantages of your industrial buildings. Ask the appropriate stakeholders if any of the available building space in your area has particular advantages, and fill this information in Worksheet 5-2, Column 4. Advantages are features above and beyond the basic requirements, including factors such as:

- incubator units for small businesses, with shared services
- easy access to a 4-lane highway
- municipal sewer
- single-story building
- newer construction or renovation (post 1985)
- fiber optic wiring

5.5 Labor Force Assessment. (Worksheet 5-4)

This part is usually necessary only if your economic development targets include some businesses requiring workers with skilled manufacturing capabilities or other technology training. To assess your local labor force resources, complete Worksheet 5-4.

Identify the strengths & weaknesses of your labor force. One of the leading reasons why businesses choose to move into a new community is because there is a good supply of workers with the right skills for their industry. Worksheet 5-4 will help you to assess the perceived strengths and weaknesses of your local labor force among the key factors listed below. The primary information sources for this assessment are likely to be major employers and the local offices of the state departments of employment and training (that you listed on Worksheet 2-2). Notes on these findings should be entered in Worksheet 5-4, Columns 2 - 3. The key factors are:

- *Worker Skills* – Are the skills of the labor force appropriate for new businesses coming into the community? Be specific about types of skills and industries utilizing them.
- *Educational Levels*– Are there [enough] workers with high school diplomas, 2- and 4-year college degrees, and technical training?
- *Education System* – Are there programs available to train workers for new jobs brought into the community? If so, for what kind of training?
- *Availability of Workers*- Although high unemployment is not desirable, it does indicate that there is a good supply of workers available.
- *Wage rates* – Are wages in the local area competitive with other similar places?

Worksheet 5-4. Labor Force Assessment

Factor (1)	**Strengths** (2)	**Weaknesses** (3)
Worker Skills	*precision machine service skills (from closed plant), good work ethic*	
Education Levels		*Two-thirds of the labor force does not have college education*
Education System	*Training program at community college for basic office skills and computer / electronics*	*no four-year college in the region*
Availability of Workers	*high unemployment, available workforce for 1000 job plant*	
Wage Rates	*20% less than state average, attractive to businesses*	
Other:		

5.6 Commercial Business District Assessment. (Worksheet 5-5)

This part is usually necessary only if your economic development targets include retail stores or business service/financial offices. To assess your area's commercial resources, complete Worksheet 5-5 for each major business district (which may be located in a traditional downtown area and/or along a strip of highway). The characteristics of these areas can be important for economic development strategies for any of three reasons:

1. New or expanded commercial development may be made possible as a result of increases in area pass-through traffic, or improvements in area accessibility.
2. Outsiders sometimes judge the quality of life in a community on the basis of the image presented by its commercial area, and that can affect industrial business attraction.
3. Older downtown areas can also have an important role as a breeding area for new business startups because they provide low-cost space.

Identify the strengths and weaknesses of your commercial business district. To assess the major commercial business district in your area, talk to the chamber of commerce and/or regional business leaders concerning what they see as the strengths and weaknesses of the area as a source of local image and local economic activity. The specific criteria to be considered are listed below, and notes on these findings should be entered in Worksheet 5-5, Columns 2 - 3. The key factors are:

- Vacancy / occupancy rates for land , storefronts and upper stories (if applicable)
- Pedestrian environment & safety – crime, lighting, benches, amenities
- Parking – availability and convenience
- Mix of businesses – specialties featured or missing types of businesses
- Costs of rent & real estate – particularly for commercial property
- Other features considered to be local strengths or weaknesses.

5.7 Tourism Assessment. (Worksheet 5-6)

This part need only be completed if your economic development targets include tourism development. To assess your area's tourism-related resources, complete Worksheet 5-6.

Step 1: List the visitor attractions. Historic attractions may include cultural and historic buildings, event sites, museums and memorials. Scenic or natural resource attractions may include parks and trails, visitor and interpretive centers, and destination recreational sites. Other tourist attractions may include sports facilities, theaters or amusement parks. List these historic, scenic and special attractions in your area on Worksheet 5-6, Part A, Column 1.

Step 2: Obtain basic descriptors of the visitor attractions. For each of the major visitor attractions, obtain information about their primary market draw (local, regional, statewide, multi-state, or national). Also obtain information about the volume of visitors to each attraction and their "strengths" (opportunities for growth in visitors) or "weaknesses" (factors limiting their appeal). Enter this information in Worksheet 5-6, part B, Columns 2 – 6.

Worksheet 5-5. Commercial Business District Assessment

Complete this form for each major business district.

Name and Location of the Commercial Business District _____

Circle one: (a) Downtown (b) Highway Strip (c) Other

Factor (1)	**Advantages** (2)	**Disadvantages** (3)
Vacancy/ Occupancy (Buildings & Lots)	*14 vacant buildings , including two former bank bldgs with historic interest*	*run down facades, need painting*
Pedestrian Environment & Safety		*poorly lit, dark at night, some petty ctime*
Parking	*Plenty of diagonal on-street parking*	
Mix of Businesses	*two restaurants, three antique shops, barber shop and 4 general retail stores plus gas station*	*no clothing stores or drug stores*
Cost of Rents & Real Estate	*low rents compared to other nearby towns*	
Other:	*potential for historic district*	

Worksheet 5-6. Tourism Resources

A. Attractions

Visitor Attractions (1)	Market Area (2)	Visitors per Yr (3)	Strengths (4)	Weaknesses (5)	Planned Investments (6)
Historic Attractions					
birthplace of country music star	*national*	*30,000*	*national name*	*no good access road, limited promotion*	
Scenic Attractions					
federally-designated "Wild & Scenic Rover", with nearby Crystal Lake	*state*	*20,000*	*beauty, recognized by Audobon Society*	*no signage for boat ramp or parking*	*proposal for resort and canoeing center*
Other Visitor Attractions					
general store and antique center	*regional*	*not available*		*seasonal opening only*	
County historical museum	*local*				

B. Facilities for Visitors

Local Services for Visitors (1)	Number of Establishments (2)	Total Capacity (3)	Strengths (4)	Weaknesses (5)	Planned Investments (6)
Hotels/Motels	*2*	*80*	*clean*	*seasonal operation*	
Campgrounds	*1*	*36*	*near national forest*	*seasonal operation*	
Restaurants	*3*	*60*		*two are lunch only*	
other					

Step 3: Assess your area's capacity for supporting more visitors. Obtain information on the number of hotels/motels, campgrounds and restaurants, and their capacity. Enter this information in Worksheet 5-6, part B.

5.8 Interpretation and Use of these Results

You should use the results of these worksheets to identify whether your area has the required facilities and resources needed to support and attract various types of business growth – including industrial growth, commercial growth and tourism/recreation growth. This information can be used in two different ways:

- Some of the very basic requirements – such as the availability of industrial park sites with full supporting infrastructure, availability of office/commercial locations with full supporting infrastructure, and availability of business sites near the highway – can be directly rated and that information used in calculating opportunities by the analysis model (described in Chapter 6).

- Many other factors -- such as the nature of business support programs and incentives, or the image of downtown or the quality of tourism attractions – cannot be simply turned into a numerical rating, and must instead be considered in the development of an economic development strategy plan (described in Chapter 7).

Either way, the information in these worksheets will help you to identify needs for additional local action. The nature of those actions will depend on the potential business targets (to be identified in Chapter 6). For instance, if the data analysis identifies a possible opportunity for financial services offices, then it may be particularly useful for you to consider the availability of first class office space with fiber optic telecommunications access. If the data analysis identifies a possible opportunity for machinery assembly plants, then it may be particularly useful to consider the availability of industrial park tracts with space for large, one-story buildings. If the data analysis indicates a possible opportunity for electronics manufacturing, then it may be particularly useful to consider labor force skills and the availability of training programs.

Of course, some of the deficiencies identified here can be addressed more quickly than others. Problems that might be addressed within a couple of years might include expansion of job training programs, upgrading of telecommunications services, and improving capacity to accommodate visitors with lodging, restaurants and fuel services. On the other hand, problems that may be more difficult to address in the short run may include cost of electricity, distance of existing industrial parks to the new highway, and limited airline service.

The next chapter completes the process of accounting for local cost factors and local infrastructure and site limitations, in order to identify the nature of project economic development opportunities.

CHAPTER SIX
CALCULATION OF OPPORTUNITIES

6.1 Overview

This chapter completes the process of analyzing local strengths and weaknesses, and it describes the final results of the analysis model. It describes three additional sets of factors that are addressed in the analysis model: (1) relative costs of doing business locally, including labor, power, tax and local prices; (2) the availability and adequacy of local infrastructure, land, facilities and resources; and (3) opportunities for development of industry "clusters" that provide jobs in complementary industries.

Preview. In this chapter you will:

- Compare the local cost of doing business with newly linked areas
- Rate the local availability of sites for new business, with adequate infrastructure
- Identify opportunities for additional growth of complementary industries

6.2 Business Costs

The cost of doing business and living in your area is influenced by the cost of labor, by the cost of electricity, and by state and local tax rates. A cost comparison can show how the cost of doing business and living in your area compares with that of the newly linked areas. This information can help to determine whether relative costs are an advantage or a disadvantage in your area.

To conduct the analysis of relative cost advantages (or disadvantages) for your area, you must input information on labor costs, productivity, power costs and taxes into spreadsheet table "Input-3", parts B and C, as illustrated in Table 6-1 (on the next page). While there are many more types of cost factors that can affect businesses, the current version of this table is limited to those measures of cost which are most easily obtainable online (via the world wide web). The following sources of data can be used:

- **Labor Cost.** You can calculate the average cost of manufacturing labor by obtaining the payroll and number of employees, and calculating the average ratio of payroll dollars per employee. This information is available, by industry, for all states and counties from the economic census, and it is also available for non-agricultural industries from county business patterns. (Both are available on the web at www.census.gov/datamap/www/ . Select a state and county and then select either *Economic Census* or *County Business Patterns*.)

- **Electricity Cost.** State-level data on electricity cost is available from the Energy Information Administration at http://www.eia.doe.gov/emeu/states/_states.html (Select a state and then select *Electricity Profile*; the average cost of electricity will be listed in Table 1.) Local cost per kWh of electricity is available for individual electric utility companies from Energy User News www.energyusernews.com (Select *Statistics, Trends and Energy Data.*).

- **Tax Burden.** Information on statewide corporate and personal tax rates, and overall tax burden, is available at www.bizsites.com/Toolkit/bythenumbers.html (Select *Topics-Economy*.) You can also calculate the average local, county and state tax burden per capita. To do that, you first obtain tax revenues for the applicable city/town, county and state and then divide it by the population of the applicable area. Tax data can be found at http://www.cache.census.gov/govs/www/cog.html (Scroll down to *Finance Phase.* For state revenues by type of tax, go to *State and Local Finances and* select *viewable data* for the state of your choice. For data on individual local governments, go back to the menu for *Finance Phase*, scroll down to *Publications*, select *Census of Governments* and then view the relevant pdf files on municipal, county and special districts. Note that most of the tables show statewide averages of local governments, but later tables break it down for individual local governments.) Population data is available at www.census.gov/datamap/www/ .

