

Jackson County Economic Development Strategic Plan

Report and Recommendations of the Economic Development Committee

December 2009

Adopted by The Jackson County Commission March 16, 2010

Prepared by: The Enterprise Group of Jackson



TABLE OF CONTENTS

	Page
INTRODUCTION.....	4
EXECUTIVE SUMMARY	5
JACKSON COUNTY ECONOMIC DEVELOPMENT STRATEGY	7
JACKSON COUNTY ECONOMIC BASE.....	10
TARGET MARKET ANALYSIS FOR JACKSON COUNTY	20
Attachment One – PowerPoint© Presentation to 12/04/09 Working Session of County Commission.....	107

Introduction

The reports and recommendations that follow were developed as a part of the Jackson County Strategic Planning process.

The Economic Development Team (members listed below) is one of several teams presently working to create a comprehensive Strategic Plan for Jackson County aimed at assuring this community of a long and successful future. The Economic Development Team was created to prepare the board’s strategic plan for economic development, or vision. Creating a plan is one of the team’s objectives.

The Enterprise Group of Jackson was tasked with providing staff support and analysis to the Economic Development Team in fulfilling its charge. In fulfillment of this task, the Enterprise Group engaged experts, commissioned fact-based analysis and framed strategic options for consideration by the Economic Development Team and County Commission.

To help guide The Enterprise Group in this task and provide feedback along the way, The Enterprise Group stayed in close touch with the Economic Development Team and periodically reported on the analyses being conducted as works in progress. Through these sessions, the Economic Development Team members provided their perspectives and invaluable wisdom to this effort. Without the active participation and thoughtful input of the Economic Development Team, the analyses and recommendations that follow could not have been created.

Economic Development Team

Karen Coffman	Jackson County Treasurer	Kent Maurer	Jackson County Airport
Jim Stormont	Grass Lake Charter Township	Ken Gaiser	City of Jackson Council Member
Denise Butler	Napoleon Township	Carol Konieczki	Community Development
Jim Videto	Jackson County Commissioner	Charles Reisdorf	Region II Planning Commission
Amy Torres	The Enterprise Group	Scott Ambs	Jackson County GIS
Scott Fleming	The Enterprise Group	Phil Tocco	MSU Extension Jackson County
Chris Sayles	Jackson Commercial Contractors Association	Mindy Bradish - Orta	Chamber of Commerce
Tom Grace	Jackson Citizens for Economic Growth	Marv Jester	Home Builders Association
Brad Williams	Jackson Citizens for Economic Growth	Victor Cardenas	Village of Brooklyn
Kyle Jansen	Citizen	Steve Morrison	South Central Michigan Works
Barry Hicks	City of Jackson	Steve Duke	Region II Planning Commission
Frank Donovan	City of Jackson	Irv French	Real Estate
Jonathan Greene	City of Jackson		

Executive Summary

In support of Jackson County strategic planning, two economic analyses of the opportunities and challenges facing Jackson County were commissioned. This document contains the formal reports on those analyses and also the Economic Development Strategy that has been created based on the findings of the analyses.

Retaining and Expanding the Current Jackson County Economy

Montgomery Consulting, Inc. examined the Jackson County Economic Base (those industries that *statistically* appear to be bringing net new jobs and investment to the area) and made some recommendations with regard to the ongoing Business Retention/Expansion efforts of the Enterprise Group.

Based on their analysis, Montgomery Consulting recommended continuing aggressive Business Retention/Expansion efforts focused on companies doing business in the five industries that *statistically* appear to comprise the bulk of the present Jackson County Base Economy. These industries were:

- Utilities
- Manufacturing
- Retail
- Educational Services (private)
- Health and Human Services (private)

The Montgomery Consulting, Inc. report also recommended continuing efforts to retain and expand individual companies that are part of the local base economy (in the sense of selling goods or services predominantly to out-of-county customers) even when they do not fall into the 5 industries listed above.¹

¹ Any company selling its products or services predominantly to out of county customers is a part of the Jackson Base Economy. Keeping such *companies* happy, healthy and located in Jackson is a top priority for any local economic development agency. Only the five referenced industries, however, are so highly concentrated in Jackson County as to make it reasonable to assume that the *industry as a whole* is a source of net new jobs and investment and so should be a priority for local Business Retention/Expansion efforts.

Attracting New Industries, Jobs and Investment to Jackson County

Duff & Phelps LLC in conjunction with Laffer, Arduin & Moore Econometrics examined longer term trends in both Jackson and the nation as a whole and, based on that analysis, recommended some “Target Markets” that the Enterprise Group should consider making the focus of its growing Business Attraction efforts. The Duff & Phelps team recommended the “Target Markets” listed below for proactive Business Attraction efforts by the Enterprise Group:

- Life Sciences
- Advanced Manufacturing (Especially selected aspects of Food Processing and Alternative Energy Equipment Manufacturing)
- Travel and Leisure, including Arts and Culture

As a part of their report, the Duff & Phelps team also recommended some things that Jackson County (and also the State of Michigan) might do to make ours a more appealing environment in which to do business. If the challenges they cite, notably in the areas of Education and Tax Policy, are successfully addressed, Jackson County’s chances of success in attracting new jobs and investment will improve in both the recommended target markets and also other industries.

Jackson County Economic Development Strategy

NOTE: Reasoning and analysis underpinning the plan described below appears in the attached reports on *The Jackson County Economic Base* (p. 10) and *Target Market Analysis for Jackson County* (p. 20).

1. Continue the longtime Business Retention/Expansion effort focused on keeping companies in local Economic Base Industries healthy, happy, growing and located in Jackson County:
 - Utilities -- Facilitate maintenance/expansion of the CMS Energy presence in the county.
 - Manufacturing -- Assist county manufacturers in diversifying their customer bases with special emphasis on helping automotive suppliers to break into or expand their sales to non-automotive markets.
 - Retail -- Build upon Jackson County's status as a place to which residents of surrounding counties come to shop. Encourage the Chamber to work with merchants to analyze where customers live in order to help current merchants to more effectively focus promotional efforts.
 - Educational Services and Health/Human Assistance -- Assist institutions and companies in these industries to continue and expand their operations in Jackson County as important community resources and also as job-generators in their own right.

2. Continue and expand the new Business Attraction effort into the recommended Target Markets, including launching the initiatives listed below.
 - Life Sciences – Conduct outreach and recruitment activities focused on companies active in this field with special emphasis on cancer research, pharmaceutical products, and other healthcare research industries.
 - Advanced Manufacturing – Conduct outreach and recruitment activities focused on advanced manufacturing companies with special emphasis on those in Alternative Energy Equipment Manufacturing and selected high value-added sectors of the Food Processing industry.
 - Travel/Leisure – Conduct outreach and recruitment efforts aimed at building upon Jackson County amenities by securing additional investment in this industry. This effort should include Arts & Culture focused efforts expanding

upon the toehold in creative industries created by the Armory Arts Village and other arts-related developments.

3. Collaborate with other sectors of community to build a “Culture of Education” in Jackson County, including:

- Increased educational attainment defined as a larger percentage of the county’s adult population having graduated high school (or equivalent) and achieving one or more degrees.
- Improved student achievement defined as higher test scores on the part of current K-12 students.
- Achieving closer coordination between local Business and Education assuring a well-prepared local workforce capable of meeting both current and future employer needs.

4. Maintain or improve those public services that most directly support Jackson County economic development, including (but not limited to) those listed below:

- Airport -- Complete runway extension project and maintain quality of service and hours of operation.
- Community Development – Help the communities of Jackson County to craft visions for their future and secure resources with which to realize those visions in areas including housing, commercial development and public facilities.
- Land Assembly -- When appropriate, utilize county-owned land or authority properties affiliated with a local unit of government to assemble land for job-creating projects.
- Recreation/Parks -- Maintain these important community amenities.
- Corridor Improvement Authority (PA-280) – This authority is an economic redevelopment tool that will help redevelop the Cooper Street entrance to the City of Jackson. It will provide for the correction and prevention of deterioration in business districts, the promotion of economic growth in the Corridor Improvement Authority area, the encouragement of historic preservation, and the authorization of the creation and implementation of development areas and development plans.
- Assure complete infrastructure of roads, adequate and safe access/egress for job-creating enterprises.
- Workforce Development – Make local employers aware of workforce development resources; help them access these resources and keep providers

focused on producing qualified workers meeting the real Jackson County employers.

- Zoning/Permitting – Assure that permitting decisions are both timely and predictable and zoning more consistent.
5. Review State-level Business Climate Challenges identified by the Duff & Phelps team.
- When appropriate, advocate for reducing or resolving these challenges to the full and effective development of our State and, by extension, Jackson County.

Jackson County Economic Base

According to the most recent Census data available, it is estimated that the total Jackson County employment is 58,272, of which 49,357 jobs were in the private sector and 8,915 jobs were in the public sector, specifically in local and state government.²

The study also estimated the proportion of “Economic Base” employment in the county. Base jobs are those in industries that are so much more highly concentrated in Jackson County than in the nation as a whole as to *statistically* appear to be bringing net new money into Jackson County.

Of the 58,272 jobs found, 30,277 were in five industries that statistically constitute the local base economy. These industries (by NAICS Code) are:

- 22 -- Utilities
- 31 -- Manufacturing
- 44 --Retail
- 61 – Education Services (private)
- 62 – Health and Human Assistance (private)

With 58,272 total jobs and 30,277 base jobs Jackson has a ratio of base to non-base jobs of 1:93. That means each Jackson County Base Job produces sufficient economic activity that it also helps support 93% of a second job, a “spin-off” job, in some other part of the local economy. This ratio is sometimes called a “County Jobs Multiplier” which, in the case of Jackson County, would currently be 1.93

If a new project (for example, a factory) were to add 100 base jobs to the Jackson County economy, those jobs will help support 93 additional jobs in other parts of the local economy (retail, services, government/education, etc) for a total of 193 jobs supported by the project. (100 + 93 = 193)

Through spin-off, the economic benefits of Base Industry employment gradually ripple out through the whole community. Because Base Industry job gains also produce spin-off jobs, local economic development agencies like the Enterprise Group typically focus most of their pro-active efforts on the local “base industries.” As a result, the typical local economic development agency operating at the county level usually responds to challenges and opportunities in other parts of the local economy in more of a reactive mode.

² Government figures used in the analysis, though the most current available, nonetheless predate Michigan’s recent budget challenges. In consequence, current government employment is likely to be somewhat lower than reported here.

Industry-by-Industry Analyses

In addition to identifying the five industries that statistically constitute the Jackson County Base Economy at the 2-digit NAICS level, the Montgomery Consulting analysis also drilled down to look at employment levels in some of the components of those industries and especially those sub-industries with higher employment levels. Sub-industry data and some industry-specific recommendations follow.

22 – Utilities: 1,750 Jobs

Highlighting Indicates 1 or more establishments of 1,000+ employees.

22---- Utilities

Industry code	Industry code description	Paid employees March 12 (number)	Establishments
22----	Utilities	1 - 2,499	14
221	Utilities	1 - 2,499	14
2211	Electric Power Generation, Transmission and Distribution	1 - 2,499	11
2213	Water, Sewage and Other Systems	20 - 99	3

7

In Jackson County, Utilities is not an industry requiring a long or elaborate discussion. The vast majority of these jobs are obviously at CMS. The presence of that company's headquarters in Jackson County gives them a much larger footprint here than utility companies have nationally and that assures they are part of the Jackson County Base Economy. Utility company jobs are typically high wage jobs and most utility company activities – with the possible exceptions of some forms of generation -- are low impact. In consequence, Utility Companies are an industry that presents communities with an enormous upside with little or no downside.

Recommendation: Business Retention/Expansion (BRE). The Enterprise Group (and community as a whole) should focus its BRE efforts in this industry on doing whatever it can to keep CMS *happy, healthy and (located) here!*

31 – Manufacturing: 10,045 Jobs

Highlighting Indicates 1 or more establishments of 250+ employees.

Code	Industry Code Description	Paid employees March 12	Establishments
31----	Manufacturing	10045	285
311	Food Manufacturing	279	10
312	Beverage and Tobacco Product Manufacturing	0 - 19	1
313	Textile Mills	0 - 19	1
314	Textile Product Mills	250 - 499	3
321	Wood Product Manufacturing	20 - 99	3
322	Paper Manufacturing	20 - 99	1
323	Printing and Related Support Activities	156	16
324	Petroleum and Coal Products Manufacturing	0 - 19	1
325	Chemical Manufacturing	100 - 249	4
326	Plastics and Rubber Products Manufacturing	605	14
327	Nonmetallic Mineral Product Manufacturing	81	9
331	Primary Metal Manufacturing	630	11
332	Fabricated Metal Product Manufacturing	3314	116
333	Machinery Manufacturing	1529	48
334	Computer and Electronic Product Manufacturing	148	3
335	Electrical Equipment, Appliance, and Component Manufacturing	0 - 19	1
336	Transportation Equipment Manufacturing	2329	20
337	Furniture and Related Product Manufacturing	20 - 99	6
339	Miscellaneous Manufacturing	209	17

8

With the exception of Food (311), Textile Product Mills (314), Wood Products Manufacturing (321), and Printing (323), most of the higher employment components of Jackson County’s manufacturing sectors are often types that are either clearly automotive-related (Transportation Equipment (336)) or that in Michigan are typically auto related.

The Michigan Manufacturing Technology Center took a look at this question. Their data -- appearing on the following page – is especially compelling. It established that at least 41% of Jackson Manufacturing activity is indeed related to the auto industry once manufacturing for auto industry customers by companies that are not necessarily tagged as “Transportation Equipment Manufacturers” is included in the analysis. The larger “hidden” auto suppliers were in industries such as Plastics and Rubber Manufacturing (326) and Fabricated Metal Products (331).

31 – Manufacturing: 10,045 Jobs

MMTC Estimate of Jackson County Auto-related Manufacturing

Jackson County, MI				
Name	NAICS Code(s)	# Estabs	Est'd % Auto	Est'd # Auto Suppliers
Auto Parts	3363	17	100%	17
Transportation Equipment, excl Parts	Rest of 336	3	100%	3
Plastic Parts	3261	12	50%	6
Primary Metals	331	11	67%	7
Fabricated Metal Products	332	116	40%	46
Machinery & Machining	333	48	67%	32
Rest of Mfg	All Others	78	10%	8
TOTAL	31-32-33	285		120
<i>Memo: Automotive % of Mfg</i>			41.9%	
<i>Sources: Census, County Business Patterns; MMTC estimates (%)</i>				

9

Taken together, the two groups of data presented in the preceding charts strongly suggest that Jackson County has a real fight on its hands in the area of Manufacturing.

Auto industry restructuring started long before the current economic difficulties and will continue long after the present recession will have ended. In consequence, job loss at many auto-related firms will probably continue in the industry.

Another factor is the growing vulnerability of even the largest and highest tier suppliers. At one time, the rule of thumb for looking at the future prospects of automotive suppliers was, “The lower their tier, the more vulnerable the company.” The new rule, however, appears to be closer to “Everybody is vulnerable.”

Recommendations: Business Retention/Expansion (BRE) -- The focus for BRE activities within local Manufacturing should be diversification – help Jackson County manufacturers to break into new markets and sell to more non-automotive customers.

Business Attraction: To remain a vibrant part of the local economy, Jackson County’s manufacturing sector needs “new blood” – companies doing business in non-automotive industries. (NOTE: Target Market analysis that follows recommends some industries on which to focus such an effort).

44 – Retail: 7,978 Jobs

Highlighting indicates 1 or more establishments of 100+ employees.

44---- Retail Trade

Code	Industry code description	Paid employees March 12(number)	Establishments
44----	Retail Trade	7978	572
441	Motor Vehicle and Parts Dealers	869	71
442	Furniture and Home Furnishings Stores	265	28
443	Electronics and Appliance Stores	319	26
444	Building Material and Garden Equipment and Supplies Dealers	939	63
445	Food and Beverage Stores	1084	78
446	Health and Personal Care Stores	421	40
447	Gasoline Stations	466	60
448	Clothing and Clothing Accessories Stores	408	64
451	Sporting Goods, Hobby, Book, and Music Stores	374	31
452	General Merchandise Stores	2280	32
453	Miscellaneous Store Retailers	290	54
454	Nonstore Retailers	263	25

11

The Base Analysis performed previously clearly identified Jackson County as a place where retailing is more highly concentrated than in the nation as a whole. That means people are coming to the communities of Jackson County in order to shop. The three subsectors highlighted above are the largest employers within Retailing but Motor Vehicle Dealers did not (at least not at the time of the analysis) lag far behind in terms of Jackson County retail industry employment.

Retailing, however, is *not* traditionally a major focus for county-level economic development agencies like the Enterprise Group. That is because Retail is traditionally thought to serve a local clientele and so to be a form of non-basic economic activity. As a result of that view, local economic development agencies have tended to not be especially active in this sector outside involvement in a few exceptionally large projects (such as a new shopping mall. Statistics show, however, that Jackson *is* a regional shopping center drawing significant out of county customers making Retail clearly part of local economic base.

Recommendation: The EG – in conjunction with the Chamber and community DDAs and other relevant parties– should seriously consider the creation of a Retail Strategy of coordinated activities aimed at helping retain/expand local businesses with both local and out-of-county customers.

Education is good for local economic development for more reasons than we could ever hope to recount here. For most communities, education aids economic development by

creating a well-prepared workforce. In other communities, educational institutions – especially major research universities – are the sources of new products and technologies around which new enterprises grow. *In a relatively few communities, of which Jackson County is one, educational services is actually part of the local economic base – a net contributor of income, jobs and investment to the community like the other industries discussed in this part of the analysis.*

The chart that follows breaks down one of the local Base Industries into its component parts. Remember, that the jobs referenced here are in *private* educational institutions – employees of Jackson County’s public school districts and Community College are not included below.

61- Education (Private): 1,557 Jobs

Highlighting indicates 1 or more establishments of 20+ employees.

61---- Educational Services

Code	Industry code description	Paid employees March '12 (number)	Establishments
61----	Educational Services	1557	26
6111	Elementary and Secondary Schools	223	4
6113	Colleges, Universities, and Professional Schools*	1000 - 2499	2
6114	Business Schools and Computer and Management Training	0-19	4
6115	Technical and Trade Schools	0-19	2
6116	Other Schools and Instruction	20-99	13
6117	Educational Support Services	0-19	1

*Data inconsistency issues.

13

Like any other form of economic activity, Education is part of the Jackson County economic base because educational employment makes up a larger percentage of local employment than education does at the national level. There are three basic ways that Educational Services emerges as a part of the local economic base:

- When the majority of students live away from the family home in order to attend school. In the case of Jackson, there are students living away from home to attend Spring Arbor.
- When half or more of the students commute to school from outside the county.
- When local educational institutions have very large employment levels irrespective of where their students live. This is why the presence of major research universities almost always establishes Educational Services as a local base industry.

This sector is growing. In 2006 data, Jackson County had 1,443 people working in Educational Services vs. 1,557 2007 data and 1,634 in the most recent data. While modest, this growth is real. Also, Education – especially Higher Ed – is also a high wage/low impact industry and a highly desirable element of any community’s future.

Recommendation: Business Retention/Expansion (BRE). Facilitate growth of Educational institutions when possible by helping facilitate capital projects and other institutional initiatives.

62 – Health/Human Assistance: 8,898 jobs

62---- Health Care and Social Assistance

Code	Industry code description	Paid employees March 12 (number)	Establishments
62----	Health Care and Social Assistance	8898	372
621	Ambulatory Health Care Services	2551	250
622	Hospitals	2500-4999	3
623	Nursing and Residential Care Facilities	1531	51
624	Social Assistance	1000-2499	68

Large Category – 4-digit level detail appears on following page.

1

Health and Human Assistance is a grab bag of low and (extraordinarily) high wage activities. This industry, however, to an even greater degree than the others creates employment opportunities over the full-range of skill levels with job titles ranging from “Housekeeper” to “Neurosurgeon” and so can play an important positive role in the future growth and development of any community.

- Healthcare itself is a high wage industry of the very sort on which local economic development agencies typically focus their efforts.
- Positions working in the provision of basic human services – such as in the efforts to reduce hunger and homelessness – are more like vocations, low-wage but critically important.

- Other sectors of this industry, notably child and elder care, are important services for working families but – at least to most workers – pay only modest wages.³ To get a full picture of the industry, it is necessary to move down a level and look at employment in the major parts of the industry as they appear below:

62 – Health/Human Assistance: 8,898 jobs

Highlighting Indicates 1 or more establishments of 100+ employees.

6211	Offices of Physicians	789	109
6212	Offices of Dentists	476	54
6213	Offices of Other Health Practitioners	266	50
6214	Outpatient Care Centers	371	16
6215	Medical and Diagnostic Laboratories	53	3
6216	Home Health Care Services	484	12
6219	Other Ambulatory Health Care Services	112	6
6221	General Medical and Surgical Hospitals	2500-4999	3
6231	Nursing Care Facilities	819	7
6232	Residential Mental Retardation, Mental Health and Substance Abuse Facilities	253	27
6233	Community Care Facilities for the Elderly	383	12
6239	Other Residential Care Facilities	76	5
6241	Individual and Family Services	644	23
6242	Community Food and Housing, and Emergency and Other Relief Services	100-249	6
6243	Vocational Rehabilitation Services	100-249	2
6244	Child Day Care Services	285	37

16

In the case of Educational Institutions, local economic development agencies are able to serve this industry primarily by helping facilitate capital projects in the sense of “running interference” with local government on regulatory matters and assisting in site assembly.

Recommendation: Business Retention/Expansion (BRE). Remain attentive to the needs of this sector. The EG should do what it can to assist enterprises in this industry to remain and expand in Jackson County by helping facilitate projects.

³ These jobs, however, like those in Travel and Leisure often function as lower rungs (modest skill expectations/modest wages) on the “career ladder” many workers climb of successively greater responsibility and compensation as they gain education, skills and experience

Longer Term Implications of Retention/Expansion Focus

The historical focus of Enterprise Group economic development efforts strongly favored efforts to Retain and Expand companies already located in Jackson County. From the early 1990s through 2007, Business Attraction leads were handled reactively (as the company engaged with the EG) with no sustained or systematic effort on the part of the Enterprise Group to interest companies presently located elsewhere relocating to (or expanding into) Jackson County. The Michigan Automotive Compressor, Inc. (MACI) plant opened in the early 1990s, and The Kinder Morgan Power Plant opened in 2000. These companies were the last major Business Attraction deals successfully closed, prior to the most recent change in The Enterprise Group leadership.

As will become clearer from some of the following analysis, the EG's long-term focus on Business Retention/Expansion (to the near-exclusion of Business Attraction) has reached its limits. Though vitally important to the current Jackson County economy, most of Jackson's present Base Industries are declining in their employment levels both nationally and locally. As a result, even the best Business Retention/Program would still consign Jackson to continued economic contraction in its level of Economic Base employment.

In response to these trends, the final recommendation arising from the Montgomery Consulting analysis is that the Enterprise Group continues its move from the entirely Retention/Expansion-focused program depicted in Figure 1 below to the broader effort, including an active Business Attraction component, depicted in Figure 2 on the following page.

Figure One – EG Annual Activity Levels, 1997-2007

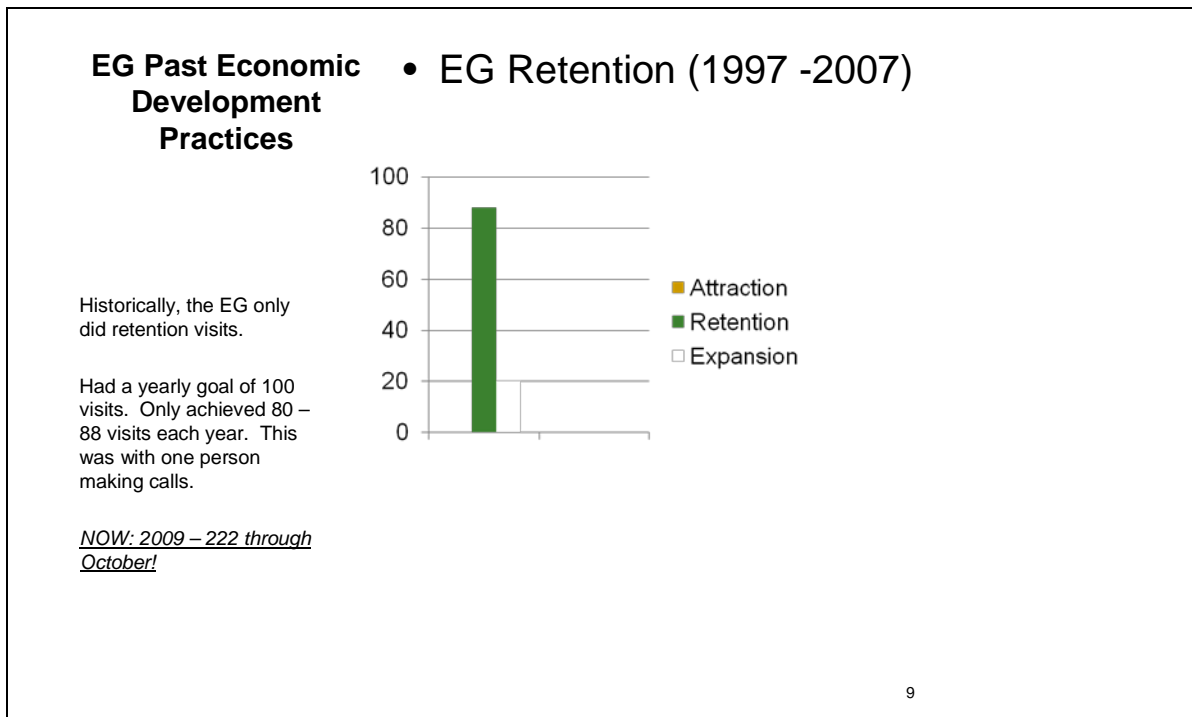
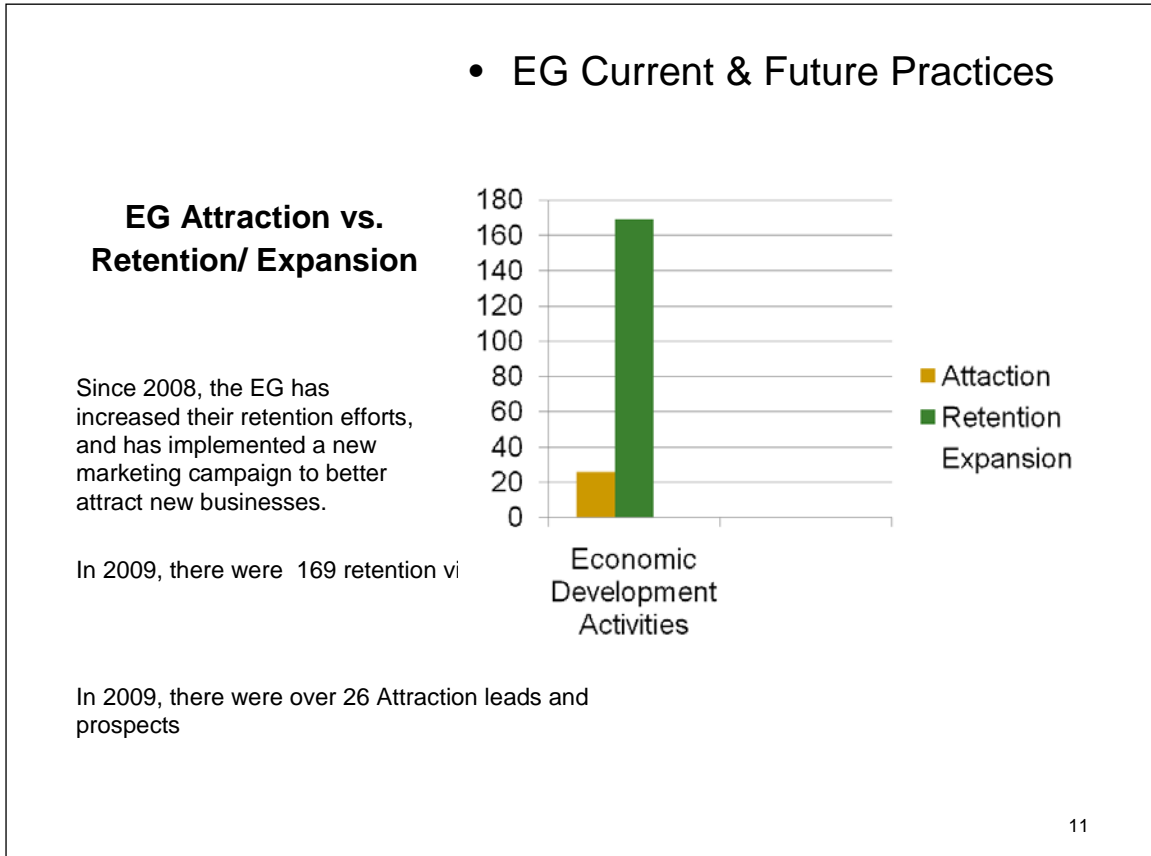


Figure Two – EG Annual Activity



Target Market Analysis

Jackson County, Michigan

December 2009

Table of Contents

Executive Summary	22
Introduction	29
Section I: Demographic and Economic Overview	32
Population	32
Age Distribution.....	33
Unemployment and Employment Trends.....	34
Top Employers.....	36
Businesses by Size	37
Per Capita Income	38
Poverty Rates	39
Section II: Education & Workforce Development	41
K-12 Education	41
Higher Education	44
Educational Attainment.....	44
Workforce Development Resources	45
Key Findings & Recommendations – Education and Workforce Development	48
Section III: Strength, Weakness, Opportunity and Threat (SWOT) Analysis	50
Internal Factors	51
External Factors.....	51
Section IV: Assessing the Viability of the Identified Potential Industries	53
Life Sciences	54
Advanced Manufacturing: Alternative Energy & Food Processing.....	63
Diversification Strategy: Michigan Economic Development Corporation (“MEDC”).....	74
Travel & Leisure.....	84
Arts & Culture.....	92
Section V: State Economic Development Programs	96
State Economic Development Complexities	98
State Competition: A Landscape Perspective	102
Economic Landscape and Development Expenditures	106
Economic Development Expenditures within the Economic Landscape.....	108
Conclusion.....	110
Endnotes	135

Executive Summary

This plan has been prepared by Duff & Phelps LLC and Arduin, Laffer & Moore Econometrics, with the assistance from Scott Fleming from The Enterprise Group of Jackson, Inc. The consultants have expertise in site selection, real estate, economic analysis and economic development consulting, here in Michigan and around the country. Our experiences working in and consulting to public and private sector clients enable us to approach this assignment from several important perspectives, including the point of view of the economic developer trying to recruit business; the site selection consultant seeking relevant, current information about a community; and the corporate manager considering a new location for expansion. With the needs and goals of these constituents in mind, the consultant team has developed an informative, user-friendly and comprehensive target market study. The plan provides the data and interpretation needed to further develop business recruitment and retention programs for Jackson County. The Study also forms the foundation for future marketing efforts, such as National Site Promotion and Prospect Development, by providing the information and analysis that site selectors, developers, investors and corporate decision makers rely upon when evaluating communities.

SWOT Analysis

SWOT Analysis is a strategic planning tool used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a project or in a business venture. Jackson County's SWOT analysis was developed using several sources of information. The sources include the Economic Development Roundtable, Interviews from local businesses and citizens of Jackson, and Jackson County Strategic Planning - Economic Development Committee, along with existing information. The information from the SWOT Analysis can be used to implement a plan of action once target industries have been identified. One of Jackson's key strengths is its proximity to key markets and access to higher education institutions. However, we are concerned with certain weaknesses; such as chronically low educational attainment levels and a lack of cultural and economic base diversity. Jackson needs to focus on leveraging its many strengths, and shoring up its weaknesses, particularly as it relates to educational attainment.

Demographic and Economic Overview

This section provides an important foundation for the overall development of the analysis. It provides an in-depth look at the past and current demographic and socio-economic trends that shape the Jackson County community.

Population

Although the Jackson County population experienced modest to nominal growth between 2000 and 2008 (0.91 percent) adding 1,441 new residents, it is still well below the national growth rate of 7.76 percent over the same period.

An overall declining growth rate and increasing out-migration trends will continue to present a significant challenge to the Jackson County community. Unless this trend is reversed, a stagnating population base will continue to erode Jackson's already weakened economic base.

Unemployment and Employment Trends

For all of 2009 the unemployment rate has been the highest percentage of the labor force without a job in Jackson County for the last 25 years. The rate as of July 2009 was 15.9 percent compared to the state and federal unemployment rates of 15.6 percent and 9.4 percent respectively. The steady decline of the automotive industry over the past 5-7 years has led to a steady decline in the economic welfare of the entire Jackson County community. As illustrated in the report, Jackson's three primary industry sectors; manufacturing, transportation & utilities and retail trade have experienced significant employment declines over the period 2000 to 2008. This is especially troubling since the decline occurred during relatively strong state and national economic times.

