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Community and Economic Impacts of the St. Croix River Crossing

A St. Croix County Perspective

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A St. Croix County Perspective

Prepared for
St. Croix County, Wisconsin

By
Matt Kures

Assistance from
Lindsay Amiel

University of Wisconsin-Extension
Center for Community and Economic Development

With contributions from
Gillaspy Demographics

The information and opinions in this report are those of the authors and do not necessarily reflect those of St. Croix County, financial supporters, the River Crossing Advisory Committee, or the University of Wisconsin-Extension.

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- Ken Arvey
- Daniel Bakken
- Carolyn Barrette
- Bill Berndt
- Eric Biltonen
- Brett Budrow
- Maureen Carlson
- Mike Darrow
- Tom Derrick
- Ellen Denzer
- Amanda Engesether
- Tim Erickson
- Blake Fry
- Dan Gavin
- Dave Gerberding
- David Grambow
- Kim Heinemann
- Susan Heuiser
- Susan Hoyt
- Logan Kelly
- David Mandel
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Introduction

The scheduled opening of the St. Croix River Crossing in 2017 creates uncertainty for St. Croix County.[1] A number of studies have considered the project's environmental and traffic impacts. However, more limited information is available on how the Crossing may affect future population growth and economic development along the Highway 64 Corridor and within greater St. Croix County. To better understand potential impacts stemming from the River Crossing, this study is conducted to: 1) explore how the improved crossing could influence the region's population growth and economic development opportunities; 2) provide communities with information and tools to plan for the economic and fiscal impacts of the River Crossing; and 3) suggest opportunities for shaping future growth.

In identifying potential impacts of the River Crossing, this study must address several distinct challenges. First, the regional economy is still recovering somewhat from the effects of the Great Recession. The economic upheavals after 2007 broadly affected the region's housing market and employment levels. As discussed later in this analysis, the economic downturn may also have affected population growth rates. The economy has undoubtedly improved, but is unknown if the recent recessionary period will continue to have lingering impacts on population and economic growth.

Second, separating the future impacts of the River Crossing from other factors influencing community change is a technical and methodological challenge. While transportation infrastructure can influence growth rates, community and regional development are also affected by a host of local, regional and national factors. The presence of the Interstate 94 major river crossing less than 10 miles to the south compounds this issue. Consequently, this analysis must rely on identifying broad rather than precise impacts.

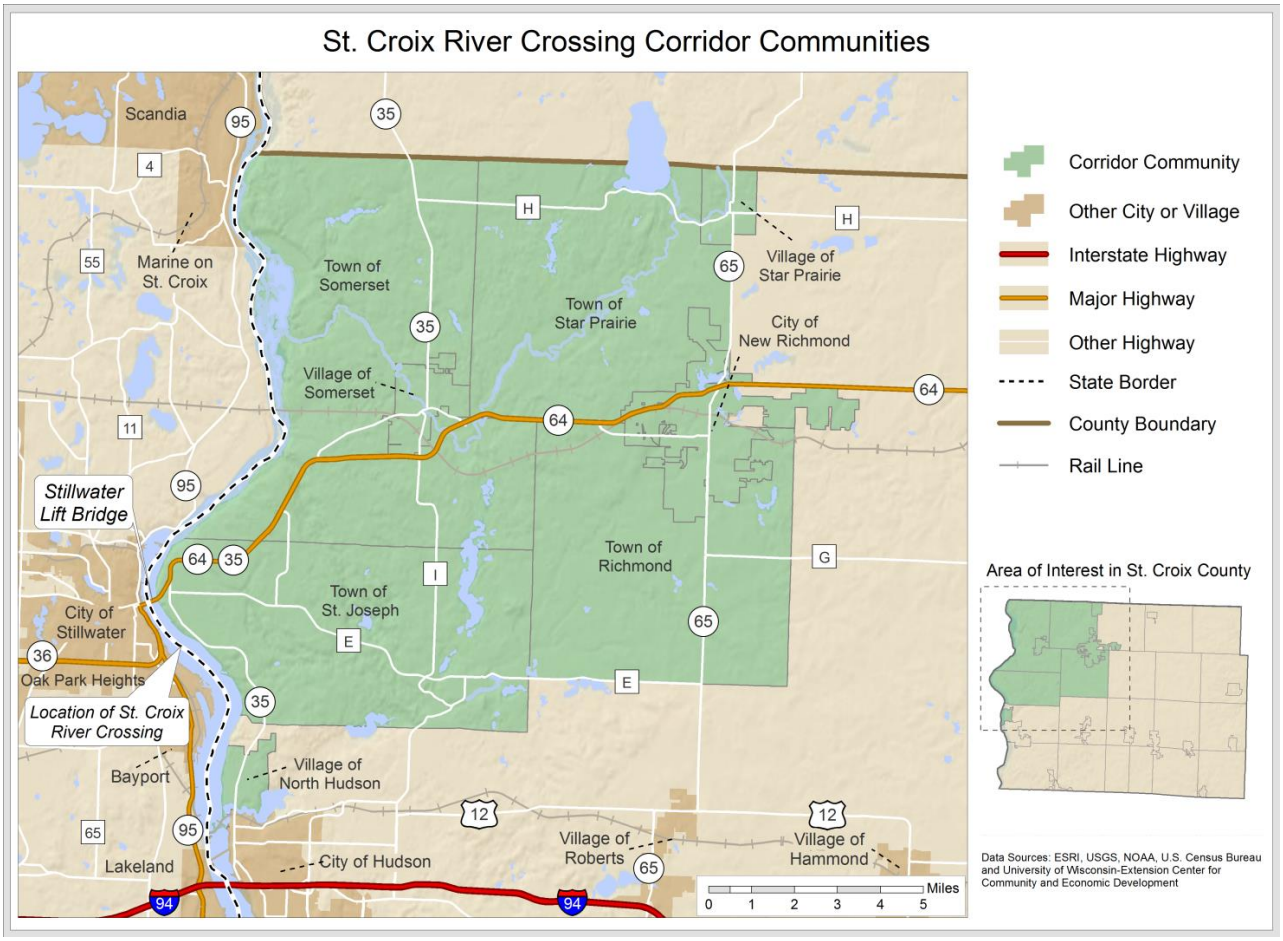
Geographic scale creates a final challenge for this analysis. The River Crossing undoubtedly will affect some portions of St. Croix County more so than others. However, future impacts are difficult to predict in small geographic areas. Consequently, this analysis does not pinpoint or specify impacts in individual communities. In fact, communities have an opportunity to shape local effects of the Crossing somewhat. Therefore, the study does not attempt to forecast or dictate future land use patterns in communities along the Highway 64 Corridor.

Despite the challenges in identifying small area impacts, the analysis does consider some potential aggregate effects in the combined cities, villages and towns most likely to be influenced by the Crossing. The communities primarily are located along Highway 64 and are referred to as "the Corridor" or "Corridor Communities" throughout this analysis. These Corridor Communities are depicted in Map i.1 and include:

- Town of St. Joseph;
- Village of Somerset;
- Town of Somerset;
- Village of North Hudson;
- City of New Richmond;
- Town of Richmond;
- Village of Star Prairie;
- Town of Star Prairie.

[1] The St. Croix River Crossing is also referred to as the River Crossing or the Crossing throughout this study.

Map i.1 – St. Croix River Crossing Corridor Communities



Study Outline

To examine potential community and economic impacts of the St. Croix River Crossing, the following analysis is partitioned into three sections:

- *Section 1 – Perspectives on Transportation Infrastructure, Population Growth and Economic Development:* Section 1 considers how transportation infrastructure broadly impacts population change and economic growth. The analysis relies on a review of existing research that largely considers how highways (and other factors) influence community growth and development. The analysis also examines how so-called comparable bridge improvement projects have impacted other counties throughout the United States.

- *Section 2 - Forecasting Population Change in St. Croix County and Corridor Communities:* Over the past few decades, St. Croix County has been one of Wisconsin's fastest growing counties in terms of both population and employment. In fact, the Census Bureau identified St. Croix County as one of the fastest growing counties in the United States between 2000 and 2005. Given these trends, it is not surprising

that population and employment growth rates in the county also have well-surpassed those of the United States and the State of Wisconsin. While recent population growth has slowed somewhat due to the recession, the question is whether the River Crossing will help growth rates return to past levels, or will growth occur at some other rate? In examining this question, Section 2 examines historical perspectives on population growth; considers current trends that could shape future rates of change; and develops population growth forecasts for the coming decades.

- *Section 3 - St. Croix River Crossing and Economic Development Opportunities*: The Crossing creates a number of potential economic impacts for the region. Some of these impacts may need to be managed by local communities, while others could create opportunities for growing jobs and income. In particular, Section 3 considers the potential economic impacts of new residents; potential comparative advantages offered by the Crossing; and recreational development opportunities that could arise.

Finally, this study should serve as a starting point for understanding the St. Croix River Crossing's impact on St. Croix County. The precise impacts are yet to be determined. As the River Crossing opens to public use, there will be opportunities for updating and modifying the analyses in this document.

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Section 1 – Perspectives on Transportation Infrastructure, Population Growth and Economic Development

Transportation infrastructure undoubtedly has an important role in regional growth and development (Mikelbank, 1996). However, the St. Croix River Crossing's precise future impacts on St. Croix County are unknown. In addition to transportation networks, existing research strongly supports the notion that community change is influenced by many factors; each having various impacts on population growth or economic development. In fact, the diverse factors affecting population and economic change defy simple interpretation and raise problems in statistical modeling methods. Even an integrated framework, or one that combines many factors into a single analysis, provides limited information on the causes or determinants of population change (Chi and Ventura, 2011a). Consequently, isolating the impact of the River Crossing on future growth is neither an easy nor straightforward task.

While it is unlikely that this analysis can identify the exact impacts of the River Crossing, broader potential effects can be explored. Specifically, there are numerous studies that consider the influence of transportation infrastructure on population change and economic growth. In fact, a number of these studies are based on Wisconsin communities and provide local perspectives on how highway improvements might impact regional growth. The potential implications of this existing research and their transferability to the River Crossing are examined below.

In addition to academic and technical studies, so-called comparison projects in other communities may also provide perspectives. Over the past several decades, a number of other metropolitan communities around the nation also have undergone bridge improvements. Considering changes to population and employment within these areas may provide insights to the future trajectory of St. Croix County. The various impacts arising from five comparable projects are described later in this section.

1.1 - Overview of Transportation Infrastructure Improvements and Population Change

Understanding the various mechanisms that affect population change is important to communities that are seeking to plan for future development. A breadth of research across many disciplines considers the factors influencing regional population growth and decline. While a complete review of the literature on population change is beyond the scope of this overview, it is worth reviewing research on how *transportation infrastructure* may influence population growth in a community. Unfortunately, the theoretical explanations and empirical findings that connect highways and population change are somewhat varied (Chi, Voss and Deller, 2006). Furthermore, there is little systematic research that explicitly explains the connections between regional growth and bridge construction. Research on the influence of highway expansions on population change also is somewhat limited (Chi, 2012). Nonetheless, a number of existing studies can inform this analysis of the River Crossing.

The impact of the River Crossing is the focus of this analysis, but it is also important to consider broader national trends that have affected population growth and decline over the past several decades. Of particular interest in St. Croix County are the influences of so-called *period effects, population de-*

concentration and regional restructuring (Frey and Speare, 1992). While these three factors are often viewed from historical perspectives, they remain relevant to this discussion. Specifically, these influences could affect future St. Croix County population changes in several manners:

- *Period effects are population influences stemming from short-term economic, demographic and political influences.* The recent downturn in the national housing market, and subsequent recessionary period, is an important period effect continuing to influence population change in the Minneapolis-St. Paul-Bloomington metro area and elsewhere. The potential impact of this period effect is considered further in Section 2;

- *De-concentration refers to the gradual dispersal of metropolitan populations into the low-density, high-amenity locations preferred by many residents*. De-concentration has occurred as transportation and communication innovations provided greater flexibility in choosing where to live and work. While there may be limits to the effects of declining transportation costs on locational decisions (Partridge, Rickman, Ali and Olfert, 2008), the River Crossing's role in providing a new transportation option could potentially influence de-concentration patterns in the metro area. Frey and Speare (1992) also suggest that de-concentration was driven previously by the emergence of unattached populations whose residential choices were not dictated by workplace considerations. This trend may continue as current (and future) residential choices among certain demographic segments could also drive de-concentration in the region as well. As with period effects, population change factors related to de-concentration are considered further in Section 2 of this analysis;

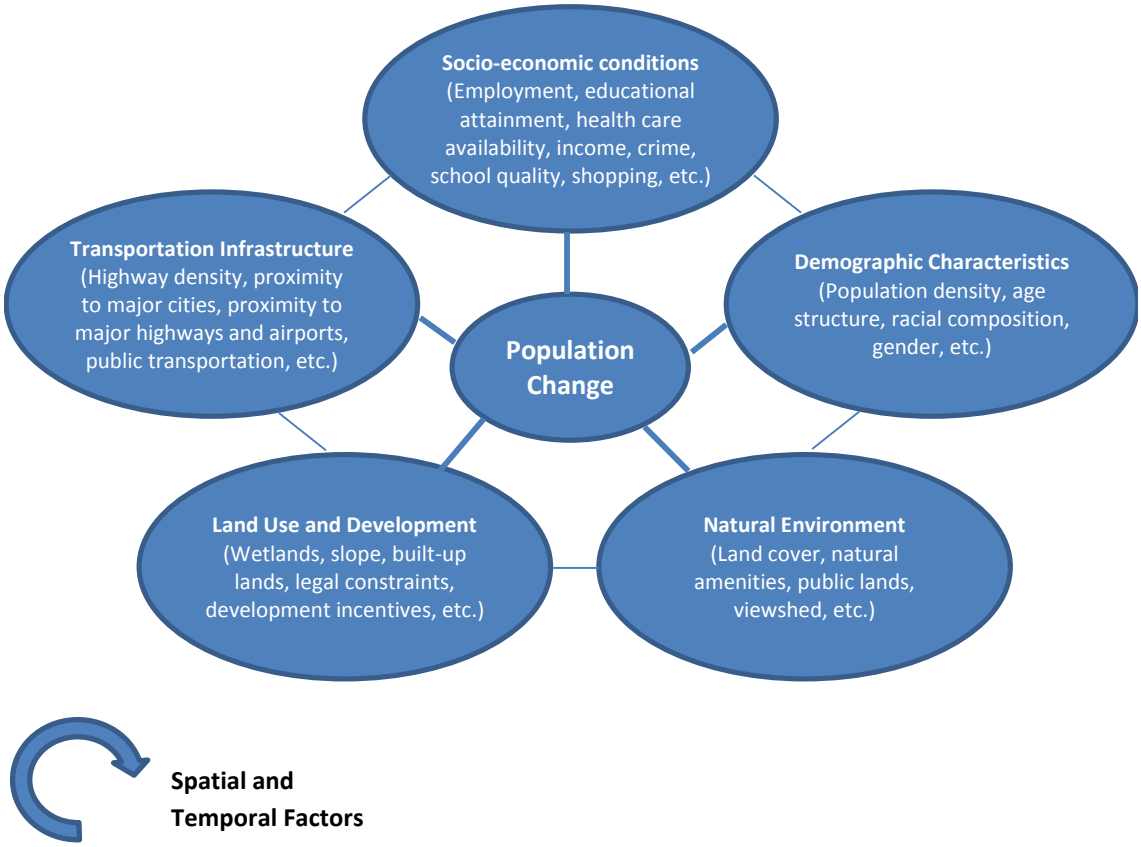
- *Regional restructuring considers how structural forces, such as industrial composition, may influence population change*. The de-industrialization of many Great Lakes metro areas provides examples of how regional restructuring has shaped population growth. As many manufacturers moved to rural locations to reduce operating costs, rural communities experienced population gains while urban areas suffered the loss of residents. However, the regional restructuring perspective could also result in urban growth. For instance, areas specializing in high-tech or knowledge-based industries may continue to grow and drive population increases in metro areas (Frey and Speare, 1992). While this assumption is not a guarantee of growth, it does suggest that a region's economic structure and trajectory is a potential driver of population change. Accordingly, St. Croix County's position in the metro area economy is examined in Section 3;

In addition to these broader influences on population change, many other factors also affect local population growth and decline. Highways and other forms of transportation infrastructure certainly are features that need to be considered as contributors to population change. However, Chi and Ventura (2011a) suggest that transportation infrastructure is but one factor in a broader integrated framework of population change (Figure 1.1). This framework includes additional factors that have been identified in prior research such as demographic characteristics; socioeconomic conditions; the natural environment, and land use and development.[2] The influence of these other factors on population change suggests that the River Crossing cannot be considered in isolation.

[2] For other reviews of the factors influencing population growth, see: Chi, 2009; Chi and Marcouiller, 2009; Chi and Ventura, 2011b.

The factors affecting regional population change can influence growth or decline through different mechanisms. Demographic characteristics (including age, sex, and race) can shape migration, fertility and mortality rates. Socioeconomic conditions, such as income, school quality, health care and employment levels, can drive migration into and away from communities. The natural environment can influence population change by attracting migrants into regions with high levels of natural amenities. Furthermore, land use and development factors, (including land availability, built-up lands, geophysical features, and legal constraints) can affect the amount of land available for growth in a municipality and its neighboring communities (Chi and Ventura, 2011a).

Figure 1.1 – Integrated Framework of Population Change



Source: Chi and Ventura, 2011a

Within this framework, the connections between transportation infrastructure and population change are of particular interest. These connections are rooted in a number of regional economic theories. One perspective comes from *location theory*, or the view that individuals and firms choose to locate in places that maximize their well-being. From a population change perspective, location theory suggests that households choose residences partially on the basis of transportation costs (Cho, Rodriguez and Song, 2008; Roback, 1982). In particular, households have a preference for low cost locations that provide accessibility to high wage jobs and allow access to urban and rural amenities (Tabuchi and Thisse, 2006; Isserman, 2001). In turn, improved transportation infrastructure is a mechanism for increasing the access among households, jobs and amenities.

Growth pole theory also provides perspectives on the potential connections between transportation infrastructure and population change. Growth pole theory attempts to explain the economic dependence of metropolitan areas and their surrounding suburban and rural areas (Chi, 2010; Henry, Barkley and Bao, 1997; Chi, Voss and Deller, 1996). Metropolitan areas can influence broader regional population changes and economic activity through two mechanisms. First, growth in an urban area can spur growth in surrounding communities. That is, urban economic development can spillover (or spread) into adjacent areas. Conversely, growth in one location can also cause decline (or backwash) in surrounding areas. Backwash occurs when growth is attracted into the urban core away from rural or suburban communities. The exact role of highways in promoting population change can vary over time and depends on broader spread and backwash effects in the metro area. *Importantly, growth pole theory views highways as a catalyst or facilitator of population change. That is, an improved highway is neither necessary nor sufficient to cause population change independent of other factors (Thiel, 1962).*

The viewpoints of location theory and growth pole theory are particularly relevant to suburban communities (such as those in western St. Croix County). From a locational perspective, suburban areas are positioned to benefit the most as locations that can provide optimal access to urban job centers *and* rural/urban amenities. Furthermore, suburban areas inherently are part of metro areas that will be subject to the spread and backwash effects of metropolitan growth and development. Consequently, this analysis is largely interested in research that assesses how transportation infrastructure affects suburban population growth or decline, rather than studies that might only consider urban or rural change.

Despite the complex factors affecting population change, a number of empirical studies have attempted to measure the impact of highways on regional growth and decline. As noted by Chi (2012), these studies are performed at various geographic scales and yield both disparate and contradictory results. In some studies, such as those by Boarnet (1994), Cervero (2003) and Goetz et al. (2010), highways are found to promote population and economic growth. However, other studies either find highways to have no impact on growth, or suggest highways are a secondary influence (Jiwattanakulpaisarn et al., 2009; Voss and Chi, 2006).

Inconsistent or secondary effects of population change attributed to highway expansions are common findings in prior studies. For instance, Voss and Chi (2006) found evidence that recently completed highway expansions had positive impacts on population change in Wisconsin communities. Specifically, Wisconsin communities within 20 miles of a highway expansion experienced elevated growth rates for a period after the expansion was completed. However, the significance of highway expansions was not consistent across all time periods. While highway expansions had a positive impact on population growth from 1990 to 2000, expansions instead suggested a *negative* impact on population change in the years between 1980 and 1990.

These contradictory findings possibly are connected to broader population trends in the state. That is, the state of Wisconsin had an unprecedented slow period of population growth between 1980 and 1990 (a rate of just 4.0 percent). However, Wisconsin had a 9.6 percent population growth rate between 1990 and 2000. Accordingly, highway expansions may have simply served to facilitate broader growth trends already in place as the highway expansions began (Voss and Chi, 2006).

The argument that highway expansions facilitate statewide population growth trends is reasonable, but is not supported by any specific theory. In reconsidering the role of highways in population change, Chi (2010) used a more integrated spatial approach partially rooted in the aforementioned framework of population change (see Figure 1.1).[3] The results of this analysis suggested that highway expansions can have direct and indirect effects on population change. Two findings are particularly relevant to the St. Croix River Crossing:

1. Highway expansions *directly* influenced population change in suburban Wisconsin communities through effects tied to growth pole theory. In the 1980s, metropolitan areas grew as rural areas faced economic upheavals stemming from deindustrialization, the farm debt crisis, and urban revival. During this period, highway expansions facilitated population movements from suburban to urban areas. In contrast, improving economic conditions in the 1990s induced residents to move to suburban areas that allowed access to both growing urban economies and rural amenities (Chi, 2010). Again, highway expansions helped to facilitate these changes. Given that these prior suburban population changes were influenced by regional economic trends, it may be that future growth patterns stemming from the St. Croix River Crossing could also depend on broader conditions in the region, or more namely the Minneapolis-St. Paul-Bloomington metro area;

2. Highway expansions also *indirectly* influenced population change in suburban areas. Chi (2010) found that population change in one community was spatially dependent on change in surrounding communities. More specifically, a community surrounded by other growing communities also tended to gain population. Conversely, a community surrounded by communities with declining populations was likely to lose residents. It may be that population growth in one community leads to higher housing prices; driving residents to choose neighboring areas as an alternative until home prices reach equilibrium. Expanded highways indirectly facilitate this change by allowing residents to easily move among communities and respond to regional housing prices and other quality of life factors. This recognition of spatial dependence is particularly important for Corridor Communities, as population trends in one community will likely influence change in other communities along Highway 35 and Highway 64.

In another study of Wisconsin communities, Chi and Ventura (2011b) considered the impact of transportation accessibility on population growth. For purposes of this study, accessibility was measured using five factors: 1) proximity to central cities; 2) proximity to airports; 3) proximity to major highways; 4) highway density; and 5) percent of workers using public transportation to work. Interestingly, the analysis found that these accessibility measures largely had *no* significant effects on population change in rural, suburban or urban areas across a three decade period. Echoing findings from other studies, Chi and Ventura (2011b) instead suggest that transportation accessibility is a facilitator of population flows, but does not directly create population growth and decline. That is, when metropolitan areas grow, transportation accessibility promotes the flows that allow people to interact among residential locations, work locations, and shopping locations.

[3] The analysis from Chi (2010) builds upon the prior study from Voss and Chi (2006). The integrated spatial approach used included four components that considered: 1) the determinants of population change (e.g. demographics, land use, environmental factors, transportation, etc.); 2) simultaneous consideration of spatial lag and spatial error dependence; 3) spatial variations in impacts; and 4) an improved approach to creating a spatial weight matrix.

While transportation accessibility was not significantly associated with population growth, Chi and Ventura (2011b) found other factors that influenced population change. Some of these factors varied across both time and geographic space. For instance, demographic factors related to age structure had erratic effects across rural, suburban and urban areas, with no consistent influence on population change. *However, characteristics related to a community's livability (i.e. educational attainment, income, and housing characteristics) were found to have an important role in affecting population change in suburban areas. That is, convenient lifestyles and quality of living are community assets valued by migrants.*

Two other findings from Chi and Ventura (2011b) are particularly important for this analysis of the River Crossing. First, factors related to the developability of an area had positive influences on population growth across several decades. *Specifically, the more lands that are available for development, the greater the likelihood that population growth will occur*. This finding is intuitive as greater amounts of developable land create additional opportunities for increasing a community's housing supply. Second, population growth or decline in a community again was found to be spatially dependent on surrounding communities. Reinforcing the findings from Chi (2010), population growth or decline in a community was strongly influenced by growth or decline in surrounding areas. As previously stated, the spatial dependency of population growth suggests that Corridor Communities will need to monitor conditions throughout the region, not just within an individual community's boundaries.

In yet another study focusing on Wisconsin communities, Chi (2012) again examined the impacts of transportation accessibility on population change. Accessibility was measured in terms of highway density, distance to highway expansions, and distance to the nearest airport (adjusted for the airport's number of passenger boardings). *Again, investments in the form of highway expansions were not found to have a significant effect on suburban population growth*. Instead, highway investment was suggested to be a secondary factor in promoting suburban population growth (Chi 2012).

In summary, the literature related to transportation infrastructure improvements and population change shows mixed results in terms of how the St. Croix River Crossing might influence population growth in the region. While some prior studies suggest that highway expansions provide some positive direct or indirect effects on population growth, other studies show little significant impact. However, this research does provide several key conclusions for evaluating future population trends in Corridor Communities and St. Croix County:

1. Highway improvements are likely best viewed as a facilitator of suburban population growth. That is, highway improvements enable flows of populations that partially are dependent on larger trends in the region;

2. Transportation infrastructure is but one of many factors that influence population change. Population growth or decline also depends on many other demographic, socio-economic, environmental and land use considerations. The influence of these factors may also vary over space and time;

3. Population growth is spatially dependent. Population growth or decline in one community is tied to growth or decline in surrounding communities. These findings suggest that this examination of the River Crossing must consider many factors (including broader metropolitan trends) that could influence future growth, rather than relying on a single set assumptions.

While not discussed in the aforementioned studies, St. Croix County communities may also want to consider questions about the causality between highway expansion and population change. The relationship between highway expansions and population growth is sometimes viewed as bi-directional or subject to "the chicken and the egg effect." That is, expanded highways initially may contribute to new population change or economic growth. However, growth also creates congestion and drives the need for expanded highways (Mikelbank, 1996; Boarnet and Haughwout, 2000; Cevero, 2003; Chi, Voss and Deller, 2006). Accordingly, population change may be facilitated initially by the Crossing, but this influence may decline over time as increased population creates new congestion.

1.2 - Overview of Transportation Infrastructure Improvements and Economic Development

Transportation infrastructure is often viewed as an important driver of economic development. Indeed, highway construction is often touted as an economic development strategy that can create better access to jobs and markets (Rephann and Isserman, 1994; Chandra and Thompson, 2000). However, the effects of transportation infrastructure on economic development are complex. As with population change, transportation infrastructure is again just one of many variables that impact economic growth (for example see: Garcia-Mila and McGuire, 1992; Halstead and Deller, 1997; Boarnet and Haughwout, 2000; Camagni, 2002; Chi and Marcouiller, 2009). Economic development in a region also is driven by factors related to labor force quality; industry structure; the availability of developable land; business climate; and quality of life characteristics. National or international events, such as the recent recessionary period, also shape local and national growth. Simply stated, local and global factors interact to shape the broader economy (Thisse, 2009).

The connections between transportation infrastructure and economic growth can be viewed from several perspectives. Neoclassical growth theory views transportation infrastructure as a factor in the production process that can lower costs. For instance, improved infrastructure can reduce the cost of transporting raw materials or finished products between locations. Efficient transportation networks also can enhance the productivity of labor inputs by reducing the commuting times of workers (Chi, Voss and Deller, 2006; Glaeser and Kohlhase, 2004; Dalenberg and Partridge, 1997; Vickerman, 1991). Reduced transportation costs may also increase consumer's income through the time-value of money. In fact, modeling performed for the St. Croix River Crossing suggests that the new bridge could have annual economic gain of $1.8 million dollars in consumer surplus (Zhu and Levinson, 2010).[4]

[4] Note that these impact estimates do not compare construction or operational costs. They also do not account for other factors such as travel time reliability, the value of redundant networks, or changes in land use.

As with population change, transportation infrastructure and economic growth are also connected through growth pole theory. Again, metropolitan areas can influence broader economic change in several manners. Growth in an urban area can spur growth in surrounding communities through spread or spillover effects. Conversely, growth in one location can also cause decline in surrounding areas when growth or spending is attracted into the urban core away from rural or suburban communities (e.g. through economic leakage). Highways in turn are the facilitators of this movement within the metropolitan area, but are not sufficient to cause changes independent of other factors (Thiel, 1962).

There are also questions about the connections between population change and employment growth patterns that potentially arise through growth pole theory. For instance, employment growth may follow population growth in a good economy, while people migrate to places with employment opportunities in a negative economy (Carlino and Mills, 1987). However, other studies suggest that population and employment changes are endogenous in nature. Regardless, population change and employment change are highly correlated (Chi, Voss and Deller, 2006).

The ties connecting economic growth and transportation infrastructure can also be viewed through the lens of location theory. As noted earlier, location theory suggests that firms will choose a geographic location that either minimizes their costs or maximizes the demand for their goods or services. As transportation expenditures can influence the cost of doing business, firms will choose locations along transportation corridors that can lower costs of moving products to final markets or increase the access of customers traveling to an establishment. Transportation infrastructure may also provide better access to labor that is needed by businesses (Chi, 2010; Nadiri and Mamuneaus, 1998; Halstead and Deller, 1997).

The perceived importance of transportation infrastructure from a location theory perspective varies somewhat. For instance, one annual survey of site selectors suggests that highway accessibility ranks second to only skilled labor availability as a factor in choosing new business locations (Area Development Magazine, 2014). Chandra and Thompson (2000) also found that new infrastructure in the form of Interstate highways had a positive effect on manufacturing and retail industry growth. However, others find that transportation costs are a somewhat limited factor in industrial site selection. A mature highway system combined with technological advances have greatly reduced freight transportation costs and created diminishing returns (Giuliano, 1989 and Glaeser and Kohlase, 2004). In fact, the average cost of moving one ton-mile by truck dropped from 38 cents in 1985 to 28 cents in 1999. In comparison, ton-mile transportation costs for rail decreased from 18 cents in 1890 to 2.3 cents in 1999 (Glaeser and Kohlhase, 2004).[5]

In reality, the importance of transportation as a location factor likely varies across time, space and industry sector. Access is likely more important to manufacturing, retail and logistics industries where transportation constitutes a larger share of operational costs. Moving people (i.e. labor and consumers) also remains expensive due to urban congestion, which in turn can reduce productivity (Glaeser and Kohlhase, 2004; Schrank, Eisele and Lomax, 2012). Furthermore, a highway improvement may influence local economic changes more so than the broader region. That is, a given infrastructure project may not offer wide improvements to metropolitan accessibility, but it might reduce travel times in the immediate areas surrounding the project (Boarnet and Haughwout, 2000).

[5] In 2001 dollars

As with efforts to quantify the impacts of transportation infrastructure on population change, studies attempting to isolate the causal effects of public infrastructure on economic growth are also somewhat inconclusive and conflicting. In one review of past research, Shatz et al. (2011) concluded that there are economic benefits to regions that arise from new highway investments. Nadiri and Mamuneaus (1996) also found that public highway investment contributed to economic growth and productivity increases at both national and industry levels. However, the impacts of infrastructure were much larger during the 1950s and 1960s when the Interstate Highway System was under construction. As highway networks became built-up and highway expenditures moved to maintenance, the impacts of public highway investments declined.[6]

In contrast, some research suggests that the effects of publicly-funded infrastructure is either overstated or secondary to other factors of economic growth (Garcia-Mila and McGuire, 1992; Krol, 1995) or has no link to productivity increases (Hulten and Schwab, 1993; Tatom, 1993). A somewhat local study of transportation investments in several Minnesota communities also found limited connections between infrastructure improvements and economic growth. Specifically, Iacono and Levinson (2013, pg. 53) examined four highway projects and found "no convincing evidence of statistically significant effects on private earnings and employment in the locations where these projects were implemented." The authors note that these findings are subject to caveats surrounding the limited timeframe in which to measure effects and the comparability of these projects in terms of their size and scope.

Yet other research on public highway investments suggests that the economic impacts are somewhat uneven. As suggested earlier, Chandra and Thompson (2000) found that new interstate highway construction increased earnings across many sectors in those counties that contained the highway. Manufacturing earnings also increased in counties adjacent to the interstate highway. However, a reduction in retail and government earnings also occurred in adjacent counties. In other words, it may be that highway investments can increase activity in some industries, but can also re-allocate activity in the region. *Accordingly, Chandra and Thompson (2000) suggest that highways may serve to re-arrange activity somewhat in a metropolitan area, but provide no net gain in overall economy activity in the region.* This observation follows the aforementioned findings of Chi and Ventura (2011b) and Chi (2012) that highways are facilitators of change in suburban areas, but do not directly contribute to population growth.

Hicks (2014) also found somewhat uneven economic impacts of highway infrastructure. In exploring the impacts of highway access on firm productivity levels, potentially different effects were apparent in urban versus rural areas. Specifically, proximity to a highway had a significant, positive impact on firm productivity (for firms with more than one employee). However, these impacts were limited to businesses located in rural regions, and were not found in estimations that included urban areas. These findings also echoed the impacts of Hicks (2006) where highway construction was found to have effects on retail concentrations in rural areas, but not metro areas.

[6] Research from Nadiri and Mamuneaus does not include the impacts of consumers or commuters that might accrue additional benefits from highway investments.

As with population change, research provides varied and uneven findings on the potential connections between transportation infrastructure improvements and economic growth. The research also raises a counterfactual question. That is, regardless of the measured economic impacts, would economic activity in a community or region occurred "but for" the presence of the infrastructure improvement (Iacono and Levinson, 2013)?[7] If not, would the activity still occur in another location in the community? Or in the county or region? The counterfactual is a difficult question to answer, but is worth considering nonetheless. Other important conclusions from existing research also can inform this study of the St. Croix River Crossing:

- Economic growth is influenced by a wide variety of regional, national, and international factors. Consequently, the impacts of the River Crossing cannot be assessed without considering the broader influence of other conditions across the local-to-global continuum;

- Similar to population movements, it may be that highway improvements help to facilitate change or re-allocate economic activity in metro areas rather than create net new growth. While St. Croix County communities may be positioned to benefit from these re-allocation mechanisms, growth likely will be also dependent on broader trends and conditions in the metro area;

- Transportation accessibility is a factor for businesses that are making locational decisions. Not only can efficient transportation networks reduce the cost of transporting raw materials and finished products, but may also create better connections among labor and employers. However, the precise importance of transportation will likely vary across space and industry. When considering the role of the St. Croix River Crossing, Corridor Communities and the broader county will need to consider two questions: First, what types of industries might benefit the most from transportation infrastructure such as the River Crossing? Second, does the River Crossing create comparative advantages for Corridor Communities greater than other potential locations in the region? That is, how do these highway improvements increase labor accessibility or lower transportation costs relative to other locations in St. Croix County or the metro area? These questions are considered further in Section 2 and Section 3.

- Finally, population growth and employment growth are correlated. While it is unknown exactly how the River Crossing will affect either population or employment levels in the future, it is likely that the River Crossing will continue to facilitate some level of growth. New residents will create demand for local services that generate economic impacts on local communities. Furthermore, new employment in local businesses needed by a growing population will create direct, indirect and induced impacts as well. These potential impacts are considered in Section 3.

[7] A good overview of the counterfactual question in impact studies is available in Siegfried, Sanderson and McHenry (2006).

1.3 - Comparable Projects

The prior review of existing research clearly shows that transportation infrastructure improvements affect population change and economic growth. However, the exact impacts will be influenced by many other factors. Impacts can also vary by project and by community. Despite this potential variability in impacts, the academic research reviewed here tends to generalize findings across groups or categories of communities. To supplement these broader conclusions, a number of so-called comparable projects are examined for their potential impacts on regional change. These projects are scattered across the United States and provide additional information about how individual county populations and employment levels may have differed before and after the completion of an improved river crossing. Comparable projects also offer some insights into how communities have responded to these changes.