The analysis model automatically averages costs among the study area counties and among the linkage area counties (with appropriate adjustment for the number of actual counties listed). It then calculates a ratio of the two, indicating whether costs in your area are higher, lower, or equal to costs in the comparison area. If the cost ratio is greater than 1, it means that costs in your area are higher than in the linkage area. This may influence businesses to locate in other areas where costs are lower. If the cost ratio is equal to 1, your costs are the same as the comparison area. If the ratio is less than one, your costs are less, which indicates that your area may have a competitive advantage in terms of the cost of doing business relative to the comparison area.

Table 6-1. Sample Input Table for Cost Data *(Spreadsheet "Input 3" Part A)*

ARC Handbook Spreadsheet - Input Form 3

ARC-OPPS Economic Development Opportunities Model

a. Relative Costs	**Study Area**		**Linkage Areas**			
Cost Categories	**Pontotoc County**		**Lee County**	**Lafayette County**	**Panola County**	
Labor Cost (Mfg $ / hr)	9.66		9.66	9.66	9.66	
Electricity Cost (c/kwh)	5.00		4.91	5.00	5.00	
Overall Tax ($ of income)	8.50		8.60	8.60	8.60	

It is best to consider this analysis as a means of screening out manufacturing industries that could find your area uncompetitive in terms of costs. However, it is also important to recognize that high labor costs can sometimes be an indicator of an area that is a good site for business location. For instance, some commercial businesses with a higher valued merchandise or services, may seek areas with a high income population. It is beyond the ability of the current analysis model to distinguish commercial businesses catering to higher income customers from commercial businesses catering to lower income customers. However, either one could be an appropriate source of economic growth in certain situations.

6.3 Development Constraints and Incentives

Your area may have an abundance of industrial parks sitting empty, just waiting for a business to walk in and instantly find vacant buildings and plots that are already hooked up with ample sewer, water, electricity, broadband communications, rail spurs and access roads. However, it is quite common, particularly in areas that have historically been economically depressed, to find that there is a significant lack of readily available industrial parks, buildings or sites that are located near the new highway and are available with full infrastructure support. Similar types of limitations may also apply for office space or for commercial/retail space that is now available in your area.

It is actually quite logical that in an economically depressed area, no private investor would want to put money into developing buildings, access roads and supporting infrastructure that will remain unused for the foreseeable future. For that reason, such investment may become a local need and priority if your area is to be successful in realizing the economic growth opportunities potentially made possible by a new highway segment.

Sometimes there are constraints on the availability of desirable business location sites that cannot be overcome. This may occur if the most desirable sites along the highway or nearby and accessibility to it are all already taken, or if the most desirable locations cannot be built upon because of topography or designation as wetlands, parklands or Native American reservations.

The analysis model provides you with a way or recognizing situations that represent either particularly advantageous or particularly limited opportunities for highway-related commercial business, industrial plants or office development. Based on the worksheets you completed in Chapter 5, you should be able to rate the extent to which there are readily-available and attractive sites for these three types of business development. In most areas, the currently available offerings will given a rating somewhere between zero (representing *no* attractive sites readily available) and one (representing *plenty* of readily-available and attractive sites). In some exceptional cases, the available offerings may be given a rating greater than one (representing exceptional incentives). The values for most areas are likely to be in the range of 0.3 – 0.8. You should input these ratings into spreadsheet “Input 3,” part C, which is illustrated in Table 6-2.

Table 6-2.
Sample Input Table for Development Constraint Data *(Spreadsheet "Input 3" Part C)*

ARC Handbook Spreadsheet - Input Form 3

ARC-OPPS Economic Development Opportunities Model

c. Development Constraints or Incentives

factor<1 indicates infrastructure or development factor that constrains growth
factor>1 indicates incentive factor that enhances growth

Availability of Highway-Related Commercial Land	0.80
Availability of Industrial Park Sites with Full Infrastructure	0.80
Availability of Office/Commercial Development Sites	0.80

The effect of these ratings are to increase or decrease the projection of potential business growth opportunities for particular types of businesses, depending on the extent to which each type of business relies upon commercial, industrial or office-related land and buildings. You can run the analysis model twice, if you wish to compare results for the current situation with limitations on the available sites, and for a future situation in which those limitations have been overcome through public investment in infrastructure and utility development. (If you do that, you must resave the spreadsheet data file with a new name for each separate run.)

6.4 Complementary Industries

It is important to also consider opportunities for building upon inter-industry linkages – in other words, buyer-supplier relationships between different types of business. "Complementary industries" are types of business which *are not* primary target industries, but which may nevertheless represent growth opportunities because they *are* suppliers of goods and services to the primary target industries. In this case, any direct opportunities for business growth created by Appalachian highways may also indirectly create opportunities for growth in complementary industries that do not directly depend on highway access.

We identify opportunities for growth in complementary industries through use of "input-output" tables, which show inter-industry technology (buyer-supplier) relationships. This calculation is done automatically in the spreadsheet, using data on linkages between industries and on industry concentrations in your area and the areas that your area is now linked to. You would not normally want to change the table of inter-industry technology relationships, though it can be accessed and changed if desired through the "Assumptions" spreadsheet. A small portion of that very large table is illustrated in Table 6-3 (on the next page).

Table 6-3.
Sample Table for Inter-Industry Relationships *(Spreadsheet "Assumptions")*

ARC Handbook Spreadsheet - Assumptions

c. Threshold Matrix of Direct Coefficients (U.S. '97)

SIC	Sector	Furniture	Paper	Rubber prod	Leather prod	Stone, glass, prod	Primary metals	Fabricated metals	Industrial Machinery	Electrical equipment	Transport equipment	Scientific instruments
22	Textile mill products	0.052	0	0.015	0.019	0	0	0	0	0	0	0
23	Apparel	0	0	0	0	0	0	0	0	0	0	0
24	Lumber and wood	0.07	0.04	0	0	0	0	0	0	0	0	0
25	Furniture and fixtures	0	0	0	0	0	0	0	0	0	0.013	0
26	Paper products	0.016	0	0.022	0	0.02	0	0	0	0	0	0.018
27	Printing and publishing	0	0	0	0	0	0	0	0	0	0	0
28	Chemical products	0.013	0.054	0.186	0.035	0.032	0.014	0.015	0	0.011	0	0.012
29	Petroleum and coal	0	0	0	0	0.013	0	0	0	0	0	0
30	Rubber and plastics	0.042	0.028	0	0	0.012	0	0.013	0.019	0.024	0.03	0.03
31	Leather products	0	0	0	0	0	0	0	0	0	0	0
32	Stone, Clay, glass	0	0	0	0	0	0	0	0	0	0	0
33	Primary metal	0.037	0	0	0	0	0	0.167	0.069	0.033	0.037	0.02
34	Fabricated metal prod	0.059	0	0.01	0	0	0.014	0	0.041	0.033	0.067	0.039
35	Industrial machinery	0	0	0.012	0	0	0.02	0.013	0	0.015	0.03	0.019
36	Electronic/electric equip	0	0	0	0	0	0	0	0.064	0	0.037	0.104
37	Transportation equip	0	0	0	0	0	0	0	0	0	0	0
38	Instruments	0	0	0	0	0	0	0	0	0	0.017	0
39	Misc. manufacturing	0	0	0	0	0	0	0	0	0	0	0

6.5 Calculation and Interpretation of Changes in Economic Opportunities

The spreadsheet analysis model system calculates the extent of potential employment growth for each type of business based on the following five considerations:

- ***Comparison of your area's economic mix and trends to those of outside areas to which it is now linked (by the new highway segment).*** This analysis provides an up-side estimate of the maximum additional growth that your area could potentially achieve IF: (a) it were to grow its under-represented industry sectors up to the proportional representation already achieved by the linked areas, and (b) it were to grow its under-performing industry sectors up to the rate of growth being achieved by those same industries elsewhere. These would represent reasonable possibilities <u>if</u> the previous lack of good highway access were the only real factor holding back

economic growth in the study area. The economic profile and performance analysis was described in Chapter 3.

- ***Comparison of changes in Market Access and Linkage Connections.*** As was shown in Table 4-4, improvements in customer market access (caused by the new highway link) are valued primarily by businesses that serve surrounding residential markets – particularly retail and personal services firms. Improvements in labor market access are valued primarily by businesses that depend on workforce access – particularly office-based and service businesses. Improvements in supplier access are valued primarily by businesses that depend on input materials – particularly manufacturing businesses. Thus, the findings of potential business growth from the preceding two comparisons (area profile/trends and cost advantage) are further reduced to just recognize that portion of the potential growth which is likely to be related to highway access factors. This access analysis was described in Chapter 4.

- ***Comparison of the relative business cost advantage or disadvantage.*** If the local area has higher costs of doing business than elsewhere, then its potential for manufacturing growth is reduced over what might otherwise be possible (from the other factors). The cost comparison can increase or diminish the potential for business growth from what would otherwise be predicted by the analysis of comparison of area profiles and trends. This cost analysis was described in Section 6.2.

- ***Assessment of development constraints and incentives.*** The extent to which business expansion and attraction opportunities are likely to be realized will depend on the extent to which industrial, commercial and/or office buildings and sites are available for occupancy and fully supported by local public infrastructure and utilities. The assessment of land, buildings, infrastructure and resources was designed to provide a basis for determining local needs for improvement in order to realize economic growth potentials. This analysis of development constraints was described in Chapter 5 and Section 6.3.

- ***Industry buyer-supplier relationships.*** There can be additional economic growth opportunities associated with businesses that supply parts, materials and/or services to other industries that are the primary highway-related business attraction opportunities. This is automatically calculated by the spreadsheet system based on the inter-industry direct requirements matrix from the US Bureau of Economic Analysis' input-output tables. This complementary industry (cluster) analysis was described in Section 6.4.

The result of this spreadsheet analysis is an estimate of how much economic growth could potentially result from the highway project, ***if*** your area also has the necessary land, buildings, support infrastructure and business climate to support them. The results are provided in the "Output 3" spreadsheet, as illustrated in Table 6-4. They show an estimate of the current potential for additional employment in each industry that could be directly affected by the new highway segment. A separate column shows the additional "indirect" potential associated with suppliers to the directly-affected types of business.

None of these potentials, either the direct ones or the indirect ones, will automatically come to your area because of a new Appalachian highway segment. Rather, a strategy plan is necessary to address remaining needs and to actively entice such business growth and attraction. The next chapter discusses ways to identify what you need to do to facilitate and encourage the potential growth to occur, and how to develop an action plan and strategy to make that happen.

