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Economic Impact of Projects Leveraged by the Minnesota Historic Rehabilitation Tax Credit in Fiscal Year 2014

AN ECONOMIC IMPACT ANALYSIS PROGRAM REPORT

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IN PARTNERSHIP WITH: MINNESOTA HISTORICAL SOCIETY
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INTRODUCTION

Historic preservation efforts gained popularity as redevelopment tools beginning in the 1960's, partially as a result of the recognition of the value of historic places. In 1966, the United States' Congress passed the National Historic Preservation Act. The Act, and related legislation, created a partnership between the federal government (National Park Service) and state governments (State Historic Preservation Offices). Since 1976, the federal government has provided a historic tax credit as a financial incentive to assist in the preservation of important historic structures.

In April 2010, Minnesota enacted the historic tax credit via the Minnesota Historic Rehabilitation Tax Credit law. The credit is administered by the Minnesota State Historic Preservation Office, in conjunction with the Minnesota Department of Revenue. The law is intended to promote private investment in historic properties with the goal of stimulating job growth, increasing the tax base, and revitalizing communities. The law makes two tools available; state income tax credits and grants in lieu of credits. Eligible property owners can receive a state income tax credit of up to 20 percent of qualifying expenses on historic preservation projects. Alternatively, a grant in lieu of a credit (equal to 90 percent of allowable credit) is available to property owners. Properties must be eligible for the federal tax credit in order to receive the state credit.

Eligibility for the Minnesota Historic Rehabilitation Tax Credit is determined by two factors. First, the property must be a certified historic structure, that is, a building listed on the National Register of Historic Places or certified as contributing to a

registered historic district. Second, the building must be rehabilitated for an income producing use and the project must meet a substantial rehabilitation test. As a condition of receiving the credit, all work on the property must meet the US Secretary of Interior's Standards for Rehabilitation and the completed work must be approved by the US National Park Service.

As part of the Minnesota legislation, the Minnesota Historical Society "must annually determine the economic impact to the state from the rehabilitation of property for which credits or grants are provided" ([Minnesota Statutes, Chapter 290.0681, Subdivision 9](#)). To complete this charge, the Minnesota State Historical Society contracted with University of Minnesota Extension's Economic Impact Analysis (EIA) program. University of Minnesota Extension first completed the analysis in 2011, covering projects receiving part II approval from NPS in fiscal year 2011. Extension has completed the analysis in each subsequent year. The reports can be viewed here: <http://www.extension.umn.edu/community/economic-impact-analysis/reports/>.

This report is a third update to the original analysis. The primary focus of this report is on projects receiving part II approval from NPS in fiscal year 2014. Information from previous years is included in this report to provide context. A summary of the economic impact of the four years of the Minnesota Historic Rehabilitation Tax Credit is also incorporated into this report. Pursuant to Minnesota Statutes, Chapter 3.197 regarding the cost of reports, the cost of this economic impact report is \$2,500.

The Minnesota Historic Rehabilitation Tax Credit allows for a state income tax credit of up to 20 percent of qualifying expenses or a grant in lieu of credit.



EXECUTIVE SUMMARY OF THE ECONOMIC IMPACT OF PROJECTS LEVERAGED BY THE MINNESOTA HISTORIC REHABILITATION TAX CREDIT, FISCAL YEAR 2014

The Minnesota Historic Rehabilitation Tax Credit allows eligible property owners to receive a state income tax credit of up to 20 percent of qualifying rehabilitation expenses or a grant in lieu of the credit. The following is a summary of the results of an analysis of the economic impact of projects leveraged by the tax credit in fiscal year 2014.