For a transportation infrastructure project to be considered comparable to the St. Croix River Crossing, it must meet several criteria. First, the project *must replace or expand* an existing bridge rather than create a new crossing. Second, the bridge *must be located in a metropolitan statistical area*, preferably connecting the exterior of the metro area to its interior portions. Finally, the bridge project *must not be part of a major interstate crossing* with significantly larger traffic counts. Unfortunately, bridge projects that match these criteria are somewhat limited. While there is a surge of bridges in the planning or construction phases, these projects do not yet allow for comparisons to be made. Furthermore, many other large metropolitan bridges were built prior to the 1980s and subsequently offer limited time-series data to be examined.[8]

The lack of a large number of comparable projects precludes a more detailed econometric study of the population and economic impacts associated with bridge improvements. Therefore, this examination is somewhat limited and anecdotal. Nonetheless, the National Bridge Inventory and searches of newspaper archives reveal a number of bridge improvement projects that are somewhat similar to the St. Croix River Crossing. These projects include:

- *The Route 370 Corridor in St. Charles County, Missouri* - Completed in 1996 and located within the St. Louis, MO-IL metropolitan statistical area;
- *The Bloomington Ferry Bridge in Scott County, Minnesota* - Also finished in 1996 and part of the Minneapolis-St. Paul-Bloomington, MN-WI MSA;
- *The George P. Coleman Memorial Bridge in Gloucester County, Virginia* – Completed in 1995 and found in the Virginia Beach-Norfolk-Newport News, VA-NC MSA;
- *The Arthur Ravenel Jr. Bridge in Charleston County, South Carolina* – Opened in 2005 and located in the Charleston-North Charleston-Summerville, SC MSA;
- *The Blennerhassett Bridge between Wood County, WV and Washington County, OH* - Completed in 2008 and situated in the *Parkersburg*-Marietta-Vienna, WV-OH MSA.

[8] Many of the data sets used in this analysis begin with 1969.

Importantly, St. Croix County also experienced a prior bridge improvement project at the Interstate 94 crossing at Hudson. The project was performed in the late-1980s and provides an additional historical perspective for the county.

Some potential impacts arising from bridge improvements are assessed using population and employment growth patterns. Examining how population and employment levels may have changed in the periods before and after a project was completed could suggest whether an improved bridge induced additional growth. Accordingly, county population and employment changes for each comparable project are evaluated between the years of 1970 and 2013. A qualitative overview of each project is also provided.[9]

Population and employment trends are considered using two measures: 1) percent change in population or employment since 1970; and 2) percent change in population or employment from the prior year. Measuring change since 1970 allows for a long-term outlook, while assessing change from the prior year provides perspectives on year-over-year trends. When examining population and employment change on a year-over-year basis, readers should note that a downward trend line usually does not indicate negative growth. Instead, downward trends on many of the following charts suggest that growth rates are slowing.

Route 370 Corridor and the Discovery Bridge – St. Charles County, Missouri

The Route 370 Corridor connects St. Charles County and St. Louis County in the St. Louis MO-IL metropolitan statistical area (MSA). The St. Louis MSA is the 19th largest metro area in the nation with a population of approximately 2.8 million people. St. Charles County is the peripheral county in this analysis and is home to approximately 373,000 residents and 142,000 employees. Faced with rapid population growth, St. Charles County encountered several transportation infrastructure issues in the 1980s. First, the Missouri Route 115 bridge spanning the Missouri River was deteriorating rapidly and needed to be either repaired or replaced. Second, congestion on nearby Interstate 70 was causing extensive traffic bottlenecks in the area. In fact, traffic counts across the I-70 Bridge at the Missouri River (also known as the Blanchette Bridge) had reached 100,000 cars per day with further increases expected.

To address congestion issues, the 12-mile Route 370 Corridor and Discovery Bridge across the Missouri River were proposed in the mid-1980s. The Route 370 Corridor and Discovery Bridge connect to both Interstate 70 and Interstate 270, providing an alternate route across the Missouri River. The City of St. Charles, Missouri sits at one end of the Corridor and largely supported the project. The community backed the project as the new bridge and highway bypass would re-route commuter traffic around the city and ease traffic congestion in downtown St. Charles. Support for the project was also based on the notion that new transportation infrastructure could help attract light industry to the mostly under-developed region north of the city and expand the community's tax base. Similar support was echoed by county officials who hoped that the new Route 370 Corridor would open the region to development opportunities (Miller, 2006; Bryant, 2006).

[9] The qualitative overviews of each project largely were assembled by Lindsay Amiel.

Construction of the new corridor commenced in early 1989 and ended in 1996. Originally, Missouri Department of Transportation officials predicted that the Route 370 Corridor would carry 40,000 to 50,000 vehicles daily. However, average daily traffic volumes across the Discovery Bridge totaled 60,000 vehicles by 2006; a large increase from the 17,000 vehicles per day that used the previous Route 115 bridge. By the Discovery Bridge's 10th anniversary, 7.5 million square feet of farmland had been converted to mixed use developments and approximately 10,000 jobs were added to the local economy (Miller, 2006; Bryant, 2006).

The Discovery Bridge and Route 370 Corridor project share some similarities with the St. Croix River Crossing. Both river crossings are located in large metropolitan statistical areas. The St. Louis MSA is home to approximately 2.8 million residents, while the Minneapolis-St. Paul-Bloomington MSA has a population of approximately 3.3 million people. Furthermore, both bridges replace existing structures; adding additional lanes and rerouting traffic flows around downtown areas. These projects intend to reduce congestion on city streets and improve safety. *Finally, both bridges are secondary crossings into their respective counties.* The Discovery Bridge sits several miles from the adjacent Interstate 70 crossing while the St. Croix River Crossing is located less than ten miles from the Interstate 94 bridge at Hudson.

Despite some similarities, there are several important differences that distinguish the Discovery Bridge from the St. Croix River Crossing. First, St. Charles County's population was much larger than that of St. Croix County before the construction of the Discovery Bridge. According to the 1990 Decennial Census (before the Discovery Bridge was finished), St. Charles County had 212,913 residents. In contrast, St. Croix County's population was 86,000 people in 2013. Second, St. Charles County is more centrally located in the metro area while St. Croix County is at the metro fringe. Specifically, St. Charles County is situated directly adjacent to the City of St. Louis while St. Croix County is further from the urban cores of Minneapolis and St. Paul. Finally, the Route 370 Corridor provides direct access to the interstate highway system while the new St. Croix River Crossing does not.[10]

From outward appearances and anecdotal evidence, the bridge seems to have been a success in terms of easing congestion and spurring growth. However, the exact impact of the project is somewhat more complicated when considering longer-term patterns of growth in St. Charles County. The county's growth rate since 1970 has been significantly faster than the rates found in the state of Missouri and the United States. Population growth in St. Charles County also has occurred at a much faster rate than that of the St. Louis MSA (Figure 1.2). *In fact, St. Charles County traditionally has been one of the fastest growing counties in Missouri and is among the fastest growing counties in the lower Midwestern states*[11]

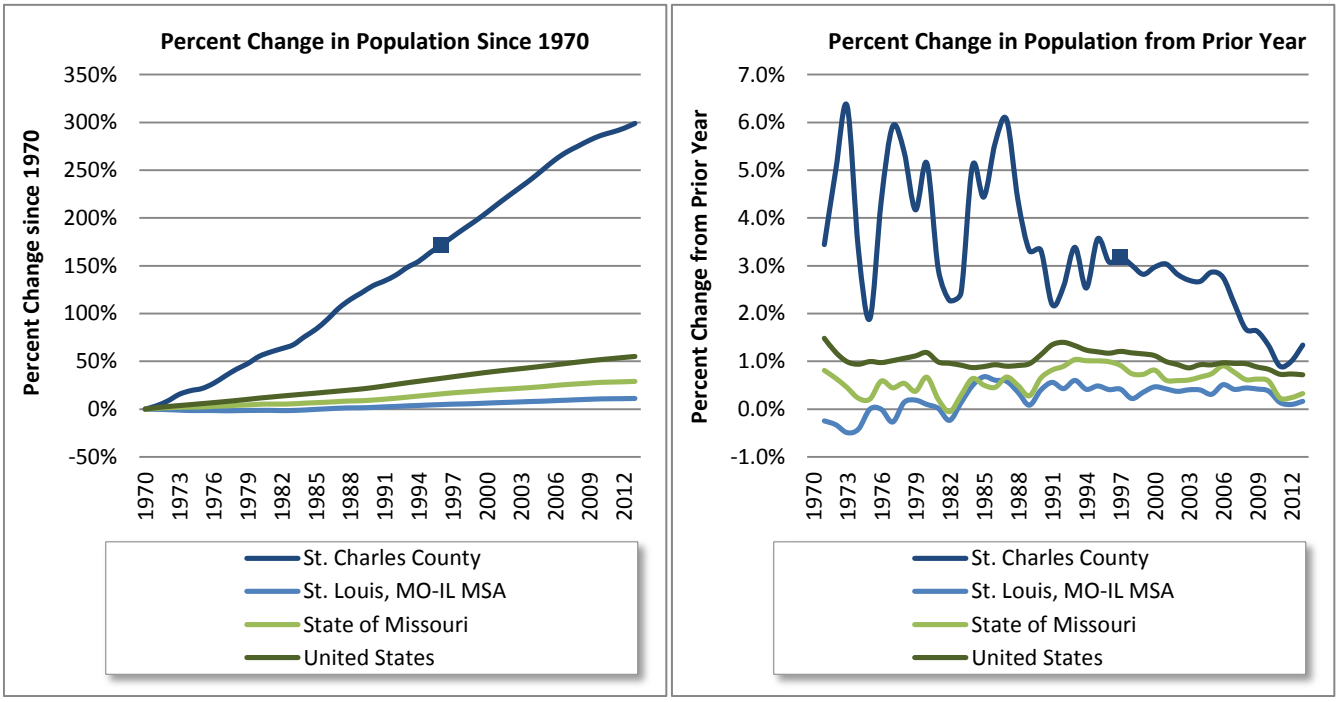
A closer examination of population trends in St. Charles County before and after the completion of the Discovery Bridge/Route 370 Corridor shows little change in growth rates. While the county's growth rate has remained high, it has not changed appreciably with the addition of the bridge. In fact, year-over-year population growth rates have actually declined steadily since the completion of the infrastructure project in 1996. Growth rates within the two communities linked by the Route 370 Corridor, the City of St. Charles

[10] Route 370 connects to I-270 on the east side of the Missouri River and to I-70 on the west side of the river.

[11] Including Missouri, Illinois, Iowa, Nebraska, Kansas, Oklahoma, Arkansas, Tennessee and Kentucky.

and the City of St. Peters, have also slowed since the completion of the bridge (Figure 1.3). Specifically, the combined populations of these two cities grew by 89 percent between 1980 and 1990, but increased by only 11 percent between 1990 and 2000. Moreover, their combined populations grew by just six percent from 2000 to 2010.

Figure 1.2 – St. Charles County, MO Population Trends 1970 to 2013



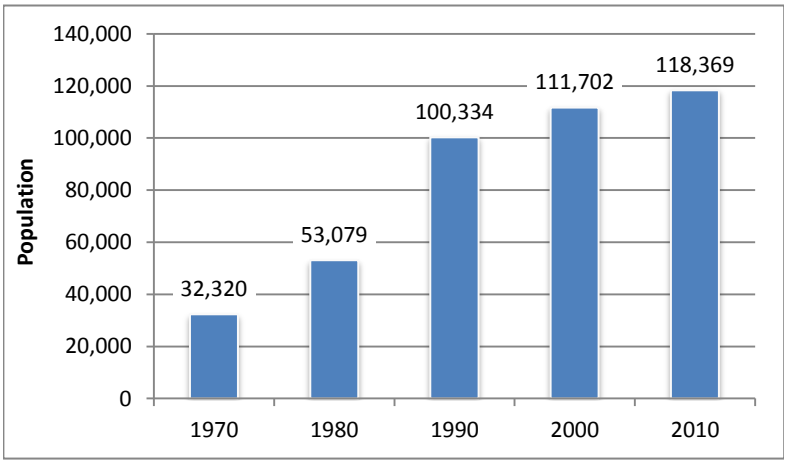
■ - Denotes Year of Bridge Completion

Source: Bureau of Economic Analysis and Author's Calculation

A comparison of population trends also shows that population growth in St. Charles County has somewhat mimicked patterns within the overall the St. Louis metro area. While the growth rates in St. Charles County are amplified relative to rates in the metro area, periods of increasing growth rates in the St. Louis MSA also tend to be reflected in St. Charles County. Similarly, periods of slower growth in the metro area also echo declining growth rates in St. Charles County (Figure 1.2).

Similar to population change, employment growth before and after the bridge project also has remained relatively steady. From 1970 to 2013, employment grew from 19,000 to 142,000 jobs, an impressive 643 percent increase (Figure 1.4). However, year-over-year growth rates in the five years (1996 to 2001) after the Route 370 Corridor and Discovery Bridge was

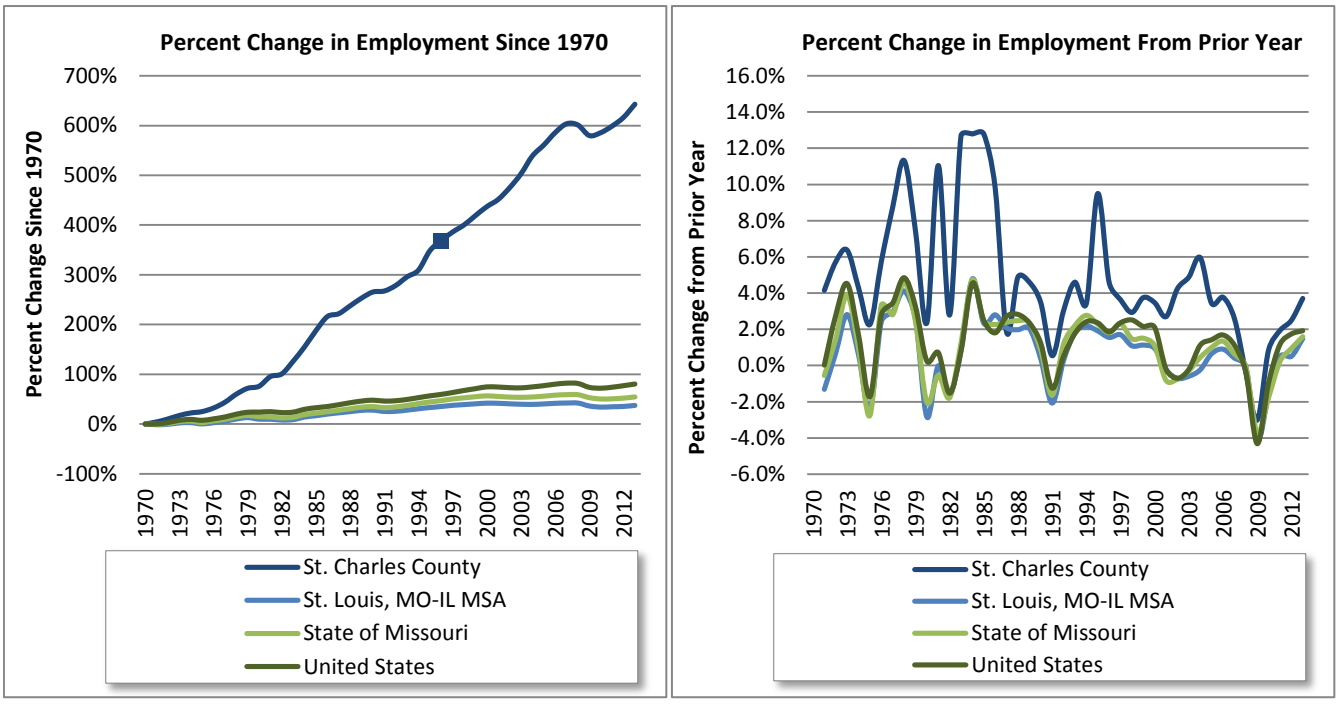
Figure 1.3 – City of St. Charles and City of St. Peters, MO Population Growth – 1970 to 2010



Source: U.S. Census Bureau

completed are generally the same or lower than the growth rates in the years directly before the project was finished. Growth rates during the five-year period after completion are also similar to the rates found St. Charles County during many other non-recessionary periods. While employment growth rates in St. Charles County increased again after 2001, this period also coincides with the economic recovery that occurred after the mild national recession that lasted from March to November of 2001.

Figure 1.4 – St. Charles County, MO Wage and Salary Employment Trends 1970 to 2013



■ - Denotes Year of Bridge Completion

Source: Bureau of Economic Analysis and Author's Calculation

Neither population nor employment growth rates increased appreciably after the completion of the Route 370 Corridor and Discovery Bridge. *However, these trends should not suggest that the Discovery Bridge project did not have an impact on growth in St. Charles County.* Instead, these trends may reflect the observation that transportation infrastructure projects facilitate suburban growth rather than directly cause it. It may be that the Discovery Bridge and Route 370 project removed a transportation bottleneck in the region and opened access to land that helped St. Charles County remain economically competitive (despite low growth rates in the St. Louis metro area). Consequently, these infrastructure changes allowed growth in the county to continue at rates that largely exceeded those of the metro area. Nonetheless, it is difficult to isolate the exact impact of the project on St. Charles County.

The completion of the Discovery Bridge and Route 370 Corridor also provides one model of regional collaboration that could provide an example for St. Croix County communities. As noted earlier, population and economic change in a given community are also influenced by conditions in surrounding communities. Given that transportation infrastructure is one means for enhancing these connections, those communities most affected by a transportation project will likely need some level of cooperation to manage this change. Recognizing this challenge along the Route 370 Corridor, a regional civic group known as *DISCOVER! 37*0

was formed in the year 2000 with the goal of promoting business opportunities along the Route 370 Corridor. Comprised of communities, governmental agencies and businesses, the group provides marketing, planning and information dissemination along the Corridor. More information about DISCOVER! 370 is available at: www.discover370.com

Bloomington Ferry Bridge – Scott County, Minnesota

The Bloomington Ferry Bridge spans the Minnesota River, connecting the City of Bloomington in Hennepin County and the City of Shakopee in Scott County. Completed in 1996, the bridge carries U.S. Highway 169 and was part of a larger infrastructure project that involved the U.S. Highway 169 bypass around Shakopee. The project helped address flooding issues at the crossing. The old bridge approach was at grade with the Minnesota River on the Shakopee side of the crossing and would flood occasionally in the spring or summer. A typical flooding event would close the road and require traffic to be diverted. However, the prior crossing was often congested regardless of floods on the Minnesota River.

The Bloomington Ferry Bridge and the St. Croix River Crossing have a number of parallels. Both bridges replace existing structures with crossings that add traffic lanes to improve safety and reduce construction. The two structures are also connected to counties that were found among the nation's 100 fastest growing counties in the 1990s.[12] Additionally, Scott County, MN and St. Croix County, WI are both located in the Minneapolis-St. Paul-Bloomington MSA and are influenced by a shared regional economy.

As both the Bloomington Ferry Bridge and the St. Croix River Crossing are located in the same metro area, it may be tempting to assume that any impacts experienced in Scott County will be replicated in St. Croix County. However, several important differences distinguish the Bloomington Ferry Bridge and the St. Croix River Crossing. First, Scott County's population grew at a notably faster rate than that of St. Croix County. Between 1970 and 1995, Scott County's population grew by almost 118 percent, almost double the St. Croix County rate of 61 percent. Second, Scott County is located closer to the metro area's urban core than St. Croix County. This more central location places Scott County closer to a number of large employment centers, including downtown Minneapolis, allowing commuters greater access.[13] *Furthermore, the Bloomington Ferry Bridge provides the primary means of access to the metro core for most Scott County residents*. In contrast, the I-94 crossing at Hudson is St. Croix County's largest point of access, not the St. Croix River Crossing.

Population growth in Scott County has been impressive in the decades both before and after the completion of the Bloomington Ferry Bridge. With a few exceptions, year-over-year population growth rates have largely exceed the rates found in the Minneapolis-St. Paul-Bloomington metro area, the state of Minnesota and the United States (Figure 1.5). Comparing these growth rates before and after the completion of the project reveals a number of noteworthy trends:

[12] Among the fastest growing counties with a population greater than 10,000 residents.

[13] Differences in commuting access are examined further in Section 2.

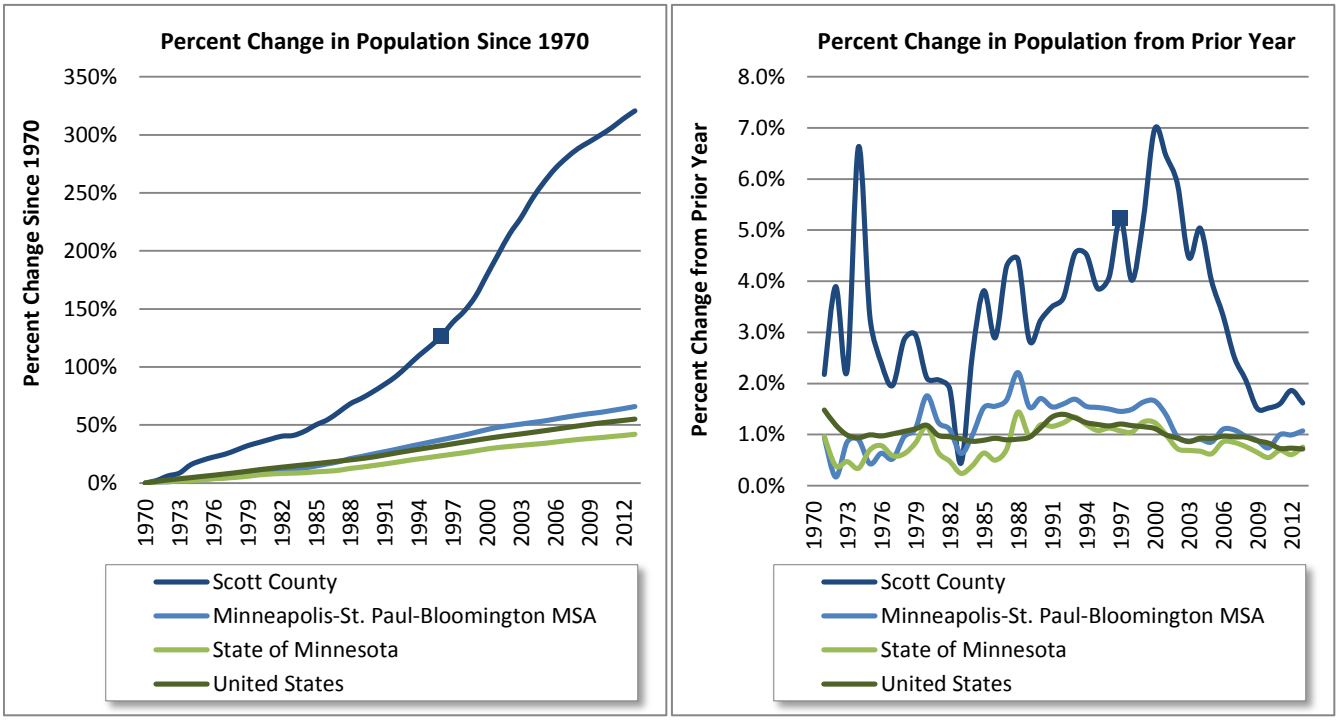
- Year-over-year population growth rates in Scott County began to increase steadily after the end of the dual recessionary periods in the early 1980s. Between 1985 and 2006, annual growth rates remained above three percent for all but several years;

- Moreover, population growth in the Minneapolis-St. Paul-Bloomington metro area also was elevated across this period, albeit at a lesser rate than Scott County. This extended period of higher growth rates suggests that the growth trajectory in Scott County (and the metro area) started well before the construction of the Bloomington Ferry Bridge;

- Scott County also experienced elevated population growth rates for a period after the bridge was completed. Between 1998 and 2003, annual growth rates were higher than the rates before the Bloomington Ferry Bridge was completed. The completion of the bridge, and the accessibility it created, likely was a factor in allowing population growth rates to remain high over this period. However, the exact impact of the bridge relative to other factors in the region is unknown;

- Growth rates in Scott County slowed dramatically between 2005 and 2013. The declining rates coincide with similar trends found in many counties throughout the metro area and are partially attributed to the onset of the recession in December 2007 (e.g. a period effect noted earlier in this section). *These changes should serve as a caution that growth is influenced by many factors and should not be expected to continue at previous rates into perpetuity*.

Figure 1.5 – Scott County, MN Population Trends 1970 to 2013



■ - Denotes Year of Bridge Completion

Source: Bureau of Economic Analysis and Author's Calculation

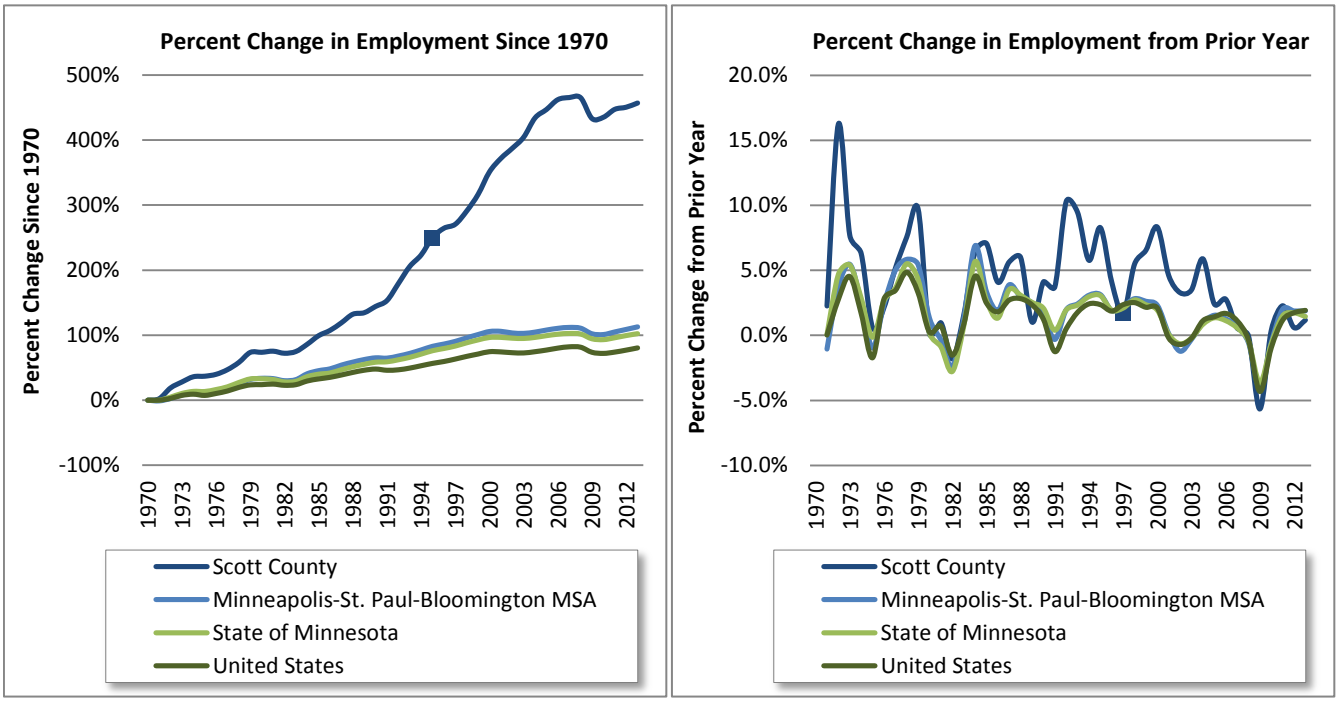
As with population growth, Scott County has also experienced significant increases in wage and salary employment. Between 1970 and 2013, employment in Scott County establishments increased by 321 percent; significantly greater than the 64 percent increase in the metro area and the national increase of 54 percent (Figure 1.6). Year-over-year changes in employment growth rates also reveal several trends in Scott County:

- While year-over-year employment changes in Scott County tend to show greater rates of increase and decrease than the metro area, overall county trends tend to follow those found in the Minneapolis-St. Paul-Bloomington MSA. That is, when employment growth rates increase in the metro area, rates also tend to increase in Scott County. Conversely, when employment growth rates slow in the metro area, they also slow in the county. *Many of these trends are tied to employment declines during recessionary periods, and employment increases in times of national economic expansion*;

- The correlations between employment change rates in Scott County and the Minneapolis-St. Paul-Bloomington metro area are not surprising given that metropolitan economies have a regional influence. The trends in Scott County and the metro area may also be tied to the aforementioned spread effects associated with growth pole theory;

- Employment growth rates in Scott County were greater in the five-year period prior to the completion of the Bloomington Ferry Bridge in 1996. Growth rates returned to pre-construction levels again after the bridge and bypass were completed. This temporary decline in growth rates possibly could be attributed to local businesses being affected by construction activity that limited accessibility. However, the metro area and the United States also experienced slight declines in employment growth rates in the mid-1990s.

Figure 1.6 – Scott County, MN Wage and Salary Employment Trends 1970 to 2013



■ - Denotes Year of Bridge Completion

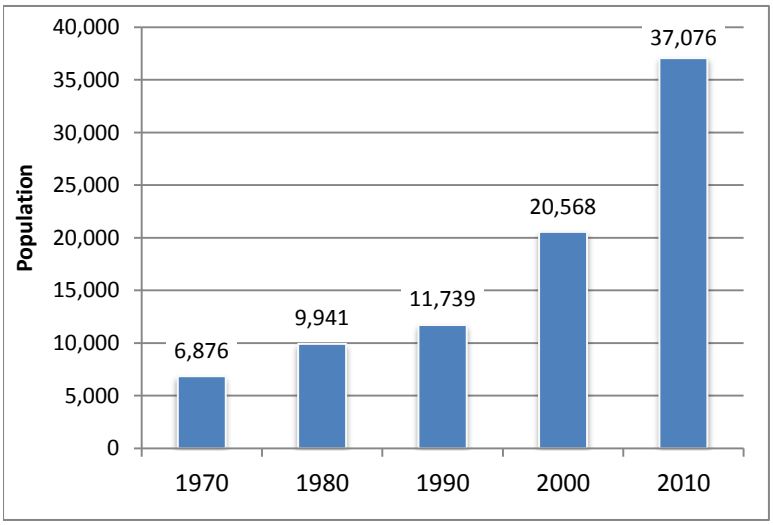
Source: Bureau of Economic Analysis and Author's Calculation

Similar to the Discovery Bridge in St. Charles County, Missouri, it may be that the completion of the Bloomington Ferry Bridge and U.S. Highway 169 removed a growth bottleneck. Both St. Charles County, MO and Scott County, MN were growing rapidly before the completion of their respective infrastructure projects. The removal of local traffic constraints in turn allowed growth to continue and accelerate somewhat in the case of Scott County. The new bridges relieved congestion, at least temporarily, and created improved access to new development opportunities.[14] Consequently, the bridges allowed growth to continue at notable paces. In the absence of these projects, growth potentially may have been more constrained.

A significant share of Scott County's growth was directed to the City of Shakopee, which is located at the base of the Bloomington Ferry Bridge. Shakopee's population grew dramatically between 1990 and 2010 (Figure 1.7). While Shakopee's population grew by just 18 percent between 1980 and 1990, the community's population increased by 75 percent between 1990 and 2000. Furthermore, the number of residents in Shakopee also increased by 80 percent from 2000 to 2010.

Population growth rates in the City Shakopee could reflect the ability of transportation infrastructure to re-direct growth. In the decades prior to the completion of the Bloomington Ferry Bridge, growth rates in Shakopee either trailed the rates found in the balance of Scott County (e.g. those areas excluding Shakopee) or were somewhat similar. After the bridge was completed, growth rates in both Shakopee and the balance of Scott County continued their growth paths. However, post-construction population growth rates in Shakopee well-exceeded those found in the balance of the county.

Figure 1.7 – City of Shakopee, MN Population Growth – 1970 to 2010



Source: U.S. Census Bureau

The growth patterns in Shakopee and Scott County, Minnesota could provide some lessons for Corridor Communities in St. Croix County.[15]

- Growth may follow several paths and communities should over-plan for the potential population and economic outcomes that arise from bridge improvements. Relying on an assumed rate of growth or a single population projection could cause a community to be either unprepared for rapid growth or

[14] While the Bloomington Ferry Bridge initially eased commuting times, travel demand from new population growth again created congestion at the crossing. For more background on how this induced demand may be generated, see Cervero (2003).

[15] Some insights come from Paul Bilotta, formerly with the City of Shakopee and now the community development coordinator of Rosedale, MN. Paul was interviewed by Lindsay Amiel in the summer of 2014.

make decisions based on growth rates that are overestimated. Planning for many contingencies will allow communities to be more fully prepared for change;

- Regardless of future growth rates, change will occur in Corridor Communities. Residents should discuss how they want their respective communities to look in 10, 20 or 30 years. Based on these discussions, communities could consider constructing strong zoning and planning strategies to ensure they attract the types and quantities of developments that match their long-term visions. Communities also may want to target developers that can meet community desires, rather than attempting to entice any firm that is willing to develop in the area;

- Even with a strong planning process, new residents and long-term citizens may not share similar ideas for the future of their community. Depending on the demographic composition and geographic origins of new residents, they may expect amenities or retailers that are not present in the community. However, long-term residents may want their community to remain unchanged or maintain a character to which they are accustomed. Conflicts may arise when new residents characterize old residents as stubborn and unwilling to accept progress. Similarly, old residents may not understand why new residents moved to a different area with the expectations it would be similar to the place from which they moved;

George P. Coleman Memorial Bridge - Gloucester County, Virginia

The George P. Coleman Bridge carries U.S. Route 17 between the communities of Gloucester Point and Yorktown in the Virginia Beach-Norfolk-Newport News metro area. First constructed in 1952, the original Coleman Bridge was a two lane crossing with a planned capacity of 15,000 vehicles a day. However, increased travel demand attributed to population growth led to more than 27,000 vehicles crossing the bridge by the mid-1990s. To address this deficiency, the bridge was reconstructed as a four-lane crossing in 1995. The new bridge has a double-swing construction that allows for ships on the York River to pass through its openings. The bridge currently carries almost one million vehicles each month (Virginia Department of Transportation).

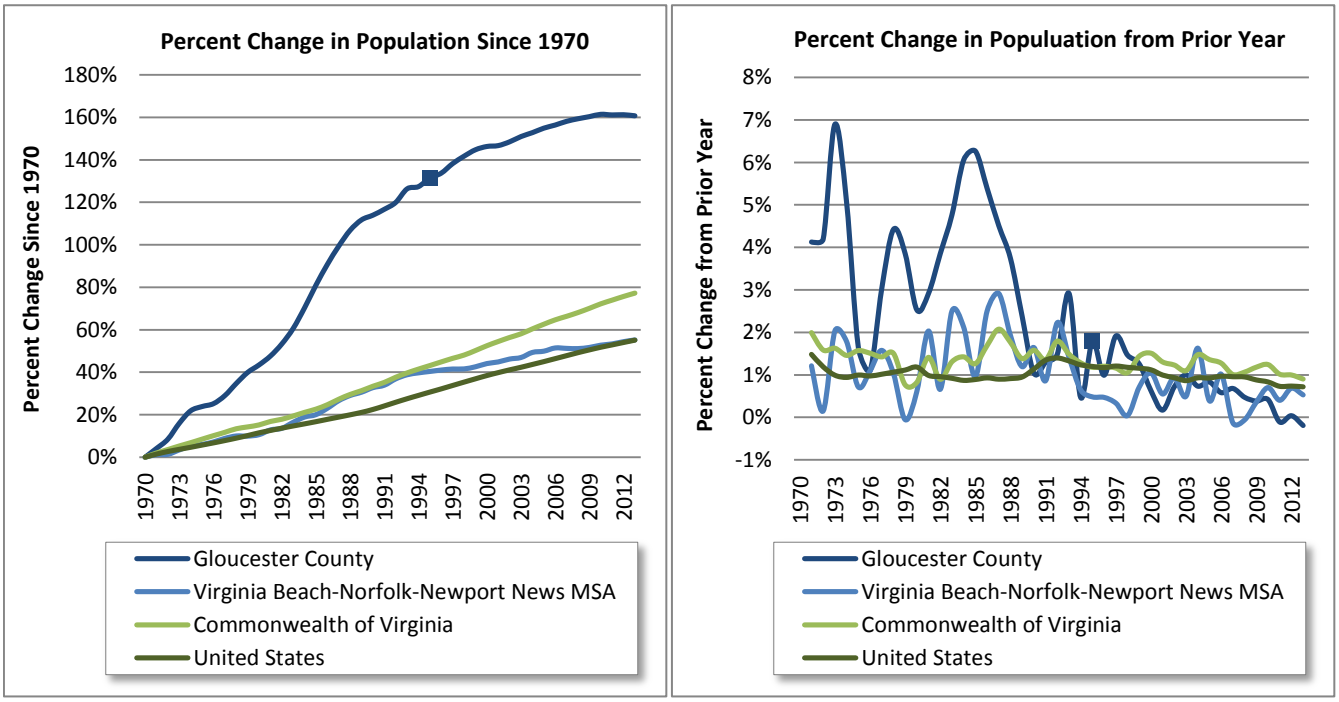
The Coleman Bridge connects Gloucester County and York County. Similar to St. Croix County, Gloucester County sits on the fringe of the metropolitan area. However, Gloucester County is smaller than St. Croix County in terms of both population and employment. In 2013, Gloucester County was home to almost 37,000 residents compared to 86,000 individuals in St. Croix County. Similarly, Gloucester County establishments accounted for 10,000 wage and salary employees while St. Croix County was home to 34,000 jobs. Employment in Gloucester County is biased toward industries that typically serve the local population, such as retail trade, health care and hospitality. In contrast, St. Croix County has a higher share of its employment in manufacturing and professional/technical services.