Table 6-4
Illustration of Model Output: Potential for Additional Business Growth and Attraction
(spreadsheet "Output 3")

SIC	LABEL	Business Attraction	Supplier Attraction
22	Textile mill products	4	23
24	Lumber and wood products	47	30
25	Furniture and fixtures	423	0
28	Chemicals and allied products	0	12
29	Petroleum and coal products	0	0
30	Rubber and misc. plastics products	24	19
33	Primary metal industries	7	17
34	Fabricated metal products	2	27
37	Transportation equipment	11	1
39	Miscellaneous manufacturing industries	16	0
50	Wholesale trade - durable goods	11	48
51	Wholesale trade - nondurables	21	48
52	Bldg materials & garden supplies	13	0
53	General merchandise	43	0
54	Foods stores	65	0
55	Auto dealers & service stations	29	0
56	Apparel and accessory stores	11	0
58	Eating and drinking estabs	43	0
65	Real estate	0	18
67	Holding, investment offices	0	18
73	Business services	3	32
76	Miscellaneous repair services	12	0
80	Health services	20	0
83	Social services	14	0
87	Engineering & management	3	13
	Total	**877**	**361**

6.6 Summary

This chapter examined how accessibility improvements provided by the highway can interact with characteristics of local industry mix, trends, costs, and facilities in order to affect the area's economic growth potentials. That information provided the basis for estimating the nature of potential economic growth and attraction prospects for your area. Of course, many other factors such as local business climate, quality of education, climate and others may also affect your area's economic prospects. No model can analyze all of these factors. For that reason, the produced by this spreadsheet analysis model must be viewed as merely a screening tool to help you identify growth opportunities. The development of an action plan and strategy for addressing any such opportunities is described in the next (and final) chapter.

CHAPTER SEVEN
PROCESS FOR DEVELOPING A STRATEGIC PLAN

7.1 Overview

In the previous three chapters, we have discussed how to gather data to assess your area's economic performance, the potential opportunities provided by highway access improvements, and your area's facilities and resources. In this final chapter, we lay out a general *process* for you to work with other area agencies and leaders in forging a strategy plan for pursuing greater economic growth.

The strategic planning process consists of three basic steps:

- ***Part 1: SWOT Review: Where are we now?*** You discuss the area's Strengths, Weaknesses, Opportunities and Threats (SWOT) with other interested parties. You can do this through a review of findings from the analyses described in previous chapters, (local economic performance, highway access, and facilities/resources assessment) and a discussion of its implications.

- ***Part 2: Mission Statement: Where are we going?*** You discuss how the SWOT findings and your community values combine to determine a vision of feasible and desirable future directions for the area. This serves as a foundation for developing long-term goals and objectives. Finally, stakeholders should agree on measurable milestones and specific targets for economic development.

- ***Part 3: Strategic Plan Development: How do we get there?*** You develop a program of action steps to work toward achievement of the vision and goals. You must agree on organizational, staffing and financing plans to pursue the goals, as well as some form of monitoring and evaluation to assure their effectiveness.

7.2 SWOT Review: Where are we now?

A fundamental step in assessing where your area now stands for encouraging economic growth and development is the identification of strengths, weaknesses, opportunities, and threats (SWOT) facing your area. The strategy and program that you develop will build upon your area's strengths, pursue opportunities, and consider how to improve upon areas that are currently weaknesses or threats. You will not be able to "fix" all weaknesses. Those that cannot be fixed should nevertheless be noted, as they will influence your decisions about the types of businesses your strategy will pursue.

Preliminary Summary of Findings. The first step in the SWOT Review is to draw together the information gathered in the previous chapters. You should use the information from the prior chapters to:

1. summarize findings on the *types of business* that are either the largest current sources of jobs in your area or job growth in your area (based on spreadsheet data analysis from Chapter 3) ,

2. summarize findings on the *market changes* and potential nature of *business growth* associated with completion of the highway project (based on spreadsheet data analysis from Chapter 4),

3. summarize findings on the *strengths and weaknesses* of your area's economic development resources and facilities (based on worksheets from Chapter 5), and

4. summarize the *competitive and structural factors* affecting future economic growth opportunities (based on the spreadsheet analysis and results from Chapter 6).

SWOT Analysis Strategy Meeting. The second step is to convene a strategy meeting of stakeholders to develop a common understanding of your area's economic situation, prospects and needs. The group should use the summary of information to: (1) identify the *types of business* that are currently the largest sources of jobs in the area, and the types of business that offer the largest potential for future job growth in the area; (2) rate their relative *importance* as either sources of current jobs or potential sources of future jobs, and (3) assess strengths and weaknesses of the area's *internal resources* (e.g., facilities, programs and labor force) for promoting those types of business. The group should also discuss: (4) opportunities and threats posed by *external factors* (e.g., technology change, global economic change or government regulations) affecting the area's prospects for those types of business. Put this information into a concise statement such as the SWOT form that is shown in Table 7-1.

7.3 Vision and Goal Formulation: Where are we going?

Once you have assessed your strengths, weaknesses, opportunities, and threats, a separate series of meeting of key stakeholders in the community should be conducted to achieve agreement on: (1) a strategic focus and mission, (2) overall goals for economic development and (3) measurable milestones and targets along the way.

Formulate a Strategy Focus and Mission Statement. It is important to discuss the major trends (opportunities and threats) facing the area, and the values of area residents and businesses relative to economic change and quality of life. From that discussion, there should be some general agreement on how the community or area wants to see economic growth evolve over the next five to ten years. This represents the strategy direction. The mission statement should include: a statement of the strategy direction and its reasons, as well as a specific time frame, target area and focus on target industries to be pursued.

In completing this step, it is often helpful for the group to develop: (1) a probable future scenario for the area based on no intervention, and (2) a preferred scenario based on intervention to pursue economic development targets. The preferred scenario will serve as a basis for the vision statement. This can agreed upon before the end of the meeting or it can be drafted afterwards and circulated among participants for comment and refinement.

Table 7-1. Sample Form for SWOT Review

Type of Business	*Coal mining*	*Automotive parts suppliers*	
Current Importance in your Area	*Largest employer*	*Small but growing*	
Competitive Position of your Area	*Weak, relative to surrounding areas*	*Previously weak, made stronger due to highway connection*	
Area Strengths (Supporting Growth)	*Labor force is well skilled*	*Well positioned location relative to two auto assembly plants*	
Area Weaknesses (Threatening or Constraining)	*None*	*Limited labor force skills, no suitable industrial park properties*	
Potential Opportunities for Growth	*None*	*Could double in our county due to expansion of nearby auto plants*	
Potential Threats to Retention or Growth	*The industry is shrinking nationally*	*Strong competition from adjacent surrounding counties, uncertainty about the auto industry*	

It is also important to achieve consensus among stakeholders about priorities for the types of economic development intervention to be considered. These can include some or all of the four major types of economic development: (1) *retention* of existing industries that are threatening to leave your area, (2) promoting *expansion* of existing industries already in your area, (3) *attraction* of new industries and recruiting new businesses to relocate to your area, and (4) promoting *startups* of new business within your area.

Formulate Goals. In a subsequent meeting, the vision statement should be then translated into one or more specific goals. Goals to provide initial direction to the economic development strategy and they also provide a yardstick against which to measure progress. The goals may include economic, physical or organizational changes, such as:

- Retain or increase employment in the area (reducing unemployment)
- Retain or increase the area's population base (reducing the outflow of young people)
- Increase average income levels (reducing poverty)
- Improve the quality of jobs (reducing under-employment)
- Diversify the area's economic base
- Stabilize or augment the local tax base
- Improve local infrastructure, assets, and facilities
- Improve the capacity of local organizations for promoting economic development
- Increase funding mechanisms to promote economic development.

Designate Measurable Milestones and Specific Targets. General goals for the strategy should be translated into specific targets in terms of the types of businesses to be recruited, retained, supported, or encouraged. Targets should be types of business that represent local strengths as well as those presenting new opportunities for growth in your area. They should be screened from the list of potential targets in the technical analysis (analysis in Chapters 3 - 6), based on your community's ability to support them by offering the relevant access to markets and suppliers, labor pool, infrastructure, and growth support programs. Secondary screening criteria might also include community values regarding environmental considerations, quality of jobs, and nature of required land development.

7.4 Strategy Development: How do we get there?

The next phase of strategic planning is to determine the way that the community's goals will be achieved. There are six basic elements in the implementation of a typical economic development strategy aimed at business growth and attraction:

1. *Community Information:* Create and distribute a package of basic information about the area and what it offers to business. This is often known as a "fact book".
2. *Sales Representation:* Meet with other allies such as state economic development agencies.
3. *Business Visitation*: Work with existing businesses in the area to assure them that they are wanted and appreciated. Help them to stay and grow in the community.

4. *Ambassadors*: Establish a point of contact for firms interested in starting up, expanding or moving to communities in the area.
5. *Business Support:* Implement supportive programs to help meet business needs for location and expansion in the area (such as financing, job training, and infrastructure development).
6. *Ongoing Effort*: Maintain your program of effort (items 1 – 5, above) over time.

Who to Involve. Discussions with politicians, other local stakeholders and other allied organizations are needed to fund and implement such a strategy. No economic development program can work without political support. By building consensus among political leaders, you will facilitate the allocation of sufficient public resources and the approval of local regulations that help rather than hinder economic growth (such as business zoning and tax rates). Politicians, like other stakeholders, need to be involved in the strategic planning process from the start. It is particularly helpful if the political leadership can initiate the planning process. Involvement of both the private and public sectors in planning usually improves the ability to successfully implement an economic development strategy.

Turning a General Strategy into an Action Plan. Your strategy should be translated into specific annual goals and milestones for the next three to five years. Table 7-2 shows an example of an action plan for regional economic development that is implemented by a new voluntary partnership with no full time staff or real funding sources. Table 7-3 shows an example of a funding plan with potential revenue sources and fundraising goals.