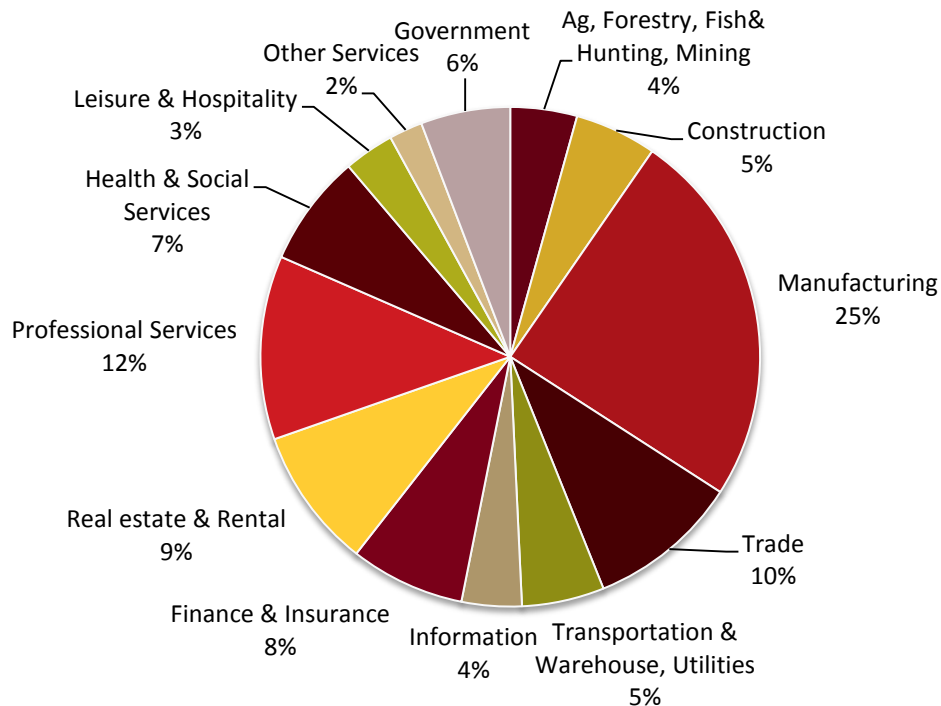
- **Direct Impact:** The 15 projects which received preliminary approval for the credit and began renovation in fiscal year 2014 were included in this study. The 15 projects receiving preliminary approval for the credit in FY 2014 estimate spending \$131.4 million dollars on rehabilitation expenses (excluding acquisition costs). In order to complete this work, an estimated 718 construction-related workers will be hired. They will be paid an estimated \$51.0 million in wages, salaries, and benefits.
- **Economic Impact:** The total economic impact of projects leveraged by the FY 2014 Minnesota Historic Rehabilitation Tax Credit is an estimated \$237.2 million. This includes \$86.0 million in labor income. Projects spurred by the credit support 1,338 jobs.
- **Tax Credit:** Provided the projects are completed as planned and meet the requirements of the program, an estimated \$29.3 million will be awarded by the Minnesota Historic Rehabilitation Tax Credit to leverage these projects. Therefore, for every state dollar of tax credit or grant allowed, \$8.09 in economic activity is generated in Minnesota.
- **Benefiting Industries:** Minnesota's construction industry benefited most significantly from the rehabilitation projects. Other construction-related industries also benefited, including the wholesale trade industry, the housing market and the architectural and engineering industry. Finally, wages earned by construction workers spurred additional economic activity in the housing and health care industries.
- **Impacts in Previous Years:** In the four years of the Minnesota Historic Rehabilitation Tax Credit, the tax credit has generated an estimated \$1.4 billion in output in the state's economy and supported an estimated 8,919 jobs and \$456.8 million in labor income. Projects receiving Part II approval from NPS in fiscal years 2011, 2012, 2013, and 2014 requested credits and grants totaling \$163.1 million. Therefore, for every state dollar of tax credit or grant allowed in the past four years, \$8.37 in economic activity was generated in Minnesota. It is important to note that credits and grants in lieu of credit will be claimed over several years, as projects are completed.
- This is a conservative analysis, focused primarily on construction-related spending. The economic benefits of any potential new commercial activity are not included in this study. Further, this study does not measure any non-market values generated from newly renovated structures.

PROFILE OF THE STUDY AREA ECONOMY

The study area for this analysis is the state of Minnesota. The state was chosen as the study area since the Historic Rehabilitation Tax Credit can be issued in any community in Minnesota. The spending on tax credit projects can be compared to \$588.2 billion of output in all sectors of Minnesota's economy in 2013.¹ There were 3.6 million jobs in all sectors in the state.

Chart 1 shows total output in Minnesota by industry category. The manufacturing sector contributes 25 percent of total output to the state's economy. The service sectors, in total, contribute 47 percent of output to the state's economy. Of the service sector categories, the professional services sector (12 percent) comprises the largest component. The construction sector generated \$31.2 billion in output in 2013.