Per Capita Income – Credit Issues

Jackson's per capita income of \$28,000 is well below both the state and national average, which is \$33,788 and \$36,714 respectively. Michigan has the nation's lowest per capita personal income growth; primarily attributable to its declining automotive sector.

Jackson County's lack of economic drivers and the ongoing decline of the automotive manufacturing industry will continue to weaken Jackson County's local economy and lead to further job losses. Jackson County must position itself to attract new industries and diversify its economic base.

Poor credit quality of residents is another lingering economic problem that is compounding the already struggling local economy. Jackson County's high share of subprime mortgage loans between 2005 and 2007 suggests weak overall credit quality. In 2006, more than 30% of the mortgages originated in Jackson County were subprime. Job losses combined with the national credit crisis and weak income growth is expected to increase foreclosures and likely increase delinquencies on consumer loans.

Education and Workforce Development

K-12 Education

This section examines educational attainment and overall competitiveness of Jackson's 16 school districts, serving approximately 25,284 students. The five largest districts make up approximately sixty (60) percent of the student population: Jackson Public Schools, Northwest Community Schools, Western School District, Columbia School District and Napoleon Community Schools.

To effectively gauge overall competitiveness in comparison to the State of Michigan we provide an analysis of key indicators of the following educational proficiency indicators in the K-12 system: Michigan Educational Assessment Program (MEAP); Michigan Merit Examination (MME); and the ACT college admission examination.

The quality of the public school system is a direct and unavoidable reflection on the community's socioeconomic well being as well as a key factor in a business' decision to locate their operations. Closing the achievement gaps is critical for Jackson County to compete on a state, national and global level.

We were pleased to find that a higher proportion of Jackson County adults held a high school diploma or associate's degree than adults state and nationwide.

Higher Education

Jackson has 6 colleges and universities in the County and another 15 within a one hour drive. These colleges and universities are a tremendous asset that should be leveraged by the Jackson County economic development team. The unique opportunity these colleges and universities promote is access to over 155,000 highly educated individuals. In addition, if leveraged properly, access to the resources of these 21 colleges and universities opens the doors to potential new businesses by partnering with their technology transfer offices. The Milken Index reported that for the 2000-2004 University Technology Transfer and Commercialization Index: "The University of Michigan ranks ninth overall. It has consistently high scores, as well, but its best outcome achievement is in Patents" where U-M ranked 8th. Jackson County must aggressively leverage these educational resources and assets as part of their effort to diversify their economic base.

Workforce Development

Jackson County already has in place an expansive workforce development network; programs which span from K-12 education to higher-education to on-the-job training. The area workforce training network provides workforce development services to jobseekers and businesses. We found that the programs are flexible and in many instances demand-driven. South Central Michigan Works (SCMW) and is recognized as the primary workforce development service provider for job seekers and businesses. However, Jackson County offers other unique programs such as the Jackson Legacy Program, "Project Lead the Way" (PLTW), and Manufacturing/Technology related camps

("I Can Make it Camp", "Machining U", and "Gateway Academy"), that team up with the public schools, higher education institutions and the private sector, with the goal of increasing the quantity and quality of students graduating from the local secondary school systems.

Education Recommendation

To be competitive, Jackson County must develop and implement a strategy to ensure that its existing and future workforce is being trained with the necessary skills and competencies that are in demand with the labor market and consistent with the target industry needs.

Also, it is important to facilitate growth of educational institutions by assisting in capital projects and other institutional initiatives.

Assessing the Viability of the Target Industries

The consultants identified four potential industries that might be appropriate target industries for Jackson County Michigan. These industries are: Life Sciences, Leisure & Travel, Food Processing and Advanced Manufacturing with a focus on alternative energy. This section assesses the viability of each of these target industries with respect to Jackson County's current economic landscape; policy environment; and infrastructure, which incorporates current industries, proximate universities, and community demographics.

The key focus industries were ranked based on the probability of success if the County pursued one of the key industries and that industry's growth prospect as compared to the national average.

Life Sciences

The life sciences industry is typically defined as firms primarily engaged in conducting research and experimental development in the physical, engineering, and life sciences, such as biotechnology, pharmaceuticals, medical devices, research and development, and health-care services.

Not only are wages in the life sciences higher, total wages paid in the life sciences industry for the U.S. has been steadily increasing since 2001 and are up 43.3% over the seven year period between 2001 and 2007. Michigan's life sciences industry employment rose 15.7%, even better than the national average, compared to the Michigan statewide employment loss of -6.7%.

Based on the total wage and employment growth of the life sciences industry, the expected economic growth potential from targeting the life sciences industry is accelerated.

Michigan in general and Jackson County in particular possesses several of the key attributes that have proven necessary in the development of previous viable research clusters.ⁱ First amongst equals is a strong hospital system that provides key facilities and human capital.

Life Sciences Recommendation

Jackson economic development officials should focus on developing the following industry sectors:

The agricultural feedstock, chemical feedstock, and agricultural chemical industries are all relatively small industries, cumulating to less than 1,000 jobs in Michigan and barely more than 100,000 jobs in the nation in 2007, but the fact that they are growing rapidly in Michigan while declining or modestly increasing in the United States during this period is noteworthy.

Another relatively successful bioscience manufacturing industry in Michigan is medical electronic instruments manufacturing (employment growth of 41.2 percent between 2002 and 2007) and, compared with the chemical and agricultural industries, this is a relatively large industry in Michigan (1,636 jobs in 2007) and the nation as a whole (106,300).

It is important for Jackson to build up “Significant private sector and community support behind the concept of establishing a cluster in the region.”ⁱⁱ Because successful research clusters require extensive community infrastructure, motivated local participants increase the probability of success.

Advanced Manufacturing

Michigan’s greater reliance on manufacturing jobs compared to the national economy led to total employment growth in Michigan, compared to a decline of a period of relatively strong employment growth for the U.S. overall.

Despite the declining employment trends, because output per worker, or total productivity, in the manufacturing industry was rising, total manufacturing wages paid increased. Total manufacturing wages paid per full time equivalent employee rose from \$50,002 in 1998 to \$56,407 in 2008. The rise in total wages means that while fewer people were employed in this industry, those who were employed had an increasing income.

Jackson County’s historic connection to the manufacturing sector provides a solid base from which to attract those portions of the manufacturing sector that are still experiencing growth thereby bringing a well paying growing manufacturing sector back to the area.

Many of the physical attributes important for a viable life sciences cluster are the same:

- Physical infrastructure
- Skilled labor force
- University and education connections

- Community Colleges have been identified as a key player in narrowing the skills set for manufacturing and helping ensure workers have the skills necessary for Advanced Manufacturing jobs.

Within the *advanced manufacturing* industry Jackson County can exploit the following key industry sectors:

- Alternative Energy manufacturing
 - Biofuels
 - Solar
 - Wind
 - Geothermal
 - Alternative Energy Storage - MEDC Collaboration
 - Food Processing
- Similar to life sciences industry, alternative energy sector requires:
 - Strong connections and dependence on university clusters for technology developments.
 - Focus on expanding current core renewable energy component manufacturing capabilities
 - Team with the Michigan Economic Development Corporation (MEDC) to facilitate a coordinated diversification strategy aimed at developing the alternative energy supply chain in Jackson County.
 - With the local focus on the automotive industry, Jackson County’s strengths revolve around the automobile industry.
 - Alternative energy projects that leverage the automobile technologies of the area are particularly relevant – this is already occurring and should be further developed and nurtured.

Travel & Leisure

Currently, Jackson County can offer its visitors golf, access to hunting and fishing areas, as well as the Michigan International Speedway (located 18 miles away). According to the Enterprise Group of Jackson, there are more than 500 holes of golf in Jackson County, giving Jackson County more golf courses per capita than any other county in the nation. Additionally, Michigan has a competitive sales tax rate of 6.0%, which will also help encourage tourism and other travel and leisure endeavors.

Duff & Phelps and Arduin, Laffer & Moore recommends that Jackson County emphasize the travel and leisure industry. The justification for this strategy is a combination of the relative ease with which an investment in the travel & leisure can be implemented, the tourist attractions that already exist in or near the Jackson County area, and the relatively competitive wage growth and employment growth in the tourism industry relative to Michigan’s recent experience.

Focus on attracting outdoor/recreation lifestyle center development, i.e. Cabela's, equestrian center; building on Jackson's location; leveraging Jackson's recreational amenities to attract events to the community and build off of the Armory Arts Village to promote fairs and to attract commercial businesses such as restaurants and shops to the downtown area.

The travel & leisure industry offers Jackson County a very high probability of success and a return from the investment is significantly above the current employment and wage growth experience in Michigan.

Arts & Culture: The Impact to Jackson's Economy

Arts & Culture is an important complimentary strategy for Jackson County to pursue. Nationally, the nonprofit arts and culture industry generates \$166.2 billion in economic activity every year—\$63.1 billion in spending by organizations and an additional \$103.1 billion in event-related spending by their audiences.

Beyond the direct economic impacts and direct benefits to the already existent travel & leisure infrastructure, investments in Arts & Culture enhances the quality of life metrics that are important to the creative classes. These creative classes are important for the creation of a successful life sciences cluster as well as further improvements in Jackson County's Advanced Manufacturing efforts.

Jackson County has a vibrant Arts & Culture sector that needs to be emphasized and expanded as part of its economic development strategy. One great example of this sector that currently exists in Jackson County includes the Armory Arts Village of Jackson.

It's well documented that a thriving cultural life generates income, jobs and tax revenue for state and local communities. Not surprisingly, many communities have turned their attention toward leveraging arts and cultural programs to generate economic vitality in under-performing communities. States and local communities are beginning to realize that their economic fortune is tied to the location preferences of highly mobile knowledge-workers who form the intellectual backbone of the new economy. These workers value "quality of place" above nearly all other factors – including job market conditions – in choosing where to locate.

Introduction

Our experiences working in and consulting to public and private sector clients enable us to approach this assignment from several important perspectives, including the point of view of the economic developer trying to recruit business; the site selection consultant seeking relevant, current information about a community; and the corporate manager considering a new location for expansion. With the needs and goals of these constituents in mind, we will develop an informative, user-friendly and comprehensive target market study.

You and your team will gain the data and interpretation needed to develop a business recruitment program to support your economic development efforts in Jackson County. The Study will also form the foundation for future marketing efforts, such as national site promotion and prospect development, by providing the information and analysis that site selectors, developers, investors and corporate decision makers rely upon when evaluating communities.

The study process involved the following activities:

- Reviewed development and target-related studies previously undertaken in the County;
- Conducted regular meetings Enterprise Group staff on study elements;
- Hosted meetings with business and community leaders to share preliminary demographic and target information;
- Presented to key stakeholders
- Conducted meetings with state and local economic development professionals; and
- Conducted interviews with residents, public officials and representatives of the business community.

Study Methodology & Targeting Criteria

Working with The Enterprise Group of Jackson, Duff & Phelps and Arduin, Laffer & Moore Econometrics have identified three potential industries that could be appropriate target industries for Jackson County Michigan. These industries are: Life Sciences, Leisure & Travel, Advanced Manufacturing (especially Alternative Energy and Food Processing Manufacturing). Our analysis examined the viability of each of these “target” industries with respect to the current economic landscape; policy environment; and infrastructure, which incorporates Jackson County’s current industry, university, and demographics.

We want to emphasize that the report narrowly focuses on three primary industries that we feel should be an area of focus for the Jackson economic development attraction efforts, but it is by no means an exclusive list. Prior to undertaking this endeavor we discussed in detail current Jackson County economic development efforts aimed at industry attraction and although there is some overlap we focused primarily on emerging industries; those that create new, high paying, high skilled job opportunities for the community and that are non-automotive. We encourage current efforts to attract other industries such as those related to film and aerospace; however, our goal was to present a manageable number of industries

to focus attraction efforts – industries that present average to above average chance for success. We recognize that economic development organizations have limited resources and that it's impossible to effectively focus attraction efforts, i.e. time and money, on a large list of industries. It is our experience that attraction efforts are more successful when the targets are concise and the number is manageable.

We began with a review of the current economic landscape nationally, for the state of Michigan, and for Jackson County. This includes a review of recent economic trends (income, output, employment, etc.), population trends, and relevant policy trends. These trends will be contrasted with the current and expected growth potential for each of the targeted industries.

Where relevant, we identified the metropolitan areas that are currently the major centers – current top industry clusters. The common attributes and features of the top industry clusters, along with any meaningful differences, were identified. This analysis relied both on primary data from the government and secondary data sources that have analyzed the local infrastructure attributes that foster the development of a viable industry cluster in each of the focus industries.

As part of the cluster viability analysis, to the extent the data is available, we examined the breadth of the impact from each industry cluster on the broader local economic landscape. For example, we examined whether or not historically the growth potential in the localities with viable life science clusters increase by a greater or lesser amount than the growth potential in the localities with viable leisure and travel industries.

The current landscape in Jackson County was then evaluated with respect to its ability to sustain a viable industry cluster for each one of the focus industries. Both the number of attributes (i.e. chance of success) and growth potential (i.e. benefits from success) were evaluated.

For each target industry, we will explain why the industry is a good fit for Jackson County and/or the region. If the industry identified turns out not to be a good fit, the analysis will explain why and then suggest changes Jackson County could make that would improve the fit.

This analysis will also incorporate the actions being undertaken in other localities on the chance of success of a Jackson County initiative. This section will conclude with a summary of the comparative advantages and disadvantages of Jackson County with respect to each of the four target industries.

Final Report: Findings & Recommendations

The study represents a step forward in the process of marketing the community to new businesses and also presents an opportunity for the Jackson County team to promote the target market study program and encourage greater participation. The presentation focuses on the following:

Content of presentation meetings:

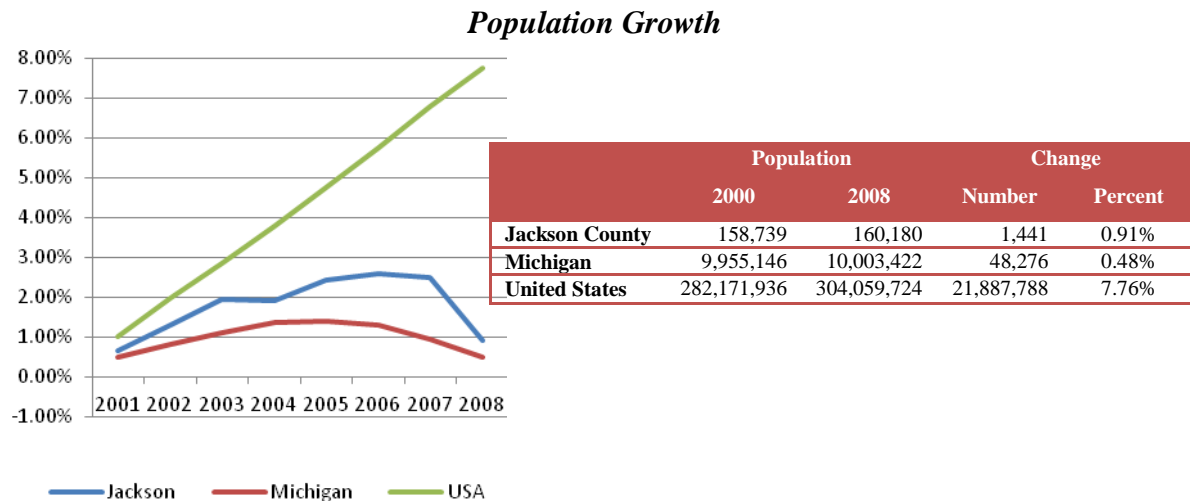
- Summary of Target Industry Study and the purpose of the report
- Study Methodology
- Highlights of the Target Industry Study
- Advice on using Target Industry Study to create marketing programs and promote priority development sites

Section I: Demographic and Economic Overview

This assessment of the region’s demographic trends serves as a “snapshot” of the population dynamics shaping Jackson County. Indicators such as migration, populace by race and ethnicity, and age distribution illustrate the population dynamics contributing to the County’s growth. Socioeconomic indicators such as educational attainment, per capita income, and poverty rates help fill out this picture. This “snapshot” focuses on the County’s demographic changes since 2000 compared to Michigan and the United States.

Population

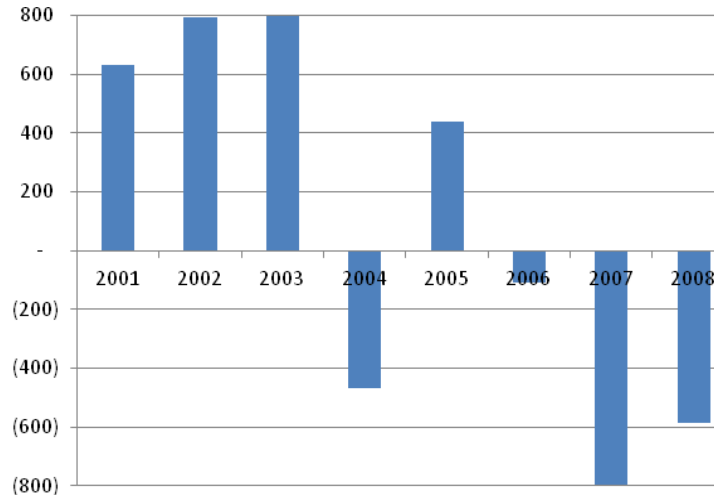
Between 2000 and 2008, Jackson County grew by 0.91 percent, adding 1,441 new residents, compared to 0.48 percent growth statewide. However, the County’s growth was significantly less than the nation’s growth of 7.76 percent, and has been declining since 2006. While population growth rates slumped alongside the region’s economic recession in 2001, Jackson County has still maintained greater growth than that of Michigan.



Source: US Census Bureau

To gain a deeper understanding of these growth dynamics, components of population change from 2000 to 2008 were analyzed for the county. Two factors account for population growth and decline: natural change (births minus deaths) and net migration. The following chart outlines Jackson County’s net migration patterns for the past eight years.

Jackson County Net Migration

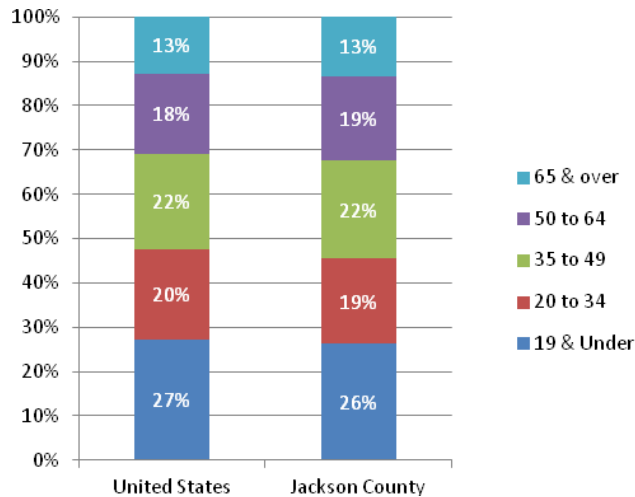


Source: Census Bureau

Age Distribution

The following chart illustrates how the populations of Jackson County and the nation are distributed among age groups. Compared to the nation, Jackson County is practically identical to the nation in terms of percentage of age groups.

Age Groups as a Percentage of Total Population

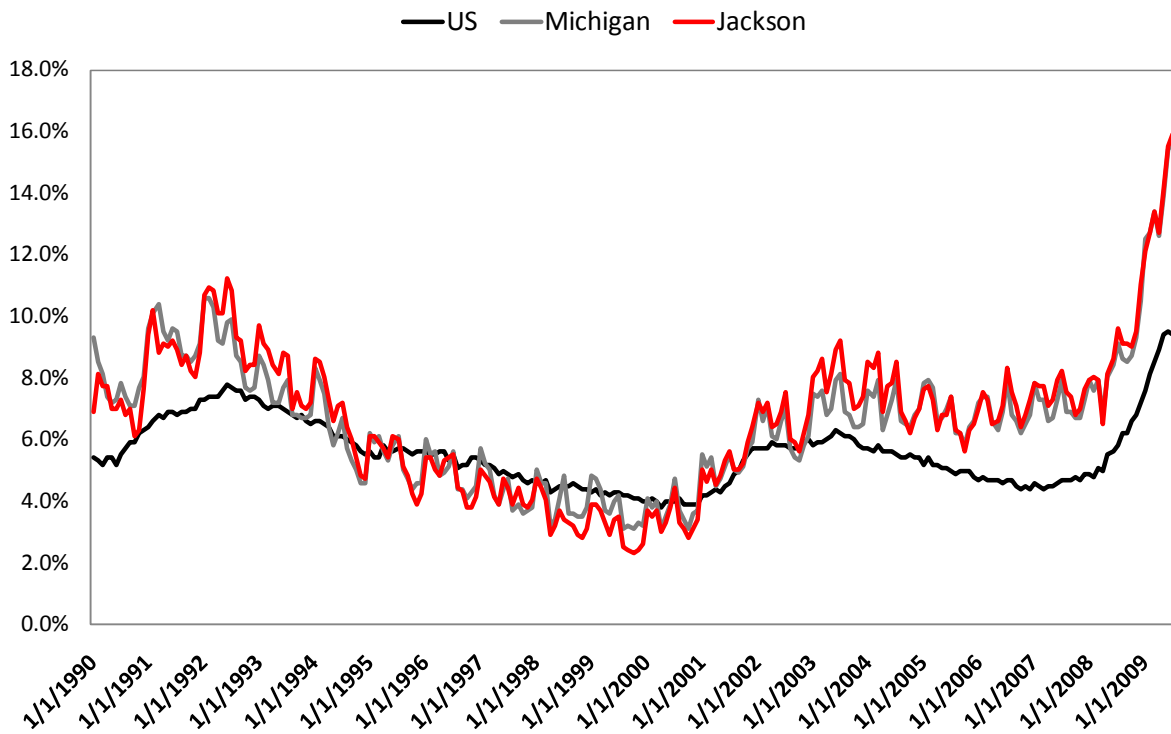


Source: Census Bureau

Unemployment and Employment Trends

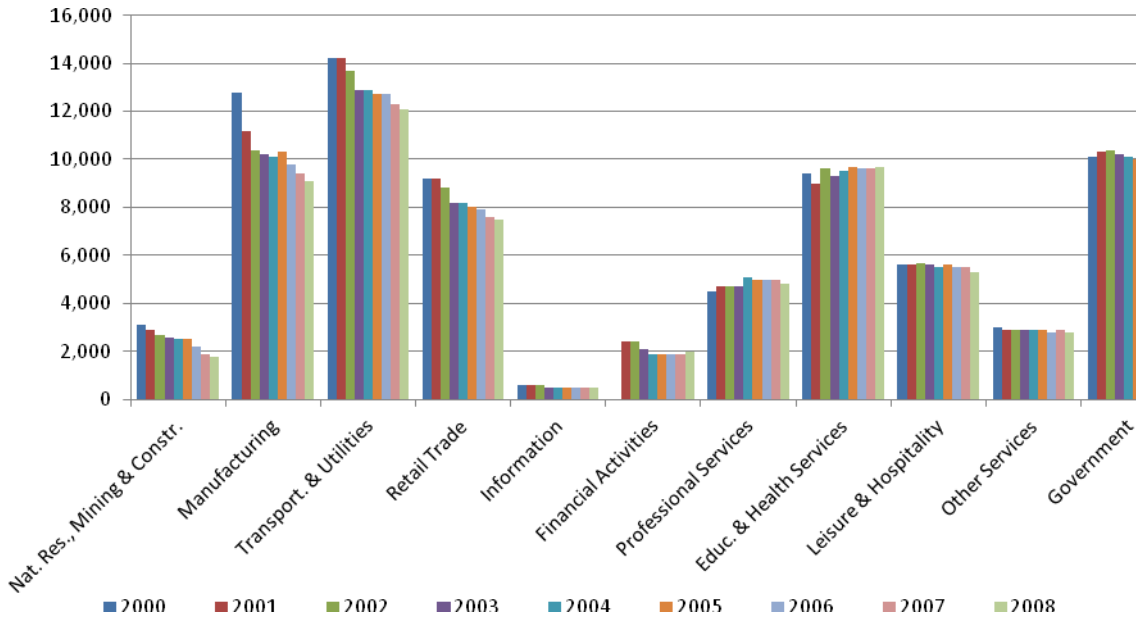
The latest unemployment data (as of July 2009) was 15.9% for Jackson County.ⁱⁱⁱ For all of 2009 the unemployment rate has been the highest percentage of the labor force without a job in Jackson County for the last 25 years. Michigan suffers from a similar unemployment problem, with the latest estimate being 15.6%.^{iv} These unemployment rates are significantly higher than the national average. For the U.S. as a whole, the unemployment rate in July 2009 was an exceptionally high 9.4%, with expectations of further increases in the future. Such a high unemployment rate for the nation is problematic, but still pales in comparison to the unemployment problems across Michigan and Jackson County.

Unemployment Rates: U.S., Michigan and Jackson County



To better understand the affect unemployment has on the County, an examination of employment trends by industry is needed. Jackson County's economy was based on supporting Detroit's automotive manufacturing industry, tying the economic prospects of Jackson County with the fate of the domestic automobile industry. According to the Enterprise Group of Jackson, 60% of Jackson's 350 businesses are directly supporting the automobile market.^v The steady decline of the automobile industry over the last five years has led to a steady decline in the economic welfare of the entire Jackson County area. Jackson County's weakened economic state going into the national recession has led to larger negative impacts from the current economic crisis in Jackson County compared to the rest of the nation. The following shows the employment trends by industry since 2000.

Employment by Industry



Source: MI Labor Market Information

The industries that historically employ the most Jackson residents seem to all be in a steady decline since 2000. Jackson’s three primary industry sectors; manufacturing, transportation & utilities and retail trade have experienced significant employment declines over the period 2000 to 2008; this is especially troubling since the decline occurred during relatively strong state and national economic times. Though decreased employment is widespread among the majority of industries, the Educational & Health Services industry has enjoyed some overall growth. This is largely due to Allegiance increasing headcount and being the County’s largest employer.

Industry Employment Comparison

Occupation Title	USA	MI	Jackson	% to US	% to MI
All Occupations	42,270	42,890	39,030	92%	91%
Management occupations	100,310	96,450	84,680	84%	88%
Business and financial operations occupations	64,720	65,090	62,410	96%	96%
Computer and mathematical science occupations	74,500	68,440	60,910	82%	89%
Architecture and engineering occupations	71,430	72,270	63,310	89%	88%
Life, physical, and social science occupations	64,280	58,330	66,040	103%	113%
Community and social services occupations	41,790	44,090	41,140	98%	93%
Legal occupations	92,270	90,720	73,230	79%	81%
Education, training, and library occupations	48,460	52,210	45,880	95%	88%
Arts, design, entertainment, sports, and media occupations	50,670	46,960	40,720	80%	87%
Healthcare practitioners and technical occupations	67,890	67,920	60,070	88%	88%
Healthcare support occupations	26,340	26,430	26,830	102%	102%
Protective service occupations	40,200	39,890	44,720	111%	112%
Food preparation and serving related occupations	20,220	19,940	19,840	98%	99%
Building and grounds cleaning and maintenance occupations	24,370	25,810	25,660	105%	99%
Personal care and service occupations	24,120	23,830	20,900	87%	88%
Sales and related occupations	36,080	35,000	30,890	86%	88%
Office and administrative support occupations	32,220	32,670	31,560	98%	97%
Farming, fishing, and forestry occupations	23,560	27,620	21,740	92%	79%
Construction and extraction occupations	42,350	46,920	45,810	108%	98%
Installation, maintenance, and repair occupations	41,230	44,480	43,580	106%	98%
Production occupations	32,320	37,120	34,200	106%	92%
Transportation and material moving occupations	31,450	32,910	28,640	91%	87%

Source: Bureau of Labor Statistics

Top Employers

Surveying a region's largest employers provides a good starting point for understanding its economy. The County's proximity to the large automotive manufacturers results in a large presence of manufacturing jobs. The regional economy provides thousands of government and educational jobs to local residents; in fact, 6 of the top 20 employers are in the public sector. The County is also home to many private firms; its largest private sector employers are predominately in health care, manufacturing and utilities.

Top 20 Employers in the Jackson MSA, 2008

Employer	Number of Employees	Business Type	NAICS
Allegiance Health	3,146	Health Services	621111
Michigan Department of Corrections	2,040	Government	922150
Consumers Energy	2,026	Utilities	221210
Local Government	870	Government	
Michigan Automotive Compressor (MACI)	784	Manufacturing	336391
Jackson Public Schools	782	Educational Services	611110
Jackson Community College	767	Educational Services	611310
Meijer, Inc. (2 locations)	755	Retail	445110
Wal-Mart Super Center/Sam's Club	598	Retail	452112
TAC Manufacturing	590	Manufacturing	336399
Eaton Corporation	563	Manufacturing	332912
McDonald's (8 locations)	450	Food Services	722211
Jackson County Intermediate School District	427	Educational Services	611519
Great Lakes Home Health & Hospice	400	Health Services	621610
Alro Steel	325	Manufacturing	423510
Spring Arbor University	300	Educational Services	611310
Anesthesia Business Consultants	284	Health Services	541219
Lifeways/Community Connections	275	Health Services	
Dawn Food Products	273	Food Services	311822
Tenneco	270	Manufacturer	336399

Source: The Enterprise Group of Jackson, Inc.

Businesses by Size

In 2006, about 71 percent of the region's businesses employed less than ten people. In other words, small businesses make up the bulk of establishments in Jackson County. This is also true for Michigan and the nation. Only two percent of businesses in the Jackson metro area employed more than 100 people in 2006. These figures emphasize the significance of small businesses to the County's economy.

Jackson MSA Business Establishments by Number of Employees: 2000 and 2006

Number of Employees	Year		Change	
	2000	2006	Number	Percent
Under 10	2,364	2,381	17	0.7%
10-19	515	476	-39	-7.6%
20-49	331	296	-35	-10.6%
50-99	111	117	7	6.3%
100+	90	74	-16	-17.8%
Total	3,411	3,344	-67	-2.0%

Source: Census Bureau

Per Capita Income

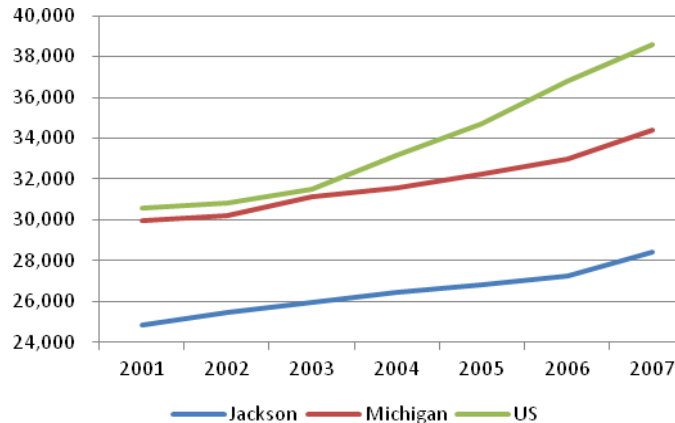
Per capita income (PCI) is an important indicator of economic stability and potential buying power of a community and its residents. PCI is a measure of the total personal income of a place divided by its total population; it reflects downturns in the economy, unemployment rates, and wages. Between 2001 and 2007, annual growth of per capita income in Jackson County was in line with that of the state. However, both state and county PCI are growing slower than the nations since 2003.

While outperforming Jackson County, over the 10-year period from 1999 to 2008, Michigan experienced the lowest level of personal income growth in the nation at 27.0%, compared to the national average of 55.0%. Per capita personal income growth in Michigan of 25.6% is also the lowest in the nation compared to 42.3% for the nation overall. The lack of economic growth can be attributed to problems with the automotive industry, which the Michigan economy is heavily reliant upon, but it is also important to note that the anti-business climate created through decades of high tax rates and burdensome regulations has played a significant role as well.

Jackson County's lack of economic drivers and the ongoing decline of the automotive manufacturing industry will continue to weaken Jackson County's local economy and lead to further job losses, lending urgency to the implementation of a plan designed to position itself to attract new industries and diversify its economic base.

Poor credit quality of residents is another lingering economic problem that is compounding the already struggling local economy. Jackson County's high share of subprime mortgage loans between 2005 and 2007 suggests weak overall credit quality. In 2006, more than 30% of the mortgages originated in Jackson County were subprime. Job losses combined with the national credit crisis and weak income growth is expected to increase foreclosures and likely increase delinquencies on consumer loans.