Table 7-2: Sample Action Plan for a New Regional Economic Development Partnership

Strategy Element	Year One	Year Two	Year Three
Business Attraction	*Research target industry needs*	*Step up downtown renewal*	*New training programs for target industries*
	Develop regional brochure	*Develop internet web site materials*	*Identify related cluster industries*
Business Retention	*Form business networking groups*	*Launch business opportunity initiative*	*Launch regional image-building campaign*
	Annual postcard survey of business	*Develop incubators & managed workshops*	*Promote private industrial development*
Training	*Work with local college to offer computer training*	*Begin school to work programs*	*Tailored training to met new businesses needs*
Financing	*Sponsor business banking fair*	*small business tax & accounting seminars*	*Revolving loan fund for business startups*
	business accounting course offered by community college	*Promote SBA loan programs*	*Work with Chamber to identify future needs*

Table 7-3: Sample Economic Development Funding Plan

Source	Year 1	Year 2	Year 3
Existing Funding			
State Office of Economic Development	*$ xx,xxx*	*$ xx,xxx*	*$ xx,xxx*
Community Development Block Grant Funds	*$ xx,xxx*	*$ xx,xxx*	*$ xx,xxx*
Working Capital (Bank Donations)	*$ xx,xxx*	*$ xx,xxx*	*$ xx,xxx*
New Sources of Funds			
Federal Welfare-to-Work Grant	*$ xx,xxx*	*$ xx,xxx*	*$ xx,xxx*
City Planning Funds	*$ xx,xxx*	*$ xx,xxx*	*$ xx,xxx*
Sponsoring Business Memberships/Donations	*$ xx,xxx*	*$ xx,xxx*	*$ xx,xxx*
State Dislocated Worker Program	*$ xx,xxx*	*$ xx,xxx*	*$ xx,xxx*
Private Foundations	*$ xx,xxx*	*$ xx,xxx*	*$ xx,xxx*
Total Funds in Place	*$ xx,xxx*	*$ xx,xxx*	*$ xx,xxx*
Total Fundraising Goal	*$ xx,xxx*	*$ xx,xxx*	*$ xx,xxx*

7.5 Monitoring & Evaluation

Once the action plan is in operation, periodic monitoring and evaluation of the program is critical to keep it on target while maintaining enough flexibility to respond to new challenges. The monitoring and evaluation process should assess the extent to which immediate action items (as discussed in Section 7.4) have been implemented, and it should also assess the extent to which there is movement towards achieving longer-term goals (as discussed in Section 7.2).

There are three main purposes for monitoring and evaluation of on-going programs. First, evaluation serves as an *internal feedback* system that identifies how efficiently and effectively a program is achieving its goals. Secondly, it serves as an external tool of *accountability and justification*. The evaluation process provides useful information to community residents and leaders who want evidence that the program is accomplishing its goals. Use of a periodic summary of accomplishments is helpful in maintaining support. Finally evaluations can help increase the effectiveness of the plan, by showing when *adjustments* should to be made as new opportunities and circumstances arise.

Appendix A

Blank Worksheets

ARC Handbook Spreadsheet - Input Form 1

ARC-OPPS Economic Development Opportunities Model

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a. Header for Pages

Scenario Title	
Today's Date	

b. Define Study Area

State		**County**	
		County	

c. Hwy Linkages to Other Areas

1	
2	
3	
4	

d. Years for Economic Data

Most Recent	
Earlier Time	

ARC Handbook Spreadsheet - Input Form 2 Corridor V

Current Employment in Thousands		Study Areas				Linkage Areas				United States	
		1993	1997	1993	1997	1997	1997	1997	1997	1993	1997
										United States	
SIC	LABEL			0							
7	Agricultural services										
8	Forestry										
9	Fishing										
10	Metal mining										
12	Coal mining										
13	Oil and gas extraction										
14	Nonmetallic minerals										
15	General contractors										
16	Heavy construction										
17	Special trade contractors										
20	Food and kindred products										
21	Tobacco products										
22	Textile mill products										
23	Apparel & other textile s										
24	Lumber and wood products										
25	Furniture and fixtures										
26	Paper and allied products										
27	Printing and publishing										
28	Chemicals and allied products										
29	Petroleum and coal products										
30	Rubber and misc. plastics										
31	Leather and leather products										
32	Stone, Clay, and glass										
33	Primary metal industries										
34	Fabricated metal products										
35	Industrial machinery										
36	Electronic and electric										
37	Transportation equipment										
38	Instruments										
39	Miscellaneous manufacturing										
41	Local and passenger transit										
42	Trucking and warehousing										
44	Water transportation										
45	Transportation by air										
46	Pipelines, except natural gas										
47	Transportation services										
48	Communications										
49	Electric, gas services										
50	Wholesale - durable goods										
51	Wholesale - nondurables										
52	Bldg & garden supplies										
53	General merchandise										

54	Foods stores										
55	Auto dealers & gas service										
56	Apparel and accessory stores										
57	Furniture and home stores										
58	Eating and drinking estabs										
59	Miscellaneous retail										
60	Depository institutions										
61	Nondepository institutions										
62	Security & commodity brokers										
63	Insurance carriers										
64	Insurance agents, services										
65	Real estate										
67	Holding, investment offices										
70	Hotels and other lodging										
72	Personal services										
73	Business services										
75	Auto repair, services, parking										
76	Miscellaneous repair services										
78	Motion pictures										
79	Amusements & recreation										
80	Health services										
81	Legal services										
82	Educational services										
83	Social services										
84	Museums, botanical, zoos										
86	Membership organizations										
87	Engineering & management										
89	Services, other										
99	Unclassified establishments										
SUBTOTAL											

ARC Handbook Spreadsheet - Input Form 3 Corridor V

ARC-OPPS Economic Development Opportunities Model

a. Relative Costs

Cost Categories	Study Area			Linkage Area(s)		
Labor Cost (Mfg $ / hr)						
Electricity Cost (c/kwh)						
Overall Tax ($ of income)						

b. Changes in Accessibility & Market Access

Type of Change	Change %
Change in Labor Market	
Change in Customer Market	
Change in Business-to-Business Market	
Change in Tourism Market	
Change in Access to Airports	
Change in Access to River or Sea Ports	
Change in Access to Rail Centers	
Change in Pass-by Traffic	

Retail/Service Capture from Linkage Area	

c. Development Constraints or Incentives

factor<1 indicates infrastructure or development factor that constrains growth
factor>1 indicates incentive factor that enhances growth

Availability of Highway-Related Commercial Land	
Availability of Industrial Park Sites with Full Infrastructure	
Availability of Office/Commercial Development Sites	

Worksheet 2-1. Input Table for Key Stakeholders

Stakeholder Group	Organization Name, Address, Contact Person, Tel (1)	Marketing Role (describe) (2)	Business Development & Financing Programs (describe) (3)	Other Roles in Economic Development (describe) (4)	What data on target area / linked areas? (5)	What data on ED resources? (6)
State ED Agency						*statewide database of economic development programs*
County/ Regional ED Agency						--
Local ED Organization						--
Local Government						*community taxes, major employers, land use data*
Electric Utility						*industrial park inventory*
Chamber of Commerce						*business directory and product/service purchasing guide*
State Trans Agency						*traffic counts and speeds., for major roads*
Non-Profit						--

Worksheet 5-1. Economic Development Program Inventory

Program Type (1)	Check if it Exists (2)	Name of Program (3)	Eligibility Rules / Target (4)	Potential Funding to Applicant ($) (5)	Importance (High, Medium, Low) (6)
Support for Existing Businesses					
Counseling					
Financing					
Other					
Support for New Start-Up Businesses					
Counseling					
Financing					
Incubator Space					
Other					
Investment Incentive Programs					
Land					
Buildings					
Equipment					
Other					
Promotion & Marketing of the Area					
Tourism					
Industrial					
Downtown/Center					
Other					
Training Programs					
Vocation Education					
College					
Other Specialized Training					

Worksheet 5-2, Industrial Parks and Land Parcels

Names & locations of industrial parks **(1)**	**Meet Standards? Yes / No** **(2)**	**Deficiencies** **(3)**	**Advantages** **(4)**

Worksheet 5-3. Industrial Buildings Assessment

Names & Locations of Industrial Buildings (1)	Meet Standards? Yes / No (2)	Deficiencies (3)	Advantages (4)

Worksheet 5-4. Labor Force Assessment

Factor (1)	**Strengths** (2)	**Weaknesses** (3)
Worker Skills		
Education Levels		
Education System		
Availability of Workers		
Wage Rates		
Other:		

Worksheet 5-5. Commercial Business District Assessment

Complete this form for each major business district.

Name and Location of the Commercial Business District _____

Circle one: (a) Downtown (b) Highway Strip (c) Other

Factor (1)	**Advantages** (2)	**Disadvantages** (3)
Vacancy/ Occupancy (Buildings & Lots)		
Pedestrian Environment & Safety		
Parking		
Mix of Businesses		
Cost of Rents & Real Estate		
Other:		

Worksheet 5-6. Tourism Resources

A. Attractions

Visitor Attractions (1)	Market Area (2)	Visitors per Yr (3)	Strengths (4)	Weaknesses (5)	Planned Investments (6)
Historic Attractions					
Scenic Attractions					
Other Visitor Attractions					

B. Facilities for Visitors

Local Services for Visitors (1)	Number of Establishments (2)	Total Capacity (3)	Strengths (4)	Weaknesses (5)	Planned Investments (6)
Hotels/Motels					
Campgrounds					
Restaurants					
other					

Appendix B: Corridor T Case Study

The purpose of this case study was to examine an area in which a highway project was completed and to test how the model predicts the economic opportunities of the project.

B.1 Case Study Area

Southwestern New York state is a largely rural area with a history of economic distress. It is officially classified by the Appalachian Regional Commission as a transitional area, one that is not yet competitive with national averages. In 1995, the median household income (approximately $29,500)of the two westernmost counties, Chautauqua and Cattaraugus) was 13% lower than the state average, and the population of the area has declined since 1990 while the population of the state has grown. The area is not densely populated, and comprised only 1.2% of the total New York state population in 1999.

Corridor T

Exhibit 1 shows the study area. Our study focuses on the impacts and opportunities created by Appalachian Corridor T, which runs west to east from I-90 outside of Erie, PA to I-390 in Bath, NY. Corridor T was a two-lane rural highway before it went through a series of upgrades. It was first upgraded into a limited access two-lane route with interchanges, and then expanded into a four-lane freeway west of Jamestown. The highway also crosses Chautauqua Lake and continues due west to intersect I-90 near Erie. The original State Route 17 had skirted Chautauqua Lake to the east and connected to I-90 near Fredonia. The entire freeway is now known as the Southern Tier Expressway, or I-86.

Exhibit 1 Study Area in Southwestern New York

Corridor T connects southwestern New York with many previously less accessible places. The link between Jamestown, NY (in Cattaraugus county) and Erie, PA has been greatly improved through the upgrade of the two-lane route to a four-lane interstate in the 1990s, as well as by a bridge across Chautauqua Lake completed in 1980. Through its link to I-90 in the west, the corridor also improves the accessibility of Buffalo, NY. The eastern portion of the corridor links the area to I-390, thereby improving the link with New York City, and also improves accessibility to the Finger Lakes region of New York state.

Over the past twenty years, three major highway improvements have been completed on Corridor T. In 1980, a bridge across Chautauqua Lake was completed, which significantly

reduced travel times and increased accessibility between Jamestown (and other NY points) and Erie County, Pennsylvania. Before the bridge was completed, traffic traveling between Jamestown and the Pennsylvania State line had to travel around the lake on lower-speed secondary routes, or use a small ferry with uncertain travel and arrival times. The other improvements were the expansion of Corridor T from a 2-lane road to a 2-lane limited access facility, and later to a 4-lane freeway. This improvement, which provided passing lanes, full shoulders and medians, resulted in increased safety and capacity.