Chart 1: Output by Industry Minnesota 2013



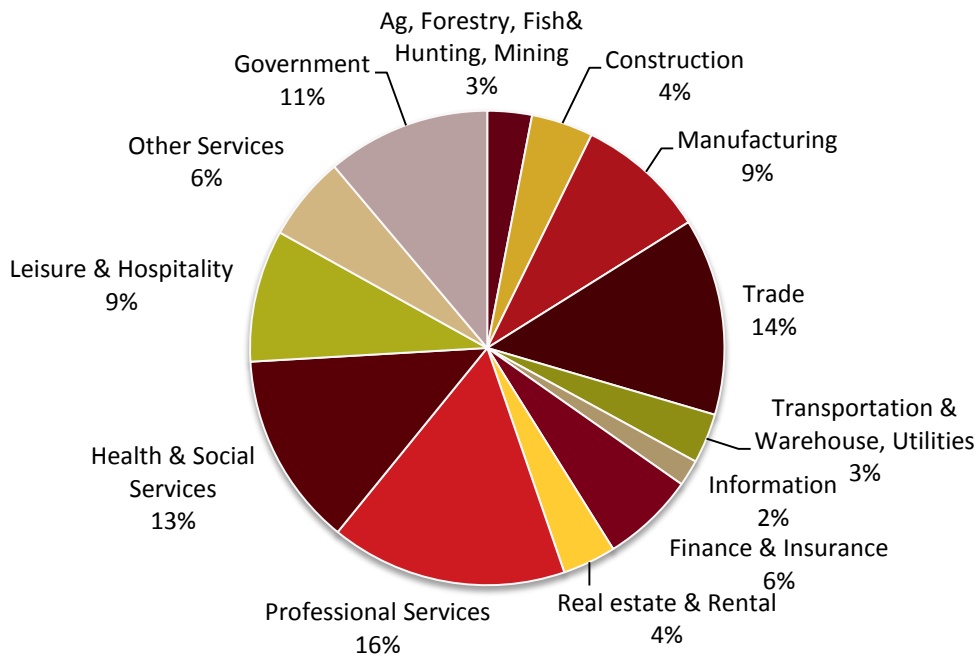
Employment by industry category is shown in chart 2. The service sectors have the largest share of employees in Minnesota (56 percent). Professional services, trade, and health and social services have the largest shares respectively. The construction industry employs 4 percent of workers in Minnesota. In 2013, there were 150,000 construction workers in the state.

While manufacturing creates 25 percent of output, it only employs 9 percent of all workers. There are two possible reasons for this observation. First, in the database, one job is one job, regardless of its status as part-time, full-time, or seasonal. Since the service sectors tend to employ more part-time employees and manufacturing more full-time, manufacturing's share of employment may

¹ Note, IMPLAN measures output (or total sales in the economy). This is not the same as GDP.

appear lower. Second, manufacturing workers can produce more output per employee in comparison to workers in many other industries.

Chart 2: Employment by Industry Minnesota 2013



ECONOMIC IMPACT

Total economic impact is equal to the summation of direct, indirect, and induced effects. The direct effect is the initial change triggered by an economic event. This could be the opening of a new business, the closing of a plant, or construction spurred on by a tax credit. The direct effect triggers additional economic activity to occur, therefore setting off ripples in the local economy. These ripples fall into two categories, indirect effects (created by business-to-business transactions) and induced effects (created by consumer-to-business transactions). In an economic impact analysis, researchers quantify the direct effects. An input-output model then measures the indirect and induced impacts. The input-output model used was IMPLAN (MIG, Inc.).

Direct Effects Fiscal Year 2014

The direct effect of the historic tax credit program is the value of the construction activity spurred by the credit. From July 1, 2013 through June 30, 2014, 15 renovation projects received National Park Service Part II approval. This means the projects received initial approval and began making construction expenditures. Projects will not receive final approval and the tax credit until all work is completed and approved by the National Park Service (a process known as Part III certification).

Table 1 lists the 15 renovation projects that received Part II approval between July 1, 2013 and June 30, 2014. The historic name of the property, the current property name, and the property's proposed use are provided in the table. The historic property name reflects the original use and designation of the building. The proposed use column indicates what the building will be used for following the renovation project. Thirteen projects are planned for the Twin Cities metropolitan area and two will occur in greater Minnesota.

Table 1: Minnesota Historic Rehabilitation Tax Credit Projects Receiving National Park Service Part II Approval between July 1, 2013 and June 30, 2014

Historic Property Name	Current Property Name	Proposed Use	Location
Bradshaw Building	Bradshaw Building	Commercial	Minneapolis
Cameron Transfer and Storage Building	Cameron Transfer and Storage Building	Residential	Minneapolis
Duluth Public Library	Carnegie Building	Commercial	Duluth
Gurley Candy Company	Gurley Candy Company	Commercial/ Residential	Minneapolis
Judson Wade Bishop House	Judson Wade Bishop House	Residential	St. Paul
Kruse Garage	Cannon River Winery	Commercial	Cannon Falls
The Melrose	The Roselle	Residential	Minneapolis
Minnesota Linseed Oil Company	Valspar Building Number 4	Commercial	Minneapolis
Minnesota Milk Company Building	St. Paul Old Home Plaza	Residential	St. Paul



Northwestern Consolidated Milling Company Elevator A	Cerasota Building	Residential	Minneapolis
Quartermaster Shops, Quartermaster Stables, NCO Quarters	Buildings 210, 211, 214, 227 and 229	Residential	Fort Snelling
The Roselle	The Roselle	Residential	Minneapolis
Security Warehouse	Itasca Building	Commercial	Minneapolis
United States Post Office and Custom House	United States Post Office and Custom House	Commercial/ Residential	St. Paul
The Williston	The Adams	Residential	Minneapolis

Source: Part A Applications Submitted to the Minnesota Historical Society

The direct impact of Minnesota Historic Rehabilitation Tax Credit projects in FY 2014 is shown in table 2. Total project costs are the total costs as estimated by the developer. In economic impact analysis theory, acquisition costs do not create an economic impact. This is because they are simply a transfer of wealth (cash for land and/or a building). Therefore, acquisition costs are not included in the economic impact.