As suggested earlier, Gloucester County experienced rapid population growth throughout the 1970s and 1980s (Figure 1.8). In the decade before the Coleman Bridge was completed (1985 to 1995), Gloucester County's population increased by 27 percent; a rate almost double that of the Virginia Beach-Norfolk-

Newport News metro area and the Commonwealth of Virginia. However, growth rates have slowed considerably since the completion of the bridge. In the 10 years after the bridge was completed (1995 to 2005), Gloucester County's population growth rate increased by only 10 percent. *In fact the county's growth rate from 1995 to 2013 was just 12.6 percent.*

The declining population growth rates in Gloucester County could be partially attributed to slowing growth in the metro area. Growth in both the Commonwealth of Virginia (13.6 percent) and the United States (11.6 percent) was faster than that of Gloucester County in the decade after the bridge was completed. However, the Virginia Beach-Norfolk-Newport News metro area population increased by just 6.8 percent. Gloucester County still grew faster than the MSA over this period, but declining population growth in the metro area likely affected local growth rates as well. Specifically, the spread effects that are attributed to metropolitan growth patterns were likely reduced in suburban Gloucester County.[16]

Figure 1.8 – Gloucester County, VA Population Trends 1970 to 2013



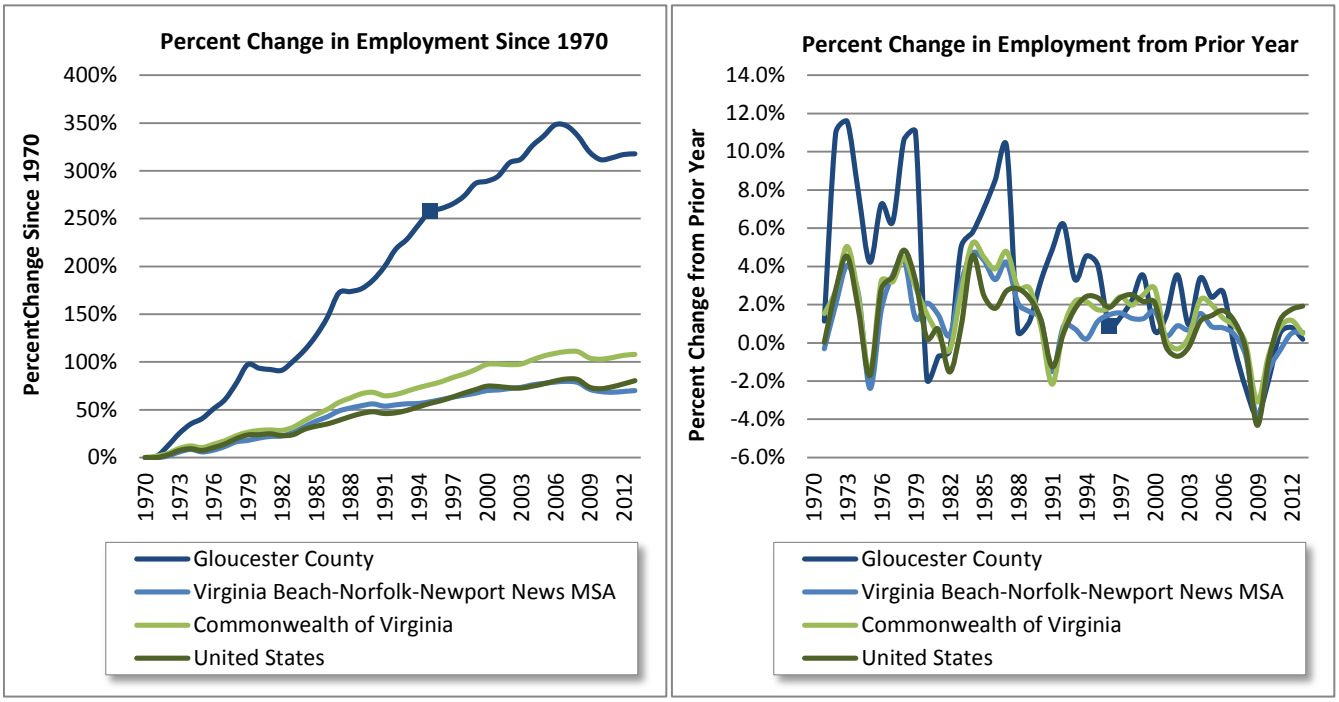
■ - Denotes Year of Bridge Completion

Source: Bureau of Economic Analysis and Author's Calculation

When compared to population trends, employment growth in Gloucester County shows a somewhat similar pattern. In the decade prior to the completion of the Coleman Bridge, wage and salary employment in Gloucester County increased by 57 percent (Figure 1.9). In comparison, employment grew by 15 percent in the metro area, 22 percent in Virginia and 18 percent in the United States. In the decade since construction was completed, employment in Gloucester County increased by just 25 percent. However, employment in the Virginia Beach-Norfolk-Newport News metro area grew by only 13 percent. As with population trends, Gloucester County's employment growth rate declined after the construction of the bridge, but remained greater than that of the metro area.

[16] See the discussion of growth pole theory earlier in this section.

Figure 1.9 – Gloucester County, VA Wage and Salary Employment Trends 1970 to 2013



■ - Denotes Year of Bridge Completion

Source: Bureau of Economic Analysis and Author's Calculation

In summary, population and employment trends in Gloucester County, Virginia show an example where growth rates slowed after the construction of an expanded bridge. However, both employment and population increases in Gloucester County continued to outpace rates in the Virginia Beach-Norfolk-Newport News metro area. It may be that the Coleman Bridge was partially responsible for this difference. Other factors may be responsible as well. *Nonetheless, slowing growth patterns in both Gloucester County and the metro area suggest that these two areas are inherently linked and improved transportation infrastructure may not be sufficient for a county to overcome larger regional trends.*

Arthur Ravenel Jr. Bridge – Charleston, South Carolina

The Arthur Ravenel Jr. Bridge, also known as the Cooper River Bridge, spans the Cooper River between Charleston, South Carolina and the town of Mount Pleasant. Planning for the Cooper River Bridge started in 1998 when a study determined that two existing bridges, the Grace and Pearman bridges, were deteriorating and needed to be replaced. Both bridges also were considered obsolete. The structures were too narrow; had weight restrictions that prevented traffic flow; and were too low to accommodate large shipping vessels.

The Arthur Ravenel Jr. Bridge is North America's longest cable-stayed bridge and consists of an eight-lane highway with bicycle and pedestrian paths. With a total cost of $623 million, construction of the bridge commenced in 2001 and was opened to traffic in July 2005 (Skanska, 2008). Since its completion, traffic accidents and fatalities decreased substantially. Traffic congestion has eased considerably and commute times have decreased by five to ten minutes (depending on the time of day).

Environmental considerations were a top priority when designing the bridge. Similar to the St. Croix River Crossing, the Arthur Ravenel Jr. Bridge crosses a historical and environmentally vulnerable waterway. Specifically, 75 percent of the bridge span was constructed either directly over or adjacent to sensitive wetland environments. After construction was complete, wetlands were restored to their original conditions and 80 percent of the waste material from the old bridges was used to create artificial reefs for fish habitats. Bridge lighting also was designed to minimize light pollution disturbances during nesting seasons for loggerhead sea turtles and migratory birds (Skanska, 2008).

The communities of Mount Pleasant and Charleston also were concerned about the aesthetic and economic impacts of the bridge. A mitigation plan was developed with local communities who would be impacted by the bridge construction. The plan outlined provisions for parks and green space; affordable housing; local employment and educational training; as well as other economic opportunities. For example, the bridge contract required that on-the-job training be offered in the building trades to local low income residents. As a result, 62 unemployed or underemployed residents of Charleston's upper peninsula earned journeyman's status in at least one job area (Skanska, 2008).

As with other comparable areas, there are several similarities and differences between the Arthur Ravenel Jr. Bridge and the St. Croix River Crossing. Both bridges replaced existing structures, adding additional lanes and rerouting traffic flows in order to reduce congestion on city streets and improve safety. However, the Cooper River Bridge replaces two existing bridges and re-routes traffic in order to align and merge with the interstate highway system. Both bridges also are on historic waterways that require a significant amount of environmental mitigation. The Cooper River Bridge won several awards for its environmental mitigation efforts. Bridge projects that also cross historical or vulnerable waterways, such as the St. Croix River Crossing, might consider the Cooper River Bridge project as an example.

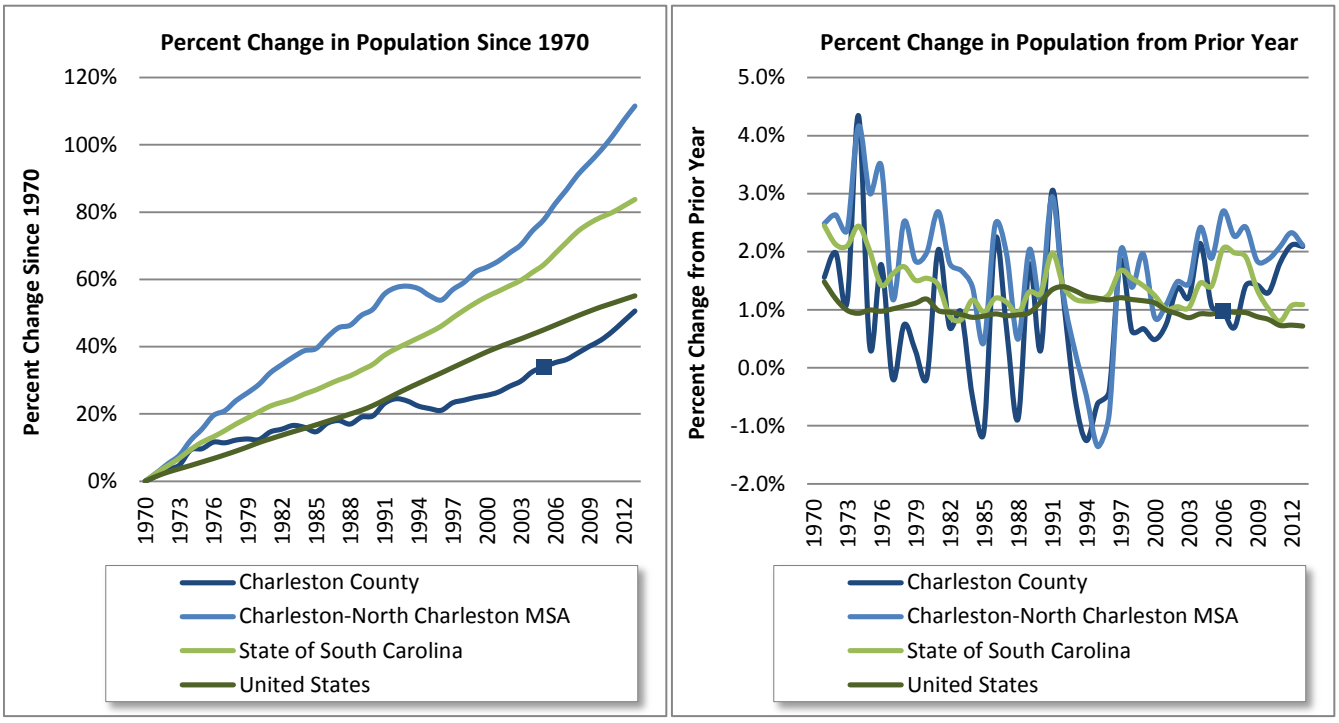
While both river crossings are located in metro areas, the Charleston MSA has a population of just 712,220 while 3.3 million residents live in the Minneapolis-St. Paul-Bloomington metro area. Furthermore, the Arthur Ravenel Jr. Bridge is located in the interior of its metro area whereas the St. Croix River Crossing is on the fringe of the Minneapolis-St. Paul-Bloomington MSA. Charleston County also has greater racial and income diversity than St. Croix County. In particular, the bridge is located in an area with a concentration of lower-income households that is undergoing gentrification.

Unfortunately, analyzing population and employment growth trends before and after the completion of the Arthur Ravenel Jr. Bridge is constrained somewhat by its completion date. The bridge opened in 2005, just several years prior to the start of the Great Recession. Furthermore, the period prior to the construction of the bridge was marked by a period of economic recovery stemming from the 2001 recessionary period. Consequently, it may be difficult to draw many conclusions from the data.

Readers will also notice that the population in Charleston County and the greater Charleston metro area dipped in the early 1990s (Figure 1.10). Between 1992 and 1996, Charleston County lost 8,500 residents while the total metro area population declined by over 12,000 people. This population decline reflects the closure of the Charleston Naval Base, which was announced in 1993 and completed in 1996. Consequently, the region experienced a large change to its economy that is reflected in both population and employment figures.

Between 1997 and 2005, Charleston County's population increased by 8.6 percent; a rate somewhat slower than that of the entire Charleston-North Charleston MSA (13.2 percent) and the state of South Carolina (10.6 percent). After the completion of the Arthur Ravenel Jr. Bridge, Charleston County's population grew by 12.4 percent between 2005 and 2013, a rate faster than that of the eight year period before construction concluded. Importantly, Charleston County's 12.4 percent population increase over this period outpaced growth rates in South Carolina (11.8 percent) and the United States (7.0 percent). *However, population in the Charleston-North Charleston metro area increased by a notable 19 percent over this same period and continued to grow faster than Charleston County. Consequently, it is difficult to separate any effects stemming from the bridge and overall conditions in the metro area.*

Figure 1.10 – Charleston County, SC Population Trends 1970 to 2013



■ - Denotes Year of Bridge Completion

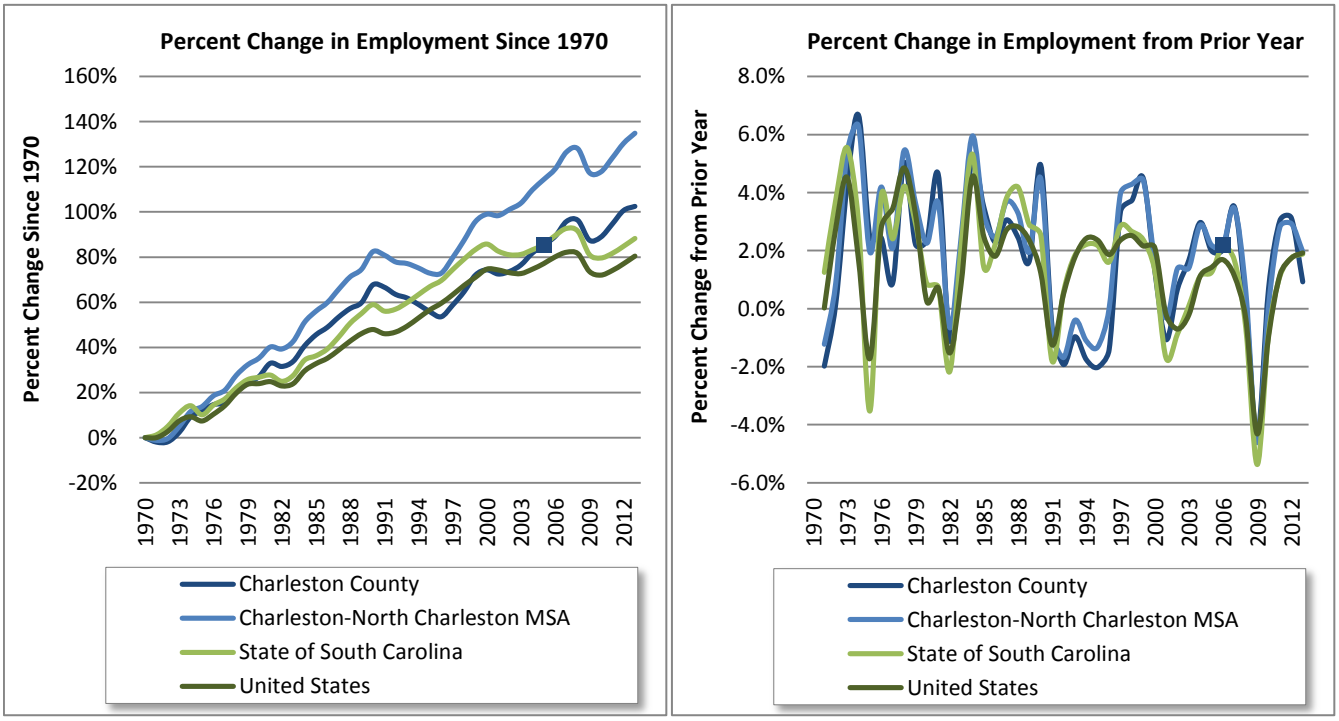
Source: Bureau of Economic Analysis and Author's Calculation

The impacts of the Charleston Naval Base closure are also apparent in employment trends. Between 1970 and 1990, wage and salary employment in Charleston County and the Charleston-North Charleston metro area grew faster than both South Carolina and the United States. However, the closure of the naval base caused Charleston County to lose over 12,000 jobs between 1992 and 1996. Charleston County and the metro area's economy largely recovered between 1997 and 2005, with wage and salary employment growing by 16.8 percent and 19.3 percent respectively. In comparison, employment in South Carolina increased by 6.3 percent over this period, while U.S. employment grew by 8.5 percent.

Since completion of the Arthur Ravenel Jr. Bridge in 2005, both Charleston County and the Charleston MSA have continued to grow. Between 2005 and 2013, wage and salary employment increased by 9.2 percent in Charleston County and 9.6 percent in the metro area. While these rates are slower than the period before construction, the declines are not surprising given the influence of the Great Recession. More

importantly, wage and salary employment increased by just 1.5 percent in South Carolina and 1.9 percent in the United States over the same period. The higher growth rates in Charleston County and the metro area, relative to the state and national averages, suggest the strength of the regional economy and may hide any specific impacts stemming from the Arthur Ravenel Jr. Bridge.

Figure 1.11 – Charleston County, SC Wage and Salary Employment Trends 1970 to 2013



■ - Denotes Year of Bridge Completion

Source: Bureau of Economic Analysis and Author's Calculation

The Blennerhassett Island Bridge – Washington County, Ohio and Wood County, West Virginia

The Blennerhassett Island Bridge spans the Ohio River between Belpre, Ohio and Parkersburg, West Virginia. Parkersburg is the fourth largest city in West Virginia with a 2010 Decennial Census population of 31,492 people. The community is part of the Parkersburg-Marietta-Vienna Metropolitan Statistical Area which had a 2010 population of 154,451 residents. Construction on the Blennerhassett Island Bridge was completed in 2008 at a cost of $135 million.

The bridge provided a four lane upgrade of U.S. Route 50 over the Ohio River. While Ohio and West Virginia split the development costs, the bridge project was the single largest construction project by the West Virginia Division of Highways.[17] The project was partially designed to facilitate the flow of people and goods between West Virginia and Ohio and ultimately spur economic development. The bridge project also re-

[17] West Virginia Department of Transportation - www.transportation.wv.gov/highways/bridge_facts/Modern-Bridges/Pages/Blennerhassatt.aspx

routed traffic around Parkersburg, which could ease traffic congestion downtown, and potentially provided more direct routes for manufacturing shipments in the area. Moreover, the bridge was part of a larger project known as Corridor D, which had a goal of connecting the region to the larger East Coast economy.

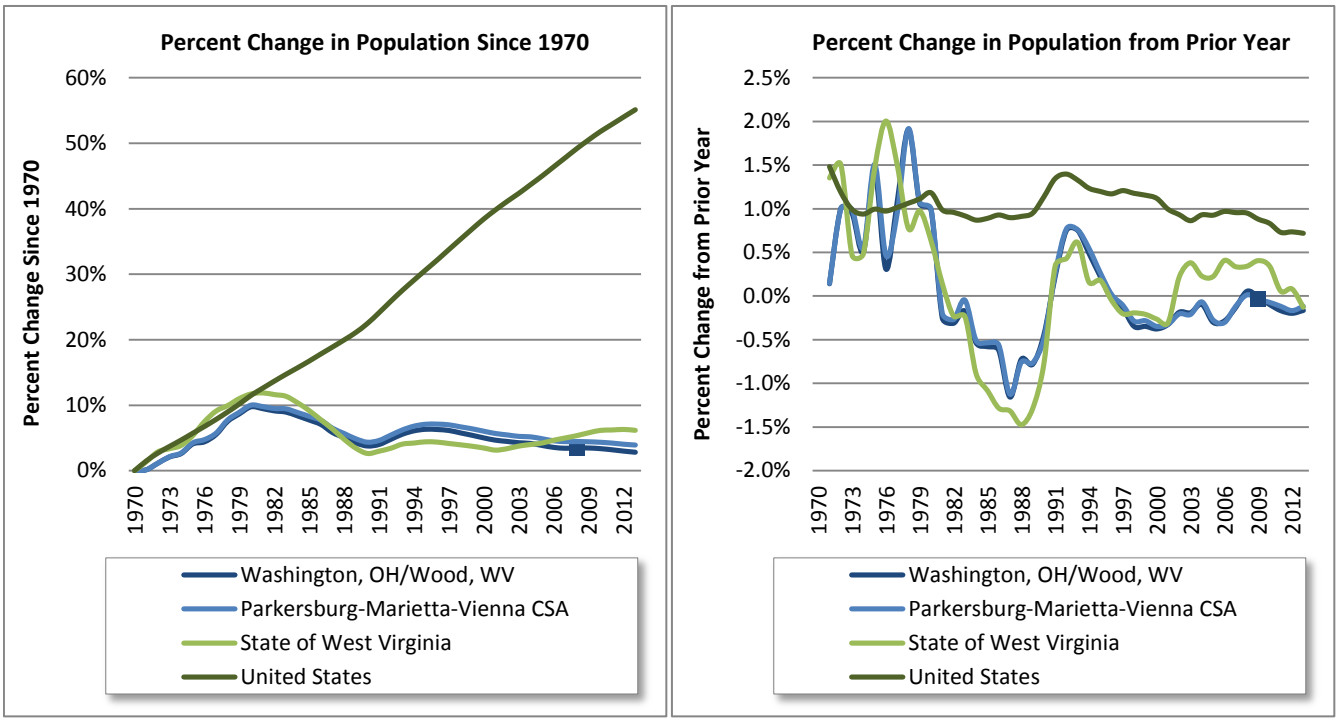
The Blennerhassett Island Bridge and the St. Croix River Crossing both update or replace existing structures, adding additional lanes with the aims of reducing city traffic congestion and improving safety. However, the regions that encompass these two structures are dramatically different. The Parkersburg-Marietta-Vienna Metro area has a population of 154,000 while the Minneapolis-St. Paul-Bloomington metro area has 3.3 million residents. Furthermore, St. Croix County has seen expansive growth over the past several decades whereas the population of the Parkersburg-Marietta-Vienna MSA has declined somewhat.

Both local and state officials believed that the bridge would bring new growth to the region. However, very little development has occurred since the completion of the project. Some officials have blamed the onset of the Great Recession, which commenced just as the bridge neared completion in 2008 (Dunlap, 2013). While an ethane cracking facility and several polyethylene production plants were proposed in late 2013, these plans are currently on hold and being re-evaluated due to changes in the ethane market (Kusic, 2015).

A lack of development associated with the Blennerhassett Bridge could be partially attributed to the recent recessionary period. However, the region has grown very little over the prior decades. The combined area of Washington County, Ohio and Wood County, West Virginia has steadily lost population since the mid-1990s (Figure 1.12). In fact, the region had 10,000 fewer residents in 2013 than in 1980. While employment levels in Washington County, OH and Wood County, WV increased throughout the 1980s and 1990s, the growth rate was well below the national average (Figure 1.13). Furthermore, the region has lost more than 5,000 jobs since the year 2000.

While the Blennerhassett Bridge may in fact have future economic impacts, its effects are likely limited by other regional economic conditions. Any additional market connections created by the bridge (and Corridor D) are likely to be overshadowed by other factors. That is, constructing an improved bridge/new corridor in an economically depressed area is unlikely to create economic growth on its own. As noted earlier, transportation infrastructure is necessary, but not sufficient to create growth (Chi, Voss and Deller, 2006). The Blennerhassett Bridge project likely serves as an example of this observation.

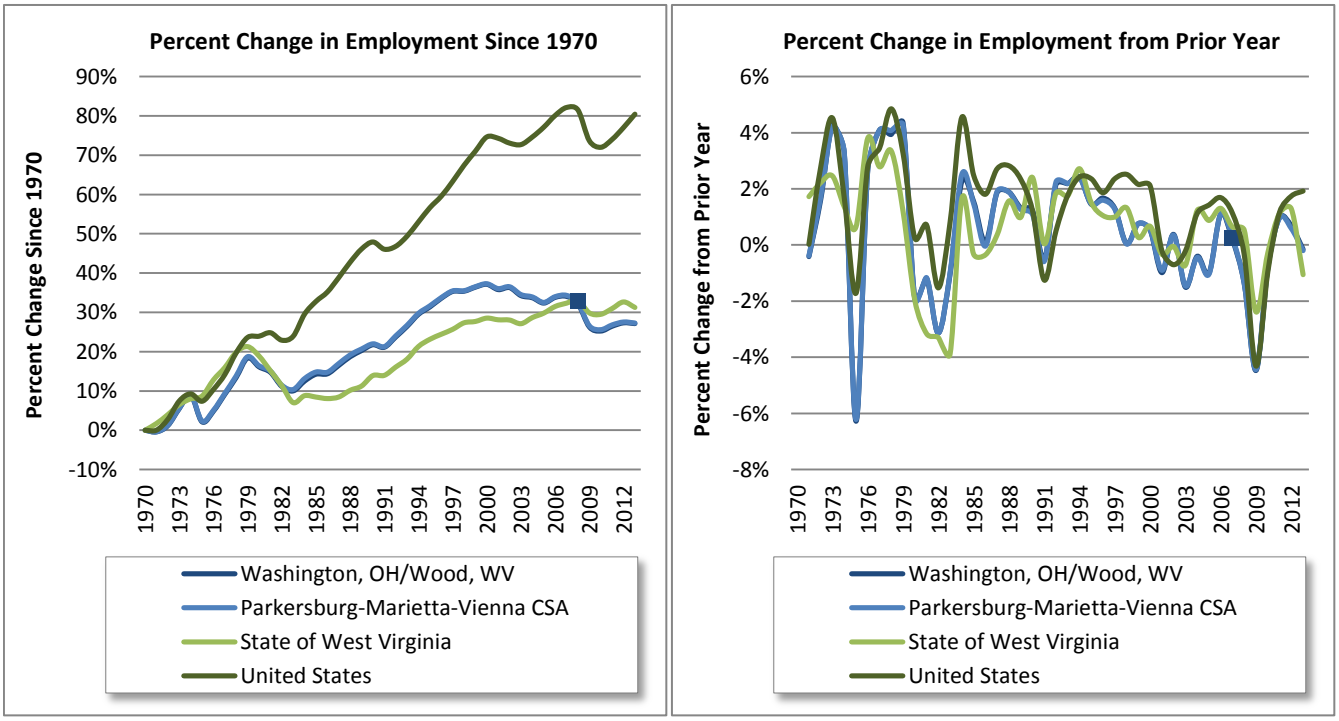
Figure 1.12 – Wood County, WV/Washington County, OH Population Trends 1970 to 2013



■ - Denotes Year of Bridge Completion

Source: Bureau of Economic Analysis and Author's Calculation

Figure 1.13 – Wood County, WV/Washington County, OH Wage and Salary Employment Trends 1970 to 2013



■ - Denotes Year of Bridge Completion

Source: Bureau of Economic Analysis and Author's Calculation

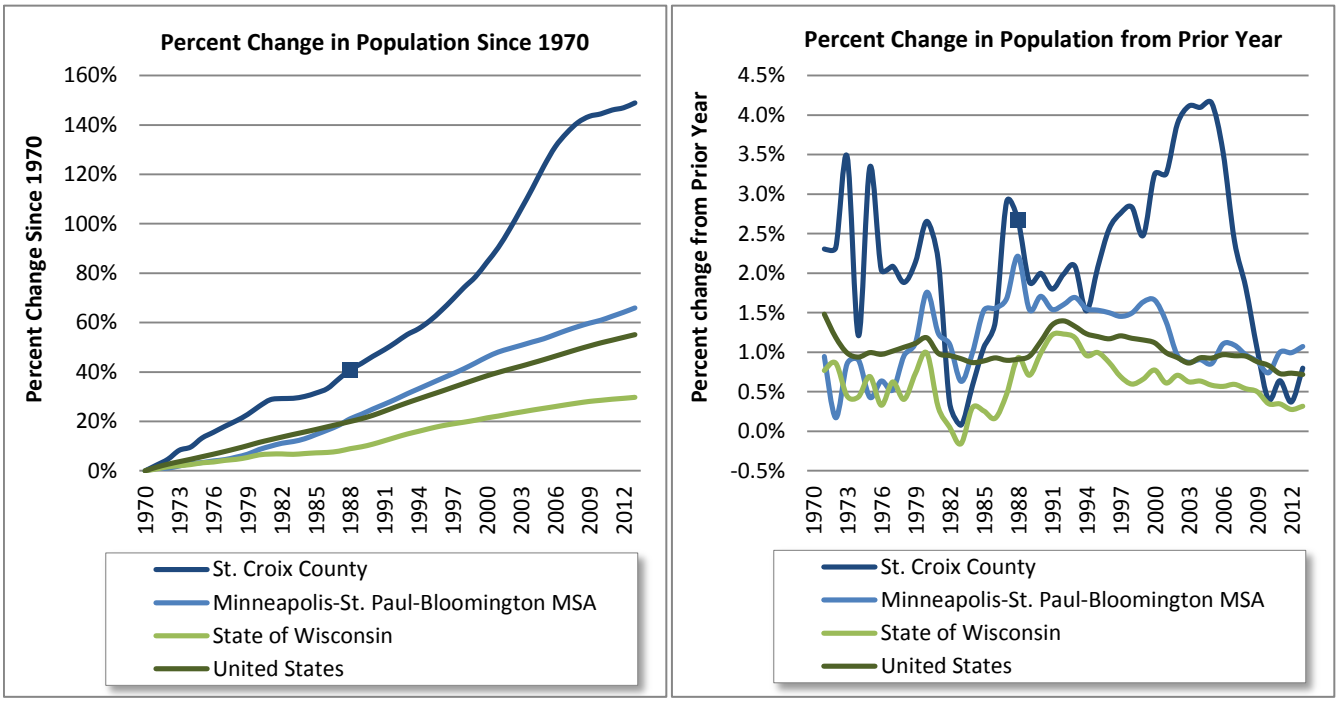
The Interstate 94 Bridge – St. Croix County, Wisconsin

Importantly, St. Croix County also experienced a prior bridge improvement project with an upgrade to the Interstate 94 crossing at Hudson. The final ten miles of I-94 in Minnesota, extending from Woodbury, MN to the Wisconsin state line, were finished in 1985. Bridge improvements to the Hudson crossing were also completed circa 1989 and again in 1995.[18] Considering St. Croix County growth trends before and after this local infrastructure improvement provides an additional historical perspective for the county.

In the decade before the initial bridge improvements at Hudson, St. Croix County's population increased by 17.1 percent. In comparison, population increased by 14.7 percent in the Minneapolis-St. Paul-Bloomington metro area and by 10 percent in the United States. However, the state of Wisconsin's population grew by just 4.1 percent over this period. *In fact, the 1980s were among the slowest growth years in the history of the state.*

In the decade after the bridge improvements (and completion of the interstate highway), St. Croix County's growth rate increased to 23.7 percent. Population growth also increased in the metro area by 16.8 percent. The additional growth rate in St. Croix County relative to that of the metro area could suggest that the bridge improvements had a positive influence on St. Croix County. However, other factors must be considered as well. For instance, this period also marked a time of more rapid growth in the state of Wisconsin (9.9 percent) and the United States (12.8 percent). These faster state and national growth rates may reflect larger demographic shifts that could have driven increased rates in St. Croix County as well.

Figure 1.14 – St. Croix County Population Trends 1970 to 2013



■ - Denotes Year of Bridge Completion

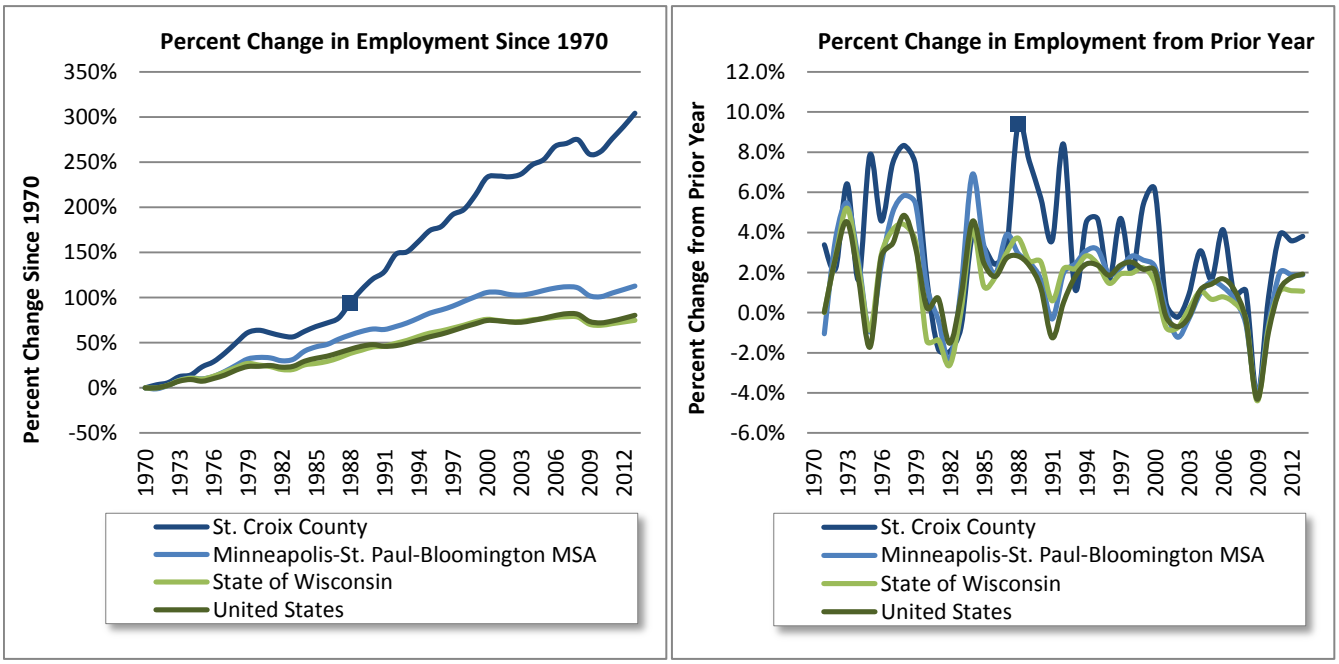
Source: Bureau of Economic Analysis and Author's Calculation

[18] A description of these improvements is available at: www.johnweeks.com/bridges/pages/sc02.html

St. Croix County employment trends before and after the I-94 bridge improvements also show a potential influence of the expanded crossing. Using 1978 to 1988 as a baseline, wage and salary employment in St. Croix County increased by 29.4 percent. Employment in the Minneapolis-St. Paul-Bloomington metro area increased by a similar rate of 26.7 percent. Both of these rates outpaced employment growth rates in Wisconsin (12.6 percent) and the United States (19.2 percent).

The decade after the bridge improvements occurred was a time of significant economic expansion throughout Wisconsin. Employment in the state of Wisconsin grew by 22 percent over this decade, outperforming the national rate of 17.3 percent. This impressive growth in the broader Wisconsin economy likely augmented employment increases in St. Croix County. *However*, *St. Croix County's employment growth rate increased by 53.3 percent during the same period*. In contrast, the metro area's rate actually slowed slightly to 23.5 percent. The differing growth rates in St. Croix County and the metro area could reflect the re-distributive effect of the transportation improvements at Hudson. That is, the interstate highway completion and bridge construction allowed for metro growth to be further allocated to St. Croix County.