Cattaraugus and Chautauqua Counties

and the Greenfield Township of Erie County

Although Corridor T spans part or all of five counties, we focus on the western portion of the corridor. Specifically, the study area for our analysis included Chautauqua and Cattaraugus counties as well as the Greenfield township in Erie County, PA. Several unique attributes make this portion of the Corridor T impact area interesting for study. These include the presence of tourism activity centered around Chautauqua Lake, a state park, an Indian reservation, and several notable population centers. The cities of Jamestown, Olean, and Salamanca, and the town of Allegany, have a combined population of 62,939. Jamestown and Olean are the key centers of business and commerce in the study area.

In our economic performance analysis, we compared the core study area (Chautauqua and Cattaraugus Counties, NY) to the area directly east of the study area (Steuben County, New York) and the area directly west (Erie County, PA). Steuben County lies to the east of the study area and Erie County lies to the west.

B.2 Regional Economy

The extent to which improvements to a highway will generate opportunities for economic growth depend on several factors. Of great importance is the nature of the existing economy and its relationship to the wider regional economy, including the mix of industries and industry trends.

Business Mix and Trends

An analysis of the local economy of Cattaraugus and Chautauqua counties shows an area that is going through some economic changes. In keeping with the national economy, service industries are employing a large portion of the workforce in recent years. Health services and social services were the largest service employers in 1997, accounting for 10.2% and 4.8% of the study area's employment, respectively. Personal and health services are increasing in importance, gaining 499 and 251 jobs, respectively, between 1993 and 1997. Retail (general merchandise) sales are also increasing in importance, gaining 480 jobs from 1993 to 1997.

However, while food and apparel manufacturing industries lost the most jobs over the last few years, not all manufacturing is in decline. Industrial machinery and equipment gained the most jobs of any industry from 1993 to 1997 (286 jobs) and also accounted for a large portion of the study area's jobs (6.2%) in 1997.

The ARC-OPPS Model compared the study area's economic mix and trends to those of the comparison counties. Based on this analysis, the following industries were classified as shown in the tables below.

Table B-1 Local Economic Performance Findings

Strong, Stable Local Industries (A)	Local Industries Under Threat – May Need Attention (B)	Local Industries in National Decline - Diversify (C)
Nonmetallic minerals Furniture and fixtures Communications Wholesale - nondurables General merchandise Foods stores Eating and drinking Personal services Business services Motion pictures Amusement & recreation	Oil and gas extraction Special trade contractor Lumber and wood Rubber and plastics Stone, Clay, glass Fabricated metal prod Industrial machinery Trucking & warehousing Transportation services Wholesale - durables Furniture, furnishings Health services Educational services Social services	Apparel and other textile Paper products Electric, gas services Insurance carriers

Medium Strength Local Industries, Possible Growth Opps (D)	Weak Local Industries in National Decline – Focus Efforts Elsewhere (E)	Emerging Local Industries – Nurture (F)	Weak Local Industries – Possible Growth Opportunities (G)
Real estate	Apparel and accessories Depository institutions Misc. repair services	Heavy construction Auto & service stations Engineering & mgmt	Agricultural services Printing and publishing Electronic/electric equip Passenger transit Miscellaneous retail Insurance agents, broker Hotels, other lodging Auto repair and parking

(A) Strong, Stable Local Industries – have a substantially higher concentration of employment than the same industry in the comparison area, and are growing faster locally than nationally.
(B) Local Industries Under Threat – have a substantially higher concentration of employment than the same industry in the comparison area, and are growing nationally while declining or growing more slowly locally
(C) Local Industries in National Decline – have a substantially higher concentration of employment than the same industry in the comparison area, but are declining nationally
(D) Medium Strength Local Industries with Possible Growth Opportunities - have a slightly higher or slightly lower concentration of employment than the same industry in the comparison area, and are growing nationally while declining or growing more slowly locally
(E) Weak Local Industries in National Decline – have a lower concentration of employment than the same industry in the comparison area, and are declining nationally
(F) Emerging Local Industry - have a lower concentration of employment than the comparison areas, and are growing faster locally than nationally
(G) Weak Local Industry, but Possible Growth Opportunity – have a lower concentration of employment than the comparison areas, and are growing nationally while declining or growing more slowly locally

There are two more possible categories, but none of the industries in the study area fall in them. The first is Unstable Local Industries, which have a slightly higher or slightly lower concentration of employment than the same industry in the comparison area, and are declining nationally. The second is Local Industries with Strength – Support, which have a slightly higher or slightly lower concentration of employment than the same industry in the comparison area, and are growing faster locally than nationally

Business Costs

A significant difference in the cost of doing business in two areas can give one an advantage in attracting business. The main study area in New York state is bordered to the west and south by Pennsylvania state, which has no sales tax on clothing. This puts the study area at a disadvantage in attracting commercial enterprises. However, Chautauqua county recently eliminated the sales tax on purchases of clothing and shoes of less than $110, which may help the area to attract more commercial enterprises and generate more local shopping activity. Property and corporate tax are lower in New York than in Pennsylvania but that is reported to be changing to some extent.

Because the economy of the study area has been stagnant, a housing stock of medium to high-priced housing does not exist. This deters the attraction of executives, who would suffer capital gains losses if they purchased the lower-priced homes in the study area.

As the New York state sales tax is higher than that of Pennsylvania, the study area (which is composed mainly of two New York counties) is expected to have a greater sales tax revenue per capita than the comparison area (which includes a county in Pennsylvania). However, the average sales tax revenue collected per capita in 1998 was lower in the study area ($683) than in the comparison area ($745). This is because people go outside of the study area to shop. This is particularly due to Pennsylvania's proximity and lower sales tax, but may also pertain to the limited shopping options within the study area. The corporate and personal income tax revenue collected per capita in 1998 were higher in the study area ($172 and $1,006 respectively) than in the comparison area ($151 and $754 respectively) due to higher tax rates in the study area.

B.3 Impact of Highway on Users

The primary access benefit of Corridor T is faster east-west travel between Erie, PA and Binghamton, NY. The Corridor also improves access to the Finger Lakes region of New York State.

Estimated Change in Travel Times

The bridge and twinning improvements have reduced commuting and shopping times between Jamestown and Erie by an average of 16 minutes, from 76 minutes to just under one hour. This amounts to a 21% decrease in average travel times between the two areas, and brings them just under the outer threshold for daily travel between two places in urban areas. Travel time improvements also resulted, as shown in Table B-2 below.

Table B-2 Estimated Travel Time Improvements for Corridor T

Improvement	Travel Time Before Improvement	Travel Time After Improvement	Difference
I-90 (PA) to Chautauqua Lake	23 minutes (50MPH)	19.1 minutes (60 MPH)	-18%
bridge over Chautauqua Lake	22 minutes (30 MPH)	9.2 minutes (60 MPH)	-58%
Chautauqua Lake/ Jamestown to I-390 (near Bath)	126 min. (55 MPH)	107 min. (65 MPH)	-15%

Estimated Change in Travel Volumes

Traffic volumes have increased substantially on I-86 since the bridge and twinning projects have been completed (see Table B-3 below). Between 1978 and 1988, highway traffic increased by 66% on highway sections west of the bridge (away from Jamestown). During the same time period, traffic almost doubled (increased by 100%) on the Jamestown side of the bridge. This suggests that a good deal of regional traffic has been attracted by the bridge construction; it also suggests that local traffic has been attracted to the high-speed facility to an even greater extent. Traffic increases between 1988 and 1999, corresponding to the period covering the twinning project, are more modest than those following the bridge project. Traffic west of the bridge increased by 33% during the ten-year period, while traffic west of the bridge grew by 25%.

Table B-3 Average Annual Daily Traffic at Selected Locations on I-86 (1978-1998)

Location	1978	1988	% Annual Increase	1998	% Increase 1988-1998
West of Bridge	3,500	5,800	6.6	7,700	33%
East of Bridge	4,550	9,000	4.9	11,300	25%
Jamestown	5,250	9,350	4.4	11,400	22%

These traffic increases do correspond with enhanced economic opportunity in Chautauqua County. While population and employment declined slightly between 1980 and 2000, the value of manufacturing output and retail sales increased significantly. Concluding that these highway improvements caused these increases would be misleading and overstating the case, since there are so many factors that cause a firm to start up, relocate or expand and ultimately succeed in any particular area. However, we know from many past studies that retail and manufacturing industries do rely heavily on good highway access in order to succeed. The improvements on I-86 have certainly provided significantly greater access to and from Jamestown and have contributed to that success.

B.4 Resources for Economic Development

Industrial Parks

Existing industrial parks are some distance from the highway. There is little evidence of signs on the highway or at interchanges advertising existing industrial parks. There appear to be many sites that could become industrial parks, but they are largely unadvertised and many are undeveloped or not yet served by utilities and road infrastructure, such that they are not yet ready for occupancy.

According to a database maintained by the Southern Tier West Regional Planning and Development Foundation, there appear to be about 75 parcels of land in Cattaraugus and Chautauqua counties that are now operating as industrial parts or designated as future industrial park sites. A total of 57 of the land parcels are within 5 miles of the highway corridor. There is municipal water service at 46 of the 75 sites, and about 15 of them have municipal sanitary disposal services. Six sites are 50,000 square feet or larger, though over 35 have three or more acres. Some have rail access.

Economic Development Programs

Chautauqua County has a number of economic development programs through the Industrial Development Authority, the County Department of Economic Development, the Workforce Investment Board, Jobs Chautauqua, and Chautauqua Opportunities, Inc. The County of Chautauqua Industrial Development Agency (CCIDA) has the principal role of attracting new business and industry to the area and helping businesses secure financial assistance, providing advocacy services and developing infrastructure and industrial parks. The CCIDA has Financial Assistance programs geared mainly toward manufacturing firms and provides assistance with import/export, site information, community development, permitting, and skills training.

Southern Tier West Regional Planning and Development Board is the organization that oversees many regional economic development programs in Chautauqua, Allegany, and Cattaraugus counties. Southern Tier West includes the Business Resource Center, a Development Foundation, a Regional Planning and Development Board, and an Enterprise Development Organization. The Southern Tier West Development Foundation is involved in several economic development programs through its disbursement of seed grants of $2,000 to $10,000. Funding is focused on supporting planning, infrastructure pre-engineering, capacity building, and inter-municipal cooperation. The Southern Tier West Business Resource Center provides below-market rentals of office space, shared services, business advice, and networking with other small business assistance programs for business start-ups in office space at the Center for Regional Excellence and in a new business incubator.