Table 2: Direct Impact of Fiscal Year 2014 Minnesota Historic Rehabilitation Tax Credit Projects

Total Estimated Rehabilitation Project Costs	Total Estimated Rehabilitation Project Costs (Excluding Acquisition)	Estimated Minnesota Historic Rehabilitation Tax Credit
\$182,464,412	\$145,971,530	\$29,324,844

Total estimated costs for the 15 projects total \$182.5 million. Excluding acquisitions, project costs are estimated at \$146.0 million. These projects are being leveraged by an estimated \$29.3 million in tax credits and/or grants. Given these estimates, for every dollar of the Minnesota Historic Rehabilitation Tax Credit, private developers will be investing \$6.22 of their own funds.

The total project costs, excluding acquisitions and non-qualifying expenses, are the direct effect of the Minnesota Historic Rehabilitation Tax Credit. The study area for this project is the state of Minnesota. Only construction spending that occurs in Minnesota can be entered into the model. Since the state is a diverse economy, it is assumed that the majority (90 percent) of construction-related purchases can be made in-state.² Therefore, the direct impact of the credit entered into the model is \$131.4 million.

² The 90 percent local spending assumption is an estimate based on the knowledge and experience of the analyst. Any further specificity would require primary data collection. It is unlikely 100 percent of construction spending occurs in Minnesota. However, given the size of the study area economy, it appears reasonable the large majority of spending does occur in-state.

Indirect and Induced Effects Fiscal Year 2014

Using the direct impacts from above (table 2), \$131.4 million in direct impact was entered into an input-output model. Input-output models trace the flow of dollars throughout a local economy and can capture the indirect and induced, or ripple effects, of an economic activity. The input-output modeling software and data from IMPLAN was used in this report.

Indirect effects are those associated with a change in economic activity due to business spending for goods and services. In this case, these are the changes in the local economy occurring because developers need to purchase construction materials (lumber, cement, equipment, for example) and construction-related services (architectural, law, engineering, etc.). These are business-to-business impacts.

Induced effects are those associated with a change in economic activity due to spending by the employees of businesses (labor) and by households. Primarily, in this study, these are economic changes related to spending by construction workers hired to perform the rehabilitation work. These are business-to-consumer impacts.

Total Impact Fiscal Year 2014

The total economic impact of projects leveraged by the Minnesota Historic Rehabilitation Tax Credit in FY 2014 is an estimated \$237.2 million dollars. To produce \$237.2 million in output, 1,338 workers were employed and an estimated \$86.0 million in payments were made those employees. Total economic impact is comprised of direct, indirect, and induced impacts. These are each detailed in table 3.

- Direct impacts, determined using the process outlined, include an estimated \$131.4 million in new construction-related sales (output), 718 construction jobs, and \$51.0 million in payments to construction workers.
- Spending on construction-related materials creates indirect impacts. Indirect impacts from the tax credit total an estimated \$45.6 million in sales (output), including 230 FTE jobs in all sectors of the economy and \$14.9 million in payments to those workers.
- Finally, labor spending creates induced impacts. Induced impacts from the tax credit total an estimated \$60.2 million in sales (output), including 390 FTE jobs in all sectors of the economy and \$20.1 million in payments to those workers.

The Minnesota Historic Rehabilitation Tax Credit supported \$237.2 million of economic activity in FY 2014.

Table 3: Total Economic Impact of Projects Leveraged by the Fiscal Year 2014 Minnesota Historic Rehabilitation Tax Credit

	Direct	Indirect	Induced	Total
Output (millions)	\$131.4	\$45.6	\$60.2	\$237.2
Employment (FTE's)	718	230	390	1,338
Labor Income (millions)	\$51.0	\$14.9	\$20.1	\$86.0

Estimates by the University of Minnesota Extension Center for Community Vitality

Provided the projects are completed as planned, the Minnesota Historic Rehabilitation Tax Credit granted to FY 2014 projects will total \$29.3 million. Therefore, for every state dollar of tax credit or grant allowed, \$8.09 in economic activity is generated in the state of Minnesota. This activity is mostly driven by additional investments by project developers, but also includes the ripple effects of construction-related spending.