Figure 1.15 - St. Croix County Wage and Salary Employment Trends 1970 to 2013



■ - Denotes Year of Bridge Completion

Source: Bureau of Economic Analysis and Author's Calculation

While improvements to the Interstate 94 Crossing at Hudson provide important perspectives, it is important not to assume that similar paths will occur with the completion of the St. Croix River Crossing. Improvements to the I-94 bridge at Hudson are part of a large interstate highway crossing that is the county's primary point of access into the Minneapolis-St. Paul-Bloomington metro area. In comparison, the St. Croix River Crossing is a secondary bridge with lesser accessibility to the metro area. Furthermore, both population and economic growth patterns have changed dramatically since the late 1980s and early 1990s. Structural economic and demographic shifts will likely influence future growth in the county. The implications of these changes will be considered in Section 2 and Section 3.

1.4 - Conclusions

The preceding discussion of transportation infrastructure improvements emphasizes the challenge in isolating the impacts of any project on regional growth. Clearly, transportation infrastructure is but one of many factors that influence population and economic change. Both academic research and comparable projects show that the influence of these factors may also vary over geographic space, time, and within individual communities. Nonetheless, the preceding discussion suggests several broad, but important findings for Corridor Communities and greater St. Croix County:

- Population and economic changes are influenced by a wide variety of regional, national, and international factors. Consequently, the impacts of the River Crossing cannot be assessed without considering the potential broader influences of other regional and national conditions;

- Highway improvements, including bridge expansions, are likely best viewed as a facilitator of suburban growth. Highway improvements enable flows of populations that are partially dependent on larger trends in a metropolitan area. Similarly, highway improvements help to facilitate change or re-allocate economic activity in metro areas rather than create net new growth. While St. Croix County communities may be positioned to benefit from these re-allocation mechanisms, growth likely will be tied to the health of the broader metro-area economy;

- Population growth is spatially dependent. Population growth or decline in one community often is tied to growth or decline in surrounding communities. Consequently, Corridor Communities may want to collaborate in some manner to understand how any future planning or fiscal decisions may impact each other or the broader area;

- Growth in St. Croix County may follow several paths. Communities should likely over-plan for a number of potential population and economic outcomes that could arise from the River Crossing. In fact, the analysis of comparable projects shows examples where growth rates accelerated, remained similar, or declined after the construction of a bridge. Developing a range of future growth scenarios will allow communities to be more fully prepared for change. A range of future growth scenarios will also allow residents to envision and shape how their respective communities could look in the coming decades.

In summary, transportation infrastructure improvements can be seen as a catalyst for change, but are neither necessary nor sufficient to *guarantee* economic and population growth rates in surrounding areas. This statement should not suggest that transportation infrastructure, such as the St. Croix River Crossing, is unnecessary for population growth or economic development. Instead, the improvement of any given project cannot assure some assumed future rate of growth.

Section 2 – Forecasting Population Change in St. Croix County and Corridor Communities

The overview of transportation infrastructure and population growth in Section 1 suggests that the River Crossing may serve to reinforce rates of suburbanization in St. Croix County. That is, the new bridge will help facilitate future growth in the county, but the River Crossing is just one of many factors that will influence population change in the coming decades. Broader population trends in the region likely will affect local growth rates. St. Croix County and Corridor Communities also face uncertainly associated with a slow economic recovery and an unknown future housing market. While it is impossible to precisely predict how population in the region will grow, it is important to understand how past trends and anticipated future changes (including the River Crossing) could influence the future population of St. Croix County and Corridor Communities.

Importantly, this analysis does not attempt to forecast future population change for individual municipalities. Population projection techniques often do not perform well for small geographic areas, such as an individual community or town. As noted by Chi and Voss (2011), most forecasting techniques have been developed for larger areas, such as counties. Furthermore, non-demographic factors often ignored in other forecasting methods, such as land use restrictions, may have more importance in smaller areas. Most forecasting methodologies also ignore spatial influences such as population spillovers and growth rates in neighboring areas. While researchers have attempted to account for these deficiencies in small area forecasting, the results have been mixed (Chi and Voss, 2011). In recognizing these limitations, St. Croix County is used as the geographic foundation for generating population projections. These county-based projections are then used to produce population forecasts for the combined Corridor Community study area.

2.1 - Population Change in St. Croix County and Corridor Communities – Historical Perspectives

As noted in the Introduction, St. Croix County has been one of the fastest growing counties in the State of Wisconsin over the past four decades. Between 1970 and 2013, the county added over 50,000 residents; more than doubling its population (Table 2.1). The recent period between the 2000 Census and the 2010 Census accounted for the county's greatest population growth rate (33.6 percent). However, significant growth also occurred between 1990 and 2000 (25.7 percent).

The eight municipalities that comprise the Corridor Community study area also experienced steady population growth over the past 40 years. The combined Corridor Communities increased from 11,417 residents in 1970 to just over 30,000 residents in 2013. While population growth rates varied within individual municipalities, the combined study area communities often grew at an almost identical rate as the balance of St. Croix County. These similar rates occurred between 1990 and 2000 and again between 2000 and 2010. Importantly, nearly equal growth rates transpired despite the travel challenges posed by the Stillwater Lift Bridge.

Table 2.1 – Population Change in Corridor Communities and St. Croix County 1970 to 2013

Municipality	1970 Census	1980 Census	1990 Census	2000 Census	2010 Census	2013 Estimate
Town of Richmond	1,091	1,338	1,400	1,556	3,272	3,339
Town of St. Joseph	1,357	2,180	2,657	3,436	3,842	3,851
Town of Somerset	1,185	1,833	1,968	2,644	4,036	4,077
Town of Star Prairie	1,390	1,900	2,098	2,944	3,504	3,518
Village of North Hudson	1,547	2,218	3,101	3,463	3,768	3,770
Village of Somerset	778	860	1,072	1,556	2,635	2,642
Village of Star Prairie	362	420	507	574	561	556
City of New Richmond	3,707	4,306	5,106	6,310	8,375	8,533
Combined Corridor Communities	11,417	15,055	17,909	22,483	29,993	30,286
St. Croix County	34,354	43,262	50,251	63,155	84,345	85,249

Sources: U.S. Census Bureau and Wisconsin Department of Administration Demographic Services Center

Population change can be further segmented into two components: 1) *natural increase;* and 2) *net migration*. Natural increase is the change in population due to births and deaths in an area. A positive natural increase occurs when a region experiences more births than deaths over a given time period. Conversely, a negative natural increase arises from more deaths occurring than births.

Net migration measures population change due to people moving into and away from an area. Residents moving into a region are in-migrants while individuals moving from an area are out-migrants. If in-migrants exceed out-migrants, then the region has a positive net migration of residents. In contrast, more out-migrants than in-migrants produce a negative net migration.

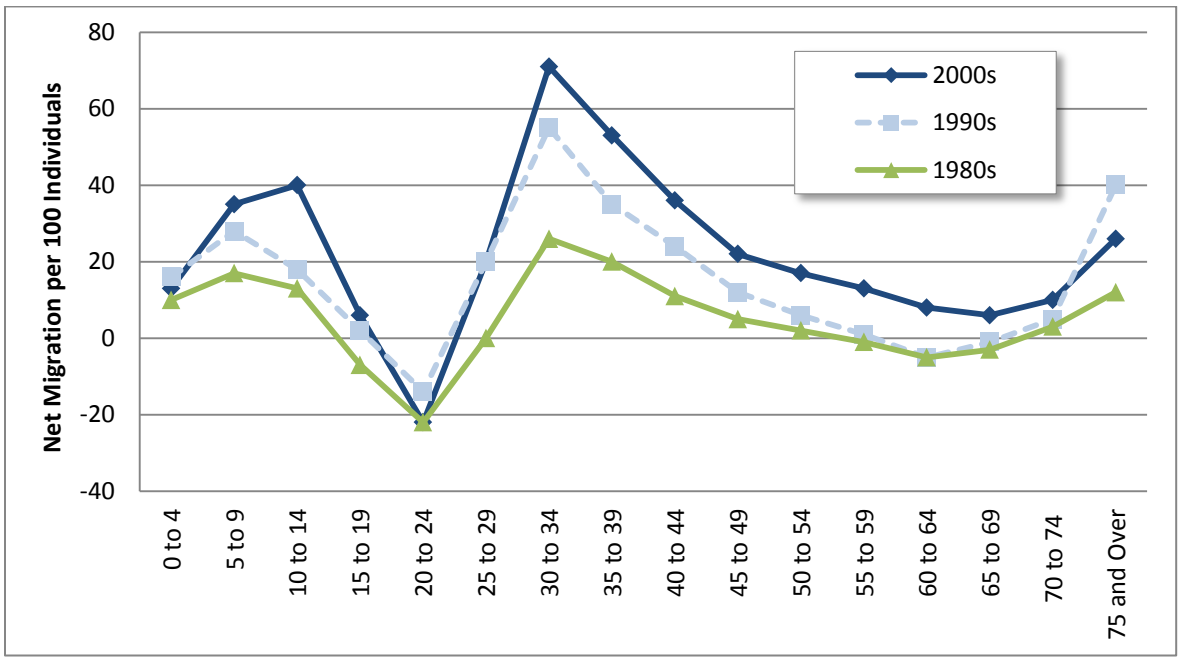
Over the past several decades, St. Croix County's population growth has been driven largely by positive net migration. As an example, consider the period between 2000 and 2010. Over this decade, St. Croix County added almost 21,200 residents. *Almost 70 percent of this growth can be attributed to positive net migration into St. Croix County.*[19] Not surprisingly, a large share of net migration is driven by residents moving to St. Croix County from counties in the Minneapolis-St. Paul-Bloomington MSA.[20] These migration patterns reinforce the current dependencies and connections between population growth in St. Croix County and the overall metro area.

Net migration rates are also available for specific age groups. As implied, a positive net migration rate indicates that more individuals in an age group are moving into an area than those moving away from it. A negative net migration rate denotes a greater number of out-migrants than in-migrants. St. Croix County's net migration rates by age group show somewhat similar trends over the past three decades (Figure 2.1). Depending on the specific decade, positive net migration rates are found among most age groups. The exception is individuals in the 20 to 24 age range. Net migration rates also tend to be the highest among individuals between the ages 30 to 34 and ages 35 to 39.

[19] Based on figures provided by the Wisconsin Department of Administration Demographic Services Center

[20] County-to-County migration data is available from the Internal Revenue Service.

Figure 2.1 - Net Migration Rates by Age Group for St. Croix County

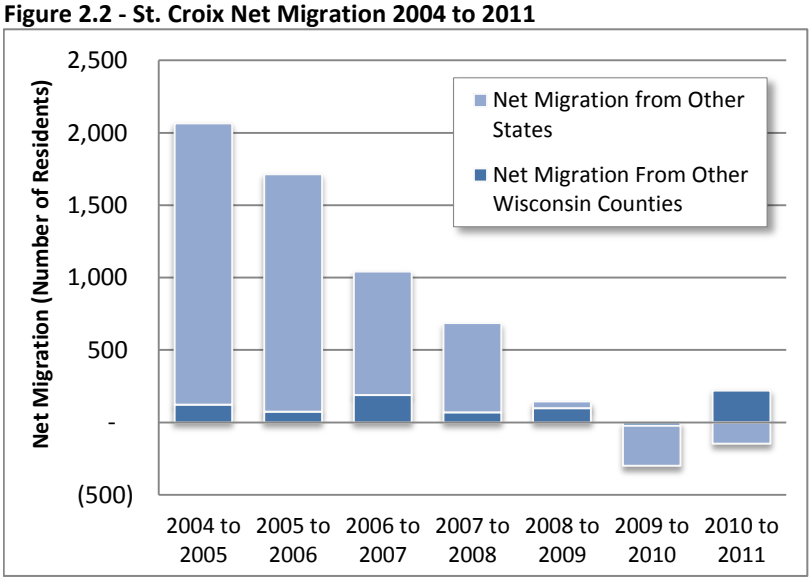


Source: Winkler, Richelle, Ken Johnson, Cheng Cheng, Jim Beaudoin, Paul Voss, and Katherine Curtis. Age-Specific Net Migration Estimates for US Counties, 1950-2010. Applied Population Laboratory, University of Wisconsin- Madison, 2013.

The high net migration rates among individuals ages 30 to 39 suggest that this age cohort is an important driver of population growth in St. Croix County. Not only do these individuals directly contribute to population growth in the county, this age group is also in a life-stage of prime family formation and home buying. Consequently, the net migration of this age group is likely responsible for a share of the county's positive net migration found among children as well (e.g. ages 0 to 14). The net migration rates among these age groups in St. Croix County largely reflect the suburbanization pattern found in other large metro areas (Johnson, Winkler and Rogers, 2013). The 30 to 39 age group's importance to future population growth is considered later in this discussion.

Despite the positive net migration rates into St. Croix County, net migration greatly declined in the period between 2005 and 2010 (Figure 2.2). In fact, a negative net migration rate occurred between 2009 and 2010. While net migration rebounded slightly between 2010 and 2011, the positive net migration was attributed to residents moving from other Wisconsin counties, rather than from out-migration from the Twin Cities.

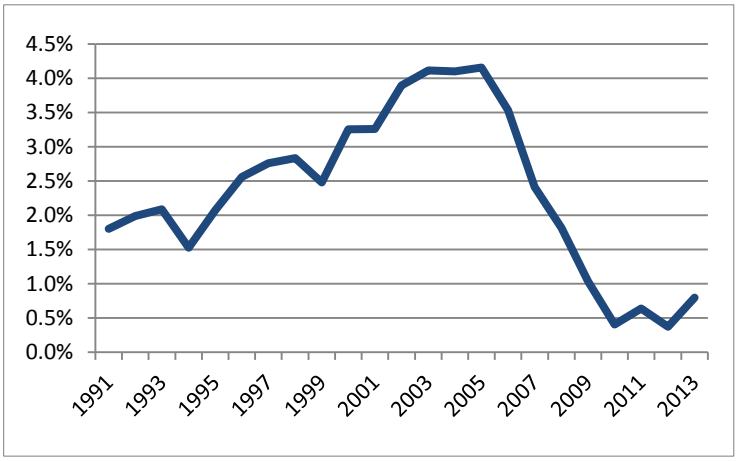
Figure 2.2 - St. Croix Net Migration 2004 to 2011



Source: Internal Revenue Service and Author's Calculations

Not surprisingly, lower net migration since 2005 also contributed to slower population growth rates in St. Croix County. The county experienced a period of rapid growth between the late 1990s and 2005. *In fact, the interval between 1995 and 2005 marked the county's longest period of substantial, sustained growth since 1970.* More recently, year-over-year growth rates rapidly declined to just a 0.4 percent increase between 2009 and 2010. Population growth rebounded slightly between 2012 and 2013, but rates still remain well below peak values.

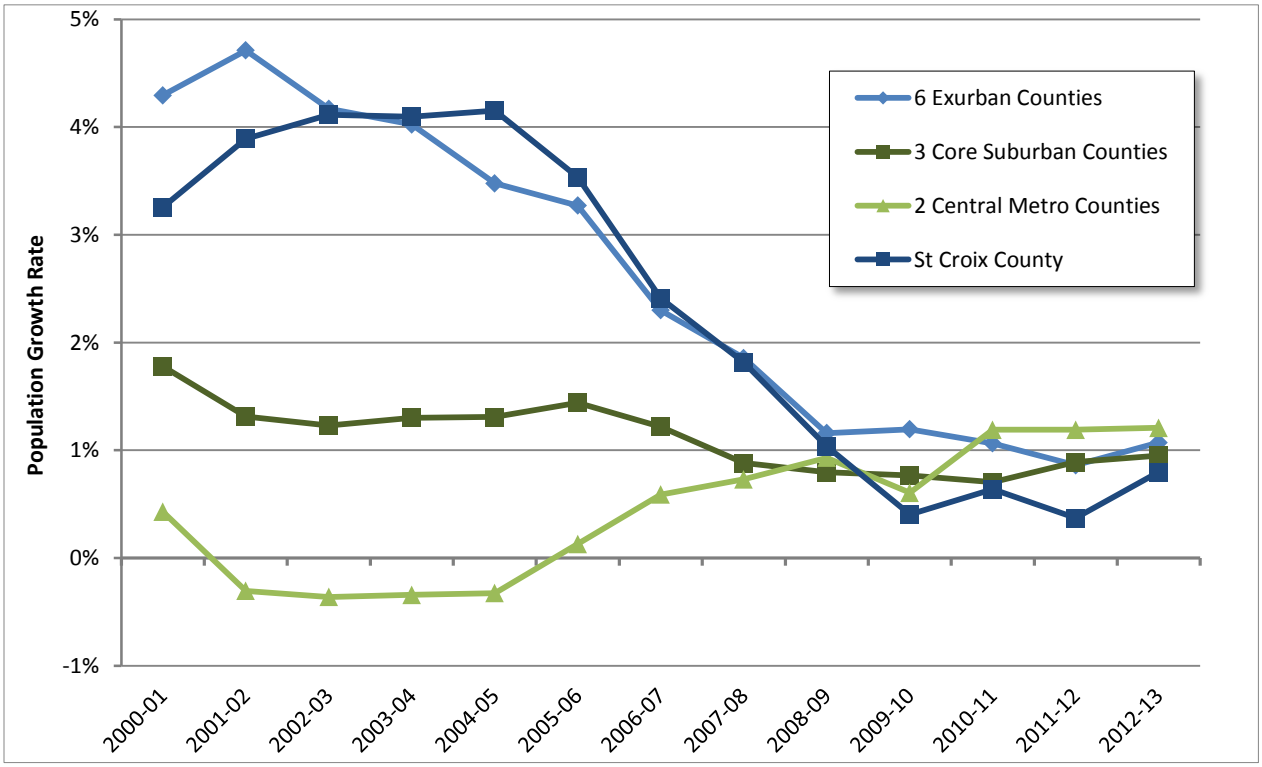
Figure 2.3 – St Croix County Percent Population Change from the Previous Year (1990 to 2013)



Source: U.S. Census Bureau and Gillaspy Demographics

The slowing population growth rates in St. Croix County were also found across the Minneapolis-St. Paul-Bloomington metro area. In particular, growth patterns within central, suburban and exurban portions of the metro area converged. Growth rates in exurban counties experienced notable declines since the early 2000s (Figure 2.4). Core suburban county population growth also slowed since 2000, albeit at a somewhat more gradual rate. In contrast, core counties (Hennepin and Ramsey) in the metro area are now growing at either faster or similar rates as exurban and suburban counties.

Figure 2.4 - Population Growth Rates for Counties in the Minneapolis-St. Paul-Bloomington MSA



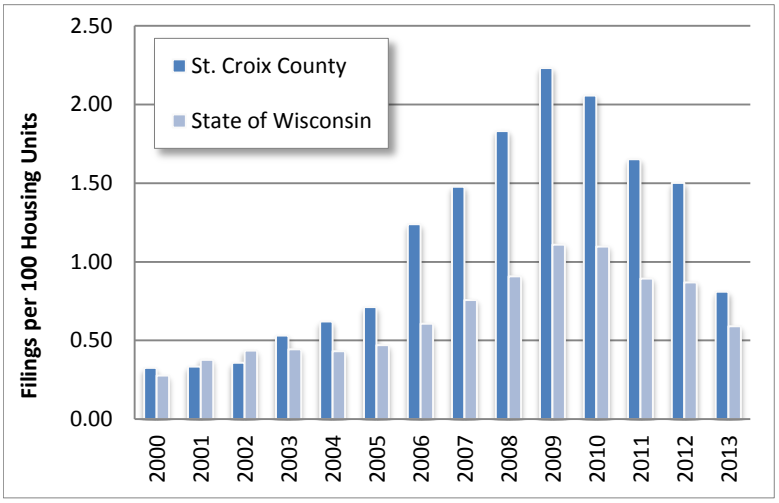
Source: U.S. Census Bureau and Gillaspy Demographics

The recessionary period officially extending from December 2007 to June 2009 undoubtedly contributed to recent population growth patterns in the metro area. As noted in Section 1, the Great Recession is an example of a period effect that can dampen population growth. Almost eight million jobs were lost in the United States between 2007 and 2010 (a decline of 5.5 percent). National unemployment rates increased from 4.6 percent to 9.6 percent over this same period. Similarly, wage and salary employment in the sixteen-county metro area declined by 5.3 percent (-94,000 jobs) between 2007 and 2010. In fact, employment in the metro area is just now reaching pre-recession levels.

A portion of the lower growth rates can be attributed to reduced geographic mobility arising from this economic uncertainty. Nationally, the percent of moves related to individuals wanting to own homes or find better homes was lower in 2013 than in 1999. The share of moves spurred by individuals seeking new jobs or job transfers also fell during this period (Ihrke, 2014). While similar statistics are unavailable for the metro area, the Great Recession likely had a large local impact on similar motivations for moving. *However, it is important to note that overall mobility rates have been gradually decreasing for an extended period, well before the recession's onset (Stoll, 2013). Importantly, these lower mobility rates have been particularly apparent among young adults (Alexander et al, 2014). Consequently, not all of the change in mobility is necessarily attributed to the economic downturn.*

The effects of the Great Recession were particularly apparent in home foreclosure filings across St. Croix County. Foreclosure filing rates in the county increased from 0.71 filings per 100 housing units in 2005 to 2.23 filings per 100 units in 2009 (Figure 2.5).[21] In most years between 2006 and 2012, St. Croix County had among the highest foreclosure rates for all Wisconsin counties. In fact, the high rates in 2008 and 2009 were double those of the overall State of Wisconsin rate and were widespread across the county (Map 2.1). Importantly, the county's foreclosure rates are less associated with the subprime loan issues found in some parts of the state and nation. Instead, local foreclosure rates were largely driven by other economic factors. Changes to the local housing market have also resulted in more than 1,500 unimproved lots now found in Corridor Communities.[22]

Figure 2.5 – Foreclosure Filing Rates 2000 to 2013 (Filings per 100 Housing Units)



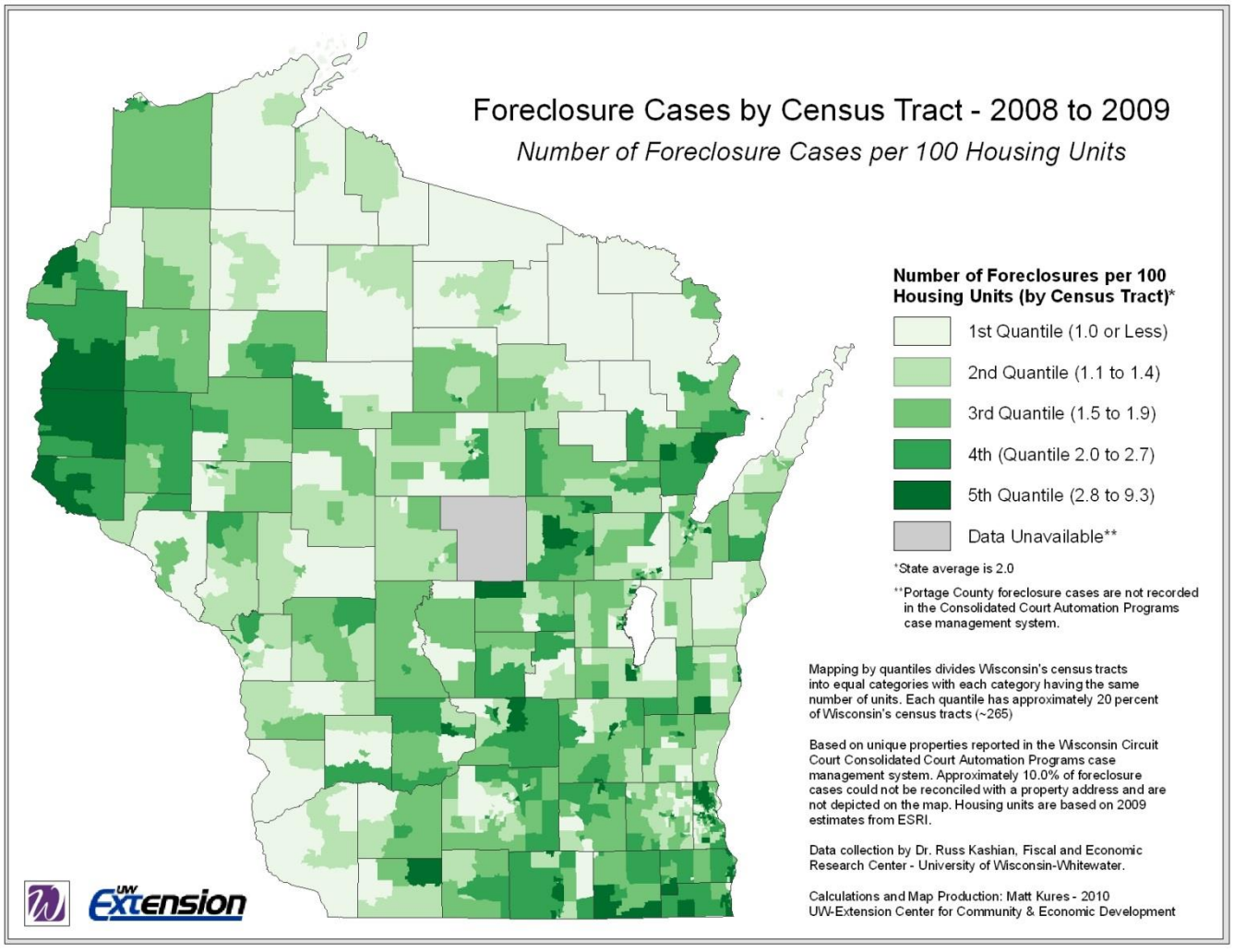
Source: UW-Whitewater Fiscal and Economic Research Center and UW-Extension Center for Community and Economic Development

[21] The definition of a foreclosure can vary. Accordingly, it is important to note that the foreclosure rates in Figure 2.5 and Map 2.1 defines a foreclosure as a *lis pendens,* or the formal filing of a lawsuit that starts the foreclosure process against a property owner. Not all of these foreclosure filings will proceed to an auction or sheriff sale. The foreclosure cases reported in this analysis also have been adjusted to remove numerous actions against the same property due to multiple mortgages or property tax delinquencies. Subsequently, the figures reported here will likely differ from other foreclosure estimates.

[22] Based on figures provided by St. Croix County Planning and Zoning, Land Information

A final period effect from the recent recession may also be found in local birth rates. The Minnesota State Demographic Center reports that birth rates in Minnesota peaked in 2007 and have yet to return to pre-recession levels. A similar trend in Wisconsin is noted by Wisconsin Department of Health Services. Economic uncertainty among potential parents may be a reason for these trends both regionally and in other states across the nation (Dayton, 2014; Pew Research Center 2014). However, it is unknown when and if these rates will increase. Specifically, Dayton (2014, pg. 5) notes that "it remains to be seen whether total fertility rates and thus the total number of babies will climb over 70,000 annually again as we move further away from the most recent recession. If Minnesota's overall population growth continues to outpace the growth in births, our state will continue to become older on balance as the size of older age cohorts will predominate over younger ones."

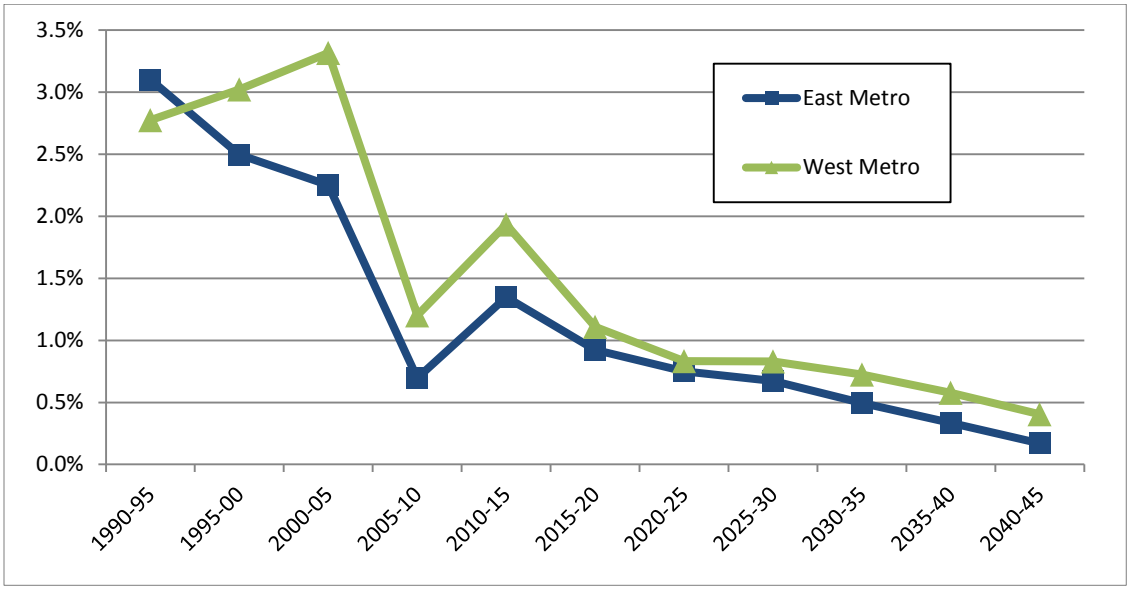
Map 2.1 – Foreclosure Cases by Census Tract – 2008 to 2009



2.2 - Forecasting Future Population in St. Croix County and Corridor Communities

Some portion of recent population trends are attributed to the Great Recession. Some of these trends are likely temporary and could change as the economy continues to improve. However, some of the population changes in the metro area started prior to the recession and may be partially attributed to other structural conditions. Indeed, the Minnesota State Demographic Center projects that growth rates in both the western and eastern portions of the Minneapolis-St. Paul-Bloomington metro area will continue to slow over the next 30 years (Figure 2.6). These projections do not mean that population levels will plateau or decline, but rather that the region will see a *slower growth rate*. The historical population and economic connections between St. Croix County and the broader metro area suggest that these projections should be considered when evaluating future growth scenarios in the county and in Corridor Communities.

Figure 2.6 – Projected Annual Average Population Growth of the Twin Cities Metro Area (Excluding Hennepin and Ramsey Counties)



Source: Minnesota State Demographic Center and Gillaspy Demographics

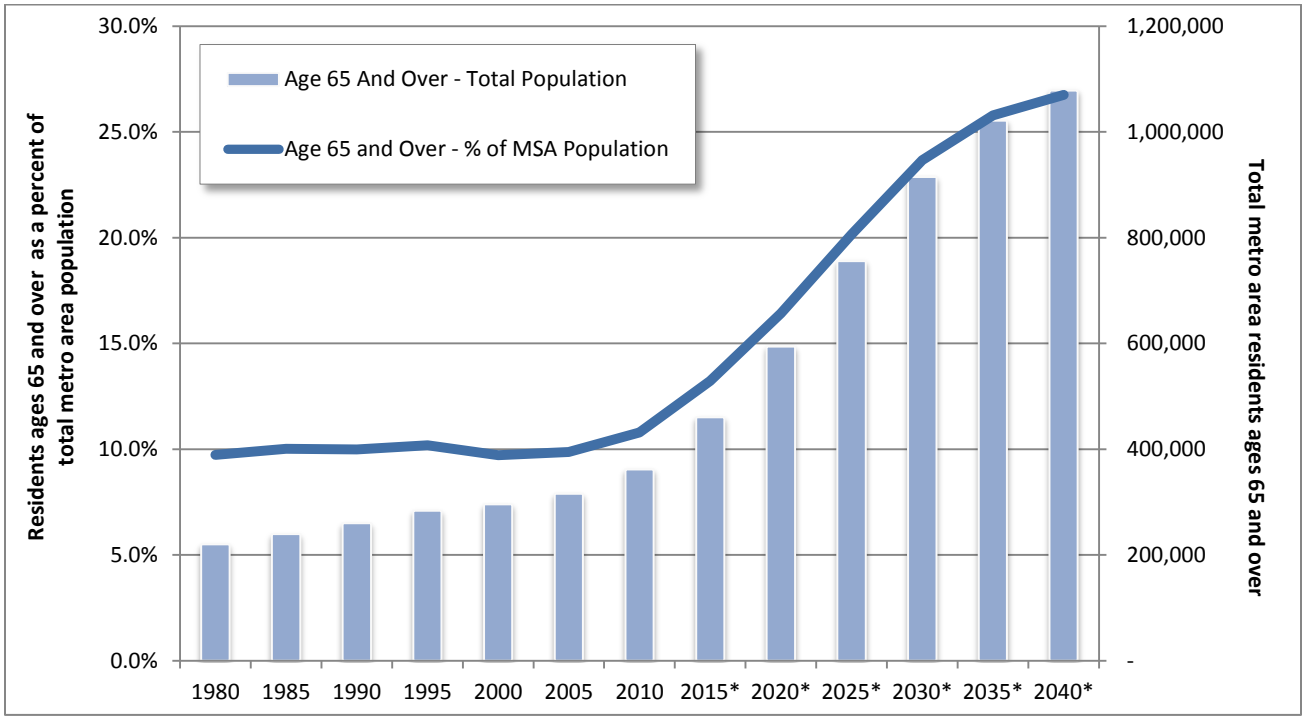
Age Structure

The age structure of St. Croix County and the metro region is projected to change dramatically over the next several decades. Two age groups are of particular interest to this study: 1) the Baby Boomers, or individuals born between 1946 and 1964; and 2) the Millennials, who are loosely defined as the population born after 1981.[23] The size, mobility and preferences of these age cohorts have the potential to greatly influence future population change in the region. These individuals will also impact the region's housing market over the coming decades.

[23] The exact year of birth for Millennials varies somewhat. Moreover, a definitive end date has not yet been set.

Baby Boomers, currently between the ages of 50 and 68, are approaching typical retirement ages in large numbers. As Boomers continue to age, the metro area's population age 65 and over is projected to swell from 362,000 individuals in 2010 to over 1 million residents by 2035 (an increase of 182 percent). The metro area's total share of residents age 65 and over is also expected to increase from approximately 11 percent in 2010 to over 25 percent by 2035 (Figure 2.7)

Figure 2.7 – Trends in the Metro Area Population Ages 65 and Over



*Denotes population projection. Sources: U.S. Census Bureau, Minnesota State Demographic Center, Wisconsin Department of Administration Demographic Services Center and Author's Calculations. Note that the Minnesota State Demographic Center and the Wisconsin Department of Administration may use different methodologies in developing their projections.

The growing number and share of residents age 65 and over likely will alter many aspects of the regional economy including labor force availability; revenue collections and outlays; health care provision; and transportation services. The housing market likely will face many changes as well. *In particular, mobility rates will be reduced as older individuals tend to move less frequently.* Lower mobility rates likely will continue as a number of studies suggest that people have a preference for "aging in place" (Baker et al, 2014). The Center for Disease Control and Prevention (CDC) defines aging in place as "The ability to live in one's own home and community safely, independently, and comfortably, regardless of age, income, or ability level." Consequently, Boomers may want to remain in homes and communities as long as possible.

An aging population also will require communities to offer goods and services needed by older residents. The Baby Boomer generation is large and diverse, and communities should be cautious about generalizing the needs and wants of this age cohort. Furthermore, the needs of someone who is age 65 may be quite different from those of someone age 85. Nonetheless, communities across the metro area may not be positioned to accommodate older residents. Specifically, Baker et al (2014) note that:

- A large share of the nation's housing inventory lacks basic accessibility features. These features are needed by older adults with disabilities to live safely and comfortably;
- Transportation and pedestrian infrastructure is often ill-suited to those without automobile access;
- Housing and health care system disconnects may place many older adults with disabilities or long-term care needs at risk of premature institutionalization.

The broad deficiencies of the nation's housing stock should not imply that St. Croix County is ill-prepared or cannot meet the needs of an aging population. Nonetheless, both the county and Corridor Communities should understand the desires of older residents, both now and over the next 20 years. The aging of the Boomers could actually create an opportunity for communities. Specifically, those areas that can develop the goods and services needed by an aging population could attract new residents seeking a retirement destination. A growing number of resources are available to those communities wanting to better understand the needs of an aging population (Figure 2.8).