Other Facilities and Resources

There are several educational resources in the area, including the Fredonia School (known for its programs in music and education), St. Bonaventure, Olean Business Institute, Jamestown Business College and Jamestown Community College. Alfred University is located just east of the study area and hosts an internationally known ceramics school.

B.5 Economic Beneficiaries and Impacts to Date

Key Economic Beneficiaries

The following categories of business are viewed as beneficiaries of the now-completed highway project.

- The trucking industry is a major beneficiary of the I-86 improvements, since a high proportion of truck travel is long-distance travel. The highway improvements have enhanced the attractiveness of I-86 and Jamestown from Erie and the I-90 corridor, and strengthened the long-distance connection between the Erie region and New York City. Available traffic data indicate that truck travel comprises 20 percent of average daily traffic on I-86 between the New York/PA State line and Jamestown.

- The wine/juice industry both in the study area and outside of the corridor may benefit from the improvement in the highway corridor. Fruit is trucked from the Finger Lakes region of central New York to the southwestern part of New York and to Erie county, PA, where it is pressed. Some juice is sent back to the Finger Lakes region to make wine. Faster travel along the corridor provides shipping cost savings for wine and juice manufacturers. One large juice manufacturer in the study area is Welch's, which has plants in North East, PA just four miles from the interchange of Corridor T with Route 89, and several miles north on I-90 in Westfield, NY.

- The furniture and wood industry within the study area is another beneficiary from the highway. The local furniture industry uses wood that is trucked from northern Illinois and Ohio to production facilities in Jamestown and Erie, where it is processed into office and home furniture. (Bush Furniture is headquartered in Jamestown, NY and has another facility in Erie, PA.) Hardwood timber is also a local primary resource; however, a substantial amount of this wood is sent overseas with only rough-mill local processing, and so has no value-added component for the area. The raw material goes to Buffalo and then by train to Montreal where it is containerized, or it goes to NYC or Philadelphia out of ports there. The main route to NYC now is Route 17 (Corridor T) to 82.

- The Salamanca area is within the Seneca Nation reservation. It has reservation-related development, primarily small shops selling tax-free gasoline and cigarettes. These businesses can benefit from higher traffic volumes in the Corridor.

- Tourist attractions in the study area can benefit from the improved access provided by Corridor T. Attractions include the Allegany State Park which draws about a million visitors a year, and the Holliday Valley Ski Resort (the biggest private resort in the country) which draws about 500,000 visitors a year. The highway has reportedly had a large impact on Holliday Valley, which draws many visitors from Canada. There are a few other ski resorts in the area, some of which are reported to be affected by the highway. A significant amount of tourism activity in the summertime is focused around Chautauqua Lake, including the unique Chautauqua Institution, a retreat which reportedly attracts visitors from a wide area including New York City and Pittsburgh. The Zippo factory in Bradford, PA, a short drive from I-86, also draws a significant number of visitors. Tourism industry representatives believe that tourist travel may make up as much as one-third of all travel in the I-86 corridor. For this travel market, I-86 is a reliable and safe access route within Chautauqua and Cattaraugus Counties, and a vastly improved means of long-distance travel to and from Pennsylvania.

- Residents of Jamestown and the surrounding area may benefit from easier access to a range of shopping locations. To the west, Erie, PA has large regional malls. Within the study area, Olean has strip shopping centers featuring Wall-Mart and Big K. Olean, Cuba, and Jamestown all have downtown areas with specialty stores.

- Although there is very little development at the Cuba and Bath interchanges, officials at the Southern Tier regional planning commission believe that there is a potential for development in these areas.

Economic Growth Impacts to Date

- ***Highway Related Business.*** Traffic has doubled in the past 20 years, as the highway improvements have been phased in over that period. Truck traffic, in particular, has increased since the Southern Tier Expressway became designated as an interstate highway (see Section III). This is primarily evidenced by the emergence of new motels, restaurants, and gas stations at highway interchanges. New motels include Red Roof and Comfort Inn. New restaurants include McDonald's and Bob Evans. In addition, there are two new truck servicing businesses along the highway. Since the corridor is still not listed on interstate highway maps, even more traffic is expected once the new highway maps are distributed.

- ***Manufacturers Relying on Truck Shipping.*** Since completion of the highway project, the following business attraction and expansion has occurred:

    - Juice Products --Cliff Star, a large juice processor , has located its world headquarters in the local area along the Corridor. Red Wing has solidified its plans to stay in the area. There has been some growth of small-scale wineries locally, but a decline in local wining acreage - it is unclear how much of this is related to transportation.

    - Dairy Products-- Several local dairy producers, including Cuba Cheese and Friendship Dairies, are also expanding.

    - Electronics -- There are also some small electronics firms in the area, such as Acme, Current Controls (an offshoot of Acme), ExelCo (which has a contract with the air industry), Dresen Rand (which works with oil companies as part of Ingerson Rand, and is moving its world headquarters to Olean soon).

- ***Labor Impacts.*** From the perspective of people who commute from Erie, the main impact of the new highway is that it is faster to get to Jamestown and points east. However, few workers are thought to commute to and from Jamestown. Similarly, some people commute from Olean to Bradford and from Jamestown to Warren for work, but many were making the same commutes on the old roads, so while these people save time and expense, the impact of the highway is uncertain.

- ***Retail Development.*** In the last five years there has been significant development in Olean on Constitution Ave., which runs parallel to Corridor T. A Wall-Mart, Big K, and related commercial stores have been established. However, it is unclear if these developments were related to the Corridor T, as they grew out of already existing development. The Interstate may make it easier to get supplies to the stores on Constitution Ave; however the development does not seem to be attracting traffic from the interstate.

- ***Other Development.*** A NASCAR racetrack at the interchange of I-90 and I-86 in Greenfield township will be the first significant development in Erie County since the highway's completion. The developer is putting in infrastructure with enough capacity to serve the surrounding area. Local officials expect more economic development once the area is equipped with proper infrastructure.

B.6 Projected Opportunities

Existing Constraints to Economic Development

There are three main existing constraints holding back economic development along the highway:

(1) Land Use. Much of the land directly adjacent to the highway alignment is not available for development. The Salamanca stretch of the corridor it is Seneca Nation Reservation land, which imposes constraints to development. The Allegany State Park, also nearby along the Salamanca stretch, also inhibits development in its land. Finally, a large area of wetlands east of Chautauqua Lake also restricts development there.

(2) Transportation System. Improvements in North-South access are thought by local officials to be a remaining need which must be met in order for more significant improvements in the economy to occur. Plans are underway for an expansion of NY route 219 which could have synergistic effects with Corridor T.

From the perspective of Erie city and county, additional economic impacts of the highway are also constrained by traffic bottlenecks that make it hard to get in and out of downtown Erie, and by a lack of infrastructure to support potential businesses in the surrounding area. No local infrastructure is in place west of the bridge at any of the highway interchanges, where the area consists of farmland and woods.

Finally, there is scheduled air service in the area, but it is fragmented. Some people from the study area use the Erie airport (which they access via the Corridor T) or the Buffalo airport. Some people use the Toronto or Cleveland airports. There is an airport in Jamestown but a lack of competition between airlines makes flights out of Jamestown more expensive.

(3) Labor Force. Following many years of stagnant or declining economic opportunities, young people tend not to remain in the study area due to a lack of significant job opportunities.

Projected Opportunities, Given Current Constraints on Facilities

Given current constraints on the labor market and industrial park facilities, the ARC-OPPS model projects that development will likely focus on commercial and visitor-related activities. Projected growth is highest in the following industries: general merchandise sales, service stations and auto dealers, miscellaneous retail, eating and drinking establishments, and hotels and other lodgings. Table B-4 shows the estimated potential number of employees resulting from direct and indirect business attraction, given current constraints.

Table B-4 Projected Growth Opportunities for Corridor T Area – Given Current Constraints

Corridor T - Given Current Constraints		Potential No. of Employees	
		Direct Business Attraction	Indirect Business Attraction
15	General contractors	0	11
16	Heavy construction	0	11
17	Special trade contractors	0	11
20	Food and kindred products	3	49
24	Lumber and wood products	21	1
27	Printing and publishing	4	12
30	Rubber and misc. plastics products	17	3
35	Industrial machinery and equipment	29	2
36	Electronic and other electric equipment	23	3
42	Trucking and warehousing	22	3
50	Wholesale trade - durable goods	38	36
51	Wholesale trade - nondurables	103	36
52	Bldg materials & garden supplies	54	0
53	General merchandise	194	0
54	Foods stores	109	0
55	Auto service stations	172	0
56	Apparel and accessory stores	52	0
57	Furniture and home stores	24	0
58	Eating and drinking establishments	350	0
59	Miscellaneous retail	194	0
60	Depository institutions	27	19
65	Real estate	1	81
67	Holding, investment offices	0	81
70	Hotels and other lodging	147	0
72	Personal services	15	0
73	Business services	26	104
75	Auto repair, services, parking	24	1
76	Miscellaneous repair services	17	0
78	Motion pictures	14	0
80	Health services	116	0
82	Educational services	82	0
83	Social services	41	0
87	Engineering & management	16	34

These results are generally consistent with local observations (previously described), which has been that the corridor has had several new hotels, restaurants, auto service stations and truck servicing businesses locate along the highway since its expansion to a four-lane freeway. There has also been significant expansion of electronics businesses and food products businesses since that time. Thus, the business sectors actually appearing along the highway were the same business sectors forecast identified as growth opportunities by the ARC-OPPS model. More warehousing is also expected to occur once the highway becomes more widely recognized as part of the interstate system.

However, both the above model forecast and the actual experience to date have been subject to constraints concerning availability of infrastructure support for industrial parks, as well as labor skills. The next section discusses how much broader economic growth could be possible if those constraints are addressed.

Projected Opportunities with Improved Industrial Infrastructure

If maximum efforts are made to develop industrial park facilities with supporting infrastructure, the ARC-OPPS model projects that other industrial development could occur. Projected growth opportunities would exist for industries including industrial machinery and equipment, furniture and fixtures, fabricated metal products, and electronic and other electric equipment. In addition, opportunities are projected for trucking and warehousing, wholesale trade in durables and non-durables, and business, health, educational, and social services. Table B-5 shows the estimated potential number of employees resulting from direct and indirect business attraction, assuming maximum efforts to alleviate current constraints.