Top Industries Impacted

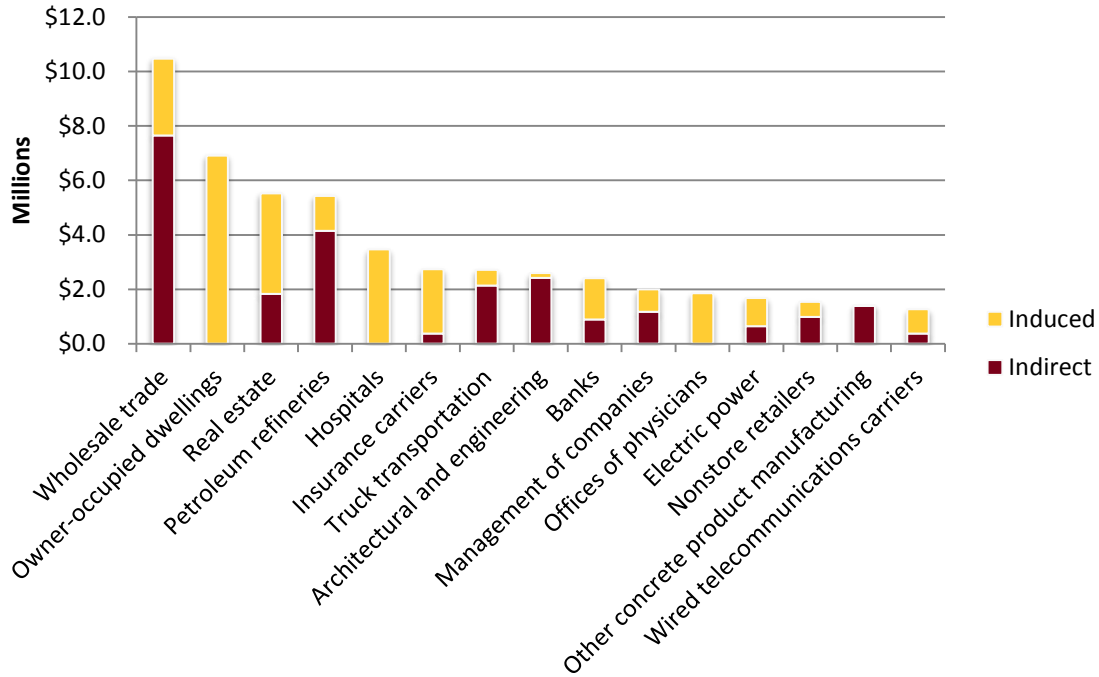
The top fifteen industries impacted by projects of the FY 2014 Minnesota Historic Rehabilitation Tax Credit are shown in charts 3 and 4. Chart 3 illustrates the top fifteen industries sorted by output and chart 4 sorted by employment. These charts do not include the direct impacts in the construction industries.

In terms of output, the magnitude of impacts of the Minnesota Historic Rehabilitation Tax Credit is highest in the wholesale trade, housing, and petroleum refineries. The projects undertaken by the contractors will create over \$10.0 million in activity in the wholesale trade industry. Of this, approximately two-thirds will be the result of spending by the contractors for supplies and services and one-third as the result of spending by the employees of the contracting firms.

Not surprisingly, high indirect impacts are observed in the architectural and engineering industry, the wholesale trade industry, the petroleum industry, and the trucking industry. These industries are the components of the core of the construction supply chain. They are also items that are typically available on a local basis.

High induced impacts are in the housing market (both owner-occupied and rental) and health care (including hospitals, offices and physicians and dentists, and insurance carriers). These results are indicative of the average household's spending, which is often concentrated in housing and health care.