Figure 2.8 - Resources for Understanding the Community and Housing Needs of Older Adults

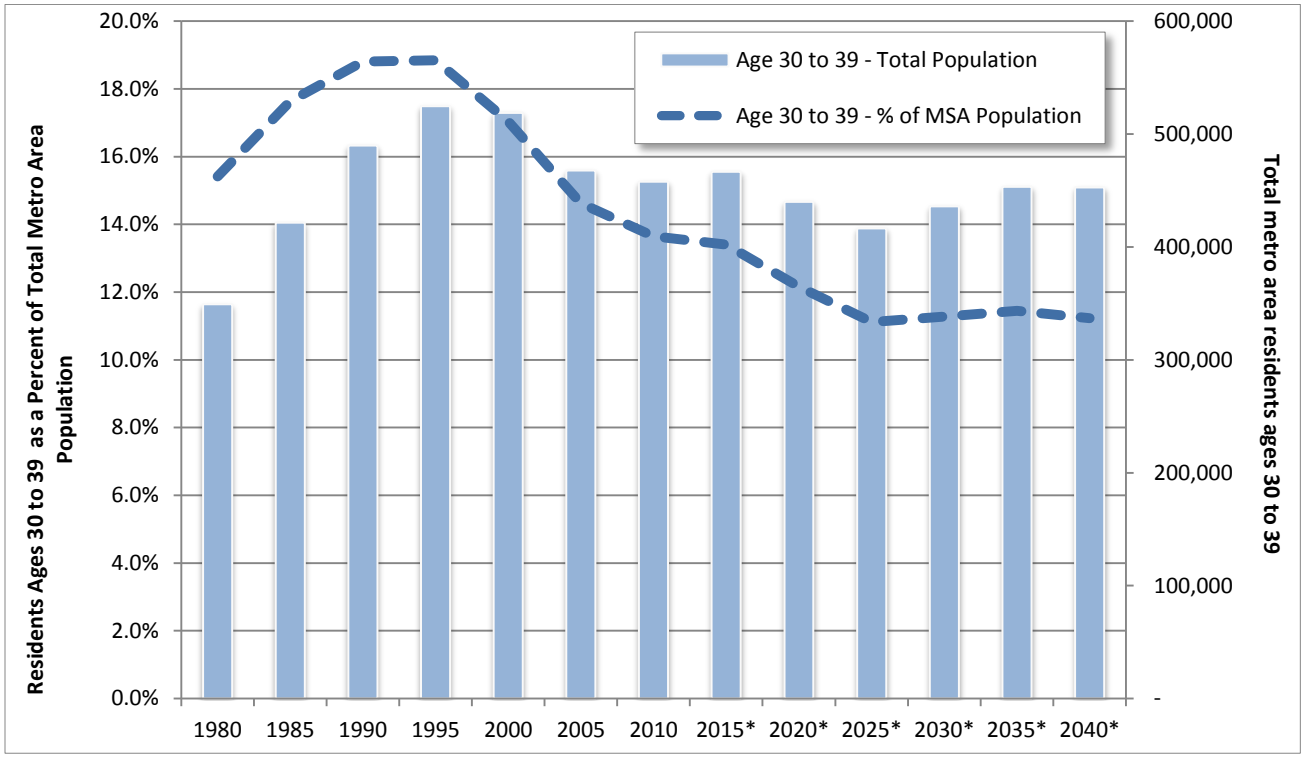
- University of Wisconsin-Extension Creating Aging Friendly Communities – Community Level Planning for the Age Wave: fyi.uwex.edu/agingfriendlycommunities/
- CDC Healthy Aging Research Network & Creating Aging-Friendly Communities: www.agingfriendly.org
- AARP Public Policy Institute Livable Community Resources: www.aarp.org/research/ppi/liv-com/
- The Joint Center for Housing Studies of Harvard University - *Housing America's Older Adults—Meeting the Needs of An Aging Population*: www.jchs.harvard.edu

Although Baby Boomers are approaching retirement age over the next 20 years, they were not always of this age. As previously mentioned, the 30 to 39 age group has been responsible for high net in-migration rates to St. Croix County. In the past, Boomers drove these migration rates. Starting in 1980, a wave of Boomers began to turn 30 years old. As Boomers aged through this age range, the number of metro area residents between the ages of 30 and 39 grew dramatically between 1980 and 2000 (Figure 2.9). By 2004, the last of the Boomers turned age 40.

As Boomers have progressively grown out of this age cohort, the number of metro area residents in the 30 to 39 age group is currently 50,000 less than the peak found circa 1995. The size of this age cohort is expected to drop by an *additional* 50,000 residents by the year 2025; a 40-year low. As a result of this trend, the size of this key demographic will be notably smaller (~100,000 less) over the coming decade than during 1995 to 2005 period when St. Croix experienced rapid growth rates. Accordingly, overall housing demand from these individuals likely will be reduced as well.[24] After 2025, the number of metro area residents in the 30 to 39 age group is projected to grow again. Nonetheless, the size of this age group is not projected to reach the high values found between 1990 and 2000.

[24] As suggested by Pitkin and Myers (1994), it can be problematic to forecast future home ownership rates for demographic cohorts based on current preferences. However, homeownership preferences and rates among future 30 to 39 year olds would need to increase dramatically for this age group to create the same demand as found in the 1990s. It is also likely that future 30 to 39 year olds will be more diverse than those of prior decades and could have different housing preferences.

Figure 2.9 – Trends in the Metro Area Population Ages 30 to 39



*Denotes population projection. Sources: U.S. Census Bureau, Minnesota State Demographic Center, Wisconsin Department of Administration Demographic Services Center and Author's Calculations. Note that the Minnesota State Demographic Center and the Wisconsin Department of Administration may use different methodologies in developing their projections.

Moving through the next two decades, the 30 to 39 age group will be largely comprised of the Millennial generation. In fact, the oldest of the Millennials are just now entering their early 30s. While this age group is forecast to grow somewhat after 2025, there are uncertainties about the future community and housing preferences of these individuals. Current demographic data from the American Community Survey and the Current Population Survey show a number of changes among Millennials compared to prior generations. For instance, Millennials are less likely to be married compared to individuals in prior generations who were of a similar age. The Pew Research Foundation reports that just 26 percent of Millennials between the ages of 18 and 32 are married. In comparison 36 percent of Generation X was married at the same age, while 48 percent of Baby Boomers were married when they were in the 18 to 32 age range.

Some of the decline in marriage likely reflects the Millennials changing views on marriage as a traditional institution (Pew Research Foundation, 2014). However, falling marriage rates are noted here as they may be partly tied to a difficult labor market and other economic challenges faced by Millennials relative to prior generations. That is, individuals may lack an appropriate economic foundation often viewed as a prerequisite for marriage (Pew Research Foundation, 2014). A weak economy is not only affecting marriage rates, but also broader household formation across the United States. Specifically, the share of adults in their 20s, who are also the heads of households, remains 2.6 percent below the rate found a decade earlier. Consequently, this lower formation rate also affects propensity of individuals to move and purchase housing. The ongoing economic recovery may encourage marriage and household formation

rates to increase, but Millennials currently are on a lower trajectory of housing independence than prior generations. In all, it is difficult to predict how these trends will change (Alexander et al, 2014).[25]

Some research has suggested that rising student debt levels also affects the homeownership prospects of Millennials. Between 2004 and 2012, national student debt levels increased from $364 billion in 2004 to $966 billion in 2012. Approximately one-third of current student debt is held by individuals under the age of 30. An additional third is owed by those between the ages of 30 and 39 (Brown et al, 2014). One possible consequence of this rising student debt is a sharp decline in mortgage originations among potential borrowers with large student loans. The decline in originations may partially reflect a tightening of mortgage eligibility attributed to maximum debt-to-income ratio requirements (Brown et al, 2014).

However, the exact impact of student loans on homeownership is debatable. For instance, Akers (2014) notes that high overall student debt levels are rare. Akers and Chingos (2014) also suggest that the monthly payment burden among student loan borrowers has remained steady, or even declined, over the past two decades. Specifically, the median student loan borrower consistently has spent three-to-four percent of his or her monthly income on loan repayments since 1992. Furthermore, the mean payment-to-income ratio has fallen from 15 percent to 7 percent (Akers and Chingos, 2014).

Finally, a number of studies and commentaries have suggested that Millennials may have housing tenure and locational preferences that differ from previous generations. In particular, various articles and reports suggest that Millennials may want to reside in a more urban setting, or within denser inner-ring suburbs. The rationales for choosing these locations are that they provide better access to public transportation, amenities and jobs; thereby reducing their dependence on automobiles. There also may be a growing preference for renting rather than homeownership (Nelson, 2009; Doherty and Leinberger, 2010; Florida, 2011; Gallagher, 2013; Nielsen, 2014). If true, these trends could have a particular impact on St. Croix County.

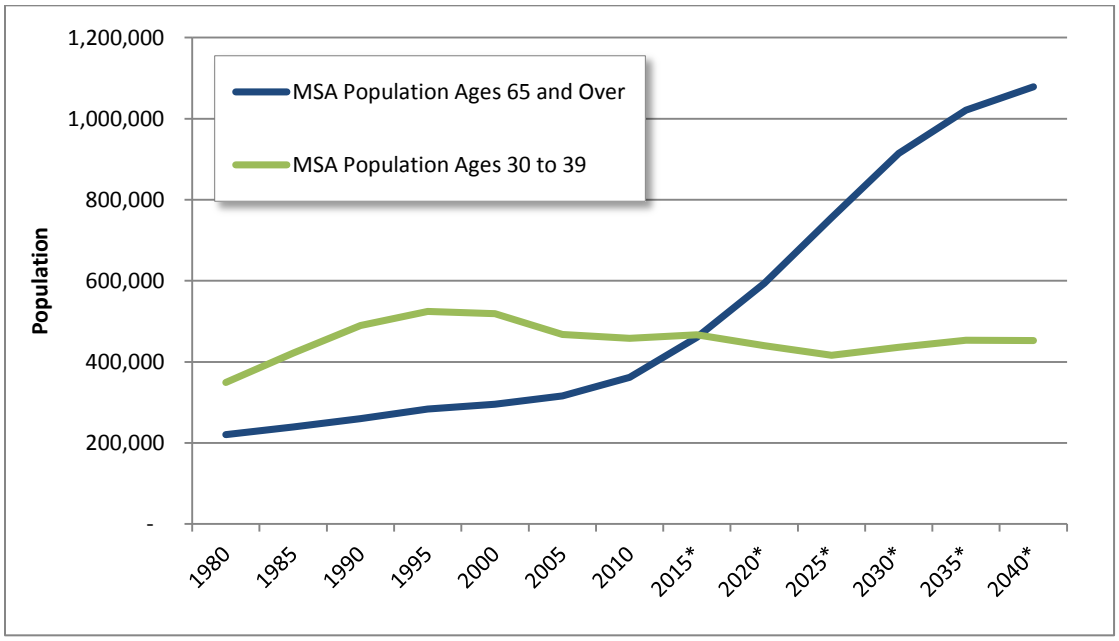
Despite these assertions, other research suggests that these statements may be inaccurate or are yet to be determined. A number of surveys suggest that Millennials' homeownership desires largely mirror those of previous generations (Lachman and Brett, 2011; Drew, 2014). Others are skeptical that large-scale returns to urban living will occur (Kotkin, 2013). In reality, the Millennial generation is large; its preferences are evolving and may change in the future. Accordingly, some caution should be placed on forecasting future homeownership rates based on current preferences (Pitkin and Myers, 1994). Nonetheless, the current and future preferences of Millennials should be at least be considered and monitored by St. Croix County and Corridor Communities.

In summary, Baby Boomers and Millennials have the potential to greatly shape communities and housing markets both in the metro area and within St. Croix County. The Boomers in particular could drive many of these changes. By 2015, the number of residents in the metro area age 65 and over will exceed those

[25] The State of the Nation's Housing report published annually by the Joint Center for Housing Studies at Harvard University provides in-depth perspectives on housing and demographic trends.

between the ages of 30 and 39 (Figure 2.10). Furthermore, the size difference between these two age groups is forecast to grow dramatically over the next 25 years. The implications for St. Croix County and Corridor Communities are many. *Importantly, these shifts in age structure likely will occur, regardless of the completion of the River Crossing.*

Figure 2.10 – Trends in the Metro Area Population Ages 65 and Over and Ages 30 to 39



*Denotes population projection. Sources: U.S. Census Bureau, Minnesota State Demographic Center, Wisconsin Department of Administration Demographic Services Center and Author's Calculations. Note that the Minnesota State Demographic Center and the Wisconsin Department of Administration may use different methodologies in developing their projections.

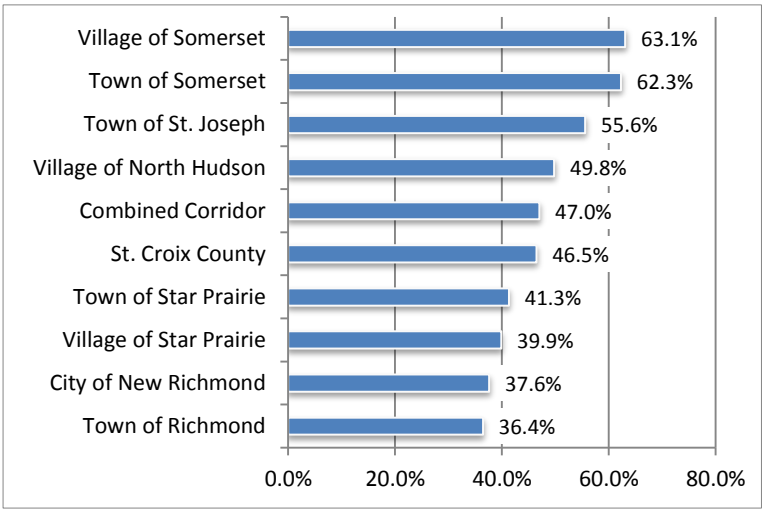
Job Accessibility

The Minnesota portion of the Minneapolis-St. Paul-Bloomington metro area has long been an important employment center for St. Croix County residents. In 2011, 46.5 percent of the jobs held by all of St. Croix County residents were found across the state line. Similarly, 47 percent of the jobs held by Corridor Community residents were located in the State of Minnesota (Figure 2.11).[26] Not surprisingly, the greatest shares of workers commuting to Minnesota are found in Corridor Communities closest to the River Crossing. Communities at a greater distance, such as the City of New Richmond and Town of Richmond, have the lowest share of workers commuting to Minnesota. The City of New Richmond also has a sizeable number of local employment opportunities within the community, which also may account for some of these differences.

[26] Place of work characteristics are derived from the Census Bureau's LEHD Origin-Destination Employment Statistics (LODES). The LODES figures report the origins and destinations for employees at a variety of geographic levels. The figures rely on synthetic data manipulation methods to protect confidential information about workplaces and the residential locations of workers. The reliance on synthetic data manipulation is important as no actual data for a given employer are used. Furthermore, the data is produced in a manner that ensures the published data, while not exact, become increasingly accurate as the number of businesses in an area increases. Consequently, figures for smaller or less populous areas may be subject to greater levels of estimation.

As mentioned in Section 1, individuals are assumed to select their residential locations and workplaces in a manner that maximizes the positive benefits to his or her household (Renkow and Hoover, 2000; Cho, Rodriguez and Song, 2008; So, Orazem and Otto, 2001; Partridge, Ali and Olfert, 2010). When making these decisions, an individual may weigh many factors associated with living in one place and working in another. Certainly, commuting time has been identified as one significant variable that influences residential decisions (Abraham and Hunt, 1997, Levine, 1998). In general, lower commuting times are viewed as an amenity.

Figure 2.11 –Jobs held by Corridor Community Residents – Percent Located in Minnesota (2011)



Source: U.S. Census Bureau LODES

Not all Corridor Community commuters currently use the Stillwater Lift Bridge. However, previous studies and anecdotal information suggest current crossing conditions at the Lift Bridge can increase travel time by 15 to 20 minutes during peak periods.[27] Every commuter does not necessarily face this delay on a daily basis, but these longer or unreliable trip times (e.g. worst trips), may have a larger impact on commuters' psyches than their average travel times (Schrank, Eisele and Lomax, 2012). Consequently, reducing travel time by 20 minutes during these bottleneck periods could reduce peak-period commuting times; improve accessibility to jobs; and potentially create an additional amenity for workers who want to reside in Corridor Communities. The question is: how large of an incentive is created by the removal of this additional travel time? Unfortunately, this is not necessarily an easy question to answer.

While overall commuting time or cost is an important consideration, the exact impact of reduced travel times created by the River Crossing will vary by worker and location. Moreover, a review of past research by Cho, Rodriquez and Song (2008) suggests that the exact influence of commuting length/time on locational decisions is neither definitive nor consistent. A number of studies suggest that workplace accessibility is either significant or a critical determinant for individuals who are deciding where to live (Abraham and Hunt, 1997; Levinson, 1998; Bhat and Guo, 2004). Other research places a higher importance on a location's demographic composition, its housing characteristics and its neighborhood attributes (Molin and Timmermans, 2003; Zondag and Pieters, 2005).

Despite the challenges in trying to isolate the impacts of commuting time, some research has estimated the elasticities between commuting time and locational choices. For instance So, Orazem and Otto (2001) found that a 10 percent increase in commuting time between metro and non-metro job markets reduces

[27] An analysis of traffic delay noted in the Economic Impact Analysis: St. Croix River Crossing (Economic Development Research Group, Inc., 2004) suggests that typical midweek travel times through downtown Stillwater to the Wisconsin side of the St. Croix River varied from 7 to 22 minutes eastbound and 6 to 22 minutes westbound. Advisory committee members noted similar travel times as did the author.

the proportion of commuters moving across these areas by 17 to 19 percent. However, this work is conducted at a regional level, rather than for a smaller geographic area such as St. Croix County or the Corridor Communities. In fact, measuring similar elasticities for smaller areas may be subject to many of the challenges associated with small area population forecasting previously noted by Chi and Voss (2011) and is beyond the scope of this study. Nonetheless, it is still important to consider how the new River Crossing could influence job accessibility for St. Croix County residents.

One means for exploring job accessibility is to calculate the *cumulative* number of jobs within a given drive time from a location. Some research suggests that the number of potential *future* employment opportunities may matter more to an individual's locational decision than access to his or her *current* work location (Crane, 1996). Factors such as the propensity of an individual to switch jobs, the presence of two-worker households, and urban decentralization may increase the importance of overall accessibility to potential employment centers rather than the significance of a simple commuting time (Cho, Rodriguez and Song, 2008).

Based on data from the U.S. Census Bureau LODES dataset, the following charts and tables summarize the number of available jobs within 15, 30 and 45 minute travel times of Houlton and New Richmond.[28] These two communities were selected for analysis based on their locations at each end of the Corridor Community study area. The estimates compare employment accessibility both before and after the completion of the River Crossing.[29] Estimates for the "before" period are based on a 20-minute travel penalty for crossing the Stillwater Lift Bridge. Again, not all commuters will face this delay on a daily basis, but 20 minutes provides a starting point for discussion.

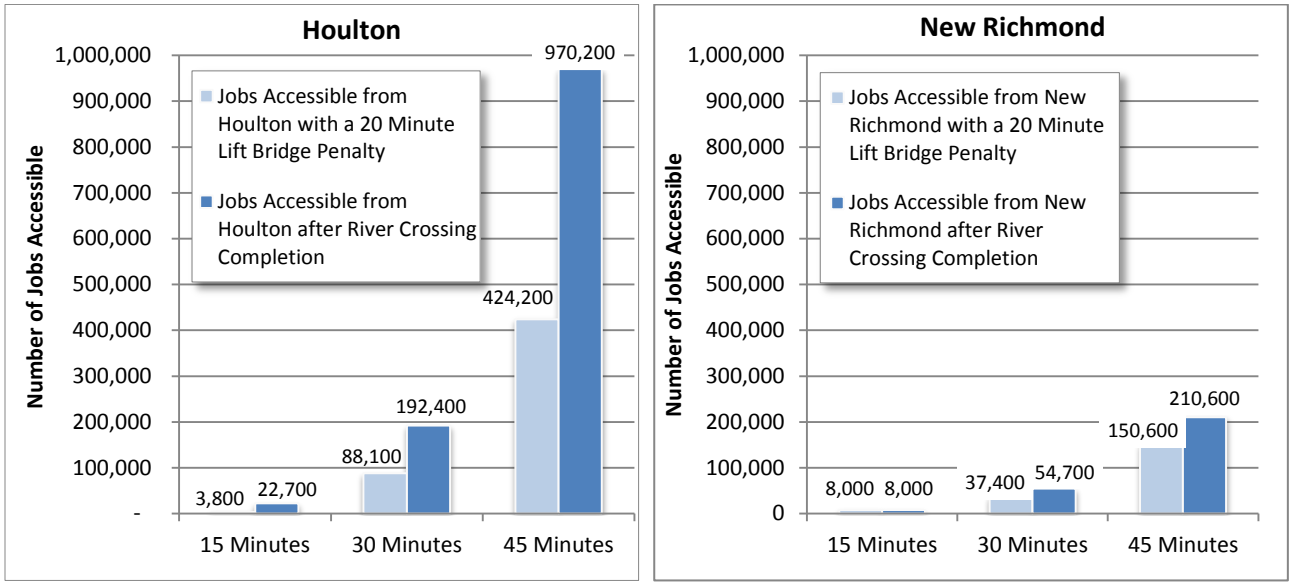
When removing a 20-minute travel penalty, the number of jobs available within a 15-minute drive of Houlton increases from almost 3,800 to 22,700 during a typical morning commute. Within a 30-minute drive time, the number of accessible jobs rises from 88,100 to 192,400. Furthermore, the number of jobs accessible within a 45-minute drive of Houlton increases from 424,200 to 970,200 (Figure 2.12). Importantly, some of the highest net increases in job accessibility are found among jobs having higher earnings; or those jobs with earnings of more than $3,333 per month (Table 2.2).

The increase in potential job accessibility for a Houlton resident results from the Crossing facilitating greater access to dense employment centers in the interior of the metro area. However, this accessibility will decline for those communities located further from the River Crossing. For instance, it will take a commuter residing in New Richmond approximately 15 minutes just to reach the River Crossing. Consequently, the number of jobs accessible from New Richmond increases after the completion of the Crossing, but not nearly at the same rate as found in Houlton (Figure 2.13). The increase in job accessibility for New Richmond is also somewhat more equally distributed among jobs with different monthly earnings.

[28] Note that travel times are calculated within every direction from Houlton and New Richmond. Consequently, accessibility to jobs in St. Croix County and other Wisconsin counties are included. Furthermore, commuters are given the option of crossing the St. Croix River at Hudson if possible in a given drive time.

[29] A typical morning commute is based on travel times for an individual who: 1) leaves for work at 7:30 A.M. and 2) faces usual traffic conditions. The calculations incorporate travel and congestion data from INRIX for the road network likely to be used by commuters. Note that the Crossing will likely reduce some local congestion in the region. These reductions are not factored here.

Figure 2.12 – Job Accessibility Comparisons – 15, 30 and 45-Minute Drive Times



Source: U.S. Census Bureau LEHD and Author's Calculations

Table 2.2 – Cumulative Number of Jobs Available within 15, 30 and 45 Minute Drive Times of Houlton

From Houlton	**15 Minute Drive Time**			**30 Minute Drive Time**			**45 Minute Drive Time**		
Job Monthly Earnings	*Jobs Before*	*Jobs After*	*Net Change*	*Jobs Before*	*Jobs After*	*Net Change*	*Jobs Before*	*Jobs After*	*Net Change*
$1,250 per month or less	1,200	6,700	5,400	23,700	54,400	30,700	107,800	225,900	118,100
$1,251 to $3,333 per month	1,200	6,800	5,600	23,800	57,500	33,600	128,900	284,800	156,000
More than $3,333 per month	1,300	9,300	8,000	40,600	80,600	40,000	187,500	459,500	272,000
Total Jobs	**3,800**	**22,700**	**18,900**	**88,100**	**192,400**	**104,300**	**424,200**	**970,200**	**546,000**

Source: U.S. Census Bureau LEHD and Author's Calculations

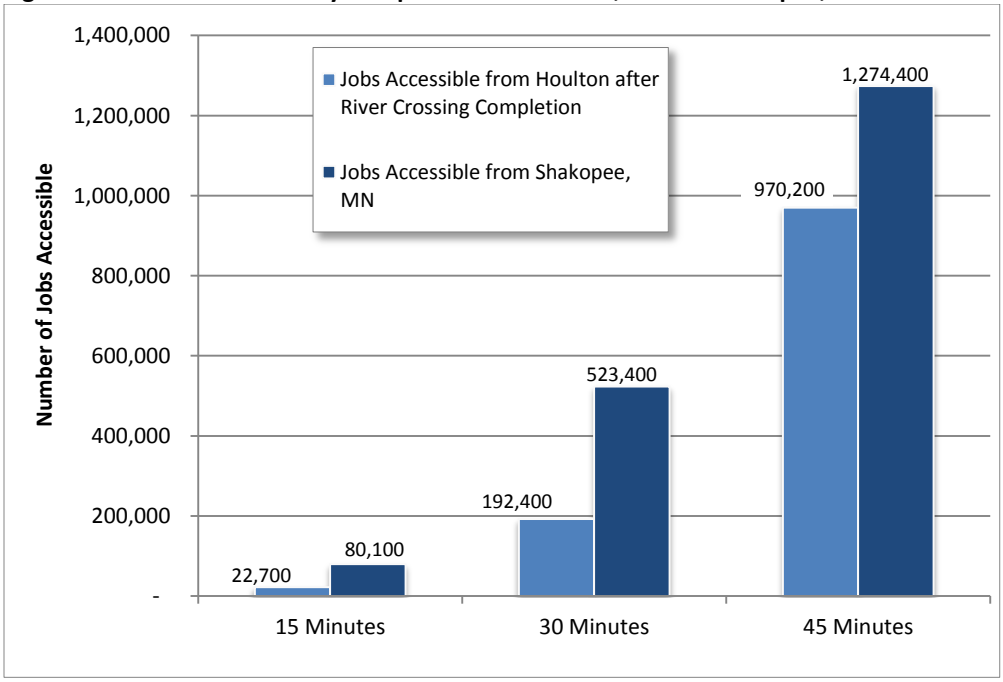
Table 2.3 – Cumulative Number of Jobs Available within 15, 30 and 45 Minute Drive Times of New Richmond

From New Richmond	**15 Minute Drive Time**			**30 Minute Drive Time**			**45 Minute Drive Time**		
Job Monthly Earnings	*Jobs Before*	*Jobs After*	*Net Change*	*Jobs Before*	*Jobs After*	*Net Change*	*Jobs Before*	*Jobs After*	*Net Change*
$1,250 per month or less	2,500	2,500	-	12,800	17,400	4,600	40,700	59,200	18,500
$1,251 to $3,333 per month	2,900	2,900	-	13,200	18,300	5,100	44,700	64,600	19,900
More than $3,333 per month	2,700	2,700	-	11,400	19,000	7,600	65,200	86,900	21,600
Total Jobs	**8,000**	**8,000**	**-**	**37,400**	**54,700**	**17,400**	**150,600**	**210,600**	**60,000**

Source: U.S. Census Bureau LEHD and Author's Calculations

Increased job accessibility arising from the River Crossing should also be considered relative to other communities in the region. As one example, consider the number of jobs available within 15, 30 and 45-minute drive times from Houlton, WI and Shakopee, MN during a typical morning commute. Shakopee is compared here as it sits at the base of the Bloomington Ferry Bridge in Scott County, MN and is regularly offered as a potential comparable community that has experienced bride-related impacts. Even after the completion of the River Crossing, the number of jobs accessible from Shakopee during a typical morning commute remains greater than the number of jobs accessible from Houlton (Figure 2.13). Accordingly, increased accessibility stemming from the River Crossing will be beneficial, but will not necessarily create a unique competitive advantage in the region. Instead, Corridor Communities will need to compete for jobs and residents based on other housing, economic and quality of life factors as well.

Figure 2.13 – Jobs Accessibility Comparison for Houlton, WI and Shakopee, MN



Source: U.S. Census Bureau LEHD and Author's Calculations

Projection Methodology and Scenario Development

St. Croix County and Corridor Communities have undoubtedly experienced high rates of population growth over the past few decades. Given the preceding discussion on transportation infrastructure; current population trends; anticipated changes to the region's age structure; and job accessibility; the question is how will St. Croix County's population increase in the future? While this analysis cannot precisely predict population growth 5, 10, 20 or 30 years from now, a number of potential projections are developed for both St. Croix County and the Corridor Community study area. One projection is from the Wisconsin Department of Administration's Population Services Center and is considered here as the "official" state projection. Other projections are developed by Gillaspy Demographics.

Both the official State of Wisconsin projection and the projection models developed by Gillaspy Demographics use a cohort-component method. As noted by Egan-Robertson (2014, pg. 1), the cohort-component method "takes the initial population of a geographic area by age and sex and progresses it forward in equal intervals (usually five years), with modifications to fertility, mortality and migration rates, to produce predictions of the future population." The full methodology used in developing the State of Wisconsin's projections is available at: www.doa.state.wi.us/divisions/intergovernmental-relations/demographic-services-center/projections

The projections by Gillaspy Demographics rely on fertility and mortality characteristics similar to those of Minnesota and Wisconsin. Furthermore, the projections are based on a migration profile for age and gender across the past six decades. The migration profile is used to develop alternative assumptions about migration after 2015. Four specific models for St. Croix County are produced (depicted in Figure 2.14) and are based on several scenarios:

- **Model 1 (Slow Start)—**Continuation of current out-migration from 2015 to 2020, then rapid in-migration of about 1,200 per year from 2020-2025, slowing to 200-400 per year after;

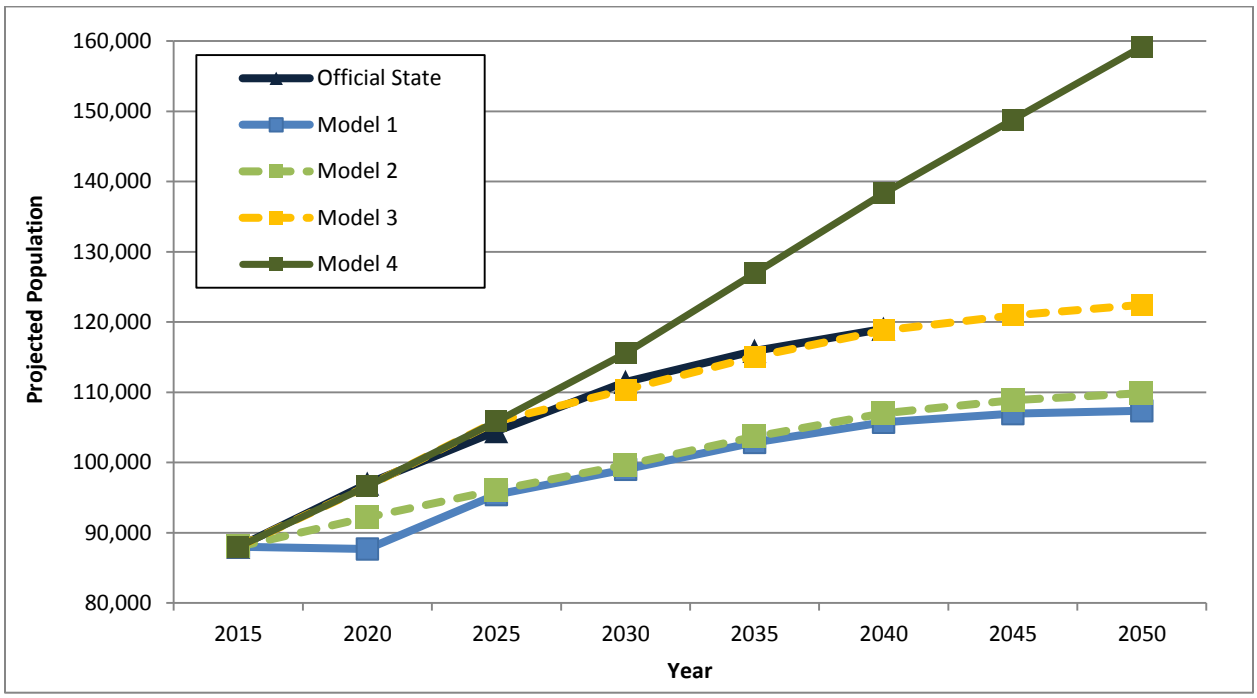
- **Model 2 (Steady In Migration)—**Steady in-migration of 200-500 per year;

- **Model 3 (Rapid Growth Moderating after 2025)—**1,100 to 1,500 in migration per year through 2025, moderating to 300-500 after. *Note that Model 3 is nearly identical to the official State of Wisconsin projection;*

- **Model 4 (Maximum Growth)—**1,100 to 1,800 net in-migration per year through 2050;

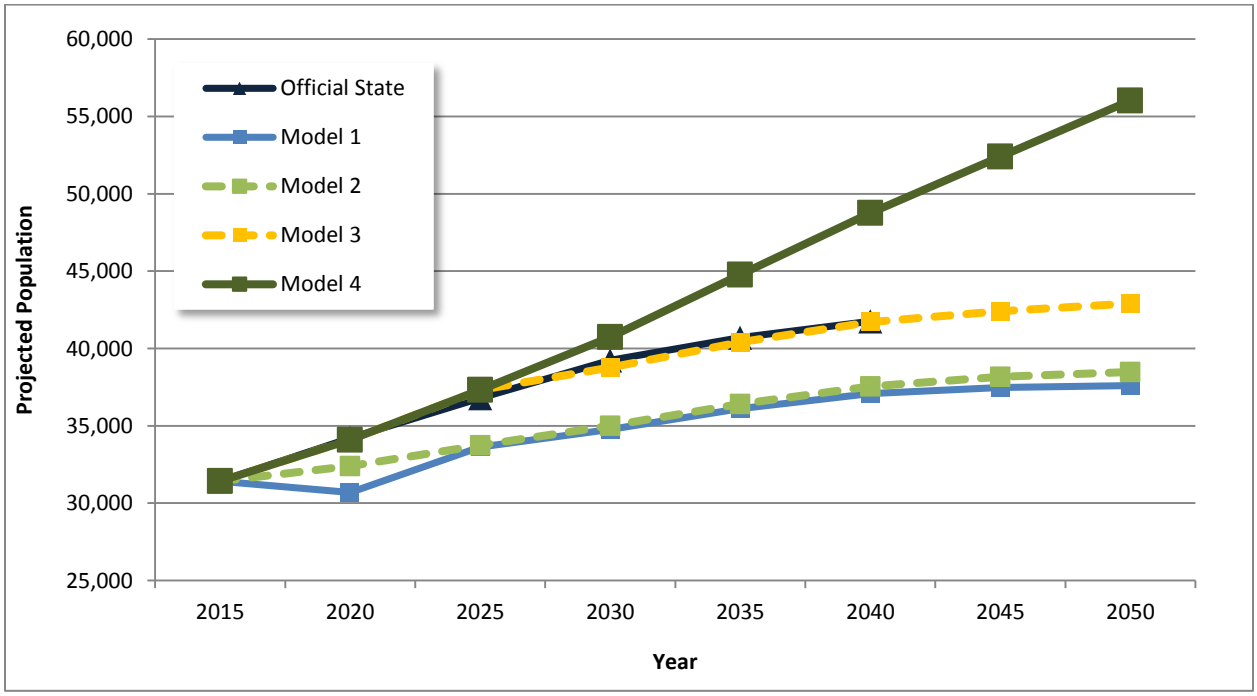
Official State of Wisconsin projections are also available for the Corridor Communities and are considered in this analysis. Using the results of the St. Croix County projections from Gillaspy Demographics, four additional estimates also are produced for the Corridor Community study area (Figure 2.15). These figures assume that the combined study area receives 38 percent of the County's future population growth; a percentage that has remained somewhat consistent over time. However, individual communities along the Corridor could grow at faster or slower rates. More discussion on potential growth patterns among neighboring communities is considered below.

Figure 2.14 – St. Croix County Population Projection Model Results



Sources: Wisconsin Department of Administration Demographic Services Center and Gillaspy Demographics

Figure 2.15 – Corridor Community Study Area Population Projection Model Results



Sources: Wisconsin Department of Administration Demographic Services Center and Gillaspy Demographics

Suggested Projections

Based on the preceding discussion in Section 1 and Section 2 of this study, as well as input from the River Crossing Advisory Committee, two sets of projections are suggested. Specifically, the suggested population projections are the official State of Wisconsin figures (which mirror Model 3) and figures from the aforementioned Model 2. The inclusion of these two projections is based on:

1. Existing research on population growth and infrastructure improvements;
2. Past experiences and trends found in other counties who have undergone bridge improvements;
3. Anticipated changes to the region's growth, age structure and mobility rates;

Based on these projections, St. Croix County is estimated to add approximately 19,000 to 31,000 residents between 2015 and 2040 (Table 2.4). Corridor Communities are projected to add between 6,100 and 10,300 residents (Table 2.5). *Importantly, these figures are only projections based on current trends and anticipated changes to the region's population structure. They are subject to future change and revision*.