Per Capita Income Levels



Source: Bureau of Economic Analysis

Poverty Rates

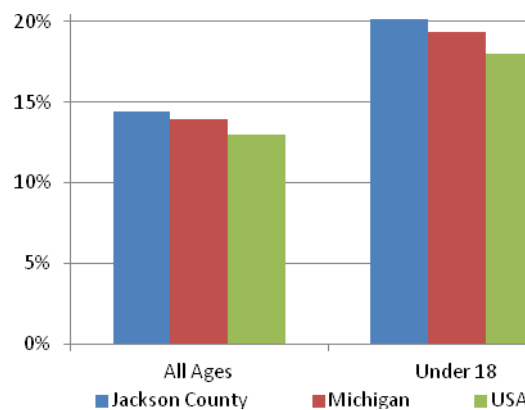
Examining poverty rates is one of the best ways to help gauge a region’s socio-economic prosperity. The U.S. Census Bureau uses information such as family size, pre-tax income, and number of children to determine annual poverty thresholds. In 2007, the most recent year for which reliable poverty rates are available, the poverty threshold for a family of four with two children was \$21,027. The poverty rate for an individual in the same year was \$10,590.

Since 2000, poverty rates for the total population and for children have increased in Jackson County. Both rates remain higher than those for the state and the nation. Significant increases in both total population poverty rates and child poverty rates are a concern. The overall poverty rate in Jackson is more than double the national rate and the rate of poverty for children in Jackson County is three times the national rate.

“2007 Poverty Rates US, Michigan and Jackson

	Total Population		Under 18	
	Number	Percent	Number	Percent
Jackson	6,740	44.4%	2,257	41.80%
Michigan	418,852	44.0%	116,504	33.55%
USA	6,471,161	20.5%	1,509,982	13.03%

“Poverty Increases Since 2000”



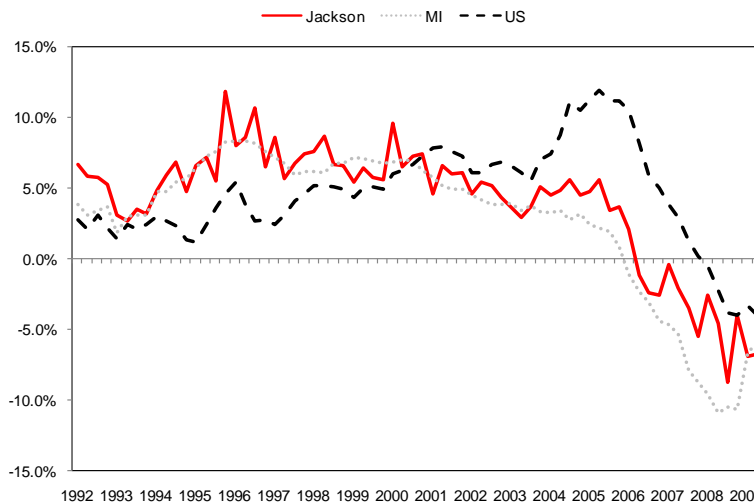
Source: Census Bureau

Regions with stagnant economic opportunities and declining populations lead to other negative economic consequences that can reinforce the original economic problems. For instance, the changing values of home prices are an important indicator of the economic

well being of an area. Relative price differentials across states and regions are the result, in large part, of differences in economic opportunities and all other things held equal, those regions that create a pro-growth economic environment through effective economic policies experience a more robust housing market.

U.S. home prices have experienced record losses by any measure. The Federal Housing Finance Agency’s House Price Index compares purchase-only housing prices with data from Fannie Mae and Freddie Mac. The index is available over a long time period and covers county housing trends across the country.^{vi}

Home Price Appreciation: U.S., Michigan and Jackson County



Source: Federal Housing Finance Agency

Based on the Federal Housing Finance House Price Index, national housing prices fell 6.1 % between the second quarter 2008 and the second quarter 2009 – one of the largest declines in this index’s history – but are up 6.7% over the past 5 years. The drop in housing prices in Michigan was 5.9% between the second quarter 2008 and the second quarter 2009 and is down 20.6% over the past 5 years. Recent housing price declines in Jackson County were even greater than Michigan’s over the past year falling 6.7 % between the second quarter 2008 and the second quarter 2009; they and are down 8.8% over the past 5 years. Consequently, Jackson County’s declining economic competitiveness has worsened the impacts from the national housing bust in Jackson County.

Section II: Education & Workforce Development

The quality of the local workforce is the number one issue in economic development today. Without a proven “pipeline” to prepare its future workforce, a community will be at a distinct competitive disadvantage. At the K-12 level, quality public education systems are needed to prepare graduates for local jobs or college and to make Jackson County a competitive place for middle-class families. Higher education services are needed to train and educate students and to provide continuing education opportunities for working adults. Workforce development initiatives link education with regional businesses and create learning opportunities for workers at many different stages in their careers. This section examines the County’s competitiveness in education and workforce development.

K-12 Education

The foundation for the workforce’s skills begins in the primary and secondary school systems. Having strong public schools contributes to overall community competitiveness by generating workplace and college-ready students and helps make the community marketable and attractive to workers with families.

In the following analyses for Jackson County, all of the County’s public school districts were used to gauge overall competitiveness in comparison to the State of Michigan. The districts included were Columbia School District, Concord Community Schools, The da Vinci Institute, East Jackson Community Schools, Grass Lake Community Schools, Hanover-Horton Schools, Jackson Arts and Technology PSA, Jackson Public Schools, Michigan Center School District, Napoleon Community Schools, Northwest Community Schools, Paragon Charter Academy, Springport Public Schools, Vandercook Lake Public Schools, and Western School District (collectively “the Districts”).

About the School Districts

The Districts in the County serve over 25,000 students. The following chart details each district's spending for education per pupil compared to that of the State.

Expenditures for Education per Pupil: 2007-08

	Average daily attendance	Total expenditures for education	Total expenditures per pupil
Statewide	1,528,815	18,897,719,196	12,361
Jackson Public Schools	5,966	69,802,405	11,700
Northwest	2,945	26,961,218	9,155
Western	2,667	24,002,557	9,000
Columbia	1,603	14,498,529	9,045
Napoleon	1,488	13,550,222	9,106
East Jackson	1,332	12,554,271	9,425
Michigan Center	1,289	12,193,889	9,460
Hanover-Horton	1,239	11,262,002	9,090
Vandercook Lake	1,216	11,825,405	9,725
Grass Lake	1,145	13,671,995	11,941
Springport	946	11,346,734	11,994
Concord	888	8,014,321	9,025
Paragon	614	5,238,082	8,531
da Vinci	250	2,095,142	8,381
Jackson Arts & Tech	128	1,713,329	13,385

Source:
Department of

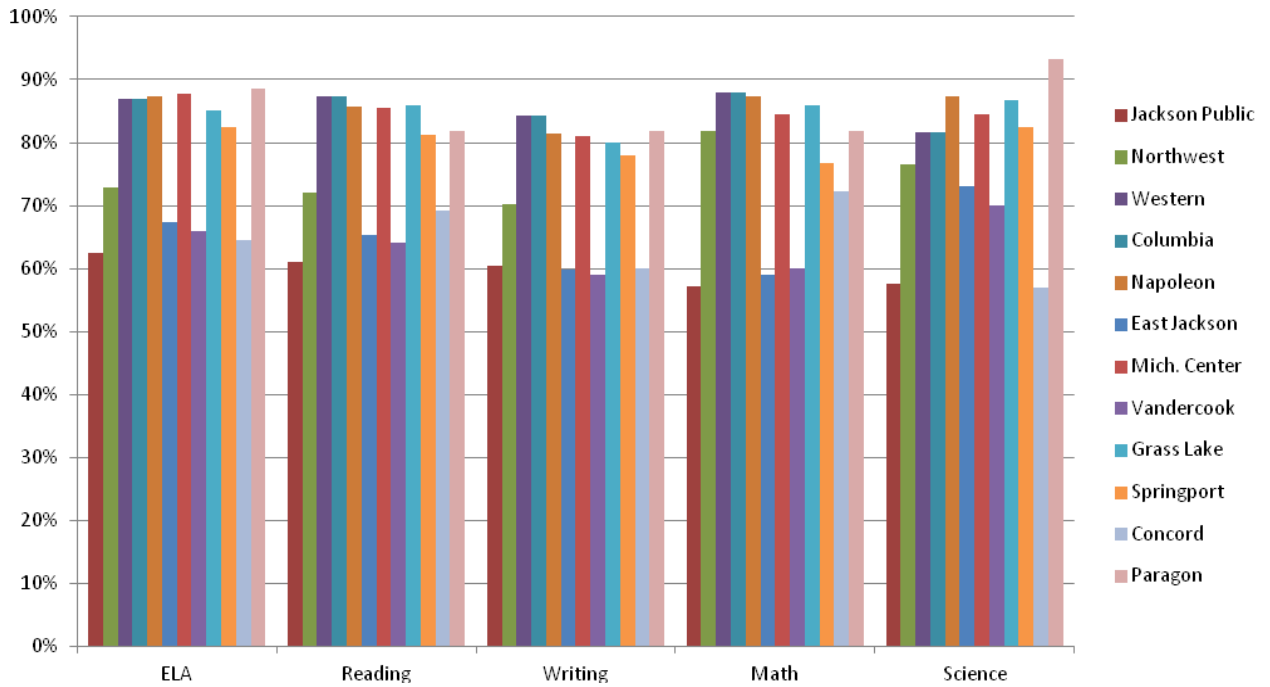
Michigan
Education

The charts the between Districts State of in regards

following illustrate differences the and the Michigan to student

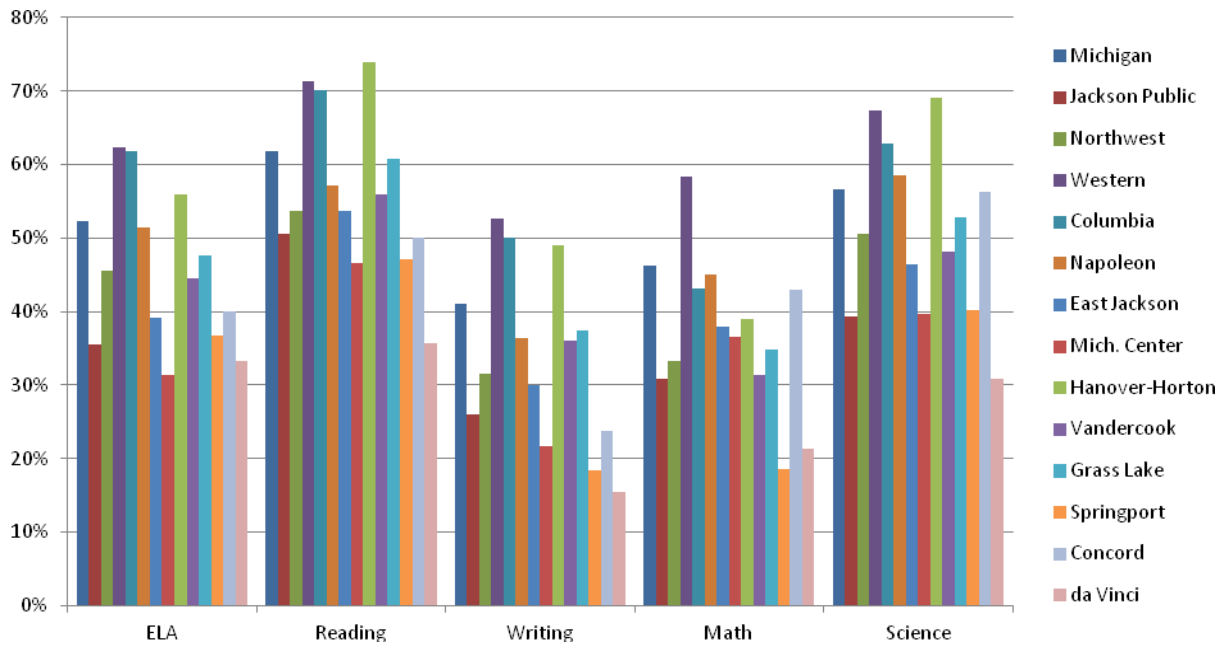
performance on assessment exams, specifically the Michigan Educational Assessment Program (MEAP), Michigan Merit Exam (MME), and the ACT college admission exam.

Michigan Educational Assessment Program (MEAP), 8th Grade: Percentage of Proficient or Advanced, 2008



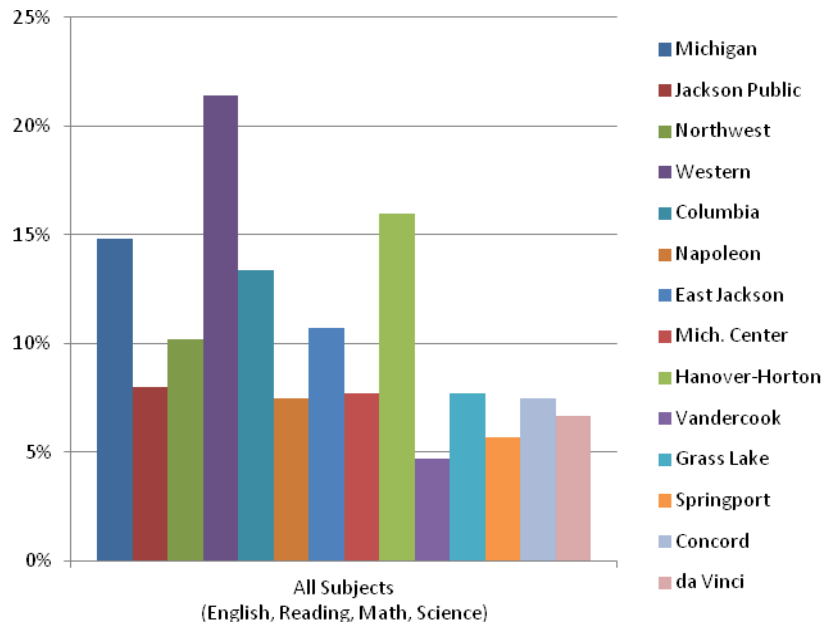
Source: MI Department of Education

**Michigan Merit Examination (MME):
Percentage of Proficient or Advanced, 2008**



Source: MI Department of Education

Percent of Students with College-Ready ACT Scores, 2008



Based on ACT college ready benchmarks (18 in English, 21 in Reading, 22 in Mathematics, and 24 in Science)
Based only on students with college-reportable ACT scores

Source: MI Department of Education

Higher Education

The following are all the higher-education establishments within the Jackson County vicinity, the highest degree offered by each school and the latest number of students enrolled.

Universities and Colleges near Jackson County

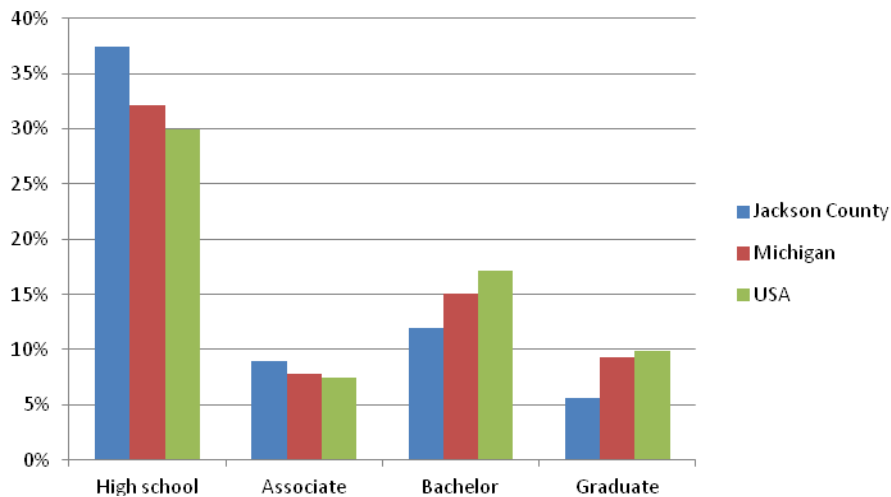
Colleges within Jackson County	Highest Degree Offered	Students Enrolled
Baker College of Jackson	Bachelor	1,003
Jackson Community College	Associate	3,048
Michigan State University Extension	N/A	N/A
Michigan Virtual University	Associate	N/A
Siena Heights Extension	N/A	N/A
Spring Arbor University	Master	2,726
Colleges within One Hour	Highest Degree Offered	Students Enrolled
Adrian College	Bachelor	988
Albion College	Bachelor	1,643
Concordia University	Master	N/A
Eastern Michigan University	Doctor	18,382
Great Lakes Christian College	Bachelor	161
Hillsdale College	Bachelor	1,300
Kellogg Community College	Associate	4,081
Lansing Community College	Associate	9,982
Michigan State University	Doctor	40,082
Olivet College	Master	903
Siena Heights College	Master	1,358
University of Michigan	Doctor	36,885
Thomas M. Cooley Law School	Professional	1,269
Washtenaw Community College	Associate	6,193
Western Michigan University	Doctor	24,568

Despite Jackson County's close proximity to many colleges and universities, some of which are very large, the County's education attainment and per-capita income are below that of the State of Michigan and the nation.

Educational Attainment

Educational attainment is an important indicator of socio-economic wellbeing. Not only is educational attainment related to earning potential and income levels, but it is also one of the key determinants of a workforce's competitiveness. Though a higher proportion of Jackson County adults held a high school diploma or associate's degree than adults state and nationwide, the County's percentage of adults with a bachelor's degree or higher was much less than the state and nation. In order for Jackson County to be competitive, it is vital that more local residents obtain higher degrees and be able to find solid employment opportunities commensurate with their educational training.

Percentage of Adults Age 25+, 3-year Survey, 2005-2007



Source: Census Bureau

Workforce Development Resources

We cannot stress enough the importance of a skilled and knowledgeable workforce. The successful implementation of the Jackson Target Industry study rests, in part, on Jackson County's ability to prepare workers for new and increasing job opportunities. Creating a workforce delivery system that is market-driven, responsive to local economic needs and contributes to the economic competitiveness of the community is essential to Jackson County's ability to attract and retain businesses. Whether it's manufacturing or life sciences – the same challenge exists: an insufficient supply of people with the required skills to fill the positions. To be competitive, Jackson must develop a strategy and make a commitment to ensure that its existing and future workforce is being trained to the skills and competencies that are in demand in the labor market.

Jackson County already has in place an expansive workforce development network; programs which span from K-12 education to higher-education to on-the-job training. The area workforce training network provides workforce development services to jobseekers and businesses. We found that the programs are flexible and in many instances demand driven. A brief description of each of the programs is listed below.

“Project Lead the Way” (PLTW): PLTW is a not-for-profit organization that promotes advanced placement courses for middle and high students. PLTW forms partnerships with public schools, higher education institutions and the private sector to increase the quantity and quality of students graduating from the educational system. Currently, PLTW has partner with twelve school districts in Jackson County. The curriculum is a mix of instructor lead classes and hands-on activity that utilizes team efforts. PLTW has agreements with a number of colleges who will accept specified courses for credit or advanced placement. In addition, the program provides an opportunity for the students to intern with local businesses during the summer as a way of helping them determine if this career path is of interest.

PLTW offers two distinctive programs, engineering and bio-medical sciences. Both programs are focused on emerging technology which will allow for a successful transition from student to professional.

PLTW has created a special series of courses focused on engineering that are incorporated into the middle school and high school years. These courses complement math and science college preparatory programs to establish a solid background in engineering and technology. The engineering program is broken out further into “Gateway to Technology” and “Pathway to Engineering.” These two programs offer classes such as; Design and Modeling, Automation and Robotics, and The Science of Technology.

The biomedical sciences program uses hands-on, real-world problems to engage and challenge students. This program is designed to teach students to: solve problems, conduct research, analyze data, understand real-world problems and participate as part of a team. These programs have a large success rate and are designed to enhance the traditional mathematics and science courses by focusing on the concepts directly related to biomedical science and engineering. PLTW is an innovative initiative which is taking a proactive approach in developing and nurturing our future workforce. PLTW is among many organizations which have begun to collaborate with colleges to encourage workforce development.

The **Jackson Legacy Program (JLP)** is a unique program that provides college scholarships to qualifying Jackson County high school graduates. JLP funds may be applied to tuition, fees and books at Jackson Community College, Baker College, Spring Arbor University or the Jackson Area Manufacturers’ Academy for Manufacturing Careers, (when in partnership with an accredited institution) for the first two years with a provision allowing them to transfer to a college or university of their choice for the remaining two years.

The JLP’s mission is “to cultivate productive citizens through effective, relevant education; to provide Jackson County high school graduates with opportunities to further their education; and to revitalize Jackson County.” An important goal of the program is to ensure that Jackson has effective pre-secondary and post-secondary educational opportunities to nurture productive citizens committed to the area's future and to stem the out-migration of talented young people from the community. Since its inception, the JLP has funded an impressive 444 students; students that might not otherwise go on to a post secondary education.

The JLP sends a strong message to residents and businesses alike; that the Jackson community is serious about its commitment to prepare students to compete for the workforce of tomorrow.

The Academy for Manufacturing Careers This program is sponsored by and delivered through the Jackson Area Manufacturers Association (JAMA) in partnership with The Enterprise Group of Jackson, and South Central Michigan Works! The Academy is certified as a Registered Apprenticeship Program by the U.S. Dept. of Labor’s Bureau of Apprenticeship and Training (USDOL-BAT), and was recently recognized as a state

proprietary school.

- *College Credit*—most courses automatically earn college credit at one or more area institutions at no additional cost.
- *Manufacturer Oversight*—A Manufacturers' Board of Review keeps the program relevant to the needs of the manufacturers.

The Skilled Trades Related Technical Instruction (RTI)/Apprenticeship and Pre-Apprenticeship Programs offered by the Academy for Manufacturing Careers are designed by Manufacturers to meet the needs of Jackson County Manufacturers. This program is sponsored by the employer for employees. The program is customized to meet the needs of each employer. However, the apprenticeship has six core programs which can be adapted to meet specific needs. The core programs are tool and die maker, machinist, machine builder, machine repair, industrial electrician, and industrial maintenance mechanic. Each program begins with core curriculum and then is developed for specialized needs. One past program was for the advanced manufacturing industry; training employees on the manufacturing of wind turbines. Programs can be designed to meet the training needs for the target industries selected by Jackson County. The Academy for Manufacturing Careers also provides Manufacturing/Technology Camps (I Can Make It Camp, Machining U Camp, and Gateway Academy Camp) which provides an educational funnel for workforce development.

Jackson Community College (JCC): JCC developed the Corporate and Continuing Education (CCE) program to better serve the employers in South Central Michigan. The CCE helps determine the companies' training needs. Once training needs are established the CCE creates a customized training system for the company. Jackson Intermediate School District, Consumers Energy, Alro Steel and Tenneco are a few of the organizations that have partnered with the CCE to develop training. Jackson Community College Business and Industry Support Center (BISC) is another program which provides training and education to different industries. Some of the programs offered by the BISC are; Supply Chain Management, Manufacturing Process and Production, Health and Safety and Quality and Continuous Improvement. The CCE and BISC are capable of developing programs in advanced manufacturing, food processing and life sciences (areas of biotechnology and pharmaceuticals). Jackson County can work closely with either program to design training focusing on its target industries.

The South Central Michigan Works (SCMW!): SCMW! helps employers recruit, develop, and keep skilled workers. Their main focus is ensuring the South Central Michigan region develops and sustains prosperity based on strong employers with a supply of competent skilled workers. SCMW operates as a conduit for businesses to partner with educational institutions or training facilities.

SCMW has assisted and fostered the development of the Jackson Academy of Manufacturing Careers. The academy was predicated on providing on-demand training in a timely and efficient manner to area manufacturing concerns and to support and promote the re-establishment of apprenticeship programs to the region. The growth of the academy

had been explosive and has recently been recognized as a state proprietary school. Another success program SCMW has facilitated is the Bio-Chem. Program of Lenawee County. Lenawee County needed chemical technicians and chemical operators. The need was not being supported by its local schools. This initiative fulfilled the need to address hazmat and material handling safety training needs for the industry on a local level rather than having to secure required regular recertification training from outside the area. The program has provided cost savings to regional employers; and has aided in assisting regional chemical employers to identify shared needs and concerns. The initiative also encouraged schools to promote programs in grades K thru post-secondary for biosciences. The creation of Science Summer Camp for grades 3-12 and the Biochemical Technology Program for grade 11-12 are two programs focusing on the development of our future workforce. SCMW specializes in designing customized training programs to meet the needs of its clients. Jackson County will work with SCMW to leverage prior programs and design new programs to meet its needs for target industries.

Key Findings & Recommendations – Education and Workforce Development

- K-12 school system: MEAP scores are well below the State average and pose a significant threat to effective implementation of a strong economic development strategy. Jackson officials must focus on improving academic achievement in every grade level.
- Jackson’s K-12 system must continue to work with area businesses and local colleges and universities to ensure that training and education programs are aligned with the needs of the target industries and take a proactive approach to ensure that students are being prepared for job opportunities in the new economy.
- Through collaboration between businesses, leaders of the local K-12 system, workforce development organizations and institutions of higher learning, Jackson County should develop specific career pathways in each of the target industry sectors.
- A higher proportion of Jackson County adults held a high school diploma or associates degree than adults state and nationwide. This is positive information in an otherwise bleak educational environment.
- Proximity to higher education establishments - Jackson County is located within a one hour drive of 21 colleges and universities. However, educational attainment levels lag behind the state and nation, putting Jackson County at a competitive disadvantage.
- Teachers, guidance counselors, and parents do not fully understand the occupations or the competencies and skills required to adequately fill the jobs of the 21st century; specifically, those jobs identified in our target industry study.
- Develop teacher externships for teachers in the Jackson County elementary and high school systems, as well as in the community college systems. Externships should

provide a variety of hands-on, industry-specific experiences that they can bring back to the classroom and integrate into the curriculum.

- Develop “Bridge” programs between secondary and post-secondary education so that individuals with an interest in any of the target industries, but not the prerequisites, can enter Associate Degree programs.
- Develop and enhance partnerships with high school student associations to increase exposure to career opportunities in each of the target industries
- Improve high out-migration levels – which constrains job attraction and retention, thereby hindering educational diversity, which is required for communities to maintain a competitive advantage.

Section III: Strength, Weakness, Opportunity and Threat (SWOT) Analysis

SWOT Analysis is a strategic planning tool used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a project or in a business venture.

Strengths and weaknesses are internal attributes of Jackson County. They can be considered helpful or hurtful to achieving an objective. Opportunities and threats are external conditions which can be used to build upon an objective and help mitigate any outside factors.

Jackson County’s SWOT analysis was developed using several sources of information. The sources include the Economic Develop Roundtable, interviews from local businesses and citizens of Jackson, Economic Development Conference along with existing information. The information from the SWOT Analysis can be used to implement a plan of action once target industries have been identified.



Internal Factors

Strengths

- Jackson County is centrally located in the southern part of Michigan with close proximity to the major markets of Detroit and Chicago.
- The county maintained a steady increase in size throughout the years. Jackson had approximately 224 people per square mile it contains an estimated 60,000 households.
- About 35% of the households have children under 18 living with them.
- Located between more densely populated counties, Jackson provides a wide range of housing for residents. City living, countryside or lakeside homes allow options for everyone and every lifestyle.
- There are six colleges located within Jackson County and another fifteen colleges within an hour drive.

Weaknesses

- Jackson County is rated slightly below the national average in education.
- As demonstrated above, Jackson County has been underperforming the U.S. economic potential for years, and has deteriorated further during the current recession. Manufacturing tied to the automobile industry is a main source of weakness that continues to weaken as the automobile industry reformulates a new strategy for the future.
- Jackson County is experiencing poor economic climate – national, state, local.
- Too many economic development groups in the county are causing fragmentation, especially as it relates to a common vision. The result is the economic development groups compete with one another instead of working as a team toward a common goal.

Jackson County suffers the loss of youthful, educated professionals to out-migration, and is now unable to retain the current highly educated professionals. Much of this loss stems from business closures which can be attributed to the current economy.

External Factors

Opportunities

- The existence of the numerous economic development groups can be turned into a strength if these groups can be unified and work toward a common goal.

- The large number of 4-year and 2-year universities in and around Jackson County provides a critical resource that can be leveraged to increase the skills and educational attainment of the local population.
- The “creative class”, a term coined by author Richard Florida, refers to individuals creating new forms of work, products or other visionary breakthroughs. This class of workers is viewed as pivotal for thriving in the New Economy. The creative class workers emphasized needs to coincide with the focus industries (see below); however general infrastructure that is attractive to the creative class should be emphasized.
- As part of helping the focus industries thrive, strong connections between the academic and business communities should be fostered (especially helpful for the life sciences industry, see below). These connections are particularly helpful for new start-up ventures and small business development that should also be a focus of the economic development strategy.
- Three industry focuses that complement one another should be emphasized. The life sciences (particularly life science manufacturing) and advanced manufacturing (particularly geared toward alternative energy) industries provide high returns and strong probabilities for success. The tourism & leisure industry provides good returns with very strong probabilities for success.

Threats

- Jackson County may not experience a strong recovery in the midst of a national recession or weak growth.
- The economic development community, if it succumbs to territorialism, could jeopardize the growth opportunities.
- If Jackson County does not improve its economic landscape to better compete in the globalized economy, then it is possible that other regions, states or countries will continue to attract industry, employment and wealth to the detriment of Jackson County. Additionally, the economic drain will exacerbate the current net out-migration away from Jackson County. Arresting this net out-migration is a precondition for sustainable economic development in Jackson County.
- As a final threat, a “fear of change” mentality threatens the implementation of the new strategies that are necessary to turn the Jackson County economic decline around.

Section IV: Assessing the Viability of the Identified Potential Industries

Duff & Phelps has identified 3 potential industries that might be appropriate target industries for Jackson County Michigan. These industries are: Life Sciences, Leisure & Travel, and Advanced Manufacturing with a focus on alternative energy. This section assesses the viability of each of these target industries with respect to Jackson County's current economic landscape; policy environment; and infrastructure, which incorporates current industries, proximate universities, and community demographics.

Clearly there are other industries that can thrive in Jackson County, and our focus on the three target industries should not constitute a rejection of other potential growth industries such as food processing or the aerospace industry. Instead, these industries were chosen based on both the potential for a viable industry cluster to develop coupled with the potential reward from successfully creating the targeted industry cluster in Jackson County.

The economic landscape in Jackson County and Michigan is not conducive to fostering economic growth. Taxes are too high and regulations are too burdensome. Alleviating these costs will increase the ability for all industries to thrive. With respect to the 3 potential industries identified, Jackson County has strengths and comparative advantages that can help viable industry clusters in these areas develop or expand.

A theme we come back to often in this analysis is the importance of coordination across state and local development strategies. The connection between the target industries from our analysis and available incentive programs already established should help reinforce the success of both strategies.

We judge the appropriateness of a potential industry for Jackson County on two broad criteria:

- The ability of the current population, infrastructure, and resources (either local, state or federal) of Jackson County to sustain a viable and growing cluster in the identified industry; and,
- The expected benefits to Jackson County if a viable industry cluster is established.

Based on these criteria, a 3 X 3 matrix of potential outcomes is possible, see Table below. The rows measure the expected probability of success for Jackson County if the County pursued one of the identified industry clusters. The columns represent the expected rate of growth from those industry clusters if successfully established in Jackson County. The industry's economic growth potential is measured as:

- Economic growth significantly above the U.S. average (Accelerated);
- Economic growth around the U.S. average (Average); and,
- Economic growth below the U.S. average (Below Average).

Jackson County wants to focus on those industries that are growing faster than average and that have the highest probability of flourishing in Jackson County. Alternatively, especially due to Jackson County's dependence on the automobile industry whose growth prospects are already significantly below average, Jackson County wants to avoid those

industries with growth prospects below the U.S. average. Jackson County may want to consider industries whose growth is average relative to the U.S. economy if the chances of successfully establishing a viable cluster in the county are high enough.

Alternative Return Scenarios from Jackson County Economic Development Initiatives

Chance of Success	Expected Economic Growth		
	Accelerated	Average	Below Average
High	Above Average Return	Average Return	Negative Return
Medium	Above Average Return	Average Return	Negative Return
Low	Average Return	Below Average Return	Negative Return

The logic of the Table is the basis from which the viability of the 3 potential industries are judged. Because of their relative growth potential and the promise they hold for resurrecting the Jackson County MSA, three industries have been selected as targets for Jackson, including: life sciences, travel & leisure, and advanced manufacturing, especially alternative energy.

One central feature of Jackson County that will benefit all three industries under consideration is Jackson County’s central location, transportation infrastructure, and proximity to other major cities such as Detroit, Ann Arbor, and Chicago. Jackson County has a corporate airport within the city limits and commercial flights out of Detroit and Lansing within a one hour drive. The Michigan Department of Transportation has recently granted \$282,000 for the Jackson County Airport to begin hiring consultants for the \$30 million runway expansion project.^{vii} (the second of two runway expansions) Interstate 94 connects Detroit with Chicago and runs through Jackson, as does an Amtrak line. The two provide excellent opportunities for commuters and other business travel. Along with the rail line, transportation of raw materials and finished goods can be handled by one of the 38 deep water ports in the state of Michigan.

Life Sciences

The life sciences industry is typically defined as firms primarily engaged in conducting research and experimental development in the physical, engineering, and life sciences, such as biotechnology, pharmaceuticals, medical devices, research and development, and health-care services.