Table B-5 Projected Growth Opportunities for Corridor T Area – with Infrastructure Improvements

Corridor T - with Infrastructure Improvements		Potential No. of Employees	
		Direct Business Attraction	Indirect Business Attraction
15	General contractors	0	12
16	Heavy construction	0	12
17	Special trade contractors	0	12
20	Food and kindred products	8	49
24	Lumber and wood products	62	2
25	Furniture and fixtures	24	0
26	Paper and allied products	15	4
27	Printing and publishing	12	12
28	Chemicals and allied products	1	16
30	Rubber and misc. plastics products	51	6
32	Stone, Clay, and glass products	27	0
34	Fabricated metal products	26	10
35	Industrial machinery and equipment	87	3
36	Electronic and other electric equipment	68	7
42	Trucking and warehousing	22	8
48	Communications	0	27
49	Electric, gas & sanitary services	0	18
50	Wholesale trade - durable goods	38	53
51	Wholesale trade - nondurables	103	53
52	Bldg materials & garden supplies	54	0
53	General merchandise	194	0
54	Foods stores	109	0
55	Auto service stations	172	0
56	Apparel and accessory stores	52	0
57	Furniture and home stores	24	0
58	Eating and drinking establishments	350	0
59	Miscellaneous retail	194	0
60	Depository institutions	27	20
65	Real estate	1	82
67	Holding, investment offices	0	82
70	Hotels and other lodging	147	0
72	Personal services	15	0
73	Business services	26	110
75	Auto repair, services, parking	24	1
76	Miscellaneous repair services	17	0
78	Motion pictures	14	0
80	Health services	116	0
82	Educational services	82	0
83	Social services	41	0
87	Engineering & management	16	35

Appendix C: Corridor V Case Study

The purpose of this case study was to examine an area in which a highway project has been planned but not yet implemented, in order to demonstrate how the spreadsheet model can make estimates of the potential results of a future project.

C.1 Case Study Area

On the western edge of the Appalachian Region, Pontotoc County is officially designated as a transitional county which is not yet competitive with U.S. averages. There is optimism among local leaders about Pontotoc's opportunities for growth, and this study is designed to forecast the potential opportunities from a planned highway improvement that would increase Pontotoc's accessibility. The city of Tupelo, about 18 miles east of Pontotoc in Lee County, has demonstrated significant growth in the past several years, and there is optimism among local leaders about the possibility for Pontotoc County to benefit from its proximity to Tupelo. Exhibit 1 shows Pontotoc County's position in Northeastern Mississippi.

Exhibit 1 Pontotoc and Corridor V

completed highway

2-lane portion

Corridor V

Appalachian Corridor V runs east to west from South Pittsburg, TN (west of Chattanooga) through Northern Alabama and into Northwestern Mississippi; however, this study focuses on a segment of Corridor V from Tupelo, MS in the east to Pontotoc, MS in the west (see dotted line in Exhibit 1 above). The planned upgrade of this portion of Corridor V, a 2-lane rural highway, would complete a four-lane connection between I-55 at Batesville and U.S. 45 near Tupelo. The new segment of Corridor V is expected to decrease travel times to Pontotoc from Tupelo and points north, south, and east of Tupelo, and to result in a significant increase in the amount of pass-by traffic through Pontotoc County and City.

Pontotoc County

Although the segment of Corridor V from Pontotoc to Tupelo includes traverses Pontotoc County and a portion of Lee County, this study focuses on Pontotoc County, which stands to benefit from a more efficient connection to rapidly growing Tupelo in Lee County. For this study, Pontotoc County is compared to Lee County (which lies directly to the east), Lafayette County (which lies directly to the west) and Panola County (which borders Lafayette county to the west and through which I-55 runs north to south).

Although the population of Pontotoc County was estimated (at 25,685) to comprise just under one percent of the total Mississippi population in 1999, it grew 15.5% between 1990 and 1999, more than twice as fast as that of Mississippi state overall. In addition, the median household income of Pontotoc County in 1995 was approximately $27,409, slightly higher than the $26,501 average for Mississippi state.

The City of Pontotoc, in which the county's employment is concentrated, is expanding geographically as well as showing signs of economic growth. It recently annexed a plot of land to the north of the city, and local officials believe it will eventually annex all the land between the city and the major highways to the north and east of the city.

C.2 Regional Economy

The extent to which improvements to a highway will generate opportunities for economic growth depend on several factors. Of great importance is the nature of the existing economy and its relationship to the wider regional economy, including the mix of industries and industry trends.

Business Mix and Trends

The furniture and fixtures industry continues to dominate the Pontotoc economy: in 1997, over 50% of the county's workforce were employed in the industry. The industry showed overall growth from 1993 to 1997; in fact, the furniture and fixtures industry gained the most employees (+940) of any industry during this time period. Lumber and wood products (6.0%) was the second largest employer in the county and also showed the second highest growth from 1993 to 1997, gaining 180 jobs.

Although the economy continues to be led by traditional industries, other industries are becoming increasingly important. In 1997, industries that employed large portions of the county's workforce included food stores (3.6% of county employment), legal services (3.3%), eating and drinking establishments (3.1%), and general merchandise sales(2.6%). Furthermore, declines were noted from 1993 to 1997 in traditional industries such as apparel and textile products (-649 jobs) and rubber and miscellaneous plastics products (-478 jobs), further indicating shifts in the area's economy.

The ARC-Opps model compares the mix and trends of local industries (Pontotoc County) with those of industries in the comparison area (Lee, Lafayette, and Panola Counties). The following tables present a sample of industries classified by the ARC-Opps model into categories:

Table C-1 Local Economic Performance Findings

Strong, Stable Local Industries (A)	**Local Industries Under Threat – May Need Attention (B)**	**Local Industries in National Decline - Diversify (C)**	**Local Industries with Strength – Support (D)**
Agricultural services Lumber and wood Furniture and fixtures Printing and publishing Wholesale - nondurables General merchandise Foods stores Auto & service stations Non-depository institutions Auto repair and parking Social services	General contractors Food products Rubber and plastics Primary metal industries Misc. manufacturing Trucking & warehousing Eating and drinking Health services Membership orgs Engineering & mgmt	Paper products Transportation equip Instruments Apparel and accessories Depository institutions Misc. repair services	Insurance agents, brokers Motion pictures

Medium Strength Local Industries, Possible Growth Opps (E)	**Weak Local Industries in National Decline – Focus Efforts Elsewhere (F)**	**Emerging Local Industries – Nurture (G)**	**Weak Local Industries – Possible Growth Opportunities (H)**
Special trade contractor Miscellaneous retail	Textile mill products Electric, gas services	Heavy construction Transportation services Building & garden supplies Personal services Business services Legal services	Stone, Clay, glass Communications Wholesale - durables Hotels, other lodging

(A) Strong, Stable Local Industries – have a substantially higher concentration of employment than the same industry in the comparison area, and are growing faster locally than nationally.
(B) Local Industries Under Threat – have a substantially higher concentration of employment than the same industry in the comparison area, and are growing nationally while declining or growing more slowly locally
(C) Local Industries in National Decline – have a substantially higher concentration of employment than the same industry in the comparison area, but are declining nationally
(D) Local Industries with Strength – have a slightly higher or slightly lower concentration of employment than the same industry in the comparison area, and are growing faster locally than nationally
(E) Medium Strength Local Industries with Possible Growth Opportunities - have a slightly higher or slightly lower concentration of employment than the same industry in the comparison area, and are growing nationally while declining or growing more slowly locally
(F) Weak Local Industries in National Decline – have a lower concentration of employment than the same industry in the comparison area, and are declining nationally
(G) Emerging Local Industry - have a lower concentration of employment than the comparison areas, and are growing faster locally than nationally
(H) Weak Local Industry, but Possible Growth Opportunity – have a lower concentration of employment than the comparison areas, and are growing nationally while declining or growing more slowly locally

There is one more possible category (Unstable Local Industry – Focus Elsewhere), but none of the industries in Pontotoc fall into this category. Industries in this category have a slightly higher or slightly lower concentration of employment than the same industry in the comparison area, and are declining nationally.

Business Costs

A significant difference in the cost of doing business in two areas can give one an advantage in attracting business. For this study, because Pontotoc County and the comparison counties are all in northeastern Mississippi state, many factors that contribute to business costs (such as corporate income tax) are identical. However, there are some differences that distinguish Pontotoc county from the comparison counties.

Pontotoc County has a slight advantage in terms of sales tax rates. The Mississippi sales tax rate is 7%; however Lafayette County and the City of Tupelo each have an additional local sales tax of 2% on restaurants and on certain types of hotels and motels (hotels and motels with ten or more units in Tupelo and those with six or more units in Lafayette county). The City of Tupelo also charges an additional 0.25% on all sales and services. This may give Pontotoc county an advantage in attracting visitors to stay in hotels and motels or eat at restaurants. Although there are currently very few hotels and motels or restaurants in the county, the sales tax advantage may also present an opportunity for Pontotoc to develop its retail sector, which was classified by the ARC-Opps model as a "weak but possible growth opportunity" industry (see table in previous section).

Another advantage for Pontotoc in terms of business costs is that the City of Pontotoc does not have a property tax. (The city's fiscal revenue depends on user fees for natural gas, sewage, and water and on school and county taxes.) The absence of a property tax may help to attract businesses to Pontotoc City.

C.3 Impact of Highway on Users

The primary access benefit for Pontotoc from the planned segment of Corridor V is faster east-west travel between Tupelo and Pontotoc. The Corridor also improves access to destinations east of Tupelo and West of Pontotoc, and establishes a 4-lane connection between I-55 and US-45.

Projected Change in Travel Times

The U.S. 6 improvements will improve travel conditions through Tupelo, reducing travel times from points north, south, and east of Tupelo to Pontotoc and points west. During the peak hours of travel, travel from Pontotoc through Tupelo takes upwards of 40 minutes. Based on discussions with staff from the Mississippi DOT, we estimate that the U.S. 6 improvements will reduce travel times significantly. Estimated travel time benefits resulting from the new highway are shown in Table C-2 for selected towns.

Table C-2 Projected Travel Time Improvements of Highway 6 for Selected Towns

Town	Travel Time (mins) to Pontotoc Before Improvement	Travel Time (mins) to Pontotoc After Improvement	Percent Decrease in Travel Time
Baldwyn	63	43	31.7%
Fulton	70.6	50.6	28.3%
Marietta	73.9	53.9	27.1%
Nettleton	68.4	48.4	29.2%
Okolona	63	43	31.7%
Plantersville	60.8	40.8	32.3%
Saltillo	58.6	38.6	34.1%
Shannon	63.0	43.0	31.7%
Tupelo	32	12	62.5%
Verona	41	21	48.8%

Projected Change in Travel Volumes

The growth in Average Annual Daily Traffic (AADT) on U.S. 6 has been modest since 1990. Overall, traffic has grown at an average annual rate of about 2.0% per year. U.S. 6 near the Natchez Trace Parkway, on the western outskirts of Tupelo, has experienced the highest rate of growth since 1990, at around 4.5%. Average daily traffic on that section was 45,000 vehicles per day, indicating a high likelihood of traffic congestion in the peak hours of travel.

It is expected that the amount of traffic passing along Corridor V between Batesville/I-55 and Tupelo will increase substantially once there is a continuous 4-lane connection between the two points. An increase in pass-by traffic through Pontotoc County could be expected to generate opportunities for businesses that rely on pass-by traffic, and would also make the land near the highway more attractive as a business location.