Table 2.4 – Projected St. Croix County Populations

	Official State of Wisconsin		Alternative Growth Model 2	
Year	Total County Population	Change from Prior Period	Total County Population	Change from Prior Period
2010	84,345	N/A	84,394	N/A
2015	87,990	3,645	87,990	3,596
2020	96,985	8,995	92,217	4,227
2025	104,450	7,465	96,090	3,873
2030	111,470	7,020	99,672	3,583
2035	115,900	4,430	103,701	4,028
2040	119,010	3,110	106,996	3,295
2045*	N/A	N/A	108,867	1,871
2050*	N/A	N/A	109,867	1,000

Sources: Wisconsin DOA Demographic Services Center and Gillaspy Demographics *Wisconsin projections only extend to 2040.

Table 2.5 – Projected Corridor Community Populations

	Official State of Wisconsin		Alternative Growth Model 2	
Year	Total Corridor Population	Change from Prior Period	Total Corridor Population	Change from Prior Period
2010	29,993	N/A	29,993	N/A
2015	31,412	1,419	31,412	1,419
2020	34,215	2,802	32,403	990
2025	36,781	2,567	33,748	1,345
2030	39,225	2,444	34,993	1,245
2035	40,698	1,473	36,416	1,423
2040	41,747	1,049	37,547	1,131
2045*	N/A	N/A	38,160	612
2050*	N/A	N/A	38,483	324

Sources: Wisconsin DOA Demographic Services Center and Gillaspy Demographics *Wisconsin projections only extend to 2040.

A series of household projections are also developed for St. Croix County (Table 2.6) and Corridor Communities (Table 2.7). These figures assume that the local number of persons per household mimic those used by the official State of Wisconsin projection. The state figure is also consistent with historical trends and assumed persons per household in the Twin Cities area. Note that households do not include individuals living in group quarters (such as those living in nursing homes, prisons, college dorms, or other similar facilities). Consequently, not all residents are encompassed in the figures below.

Table 2.6 – Projected St. Croix County Households

	Official State of Wisconsin		Alternative Growth Model 2	
Year	Total Corridor Households	Change from Prior Period	Total Corridor Households	Change from Prior Period
2010	31,799	N/A	31,799	N/A
2015	33,975	2,176	34,088	2,289
2020	37,935	3,960	36,156	2,069
2025	41,416	3,481	38,246	2,089
2030	44,853	3,437	40,250	2,004
2035	47,314	2,461	42,490	2,240
2040	49,073	1,759	44,119	1,629
2045*	N/A	N/A	44,833	714
2050*	N/A	N/A	45,234	401

Sources: Wisconsin DOA Demographic Services Center and Gillaspy Demographics *Wisconsin projections only extend to 2040.

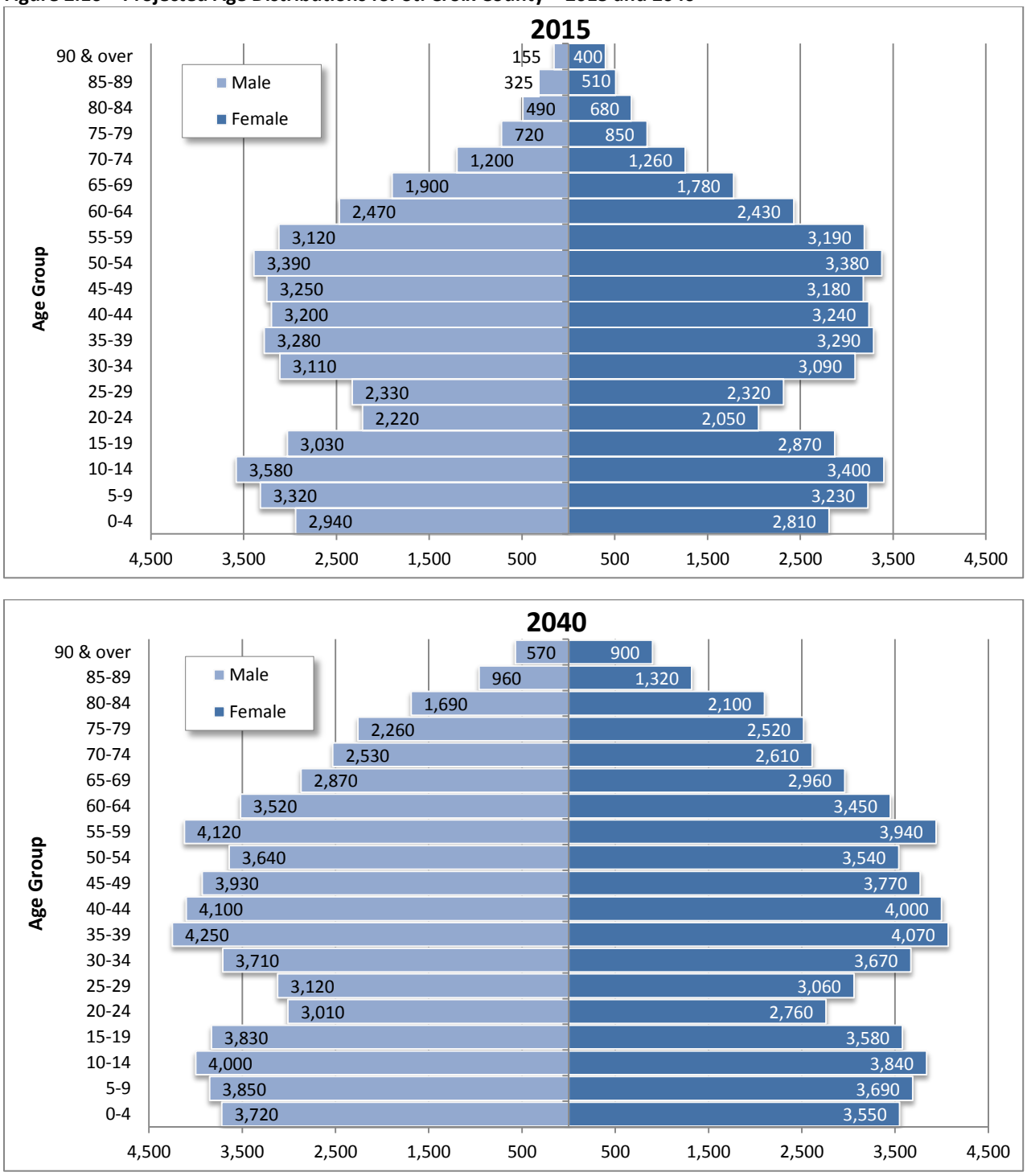
Table 2.7 – Projected Corridor Community Households

	Official State of Wisconsin		Alternative Growth Model 2	
Year	Total Corridor Households	Change from Prior Period	Total Corridor Households	Change from Prior Period
2010	11,292	N/A	11,292	N/A
2015	12,038	746	12,169	877
2020	13,409	1,371	12,705	536
2025	14,614	1,205	13,432	727
2030	15,794	1,180	14,131	699
2035	16,630	836	14,921	790
2040	17,227	597	15,482	561
2045*	N/A	N/A	15,715	233
2050*	N/A	N/A	15,844	129

Sources: Wisconsin Department of Administration Demographic Services Center and Gillaspy Demographics *Wisconsin projections only extend to 2040.

Projections are also provided by age group for St. Croix County. Age group distributions for 2015 and 2040 are depicted in the population pyramids below (Figure 2.16). The full distributions by five-year intervals are included in Appendix A. The number of residents in every age group is projected to grow over the next 25 years. However, the largest net gains and percentage increases are expected among residents ages 60 to 84. The growth within this age range is not surprising given the previous discussion concerning the region's age structure.

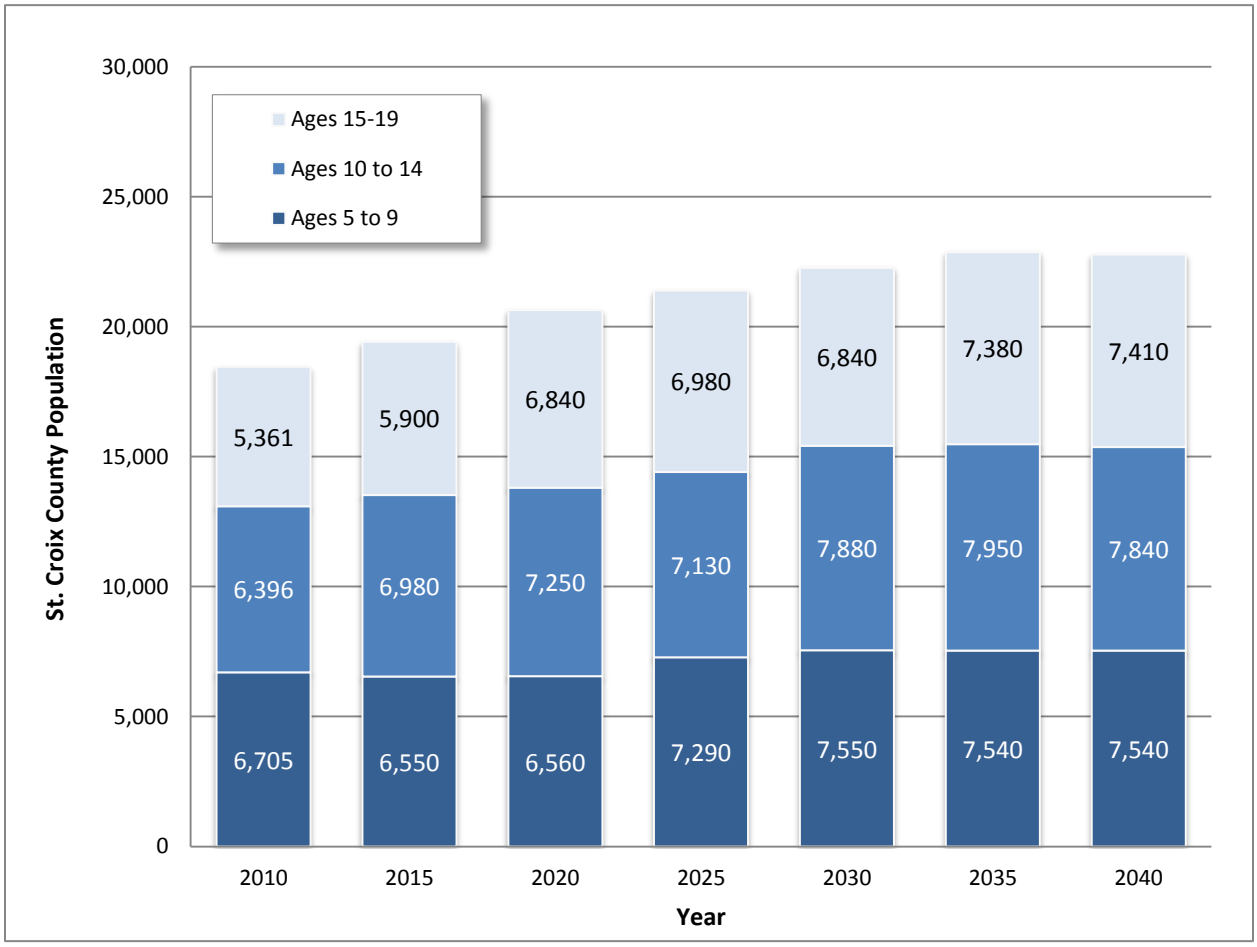
Figure 2.16 – Projected Age Distributions for St. Croix County – 2015 and 2040



Sources: Wisconsin Department of Administration Demographic Services Center

A final set of projections are summarized for the school age population in St. Croix County (Figure 2.17). While these numbers are not specific to school district boundaries found in Corridor Communities, the figures do provide some perspectives on the projected size of key age groups in the county. Furthermore, the Corridor Community study area has accounted for 35 to 36 percent of the county's total population in each of these age groups over the past several decades.

Figure 2.17 – Projected Change in St. Croix County Population Ages 5 to 19



Sources: Wisconsin Department of Administration Demographic Services Center

2.3 - Conclusions

St. Croix County and the broader Minneapolis-St. Paul-Bloomington metro area are facing several population trends that likely will affect local growth rates. In general, the region's overall growth rate has slowed over the past decade. While some of this change is temporary and undoubtedly attributed to a period effect stemming from the Great Recession, the overall metro area is still projected to slow in the coming decades. These slower growth rates partially stem from an aging population that will shape communities over the next 20 years.

Consequently, the St. Croix River Crossing will help facilitate steady growth into the coming decades, but it is unlikely that the County's population growth rate will return to the peak rates found between 1995 and 2005. That said, the projected growth rates do not mean that St. Croix County or Corridor Communities will stop growing. Growth will continue to be strong on a relative basis. *In fact, the official State of Wisconsin population projections continue to show St. Croix County as the state's fastest growing county over most of the next 25 years.*

When considering the region's future population, both St. Croix County and Corridor Communities should realize that the projections and trends discussed here are not absolute. Indeed, demographic projections are not destinies to be accepted. *Instead, population projections should provide an opportunity for discussion and guidance for policy development.* While St. Croix County and the Highway 64 corridor are likely to add residents, individual communities need to decide *how* they want to grow, but also *if* they want to grow. Communities have an opportunity to shape growth within their boundaries using tools to promote or discourage development. The individual tools used will need to be prioritized within each community, but can include: zoning ordinances; transfers of development rights; purchases of development rights; marketing initiatives; financial incentives; lot size restrictions; and changes to statutory language.

As previously discussed, the locational decisions and community preferences of Baby Boomers and Millennials will be drivers of future population growth. Both the county and Corridor Communities can capitalize on changes within these two age cohorts by catering to their needs, housing preferences, and other important quality of life factors. Developers and builders are likely already anticipating some of these changes, but community leaders and administrators should remain up-to-date on the preferences of Boomers and Millennials over the next 20 years.

While individual municipalities have an opportunity to shape growth within their boundaries, local governments also should carefully consider the "effects from neighboring places…in their decision making and planning process" (Chi, 2010). More specifically, Corridor Communities will be influenced by the actions and decisions of their neighbors. Restricting growth in one community may simply encourage development in an adjacent area. School districts may be especially impacted by these decisions as their boundaries do not coincide with municipal borders. Consequently, communities in the Corridor should remain in communication and collaborate to some degree.

Finally, population projections are subject to change. There are many regional and national economic conditions that could dramatically alter future population growth trajectories. Furthermore, the continued effects of the Great Recession could linger for years to come, or could change more quickly. The next five years should provide valuable insights into whether the population projections used in this analysis properly reflect change in the county and Corridor Communities. *Consequently, municipalities should strongly consider benchmarking key local indicators.* Tracking building permits, traffic counts, school enrollments, demand for government services, real estate transactions, emergency calls and other socio-economic data can help communities understand local change in a timely manner. Annual population estimates from the Census Bureau and the Wisconsin Department of Administration will also be important. Changes to one or many of these measures may indicate a need to revise projections or alter local policies.

Section 3 – St. Croix River Crossing and Economic Development Opportunities

Economic competitiveness is traditionally rooted in firm-level behavior, with efficient or innovative firms being more likely to increase their market share, lower their operating costs, and reduce prices for customers. Over the past few decades, the notion of competitiveness has also been extended to geographic areas. Specifically, economic success can be partially attributed to factors external to individual firms such as the availability of superior technology, an endowment of ample infrastructure, the presence of large levels of human capital, or institutional arrangements that support economic development (Camagni, 2002). For instance, Porter (2003) suggests that successful regions specialize in the production of goods and services for which local firms are efficient producers, but firm productivity is also affected by the quality of the regional business environment. Consequently, community competitiveness is partially embedded in local assets that enable firms to grow.

The St. Croix River Crossing certainly adds to the asset base that supports the region's economy. As noted in Section 1, transportation infrastructure broadly supports economic growth through its ability to reduce transportation costs; create better connections among labor and employers; and facilitate suburban population change. However, the precise impacts of infrastructure on regional economic growth are debatable and likely vary by industry and location. Given the uncertainty offered by existing research, what does the River Crossing mean for economic development opportunities in St. Croix County? In particular, what are some of the potential economic impacts facing Corridor Communities and are there specific strategies that could build upon any comparative advantages offered by the River Crossing? The following discussion considers these questions by: 1) assessing the potential economic impacts of new residents; 2) analyzing how the River Crossing could influence locational advantages within St. Croix County; and 3) evaluating recreation development opportunities.

3.1 - Potential Economic Impacts of New Residents

The household projections developed in Section 2 suggest that Corridor Communities could add between 1,300 and 2,600 new households between 2015 and 2025. Over the same period, St. Croix County is projected to grow by 2,300 to 5,400 households. While the exact number of new households will vary, these new residents will create economic impacts in a variety of manners. Undoubtedly, new income from these households will create additional demand for a variety of goods and services. Future households also will require housing units that will impact the region's residential construction market. New residents could also be a source of entrepreneurial growth if these individuals start a new business or relocate an existing business to the county.

Ultimately, new households will generate economic impacts through additional revenues, income and jobs. While the precise economic impacts of new households cannot be predicted, several broad estimates can be generated using input-output (I-O) modeling. Also known as inter-industry analysis, I-O models assess

how an economic event, or shock, ripples throughout the regional economy. Some examples of economic events could include the opening of a new business; employment reductions at an existing firm; the closing of a military base; or the construction of a new housing development. For purposes of this analysis, the economic shock is the additional demand for goods and services contributed by new residents. [30]

Simply stated, input-output models estimate how economic sectors interact with each other. More specifically, I-O models estimate how industries purchase and sell goods or services among each other (i.e. business-to-business transactions). Some I-O models are also able to estimate how consumers or governmental units purchase products from different business categories (consumer-to-business transactions or government-to-business). When a change occurs to the regional economy, input-output analysis is able to estimate how supply and demand conditions also change and eventually ripple throughout the broader economy. [31]

Economic impacts are often categorized into direct, indirect and induced impacts:

- *Direct effect* – Direct effects are attributed to the industry or sector that initially causes a change in the economy. Accordingly, direct effects do not consider how expenditures or incomes ripple throughout the region. As an example, consider the impacts of a new dairy products manufacturing facility in a community. The direct effects of this new facility include the firm's revenues, employment and payroll;

- *Indirect effects* – Businesses purchase a variety of goods and services from other businesses; often across many industrial sectors. Consequently, these business-to-business (B2B) transactions generate economic activity and may create additional impacts throughout the regional economy. Continuing with the aforementioned example of a new dairy product manufacturing facility, the new firm will certainly purchase milk from dairy producers. However, the facility will also purchase packaging materials, food manufacturing equipment, cleaning supplies, wholesale and transportation services, waste disposal, and many other goods and services. As the dairy product manufacturer makes these purchases, its suppliers receive new revenues and also may need to adjust their own economic output;

- *Induced effects* – Employees of a firm are paid wages and salaries. Induced effects estimate the impact of employees using these earnings to purchase goods and services in various sectors of the economy (i.e. food, furniture, gas, housing, medical, utilities, etc.).

[30] While an in-depth discussion of input-output modeling is beyond the scope of this analysis, an overview of I-O models is found in the *Regional Input-Output Modeling System (RIMS II) User Guide* from the Bureau of Economic Analysis (www.bea.gov/regional/pdf/rims/RIMSII_User_Guide.pdf). A technical description is also available in Chapter 15 of: Shaffer R., Deller, S. and Marcouiller, D. (2004). *Community Economics: Linking Theory and Practices* (2nd ed). Ames, IA: Blackwell Publishing.

[31] Importantly, input-output models also consider how industries rely on factors of production (such as labor and capital).

Potential Impacts of New Residential Construction

Using an input-output model constructed for St. Croix County, we can estimate several potential impacts arising from new households. One area of particular interest is the impact that new households could have on the residential construction industry. The population projections suggested in Section 2 estimate that St. Croix County could add an average of 230 to 540 households per year between 2015 and 2025. Furthermore, projections for Corridor Communities place average growth rates at approximately 125 to 250 households per year over the same period. While some of these new households will be absorbed into existing inventory, many households will require an additional supply of housing units.

While the projections provide an average range of new annual households, it is difficult to value the new residential construction needed by future residents. Certainly, the two population projection models vary in their growth rates which could affect annual revenue projections considerably (See Figures 2.14 and 2.15). Furthermore, the exact type and size of future housing units will be dictated somewhat by the preferences of new residents. Specifically, current and future trends in housing preferences could affect housing stocks in terms square footage, the sorts of amenities offered, tenure type (owner vs. renter) and other factors that influence housing value.

Given the challenges in estimating the future value of new residential construction, the impact of $10 million in new residential construction is considered here for benchmarking purposes. This amount of residential construction could correspond to relatively few high-end housing units or a larger number of lower-valued homes for first-time homebuyers. The total amount of new residential construction needed will significantly surpass this amount, but $10 million provides a starting point for analysis.

According to the input-output model, $10 million in new residential construction revenues supports approximately 120 jobs, with 76 of these jobs occurring directly in the residential construction sector and an additional 43 jobs attributed to indirect and induced effects (Table 3.1). In terms of total sales (e.g. output), $10 million of new residential construction supports $14.1 million in total impacts ($10 million directly in residential construction and $4.1 million in indirect and direct effects). This amount of residential construction also supports almost $4.2 million in labor income, which includes wages, benefits and proprietor's income. Many of the largest indirect and induced effects occur in retail categories, financial services and professional services.

Table 3.1 – Estimated Impact of $10 Million in New Residential Construction

Impact Type	Employment	Labor Income	Output
Direct Effect	76	$2,800,000	$10,000,000
Indirect Effect	26	$870,000	$2,410,000
Induced Effect	17	$520,000	$1,730,000
Total Effect	*119*	*$4,190,000*	*$14,140,000*

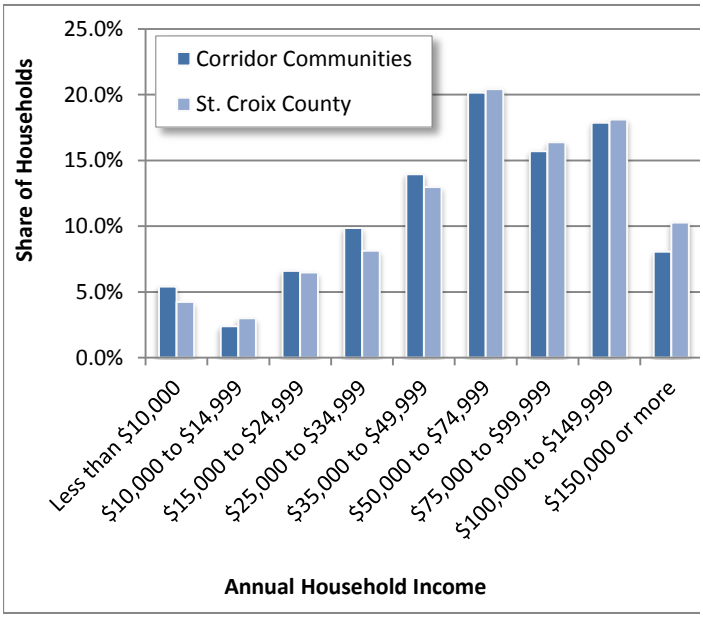
Sources: IMPLAN and Author's Calculations

Potential Impacts of Household Spending

In addition to potential impacts on residential development, future households will also create demand for a variety of other goods and services. The input-output model constructed for this analysis can estimate the impacts arising from this new demand using a number of assumptions. First, the I-O model is based on typical expenditures for goods and services made by households of different income levels. That is, purchases by higher income households likely will differ from those of lower income households. *Accordingly, this analysis assumes that the future household income distribution will mimic the current distribution found in St. Croix County (Figure 3.1).* Second, the impacts of future household spending are based on current expenditure patterns. As in the past, the relative demand distribution for goods and services will likely change moving forward.

The projected employment impacts of new household spending are summarized in Table 3.2. These figures represent the number of employees *supported* by the projected income increases attributed to new Corridor Community households and new St. Croix County households. The figures include estimates for the ten industry categories receiving the largest employment impacts, as well as the total employment impacts generated across all industries.[32] Impact estimates are included for each of the two suggested projection models noted in Section 2 (i.e. the official State of Wisconsin projections and alternative growth model 2). Note that the figures in Table 3.2 only represent the new households added between 2015 and 2025.

Figure 3.1 – Current Household Income Distribution



Source: U.S. Census Bureau 2009-2013 American Community Survey and Author's Calculations

Not surprisingly, the ten greatest employment impacts are found in industries that offer goods and services frequently used by consumers including restaurants, retail and health care.[33] Overall, the employment impacts vary according to the number of new households estimated by each projection model:

[32] The employment impact figures generated in this analysis only include induced impacts. Without knowing how household spending translates into industry-specific estimates of increased output (i.e. sales), the input-output model cannot generate direct or indirect impacts.

[33] The input-output model treats retail sectors somewhat differently. Only the retail markup, or margin, is assumed to impact the local economy. The total value of retail sale includes a product's retail markup as well as its production costs, wholesale markup and transportation costs. As local retailers frequently purchase products manufactured outside the region, the retail markup is the portion of a product's price that remains in the regional economy. The model also makes adjustments if a retailer is headquartered in the local economy (i.e. not a chain location headquartered elsewhere).

- Within the Corridor Communities, impacts range from 443 to 903 total employees supported by new household income. Given uncertainty in the modeling process, a range of employment impacts is also included here. Specifically, an estimated 425 to 475 employees are supported by the new households estimated by alternative growth model 2. Moreover, 850 to 950 estimated employees are supported by the new households suggested by the State of Wisconsin official projections;

- Impacts in St. Croix County vary from 868 to 2,204 employees supported by new household income. Again, employment impact ranges are also included. Based on the households projected by alternative growth model 2, new household income is estimated to support 825 to 915 employees. Similarly, new household income based on official State of Wisconsin projections is estimated to support 1,900 to 2,100 employees.

Table 3.2 – Estimated Jobs Supported by Projected Household Income Increases (From 2015 to 2025)

	Corridor Communities		St. Croix County	
Industry Category	**Alternative Growth Model 2**	**Official State of Wisconsin Projection**	**Alternative Growth Model 2**	**Official State of Wisconsin Projection**
Food Services and Drinking Places	70	142	137	315
Hospitals (Private Sector)	25	50	48	110
Nursing and Residential Care Facilities	22	45	43	99
Retail Stores - General Merchandise	22	44	42	98
Retail Stores - Food and Beverage	21	42	40	93
Ambulatory Health Care	19	38	37	84
Home Health Care Services	19	38	37	85
Individual and Family Services	15	32	31	70
Retail Stores - Motor Vehicle and Parts	13	27	26	61
Civic, Social, Professional and Similar Organizations	13	27	26	59
All Other Industry Categories	205	419	403	930
Total	**443**	**903**	**868**	**2,004**

Sources: IMPLAN and Author's Calculations

The impacts generated by additional household income could provide new or expanded business opportunities within local communities. However, any use of the figures in Table 3.2 should be approached with caution. As previously noted, these estimates are based on assumptions tied to future household income distributions and consumer expenditure patterns. Furthermore, these figures are also subject to several other caveats:

- Importantly, these figures are not derived from specific estimates of St. Croix County household expenditures. The figures are based on typical expenditures for households within different income ranges. Accordingly, local spending patterns may differ somewhat

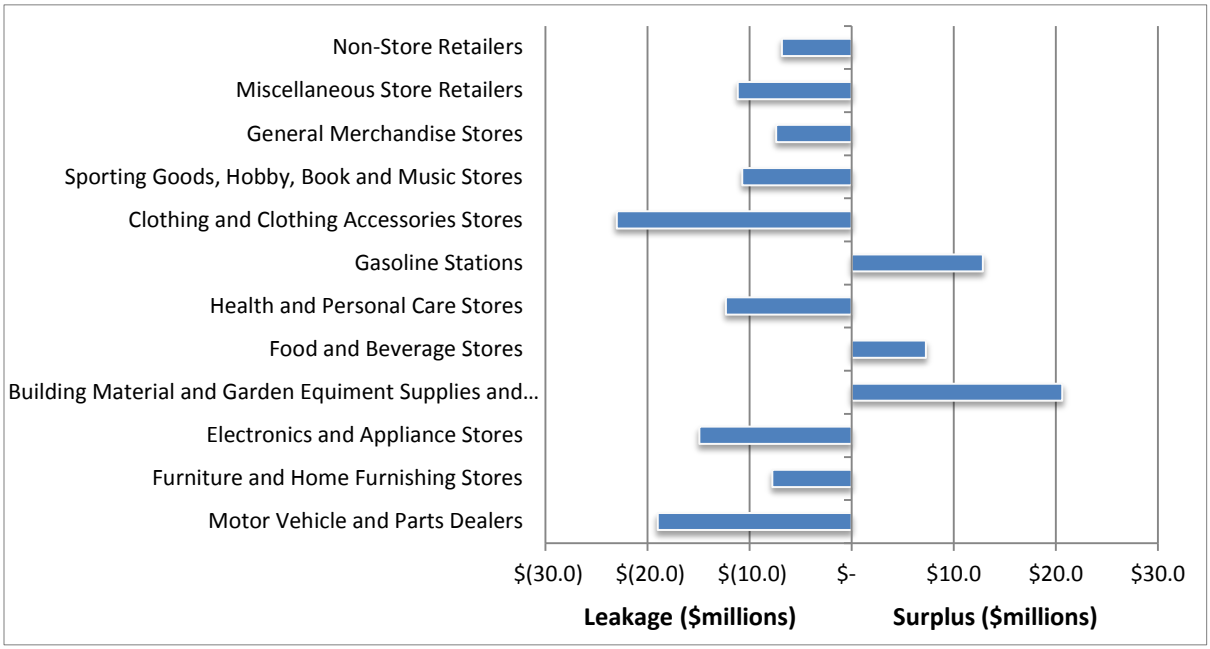
- *The estimates do not predict when an economic impact will occur in a community.* Instead, the impacts arising from household income changes will occur at some non-specific time in the future. This

characteristic of I-O modeling is particularly important for this analysis as the estimates are based on projected income changes to the year 2025. The actual income generated by new households will be added to the region in an incremental manner over the coming decade;

- The figures do not distinguish between full-time and part-time employment (all jobs are counted equally). These differences may be particularly important for evaluating impacts in industries more reliant on part-time employment;

- The impacts are subject to local characteristics that may not be captured in the input-output model used in this analysis. For instance, the employment impacts attributed to new Corridor Community household income may not actually occur in Corridor Communities. Commuting and shopping patterns throughout St. Croix County suggest that impacts could be scattered in other communities. Furthermore, the model may not account for local retail conditions. While input-output models can estimate the shares of retail purchases made within the local economy, these models may not always reflect local conditions. For instance, a number of retail categories in St. Croix County suggest high levels of leakage, or potential retail expenditures leaving the county and made elsewhere (Figure 3.2).

Figure 3.2 – Retail Surplus and Leakage Estimates for St. Croix County (2011)



Source: Deller, 2012

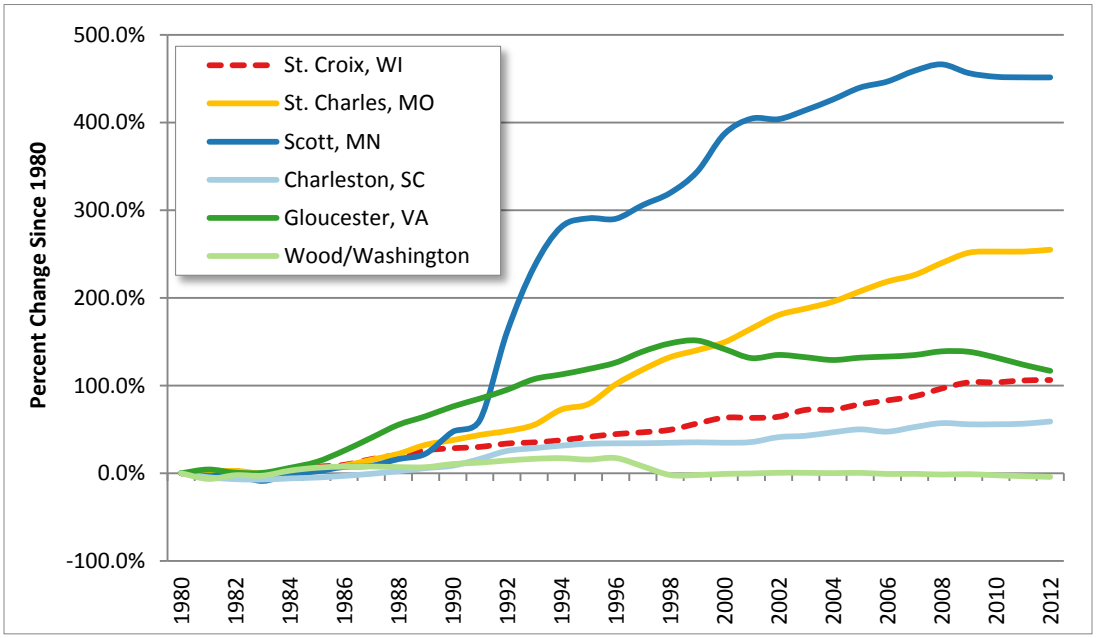
The retail surplus-leakage conditions in St. Croix County raise a broader issue about new access created by the River Crossing. While the completed bridge will create improved access to the metro area for commuters and businesses, it will also increase access to competition. That is, it will allow St. Croix County residents and businesses additional access to commercial centers across the river. Consequently, these transportation improvements could help to eliminate a travel barrier that might partially protect local businesses from competition (Boarnet and Haughwout, 2000).

A Note on Fiscal Impacts

Population and economic growth certainly will create employment and income impacts for St. Croix County. However, these economic impacts will also generate fiscal impacts, or changes to government revenues and expenditures. New residents or businesses can expand the local tax base, but will also create additional demand for protective services, school districts, or physical infrastructure. The challenge for local communities is to balance the new revenues and costs created by future growth.

As an example of how population growth affects demand for public services, consider the changes to local government employment levels found in the comparison counties examined in Section 1 (Figure 3.3). Local government employment includes employees of school districts, protective service units, public works departments, general public administration and other local institutions. In lieu of government expenditure figures for each comparison area, local government employment provides a proxy for changes in public service demand. Not surprisingly, growth in local government employment between 1980 and 2012 largely mirrors the population growth trends found each of these areas.

Figure 3.3 – Percent Change in Local Government Employment 1980 to 2012 for Selected Counties

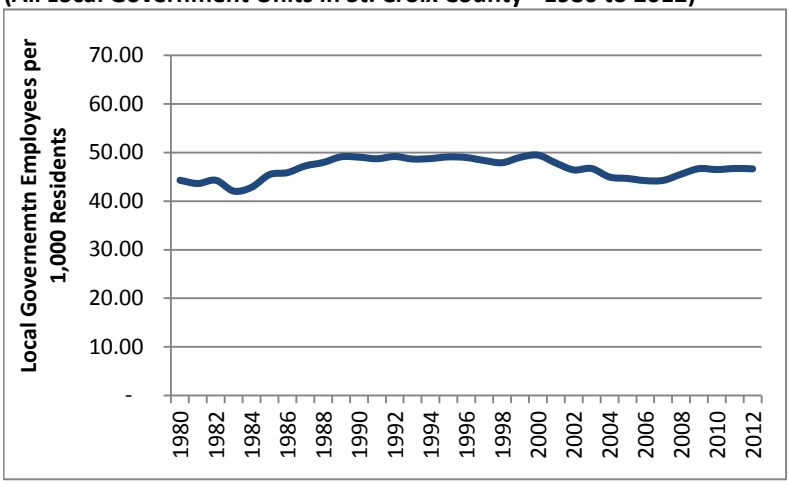


Sources: Bureau of Economic Analysis and Author's Calculations

Both population and local government employment growth rates are particularly prevalent in Scott County, Minnesota. For example, the Shakopee School District within Scott County has added 50 to 60 new teachers a year over the past 15 years (Whylly, 2014). While Scott County's growth in local government employment has been sizeable, future demand for public services in St. Croix County is yet to be determined. That said, the number of local government employees per capita in St. Croix County has remained remarkably consistent. Over the past few decades, the county has maintained 45 to 50 local government employees for every 1,000 residents (Figure 3.4). *Again, these figures include local government employees across all municipalities in St. Croix County, not just county government itself.*

Again, local government employment is only a proxy for local government expenditures. Specific needs will likely vary by community according to future levels of development and the current capacities of local government services. *Subsequently, communities should consider comparing the anticipated costs attached to a new development in conjunction with any new revenues it generates.*

Figure 3.4 - Number of Local Government Employees per 1,000 Residents (All Local Government Units in St. Croix County - 1980 to 2012)



Sources: Bureau of Economic Analysis and Author's Calculations

New Residents and Entrepreneurial Development

Economic development initiatives are traditionally segmented into attraction, retention, expansion and start-up activities. Attraction involves economic development organizations or other entities trying to entice new businesses (or other forms of capital) to move to their community from elsewhere. Retention activities intend to help existing firms remain in the community or maintain current employment levels. Initiatives surrounding expansion attempt to help firms grow revenues or jobs. Finally, start-up strategies support the formation of new firms or enterprises.