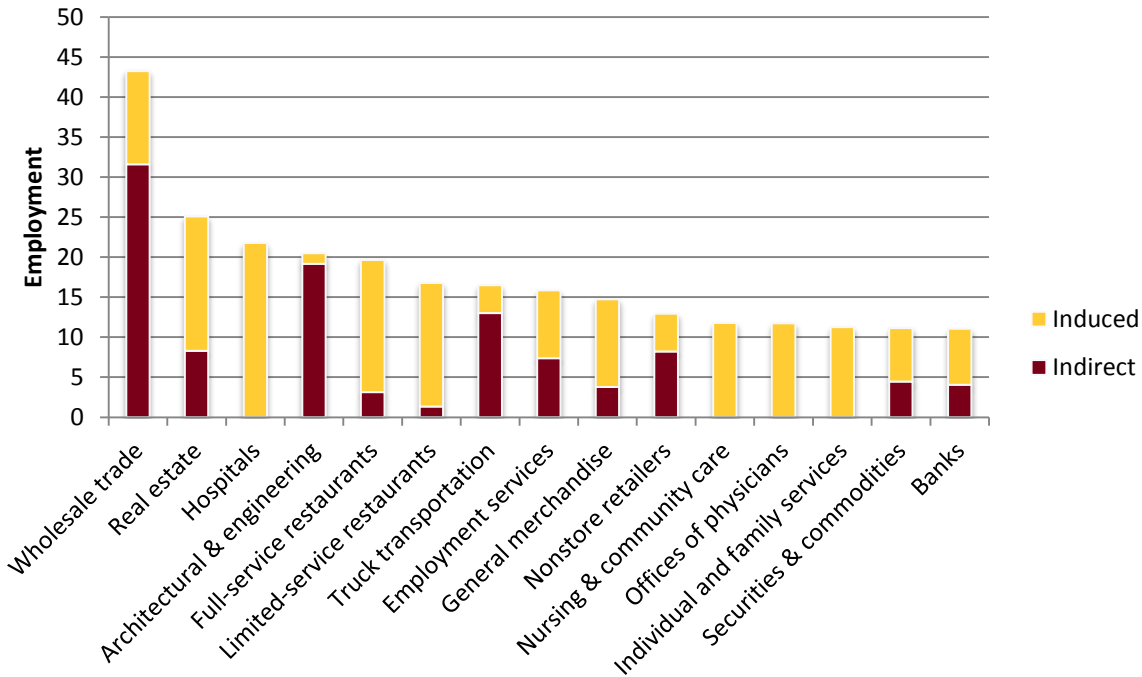
Chart 3: Top Indirect and Induced Effects, Sorted by Output



In terms of employment, the magnitude of impacts of the Minnesota Historic Rehabilitation Tax Credit is highest in the wholesale trade industry, the real estate (rental) industry, the health care industry, and the architectural and engineering industry. The restaurant industry, including both limited-service and full-service dining shows higher impacts on the employment chart than in the output chart. Restaurants tend to have a lower output per employee ratio.

As with the output impacts, indirect impacts are highest within industries in the supply chain of contractors (architects and engineers and wholesale suppliers, for example). Induced impacts are higher in industries which provide goods and services to employees of the contractors (housing and health care, for example).

Chart 4: Top Indirect and Induced Effects, Sorted by Employment



SUMMARY OF PAST RESEARCH

This is the fourth year University of Minnesota has quantified the economic contribution of the tax credit. This section summarizes the results of previous research into the credit. It also reports the total contribution of the tax credit for the four-year period.

Total Impacts: Fiscal Year 2011

Fourteen projects were included in the FY 2011 analysis. One of those projects, The Buzza Company Building, actually moved into FY 2012. The numbers shown in this report have been adjusted to reflect this change and are different from the previously published report.

The analysis showed project managers in fiscal year 2011 anticipated spending an estimated \$244.1 million locally to implement their projects (table 4). This includes hiring 1,500 construction and related workers and paying \$79.8 million in labor income. As a result of this direct spending triggered by the fiscal year 2011 Minnesota Historic Rehabilitation Tax Credit, total output in the state economy increased by an estimated \$429.9 million, including 2,880 jobs and \$143.7 million in labor income.

The Minnesota Historic Rehabilitation Tax Credit granted to these projects totaled \$49.1 million. Therefore, for every state dollar of tax credit or grant allowed, \$8.75 in economic activity is generated in the Minnesota. This activity is mostly driven by additional investments by project developers, but also includes the ripple effects of construction-related spending.

Table 4: Total Economic Impact of Projects Leveraged by the Fiscal Year 2011 Minnesota Historic Rehabilitation Tax Credit

	Direct	Indirect	Induced	Total
Output (Sales)	\$244.1	\$88.3	\$97.5	\$429.9
Employment (FTE's)	1,500	632	747	2,880
Labor Income	\$79.8	\$31.9	\$32.1	\$143.7

Estimates by the University of Minnesota Extension Center for Community Vitality

Note: Due to change an incorrect classification of one project (Buzza Building), these numbers have changed since publication of the initial report.

Total Impacts: Fiscal Year 2012

In 2012, 16 projects were included in the analysis. The 16 projects planned to expend an estimated \$292.4 million on renovations and improvements (table 5). Contractors employed to complete the projects estimated they would hire 1,480 individuals to complete the projects.

The economic impact of the Minnesota Historic Rehabilitation Tax Credit projects in fiscal year 2012 was an estimated \$558.7 million in Minnesota. This impact includes \$180.5 million of labor income paid to the estimated 3,502 workers whose jobs were created as a result of the tax credit.

The Minnesota Historic Rehabilitation Tax Credit granted to these projects totaled \$69.7 million. Therefore, for every state dollar of tax credit or grant allowed, \$8.00 in economic activity is generated in the State of Minnesota. This activity is mostly driven by additional investments by project developers, but also includes the ripple effects of construction-related spending.