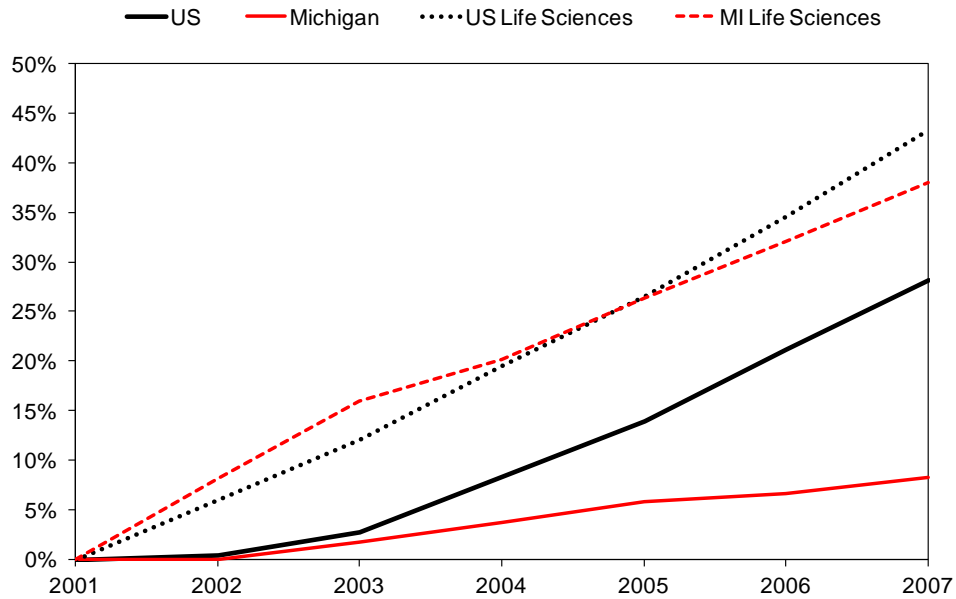
The life sciences industry is growing quickly and has generated many high-level employment opportunities throughout the nation. Successful life science clusters have been important contributors to several cities including the greater Boston area, Philadelphia, San Francisco, San Diego, Raleigh, and Chicago. Compared to the U.S. average, the life sciences industry pays well. As of 2006, according to the Bureau of Labor Statistics, those industries that comprise the Life Sciences industry pay between 41% and 106% more than the average private sector job in 2006.

**U.S. Average Annual Wages per Employee,
2006^{viii}**

Drugs & Pharmaceuticals	\$86,892
Information	\$76,257
Professional, Scientific, and Technical Services	\$71,544
Research, Testing, & Medical Laboratories	\$71,284
Total Biosciences	\$70,959
Agricultural Feedstock & Chemicals	\$67,870
Finance and Insurance	\$65,095
Medical Devices & Equipment	\$59,441
Manufacturing	\$54,865
Construction	\$43,215
U.S. Total Private Sector	\$42,272
Transportation and Warehousing	\$42,013
Real Estate and Rental and Leasing	\$41,071
Health Care and Social Assistance	\$40,205
Retail Trade	\$25,849

Not only are wages in the life sciences higher, total wages paid in the life sciences industry for the U.S. have been steadily increasing since 2001 and are up 43.3% over the seven year period between 2001 and 2007. This is dramatically higher than the 28.2% rise in total wages during the same period.^{ix} Figure LS1 shows the difference in the growth of life science wages against total US wages, Michigan wages, and Michigan life science wages. Wages in Michigan's life science industry grew 38.0%, which while still below the national average was more competitive than the overall wage growth of 8.3%.

**Figure: LS1 Life Science Cumulative Wage Growth
2001-2007**

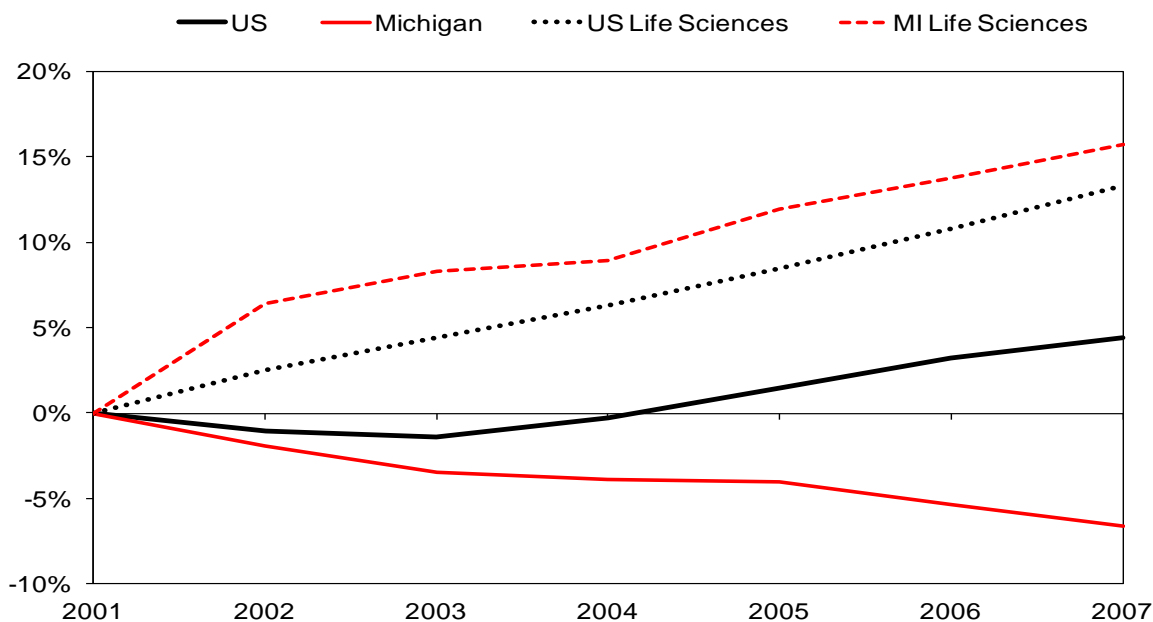


Life science employment rose 13.3% across the country from 2001 to 2007, while U.S. employment rose 4.4% over the same period (see Figure LS2). Michigan’s life sciences industry employment rose 15.7%, even better than the national average, compared to the Michigan statewide employment loss of -6.7%.

Source: BLS

According to the 2008 Battelle report for BIO (the Biotechnology Industry Organization), “The biosciences are recognized globally as a key driver of modern economic progress, offering enormous potential for linking basic research innovations with new market opportunities.”^x According to the report, employment in the life science industry is growing significantly faster than the U.S. average and, perhaps more importantly from Jackson County’s perspective, “The biosciences sector pays, on average, 68 percent higher salaries than the average private-sector job. The average annual wage of the biosciences sector is approximately \$71,000 as compared with an average annual wage of \$42,000 for the total private sector.”^{xi}

Figure: LS2 Life Science Cumulative Employment Growth 2001-2007



Source: BLS

The life science industry is also attracting a great deal of investment and is attracting a large number of students. According to MICHBIO:

- *Academic bioscience R&D expenditures totaled \$29 billion in FY 2006*
- *U.S. higher education institutions awarded bioscience-related degrees to more than 143,000 students in the 2006 academic year*
- *Venture capital investments in bioscience companies reached \$11.6 billion in 2007*
- *More than 82,000 bioscience-related patents were awarded between 2002 and 2007 in the United States.^{xii}*

The sheer number and expenditures of state programs (including Florida, Georgia, Texas, Massachusetts, and Michigan) to attract life science clusters are further proof of the perceived growth premium of the life sciences industry. Should a viable life science cluster become established in Jackson County, total employment and income growth in the region would benefit greatly.

Based on the total wage and employment growth of the life sciences industry, the expected economic growth potential from targeting the life sciences industry is accelerated. While other measures, such as total output or total investment are also meaningful, clearly total wage and employment growth in the life sciences industry is accelerated, both nationally and in Michigan. Growth forecasts for the industry indicate that the life sciences industry, driven by biotechnology will continue to outpace overall U.S. economic growth for the near future.^{xiii}

Michigan is currently a successful player in the life sciences industry space, and is growing at a rapid pace. According to MICHBIO:

Biosciences programming through the Michigan Economic Development Corporation's (MEDC's) 21st Century Jobs Fund increased from \$3.5 million in 2007 to \$18.2 million in 2008, targeted at a series of academic-industrial Centers of Excellence. Among the recent biosciences projects approved by the MEDC was \$3.4 million to re-use a former Pfizer facility in Holland as a biosciences incubator/commercialization center.

Since the last BIO report, the \$109 million 21st Century Investment Fund, created as part of the 21st Century Jobs Fund, joined the earlier \$95 million Venture Michigan Fund in making investments in venture capital funds active in Michigan. In addition to functioning as a second source of funds, the 21st Century Investment Fund may also make direct investments in venture capital deals.

At an earlier stage of investment, the State's 12 "SmartZones"—tax-advantaged districts each equipped with university-affiliated incubation or commercialization programs—jointly launched a return-oriented Michigan Pre-Seed Capital Fund, which by March 2008, had invested \$5 million in 22 companies, many in the biosciences.

Michigan State University in Lansing was a collaborator with the University of Wisconsin in Madison in the Great Lakes Bioenergy Research Center, which was awarded \$125 million by the U.S. Department of Energy in 2007. The Center also involves Pacific Northwest National Laboratory, Oak Ridge National Laboratory, and three universities in Florida, Illinois, and Iowa.^{xiv}

In fact, the Pharmaceutical Manufacturer's Association of America (PhRMA) has documented that wages and salaries of the bioscience industry was \$2.5 billion in 2007.^{xv} Perhaps more importantly, the top notch research universities and other assets are core fundamentals that provide a major competitive advantage for Michigan in developing a vibrant life sciences cluster. Another Michigan advantage is the extensive investments to support the life sciences industry that are already committed including:^{xvi}

- A \$3.5 million investment in Biotech R&D incubation facility to reuse former Pfizer facility.
- \$18.2 million in Centers of Excellence.
- The Michigan Pre-Seed Capital Fund, which makes equity investments in early-stage companies, that by March 2008 has invested \$5 million in 22 companies, many in the biosciences. A Jackson County company, Transpharm Preclinical Solutions, located in Napoleon Township, received a \$400,000 loan from the state's Company Formation and Growth Fund.
- Michigan's 15 "Smart Zones"—tax-advantaged districts each equipped with university affiliated incubation or commercialization programs. (one of which is located in Blackman Township, Jackson County).

As further evidence to the existing foundation for the creation of a vibrant life sciences cluster in Michigan, universities in Michigan graduated the 8th largest number of students with higher education degrees in bioscience.^{xvii}

Local economic development strategies are more successful when these strategies are connected to the strategy at the state level, see Section III. From this perspective, focusing on the life science industry is a sound strategy for Jackson County despite the strong competitive environment as these programs will leverage the considerable investments made by state and other localities in Michigan.

Additionally, Michigan in general and Jackson County in particular possesses several of the key attributes that have proven necessary in the development of previous viable research clusters.^{xviii} First amongst equals is a strong hospital system that provides key facilities and human capital. Hospitals in the Jackson County area include:

- Allegiance Health, formerly W A Foote Memorial Hospital (a major employer in Jackson County)
- Eaton Rapids Medical Center (26 miles away in Eaton Rapids, MI)
- Chelsea Community Hospital (28 miles away in Chelsea, MI)
- Hillsdale Community Health Center (29 miles away in Hillsdale, MI), and
- University of Michigan Hospital (40 miles away in Ann Arbor, MI).

Related to the hospital infrastructure needs, viable life science clusters also benefit from Universities with proven histories of obtaining research grants and creating relevant technologies. In fact, the United States leads the world in the number of biotech patents filed because of the strength of its university system.^{xix}

The areas with strong life science clusters all have one thing in common: they all have top research universities nearby to ignite innovation and ensure continued growth. Both life sciences and alternative energy will require new discoveries to maintain any chance of sustainability and top research institutions are necessary to make this happen. If a strong research cluster could be encouraged to cultivate in Jackson, the city would not only become an important part of the greater state of Michigan, but it could also become a key to other sources of US growth, in much the same way Silicon Valley has in the past two decades. Universities serve as an important generator of basic research and testing that forms the genesis of the next generation of commercialized life science technologies; and a strong technology cluster benefits from the transfer of patents to the private sector. Once again, Jackson County meets this criterion. The University of Michigan, Wayne State University, and Michigan State University are all within 70 miles of Jackson County. All of these universities have a proven track record of creating value-added research and could become great partners for Jackson in the future.

Successful life science clusters also have complimentary industries nearby to support and encourage the growth in the entrepreneurial life science ventures. Synergies between start-ups, venture capital firms, university research departments, large corporations, and other stake holders should be promoted to maximize the chances of creating a vibrant cluster.^{xx}

Recommended Life Sciences Industry Focus

Within the life sciences industry, the manufacturing sub-industries play to Jackson County's infrastructure and historical strengths. According to PhRMA:

The agricultural feedstock, chemical feedstock, and agricultural chemical industries are all relatively small industries, cumulating to less than 1,000 jobs in Michigan and barely more than 100,000 jobs in the nation in 2007, but the fact that they are growing rapidly in Michigan while declining or modestly increasing in the United States during this period is noteworthy. Another relatively successful bioscience manufacturing industry in Michigan is medical electronic instruments manufacturing (employment growth of 41.2 percent between 2002 and 2007) and, compared with the chemical and agricultural industries, this is a relatively large industry in Michigan (1,636 jobs in 2007) and the nation as a whole (106,300). So, the aggregate employment data on the bioscience industry disguises the fact that several of its sub- industries in Michigan, such as medical instruments, are doing relatively well. This could present an opportunity for Michigan on the economic development front.^{xxi}

The historical success of the life sciences manufacturing industries in Michigan provides a strong justification for Jackson County to dedicate its life sciences investments toward manufacturing, especially the medical electronic instruments manufacturing; and Research and Development in Biotechnology and Testing Laboratories that is experiencing both strong growth and is large in size. Agricultural feedstock manufacturing, which is also historically linked to Jackson County, is another high value target for Jackson County.

Based on our findings we recommend the Jackson economic development team focus on the following North American Industry Classification System codes:

NAICS	Title	Description
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	This U.S. industry comprises establishments primarily engaged in manufacturing electromedical and electrotherapeutic apparatus, such as magnetic resonance imaging equipment, medical ultrasound equipment, pacemakers, hearing aids, electrocardiographs, and electro-medical endoscopic equipment.
334517	Irradiation Apparatus Manufacturing	This U.S. industry comprises establishments primarily engaged in manufacturing irradiation apparatus and tubes for applications, such as medical diagnostic, medical therapeutic, industrial, research and scientific evaluation. Irradiation can take the form of beta-rays, gamma-rays, X-rays, or other ionizing radiation.
334516	Analytical Laboratory Instrument Manufacturing	This U.S. industry comprises establishments primarily engaged in manufacturing instruments and instrumentation systems for laboratory analysis of the chemical or physical composition or concentration of samples of solid, fluid, gaseous, or composite material.
541711	Research and Development in Biotechnology	This U.S. industry comprises establishments primarily engaged in conducting biotechnology research and experimental development. Biotechnology research and experimental development involves the study of the use of microorganisms and cellular and biomolecular processes to develop or alter living or non-living materials. This research and development in biotechnology may result in development of new biotechnology processes or in prototypes of new or genetically-altered products that may be reproduced, utilized, or implemented by various industries.
541380	Testing Laboratories	This industry comprises establishments primarily engaged in performing physical, chemical, and other analytical testing services, such as acoustics or vibration testing, assaying, biological testing (except medical and veterinary), calibration testing, electrical and electronic testing, geotechnical testing, mechanical testing, nondestructive testing, or thermal testing. The testing may occur in a laboratory or on-site.

Referring back to the 3 X 3 analysis matrix, life sciences manufacturing (especially the medical instruments and agricultural feedstock) provides a high return and high probability investment due to the accelerated growth potential and high wages associated with these sub-industries. It provides high probability due to the previous success Michigan has experienced with these industries coupled with the appropriate economic and academic infrastructure to support these industries.

Obstacles to Success

Despite these positive attributes, there are several negatives that counterbalance the positives listed above. As mentioned above, San Diego, San Francisco, Boston, Philadelphia and Durham are already leaders in the life sciences industry. Because the life sciences industry thrives on highly skilled workers, established research clusters have advantages because pools of skilled workers are already living in close proximity to the established clusters. Consequently, these cities have distinct advantages in attracting new life science firms and entrepreneurs.

Furthermore, many states, such as Texas and Florida, are devoting large sums of money and resources to attract existing or new life science infrastructure to their states. The life science competitive space is, consequently, crowded making it difficult for cities to differentiate themselves and attract entrepreneurs and established firms.

Additionally, the profitability of these industries, despite the excitement surrounding it, is not strong. For instance, the 23rd annual report on the biotechnology industry, "...officially records that after 40-plus years since the industry began it finally turned a profit in 2008."^{xxii} Additionally, acquiring funding for research can be one of the most difficult and important requirements for a successful life sciences venture. The financial meltdown has made access to these funds particularly difficult, endangering many of the most entrepreneurial life sciences ventures.^{xxiii}

Although the benefits from successfully establishing a life sciences cluster in Jackson County are high, the probability of successfully creating this cluster is not as high but still promising. Because of Michigan's track record, and emphasis on growing the life sciences industry, coupled with Jackson County's possession of many necessary attributes for a vibrant life sciences cluster; on net, Jackson County has as good a chance as other areas in creating a vibrant cluster – save over the aforementioned economic landscape concerns, which diminishes the growth potential for all of the industries considered in this report.

As a final thought, it is important to build up "Significant private sector and community support behind the concept of establishing a cluster in that region."^{xxiv} Because successful research clusters require extensive community infrastructure, motivated local participants increase the probability of success.

Key Findings and Recommendations:

- Focus on the NAICS codes that relate to *Medical Devices & Equipment & Agricultural Feedstock* as these have experienced sustained employment growth of 41 percent and 212 percent respectively, between 2002 and 2007.
- The second level of focus should include analytical laboratory and testing opportunities. Working with the local hospitals, and colleges and universities to identify facilities such as laboratories and equipment is an important methodology to attracting and sustaining this sector.

- Leverage the region’s academic resources to identify new opportunities in each of the target industries.
- Jackson must develop relationships with the Tri-Corridor Program or the individual academic institutions, i.e. U of M, MSU, Wayne State to overcome the fact that University-R&D expenditures did not translate into comparable enterprise development and technology-licensing activity in the region.
- Create entrepreneurial programs to support start-up businesses in region.
- Improve access to capital; Develop public/private seed fund program in collaboration with local banks, MEDC, local/regional hospitals, manufacturers and universities. Develop relationships with angel investors and venture capital funds.
- Develop a “culture of entrepreneurship” in Jackson and the region, and develop a process to connect entrepreneurs to necessary resources, websites, seminars, etc
- Develop marketing materials that specifically identify Jackson’s proximity to critical elements such as research, equipment, supplier inputs and services to help with product development.

Advanced Manufacturing: Alternative Energy & Food Processing

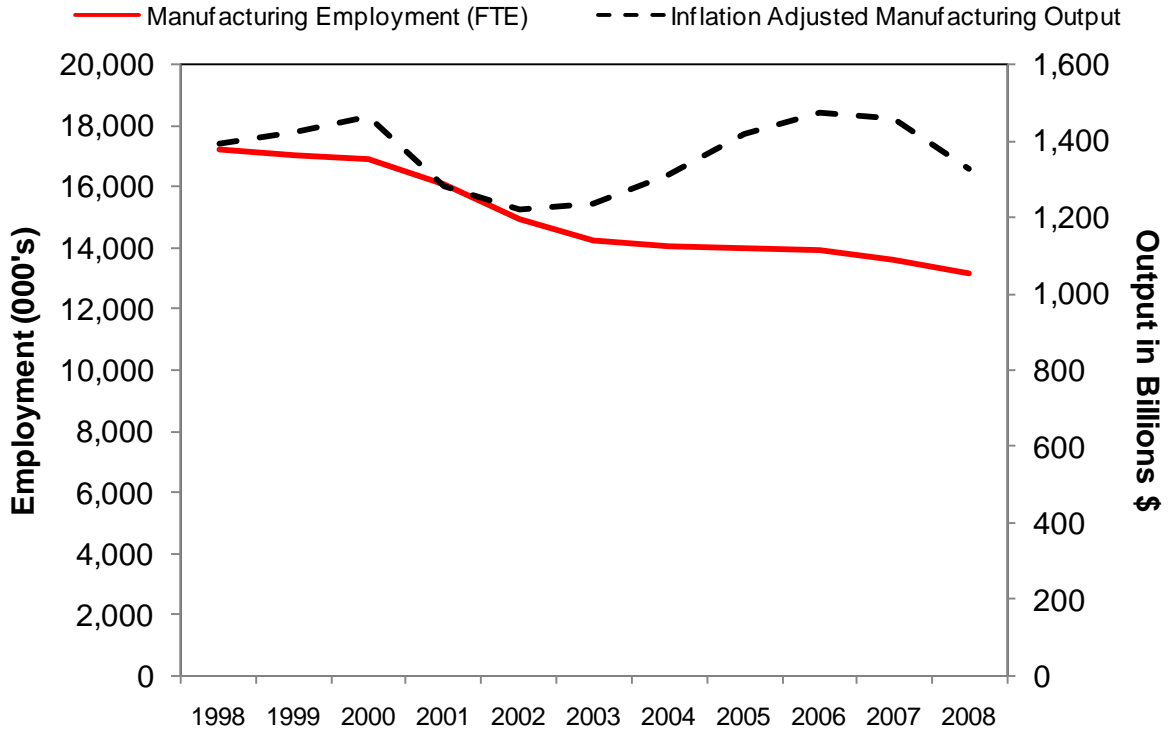
Manufacturing employment has been declining in the United States and Michigan for the past decade. Technological growth has increased manufacturing’s productivity, however, have allowed firms to produce the same dollar value of products (adjusted for inflation) with fewer people. As a result, overall output of the manufacturing industry has been flat when adjusted for inflation. Figure AM1 shows that the inflation adjusted national output of manufacturing has remained around \$1.4 trillion over this entire time period. At the same time, manufacturing employment declined from 17.2 million full and part-time workers in 1998 to 13.2 million workers in 2008. Figure AM2 shows the consequences: a general upward trend in U.S. manufacturing productivity due in large part to advanced manufacturing techniques.

The 8.5% decline in U.S. manufacturing employment between 2001 and 2007 stands in contrast to the total employment growth of the U.S. economy (see Figure AM3). Michigan’s manufacturing employment performance was even worse than the U.S. falling 28.0% over this time period from 557,981 people in 2001 to 401,644 people in 2007.^{xxv} Michigan’s greater reliance on manufacturing jobs compared to the national economy led total employment growth in Michigan to decline during a period of relatively strong employment growth for the U.S. overall.

Despite the declining employment trends, because output per worker, or total productivity, in the manufacturing industry was rising, total manufacturing wages paid increased. Total manufacturing wages paid per full time equivalent employee rose from \$50,002 in 1998 to

\$56,407 in 2008 (see Figure AM4). The rise in total wages means that while fewer people were employed in this industry, those who were employed had an increasing income.

Figure AM1: U.S. Manufacturing Full and Part-Time Employment in thousands vs. Gross Output
(Billions of 2008 dollars)



Source: BEA National Income and Product Accounts

Figure AM2: U.S. Manufacturing Productivity
(Billions of 2008 dollars)

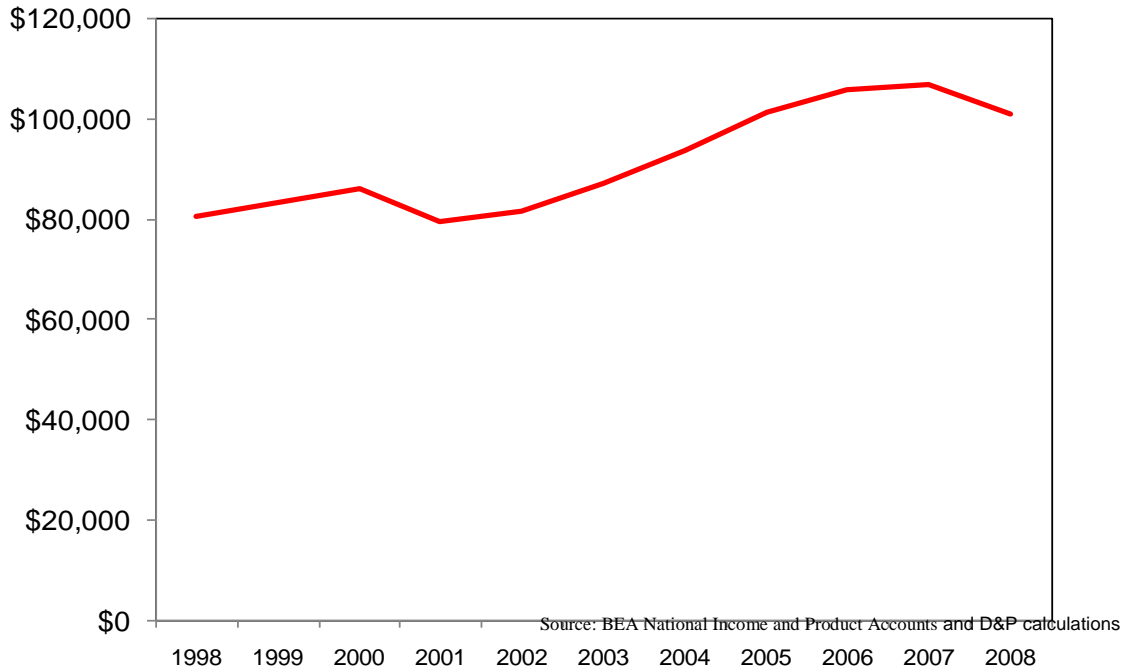


Figure AM3: Cumulative Manufacturing Employment Growth 2001-2007

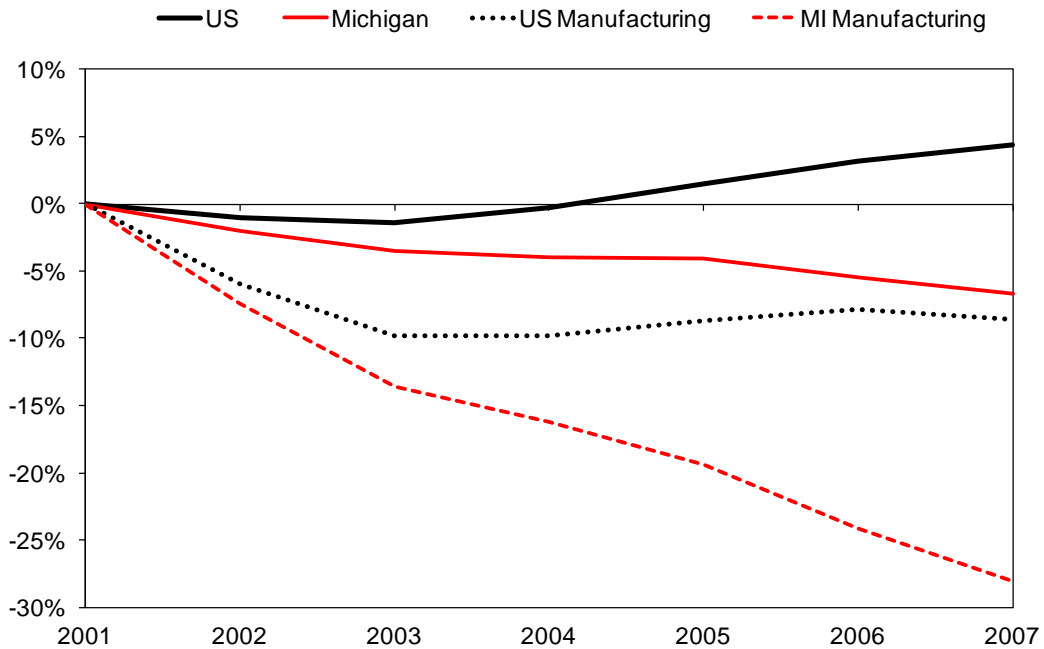
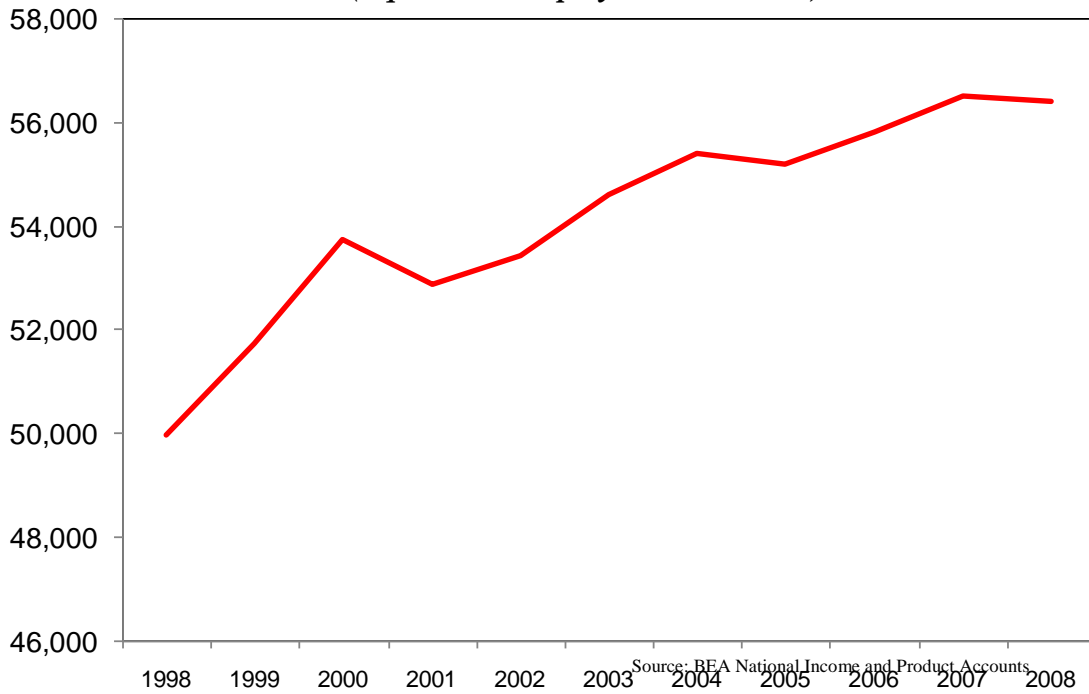
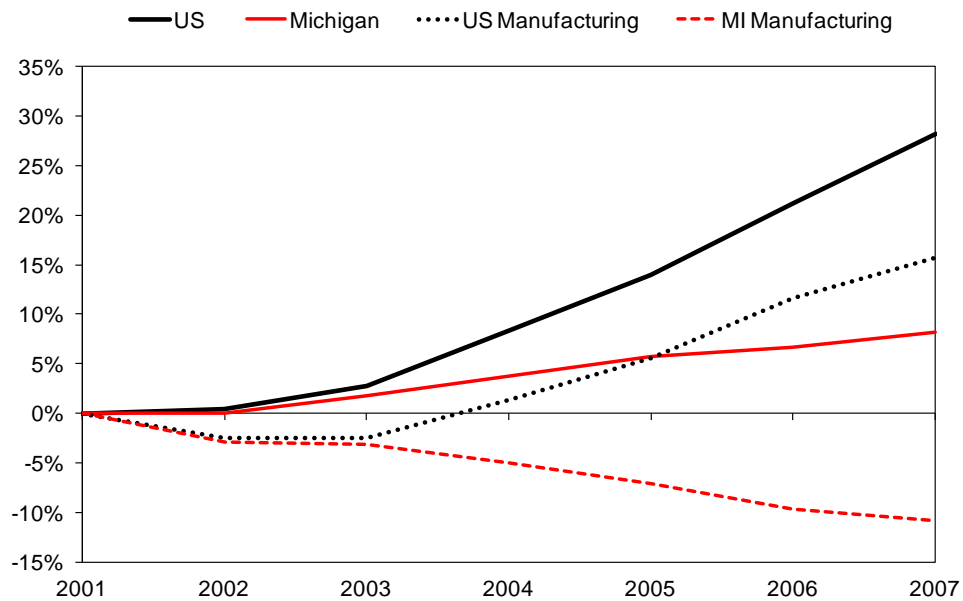


Figure AM4: U.S. Manufacturing Total Manufacturing Wages Paid per Full Time (Equivalent Employee 1998 – 2008)



Due to the high and rising wages in the manufacturing industry, manufacturing (especially advanced manufacturing industries) provide a high return industry based on our 3 X 3 analysis matrix, with the caveat that the total employment in the specific manufacturing sector is growing. Jackson County's historic connection to the manufacturing sector provides a solid base (a high probability of success from our 3 X 3 analysis matrix) from which to attract those portions of the manufacturing sector that are still experiencing growth, thereby bringing a well-paying growing manufacturing sector back to the area. However, this optimism must be tempered by the declining number of workers in the manufacturing sector. Despite the growth in wages per employee illustrated in Figure AM4, total wages paid in the U.S. economy grew faster than total wage growth in the manufacturing industry, see Figure AM5. Total wages in Michigan's manufacturing industry actually fell 10.7% over this time period, due in large part to the declining automobile industry.^{xxvi}

Figure AM5: Manufacturing Total Wages Growth 2001-2007



Source: BLS

Recommended Manufacturing Opportunities

Advances in the production process – advanced manufacturing techniques – has allowed the U.S. manufacturing industry to maintain its output levels with a declining workforce. The result has been constant production levels, higher wages, increased quality, but a smaller manufacturing labor force. Advanced manufacturing techniques have been applied to most every U.S. made product and require highly trained engineers and technicians. In fact back in 2006, 81% of American manufacturers were facing a moderate or severe shortage of qualified workers according to the Manufacturing Institute.^{xxvii}

The data presented above show that opportunities in manufacturing are not universal – the right conditions and right manufacturing sectors must be targeted in order for the high return-high probability calculus to add up.