C.4 Resources for Economic Development

The extent to which an area can benefit from opportunities arising from improved transportation and access connections also depends upon local resources for economic development. These include the availability of industrial land and building sites served by basic infrastructure, on existing economic development programs and capacity, and on other factors that make the area more or less attractive as a location for business activity.

Industrial Parks

Pontotoc has some capacity to attract industry, based on its available land and buildings. There are five industrial parks in Pontotoc county, three of which lie within Pontotoc city. One of these is full, and the remaining four have from 15 to 265 available acres. There are nine available buildings in the county ranging from 17,000 to 216,000 square feet.

Economic Development Programs

The Pontotoc County Chamber of Commerce and the Three Rivers Planning and Development District are the primary agencies responsible for promoting and managing the development of Pontotoc County. The Pontotoc County Chamber of Commerce serves as the local city and county development agency. The Chamber of Commerce is involved with housing development, development planning, business support, industrial recruitment, community promotion, education support, community beautification, downtown development, and other programs.

The Three Rivers Planning and Development District (TRPDD) includes Pontotoc and seven other counties. The TRPDD office assists local areas with planning and economic development through the administration of several programs, including Economic Development Financing, Local Government Technical Assistance, Employment and Training Programs, and Computer Software Development and Support.

Other Facilities and Resources

Northeastern Mississippi is rich in educational resources. The University of Mississippi (Ole' Miss) is located in Oxford, several miles west of Pontotoc in Lafayette County, and also has a branch in Tupelo. In Pontotoc County, the Pontotoc Ridge Career and Technology Center serves over 370 area high school students from North Pontotoc, South Pontotoc, and Pontotoc High Schools with courses in furniture manufacturing technology, automotive technology, metal trades, agribusiness, and other local trades.

The public school system in Pontotoc is credited by local officials as the main draw for people who move to Pontotoc County. Both the city and county school system have had level 5 accreditation for over 5 years. With the westward spread of growth from Tupelo, officials report that many people move just over the Lee county line in order to take advantage of Pontotoc's good schools.

C.5 Projected Opportunities

ARC-Opps Model

The ARC-OPPS model was applied to forecast the types of new business activity that could occur as a result of the future highway project completion. These projections were designed to help local officials identify economic development opportunities, and thus target their efforts to help support future business attraction and expansion. Any actual future growth will depend on the availability of sites, supporting infrastructure and local business climate.

The model results indicated that the largest element of manufacturing growth resulting from the highway is likely to be in the furniture and fixtures industry, with additional growth opportunities for lumber and wood products, rubber and plastics products, and miscellaneous manufacturing industries. In addition, commercial/retail growth opportunities are projected for establishments including food and general merchandise sales, eating and drinking

establishments, and service stations. Smaller opportunities are projected for the health care industry. A breakdown of the forecast economic opportunities is shown in Table C-3.

Table C-3 Forecast of Economic Growth Opportunities Associated With Completion of Corridor V from Pontotoc to Tupelo, MS*

SIC	Industry	Potential No. of Employees: Direct Business Attraction	Potential No. of Employees: Indirect Business Attraction
22	Textile mill products	4	23
24	Lumber and wood products	47	30
25	Furniture and fixtures	423	0
28	Chemicals and allied products	0	12
30	Rubber and misc. plastics products	24	19
33	Primary metal industries	7	17
34	Fabricated metal products	2	27
37	Transportation equipment	11	1
39	Miscellaneous manufacturing industries	16	0
42	Trucking and warehousing	8	10
50	Wholesale trade - durable goods	11	48
51	Wholesale trade - nondurables	21	48
52	Bldg materials & garden supplies	13	0
53	General merchandise	43	0
54	Foods stores	65	0
55	Auto service stations	29	0
56	Apparel and accessory stores	11	0
58	Eating and drinking estabs	43	0
65	Real estate	0	18
67	Holding, investment offices	0	18
73	Business services	3	32
76	Miscellaneous repair services	12	0
80	Health services	20	0
83	Social services	14	0
87	Engineering & management	3	13

Local Expectations

We can also learn about the potential impacts of the upgrade of the Corridor V segment from Pontotoc to Tupelo by assessing the impacts of the already completed upgrade of the Corridor from I-55 to Pontotoc. Since the construction of this 4-lane segment, there has been significant business development in Pontotoc County. Much of this development has been along Highway 15 between Pontotoc City and the intersection of Route 15 and Highway 76, and local officials believe it is primarily attributable to the four-lane upgrade. New businesses and facilities include:

- a new restaurant
- a new medical center
- a new facility that will consolidate two existing facilities of Stayfast South and accommodate an expansion
- the 84 lumber company
- several new used car lots
- a chiropractic clinic on Highway 76

Local officials believe that businesses have been attracted to Route 15 and the surrounding area because of the quick access it provides to Highway 76 and from there to I-55 to the west, or along Route 9 to US 78 on the east. Officials believe that once the corridor is built from Tupelo (I-45) to Pontotoc, growth will move east along the existing Route 6 and along the new 4-lane segment.

Following are the key categories of business and personal travel that are expected to benefit from the highway project:

- **Furniture.** Local expectations indicate that the furniture industry within Pontotoc County can expand its market and grow as a result of improved access to Interstate highways for distribution of their products.

- **Automotive Parts.** Improved access may help encourage diversification of the economy and in particular help attract automotive parts suppliers to Nissan plants. Local officials hope that existing industries can modify or alter their product lines to become suppliers to Nissan; for instance, it is possible that foam manufacturers, upholsterers of furniture, and some plastic parts manufacturers could produce supplies for truck seats. Pontotoc is located in between the Nissan headquarters in Smirna, TN and an upcoming truck assembly plant in Jackson, MS. Improved highway access in general could help enable Pontotoc to enter the supply chain, making parts that could be trucked to Jackson.

- **Shopping.** Residents of Pontotoc and the surrounding area may benefit from easier access to Tupelo, PA for shopping. Residents of Pontotoc, Tupelo, and other counties will benefit from faster commuting times.

- **Labor Market for Manufacturing.** Businesses in Pontotoc will benefit from a larger available pool of labor within commuting distance. Monroe County is one county in the surrounding area with a particularly high unemployment rate, and its residents may find more work in Pontotoc County once the highway is completed.

The expectations of local economic development professionals are generally consistent with the opportunities forecast by the ARC-OPPS model. In particular, local expectations are confirmed by the model's forecasts of growth in the furniture industry and retailing in Pontotoc County. The one partial except concerns automotive parts industries. The ARC-OPPS model forecasts a growth of 51 jobs in plastics, transportation equipment and misc. manufacturing – which are primary components of the automotive supply industry. However, that could be an under-estimate of the potential economic growth opportunity, as the Nissan factory locations were not included in the linkage areas selected for this study.

Existing Constraints

The region has a limited workforce; certainly not large enough to support the siting of a major auto assembly plant. A shortage of affordable housing in the area also makes it difficult to attract workers, many of whom live in Calhoun and Chickasaw counties to the south of Pontotoc. Monroe county, which would be better connected to Pontotoc following

the building of the Corridor V highway segment, has about 10% unemployment, so workers could in the future also be drawn from that area to Pontotoc County.

Local officials consider a good highway network to be fundamental for the future economic development of the area. They believe that Pontotoc and the surrounding area's many strengths would be tied together and propelled into opportunities by future improvements to the region's highway system.

Basic Instructions for Use of the ARC-Opps Model

Software

To use the ARC-Opps model, you must have a spreadsheet software program. The model is designed for use with Microsoft Excel. While other spreadsheet packages may be able to read the model file, it is possible that the macros which are included in the model will not work. That may affect the graph the graph in Section 3 of the Output 1 tab and the category listings in the Output 2 tab. However, the final results shown in the Output 3 tab may still be correct.

Loading

First, copy the spreadsheet model file from the diskette onto your hard/C drive. We recommend that you save the model with a different name, and that each time you use the model you save it with a new name. This will allow you to perform multiple simulations and keep them in separate files. When you no longer need a simulation, you can delete that file.

Once you have copied the model onto your hard drive, start your spreadsheet software program (e.g. Excel) and open the model file. You may be asked whether you wish to enable macros when you open the file; if so, then click Yes or "Enable Macros".

Data Entry

You will notice that there are tabs along the bottom of the screen once the file is opened. The tab labeled START contains the instructions for the use of the model. There are three input tabs, Input-1, Input-2, and Input-3, where you will enter data. The data should be entered into the green cells.

The tab labeled Assumptions contains assumptions about industries, their relationships to one another, and their dependence on highway infrastructure. You can change this information if you want to, though we recommend that you do not change it.

There are three output tabs, Output-1, Output-2, and Output-3, where you will view results of the model's calculations.

Printing

Any of the Input or Output tabs can be printed simply by using the print function in your spreadsheet program.

Use of the ARC-Opps Model for General Economic Analysis (Non-Transportation Applications)

Although the ARC-Opps model was designed to identify potential growth opportunities resulting from transportation access improvements, it can be used to identify growth opportunities even when there has not been a change in transportation or accessibility.

Input Data

To use the ARC-Opps model in this way, enter the requested data to the Input 1 and Input 2 tabs. This data includes the following:

- The name of the study area
- The name of one to four areas to which you wish to compare the study area (Enter this information in the Linkage Area section of Input 1)
- Employment by 2-digit SIC for two years (the most recent year for which data is available and a year 5-10 years prior to the most recent year) for
    1. The study area
    2. The U.S.
- Employment by 2-digit SIC for the most recent year for which data is available for the comparison area(s)

Output Data

Then, look at the output information on the Output 1 and Output 2 tabs. This information includes mix and trend ratios for each industry, and a listing of potential employment growth in each industry, and can be used as follows:

- Mix ratios provide information about the concentration of employment in each industry in the study area relative to the concentration of employment in the same industry in the comparison area(s), as explained in Chapter 3 of the ARC-Opps Handbook. This information can be used to identify industries with potential for increased employment in the study area.
- Trend ratios provide information about the growth rate of employment in each industry in the study area relative to the growth rate of employment in the same industry nationwide, as explained in Chapter 3 of the ARC-Opps Handbook. This information can be used to identify industries that are lagging in growth locally relative to their national growth rate, and which therefore may have potential for increased growth rates locally. It can also identify industries that are declining nationally; depending on their local concentrations, this information may be used to identify vulnerable local industries and to highlight the need for diversification away from these industries.

Cost-Competitiveness and Cluster Analysis

The ARC-Opps model includes an analysis of cost-competitiveness and of industry-buyer relationships that contributes to the identification of potential growth in each industry. However, the use of that information in the ARC-Opps model is contingent upon information on highway changes, and can therefore not be used as part of a general diagnostic analysis of local industry opportunities. Future versions of the ARC-Opps model may make the use of these segments of the local economic analysis possible.