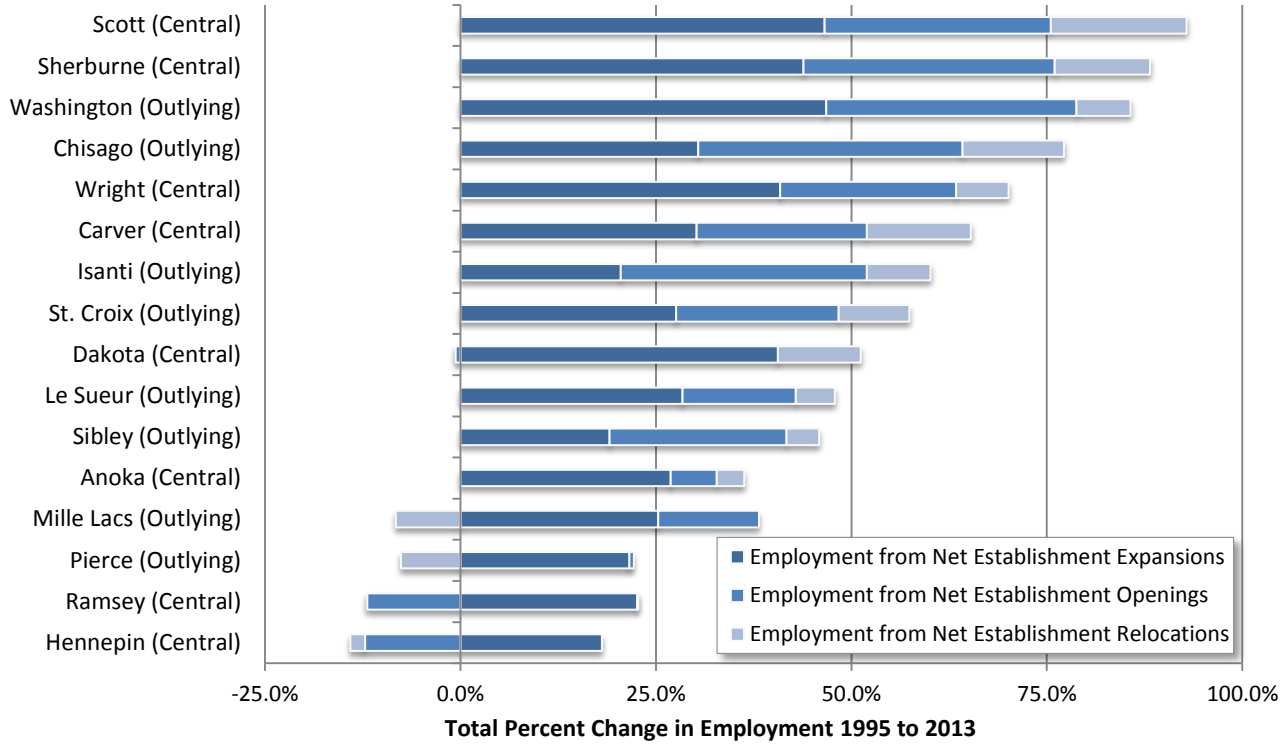
Communities often engage in one or all these activities. Some communities devote significant resources to industry attraction in an appeal to firms looking to relocate or build new facilities in their jurisdiction. Other communities may emphasize business retention activities that attempt to maintain economic activity at existing businesses. However, few communities prioritize business expansion and start-up activities through the development and support of entrepreneurs. Marginal efforts to support entrepreneurial development are particularly important given the role of industry expansion and start-ups in employment growth. As an example, consider employment change within counties located in the Minneapolis-St. Paul-Bloomington metro area (Figure 3.5). Job growth in these counties can be segmented into three components of change:

1. *Net establishment openings* - Jobs in establishment openings minus jobs in establishment closings;

2. *Net establishment expansions* - Jobs in establishment expansions minus jobs in establishment contractions;

3. *Net establishment relocations* - Jobs in establishments moving into a region minus jobs in establishments moving out of a region;

Figure 3.5 – Components of Employment Growth for Minneapolis-St. Paul-Bloomington MSA counties (1995 to 2013)



Sources: National Establishment Time Series Database and Author's Calculations

The data in Figure 3.5 show that establishment expansions and net openings *by far* contribute the greatest shares of new jobs in most metro area counties.[34] These trends are also found nationally in the 15 states with the fastest employment growth rates. Employment from net openings does involve some level of industry attraction, but a large share is also from endogenous new start-ups. In contrast, employment attributed to net relocations provides only minor influences on new employment in some counties, with no contributions in others. While these figures offer just one perspective, additional research shows similar links between economic growth and business start-up and expansion activity across the rural-urban continuum[35]

If business expansions and openings are in fact the drivers of job growth, why do many communities have a reluctance to emphasize entrepreneurial support? In short, developing initiatives and policies to further entrepreneurship often entail significant local challenges. Specific concerns include those outlined by Markely et al (2005): [36]

[34] While 2012 provides the most recent data available, the period between 1995 and 2012 provides a relevant timeframe for exploring job growth dynamics as it includes periods of rapid job growth, tepid employment changes and steep job declines.

[35] Some examples include Acs and Armington (2003); Walzer, Athiyaman and Hamm (2007); and Glaeser, Kerr and Kerr (2012);

[36] Some of the information in this discussion of entrepreneurship is based on previous research conducted by the author and published elsewhere.

- Communities frequently face a shortage of institutional support for economic development strategies rooted in entrepreneurship;
- Policies that effectively encourage the development of entrepreneurs are well not understood, particularly at the local level;
- Similarly, there are limited examples of comprehensive state and local strategies that can serve as models for communities seeking to support entrepreneurs;
- The outcomes of entrepreneurship tend to be incremental and may not be immediately visible to funders, taxpayers or elected officials;

Given that business expansions and start-ups are important sources of economic growth, how does the St. Croix River Crossing create new opportunities for development entrepreneurs in the region? As noted earlier, the St. Croix River Crossing will help facilitate future population growth into the county. Many of these new residents could be potential or nascent entrepreneurs who are looking for support in starting a new business venture. *Providing the appropriate assistance to these individuals could create new business opportunities for local communities rather than having these individuals look elsewhere to locate their business.* As discussed below, the St. Croix River Crossing will also improve access to the metro area's labor force and commercial markets while also creating additional access to the region's labor force. These improvements, along with the additional household income generated by new households, could also encourage establishment start-ups as well as create expansion opportunities for some existing businesses in the region.

Certainly, communities and economic development organizations can support entrepreneurial development by providing technical assistance, access to capital, workforce development, and built infrastructure (roads, water, energy and broadband access). However, the need for these types of assistance will likely vary by entrepreneur and communities should not follow a uniform approach to providing support. Furthermore, these features are necessary and important, but are not necessarily the most critical components in developing local entrepreneurs (Yenerall 2008).

Instead, communities and economic development organizations can broadly support entrepreneurship by creating an ecosystem where latent, new and existing entrepreneurs can succeed. In other words, the region needs to continually enhance its *entrepreneurial culture*. An entrepreneurial culture can be broadly described as one in which a community is aware of the importance of entrepreneurs to the local economy. It is open to new and different ideas. It accepts failure. It is willing to experiment. Ultimately, it encourages and supports a breadth of entrepreneurs.

Importantly, the creation of an entrepreneurial culture and support environment does not explicitly depend on infrastructure and financing. More specifically, Hustedde (2007) and Macke et al (2014) maintain that an entrepreneurial culture and support system are fostered by:

- *Welcoming fresh ideas and embracing the potential diversity of entrepreneurs* – Communities often have preconceptions about entrepreneurs. In reality, not all entrepreneurs have the same vision or goals for starting a firm. They may have untested ideas. Some entrepreneurs are interested in

generating high-growth companies. Other individuals may desire a limited enterprise that supports a specific lifestyle. A nascent entrepreneur may have never started a business before, while another may be a serial entrepreneur who has started many companies. Fostering an entrepreneurial culture and support system requires understanding the needs and motivations of many entrepreneurial types Welcoming new ideas is particularly important given that many potential entrepreneurs could be new residents in a community that are unfamiliar with local culture;

- *Creating opportunities to learn, question and think differently about entrepreneurship* - Too often in communities, entrepreneurship outreach and learning are delivered in a reactionary manner. For instance, individuals may be introduced to entrepreneurship in response to an economic shock such as a plant closing or mass layoff. Learning opportunities should occur proactively throughout the community and can start with young residents rather than waiting until they become adults. Importantly, learning opportunities are not just about developing existing and prospective entrepreneurs. Not everyone should be an entrepreneur and outreach also should stress how entrepreneurship is not a good fit for many people; [37]

- *Mobilizing resources for entrepreneurs* – As previously mentioned, resources can include technical assistance, access to capital, workforce development, broadband, business spaces, business support services, places to network and other forms of support. Some of these resources can be provided locally, but communities can also provide connections to regional or statewide assistance when appropriate;

- *Cultivating networks for entrepreneurs to thrive* – Entrepreneurs learn from each other, whether or not they are engaged in the same industry or produce a similar product. Connections can be fostered through entrepreneur networks, peer groups, mentors and advisory boards. These networks can occur in physical and virtual spaces;

- *Focusing on assets instead of deficits* – Too often communities focus on what is missing rather than what is present. Potential entrepreneurs in Corridor Communities and St. Croix County have access to many competitive assets including high levels of human capital (discussed below), a growing consumer market, local university resources, a robust highway transportation system, access to a large hub airport and other comparative advantages;

- *Fostering entrepreneurial leaders and advocates* – Communities need individuals and organizations who understand entrepreneurs and who can advocate for their needs. These leaders also tolerate failure and celebrate success;

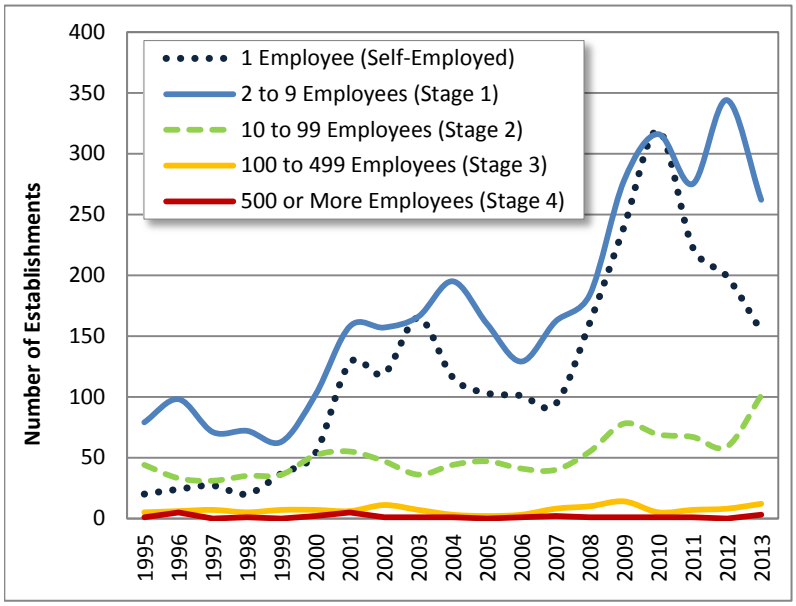
- *Building a shared vision about entrepreneurship* – Placing an emphasis on entrepreneurs does not mean that industry attraction or other economic development strategies should be abandoned. Instead, communities in the region need a shared understanding about the importance of creating new firms and helping existing firms grow;

[37] Economic environments, family backgrounds, employment histories, organizational experiences, social networks, and personality traits all affect the probability of someone acting entrepreneurially (Rauch and Frese, 2000). Some of these factors are deeply engrained in individuals and in societies and may vary within the region. However, some of these factors can be influenced in manners that grow a community's pipeline of entrepreneurs.

As mentioned, providing support for business expansions and start-ups does not mean that communities should discard industry attraction and retention strategies. Attraction and retention initiatives are part of a well-rounded economic development strategy. In fact, initiatives offered to support local entrepreneurs may also serve to assist new firms re-locating to the region. This observation is especially true when considering movements among firms of various sizes or stages.

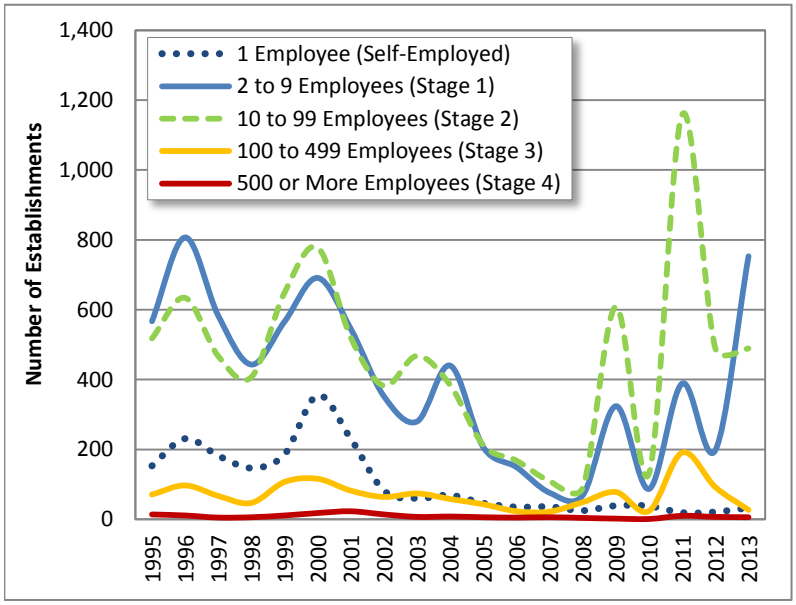
The Edward Lowe Foundation broadly classifies establishments according to five different stages. Firms in each of these stages are characterized by their employment size, but also according to their needs (Figure 3.8).[38] Most firms that relocate to the Minneapolis-St. Paul-Bloomington MSA from another location are small in terms of total employment (Figure 3.6). Between 1995 and 2013 the vast majority of establishments that relocated to the metro area had fewer than 100 employees. Indeed, most of these establishments accounted for fewer than 10 employees. The relocation of large firms is a somewhat rare occurrence.

Figure 3.6 - Establishments Relocating to the Minneapolis-St. Paul-Bloomington MSA by Employment Size (1995 to 2013)



A somewhat similar pattern is apparent among so-called "expansion start-ups" in the metro area (Figure 3.7). Expansion start-ups are establishments that were spun off by existing businesses. These firms are new locations, but are tied to some other parent firm or company. Again, the vast majority of expansion start-ups occurring in most years are categorized as Stage 1 or Stage 2 firms (i.e. 1 to 9 employees and 10 to 99 employees). Expansion start-ups for establishments of larger sizes do occur, but are somewhat more limited.

Figure 3.7 - Expansion Start-ups in the Minneapolis-St. Paul-Bloomington MSA by Employment Size (1995 to 2013)



Source: National Establishment Time Series Dataset Extracted from YourEconomy.org

[38] Not every establishment in a given stage will have the same requirements. These broad characterizations are used to help communities understand some of the distinct challenges and differences often facing firms of various sizes or at different points in their growth trajectory.

Figure 3.8 – Business Stages

1. **Self-Employed (1 employee) -** Includes small-scale business activity that can be conducted in homes as well as sole proprietorships;

2. **Stage 1 (2-9 employees) –** Includes partnerships, lifestyle businesses and startups. This stage is focused on defining a market, developing a product or service, obtaining capital and finding customers;

3. **Stage 2 (10-99 employees) -** At this phase, a company typically has a proven product, and survival is no longer a daily concern. Companies begin to develop infrastructure and standardize operational systems. Leaders delegate more and wear fewer hats;

4. **Stage 3 (100-499 employees) -** Expansion is a hallmark at this stage as a company broadens its geographic reach, adds new products and pursues new markets. Stage 3 companies introduce formal processes and procedures, and the founder is less involved in daily operations and more concerned with managing culture and change;

5. **Stage 4 (500 or more employees) –** By Stage 4, an organization dominates its industry and is focused on maintaining and defending its market position. Key objectives are controlling expenses, productivity, global penetration and managing market niches.

Source: Edward Lowe Foundation/YourEconomy.org

The metro area's establishment relocation trends and expansion start-up figures suggest several important conclusions for St. Croix County and the Corridor Communities. First, the relocation and spinoffs of large firms are relatively uncommon. This observation is true both for the metro area and the State of Wisconsin (Deller and Conroy, 2014). Moreover, the relatively few large relocations and expansion start-ups that do occur are likely sought after by hundreds communities throughout the metro area. *While the River Crossing might help create access for additional sites for these firms, competition is still fierce.*

Second, the relocation and expansion start-up trends among smaller firms should be part of a larger discussion that focuses on the contributions of Stage 1 and Stage 2 firms. In reality, businesses in these categories are drivers of employment growth in St. Croix County and the national economy. While aggregate employment within these stages has varied over time, they have been a long-term source of employment increases (See Appendix B). In fact, employment in Stage 4 establishments (i.e. 500 or employees) has declined gradually since 2001. Furthermore, the number of employees found in Stage 3 establishments has remained largely flat.

The employment contributions of Stage 1 and Stage 2 establishments suggest that growth in the region is likely to occur among smaller firms. While the River Crossing could spur the relocation or expansion of larger businesses, in reality establishment relocations; new business start-ups; and business expansions tend to occur more frequently in establishments employing 1 to 9 employees or 10 to 99 employees. Consequently, both St. Croix County and Corridor Communities should be prepared to offer sites and buildings that can accommodate a variety of business types.

3.2 - Other Locational Advantages

As noted in Section 1, the connections between economic growth and transportation infrastructure can also be viewed through the lens of location theory. From a transportation infrastructure perspective, location theory suggests that firms will choose a geographic location along transportation corridors that can lower costs. These costs are often thought of as the expenditures made by firms that are shipping goods to final markets. However, costs could also include how transportation infrastructure can increase access for customers traveling to an establishment (such as a retailer). Furthermore, location theory may consider how transportation infrastructure influences a firm's access to the region's labor force.

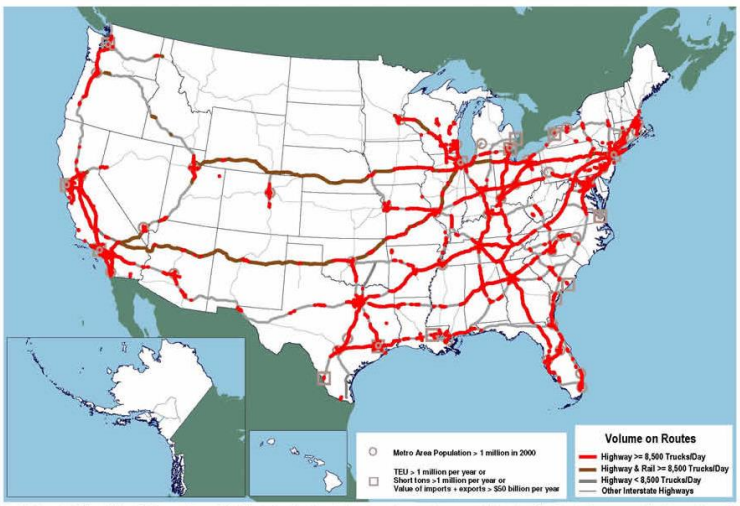
In truth, transportation infrastructure is but one of many factors that influence business location decisions. Consequently, the importance of transportation infrastructure as a location factor likely varies across time, space and industry sector. The challenge is determining how St. Croix County and Corridor Communities can best leverage the improved access offered by the River Crossing. This is especially true given that a major transportation corridor in the form of Interstate 94 is approximately 10 miles to the south.

River Crossing, Freight Transportation and Industrial Cluster Connections

Freight transportation can be considered from the perspectives of inter- and intra-regional access. In other words, freight can be transported within the region or can leave the region for more distant markets. In fact, the same highway investments that reduce long-distance transportation costs are also used for transporting goods within a metro area (Boarnet and Haughwout, 2000). Consequently, evaluating the freight transportation implications of the River Crossing requires understanding both long and short distance freight movements.

In reality, the major freight corridor from the Minneapolis-St. Paul-Bloomington metro area travels southeast rather than west (Map 3.1). For those firms who primarily ship to western markets, locations on the western portion on the metro area do not require traversing the urbanized area and likely provide greater transportation advantages. Consequently, the River Crossing itself does not necessarily provide a direct comparative advantage for St. Croix County from an inter-regional freight transportation perspective. Current or future Wisconsin-based firms that are located near the River Crossing and are

Map 3.1 – Major Freight Corridors



Note: Highway & Rail is additional highway mileage with daily truck payload equivalents based on annual average daily truck traffic (2011) plus average daily intermodal service on parallel railroads. Average daily intermodal service is the annual tonnage moved by container-on-flatcar and trailer-on-flatcar service divided by 365 days per year and 16 tons per average truck payload.
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, 2013

shipping to eastern markets will not need to move goods across the River Crossing. Instead, Minnesota firms shipping to markets in the east are more likely to benefit from the improved access.

While the River Crossing may not create a direct comparative advantage for inter-regional freight transportation in Wisconsin, its impact on inter-regional shipping could create other benefits for St. Croix County. The Crossing will alleviate local traffic congestion somewhat which could help commuters and commercial shippers alike. Furthermore, any new jobs created in Minnesota as a result of the River Crossing could create employment opportunities for St. Croix County residents. This is particularly true given the commuting patterns noted in Section 2. Instead, greater freight transportation benefits may arise for those Wisconsin firms who rely on intra-regional access.

Intra-regional freight shipments across the St. Croix River Crossing will be made primarily by truck. Certain types of industries tend to be more reliant on truck transportation than others. Table 3.3 depicts those industry categories that on average make the largest share of shipments by truck only.[39] As measured by total value, all of the industries depicted in Table 3.3 move at least 83 percent of their shipment values completely by truck. Some of these categories could include manufacturing firms who provide just-in-time delivery to regional customers, such as food manufacturers and metal and plastic goods fabricators. Others categories include wholesalers who serve regional markets. Consequently, these categories of businesses may benefit from improved access offered by the River Crossing.

Table 3.3 – Industries with the Highest Share of Shipments made by Truck (Based on Value of Shipments)

NAICS	Industry	Value of All Shipments (Millions $)	Percent of Total Shipment Values
4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers	$99,035	98.9%
45431	Fuel dealers	$37,712	98.7%
4244	Grocery and related product merchant wholesalers	$554,608	97.7%
312	Beverage and tobacco product manufacturing	$121,817	93.8%
4233	Lumber and other construction materials merchant wholesalers	$143,970	93.8%
337	Furniture and related product manufacturing	$78,099	93.5%
4247	Petroleum and petroleum products merchant wholesalers	$561,488	91.9%
4235	Metal and mineral (except petroleum) merchant wholesalers	$176,011	91.8%
326	Plastics and rubber products manufacturing	$191,748	91.6%
311	Food manufacturing	$533,628	91.1%
327	Nonmetallic mineral product manufacturing	$113,567	91.1%
313	Textile mills	$32,646	90.8%
4931	Warehousing and storage	$815,197	90.2%
321	Wood product manufacturing	$89,646	88.8%
4246	Chemical and allied products merchant wholesalers	$104,847	87.4%
4249	Miscellaneous nondurable goods merchant wholesalers	$186,678	86.3%
322	Paper manufacturing	$147,657	84.5%
314	Textile product mills	$23,887	84.0%
424	Merchant wholesalers, nondurable goods	$1,988,373	83.3%
332	Fabricated metal product manufacturing	$280,823	83.0%

Source: 2007 Commodity Flow Survey (CFS)

[39] Shipments can also be measured by tonnage.

Industries that rely on truck shipments can also be examined by the average shipping distance for their products (Table 3.4). Many shipments by wholesale industry categories travel relatively short distances. Shorter shipment distances are also found in some manufacturing categories including food manufacturing, beverage manufacturing, and non-metallic mineral product manufacturing (such as gravel or concrete). Again, these types of industries are those that might benefit from the River Crossing.

Table 3.4 - Industries with the Shortest Average Shipping Distances made by Truck

NAICS	Industry	Value of All Shipments (Millions $)	Average Shipment Distance
45431	Fuel dealers	$37,712	22
5111	Newspaper, periodical, book, and directory publishers	$26,672	35
4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers	$99,035	39
212	Mining (except oil and gas)	$43,325	42
4247	Petroleum and petroleum products merchant wholesalers	$561,488	48
4244	Grocery and related product merchant wholesalers	$554,608	83
4245	Farm product raw material merchant wholesalers	$79,392	96
4233	Lumber and other construction materials merchant wholesalers	$143,970	99
327	Non-metallic mineral product manufacturing	$113,567	102
4237	Hardware and plumbing merchant wholesalers	$91,046	103
324	Petroleum and coal products manufacturing	$133,904	121
4238	Machinery, equipment, and supplies merchant wholesalers	$233,192	122
312	Beverage and tobacco product manufacturing	$121,817	125
424	Merchant wholesalers, nondurable goods	$1,988,373	128
4235	Metal and mineral (except petroleum) merchant wholesalers	$176,011	130
4246	Chemical and allied products merchant wholesalers	$104,847	136
4249	Miscellaneous nondurable goods merchant wholesalers	$186,678	148
4236	Electrical and electronic goods merchant wholesalers	$179,186	157
42	Other Wholesale trade	$3,567,654	165
311	Food manufacturing	$533,628	170

Source: 2007 Commodity Flow Survey (CFS)

Corridor Communities and St. Croix County may also consider how the River Crossing creates transportation access, improved connections, or additional sites for businesses found in some of the region's key *industry clusters* .Over the past two decades, industry cluster initiatives have become a popular means for leveraging competitive assets in communities and regions. While a more in-depth discussion is provided below, industry clusters are geographically-concentrated businesses that are connected through 1) the products they produce; 2) the supplies, services, infrastructure and technologies they require; and 3) a common labor force. In other words, industry clusters are "groups of industries closely related by skill, technology, supply, demand, and/or other linkages" (Delgado, Porter and Stern, 2014, p. 2).

As an example of an industry cluster, consider agriculture, food and beverages. The food manufacturing portion of this cluster exhibits geographic concentrations of establishments throughout the United States, including a relative concentration the region Minneapolis-St. Paul-Bloomington metro area (Map 3.2). Furthermore, the agriculture, food and beverage cluster is tied by connections to many suppliers in terms of agricultural products, packaging, equipment, technical assistance, utilities and transportation (Figure 3.9). The cluster also depends on a specialized labor force and support organizations.

Map 3.2 – Food Manufacturing Establishment Concentrations (2013)

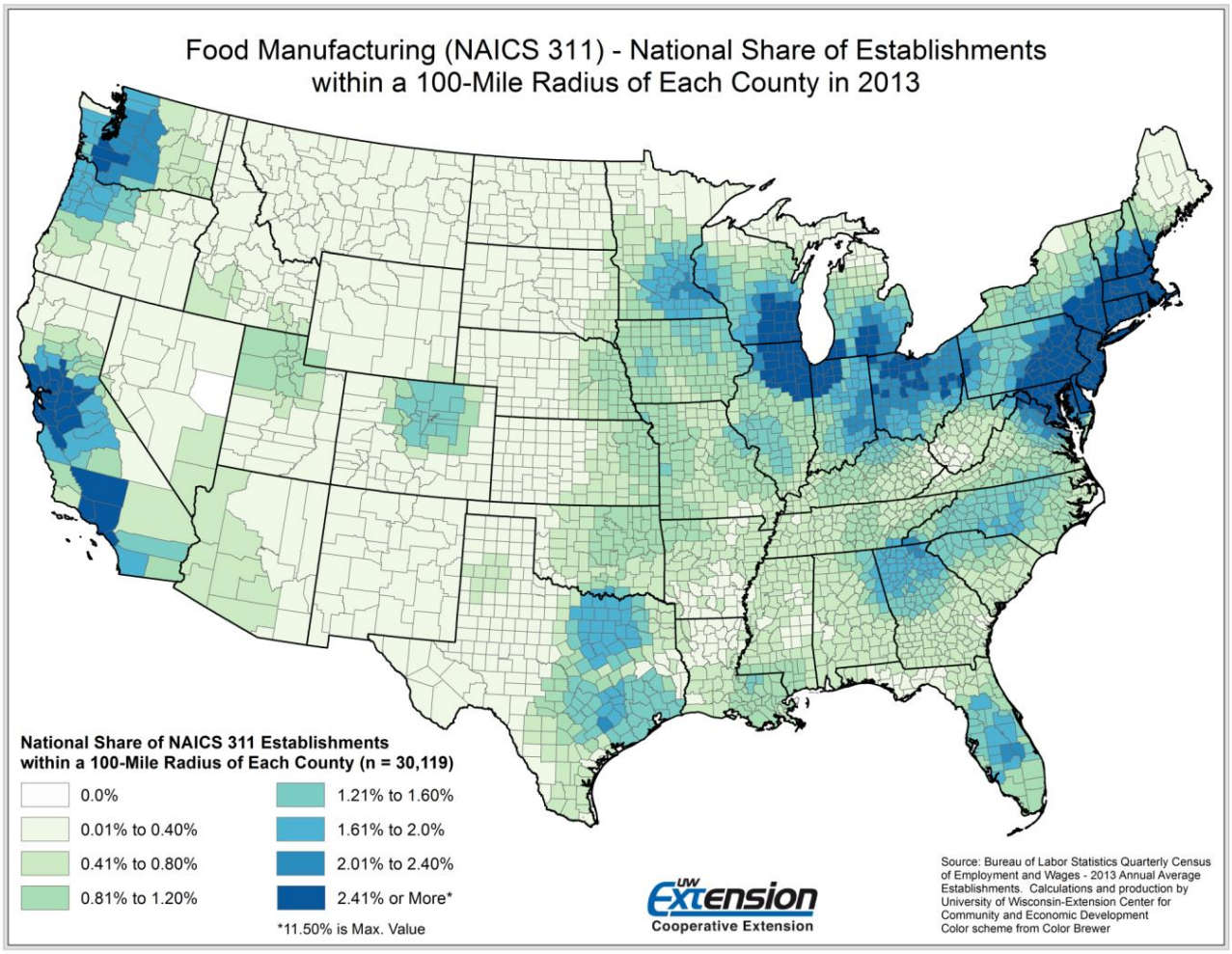


Figure 3.9 – Examples of Industries in the Agriculture, Food and Beverage Cluster

Agricultural Production

Oilseeds and Grains

Examples:

- Canola
- Soybeans
- Safflower
- Cottonseed
- Corn
- Oats
- Barley
- Wheat

Vegetable and Melons

Examples:

- Squash
- Melons
- Greens
- Cabbage
- Carrots
- Potatoes
- Beans
- Peppers

Fruits and Tree Nuts

Examples:

- Apples
- Cherries
- Pears
- Bananas
- Berries
- Citrus
- Almonds
- Walnuts

Other Crops

Examples:

- Sugar cane
- Sugar beets
- Maple syrup
- Herbs
- Spices
- Hops
- Spices

Beef, Poultry, Eggs and Pork

Examples:

- Beef cattle
- Veal calves
- Chickens
- Turkeys
- Ducks
- Pheasant
- Eggs
- Pigs

Dairy Producers

Examples:

- Dairy cattle and milk production

Seafood and Other Animal Products

Examples:

- Fish
- Shellfish
- Goats and goat milk
- Wild game
- Apiculture
- Bison
- Sheep milk

Food and Beverage Manufacturing

Grain and Oilseed Milling

Examples:

- Flour
- Malt
- Rice
- Corn Syrup
- Starches
- Oils
- Breakfast cereals

Sugar & Confectionery Products

Examples:

- Cane sugars and syrups
- Molasses
- Chocolate bars
- Cocoa products
- Candies and gum
- Granola Bars

Dairy Products

Examples:

- Fluid Milk
- Cheese
- Butter
- Whey & Casein
- Yogurt
- Ice Cream
- Infant Formula

Animal Processing

Examples:

- Fresh Beef, Pork, Lamb, or Poultry
- Sausages
- Bacon and Ham
- Animal fat and oil rendering
- Cured meats

Fruit and Vegetable Preserving & Specialty Foods

Examples:

- Fruit Juices
- Frozen/canned vegetables
- Frozen Dinners
- Pizzas
- Tomato and Pasta Sauces
- Jams and Jellies
- Soups

Seafood and Other Animal Products

Examples:

- Fresh fish
- Frozen seafood
- Pre-prepared seafood dinners
- Canned seafood
- Seafood soups

Bakery and Tortilla Products

Examples:

- Fresh and Frozen Breads
- Tortillas
- Pies and cakes
- Pastries
- Fresh or dried pasta
- Cookies and crackers

Other Food

Examples:

- Chips
- Coffee roasting
- Spices and extracts
- Sauces and dips
- Mayonnaise
- Fresh prepared vegetables

Soft Drinks and Ice

Examples:

- Soft drinks
- Flavored drinks
- Iced tea
- Bottled water
- Ice

Breweries, Wineries and Distilleries

Examples:

- Beer
- Wine
- Cider (alcoholic)
- Distilled liquor
- Packaged mixed drinks (alcoholic)

Support Services and Distribution

Packaging Materials

Examples:

- Plastic, metal and glass containers
- Paperboard boxes
- Plastic films and bags
- Printing services

Machinery and Equipment

Examples:

- Food product machinery
- Packaging machinery
- Conveyors and handling equipment
- Farm equipment
- Equipment repair

Professional and Technical Services

Examples:

- Soil sciences
- Accounting
- Marketing
- Food testing
- Engineering and design
- Veterinary

Utilities

Examples:

- Electrical power generation
- Natural gas distribution
- Water and wastewater

Distribution

Examples:

- Farm, grocery and related wholesale
- Truck and rail transportation
- Logistics services
- Warehousing

Regional transportation infrastructure is often viewed as a key component to the competitiveness to many industry clusters. Specifically, efficient and cost-effective transportation can help increase productivity by fostering regional supply chains; providing access to labor; and moving goods to markets. While many of these benefits are also offered to individual firms, clusters have the added benefit of regional concentration, or agglomeration, which may extend additional benefits tied to transportation infrastructure.[40]

A number of key industry clusters have already been identified for the region. The *Minneapolis-St. Paul Regional Cluster Competitiveness Study* (2013) authored by the University of Minnesota identifies 11 potential clusters for the region, as well as several of emerging clusters (Figure 3.10). Each cluster includes a set of core industry categories; the identification of related and supporting industries; and a brief cluster competitive analysis. The descriptions serve as a starting point for understanding some of the potential opportunities and challenges facing these clusters.

Figure 3.10 – Regional Industry Clusters

- Medical Devices;
- Lighting and Electrical Equipment;
- Analytical Instruments;
- Processed Food;
- Metal Manufacturing;
- Distribution Services, Transportation and Logistics;
- Financial Services;
- Publishing and Printing;
- Production Technology;
- Information Technology;
- Management of Companies

Source: Munnich, Dworin, Tilahun and Schmit (2013)

Communities and local economic development organizations will need to decide which metro area clusters to pursue (if any). If clusters are pursued, more specific details should be learned about the locational requirements of cluster firms. *Indeed, the prior discussion of intra-regional access suggests processed food, metal manufacturing, production technology, and distribution services may benefit from sites created by the River Crossing as well as the improved intra-regional access it creates*. However, deeper analyses of clusters may uncover other opportunities to leverage advantages of the Crossing. More specific questions to consider include:

- *Human capital* – What are the human capital needs of the cluster? Does the River Crossing create improved access to labor? Are there opportunities to develop specialized training programs for the cluster's major occupations? Are there opportunities to better partner with workforce development intermediaries? Do nascent entrepreneurs need mentoring or other support?

- *Supply chain issues* – Are primary inputs and primary support industries available locally or do they require importation from outside the region? Are there notable gaps in industry supply chains? Do logistics or transportation-related opportunities or challenges exist? Could these challenges improved by the Crossing?

[40] Empirical evidence on the ability of clusters to increase competitiveness, generate job growth, and produce new economic activity is being actively debated among researchers (for examples see: Palazuelos 2005; McDonald et al 2007; Motoyama 2008; Woodward 2012; and Delgado et al 2014). *Nonetheless, clusters remain beneficial as a framework for analysis as they can identify the potential connections and synergies among firms in the region.*

- *Capital availability* – How well does the region's lenders understand the capital needs of the industry? Do local lenders meet the needs for various forms of capital required at different business stages?