Many of the physical attributes important for a viable life sciences cluster in Jackson County, especially the physical infrastructure and skilled labor force, are also valuable for the advanced manufacturing industry. Additionally, Community Colleges have been identified as a key player in narrowing the skills set for manufacturing, helping ensure workers have the skills necessary for Advanced Manufacturing jobs.^{xxviii} From this perspective, Jackson Community College has an important role to play ensuring that any additional skills the Jackson County workforce may need for the identified advanced manufacturing industries are available.

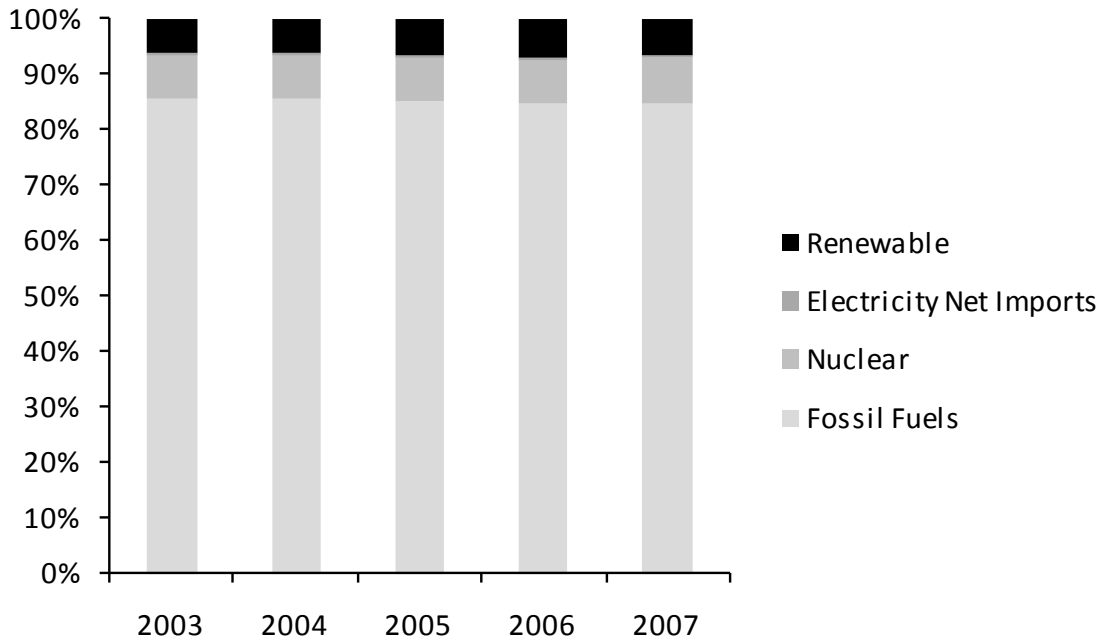
Within the advanced manufacturing industry, there is a great deal of attention and resources currently being devoted toward alternative energy manufacturing, especially by

Congress and the Obama Administration, which are offering significant federal spending support of the alternative energy industry. For this reason, we recommend that Jackson County emphasize manufacturing geared toward alternative energy technologies.

The potential opportunities and risks associated with alternative energy manufacturing is the great unknown about whether, or which, alternative energy options will succeed in the future. Between 2003 and 2007, renewable energy represented, on average, 6.5% of all energy used in the U.S.^{xxix} Figure AM6 shows how little this represents when compared to the traditional sources of fossil fuels and nuclear power plants.

Table AE1 breaks down U.S. energy consumption by source and shows how little of our energy comes from relatively new places.^{xxx} But, the opportunity is in renewable energy's growth, not in its current market share. Renewable energy consumption has increased by 11.1% between 2003 and 2007, significantly higher than the growth in total energy consumption of 3.5% for the same period.

Figure: AM6 U.S. Energy Sources 2003-2007



Source: U.S. Department of Energy

Table AE1. U.S. Energy Consumption by Energy Source, 2003-2007
(Quadrillion Btu)

Energy Source	2003	2004	2005	2006	2007
Total	98.209	100.351	100.503	99.861	101.605
Fossil Fuels	84.078	85.830	85.816	84.662	86.253
Coal	22.321	22.466	22.795	22.452	22.786
Coal Coke Net Imports	0.051	0.138	0.044	0.061	0.025
Natural Gas	22.897	22.931	22.583	22.191	23.625
Petroleum	38.809	40.294	40.393	39.958	39.818
Electricity Net Imports	0.022	0.039	0.084	0.063	0.106
Nuclear	7.959	8.222	8.160	8.214	8.415
Renewable	6.150	6.261	6.444	6.922	6.830
Biomass	2.817	3.023	3.154	3.374	3.615
Biofuels	0.414	0.513	0.595	0.795	1.018
Waste	0.401	0.389	0.403	0.407	0.431
Wood Derived Fuels	2.002	2.121	2.156	2.172	2.165
Geothermal	0.331	0.341	0.343	0.343	0.353
Hydroelectric Conventional	2.825	2.690	2.703	2.869	2.463
Solar/PV	0.064	0.065	0.066	0.072	0.080
Wind	0.115	0.142	0.178	0.264	0.319

Source: U.S. Department of Energy

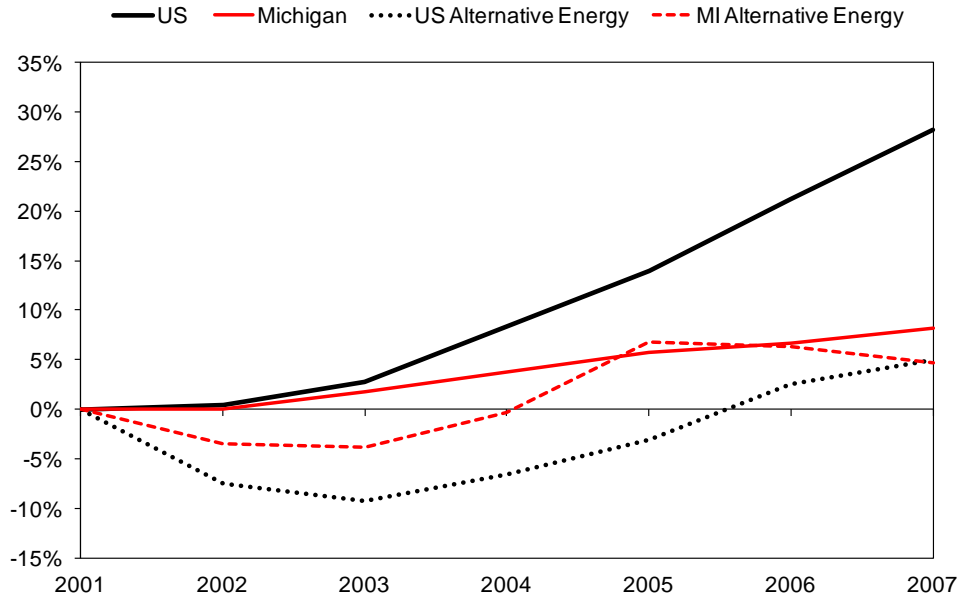
Output of renewable (or alternative energy) is growing quickly, but it is growing from a small base so it is still relatively small and the wage growth has not proven itself yet. Alternative energy is still in the formative stages and it has not yet proven its value to the consumer. Due to the infancy of the movement there is little evidence from which to judge the future growth potential of the alternative energy sector.

Total wages among the industries which support the equipment and tools necessary for alternative energy firms grew by 5.0%, for the US, between 2001 and 2007 (see Figure AM7).^{xxx} Michigan managed to capture larger wage growth gains in alternative energy than the U.S. wage growth in alternative energy through 2005, before returning to national levels. Importantly, the wage gains in the alternative energy industry have been significantly below the national and Michigan wage growth rates during this period.

The Obama Administration has made alternative energy a priority, and it is this enhanced federal support that compensates for the historic small market with erratic wage gains that have defined the industry thus far. Federal funding offers a large source for investment and research capital to be used in the fields of alternative energy. Due in large part to the American Recovery and Reinvestment Act, at least **119 grants totaling a minimum of \$549.4 million shall be available to Michigan** for the development of alternative energy technology between July 1, 2009 and June 30, 2010.^{xxxii} The State Energy Program shall devote \$82.0 million of its \$3.2 Billion to the advancement of renewable and increasingly

efficient sources of energy in Michigan.^{xxxiii} As there are no indications that the current support of alternative energy technologies will wane in the future, there will likely be significant federal government investments into the alternative energy sector in the future.

Figure: AM7 Alternative Energy Total Wage Growth (2001-2007)



Source: BLS

With respect to the economic growth potential of the alternative energy sector, the historical record is not strong enough to warrant an accelerated (or even average) growth potential based on economic output. But, due to the focus of the Administration it is reasonable to assume that the *inputs* into alternative energy manufacturing – investment dollars – will experience significant growth over the next several years.

Currently, there are various alternative energy research programs emphasized by the federal government, which we briefly sketch out below. Given the importance of the federal government “inputs” in driving growth in the industry, Jackson County should give the federal government’s areas of emphasis particular consideration.

In a move to promote energy security and improve the environment, the Hydrogen Fuel Initiative of 2003 sparked an ideological shift in the focus of the clean fuels research program of the Department of Energy’s Office of Fossil Energy (FE), from ultra-clean forms of petroleum-based fuels to an emphasis on the production of hydrogen from coal and natural gas. To perpetuate this initiative, the Office of Energy Efficiency and Renewable Energy (EERE) engage other governmental departments and the private sector to advance federal investment in research, development and deployment of new technologies. It is through this initiative that EERE now works closely with state and local governments.

Coal is the source of over half of the United States’ electricity consumption and over a quarter of the world’s coal reserves are found in the U.S.^{xxxiv} As a consequence, the U.S. Energy Department has invested heavily in promoting “clean coal” technology and other

low-cost environmentally compliant innovations that increase energy efficiency in order to preserve the foundation of America's central power system. These measures shall include the development of carbon capture and storage (CCS) retrofit systems envisioned as being capable of 90% carbon dioxide (CO₂) capture from existing coal-fired electricity generating plants; the consistent removal of over 90% of mercury from plant emissions via enhancements to flue gas desulfurization technology; and a reduction of the existing fleet's reliance on water.

Biofuels present an alternative to conventional fossil fueled energy consumption, promoting energy sustainability based on domestic plant and plant-derived resources. Impending developments by the Department of Energy's Renewable Energy Biomass Program, run by the EERE, include major programs for the continued improvement of biomass power technology, advancing biomass residue- and grain- derived ethanol, as well as renewable diesel. The EERE further endeavors to create plastics and chemicals from renewable plant-derived organic matter.

Biofuels currently account for three percent of America's aggregate primary energy production, which is second to hydropower in the United States for renewable primary energy production. The Department of Energy cites such leading sources of biofuel as dedicated energy crops and trees, agricultural food and feed crops, agricultural crop wastes and residues, wood wastes and residues, aquatic plants, animal wastes, municipal wastes, and other waste materials.^{xxxv}

The EERE's Solar Energy Technology Program is geared toward making advances in the solar power industry. The Department of Energy and Industry is currently working on solar energy advancements including:

- Photovoltaic cells, which provide electricity for items that vary from small watches to the electric power grid; and,
- Low temperature solar collectors for commercial, industrial and residential use.

Wind is among the fastest growing energy sources in the United States. The Department of Energy's Wind and Hydropower Technologies Program is attempting to promote wind as a cost-competitive energy source with fossil fuels.

Hydrogen is a clean energy carrier that originates in a variety of domestic resources such as renewable energy, nuclear energy, and fossil fuel energy (combined with carbon capture/sequestration). The \$1.2 billion, 5-year commitment of the 2003 Hydrogen Fuel Initiative is attempting to mainstream zero-emission Fuel cell vehicles. According to the Energy Hydrogen Program, a strategic framework addressing technical and economic barriers to market permeation shall be developed in 2015, with cars rolling out to the mass market as early as the year 2020.^{xxxvi} Given that transportation composes over two-thirds of the oil consumed daily, the Department of Energy's Hydrogen Program is primarily focused on developing hydrogen technology for the transportation sector. This will be done with assistance from the Offices of Energy Efficiency and Renewable Energy (EE), Fossil Energy (FE), Nuclear Energy (NE), and Science (SC), and with domestic and international pillars of industry and academia, such as the International Partnership for a Hydrogen Economy. Findings of the efforts thus far are enumerated in the "National

Hydrogen Energy Roadmap” and “A National Vision of America's Transition to a Hydrogen Economy-to 2030 and Beyond,” two fundamental blueprints for the organized, long- term, public and private initiatives necessary to develop hydrogen energy and establish its role in the future of America.

As heat drawn directly from the Earth, geothermal energy is perceived to be a clean and sustainable alternative source of energy. The Department of Energy’s Geothermal Technologies Program supports the U.S. geothermal industry in ensuring the diversity and security of variety in domestic energy supply options.

Similar to the life sciences industry, the alternative energy sector has strong connections and dependence on university clusters for technology developments. The National Science Foundation has recently requested a major boost in federal funding, asking for \$7.045 billion from the 2010 budget which represents an 8.5% increase or \$555 million over the 2009 budget.^{xxxvii}

For those cities where an alternative energy industry is developing, the alternative energy sector has tended to leverage the strengths of the area. For example, Pennsylvania has focused on wind power and San Francisco has focused on providing venture capital funding for start-up energy companies.^{xxxviii}

Based on a study prepared by the “Renewable Energy Policy Project” it is estimated that stabilizing emissions of carbon requires adding incremental annual demand of 18,500 MW of renewable projects each year for the next ten years for a total demand of 185,000 MW, leading to the creation of over 850,000 new jobs nationally. National investment in renewable energy will create new opportunities for manufacturing states like Michigan by taking advantage of their existing base of manufacturing sites and workforce expertise. Michigan already has a manufacturing base in most of the industries relevant to the production of renewable energy components. However, to meet projected demand will require significant investment in new manufacturing capacity to avoid bottlenecks in the component supply chain.

Summary of National Development

	Total Number of New MW	Number of Firms	Investment (Millions)	New FTE Jobs
Wind	124,900 MW	16,480	\$ 62,338	398,470
Solar	23,150 MW	10,272	\$ 69,624	298,194
Geothermal	15,190 MW	3,926	\$ 15,330	72,324
Biomass	21,760 MW	12,020	\$ 13,248	81,615
Total:	185,000 MW	42,698	\$ 160,540	850,603

Source: George Sterzinger and Jerry Stevens, *Component Manufacturing: Michigan's Future in the Renewable Energy Industry*, Renewable Energy Policy Project, November 2006

The strategy suggested here has the ability to accomplish two strategic goals; first is to diversify its existing economic base and secondly, to leverage Jackson’s inherent strength in manufacturing to exploit an emerging and growing industry. Jackson should focus on leveraging its existing industrial base to take advantage of the benefits that will occur as a result of the increased demand for renewable technology. Wind energy development and photovoltaic development present the greatest opportunity as it is expected to create the most demand and generate the greatest number of new jobs.

As shown in the table below Jackson is already competing for investment and new jobs in the renewable energy industry; however, it must ramp up its efforts and prepare to take advantage of the bottlenecks that will occur as a result of inadequate production capacity necessary to accommodate increased demand for renewable technologies, in particular, those related to wind and solar. Those communities and businesses that are preparing for increased demand in renewable energy and develop a plan to address manufacturing capacity issues in the renewable energy supply chain will benefit the most. The Renewable Energy Policy Project estimates that the bottlenecks will be most severe in the wind and solar component parts.

Following is a list of crucial component parts that are projected to experience severe supply-chain bottlenecks along with their respective 10-digit codes which is the highest level of detail in the NAICS:

Wind Component	10-Digit NAICS Codes
Nacelle Case	326199A141
Rotor Blade	326199A141
Nacelle Frame	3315113221
Towers	3323125106
Bearings	3329915025
Brakes	3336133111
Generator	3336110871
Gear Box *	3336127438
Shafts	3336133792
Power Electronics	3359993219
Pitch Drive	33531230
Yaw Drive	33531230

* Largest projected shortage of production capacity

Photovoltaic Component	10-Digit NAICS Code
Top Surface	3272111041
Wiring	3314224218
Frame	332322G331
Blocking Diode	3344137015
Solar Cells	334413A005
Complete Module	334413A010
Meter	3345151105
Electrical Connections	3359317100
Charge Controller	3359993104
Inverter	3359993219

There is projected production capacity problems for each of the wind and solar components listed above; however, the items highlighted in yellow represent components

where demand is expected to significantly outstrip production capacity in the United States.

The table below represents the number of firms in Jackson County operating in the referenced NAICS codes as well as the total employment.

Renewable Energy Manufacturing in Jackson, Michigan

Wind	Solar	Geothermal	Biomass
<ul style="list-style-type: none"> • 326199 All Other Plastics Product Manufacturing • 333613 Power Transmission Equip. • 331511 Iron Foundries • 332312 Fabricated Structural Metal <p>• Existing Jobs: 107</p>	<ul style="list-style-type: none"> • 335313 Switchgear and Switchboard Apparatus Manufacturing • 325211 Plastics Material and Resin Manufacturing • 332322 Sheet Metal Work Manufacturing <p>• Existing Jobs: 16</p>	<ul style="list-style-type: none"> • 332410 Power Boiler and Heat Exchanger Manufacturing • 333415 Air-Conditioning and Warm Air Heating Equipment <p>• Existing Jobs: 6</p>	<ul style="list-style-type: none"> • 332410 Power Boiler & Heat Exchanger Mfg. • 333999 All Other Misc. General Purpose Machinery • 333922 Conveyor and Conveying Equip. Mfg. • 335313 Switchgear & Switchboard Apparatus Mfg. • 333995 Fluid Power Cylinder & Actuator Mfg. • 334513 Instruments & Related Products Mfg. • 333415 A/C & Heating Equipment <p>• Existing Jobs: 29</p>

Source: George Sterzinger and Jerry Stevens, *Component Manufacturing: Michigan’s Future in the Renewable Energy Industry, Renewable Energy Policy Project, November 2006*

Diversification Strategy: Michigan Economic Development Corporation (“MEDC”)

The MEDC has identified 27 NAICS codes that have capability to supply into the wind, solar, battery and bio-fuel industries. The MEDC’s goal is to fill gaps in our advanced energy supply chain and to capitalize on the ever growing opportunities in this industry. The MEDC is targeting these 27 NAICS codes in attempt to identify existing Michigan based companies with the basic capabilities necessary to produce components for various alternative energy companies. The primary goal is to fill supply chain gaps while at the same time utilize and exploit our existing manufacturing resources.

Although Jackson will implement its own industry attraction and diversification program – we highly recommend a coordinated effort with the MEDC’s, particularly with those industry targets related to alternative energy and defense industry target strategy. The MEDC has committed considerable resources, both time and money to aimed at identifying existing Michigan-based businesses and marketing to potential alternative energy companies and their supply chain industries.

The MEDC's effort to build a domestic battery industry in Michigan is perhaps the most aggressive part of their strategy to diversify the Michigan economic base. The MEDC's strategy focuses on four main areas:

- **Recruiting cell manufacturers:** Building a domestic advanced battery industry starts with leading cell manufacturers with fully integrated facilities to act as magnets in the development of the entire value chain. Four leading cell manufacturers were selected from a candidate pool and awarded a total of **\$400 million**. These funds were intended to complement potential Department of Energy solicitations in the construction of commercial-scale, large format cell production plants.
- **Creating the value chain:** The industry will need a strong stable of suppliers in order to thrive. The State invested **\$135 million** toward the establishment of pack manufacturing facilities and expertise to integrate cells into usable power supplies, as well as drive the cost of electric vehicles down in tandem with federal consumer incentives intended to do the same. The State will also look to invest in diversification of incumbent firms as well as attract world-class suppliers in areas such as materials, control electronics, thermal management, and recycling.
- **Developing the Workforce:** The State invested **\$2 Million** to support the Advanced Battery Coalition for Drivetrains lab, a partnership between the University of Michigan and General Motors for advanced battery simulation and testing. In addition, the nation's first Energy Systems Engineering Masters program is housed at the University of Michigan, which delivers a targeted curriculum toward the development of battery and energy infrastructure engineers.

(Source: MEDC)

Through its efforts the MEDC has successfully attracted the following four advanced-battery manufacturing companies to the State, which will constitute the base of Michigan's alternative energy industry:

- **Johnson Controls-Saft Advanced Power Solutions, LLC (JCS)** – produce lithium-ion cells for hybrid and plug-in hybrid electric vehicles. JCS is partnering with Ford Motor Company on battery cell manufacturing, pack and system development, and integration capability. The project will locate a facility in Holland, MI.
- **LG Chem-Compact Power** – Korean based LG Chem, in partnership with its U.S. subsidiary Compact Power (LGC-CPI) and General Motors will manufacture lithium-ion battery cells in Michigan – location is to be determined.
- **KD Advanced Battery Group LLC (KD)** – is a joint venture of The Dow Chemical Company, Kokam America, Inc., and Townsend Ventures LLC, formed to manufacture large scale battery and cell manufacturing facility in either Holland or Midland, Michigan.
- **A123Systems Inc.** – is a Massachusetts-based designer, developer and manufacturer of rechargeable lithium-ion batteries and battery systems. They will locate in Wayne County. They entered into a development and manufacturing agreement with Chrysler LLC to provide battery systems for the company's ENVI product line.

The alternative energy storage industry and the vehicles it is intended to support is new – the industry is hampered by the high cost of producing batteries and the industry’s manufacturing capacity is limited. In addition, there are still significant technological issues to overcome before the industry becomes economically viable. That said, the industry is moving forward in Michigan and the MEDC is at the forefront of the attraction and industry diversification efforts. The MEDC is working closely with each of the battery manufacturing companies to identify the supply chain necessary to support potential demand and attract them to Michigan.

To support their efforts, the MEDC has identified the following NAICS codes that represent the alternative energy storage manufacturing supply chain. Because the battery manufacturing companies have been heavily subsidized by the federal and state government they are working closely with the MEDC to help attract the supply chain necessary to support the industry, therefore the lead project intake organization will be the MEDC for virtually all battery related activity. Following is a list of NAICS codes that represent the battery manufacturers primary supply chain.

Battery Manufacturing Industries

NAICS	Category	Title
33322*	Industry/Battery/Wind	Plastics & Rubber Industrial Machine Mfg.
32518	Battery	Other Basic Inorganic Chemical Mfg
33141	Battery	Nonferrous Metal (except Aluminum) Smelting and Refining
33429*	Battery/Defense	Other Comm. Equip. Mfg. (in the US)
33431	Battery	Audio and Video Equipment Mfg
3361	Target/Battery	Motor Vehicle Mfg.
33993	Battery	Doll, Toy, and Game Mfg
3261*	Industry/Battery/Wind/Solar	Plastics Product Mfg.
3261*	Industry/Battery/Wind/Solar	Plastics Product Mfg.

The MEDC has a two- pronged approach to filling the battery supply chain; first identify existing Michigan manufacturers that meet the NAICS code requirements necessary to support the battery manufacturers, and secondly, to attract new companies to fill out the supply chain.

Alternative Energy Industries

NAICS	Category	Title
3345*	Industry/Defense/Solar/Wind	Nav'l, Measuring, Electromedical, and Control Instruments Mfg
3344*	Industry/Solar/Wind	Semiconductor and Other Electronic Component Mfg.
325193	Industry - R&D/Biofuel	Ethyl Alcohol Mfg.
324199	Industry - R&D/Biofuel	All Other Petroleum and Coal Products Mfg.
325199	Industry - R&D/Biofuel	All Other Basic Organic Chemical Mfg
3112	Target/Alt. Energy	Grain and Oilseed Milling
325193	Alt. Energy	Ethyl Alcohol Mfg.
325211	Solar	Plastics Material and Resin Mfg.
327211	Solar	Flat Glass Mfg.
332991	Wind	Ball and Roller Bearings
333412	Wind	Industrial and Commercial Fans and Blowers
3336*	Wind	Engine, Turbine, and Power Transmission Equip. Mfg
335312	Wind	Motors and Generators
335313	Solar	Switchgear and Switchboard Apparatus Mfg.
335911	Solar	Storage Battery Mfg.
335931	Solar	Current-Carrying Wiring Device Mfg.
335999	Solar/Wind	All Other Miscellaneous Electrical Equipment and Component Mfg
3323	Target/Solar/Wind	Architectural & Structural Metal Mfg.
3315	Target/Wind	Foundries

Defense Industries

NAICS	Category	Title
3345*	Industry/Defense/Solar/Wind	Nav'l, Measuring, Electromedical, and Control Instruments Mfg
5417*	Industry - R&D/Defense	Scientific Research and Development Services
332912	Defense	Fluid Power Valve and Hose Fitting Mfg.
332992	Defense	Small Arms Ammunition Mfg.
332994	Defense	Small Arms Mfg.
332995	Defense	Other Ordnance and Accessories Mfg.
33429*	Battery/Defense	Other Communications Equipment Mfg. (in the US)
3364*	Defense	Aerospace Product and Parts Mfg.
336612	Defense	Boat Building
336992*	Defense	Military Armored Vehicle, Tank, and Tank Component Mfg
3391*	Target/Defense/Med Dev	Medical Equipment and Supplies Mfg.
5415	Target/Defense	Computer Systems Design and Related Services

Source: Michigan Economic Development Corporation

The table below provides more descriptions of the industries discussed in the previous tables:

NAICS	Category	Title	Detailed Description
3112	Target/Alt. Energy	Grain and Oilseed Milling	<p>This industry comprises establishments primarily engaged in one or more of the following: (1) milling flour or meal from grains or vegetables; (2) preparing flour mixes or doughs from flour milled in the same establishment; (3) milling, cleaning, and polishing rice; and (4) manufacturing malt from barley, rye, or other grains.</p> <p>This industry comprises establishments primarily engaged in one or more of the following: (1) wet milling corn and vegetables; (2) crushing oilseeds and tree nuts; (3) refining and/or blending vegetable oils; (4) manufacturing shortening and margarine; and (5) blending purchased animal fats with vegetable fats.</p>
3261	Industry/Battery/Wind/Solar	Plastics Product Mfg.	This industry group comprises establishments primarily engaged in processing new or spent (i.e., recycled) plastics resins into intermediate or final products, using such processes as compression molding; extrusion molding; injection molding; blow molding; and casting. Within most of these industries, the production process is such that a wide variety of products can be made.
3315	Target/Wind	Foundries	<p>This industry group comprises establishments primarily engaged in pouring molten metal into molds or dies to form castings. Establishments making castings and further manufacturing, such as machining or assembling, a specific manufactured product are classified in the industry of the finished product. Foundries may perform operations, such as cleaning and deburring, on the castings they manufacture. More involved processes, such as tapping, threading, milling, or machining to tight tolerances, that transform castings into more finished products are classified elsewhere in the manufacturing sector based on the product being made.</p> <p>Establishments in this industry group make castings from purchased metals or in integrated secondary smelting and casting facilities. When the production of primary metals is combined with making castings, the establishment is classified in 331 with the primary metal being made.</p>
3323	Target/Solar/Wind	Architectural & Structural Metal Mfg.	<p>This industry comprises establishments primarily engaged in manufacturing one or more of the following: (1) prefabricated metal buildings, panels and sections; (2) structural metal products; and (3) metal plate work products.</p> <p>This industry comprises establishments primarily engaged in manufacturing one or more of the following: (1) metal framed windows (i.e., typically using purchased glass) and metal doors; (2) sheet metal work; and (3) ornamental and architectural metal products.</p>
3323	Target/Solar/Wind	Architectural & Structural Metal Mfg.	<p>This industry comprises establishments primarily engaged in manufacturing one or more of the following: (1) prefabricated metal buildings, panels and sections; (2) structural metal products; and (3) metal plate work products.</p> <p>This industry comprises establishments primarily engaged in manufacturing one or more of the following: (1) metal framed windows (i.e., typically using purchased glass) and metal doors; (2) sheet metal work; and (3) ornamental and architectural metal products.</p>
3336	Wind	Engine, Turbine, and Power Transmission Equip. Mfg	This industry comprises establishments primarily engaged in manufacturing turbines, power transmission equipment, and internal combustion engines (except automotive gasoline and aircraft).
3344	Industry/Solar/Wind	Semiconductor and Other Electronic Component	This industry comprises establishments primarily engaged in manufacturing semiconductors and other components for electronic applications. Examples of products made by these establishments are capacitors, resistors, microprocessors, bare and loaded printed circuit boards, electron tubes, electronic connectors, and computer modems.

		Mfg.	
3345	Industry/Defense/ Solar/Wind	Nav'l, Measuring, Electromedical, and Control Instruments Mfg	This industry comprises establishments primarily engaged in manufacturing navigational, measuring, electromedical, and control instruments. Examples of products made by these establishments are aeronautical instruments, appliance regulators and controls (except switches), laboratory analytical instruments, navigation and guidance systems, and physical properties testing equipment.
3361	Target/Battery	Motor Vehicle Mfg.	This industry comprises establishments primarily engaged in (1) manufacturing complete automobile and light duty motor vehicles (i.e., body and chassis or unibody) or (2) manufacturing chassis only.
3364	Defense	Aerospace Product and Parts Mfg.	This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing complete aircraft, missiles, or space vehicles; (2) manufacturing aerospace engines, propulsion units, auxiliary equipment or parts; (3) developing and making prototypes of aerospace products; (4) aircraft conversion (i.e., major modifications to systems); and (5) complete aircraft or propulsion systems overhaul and rebuilding (i.e., periodic restoration of aircraft to original design specifications).
3391	Target/Defense/ Med Dev	Medical Equipment and Supplies Mfg.	This industry comprises establishments primarily engaged in manufacturing medical equipment and supplies. Examples of products made by these establishments are surgical and medical instruments, surgical appliances and supplies, dental equipment and supplies, orthodontic goods, ophthalmic goods, dentures, and orthodontic appliances.
5415	Target/Defense	Computer Systems Design and Related Services	This industry comprises establishments primarily engaged in providing expertise in the field of information technologies through one or more of the following activities: (1) writing, modifying, testing, and supporting software to meet the needs of a particular customer; (2) planning and designing computer systems that integrate computer hardware, software, and communication technologies; (3) on-site management and operation of clients computer systems and/or data processing facilities; and (4) other professional and technical computer-related advice and services.

Obstacles to Success

The probability that the alternative energy sector will be successful in Jackson County is unknown just as the economic potential of the investments – the industry is simply too new. Similar to the economic potential, the probability of success depends upon the ability of Jackson County to attract the large amount of federal dollars being spent on the alternative energy sector. The greater the success of Jackson County at attracting the federal dollars, the greater the alternative energy sector’s probability of success will be.

Key Findings and Recommendations

Jackson will need to develop a strategy to confront and overcome the following obstacles to effectively develop an environment where alternative energy business can grow and thrive:

- Capital credit constraints for alternative energy research and development;
- Overcome anticipated bottlenecks in the alternative energy component supply chain - demand versus production capacity for alternative energy components;
- Availability of a skilled workforce, proactive workforce development programs aimed at preparing workers for jobs in the alternative energy industry;
 - Identify the specific needs and develop programs to address training gaps

- Cost of diversification – Michigan and Jackson in particular has a manufacturing base relevant to the production of most of the components attributable to renewable energy industry; however, supplier access to capital and the complexity of adapting to a new industry is difficult to overcome;
- Coordinate alternative energy recruiting/attraction strategy with the MEDC
 - Identify common targets and share information with MEDC officials
 - Diversification – Help existing Jackson manufacturers identify opportunities in new and emerging markets:
 - As the automotive industry continues to contract – recognize that Jackson’s manufacturing base has unique production capabilities and skill set that can effectively be used in other emerging industries, i.e., alternative energy.
 - Proactively monitor renewable energy investment in the Michigan and nationally and consistently measure against Jackson’s available and/or potential production capacity.
 - Proactively identify potential production bottlenecks; prepare the Jackson manufacturing base to be ready to address potential capacity problems. Stay ahead of the market!
 - Develop database to identify Jackson firms that meet the NAICS code definition in this section.