Table 5: Total Economic Impact of Projects Leveraged by the Fiscal Year 2012 Minnesota Historic Rehabilitation Tax Credit

	Direct	Indirect	Induced	Total
Output (Sales)	\$292.4	\$127.4	\$138.9	\$558.7
Employment (FTE's)	1,480	935	1,087	3,502
Labor Income	\$85.7	\$47.4	\$47.4	\$180.5

Estimates by the University of Minnesota Extension Center for Community Vitality

Total Impacts: Fiscal Year 2013

In 2013, 15 projects were included in the analysis. The 15 projects planned to expend an estimated \$72.7 million on renovations and improvements (table 6). Contractors employed to complete the projects estimated they would hire 785 individuals to complete the projects.



The economic impact of the Minnesota Historic Rehabilitation Tax Credit projects in fiscal year 2013 was an estimated \$138.8 million in Minnesota. This impact includes \$46.5 million of labor income paid to the estimated 1,200 workers whose jobs were created as a result of the tax credit.

The Minnesota Historic Rehabilitation Tax Credit granted to these projects totaled \$16.0 million. Therefore, for every state dollar of tax credit or grant allowed, \$8.68 in economic activity is generated in the State of Minnesota. This activity is mostly driven by additional investments by project developers, but also includes the ripple effects of construction-related spending.

Table 6: Total Economic Impact of Projects Leveraged by the Fiscal Year 2013 Minnesota Historic Rehabilitation Tax Credit

	Direct	Indirect	Induced	Total
Output (Sales)	\$72.7	\$35.3	\$30.8	\$138.8
Employment (FTE's)	785	215	200	1,200
Labor Income	\$23.2	\$12.8	\$10.5	\$46.5

Estimates by the University of Minnesota Extension Center for Community Vitality

Total Impacts: Fiscal Years 2011, 2012, 2013, and 2014

In the four years of the Minnesota Historic Rehabilitation Tax Credit, the credit has leveraged an estimated \$740.6 million in construction activity, including 4,483 construction jobs and \$239.7 million in payments to those construction workers, the direct impacts shown in table 7. As a result of the spending on renovation projects, the tax credit has generated \$1.4 billion in output in the state's economy, 8,919 jobs, and \$456.8 million in labor income. Projects receiving Part II approval from NPS in fiscal years 2011, 2012, 2013, and 2014 requested credits and grants totaling \$163.1 million, which will be paid out over several years. Therefore, for every state dollar of tax credit or grant allowed in the four years, \$8.37 in economic activity was generated in Minnesota.

Table 7: Total Economic Impact of Projects Leveraged by the Minnesota Historic Rehabilitation Tax Credit, Fiscal Years 2011, 2012, 2013, and 2014

	Direct	Indirect	Induced	Total
Output (millions)	\$740.6	\$296.6	\$327.4	\$1,364.6
Employment (FTE's)	4,483	2,012	2,424	8,919
Labor Income (millions)	\$239.7	\$107.0	\$110.1	\$456.8

Estimates by the University of Minnesota Extension Center for Community Vitality

SUMMARY

The Minnesota Historic Rehabilitation Tax Credit became law in 2010. The law promotes private investment in historic properties with the goal of stimulating job growth, increasing the tax base, and revitalizing communities. The Minnesota State Legislature has asked for an annual report answering the question “What is the economic impact of projects leveraged by the Minnesota Historic Rehabilitation Tax Credit.” This report details the results of the analysis for the fiscal year 2014.

Fifteen renovation projects were deemed eligible for the Minnesota Historic Rehabilitation Tax Credit in fiscal year 2014. Project developers and contractors anticipate spending \$131.4 million in local, non-acquisition related construction expenditures, including an estimated \$51.0 million in labor income. An estimated 718 construction workers will be hired to complete the rehabilitation projects. These are the direct effects of the credit.

As project developers and contractors spend money in the state to complete their projects, additional spending is generated, which is measured as economic impact. The economic impact of projects leveraged by the Minnesota Historic Rehabilitation Tax Credit in fiscal year 2014 is an estimated \$237.2 million. The projects and related-activity spurred by the credit supported an estimated 1,338 jobs which paid \$86.0 million in compensation.

Provided the projects are completed as planned and meet the requirements of the program, an estimated \$29.3 million will be awarded by the Minnesota Historic Rehabilitation Tax Credit to leverage these projects. For every state dollar of tax credit or grant allowed, \$8.09 in economic activity will be generated in Minnesota. This activity is mostly driven by additional investments by project developers, but also includes the ripple effects of construction-related spending.