Food Processing Manufacturing

While food processing/manufacturing does not generate the universal excitement that the alternative energy sector does, there are several important advantages for Jackson County in the food processing area. As a consequence, Jackson County should also focus on expanding its current and potential food processing/manufacturing capabilities as part of its advanced manufacturing strategy.

As identified earlier, below average incomes is a problem plaguing Jackson County. Advanced manufacturing jobs offer Jackson County the opportunity to attract higher wage jobs into the area. Importantly, the wages in the food processing/manufacturing industry match the wages in other advanced manufacturing industries.

Economic development strategies are most successful when the current strengths, including resources and infrastructure, are leveraged appropriately. Toward this end, Jackson County’s infrastructure and location favor food processing manufacturing. First, the state of Michigan already has a strong presence in the food processing industry. Consequently, the necessary learning curve and investments for expanding the food processing area will be less for Jackson County compared to both competitor locations and other potential advanced manufacturing industries Jackson County might try to attract.

Other advantages that Jackson County can leverage to create a successful food processing/manufacturing cluster is the County’s central location and transportation infrastructure both of which are very important to profitable food processing logistics and operations, especially if the agricultural feedstock portion of the industry is targeted.

One other advantage is the important connections between the food processing/manufacturing industry and the life sciences technology and industry. The life sciences industry already has a small presence in Michigan that can be leveraged. Additionally, all of the resources discussed above that can make the life sciences industry an attractive target to the area are also applicable to the food processing/manufacturing industry. Additionally, by creating complementarities across targets, Jackson County would be simultaneously increasing its attractiveness to a larger number of potential firms and industries for the same dollars invested. Given the scarcity of resources, such leverage is beneficial.

Within the food processing/manufacturing sector, several agricultural feedstock areas present attractive opportunities for Jackson County including:

NAICS	Title	Description
311221	Wet Corn Milling	This U.S. industry comprises establishments primarily engaged in wet milling corn and other vegetables (except to make ethyl alcohol). Examples of products made in these establishments are corn sweeteners, such as glucose, dextrose, and fructose; corn oil; and starches (except laundry).
311222	Soybean Processing	This U.S. industry comprises establishments engaged in crushing soybeans. Examples of products produced in these establishments are soybean oil, soybean cake and meal, and soybean protein isolates and concentrates.
311223	Other Oilseed Processing	This U.S. industry comprises establishments engaged in crushing oilseeds (except soybeans) and tree nuts, such as cottonseeds, linseeds, peanuts, and sunflower seeds.

Organic Farming Industry:

Industry Overview – Michigan & Nationally:

Agriculture is the second largest industry in Michigan with approximately 53,000 farms across the state. It is estimated that 140 of the 53,000 farms are currently certified as organic farms under the USDA’s National Organic Program.

According to a 2006 survey of Michigan’s organic farmers, 80% of organic cropland is in beans and grains, 3% is in fruit, and 2% is in vegetables. Michigan ranked among the top 20 states in total organic acreage at approximately 45,500 acres. The average size of organic fruit and vegetable farms is 117 acres, with about 85 acres in production. The average organic bean and grain farm is 360 acres, with about 340 acres in production. (Source: http://www.moffa.org/f/Getting_to_Organic_2008.pdf)

Following is evidence of an emerging national and global trend in food processing associated with organic products:

- Total U.S. organic sales, including food and non-food products, were \$17.7 billion in 2006, up 21 percent from 2005. They are estimated to have reached \$21.2 billion

in 2007, and are projected to surpass \$25 billion in 2008.

Source: *2007 OTA Manufacturer Survey*

- Mass market grocery stores represent the largest single distribution channel, accounting for 38 percent of organic food sales in 2006. This is up from a 35 percent share of total sales in 2005. The natural food channel is still strong. The sales of larger grocery natural food stores combined with smaller independent natural food stores and chains accounts for 44 percent of organic food and beverage sales. Mass merchandisers and club stores, food service, internet/mail order and farmers' markets represent 8 percent, 4 percent, 2.2 percent, and 2 percent of organic food sales, respectively.

Source: *2007 OTA Manufacturer Survey*

- Global demand for organic products continues to grow, with sales increasing by over \$5 billion a year, according to *The World of Organic Agriculture: Statistics & Emerging Trends 2008*. It cited Organic Monitor estimates that international sales reached \$38.6 billion dollars in 2006, double that in 2000. The most important import markets for organic products continue to be the European Union, the United States, and Japan.

Source: *The World of Organic Agriculture: Statistics & Emerging Trends 2008*

- New research from The Natural Marketing Institute (NMI) released in 2008 reveals that consumers are increasingly incorporating organic into their lifestyles. Total household penetration across six product categories has risen from 57 percent in 2006 to 59 percent in 2007. The research also showed that the number of core users has increased from 16 percent in 2006 to 18 percent in 2007

Source: <http://www.nmisolutions.com/>

- According to the *National Restaurant Association's 2007 Restaurant Industry Forecast*, chefs ranked organic food as third on a list of the top 20 items for 2007. Also, more than half of fine-dining operators who serve organic food anticipated these items would represent a larger portion of sales in 2007. In addition, casual- and family-dining operators expected organic items to represent a larger proportion of their sales in 2007.

Source: *National Restaurant Association's 2007 Restaurant Industry Forecast*

A Global Industry Analysts report released in May 2008 shows that health and well-being are increasingly important to consumers, helping to spur double-digit annual growth in the global organic food and beverage market. "Recent outbreaks of food scares and heightened awareness of the health benefits of organically produced ingredients are thought to be behind the dramatic turn from unhealthy ingredients," according to the report. (Source: Global Industry Analysts, *Organic Foods & Beverages: A Global Business Report*, May 2008.)

Although certified organic acreage is increasing in the United States, growth of organic farmland by specific commodity is not uniform. The largest increases between 1997 and 2005 were in pastureland and rangeland (USDA, Economic Research Service, 2006). The quantity of land planted to vegetables and fruit, long the top-selling organic category, has grown steadily since 1997, and the percent of vegetable and fruit farmland that was certified organic by 2008 reached almost 5 and 3 percent, respectively. The two sectors

that are taking on increased importance in the industry are organic grains and soybeans, which provide crucial inputs for organic dairy and meat production. The amount of land devoted to organic grain production has increased, and between 2000 and 2005, farmland devoted to organic corn, wheat, and oats increased between 10 and 12 percent annually. The amount of farmland allocated to organic soybean production declined slightly. (Source: *Marketing U.S. Organic Foods: Recent Trends From Farms to Consumers / EIB-58* Economic Research Service / USDA)

Early on, the organic sector was supply-driven and organic products were introduced by farmers. However, in today's market things are different because now consumer demand is driving growth in the organic market. Twenty years ago, organic farmers struggled to find a market for their products, but today farmers face the opposite problem: they are struggling to produce a sufficient supply of organic products.

The organic industry is facing similar constraints to that in the alternative energy industry – they are both emerging and experiencing a basic economic problem which is demand outstrips the supply. As discussed above; demand for products that are healthy and environmental friendly is growing exponentially – this is equally true for the alternative energy sector and organic food industry. Jackson County has the agricultural platform, i.e. farms and farmland to successfully meet the basic requirement necessary to produce products for the growing organic market.

Jackson County Agricultural Profile:

Key Michigan Products

- Corn, soy, and wheat 97,876 acres (53.7% of cropland)
- Revenue from corn, soy, and wheat \$26,367,000
- Vegetables 502 acres (0.3% of cropland)
- Revenue from vegetables \$664,000
- Fruit and tree nuts 259 acres (0.2% of cropland)
- Revenue from fruits, tree nuts and berries \$644,000
- Dairy farms 23 farms (1.0% of all in MI)
- Revenue from milk and other dairy \$11,881,000
- All animal operations 597 operations (33,308 animals)

Agricultural Land

- Total number of farms 1,184
- Total farmland 182,345 acres (40.6% of total area)
- Forage/pasture/non-crop farmland 19,746 acres (10.8% of farmland)
- Number of farms using organic production 16 (3 certified organic farms)
- Cropland in organic production 624 acres (includes non-certified acres)
- Cropland in transition to organic 137 acres
- Area of greenhouse/nursery operations 187,838 sq. ft.

(Source: Michigan Foods & Agricultural Systems Profile-MI Department of Agriculture, July 2009)

Key Findings & Recommendations

- Converting from conventional to organic farming is constrained by a couple of factors:
 - Financial risk as farmers they learn new way of doing business
 - Marketing to retail and consumers offers new challenge
 - Meeting standards governing organic products
 - Lower yields for crops during transition years
- Develop a program to help facilitate the transition or entry into organic farming by hosting diversification seminars in partnership with The Jackson County Farm Bureau, The Michigan Organic Food and Farm Alliance (MOFFA) and The Michigan Department of Agriculture.
- Develop a market study to identify regional demand for organic foods and products
- Partner with Jackson Community College and other higher education institutions to develop organic courses to support farmers and businesses
- Partner with Local Foods Broker & Markets to develop regional buying policy
- Develop Organic Farmer Networks and Mentoring Program
- Partner with Jackson County farmers markets to develop consumers demand paths.
- Develop economic incentives to aid Farmers in the conversion from conventional to organic farming

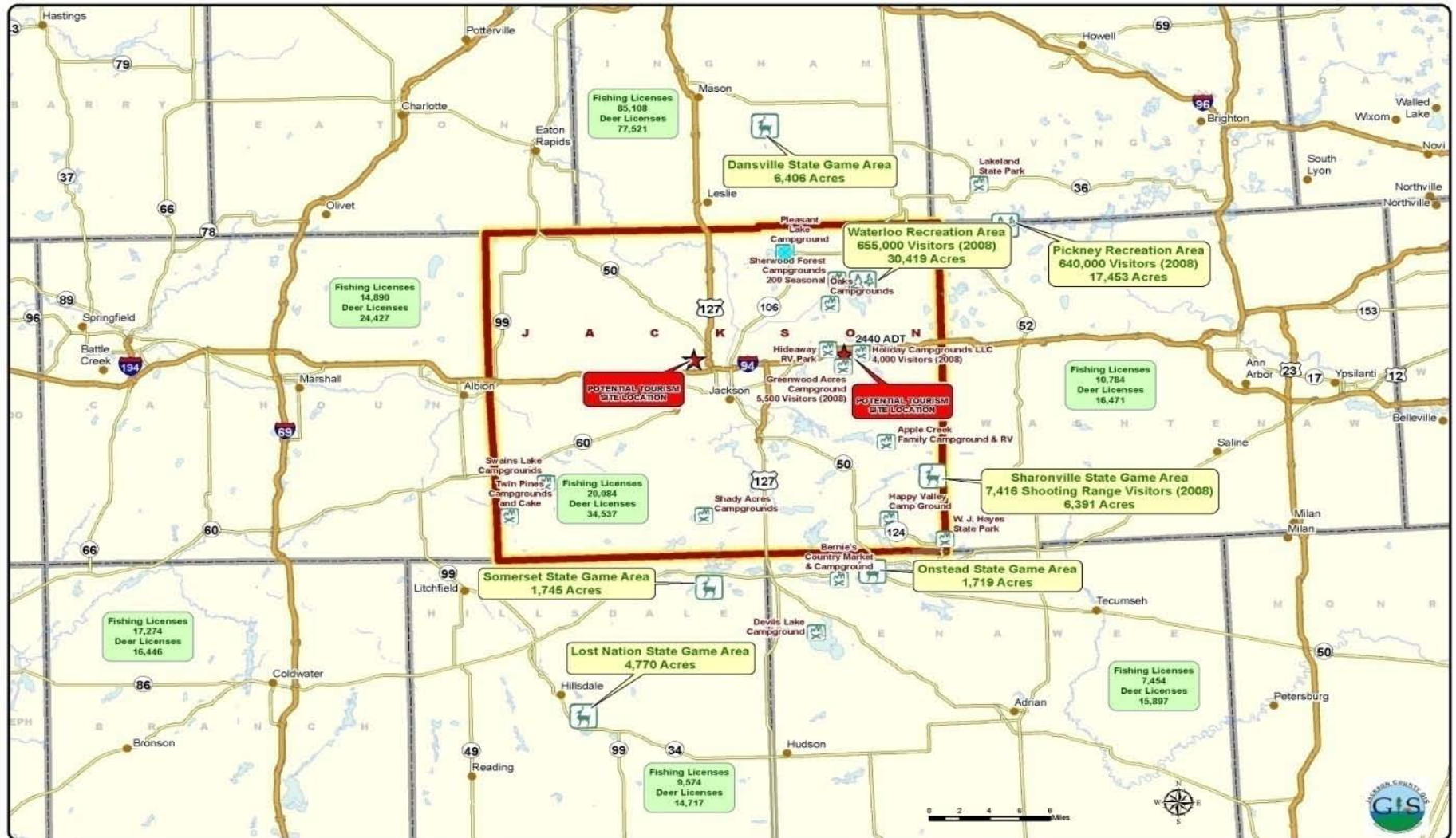
Travel & Leisure

Travel & leisure is the final industry suggested for Jackson County. Currently, Jackson County can offer its visitors golf, access to hunting and fishing areas, as well as the Michigan International Speedway which is located 18 miles from the City of Jackson. According to the Enterprise Group of Jackson, there are more than 22 golf courses in Jackson County, giving Jackson County over 500 holes of golf; more per capita than any other county in the nation. Additionally, Michigan has a competitive sales tax rate of 6.0%, which will also help encourage tourism and other travel and leisure endeavors.

Duff & Phelps recommends that Jackson County emphasize the travel and leisure industry. The justification for this strategy is a combination of the relative ease with which an investment in the travel & leisure can be implemented, the tourist attractions that already exist in or near the Jackson County area (see Figure LT1), and the relatively competitive wage growth and employment growth in the tourism industry relative to Michigan's recent experience.

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Figure LT1
Potential Tourism Site Locations
 Jackson County, MI



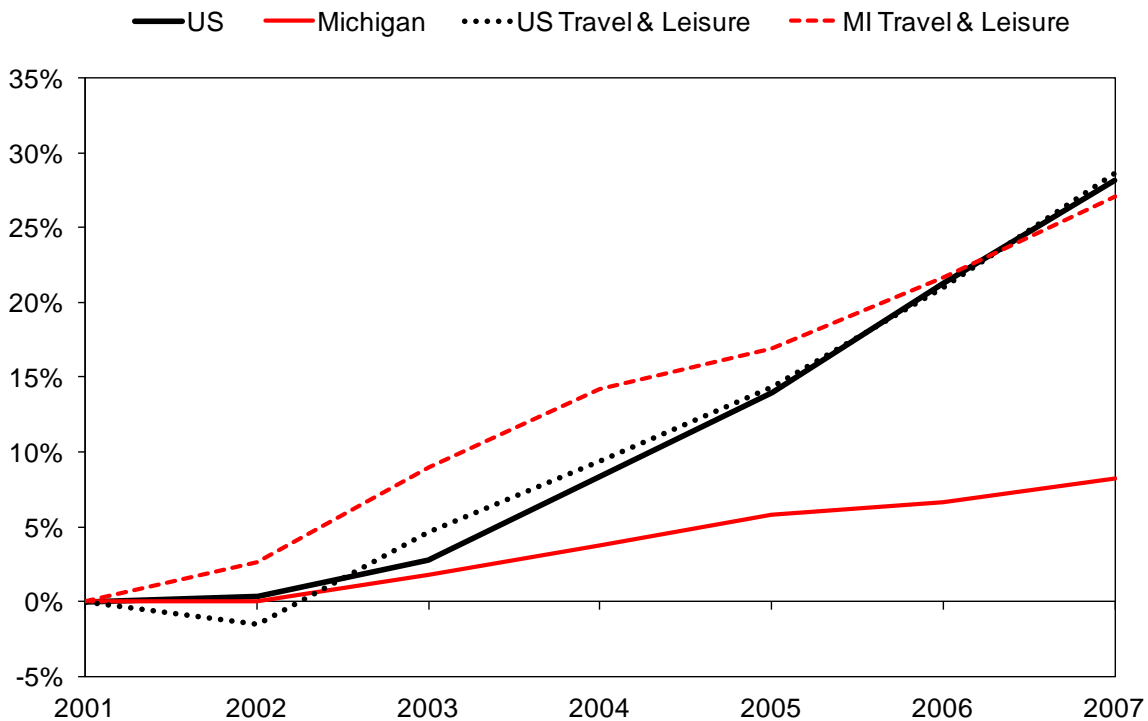
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Total wages for the U.S. travel & leisure industry grew at a similar rate as U.S. total wages for the period from 2001 to 2007 (see Figure LT2). Wages in the travel & leisure industry grew 28.7% while the U.S. total wages grew 28.2%.^{xxxix} Michigan's travel & leisure kept up the pace of the rest of the country, growing 27.1%. This was much higher than Michigan's state total wages, which grew 8.3%.^{xl}

Similar to wages, employment in the travel & leisure industry has grown at a similar pace as other U.S. employment opportunities nationally, and has grown at this level in Michigan as well, see Figure LT3.

Returning to the 3 X 3 analysis matrix, the travel & leisure industry offers Jackson County a very high probability of success and a return from the investment is significantly above the current employment and wage growth experience in Michigan.

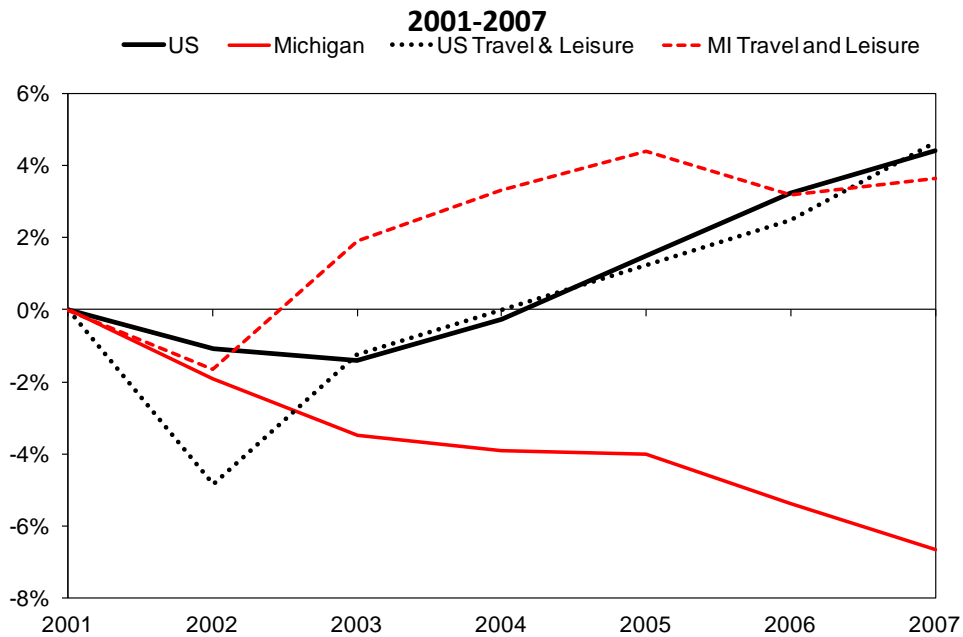
**Figure LT2: Travel & Leisure Total Wages Growth
2001-2007**



Source: BLS

Jackson is not well known as a tourist destination outside of its reputation as the home of the Michigan International Speedway (MIS) with over 100,000 visitors annually. However, Jackson County has many attributes that and a vast number of activities available for those seeking outdoor adventure, that making it a respectable tourist destination and a powerful economic development driver.

Figure LT3: Travel & Leisure Employment Growth



Source: BLS

Here are some of the tourism facts that might surprise the reader:

- Over 20,000 fishing licenses sold in Jackson County annually;
- 34,537 hunting licenses sold in 2008;
- Sharonville State Game Area had over 6,300 visitors to their shooting range in 2008;
- Waterloo State Recreation Park (30,419 acres) records over 655,000 visitors annually;
- Total of 22 camp grounds in Jackson County;
- There are 188 inland lakes and 22 with public access;
- 11th highest ranked county for number of registered boating licenses; and
- 22 Golf courses with over 500 holes.

Economic Impact: National Perspective

Travel and tourism is the nation's third largest retail sales industry, and tourism is one of the country's largest employers, supporting 7 million jobs, including 684,000 executive jobs. Some economist predict that at present rates of growth, the tourism/leisure industry could become the leading U.S. industry of any kind.⁵¹

Outdoor recreation, in particular, represents one of the most vigorous growth areas in the U.S. economy. Much of this recreation is supported by public and private parks and open land. Popular outdoor recreational activities include hiking, camping, biking, birding, boating, fishing, swimming, skiing, and snowmobiling. According to the Outdoor Industry

Foundation (OIF) “active” outdoor recreation contributes \$730 billion annually to the U.S. economy. The active outdoor recreation sector has the following economic impact:

- Support nearly 6.5 million jobs across the U.S.
- Generates \$88 billion in annual state and national tax revenue
- Provides sustainable growth in rural communities
- Generates \$289 billion annually in retail sales and services across the U.S.
- Includes over 8% of America’s personal consumption expenditures.

Economic Impact of the Hunting and Fishing Industry:

On a national level 34 million sportsmen age 16 and older spent more than \$76 billion in 2006, supporting 1.6 million jobs. If a single corporation grossed as much as hunters and anglers spend, it would be among America’s 20 largest, ahead of Target, Costco and AT&T.

In Michigan, hunting and fishing has a tremendous impact on our economy:

- Accounts for annual spending of \$3.3 Billion
- Supports approximately 30,000 jobs
- Generates approximately \$378 million in State tax revenues annually
- Generates \$406 million annually in federal tax revenues.

Source: Congressional Sportsmen’s Foundation "Hunting and Fishing: Bright Stars of the American Economy ~ A force as big as all outdoors," 2007

In 2007, Golf 20/20, a collaborative, non-profit organization, commissioned an economic impact report regarding economic activity related to golf in the U.S. The report found the following:

- Golf generated \$76 billion in goods and services in 2005 throughout the U.S.
- Golf generated a total economic impact of \$195 billion in 2005 (using multiplier effect)
- Golfing led to approximately two million jobs with wages totaling \$61 billion

In a 2005 study commissioned by the American Horse Council Foundation (AHCf) to determine the economic impact of the horse industry, they found the following was noted:

- Americans own over nine million horses
- Equestrian activities and ownership contributed \$39 billion in direct economic benefit to the U.S. economy and supported 1.4 million full-time jobs.
- When indirect and induced spending was included, the report shows the industry’s economic impact reaching as high as \$102 billion.
- Of this total, approximately \$32 billion was generated from the recreational activities and \$29 billion from showing horses.

In a poll conducted for the President's Commission on Americans Outdoors, it was discovered that most people prefer to go outdoors for their recreation, citing natural beauty and quality of view as the most important criteria for tourists seeking outdoor recreation.

Increasingly, Americans are mobilizing in unique ways in an effort to guide growth and protect their quality of life. Today, there is growing support by many communities for state and regional land trusts, which are grassroots nonprofit organizations that help to conserve land by either purchasing or accepting donations of land or conservation easements. Jackson has an extensive network of public lands, lakes, parks, campgrounds, hiking and bike trails that stimulate local tourism. In addition, Jackson's natural open space supports fishing, hunting and other wildlife-based tourism, such as bird watching and wildlife photography. There is a real connection between open space and tourism – increasingly, parks and natural open space are becoming recognized as a critical element to economic development as they have become a powerful community attribute simply by attracting new visitors to the community, improving the community's quality of life and increasing the value of nearby properties.

Key Findings - Recommendations

- Improve the promotion of outdoor recreational opportunities:
 - Promote the areas ability to provide the full spectrum of recreation opportunities.
 - Golf
 - Hunting & Fishing
 - Hiking & Biking
 - Camping
 - Eco-tourism
 - Retail businesses that serve these industries
- Simplify the ability for visitors to find information on recreation opportunities.
- Provide training to employees and education to visitors on the recreation opportunities on public lands and on protecting the region's natural resources.
- Trails & Recreation Corridors: Maintaining, Improving and Adding Linkages (Figure LT1)
 - Develop additional, and implementing existing plans to connect these important resources.
 - Create maps that link the parks and open space to area businesses.
 - Enhance marketing of corridors through development of maps and brochures.
 - Accurately identify corridor resources and define uses.
- Improve available information on corridors and interpret the history of corridors, including cultural and natural.
- Develop themes and classify for certain corridors.
- Improved signage both by the State and by communities
- Develop loop trails connecting bike and hiking trails
- Develop interpretative displays of nature, culture, and history to provide visitors the opportunity to "learn for pleasure" as they travel around the parks and community.
- Attract outdoor/recreation lifestyle center development i.e. Sports Mall
- Aggressively work toward attracting an equestrian center
- Leverage recreational amenities to attract festivals, and events to Jackson County:

- Hunting & fishing shows
- Fishing Contests
- Birders & Wildlife photography events
- Biking/Mountain Biking activities and events
- Promote and host art fairs leveraging Armory Arts Village resources
- Create a regional tourism committee to develop and implement a tourism plan

The travel & leisure industry offers a relatively high return with a very high probability of success. The two other areas of emphasis – life sciences industry and advanced manufacturing (especially alternative technologies) – have a higher potential return but lower probability of success than the travel & leisure industry. Consequently, the travel & leisure industry provides diversification for Jackson County with respect to the return and probability of success trade-off.

Arts & Culture

In addition to the target industries discussed above, a focus on Arts & Culture is an important complimentary strategy for Jackson County to pursue.

Nationally, the nonprofit arts and culture industry generates \$166.2 billion in economic activity every year—\$63.1 billion in spending by organizations and an additional \$103.1 billion in event-related spending by their audiences.^{xli} Specifically, the Arts & Culture industry generates:

- 5.7 million full-time equivalent jobs
- \$104.2 billion in household income
- \$7.9 billion in local government tax revenues
- \$9.1 billion in state government tax revenues
- \$12.6 billion in federal income tax revenues

Beyond the direct economic impacts and direct benefits to the already existent travel & leisure infrastructure, investments in Arts & Culture enhance the quality of life metrics that are important to the creative classes. These creative classes are important for the creation of a successful life sciences cluster as well as further improvements in Jackson County’s Advanced Manufacturing efforts.

Jackson County has a vibrant Arts & Culture sector that needs to be emphasized and expanded as part of its economic development strategy. One great example of this sector that currently exists in Jackson County includes the Armory Arts Village of Jackson.

The Armory Arts Village of Jackson is located on the historic site of the original 19th century Jackson State Prison, just a couple blocks north of downtown Jackson. The 19-acre site includes several historic prison buildings, a 25ft. high turreted stone wall around the perimeter of the property and a vacant industrial complex to the South converted into a dynamic arts gallery, living space and cultural center that provides the community a place to live, work and play.

The Armory Arts Village is a unique and affordable live/work environment offering 62 apartments to “artists, musicians, designers, craftsmen and other creatives with the passion and commitment to turn their creativity into micro-enterprises, small businesses and other entrepreneurial ventures.”^{xlii}

Approximately fifty percent of the current residents are from the Jackson area while the other fifty percent come from places as far away as Miami, Florida and St. Louis, Missouri and as nearby as Ann Arbor and Lansing. In addition to housing, the Armory offers specialized shared workspace and equipment for resident artists including a two-story large-scale industrial art production space, a ceramics/sculpture studio and three generic classroom/work rooms, flexible gallery/exhibit areas, and multi-use performance/special events space.

It’s well documented that a thriving cultural life generates income, jobs and tax revenue for state and local communities. Not surprisingly, many communities have turned their attention toward leveraging arts and cultural programs to generate economic vitality in under-performing communities. States and local communities are beginning to realize that their economic fortune is tied to the location preferences of highly mobile knowledge-workers who form the intellectual backbone of the new economy. These workers value “quality of place” above nearly all other factors – including job market conditions – in choosing where to locate.

In what is referred to as The New Economy, the arts are gaining recognition for their role in making communities attractive to workers who want to be identified with – and participate in – these opportunities during their scarce leisure time. Richard Florida, a professor of regional economic development at Carnegie Mellon University and columnist for Information Week coined the phrase “creative class” to describe a new workforce, one that is fast-growing, highly educated, and well paid and diverse across the dimensions of age, ethnicity and race, marital status, and sexual preference. According to Florida this new workforce shares a common ethos that values creativity, individuality, difference, and merit.^{xliii}

The creative class seeks and desire places that they consider “unique” or “authentic” – places that have historic buildings, established neighborhoods or specific cultural attributes. They like a mix of urban grit alongside renovated building, from the commingling of young and old, long-time neighborhood characters and yuppies, fashion models and “bag-ladies.” This description immediately reminded us of Jackson’s Armory Arts Village project and represents a significant step toward embracing the attributes of the “creative community.” The Armory Arts Village is an example of urban redevelopment (“urban grit”), one that embodies many of the cultural and lifestyle amenities desirable to the creative class.

To attract and retain this new workforce, businesses have had to adapt; changing work place rules, flexible schedules and relaxed dress codes. The super-creative core of this new class includes scientists, and engineers, university professors, poets and novelists, artists, entertainers, actors, designers, and architects. In addition to this core group, Florida describes another sub-sector of the group referred to as “creative professionals” who work

in the knowledge-intensive industries such as high-tech sectors, financial services, the legal and healthcare professions, and business management. From now and into the future, places that are successful in attracting the creative class will prosper; those that fail won't. Communities that recognize art and culture as critical, not only to a region's livability, but also to the preparedness of its workforce, will be "creative communities."

So while we engage in an exercise to identify target industries for Jackson County we are confronted with the reality that unless Jackson can attract, support and sustain a workforce that resembles the "creative class", then the industries that we have diligently identified will not likely be attracted to the area. The target industries that we identified are closely aligned with those that are part of "The New Economy" i.e. life sciences, advanced manufacturing: wind, solar alternative energy storage and will look to locate and grow in communities that place a premium on cultural, ethnic, and artistic diversity.

In 1995, John D. Ong, Chairman Emeritus of The B.F. Goodrich Company explained why creative people and support for the arts is important to the long-term success of his company and why they invest in the arts even in difficult economic times:

People who create in our companies – whether they be scientists, marketing experts or business strategists – benefit from exposure to the arts. People cannot create when they work and live in a culturally sterile environment...The economic benefits of the arts greatly transcend and outlive any of the normal cycles...That is why businesses invest in the arts – even when times are tough, and when there is increased pressure to manage money carefully.^{xliv}

In order to truly gain a competitive edge against others states and communities and to meet the global challenges of the New Economy, Jackson must reinvent itself by making it more attractive to knowledge-based employees and the businesses that employ them. A community that exploits the vital linkages among art, culture, and commerce will ultimately prosper; attracting a diverse population, creating a better quality of life and attracting employers. As former Hewlett-Packard CEO Carly Fiorina told a panel of governors, "Keep your tax incentives and highway interchanges; we will go where the highly skilled people are."

Key Findings/Recommendations – Arts and Culture

- There is strong demand for the Armory Arts Village apartments, only 3 vacancies as of August 2009;
- Expand the vision and physical presence of the Arts Armory Village to include transitional housing opportunities for residents of the Arts Armory Village that eventually exceed the income limitations and to those who do not qualify but want to live on the Village area. Collaborate among the business community, economic development and the local unit of government to encourage and assist with the redevelopment and/or rehabilitation of adjacent buildings and neighborhoods for residential and commercial development;

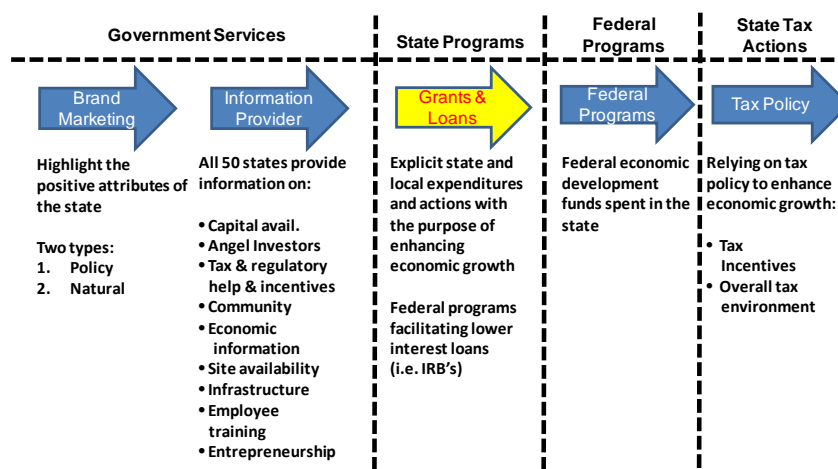
- The Armory Arts Village fills an important criterion for the creative class; it provides what Richard Florida describes as “low entry barriers” meaning a place where newcomers are accepted quickly into all sorts of social and economic arrangements;
- Strengthen marketing support and assistance for local artists – an expressed need by artists to assist them with the marketing and sale of their creative works;
- Recruit a variety of entertainment and food choices in Jackson; recruit ethnic restaurants, music venues, performance spaces to the area; create an environment that stimulates and provides high-quality, multidimensional experiences.
- Create a corridor(s) linking the downtown area to the Armory Arts Village – essentially merging the two areas by creating a safe and walkable and/or bikable pathway connecting the two areas;
- Recruit a post-secondary art school –to locate in the Armory Arts Village. Collaborate with one of the 21 colleges and universities that are located within one hour of Jackson – create a satellite location establishing an art education program;
- Collaborate with the business community and local government to sponsor a high-quality juried art show/fair;
- Create and sponsor an art competition, similar to ArtPrize, which is an art competition that will transform a three-mile district of downtown Grand Rapids with work from more than 1,000 artists. The winner of the competition wins a cash prize of \$250,000;
- Leverage Jackson County’s recreational amenities – creative class people value outdoor recreation very highly and are drawn to places and communities where outdoor activities are plentiful; and
- Coordinate and plan activities with The Arts and Cultural Alliance of Jackson County (ACAJC)
 - The Greater Jackson Community Cultural Plan (December 14, 2006) should be updated to include Armory Arts Activities and resources.
 - The Armory Arts Village and the ACAJC should pool its resources to more efficiently implement programs to boost promotion of the arts and area tourism related to the arts.