In the four years of the Minnesota Historic Rehabilitation Tax Credit, the tax credit and grant has generated an estimated \$1.4 billion in output in the state’s economy, supported 8,919 jobs, and generated \$456.8 million in labor income. Credits and grants allocated by the program in fiscal years 2011, 2012, 2013, and 2014 total \$163.1 million. Therefore, for every state dollar of tax credit or grant allowed, \$8.37 in economic activity was generated in the state of Minnesota over the four year period.

Minnesota’s construction industry will benefit most directly from projects completed using the Minnesota Historic Rehabilitation Tax Credit. However, other construction-related industries will also benefit from the projects. These include wholesale trade, the housing market, and the architectural, engineering, and related services industry. Finally, the wages earned by construction workers will spur additional economic activity in the housing and the health care industries.

This is a conservative analysis, focused primarily on construction-related spending. The economic benefit of any potential new commercial activity is not included in this study. Further, this study does not measure any non-market benefits, such as improved community atmosphere, aesthetics, or historic preservation significance.

For every state dollar of tax credit or grant allowed in 2014, \$8.09 in economic activity was generated in Minnesota. In fiscal year 2014, projects leveraged by the Minnesota Historic Rehabilitation Tax Credit supported 1,338 jobs in the state.

APPENDIX 1: METHODOLOGY

Special models, called input-output models, exist to conduct economic impact analysis. There are several input-output models available. IMPLAN (Impact Analysis for PLANning, Minnesota IMPLAN Group)³ is one such model. Many economists use IMPLAN for economic contribution analysis because it can measure output and employment impacts, is available on a county-by-county basis, and is flexible for the user. IMPLAN has some limitations and qualifications, but it is one of the best tools available to economists for input-output modeling. Understanding the IMPLAN tool, its capabilities, and its limitations will help ensure the best results from the model.

One of the most critical aspects of understanding economic impact analysis is the distinction between the “local” and “non-local” economy. The local economy is identified as part of the model-building process. Either the group requesting the study or the analyst defines the local area. Typically, the study area (the local economy) is a county or a group of counties that share economic linkages. In this study, the study area is the entire state of Minnesota.

A few definitions are essential in order to properly read the results of an IMPLAN analysis. The terms and their definitions are provided below.

Output

Output is measured in dollars and is equivalent to total sales. The output measure can include significant “double counting.” Think of corn, for example. The value of the corn is counted when it is sold to the mill, again when it is sold to the dairy farmer, again as part of the price of fluid milk, and yet again when it is sold as cheese. The value of the corn is built into the price of each of these items and then the sales of each of these items are added up to get total sales (or output).

Employment

Employment includes full- and part-time workers and is measured in annual average jobs, not full-time equivalents (FTE’s). IMPLAN includes total wage and salaried employees, as well as the self-employed, in employment estimates. Because employment is measured in jobs and not in dollar values, it tends to be a very stable metric.

Labor Income

Labor income measures the value added to the product by the labor component. So, in the corn example when the corn is sold to the mill, a certain percentage of the sale goes to the farmer for his/her labor. Then when the mill sells the corn as feed to the dairy farmer, it includes some markup for its labor costs in the price. When the dairy farmer sells the milk to the cheese manufacturer, he/she includes a value for his/her labor. These individual value increments for labor can be measured, which amounts to labor income. Labor income does *not* include double counting.

Direct Impact

Direct impact is equivalent to the initial activity in the economy. In this study, it is construction spending generated by projects leveraged by the Minnesota Historic Rehabilitation Tax Credit.

³ IMPLAN Version 3.0 was used in this analysis. The trade flows model with SAM multipliers was implemented.

Indirect Impact

The indirect impact is the summation of changes in the local economy that occur due to spending for inputs (goods and services) by the industry or industries directly impacted. For instance, if employment in a manufacturing plant increases by 100 jobs, this implies a corresponding increase in output by the plant. As the plant increases output, it must also purchase more inputs, such as electricity, steel, and equipment. As the plant increases purchases of these items, its suppliers must also increase production, and so forth. As these ripples move through the economy, they can be captured and measured. Ripples related to the purchase of goods and services are indirect impacts. In this study, indirect impacts are those associated with spending by the developers to purchase construction materials (lumber, cement, equipment, and so forth) and construction-related services (architectural, law, engineering, etc.).

Induced Impact

The induced impact is the summation of changes in the local economy that occur due to spending by labor, that is spending by employees in the industry or industries directly impacted. For instance, if employment in a manufacturing plant increases by 100 jobs, the new employees will have more money to spend to purchase housing, buy groceries, and go out to dinner. As they spend their new income, more activity occurs in the local economy. This can be quantified and is called the induced impact. Primarily, in this study, the induced impacts are those economic changes related to spending by construction workers hired to perform the rehabilitation work.

Total Impact

The total impact is the summation of the direct, indirect, and induced impacts.