Section V: State Economic Development Programs

Much of Jackson County’s decline can be attributed to the decline in the automobile industry. Yet, state and local economic policies have also made a difference. In order to reverse Jackson County’s economic slide, the County (and preferably, the state as well) need to establish an effective economic development strategy.

All 50 states have economic development offices and/or official economic development organizations at the state and local levels. The following figure summarizes the 5 general economic development programs that all states provide.

State Economic Development Programs



The first two programs provided by all states are grouped in a category called “Government Services”. These services fall into two general areas: (1) Brand Marketing, or promoting the current or desired comparative advantages of the state and include: paid advertising, public relations, business trips/conferences, and the like; and, (2) Information Provider, or serving as a one-stop clearinghouse for information on: government tax and regulatory policies; venture financing options; government financing/grants options (state and federal); economic information; as well as information on many different types of education seminars (e.g., entrepreneurship, how to start a business, employee training, and employment regulations).

The next state-provided economic development program is called “Grants and Loans”. These programs typically involve explicit state and local expenditures (such as investing in an economic development project) or state and local actions (such as extending industrial revenue bonds). These programs are often executed by the economic development agency and are referred to as state economic development expenditures.^{xlv}

Federal programs are the fourth economic development programs available to all states and localities. The federal government offers several different programs that are used by the

states and private entities in the states. These federal programs include the U.S. Department of Commerce Economic Development Authority (EDA) programs; technology grants; small business grants and programs, and biotechnology grants. Often, private groups must apply these funds, but states play an important role in helping state residents become aware of, and apply for, these funds.

Tax policies are the final component of economic development used by all states to promote economic growth. The states with competitive overall tax systems will market the state’s tax advantages – New Hampshire promotes the state’s 0% income and 0% sales taxes as a major benefit from locating in the state. Those states with uncompetitive tax systems will offer targeted businesses tax incentives – the often high profile targeted tax exemptions and rebates offered to specific industries or companies to lure them into the state. The following figure summarizes states’ current economic development strategy and logic.



The current economic development strategy begins with the 5 economic development programs. States use the programs to target two types of economic targets:

1. *Growth Class*: The cutting edge businesses and industries that the state wants to encourage. These industries and businesses will vary by state, depending upon specific state comparative advantages. For instance,^{xlvi}
 - a. **Alabama** promotes its “low energy costs”
 - b. **Georgia** promotes its tax credits, pro-entrepreneurial business environment, and innovation centers focused on the areas of aerospace, agribusiness, energy, life sciences, logistics and advanced manufacturing
 - c. **Massachusetts** provides incentives targeted toward the state’s well developed “high tech” centers

- d. **North Carolina** promotes its tax credits, well developed clusters of domestic and international firms (including a top life-sciences cluster in Raleigh-Durham), and its targeted “resource support” for key industries
 - e. **South Carolina** promotes its competitive wages, low construction and land costs, low cost and reliable electricity, and the state’s pro-business policies to attract industries
 - f. **Texas** combines its competitive tax system with new strategic investments: a \$295 million “Enterprise Fund” and the “Texas Economic Development Bank”
 - g. **Vermont** is pursuing “green technologies”
2. *Equity Class*: The groups and geographical areas that the states explicitly target typically to provide a previously disadvantaged group or area additional economic aid.

Relying on the 5 program areas, the current strategy hopes to accelerate growth in the targeted industries and groups – perhaps even fostering growth where none would have otherwise happened. Due to the economic targeting, more businesses and jobs allegedly emerge. A larger employment and business economic base leads to greater overall economic growth, including:

- Stronger top-line economic growth;
- Increased growth in income and wealth;
- Increased population growth;
- Increased tax revenues; and,
- A more diversified economy.

The critical component in this process is targeting the right jobs and businesses. Successful economic development and successful industry recruitment are almost synonymous. Due to the central role of the “targeted industries” in the prevailing economic development paradigm, this stage is shaded.

Recent examples of states targeting specific industries include Delaware’s goal to make the state a center for the evolving *fuel cell industry*, or Wisconsin’s *stem cell* initiative.^{xlvi} Other examples include high profile initiatives to attract large manufacturers, such as Mississippi’s recent success in attracting a new Toyota plant to Tupelo, Mississippi.^{xlviii}

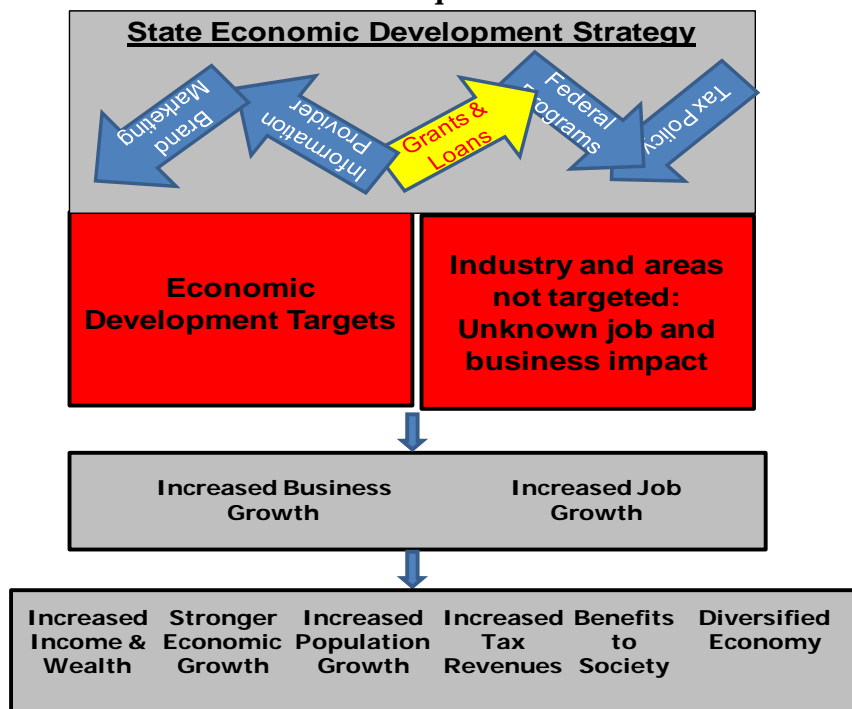
Targeting specific industries raises a number of complexities and is not the most efficient means for fostering long-term economic development. The next section illustrates the complications and unintended consequences that arise when economic development focuses on “targeted industries”.

State Economic Development Complexities

Complexities thwart the prevailing approach to economic development. The 5 program areas identified above are not necessarily working toward the same end. In fact they can work at cross-purposes, the impact of one program area offsetting the impact of another. Even within a single program area, such as explicit government expenditures, the

expenditures are often erratic and not necessarily coordinated. The lack of coordination complicates the implementation of a cogent, consistent economic development strategy. The lack of a consistent long-term economic development strategy jeopardizes the sustainability of the economic development funding – especially during the tough budget times many states face today. The following figure summarizes the problem of economic development program areas working at cross-purposes and the complexity between economic development targets and non-targeted industries often overlooked by the prevailing economic development process.

**Common Mistakes:
Strategy Components Working at Cross Purposes and the Impact of Unintended
Consequences**



In the figure above, the red “Economic Development Targets” box is split into targeted industries and industries that are not targeted. This dichotomy separates the impact strategy components can have on industries within and beyond the sightlines of policy.

All of the ramifications from economic development policies must be considered, not just the impacts on the targeted industries or groups. In the parlance of economists, policy should be formulated from a general equilibrium perspective taking all reactions of other players or markets into account, not a partial equilibrium framework that only looks at part of the ultimate reactions. Focusing on the problem instead of the symptoms and taking all reactions into account is also the only way to minimize the chance of being surprised by unintended consequences.

For instance, higher taxes to finance a new worker retraining program for a disadvantaged industry lowers the net cost of labor in the targeted industry. Employment in the targeted industry increases. Higher incomes in the targeted industry allow these employees to

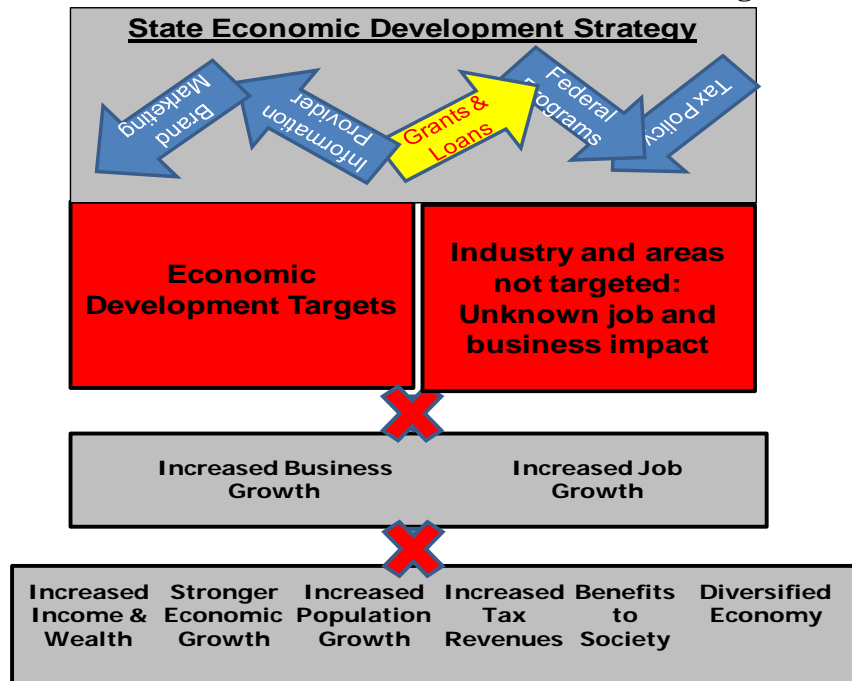
spend more on goods and services throughout Jackson County's (or Michigan's) economy. The incomes of those businesses that receive this income will grow. As this process continues, continued income and economic growth is fostered.

But, the impact of the government program does not end there. Due to the new taxes, net costs rise for other industries or residents of Jackson County or Michigan. The higher costs create the possibility that other firms will reduce production and jobs, or other residents will have less disposable income to spend. In response, disposable income for people who are part of the non-targeted industries will fall, leading these people to spend less on goods and services throughout the economy. The incomes of these businesses will decrease, and as this process continues, decreased income and economic growth ensues.

In the attempt to eliminate one distortion (higher unemployment) a second distortion (higher taxes) is created. As a consequence, the net impact of the job retraining program cannot be measured simply by the new retrained worker jobs. Lost jobs or incomes in other parts of the economy must be subtracted from that total. Economic development programs must account for the possible negative impacts on non-targeted industries and ideally implement programs that have positive impacts on both targeted and non-targeted industries.

There are still more complexities. The figure below breaks the presumed link between economic development targets, expanded business and jobs, and a stronger economic environment. Economic development programs do not directly impact job and business growth. Economic development programs operate through their impact on the economic landscape – the overall economic environment. Job and business growth are driven by a healthy economy, not other way around. Successful economic development policies need to reflect these facts and establish effective methods to improve the overall economic environment – the economic landscape.

Common Mistakes: Mistaken Economic Linkages



The importance of a landscape-focused economic development strategy is clearly seen through an examination of state economic development programs and state economic success.

Incorporating the Economic Landscape

Economic development policies are made within a broader policy framework. Although the overall economic landscape is often ignored or underappreciated, it plays a critical role in the economic development process.

The chance of achieving the goal of economic development is maximized when a state's economic landscape (or environment) allows opportunities to flourish. This goal requires the state to ensure its policies do not overly inhibit people within the state from using their own ideas, intelligence, natural abilities, and entrepreneurial spirit to provide for their families and to pursue their dreams. To use a popular phrase, it is about empowering the people.

Empowerment requires the recognition that people face obstacles to put their talents to use. These obstacles include tax rates; regulations; and, inadequate or inappropriate economic infrastructure (including human capital infrastructures). Excessive barriers cause the state residents' talents to be used inefficiently. Less is produced than is possible from the existing people and resources. Empowerment reverses this state of affairs. It shifts the citizens' efforts and capital into more productive uses.

Such shifting of resources has been discussed for a number of years in terms of the impact of cutting tax rates. In that context the shifting was often described in economic terms as a substitution effect. By lowering tax rates the after-tax value of the next dollar earned in the observable marketplace increases relative to a dollar earned in the untaxed grey or nonmarket economy. The net value of spending an hour in the taxed market economy rises relative to spending an hour in the untaxed nonmarket economy, say fixing your own car, painting your porch, or working for “under the table” wages. The incentives shift to spend more time working in the marketplace.

Similar arguments are made about how people allocate their savings or capital. Cut the tax rate on the next dollar earned by capital, and there is an increased incentive to invest more money in the market economy. Fewer saving will end up in inefficient tax dodges that previously provided their owners more than they would get after taxes in market activities, but that provided the state economy with less than it potentially could have.

Empowerment brings valuable resources into the observable market. Empowering people to use their time, energy and savings more efficiently is what generates more products and services from seemingly the same resources. Empowerment does not just enhance economic growth today. It also accelerates economic growth over time as future activities continue to leverage the successes of today to accelerate growth tomorrow.

To unleash a state’s economic development potential, policies must enhance the state’s economic landscape. Enhancing the economic landscape requires:

- Identifying and understanding how state policies impact the economic landscape; and,
- Understanding which policies and expenditures enhance the economic landscape most efficiently.

State and local governments affect the economic landscape through the taxes levied, regulations implemented, and expenditure programs financed. As illustrated below, states with the less burdensome taxes, appropriate regulations, and efficient and appropriate expenditure policies outperform those states with more burdensome tax and regulatory landscapes and inefficient expenditure policies. On these measures, Michigan and Jackson County score poorly.

State Competition: A Landscape Perspective

Each state within the U.S. is analogous to a country with open borders. Just as the U.S. competes with other countries for economic activity, states compete with each other for the location of factories, offices and jobs within the U.S. Typically the competition occurs through tax-cutting battles between neighboring states and targeted tax incentives to encourage corporate relocation. While climate, natural resources, proximity to desirable areas, etc. are important to location decisions, these are not factors that a state can change to influence incentives. What the states *can* control are state and local fiscal policies that comprise the economic landscape or environment.

A critical component of that landscape is the overall level of taxation in a state. High tax rates restrain growth. However, even if a state's tax rates are not currently high, raising tax rates makes a state less attractive and inhibits growth. Every state that raises its relative tax burden will find it difficult to retain existing facilities and to attract new businesses and workers. In tax-raising states, new business starts will decline and business failures will increase.

Conversely, a reduction in tax rates makes a state more attractive. Lower rates reduce the cost of doing business in a state, increasing profitability at prevailing prices and encouraging production to expand. Some previously unprofitable businesses now find they can turn a profit. Business failures decrease. Workers in the state find that their gross paychecks are bigger and/or their after-tax income increases. Together these changes encourage more work effort and businesses to hire more people. Jobs increase.

It is not only workers who are initially within the state that are affected. Out-of-state workers have the ability to "vote with their feet" and relocate to political jurisdictions that pursue more favorable economic policies. The more mobile workers are, the bigger the impact of tax rates changes can be. For example, a worker preparing to relocate to achieve a higher standard of living will be extremely sensitive to a change in his (or another) state's tax rates.

By contrast, factors of production that cannot easily move (real estate or an existing plant are classic examples) will be affected only slightly by tax rate changes. For example, a new manufacturing plant cannot easily be picked up and moved elsewhere. Initially its operating level will change little as a state's tax rates rise. The major impact of state tax rate increases will be on the plant's after-tax profits and, ultimately, whether to close down or to remain open. The worker who can flee can escape the higher tax, the plant that is stuck cannot. The burden of the higher taxes will be borne by those who cannot get away. Thus, the burden of state and local taxes may very well be different from its initial incidence.

Suppose there are two virtually identical manufacturing companies with production plants located within just miles of each other. One is located in Michigan, and the other is located just across the border in Indiana. Since we assume both companies sell virtually identical products in the U.S. market, competition will force them to sell their products at the same price. Because each company's plant is separated by just a thin and invisible state line, both have to pay the same interest rates, the same after-tax wages to their employees and the same prices to their suppliers.

Now, suppose that Michigan passes a large corporate income tax increase, while Indiana does not change its tax rate. Because the market for the companies' product is highly competitive, the Michigan company cannot raise its prices and pass the impact of the tax hike forward to its customers. Because it competes with surrounding companies for workers and supplies, the Michigan company cannot pass the tax hike backward onto its suppliers or employees. Instead, the Michigan firm absorbs the tax increase and after-tax profits decline. The return on investment declines leading to a reduction in investment and

hiring. With lower output and profits the Michigan company's stock price falls. Simultaneously, the identical competitor in Indiana benefits.

While workers can quickly cross state lines, over time the manufacturing company can cut back its reliance on the plant in the state where tax rates went up, and shift production to where the tax climate is more advantageous. This migration of workers and plants will continue until after-tax returns among the states are equalized. Any part of production that cannot ultimately escape bears the burden of the tax increase.

Not only is the economic landscape important in theory, but also empirical analysis shows the depth of its impact on the economy.

Overall Tax Burden: Take the overall tax burden in a state – defined as total state and local taxes as a percentage of personal income.^{xlix} Economic growth in the states with the highest tax burdens consistently lags economic growth in the states with the lowest tax burdens (see table on the following page). Between 1999 and 2008, the average growth of personal income in the 10 states with the lowest tax burdens significantly exceeded the personal income growth in the 10 states with the highest tax burdens. Not surprisingly, the stronger economic growth led to higher job growth and population growth in the low-tax states as more and more people chose to relocate to the lower-taxed states.

State and Local Tax Burden vs. 10-Year Economic Performance
(2008 State & Local tax burden vs. economic performance between 1999 and 2008,
unless otherwise noted)

	2008 S&L Tax Burden	Personal Income Growth	Population Growth	Net Domestic In- Migration as a % of Population	Non-Farm Payroll Employment Growth
Alaska	\$64.00	69.3%	9.8%	-0.2%	16.1%
Nevada	\$66.00	85.8%	34.4%	1.8%	28.8%
Wyoming	\$70.00	102.9%	8.3%	0.2%	28.1%
Florida	\$74.00	69.0%	16.3%	0.8%	13.9%
New Hampshire	\$76.00	51.8%	7.7%	0.3%	6.6%
South Dakota	\$79.00	63.6%	7.2%	0.0%	11.1%
Tennessee	\$83.00	52.0%	10.2%	0.4%	3.4%
Louisiana	\$84.00	62.9%	-1.1%	-0.8%	2.4%
Texas	\$84.00	73.9%	18.3%	0.3%	15.9%
Arizona	\$85.00	77.2%	29.4%	1.3%	21.0%
10 states with lowest burden	\$76.50	70.9%	14.1%	0.4%	14.7%
10 states with highest burden	\$107.60	51.6%	4.4%	-0.3%	4.9%
Rhode Island	\$102.00	50.8%	1.0%	-0.4%	3.5%
Wisconsin	\$102.00	45.1%	5.5%	0.0%	3.1%
Vermont	\$103.00	54.3%	2.7%	0.0%	5.0%
Ohio	\$104.00	34.0%	1.3%	-0.3%	-3.5%
California	\$105.00	57.1%	9.7%	-0.4%	7.2%
Hawaii	\$106.00	59.8%	6.4%	-0.4%	15.7%
Maryland	\$108.00	62.2%	7.2%	-0.2%	8.6%
Connecticut	\$111.00	51.7%	3.4%	-0.3%	1.8%
New York	\$117.00	51.2%	3.2%	-0.9%	4.0%
New Jersey	\$118.00	50.2%	3.9%	-0.5%	4.0%

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics and the Tax Foundation. Total Tax Burden data is from the Tax Foundation, and includes adjustments to account for state taxes paid by residents from other states (e.g., sales taxes paid by tourists or severance taxes).

States with No Personal Income Tax: The results are the same if the higher taxed states are defined as those states that levy the highest personal income tax rate by comparing states that in 2008 had no personal income tax to states that had the highest top personal income tax rates (see table on the following page).¹ Once again, the lower-taxed states and localities experienced higher personal income growth, population growth, in-migration and employment growth.

**Relationship between State Personal Income Growth and Top Marginal Personal
Income Tax Rate (State & Local)
2008**

	Top PIT Rate	Personal Income Growth	Population Growth	Net Domestic In-Migration as a % of Population	Non-Farm Payroll Employment Growth
Alaska	0.0%	69.3%	9.8%	-0.2%	16.1%
Florida	0.0%	69.0%	16.3%	0.8%	13.9%
Nevada	0.0%	85.8%	34.4%	1.8%	28.8%
New Hampshire	0.0%	51.8%	7.7%	0.3%	6.6%
South Dakota	0.0%	63.6%	7.2%	0.0%	11.1%
Tennessee	0.0%	52.0%	10.2%	0.4%	3.4%
Texas	0.0%	73.9%	18.3%	0.3%	15.9%
Washington	0.0%	58.1%	12.1%	0.3%	11.7%
Wyoming	0.0%	102.9%	8.3%	0.2%	28.1%
9 States With No PIT 9 States With Highest Marginal PIT Rate	0.00%	69.6%	13.8%	0.5%	15.1%
Hawaii	8.25%	59.8%	6.4%	-0.4%	15.7%
Maine	8.50%	50.2%	3.9%	0.3%	5.0%
Ohio	8.87%	34.0%	1.3%	-0.3%	-3.5%
New Jersey	8.97%	50.2%	3.9%	-0.5%	4.0%
Oregon	9.00%	51.6%	11.7%	0.5%	8.5%
Vermont	9.50%	54.3%	2.7%	0.0%	5.0%
Rhode Island	9.90%	50.8%	1.0%	-0.4%	3.5%
California	10.30%	57.1%	9.7%	-0.4%	7.2%
New York	10.50%	51.2%	3.2%	-0.9%	4.0%

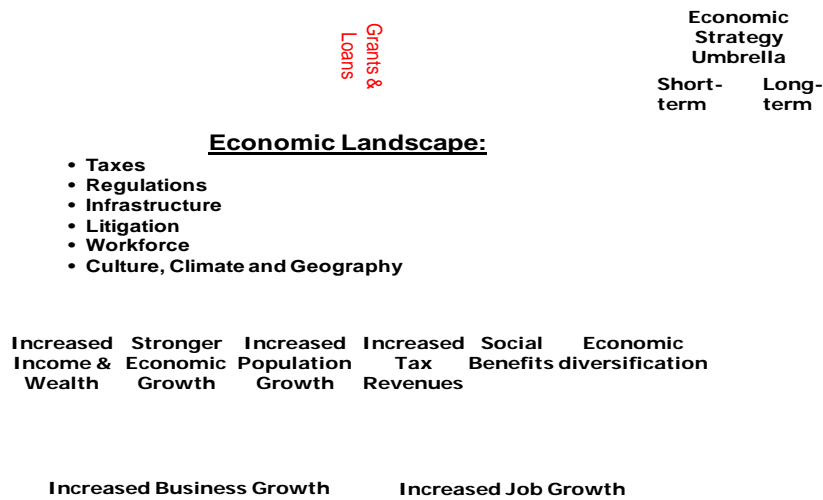
Economic Landscape and Development Expenditures

Each of the preceding comparisons demonstrates the important connection between a competitive economic landscape and accelerated economic performance. The figure on the following page illustrates how the economic landscape is the most direct route to the goals of greater economic growth and job creation. Moreover it avoids the trap of negative effects on non-targeted sectors that work at cross-purposes to these goals.

The landscape approach starts with coordinated short-term and long-term economic development strategies. Coordination across all 5-program areas is essential. The immediate goal is to make the economic landscape more competitive. Economic development expenditures, as part of this strategy, must help increase the competitiveness and attractiveness of the economic landscape. Success should be defined based on whether the economic development expenditures increase the overall attractiveness of Jackson County, Michigan.

The Economic Development Process: A Landscape Perspective

State Economic Development Strategy



As indicated by the empirical tests above, improving the economic landscape produces the biggest “bang for the buck” in terms of increased economic growth and diversity. The improving economic environment encourages greater business and job growth. The growth rate of workers’ and businesses’ incomes will accelerate, as will Michigan’s and Jackson County’s total population growth.

Michigan in general and Jackson County in particular score poorly on their economic landscape. For instance, Michigan’s property tax is much higher than the majority of the country. Residents pay \$41.11 for every \$1,000 of personal income earned which ranks the state as the 41st in the nation, with 50 being the worst.^{li}

Jackson’s personal income tax is levied at 4.35% at the state level plus an additional 1.0% for residents and 0.5% for non-residents working in the city for a total 5.35%. This is better than Detroit whose city income tax of 2.50% raises the total to 6.85% and ranks Michigan as the 31st with 50 being the worst. t.^{liii} The sales tax rate of 6.0% is above the average state sales tax rate.^{liiii}

The corporate income tax rate is 9.01%, which is ranks MI 41st, with 50th being the worst.^{liv} Recent legislatures created the Michigan business tax of 4.95% which is levied on every person with business activity in Michigan that is allocated or apportioned to Michigan and is capped at \$6 million.

Regulations are also more burdensome in Michigan compared to other states. For instance, Michigan’s minimum wage of \$7.40 is ranked 42nd, with 50th being the worst, in the US, which raises overall business costs in Michigan relative to other states. The national level is currently \$6.55, but that is set to rise to \$7.25 on July, 24th of this year.^{lv}

Economic Development Expenditures within the Economic Landscape

The data show no direct link between higher economic development spending and higher state economic growth. But, once the economic landscape is taken into account, economic development spending can play an important role in enhancing a state's economic growth rate. The key is not spending per se. The key is correct economic development spending within a broader pro-growth economic landscape.

Research & Development (R&D) expenditures are a central focus of economic development programs. Therefore, we examine the relationship between state expenditures on R&D, economic growth, and the overall economic landscape to illustrate this point.

The National Science Foundation tracks the dollar amount of state expenditures on R&D on a per capita basis to adjust for the differing sizes of state economies. The states that have the fastest per capita R&D expenditure growth rate do not necessarily have the fastest income growth rate. Similarly, the states that have the slowest per capita R&D expenditure growth rate do not necessarily have the slowest income growth rate, see table below. If instead of the change in per capita R&D expenditures, the level of per capita R&D expenditures is used to divide the states, the results are essentially the same.

**Per Capita State R&D Expenditure Growth Compared to Average Annual Personal Income Growth 1995-04
(States Ranked by Largest Growth in R&D Expenditures)**

	Average Change in per capita R&D Expenditures	Change in Personal Income
Fastest 10 States	\$1.28	5.4%
Upper Mid 10	\$0.76	5.1%
Middle 10 States	\$0.22	5.0%
Next 10	\$0.11	5.1%
Slowest 10 States	\$0.00	5.6%

**Per Capita State R&D Expenditures Compared to Average Annual Personal Income Growth 1995-04
(States Ranked by Largest Per Capita R&D Expenditures)**

	Average Growth in Per Capita R&D Expenditures	Change in Personal Income
Largest 10 States	\$1.91	5.2%
Upper Mid 10	\$1.02	5.4%
Middle 10 States	\$0.69	5.2%
Next 10	\$0.44	4.7%
Smallest 10 States	\$0.24	5.6%

Neither table illustrates a positive relationship between state R&D expenditures and economic growth because the economic landscape was not taken into account. Once the economic landscape is taken into account, state expenditures on R&D are consistent with higher economic growth, see Table below.

Landscape View: Per Capita State R&D Expenditures and Expenditure Growth Compared to Average Annual Growth in Personal Income 1995-04

	Average Per Capita R&D Expenditures	Change in Average Per Capita R&D Expenditures	Change in Personal Income
Top 10: Most Competitive States	\$0.87	\$0.28	5.4%
Bottom 10: Least Competitive States	\$0.66	\$0.27	5.0%

The above table divides the states based on the Laffer State Competitive Index.^{lvi} Those states with the most competitive environments, on average devote 32% more toward state R&D expenditures per capita than those states with the least competitive environments. As a consequence, state expenditures on R&D, or other development programs, if incorporated as part of a competitive economic landscape, can play an important role in enhancing the state’s economic growth rate.

A 2007 study by the National Governors Association and the Pew Center on the States evaluates the experience of states investing in research and development. Their findings corroborate the importance of focusing on the economic landscape in order to ensure that the state expenditures are most effective.

The biggest lesson learned is straightforward: How much a state spends on R&D is secondary. How it is spent is absolutely critical. Key to this truth is the notion that R&D efforts must be considered investments, not expenditures.

Furthermore,

Investing in research and development won’t lead to meaningful returns if it’s done in isolation. R&D yields the greatest benefit when it’s planted in a state with a full-fledged innovation economy that includes a variety of interrelated elements. The exclusion of even one can be detrimental—or even fatal—to the process. The list includes: universities and public or private research laboratories to create new ideas; buy-in and leadership from industry; effective ways for individuals and entities to communicate with one another; superior infrastructure, including laboratories, transportation and high-level communications assets; talented workers and a good quality of life to attract them; investment money and an entrepreneurial culture that will help to bring new ideas to market.^{lvii}

Competing states are also devoting a large amount of resources at attracting “the industries of tomorrow.” For instance:

- **Texas** has established (1) the Texas Enterprise Fund that since 2004 has awarded over \$335 million in financial resources to promote economic development; (2) the Emerging Technology Fund had \$185 million appropriation during the FY2008-09 biennium; (3) during the latest legislative session: the Skills Development Fund was appropriated \$51 million and job training was allocated \$11 million. Total

funding is about 1.1% of Texas' annual budget, not including tax relief initiatives and 2.8% including tax relief initiatives.

- *New Jersey's* Economic Development Authority spent \$681.5 million on various economic development initiatives in 2007, approximately 1.2% of the total budget.
- The *Wyoming* Business Council spent over \$42.5 million in FY2007.
- *New York State* has spent \$586 million on technology "Centers of Excellence" between 2001 and 2006.

The lesson for Jackson County is clear. Throwing money at potential industries will not lead to the desired result if the economic landscape is not right for the potential industry. But, as the National Governors Association study identified, if Jackson County does not have the attributes necessary to support a viable industry cluster then the investment will not be successful even if the economic landscape is conducive. Therefore, while it is important for both Jackson County and Michigan to improve its economic landscape, the viability of any potential new (or current) industry cluster also depends upon whether Jackson County has the necessary attributes to support the targeted industries. The proper development strategy, consequently, requires focused attention on both necessary conditions.

Conclusion

This report provides Jackson County economic development officials and its partners not only a very concise set of recommended target industries, but perhaps more importantly it takes an objective look at the competitive issues facing the Jackson community. We believe that Jackson has the basic ingredients to be an important economic player in the State of Michigan and that the targets identified are legitimate opportunities. Some of the ideas and suggestions expressed and recommended in this report are non-traditional and perhaps a departure from the established economic development strategies employed over the past couple of decades. However, given the unique economic conditions of our state and national economy, together with growing global competition and the emergence of new industries - we would argue that to grow and prosper in the future, it is imperative to adopt new economic strategies designed to support and build emerging industries such as alternative energy, organic food farming and tourism. It's clear to us that change is necessary as evidenced by the decades of dependence on a declining automobile industry. The economic strain caused to Michigan and heavily automotive dependent communities like Jackson County has been severe; leading to massive jobs losses and declining tax revenues.

It's time to set sights on new and emerging opportunities and to exploit the many resources that were developed and created during Michigan's economic prominence; it's time for Jackson to harness its skilled workforce, proximity to major markets, sophisticated infrastructure, access to educational institutions, innovation and entrepreneurial spirit to take advantage of the economic opportunities of the future.

And finally, to be successful, it's imperative that the Jackson community understand these basic guiding principles as they work to implement their overall economic development strategy:

- **Collaboration**
 - Public and private sector input
 - Consensus on how to develop and implement the plan
 - Diligent implementation
- **Community Support**
 - The community must be willing to contribute the resources necessary to implement the strategy.
 - Embrace the challenge
- **Adaptability**

The plan must be flexible – economic conditions change; therefore you must too.
- **Measurable**
 - Improve education attainment levels
 - Creation of a strong marketing program
 - Increased tax revenues
 - New job creation
 - Retention of existing job base

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Attachment One: PowerPoint © Presentation to the December 4, 2009 Working Session of the Jackson County Board of Commissioners

The PowerPoint © Presentation that follows was developed as a preliminary presentation and a work in progress of the analyses and recommendations presented more formally here.

At the County Commission Meeting, County Treasurer Karen Coffman described the County Strategic Planning Process, placed the efforts of the Economic Development Team in context and introduced the speakers.

Enterprise Group President Scott Fleming described his agency's work on the Jackson County Economic Development Strategy and introduced Mike Montgomery from Montgomery Consulting, Inc., who presented the results of the two analyses and summarized the recommendations.

Jackson County: Economic Development Strategy

December 2009
Report on Economic Analyses

Two Analyses

- In support of Jackson County strategic planning, the Enterprise Group commissioned two economic analyses on the opportunities and challenges facing Jackson County.
- *CURRENT/PAST* -- Montgomery Consulting, Inc. examined the Jackson County Economic Base (those industries that *statistically* appear to be bringing net new jobs and investment to the area) and made some recommendations with regard to the ongoing Business Retention/Expansion (BRE) efforts of the Enterprise Group. *BRE has historically been major focus of Enterprise Group.*
- *FUTURE (Mirror of Site Selection Process)* -- Duff & Phelps LLC in conjunction with Arduin, Laffer & Moore Econometrics examined longer term trends in both Jackson and the nation as a whole and, based on that analysis, recommended some "Target Markets" that the Enterprise Group should consider making the focus of its growing Business Attraction efforts. *Enterprise Group is now becoming More active in Business Attraction.*
-

Montgomery Analysis

- Based on their analysis of the current Jackson County economy, Montgomery Consulting recommended continuing aggressive Business Retention/Expansion efforts focused on companies doing business in five industries that comprise the bulk of the present Jackson County Base Economy.
- These industries were (by NAICS Code):
 - 22 – Utilities
 - 31 – Manufacturing
 - 44 – Retail
 - 61 – Educational Services (private)
 - 62 – Health and Human Services (private).
- Montgomery analysis validated both the quality/success of the Group's long-time Business Retention/Expansion program but also wisdom of having launched a more active Business Attraction effort.

Duff & Phelps / Arduin, Laffer & Moore Econometrics

- Duff and Phelps team looked at Jackson as *Site Selection Consultants*.
- Based on what Jackson offers and what industries need, they recommended some *Target Markets*:
 - Life Sciences*
 - Advanced Manufacturing*
 - Alternative Energy
 - Food Processing
 - Travel/Leisure including Arts/Culture*
- Also recommended what Jackson County (and State of Michigan) should do to become more appealing as a place in which to do business.
- *If challenges they cite are successfully addressed, Jackson's attractiveness to business improves, chances of success increase and more industries become realistic future targets.*

*Indicates EG already working with prospects.

A quick walk through the analyses

- Both firms prepared analyses of greater depth than can be realistically covered here.
- Going to look at/talk about a few slides from each presentation to give you nuance.
- Will conclude by talking about future direction and accountability – The “Scorecard.”
- Also, about some next steps.

Jackson County in *Michigan Multipliers 2009*

- Est. Total Employment: 58,272
- Composed of
 - Private Sector: 49,357
 - Public Sector (state & local): 8,915*
- Base Employment: 30,227
*Agencies like EG focus on Retaining,
Expanding, Creating or Attracting Base
Jobs!*

Distribution of 30,228 Base Jobs

“Basic” industries listed below right are more highly concentrated in Jackson County than in the US as a whole.

- Base status (high relative concentration) implies *comparative advantage* -- things community does well. *Basis for Expansion or Attraction.*

- Base status also indicates that an industry is especially important to the health of the local economy. *Makes an industry a higher priority for Retention program.*

- **Big + Base = CRITICAL!**

NAICS	Description	MM 2009 Est., Emp
22	Utilities	1,750
31	Manufacturing	10,045
44	Retail	7,978
61	Educational Services (Private)	1,557
62	Health/Human Assistance	8,898
	Total	<u>30,228</u>

7

Industries & Retention/Expansion Recommendations

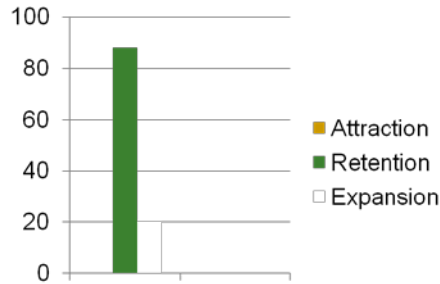
- **22-- Utilities.** *Keep CMS healthy, happy and located here!*
- **31-- Manufacturing** – Very heavily auto and related. Help firms problem solve, diversify customer base. *But global changes to auto makes shrinkage of current almost inevitable – need “new blood.”*
- **44--Retail.** Retail more important here than norm. Maintain status as commercial center.
- **61 – Educational Services** (private). Facilitate growth of institutions.
- **62 – Health/Human Services.** Regional center, facilitate growth.

EG Past Economic Development Practices

• EG Retention (1997 -2007)

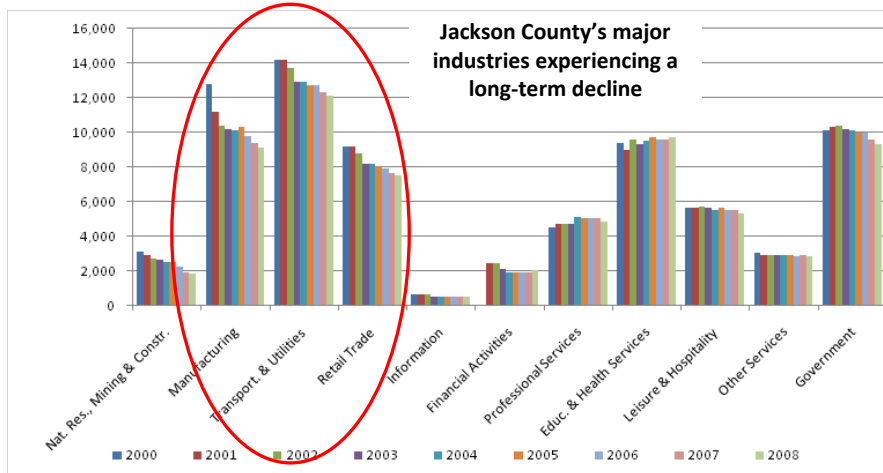
Historically, the EG only did retention visits.

Had a yearly goal of 100 visits. Only achieved 80 – 88 visits each year. This was with one person making calls.



NOW: 2009 – 222 through October!

Jackson County's Economy Needs Revitalization



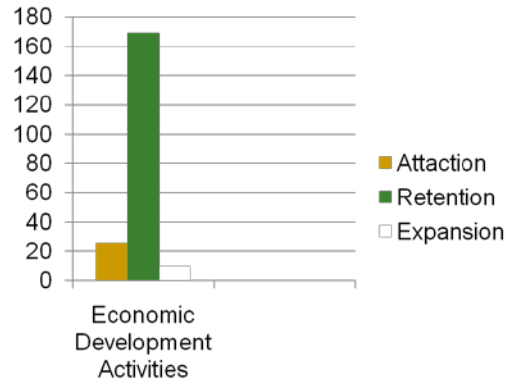
- EG Current & Future Practices

EG Attraction vs. Retention/ Expansion

Since 2008, the EG has increased their retention efforts, and has implemented a new marketing campaign to better attract new businesses.

Now we had 169 retention activities in summer and 222 through October.

Over 26 Attraction leads and prospects



11

Retention is clearly no longer sufficient

- Change inevitable. No longer possible to simply retain/expand what is here.
- Clear that long term health of Jackson County requires significant evolution in jobs base.
- Need to further change “mix” of Retention/Expansion vs. Attraction in local ED program.
- Duff & Phelps material that follows addresses how we might focus Business Attraction effort to achieve sustainable, advantageous growth.

SWOT Analysis-Overview

Strengths

- Proximity to major markets and educational institutions
- Quality of life
- Affordable housing/real estate
- Established infrastructure
- Strong economic development organizations - primary ED point of contact

Weaknesses

- Low educational attainment
- Deterioration of economic base
- Poor state economy - regressive tax system
- Struggling local economy
- Retention/attraction of educated professionals/workforce
- Lack of diversity - population and economic base

SWOT Analysis-Overview

Opportunities

- Focus on small business growth
- Improve educational attainment level
- Nurture growth of creative class
- Build stronger links between businesses and educational system
- Focus on growth sectors: life sciences, advanced manufacturing, etc.
- Unify economic development efforts

Threats

- Territorialism - internal
- Additional decline in the nation's economy
- Fear of change
- Fierce competition for jobs & tax base - global & domestic
- Emmigration

Recommended Focus Industries

- SWOT and Industry Judgment Criteria point toward focus industries listed below:
- Life Sciences
 - With an emphasis on life science manufacturing
- Advanced Manufacturing
 - Alternative Energy
 - Wind
 - Solar
 - Biomass
 - Advanced Energy Storage
 - Food Processing (Also, Organic Farming)
- Travel & Leisure
 - Arts & Culture

Industry Judgment Criteria: The 3 Focus Industries

JACKSON COUNTY SHOULD FOCUS ON INDUSTRIES WITH THE RIGHT BALANCE OF ACCELERATED ECONOMIC GROWTH AND THAT HAVE A HIGH PROBABILITY OF BEING SUCCESSFULLY ESTABLISHED OR EXPANDED IN THE JACKSON COUNTY AREA

ALL 3 BUILD ON SOME ESTABLISHED STRENGTH IN AREA.

Chance of Success	Expected Economic Growth		
	Accelerated	Average	Below Average
High		3. Tourism and Leisure	
Medium	1. Life Sciences Industry 2. Advanced Manufacturing		
Low			

1. Life Sciences Industry: Accelerated Growth Industry

- The life sciences industry is
 - Growing quickly.
 - Generating high-level employment on average 68% higher wages than average private sector job).
- Successful life science clusters have been important economic development drivers to several cities
 - The greater Boston area, Philadelphia, San Francisco, San Diego, Raleigh, Chicago, Pittsburgh
- Attracting a great deal of investment:
 - Academic bioscience R&D -- \$29 billion in FY 2006
 - Venture capital -- \$11.6 billion in 2007
 - 82,000+ new bioscience-related patents in US 2002-2007.

Michigan Is Successfully Attracting The Life Sciences Industry to the State

- Wages and salaries of the bioscience industry in Michigan was \$2.5 billion in 2007 (PhRMA)
- **Michigan – Jackson advantages:**
 - **Top notch research universities** are a core fundamental that provides Michigan with a major competitive advantage in developing a vibrant life sciences cluster. *UM, MSU, WSU, WMU and GVSU all "big" in Life Sciences.*
 - Michigan ranked number 10 in nation for academic life science research expenditures of \$892.7 in FY 2006
 - **A strong hospital system** that provides key facilities and human capital. Hospitals in the Jackson County area include:
 - Allegiance Health, formerly W A Foote Memorial Hospital (a major employer in Jackson County)
 - Also: Eaton Rapids Medical Center (26 miles away), Chelsea Community Hospital (28 miles away), Hillsdale Community Health Center (29 miles away), and University of Michigan Hospital (40 miles away in Ann Arbor, MI)

Michigan Is Successfully Attracting The Life Sciences Industry to the State

- **Michigan advantages:**
 - Extensive investments to support the life sciences industry already committed including:
 - **Tri-Corridor Program** – UM, MSU, Wayne State and Van Adel Institute
 - A **\$3.5 million investment in Biotech R&D incubation facility** to reuse former Pfizer facility
 - **\$18.2 million in Centers of Excellence**
 - The **Michigan Pre-Seed Capital Fund**, which makes equity investments in early-stage companies, that by March 2008 has invested \$5 million in 22 companies, many in the biosciences
 - Michigan's **"Smart Zones"** — tax-advantaged districts each equipped with university affiliated incubation or commercialization programs.

Life Sciences Industry: Areas of General Opportunity

According to Parma:

*The **agricultural feedstock, chemical feedstock, and agricultural chemical industries** -- 1,000 jobs in Michigan, growing rapidly in Michigan (less clear nationally).*

*Another relatively successful **bioscience manufacturing industry in Michigan is medical electronic instruments manufacturing** (employment growth of 41.2 percent between 2002 and 2007) this is a somewhat larger industry in Michigan.*

Feinstein, Abel, George A. Fulton and Donald R. Grimes (2009) "The Contribution of the Bioscience Industry to the Economy of Michigan" *Pharmaceutical Research and Manufacturers of America*, February.

Life Science – More Specific Targets

- Electromedical and Electrotherapeutic Apparatus Manufacturing
- Irradiation Apparatus Manufacturing
- Analytical Laboratory Instrument Manufacturing
- Research and Development in Biotechnology
- Testing Laboratories

Recommendations

- University-R&D expenditures did not translate into comparable enterprise development and technology-licensing activity in the region.
 - Jackson needs strong relationships with the Tri-Corridor Program and/or individual institutions.
 - Develop a process to connect entrepreneurs to necessary resources.
 - Improve access to capital. Develop public/private seed fund program in collaboration with local banks, MEDC, local/regional hospitals, manufacturers and universities.
 - Develop a “culture of entrepreneurship” in Jackson and the region.

2. Advanced Manufacturing

- Advanced manufacturing techniques has allowed the U.S. manufacturing industry to:
 - Maintain its output levels
 - Pay higher wages
 - Increase quality
 - With a smaller manufacturing labor force
- Opportunities in manufacturing are not universal
 - Right conditions
 - Target right manufacturing sectors

(2006) "The Future Success of Small and Medium Manufacturers: Challenges and Policy Issues" *The Manufacturing Institute*.

Manufacturing Opportunities

- Many of the physical attributes important for a viable life sciences cluster are the same
 - Physical infrastructure
 - Skilled labor force
 - University and education connections
 - Community Colleges have been identified as a key player in helping ensure workers have the skills necessary for Advanced Manufacturing jobs.
- Within the advanced manufacturing industry Jackson County can exploit:
 - Alternative Energy manufacturing
 - Food Processing

(2006) "The Future Success of Small and Medium Manufacturers: Challenges and Policy Issues" *The Manufacturing Institute*.

Federal Government Investment Drive Alternative Energy Opportunity

- ...The Obama Administration has enhanced federal support for alternative energy investments
- Federal funding offers a large source for investment and research capital to be used in the fields of alternative energy.
 - Due in large part to the American Recovery and Reinvestment Act, at least **119 grants totaling a minimum of \$549.4 million shall be available to Michigan** for the development of alternative energy technology between July 1, 2009 and June 30, 2010.
- Michigan's Energy Program will **devote \$82.0 million of its \$3.2 billion** to the advancement of renewable and increasingly efficient sources of energy in Michigan.
- The **National Science Foundation** has recently requested a major boost in federal funding, asking for **\$7.045 billion from the 2010** budget which represents an **8.5% increase or \$555 million over the 2009 budget.**

THERE ARE NO INDICATIONS THAT THE CURRENT SUPPORT OF ALTERNATIVE ENERGY TECHNOLOGIES WILL WANE IN THE FUTURE, THERE WILL LIKELY BE SIGNIFICANT FEDERAL GOVERNMENT INVESTMENTS INTO THE ALTERNATIVE ENERGY SECTOR IN THE FUTURE.

Alternative Energy Research Programs: A Jackson County Perspective

- Similar to life sciences industry, alternative energy sector requires:
 - Strong connections to university clusters for technology developments.
- Leverage the strengths of the area:
 - Pennsylvania -- wind power equipment, San Francisco -- venture capital funding for alt energy start-ups
- Jackson County's strengths revolve around the automobile industry.
 - *Alternative energy projects that leverage auto expertise.*
- Focus on expanding current core renewable energy component manufacturing capabilities
 - *Auto Supply to Alternative Energy Supply ("parts is parts")*

Advanced Manufacturing Industry: Build on Jackson's Existing Market Presence in Alternative Energy

Wind		Geothermal	Biomass
<ul style="list-style-type: none"> •326199 All Other Plastics Product Manufacturing •333613 Power Transmission Equip. •331511 Iron Foundries •332312 Fabricated Structural Metal <p>•Existing Jobs: 107</p>	<ul style="list-style-type: none"> •335313 Switchgear and Switchboard Apparatus Manufacturing •325211 Plastics Material and Resin Manufacturing •332322 Sheet Metal Work Manufacturing <p>•Existing Jobs: 16</p>	<ul style="list-style-type: none"> •332410 Power Boiler and Heat Exchanger Manufacturing •333415 Air-Conditioning and Warm Air Heating Equipment <p>•Existing Jobs: 6</p>	<ul style="list-style-type: none"> •332410 Power Boiler & Heat Exchanger Mfg. •333999 All Other Misc. General Purpose Machinery •333922 Conveyor and Conveying Equip. Mfg. •335313 Switchgear & Switchboard Apparatus Mfg. •333995 Fluid Power Cylinder & Actuator Mfg. •334513 Instruments & Related Products Mfg. •333415 A/C & Heating Equipment <p>•Existing Jobs: 29</p>

Advanced Manufacturing – Alternative Energy Sector - Recommendations

Challenges:

- Credit constraints.
- Anticipated bottlenecks in component supply chain.
- Availability of a skilled workforce (some alt energy skills are unique).
- Cost of diversification – supplier access to capital and the complexity of adapting to a new industry is difficult to overcome.

Recommendations:

- Coordinate alternative energy recruiting/attraction strategy with the MEDC
 - Jackson's manufacturing base has unique production capabilities and skill set that can effectively be used in other emerging industries, i.e., alternative energy
 - Identify common targets.
 - Diversification – Help existing Jackson manufacturers identify opportunities in new and emerging markets as the automotive industry continues to contract.

Food Processing Manufacturing: A Jackson County Perspective

- Infrastructure and location favor food processing manufacturing, especially:
 - Wet Corn Milling
 - Soybean Processing
 - Other Oilseed Processing
- Agricultural strengths:
 - 1,184 farms with total farmland of 182,345 acres (40.6% of total area)
- Michigan already has a strong presence in industry
- Wages match the wages in other advanced manufacturing industries

Food Processing: Organic Farming Industry Overview – Michigan & Nationally

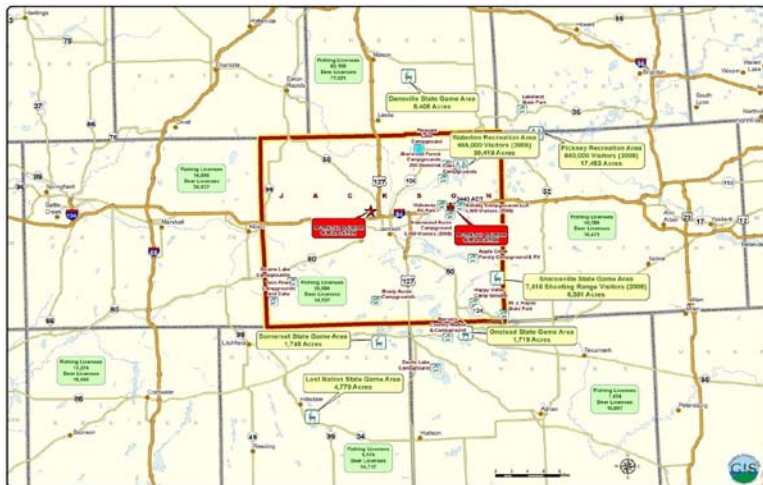
- Agriculture is the second largest industry in Michigan with approximately 53,000 farms across the state.
- 140 of the 53,000 farms are currently certified as organic farms under the USDA's National Organic Program.
- Total U.S. organic sales, including food and non-food products, were \$17.7 billion in 2006, up 21 percent from 2005.
- Estimated to have reached \$21.2 billion in 2007 and surpass \$25 billion in 2008.

Source: 2007 OTA Manufacturer Survey

Organic Farming Industry - Key Findings & Recommendations:

- Converting from conventional to organic farming is constrained by a couple of factors:
 - Financial risk as they learn new way of doing business
 - Marketing to retail and consumers offers new challenge
 - Meeting standards governing organic products
 - Lower yields for crops during transition years
- Develop a program to help facilitate the transition or entry into organic farming in partnership with The Jackson County Farm Bureau and The Michigan Organic Food and Farm Alliance (MOFFA) and The Michigan Department of Agriculture. Such a program might include:
 - Market study to identify regional demand for organic foods and products
 - Jackson Community College to develop organic courses to support farmers and businesses
 - develop regional buying policy
 - Build Organic Farmer Networks and Mentoring Program
 - Partner with Jackson Co farmers markets to develop consumer demand.
 - Develop economic incentives to aid Farmers in the conversion to organic farming

3. Strong Travel & Leisure Infrastructure Already Exists in Jackson County



Benefits from Travel & Leisure

- The travel & leisure industry offers Jackson County
 - Established growth industry in Michigan
 - Very high probability of success
 - Above average return from the investment
 - Above average current employment and wage growth in Michigan.
 - Early rungs on “job ladder”
- The travel & leisure industry provides diversification for Jackson County with respect to
 - The return / probability of success trade-off
 - Required employment skill sets

Travel & Leisure Industry: Focus

- Leverage tourism by promoting Jackson’s vast “outdoor recreational” resources
- Leverage Arts & Cultural Amenities to attract new businesses, residents and visitors.
- Build on success of Armory Arts Village.
- Additional detail on this subject available.

Tough Stuff

- Jackson County would have greater chance of success in seeking new investment in recommended targets if issues that follow are successfully addressed.
- As these issues are addressed, will also widen the range of industries that might someday be targeted.

Education Investments

COMMUNITIES WITHOUT PROVEN FUTURE WORKFORCE PREPARATION ARE AT A DISTINCT COMPETITIVE DISADVANTAGE.

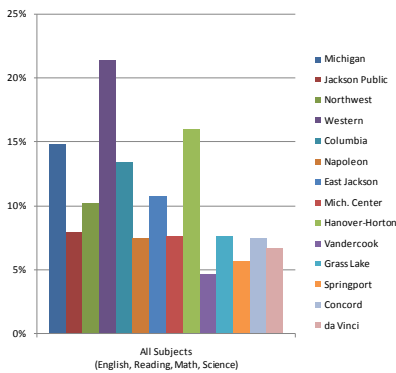
- Quality of local workforce is #1 issue in economic development today
 - K-12 prepare for local jobs or college
 - Higher education train and educate students and to provide continuing education opportunities for working adults.
 - Workforce development initiatives link education with regional businesses and create learning opportunities throughout working careers.

Jackson County Higher Education Opportunities Abound

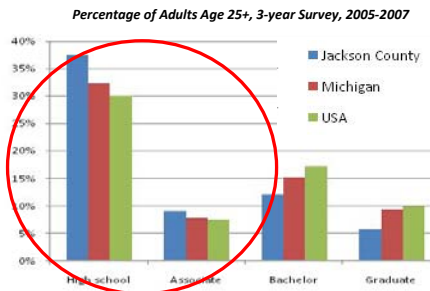
Jackson County is located within a one hour drive of 21 colleges and universities.

Colleges within Jackson County	Highest Degree Offered	Students Enrolled
Baker College of Jackson	Bachelor	1,003
Jackson Community College	Associate	3,048
Michigan State University Extension	N/A	N/A
Michigan Virtual University	Associate	N/A
Siena Heights Extension	N/A	N/A
Spring Arbor University	Master	2,726
Colleges within One Hour	Highest Degree Offered	Students Enrolled
Adrian College	Bachelor	988
Albion College	Bachelor	1,643
Concordia University	Master	N/A
Eastern Michigan University	Doctor	18,382
Great Lakes Christian College	Bachelor	161
Hillsdale College	Bachelor	1,300
Kellogg Community College	Associate	4,081
Lansing Community College	Associate	9,982
Michigan State University	Doctor	40,082
Olivet College	Master	903
Siena Heights College	Master	1,358
University of Michigan	Doctor	36,885
Thomas M. Cooley Law School	Professional	1,269
Washtenaw Community College	Associate	6,193
Western Michigan University	Doctor	24,568

Jackson County Education Achievement is Mixed



behind the state and nation, putting Jackson County at a competitive disadvantage.



Over 60% of the new jobs in the 21st century will require some post-secondary education

**JACKSON COUNTY IS UNDERPERFORMING THE STATE IN KEY EDUCATION METRICS...
...BUT, LARGER SHARE OF POPULATION WITH HIGH SCHOOL AND ASSOCIATES DEGREES**

**Jackson Educational Attainment:
Comparison to Michigan and Adjacent Counties
(Highest Level Completed)**

HIGH SCHOOL		BACHELOR'S		ADVANCED	
MICHIGAN	88.1	Michigan	24.7	Michigan	9.4
Eaton	94	Washtenaw	51.3	Washtenaw	26
Washtenaw	93.7	Ingham	34.1	Ingham	14.4
Livingston	92.7	Livingston	29.5	Eaton	8.7
Ingham	92	Eaton	24.5	Livingston	8.1
Jackson	89	Calhoun County	18.6	Calhoun County	6.2
Calhoun	88.1	Jackson	17	Jackson County	5
Lenawee County	83.4	Lenawee County	16.3	Branch	NA
Hillsdale	83.1	Hillsdale	12	Hillsdale	NA
Branch	80	Branch	10.6	Lenawee County	NA

Action Steps

- Enterprise Group to continue active Retention/Expansion program while adding Business Attraction effort in the Target Markets.
- Implement “Score Card” to monitor progress.
- Create an Education Culture in Jackson County
 - Raise Educational Attainment
 - Increase Student Achievement
 - Link Business & Education to improve preparation of young people and quickly adapt to changing needs of economy.
- Final report will provide details.

Accountability: The Score Card

- Enterprise Group has one of most detailed monitoring tools in Michigan economic development.
- Gives Board and others opportunity to understand work and monitor progress.
- (REVIEW WITH GROUP)

THANK YOU!

- A final report is being prepared and will be distributed later.
- Questions?

Endnotes

- ⁱ DeVol, et al. “America’s Biotech and Life Science Clusters: San Diego’s Position and Economic Contributions”, Milken Institute. June, 2004.
- ⁱⁱ DeVol, et al. “State Technology and Science Index”, Milken Institute. June, 2008.
- ⁱⁱⁱ See the Bureau of Labor Statistics, www.bls.gov.
- ^{iv} See the Bureau of Labor Statistics, www.bls.gov.
- ^v See the Enterprise Group of Jackson, <http://www.enterprisegroup.org/economic-development-division>.
- ^{vi} (2009) “Home Prices Decline Slightly in Second Quarter” *Federal Housing Finance Agency*, August 25.
- ^{vii} Jackson Citizen Patriot
- ^{viii} See the U.S. Bureau of Labor Statistics QCEW, www.bls.gov.
- ^{ix} See the U.S. Bureau of Labor Statistics, www.bls.gov.
- ^x Battelle Technology Partnership Practice (2008) “Technology, talent and capital: State Bioscience Initiatives 2008” *BIO—Biotechnology Industry Organization*, June.
- ^{xi} Ibid.
- ^{xii} See MICHBIO “Industry Overview”, <http://www.michbio.org/resources/biosciences-primer/industry-overview>.
- ^{xiii} (2005) “The Future of the Life Sciences Industry”, *Deloitte White Paper*, April. The Deloitte study performed a global online survey of senior executives in the life sciences industry.
- ^{xiv} See MICHBIO, <http://www.michbio.org/resources/biosciences-primer/industry-overview>. For a separate analysis of the growth of the life sciences industry in Michigan see also, Sallee Caroline et.al. (2009) “Life Sciences Industry in Michigan and the University Research Corridor” *Anderson Economic Group*, May 28.
- ^{xv} Feinstein, Abel, George A. Fulton and Donald R. Grimes (2009) “The Contribution of the Bioscience Industry to the Economy of Michigan” *Pharmaceutical Research and Manufacturers of America*, February.
- ^{xvi} Battelle Technology Partnership Practice (2008) “Technology, talent and capital: State Bioscience Initiatives 2008” *BIO—Biotechnology Industry Organization*, June.
- ^{xvii} Ibid.
- ^{xviii} DeVol, et al. “America’s Biotech and Life Science Clusters: San Diego’s Position and Economic Contributions”, Milken Institute. June, 2004.
- ^{xix} DeVol, et al. “State Technology and Science Index”, Milken Institute. June, 2008.
- ^{xx} Milken Institute, *the Value of U.S. Life Sciences: A White Paper Exploring Competitiveness, Delivery and Change*.
- ^{xxi} Feinstein, Abel, George A. Fulton and Donald R. Grimes (2009) “The Contribution of the Bioscience Industry to the Economy of Michigan” *Pharmaceutical Research and Manufacturers of America*, February.
- ^{xxii} Burrill & Company, (2009) *Biotech Industry Turns a Profit for the First Time, But Milestone Overshadowed as Companies Struggle for Survival, Report Finds*, February 25; <http://www.burrillandco.com/news-355-Biotech-Industry-Turns-a-Profit-for-the-First-Time-But-Milestone-Overshadowed-as-Companies-Struggle-for-Survival-Report-Finds.html>.
- ^{xxiii} Ibid.
- ^{xxiv} DeVol, et al. “State Technology and Science Index”, Milken Institute. June, 2008.
- ^{xxv} U.S. Bureau of Labor Statistics, www.bls.gov.
- ^{xxvi} U.S. Bureau of Labor Statistics, www.bls.gov.
- ^{xxvii} (2006) “The Future Success of Small and Medium Manufacturers: Challenges and Policy Issues” *The Manufacturing Institute*.
- ^{xxviii} Ibid.
- ^{xxix} See the U.S. Department of Energy, www.energy.gov.
- ^{xxx} Ibid.
- ^{xxxi} See U.S. Bureau of Labor Statistics, www.bls.gov.
- ^{xxxii} www.grants.gov
- ^{xxxiii} www.energy.gov
- ^{xxxiv} See, the U.S. Department of Energy, www.energy.gov.
- ^{xxxv} www.energy.gov
- ^{xxxvi} See the U.S. Department of energy, www.energy.gov.
- ^{xxxvii} National Science Foundation, www.nsf.org.
- ^{xxxviii} Pernick, Ron (2007) “The Clean Tech Revolution: The Next Big Growth and Investment Opportunity” *HarperCollins*.
- ^{xxxix} See the U.S. Bureau of Labor Statistics, www.bls.gov.
- ^{xl} Ibid.
- ^{xli} http://www.artsusa.org/information_services/research/services/economic_impact/default.asp.
- ^{xlii} <http://www.armoryartsvillage.com>
- ^{xliii} Richard Florida (2002) “The Rise of the Creative Class” *The Washington Monthly*, May.

^{xliv} <http://www.bcainc.org>. Business Committee of the Arts, Inc. Executive Lecture Series, 1995.

^{xlv} Other programs are considered by many to be important economic development expenditures. Transportation expenditures, especially capital expenditures, are also considered by some to be economic development expenditures. The same is said of other state capital expenditures, certain targeted education expenditures, worker retraining expenditures, and information technology expenditures. The economic development strategy should account for state expenditures and needs with respect to these areas in addition to the specific economic development grants and expenditures.

^{xlvi} Source: Respective economic development websites; for a summary of all state economic development agencies see NCSL: <http://www.ncsl.org/programs/econ/eco-dev.htm>.

^{xlvii} (2004) “Governor Ruth Ann Minner’s New Economy Initiative” *State of Delaware, Office of the Governor*, February 19 and: (2007) “Addendum: Recent State Initiatives to Promote Innovation” *National Governors Association*, July 23. The NGA study also provides a more detailed examination of specific state programs across 29 states in 2007.

^{xlviii} Healey James R. (2007) “Toyota to build Mississippi plant” *USA Today*, March 5;

http://www.usatoday.com/money/autos/2007-02-27-toyota-plant_x.htm. The plant will manufacture Toyota’s Highland Crossover SUV.

^{xlix} The U.S. Census collects total tax and revenue data from all 50 states and local governments, the most recent year being 2006. See, <http://www.census.gov/govs/www/estimate.html>.

¹ Personal income tax rates include the local personal income taxes levied in a focus city, which is generally the largest metropolitan area in the state.

^{li} Laffer, Arthur and Moore Steve (2009) “Rich States, Poor States: ALEC-Laffer State Competitiveness Index” *American Legislative Exchange Council*.

^{lii} Ibid.

^{liii} Ibid.

^{liv} Source: The U.S. Census, www.census.gov.

^{lv} US Department of Labor

^{lvi} Laffer, Arthur and Moore Steve (2009) “Rich States, Poor States: ALEC-Laffer State Competitiveness Index” *American Legislative Exchange Council*.

^{lvii} (2007) *Investing in Innovation*, National Governors Association and Pew Center on the States.