- *Intensity of relationships and competition* – Do firms in the cluster already collaborate to some degree or does existing competition preclude cooperation? Are there opportunities to connect with other organizations or individuals not traditionally associated with the cluster?

- *Innovation* – How does the innovation process within the cluster operate? Are there greater opportunities to partner with other firms or educational institutions on technology transfer or research?

- *Shared vision and leadership* – If they choose to do so, how can firms develop a collective identity, create a plan, or determine shared goals for the cluster? Are there individual leaders or institutions that can maintain a cluster's collective competitiveness and keep it organized?

These are detailed inquiries that will require more detailed analysis than can be provided here. However, the University of Wisconsin-Extension can help answer some of these questions.

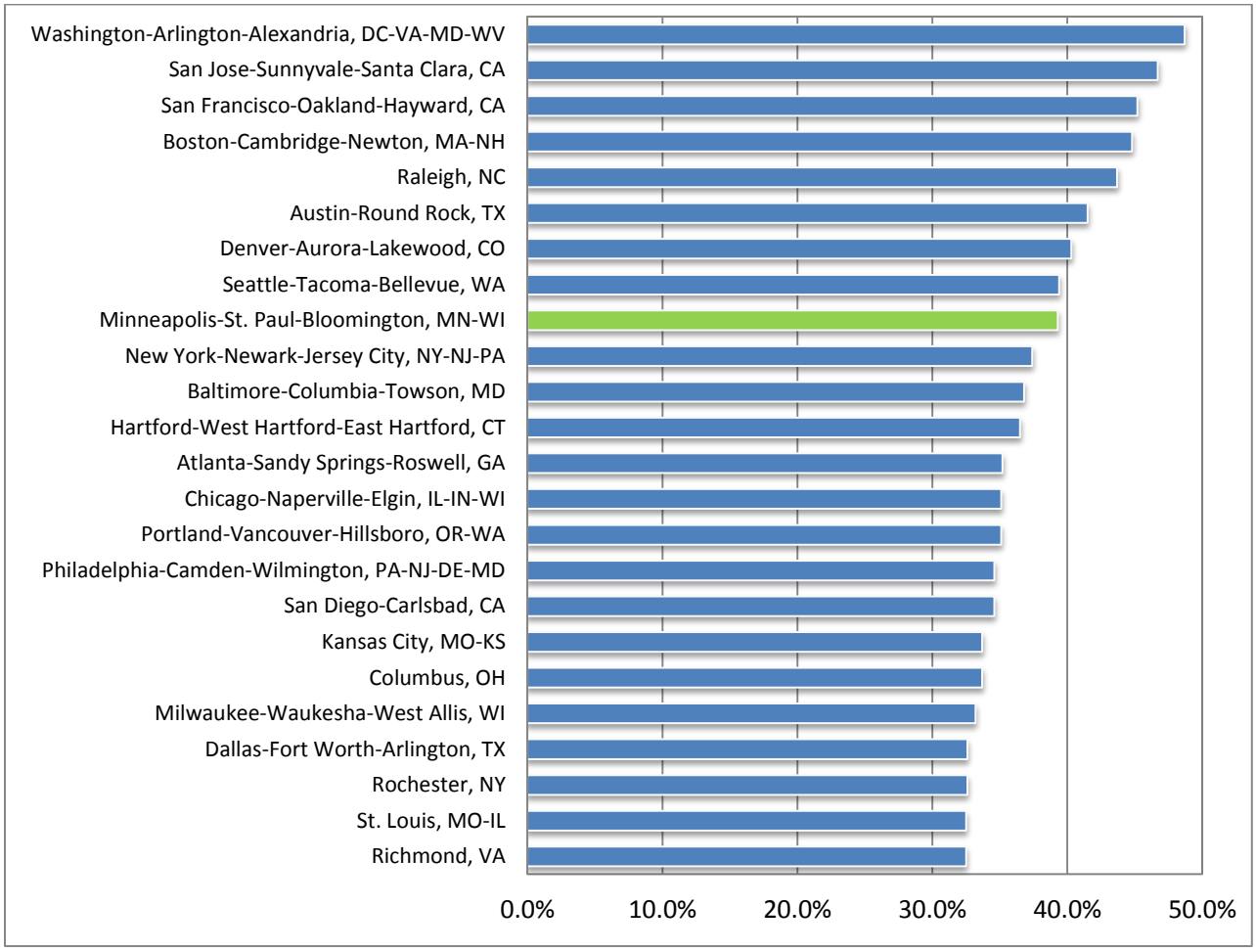
The River Crossing and Access to Human Capital

Human capital can be defined as the knowledge, skills and capabilities of the labor force. A significant amount of research finds that higher levels of human capital and labor quality are connected to outcomes such as greater employment growth rates and increased per capita incomes (Whitener and Parker 2007). In fact, it is likely that human capital is a more important factor in economic growth than access to transportation infrastructure. In particular, human capital is a local asset that can promote development through its impacts on productivity, providing opportunities to diversify the industrial base, and fostering innovation (Olfert and Partridge 2010; Gibbs 2005; Goetz and Rupasingha 2004)

Improved access for commuters also could provide better access to human capital and talent concentrations in the Twin Cities. It is important to remember that the River Crossing travels in both directions. As previously mentioned in Section 2, approximately 47 percent of the jobs held by Corridor community residents are located in Minnesota. However, only 10 percent of jobs located in the Corridor are filled by Minnesota residents.

One of the key assets of the metro area is its high level of educational attainment. As an example, consider the metro area's concentration of college graduates. The Minneapolis-St. Paul-Bloomington MSA has one of the highest shares of residents with a college degree among all large metro areas in the United States (Figure 3.11). The metro area also has concentrations and specializations in occupational clusters related to information technology; mathematics, statistics, data and accounting; managerial, sales, marketing and HR; engineering and related sciences; and other technology-based professions.

Figure 3.11 - Share of Residents with a College Degree – Top 25 Large Metro Areas



Source: U.S. Census Bureau American Community Survey and Author's Calculations

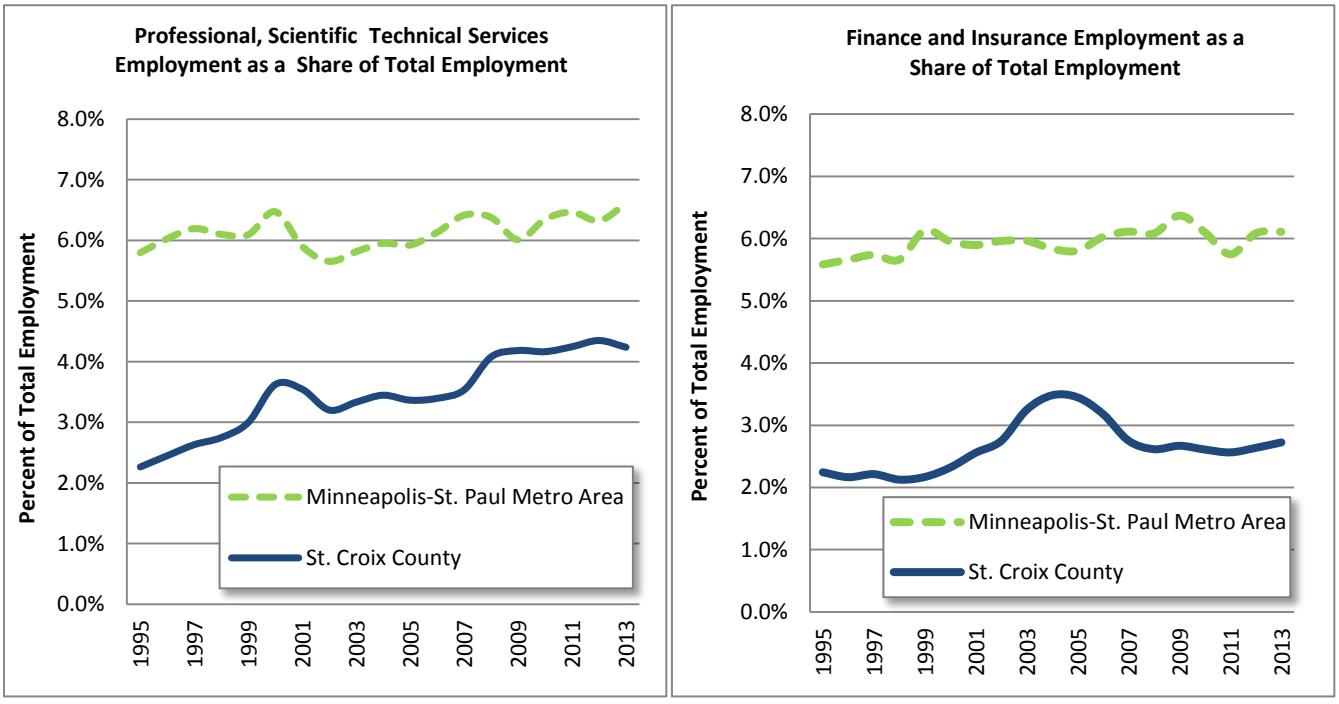
Some the region's college graduates are concentrated in the aforementioned industry clusters. Others are more broadly found in sectors related to professional, technical scientific services, and finance and insurance. While these two sectors now constitute a larger share of St. Croix County employment than twenty years ago (Table 3.5), their concentrations continue to remain below that of the metro area average (Figure 3.12). There are good reasons for these employment differences, but there may be an opportunity to build these industries locally through improved access to talent, available land, and lower costs of doing business created by the River Crossing.

Table 3.5 – Change in St. Croix County Annual Average Employment by Industry Sector (1994 to 2014)

NAICS	Industry	Total St. Croix County Employment		Employment Change	Total Share of St. Croix County Employment	
		1994	*2014*	*1994 to 2004*	*1994*	*2014*
11-21	Natural Resources	140	276	136	0.7%	0.9%
22	Utilities	52	84	32	0.3%	0.3%
23	Construction	769	1299	530	3.8%	4.1%
31-33	Manufacturing	6,118	6,377	259	30.1%	19.9%
42	Wholesale Trade	437	1,103	666	2.1%	3.4%
44-45	Retail Trade	2,478	3,948	1,470	12.2%	12.3%
48-49	Transportation and Warehousing	858	1,123	265	4.2%	3.5%
51	Information	198	262	64	1.0%	0.8%
52	Finance and Insurance	450	824	374	2.2%	2.6%
53	Real Estate and Rental and Leasing	132	147	15	0.6%	0.5%
54	Professional, Scientific and Technical Svcs.	487	1,268	781	2.4%	4.0%
55	Management Of Companies & Enterprises	114	195	81	0.6%	0.6%
56	Administrative Support & Waste Services	506	1,171	665	2.5%	3.7%
61	Educational Services	1,391	2,472	1,081	6.8%	7.7%
62	Health Care & Social Assistance	2,104	5,192	3,088	10.4%	16.2%
71	Arts, Entertainment & Recreation	350	505	155	1.7%	1.6%
72	Accommodation & Food Services	2,158	3,555	1,397	10.6%	11.1%
81	Other Services (Except Public Admin.)	489	865	376	2.4%	2.7%
92	Public Administration	1,088	1,377	289	5.4%	4.3%
99	Unclassified	8	0	(8)	0.0%	0.0%

Sources: Quarterly Census of Employment and Wages and Author's Calculations

Figure 3.12 - Employment Comparisons for Professional, Scientific and Technical Services and Finance and Insurance



Sources: Quarterly Census of Employment and Wages and Author's Calculations

3.3 - Recreational Development Opportunities

Communities across the rural-urban continuum have successfully leveraged outdoor recreation as an economic development strategy. This is also true in St. Croix County, as local recreational assets attract visitors, generate spending in local businesses and contribute to the area's quality of life. As with other sectors of the regional economy, the St. Croix River Crossing has an opportunity to influence recreational activity in Corridor Communities and the broader county. Accordingly, the following overview considers how the River Crossing could impact recreational development opportunities. A particular focus is placed on recreational uses related to multi-use trails and bicycling.

The River Crossing and Recreational Trail Use

As the popularity of walking, jogging, and bicycling has increased, the development of multi-use trails has arguably become the most popular means of supporting these recreational activities (Asabere and Huffman, 2009). The 4.7 mile bike and pedestrian trail loop constructed as part of the River Crossing builds on this trend and has an opportunity to create benefits for local residents. Certainly the development of recreational trails has potential implications for citizens' health and personal well-being. However, the development of multi-use trails can also generate an economic stimulus for local communities. More specifically, carefully-planned trails can utilize local land resources in a manner that provides additional income for current residents without jeopardizing the possibility of future income streams from other land uses (Kazmierski et al, 2008).

Recreational, multi-use trails can generate economic benefits in several manners. From a short-term perspective, the construction of bicycling and walking-related infrastructure creates economic impacts attributed to the labor income of construction workers and the purchases of materials used in these projects. For instance, Garrett-Peltier (2011) estimated the economic impacts of 58 different pedestrian and bicycle infrastructure construction projects across the United States. The analysis found that these projects supported an average of nine jobs per million dollars of construction costs. While the exact construction impact of the St. Croix River Crossing trail loop is unknown, it is likely to generate temporary benefits tied to local employment and income generation.

Other research considers how trail infrastructure can create economic benefits tied to property values. Some studies apply hedonic analysis to measure how proximity to a multi-use path impacts property values or sales prices.[41] Other analyses use a stated preference approach that asks home owners how the presence of a trail might influence their decision to buy a home. The results of these studies vary somewhat:

- In San Antonio, Texas home sales adjacent to trails were associated with a two percent price premium. Moreover, home sales adjacent to trails also having greenbelts had a five percent price premium (Asabere and Huffman, 2009);

[41] In the context of property valuations, hedonic analysis is a revealed preference approach to quantifying the relationship between a property's values and its characteristics. Certain physical characteristics and geographic locations may be valued by home owners more so than others. For instance, a greater square footage and a higher number of bathrooms may have a positive impact on home values, while the age of a home or its proximity to undesirable land uses may decrease a home's value.

- An analysis of the Little Miami Scenic Trail in southwest Ohio suggests that the sales prices of single family residential properties decreases by $7.05 for each foot further in distance from the trail. In other words, proximity to the Little Miami Scenic Trail adds value to nearby properties (Karadeniz, 2008);

- In the Minneapolis-St. Paul metro area a study examining the impact of bicycle facilities on home values found mixed results (Krizek, 2006). Within the urban core (i.e. in Minneapolis and St. Paul), moving a home 400 meters closer to an off-street, multi-use path increased its value by $510. However, the opposite effect was found in suburban areas. Specifically, proximity to a non-roadside trail reduced suburban home values by $240. Several reasons for this difference could be that suburbanites in this study had lower rates of bicycle use; or that suburban residents are more concerned with the greater access that trails afford to their property or neighborhood;

- An analysis of residential properties in Delaware suggested that a location within 50 meters of a bike path had a positive sales price impact of at least $8,800 (Racca and Dhanju, 2006);

- In a study of properties located near trails in Bloomington, Indiana, some property owners thought that proximity to a trail might increase their property values. However, others thought that the trails had no impact on their home's valuation (Corning, Mowatt, and Chancellor, 2012). The sentiment of these property owners is partially reflected in other analyses where residents believe that proximity to a trail has little impact on property values (Crompton, 2001);

- An analysis of property owners near multi-use trails in Omaha, Nebraska found that 81 percent of homeowners thought that a nearby trail would have a positive effect or no effect on the ease of selling their home (Greer, 2000). Similarly, 78 percent of property owners thought that the presence of a trail would have either a positive or neutral impact on sales price.

On the Wisconsin side of the River Crossing, much of the area surrounding the new trail loop currently is undeveloped. Consequently, any property value impact of the trail is yet to be determined. The aforementioned study of property values in the Minneapolis-St. Paul metro area does suggest that trails could have a negative impact in a suburban area such as the Town of St. Joseph. However, most studies show that multi-use trails either have a neutral or positive impact on residential property values. If the impacts are in fact positive, the trail loop could eventually contribute to an increased tax base.

Perhaps the most frequent means of assessing the economic contributions of multi-use trails is to consider impacts tied to trail user expenditures. Similar to impact analyses of other economic activities, these assessments measure how the spending of trail users supports employment and revenues in local businesses. The scale and scope of trail use economic impact studies vary considerably, ranging from aggregate statewide analyses to smaller-scale studies of individual trails. For purposes of this analysis, studies of individual trails provide more appropriate perspectives on economic impacts.

Table 3.1 depicts some of the impacts attributed to dedicated bicycle and pedestrian trails located throughout the United States. While these trails vary in their scale and location, two broad conclusions

should be considered. First, those trails located in metro areas (such as Orange County, Florida and Northern Virginia) tend to have larger usage levels and subsequent impacts. These figures are not surprising as urban markets provide a larger pool of potential users. Second, trails of any size tend to account for a small share of total regional employment or output. However, trail user impacts on individual businesses can be sizeable and their economic influence should not be discounted.

Table 3.6 – Sample Economic Impacts of Multi-Use Trails

Name, Location and Year of Study	Annual Estimated Trail Usage	Economic Impact ($)	Number of Jobs Supported	Figures Includes Local Expenditures?
Orange County Trails; Orange County, FL (2010)	1,700,000	$42.6 million	516	Yes
Ghost Town Trail; Cambria County and Indiana County, PA (2009)	75,500	$1.7 million*	N/A	Yes
Perkiomen Trail; Montgomery County, PA (2008)	400,000	$5.6 million*	N/A	Yes
Catskill Mountain Rail Trail; Ulster County, NY (2013)	140,000 (32,200 non-local)	$3.1 million	44	No
Washington and Old Dominion Trail; Northern, VA (2004)	1,707,353 (89,807 non-local)	$1.8 million	34	No

*Figures include direct expenditures only and were not analyzed using an I-O Model.

When considering these existing studies, it may be tempting to assume their results can be translated or extrapolated to potential economic impacts in St. Croix County. However, caution should be used as the results of economic impact studies may differ or vary for several reasons:

- Many economic impact studies of recreational facilities do not differentiate between local and non-local spending. Instead, impacts should be measured only using non-local visitor spending. Non-locals represent an outside injection of income that can be attributed to the travel motivations produced by trails. That is, visitors from outside the area spend money in a manner that would not occur but for the presence of the trail. Conversely, local residents who use trails will spend money in the locality regardless of the trail's presence (Bergstrom et al. 1990; Stynes 2004; Prey, Marcouiller and Kim, 2013). In the aforementioned studies, almost 75 percent of Orange County trail users also reside in Orange County. Moreover, 65 percent of Ghost Town Trail users originate from the local area while 78 percent of Perkiomen Trail users are local residents. Consequently, the economic impacts of these trails are likely overstated;

- The scale and scope of impact studies may differ dramatically. Studies that consider the economic impacts of trails at a larger geographic level inherently will have bigger multipliers than studies of localized trail systems. Studies also may consider a range of activities that may or may not be applicable at a local level. For instance, some studies consider the economic impact of more durable

purchases (e.g. the purchase of bicycle) while others exclude this type of spending. Furthermore, some studies may include the impact of bicycle-related events (such as bicycle races or tours). Others simply measure the impact of daily activities on roadways or trails;

Importantly, the economic impact of bicycling (or other recreational activities) also will depend on the local economic structure. Communities with few businesses in which bicyclists and pedestrians can spend their money will likely experience smaller impacts. Impacts in rural communities may also be smaller than those in metropolitan areas as rural regions tend to have less diversified economies (Kazmierski et al, 2008). This observation is particularly important for user spending attached to the River Crossing's trail loop. Specifically, downtown Stillwater currently has many more businesses to capture trail user spending than the Town of St. Joseph. Once additional businesses become available, additional spending may occur on the Wisconsin side of the trail.

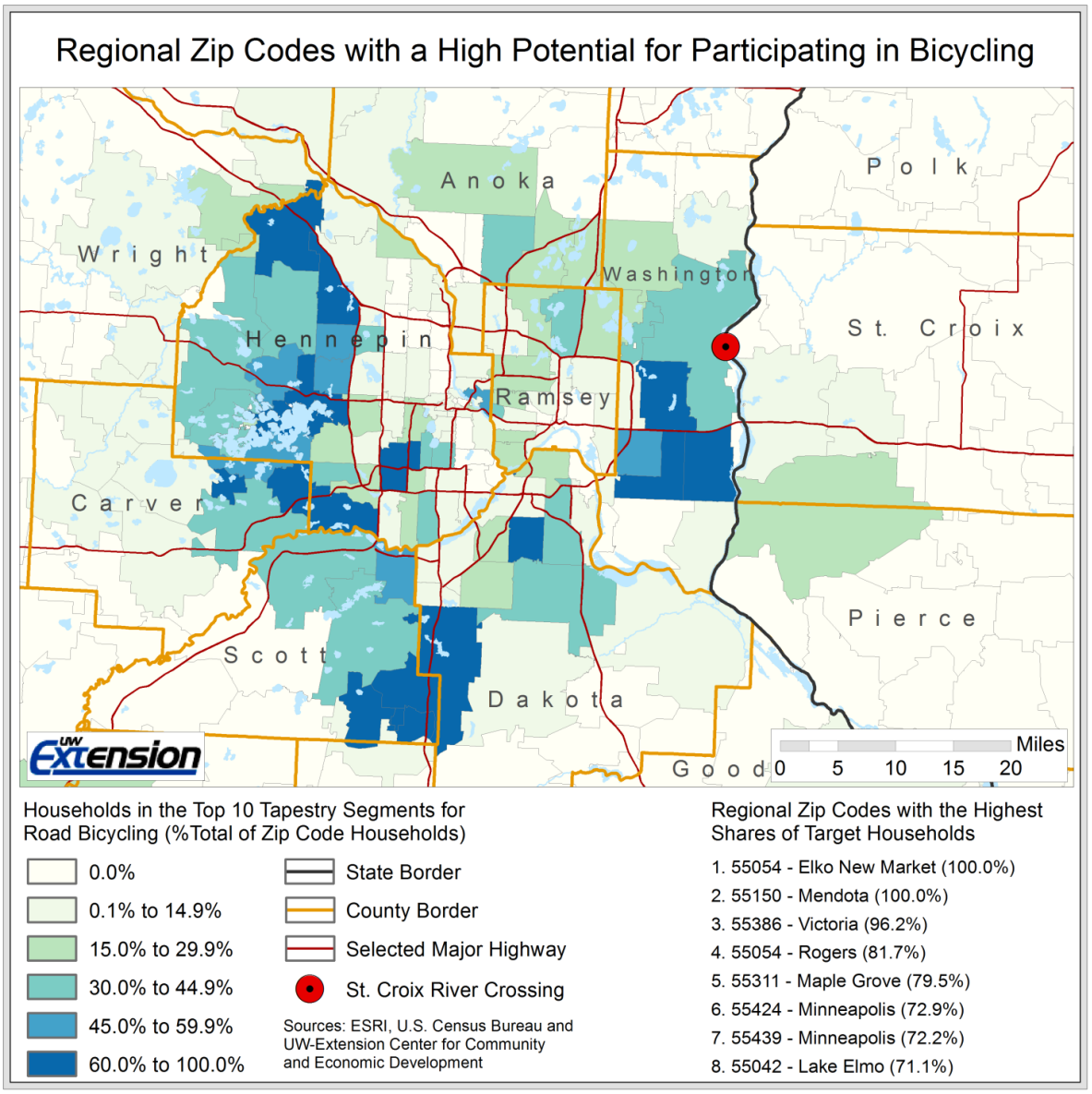
While impacts from the trail loop are expected to be incremental and somewhat limited, an argument could be made that the River Crossing's new trail loop might serve as a catalyst for other bicycle-related tourism and activities in the region. The *St. Croix County Parks and Recreation Bicycle and Pedestrian Plan* prioritizes a number of on-road and off-road facilities that enhance bicycle infrastructure and routes in the county. Once developed, the River Crossing could serve as a trail head and create improved access to this broader system of bicycling routes. This access is particularly relevant given the Minneapolis-St. Paul metro area's high rate of cycling use (Barnes and Krizek, 2005; Dill and Carr, 2003). Eventually, attracting additional riders from the metro area could create new sales opportunities for local businesses.

In terms of economic potential, households with a high propensity to participate in on-road bicycling or bicycle touring are likely key markets for St. Croix County. Many casual riders in the metro area already have access to trails as 90 percent of Twin Cities homes are within one mile of an off-street trail (Krizek, 2006). However, more passionate or advanced bicyclists desiring longer rides or a variety of routes might consider St. Croix County as an opportunity. A number of zip codes with high concentrations of this target market are found throughout the metro area. Importantly, a number of these zip codes are located in areas that may benefit from the improved access offered by the River Crossing (Figure 3.13).

Figure 3.13 – High Potential Households for Bicycling Related Activities.

Lifestyle segmentation data can be used to identify households that suggest a high potential for participating in bicycling-related activities and spending. Lifestyle segmentation systems attempt to predict specific buying habits and preferences of consumers based on their location (urban, suburban, rural); their socio-economic status (age, income, occupation, type and value of residence); and their buying behaviors and preferences.

For purposes of this analysis, the Tapestry™ lifestyle segmentation system from ESRI was used to identify the top 10 consumer segments with the highest propensity for engaging in road biking. These segments are 40 to 60 percent more likely to participate in road biking than the average U.S. household (Descriptions of these segments are found in Appendix C). As shown on the map below, a number of zip codes with high concentrations of these households are located in proximity to the St. Croix River Crossing. Information on the Tapestry methodology is available at:
downloads.esri.com/esri_content_doc/dbl/us/J9941Tapestry_Segmentation_Methodology.pdf



As with any potential impacts arising from the River Crossing's new trail loop, caution also should be used when estimating the potential economic contributions of broader bicycling activity throughout the county. For instance, economic development organizations might assume that local impacts will be similar to the statewide figures found in the 2010 report: *Valuing Bicycling's Economic and Health Impacts in Wisconsin*.[42] However, this study considers economic impacts that may or may not have a local component, such as the economic impact of bicycling manufacturing, sales and services.

As mentioned earlier, economic impact analyses performed for a larger geographic area (e.g. the state of Wisconsin) also will inherently have larger multipliers. Finally, the activity levels and spending estimates in this study are extrapolated from figures collected in Jefferson County and along the Elroy-Sparta Trail. While there is some merit in these extrapolations at a state-level, these figures are partially based on well-established trail systems and may not reflect local conditions.

Truly optimizing the impacts related to new bicycling/trail infrastructure and improved access to the county will likely require strategies for capturing the spending from these visitors. While every community will approach this consumer segment in a different manner, communities that succeed will have a clear plan for doing so. Several resources are suggested in Figure 3.2 for communities interested in developing economic development strategies around trail-users and/or broader bicycling activity.

Figure 3.14 – Selected Resources for Trail-Based and Bicycle-Related Economic Development

- *Trail Towns - Capturing Trail-Based Tourism* – From the Land Information Access Association. Includes information on how communities can assess physical design issues, create events, promote business and economic development opportunities, identify user needs, and organize local volunteers.

  Available at: www.liaa.org/downloads/trail_town_manual.pdf

- *Getting the Wheels Rolling: Using Policy to Create Bicycle Friendly Communities* - From the Center for Land Use Education (CLUE) at the University of Wisconsin-Stevens Point and the University of Wisconsin-Extension. Offers information on bicycle infrastructure planning, creating bicycle-friendly communities and a compendium of bicycle planning resources.

  Available at: www.uwsp.edu/cnr-ap/clue/Documents/Tracker/TrackerSummer2014.pdf

- *Implementing Trail-Based Economic Development Programs – A Handbook for Iowa Communities* – From the Iowa Department of Transportation. Contains principles for trail-based economic development, case studies, and benchmarking resources.

  Available at: www.iowadot.gov/iowabikes/trails/web-pdf/EconHandbook/HANDBOOK.pdf

[42] See Grabow, Hahn and Whited, 2010

Accessibility to Other Recreational Assets

Economic development activities surrounding trail use and bicycling are not the only recreational opportunities potentially related to the River Crossing. As noted in Section 2, the accessibility to many Corridor Communities will be improved once the River Crossing is complete. While this accessibility is usually framed in the context of commuting times, visitor access could also be improved to other recreational assets in Corridor Communities such as the Somerset Amphitheater and the Apple River. Willow River State Park also is a key local amenity which had a visitation of 479,000 in 2010 and accounted for $24.9 million in non-local expenditures (Prey, Marcouiller and Kim, 2013).

Depending on the visitor segment, reduced travel times or congestion offered by the River Crossing may provide some additional incentive to visit local recreational facilities. However, it is unclear how much any improved accessibility will result in an additional travel motivation for visitors. Travel costs are an important part of tourism expenditures, but are only one of many factors influencing travel decisions. Instead, Celata (2007) suggests that accessibility itself is not a source of competiveness for travel destinations. That is, "competitive advantages do not arise from being closer to the market, but from the ability to use and promote the local attractive potential to reduce the weight of distance. If a destination is unique – accessibility has no influence on its attractiveness" (pg. 38). Consequently, local destinations should continue to rely on their uniqueness or their niche. However, reduced travel times or costs could provide some local benefit if St. Croix County attractions become more accessible relative to *similar* attractions in the region.

Finally, the River Crossing may also provide better access to recreational assets located in northwest Wisconsin. In particular, the River Crossing's improved connection to Highway 35 and Highway 64 provide an enhancement to the travel corridor between the metro area and recreational destinations in high-amenity Wisconsin counties (such as Washburn, Sawyer, Bayfield and Ashland). In fact, several counties in northwest Wisconsin have among the highest national concentrations for seasonal and recreational housing units. Many owners of these units live in the Minneapolis-St. Paul metro area, while other metro area residents simply recreate in this area of Wisconsin. This transient consumer segment could provide market opportunities for Corridor Community businesses such as gas stations, grocery stores and general merchandise stores. However, it is difficult to quantify this market segment.

3.4 - Conclusions

Regional companies, workers and communities likely will realize economic benefits from the St. Croix River Crossing. However, St. Croix County and Corridor Communities are subject to many other factors that contribute to economic growth and development. Consequently, the St. Croix River Crossing should not be viewed as a panacea to growth. Instead, the Crossing will likely create opportunities that will need to be supported by local economic development efforts. Specific opportunities include:

- New household income in Corridor Communities and St. Croix County could generate significant future expenditures and employment impacts. However, communities should also consider that the River Crossing also improves access to shopping and commercial districts in Minnesota. For communities to truly benefit from this additional spending potential, they will need to develop strategies to address expenditure leakage;

- With growth also comes additional demand for local government services. Communities will need to determine how to balance additional tax revenues generated by future growth with the costs for services that may arise from new households;

- New household growth facilitated by the River Crossing also creates a potential pool of new entrepreneurs. St. Croix County and Corridor Communities may want to consider initiatives to support these individuals;

- Large firm relocations and expansions are relatively rare. Most relocating firms and so-called expansion start-ups employ fewer than 100 workers. Furthermore, most employment growth occurs among firms with 1 to 9 employees or 10 to 99 employees. Consequently, it is less likely that growth in along the Corridor will arise from large firms relocating to the region. Instead, new and expanding firms will need a range of buildings and sites to fit their needs;

- Economic impacts from the St. Croix River Crossing are likely to be incremental in nature. While some developments may appear rapidly, overall growth likely will occur gradually as individuals and businesses adapt to the River Crossing;

- The improvements arising from the River Crossing are less likely to enhance inter-regional transportation advantages for Wisconsin-based companies. However, the Crossing does create intra-regional improvements that could benefit a number of wholesale and manufacturing categories. The Crossing could also create additional access and opportunities for connecting to the region's industry clusters and talent. Communities may want to consider learning more about the needs of regional industry clusters. Communities should also contemplate developing profiles that detail characteristics of the labor force living within 15, 30 and 45 minute drive times;

Finally, this study is not a substitute for a comprehensive economic development strategy. While this analysis identifies potential economic development prospects arising from the River Crossing, communities and economic development organizations will need to craft formal strategies and initiatives around these opportunities. The University of Wisconsin-Extension can continue to support these efforts.

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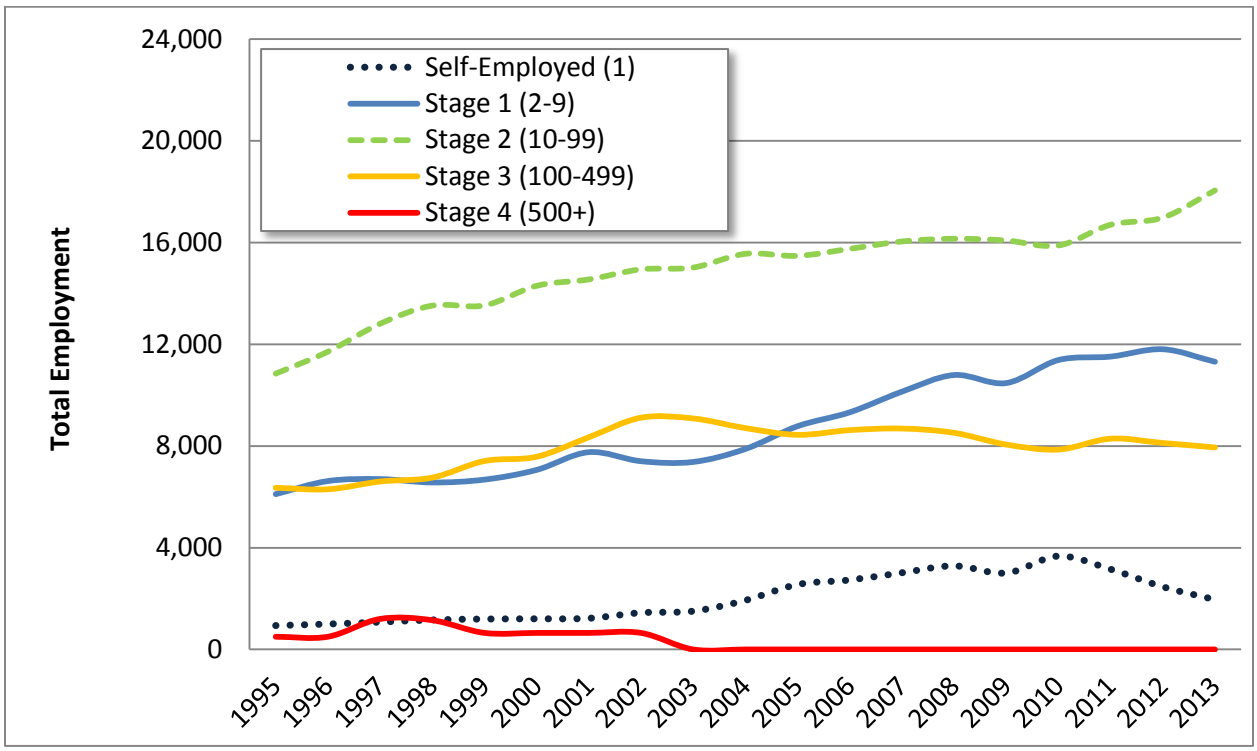
Appendix A – St. Croix County Population Projections by Age

Age Group	2010	2015	2020	2025	2030	2035	2040
0 to 4	6,166	5,750	6,530	6,830	7,010	7,090	7,270
5 to 9	6,705	6,550	6,560	7,290	7,550	7,540	7,540
10 to 14	6,396	6,980	7,250	7,130	7,880	7,950	7,840
15 to 19	5,361	5,900	6,840	6,980	6,840	7,380	7,410
20 to 24	3,924	4,270	4,880	5,550	5,650	5,380	5,770
25 to 29	5,546	4,650	5,290	5,950	6,720	6,660	6,180
30 to 34	5,996	6,200	5,690	6,310	7,020	7,620	7,380
35 to 39	6,203	6,570	7,400	6,630	7,260	7,790	8,320
40 to 44	6,437	6,440	7,360	8,130	7,210	7,670	8,100
45 to 49	6,933	6,430	6,880	7,720	8,490	7,330	7,700
50 to 54	6,683	6,770	6,550	6,920	7,750	8,350	7,180
55 to 59	5,379	6,310	6,680	6,380	6,710	7,450	8,060
60 to 64	4,148	4,900	6,080	6,340	6,050	6,280	6,970
65 to 69	2,805	3,680	4,610	5,650	5,890	5,580	5,830
70 to 74	1,867	2,460	3,410	4,220	5,160	5,380	5,140
75 to 79	1,461	1,570	2,170	2,980	3,700	4,540	4,780
80 to 84	1,176	1,170	1,300	1,780	2,460	3,050	3,790
85 to 89	723	835	840	935	1,300	1,800	2,280
90 and over	436	555	665	725	820	1,060	1,470

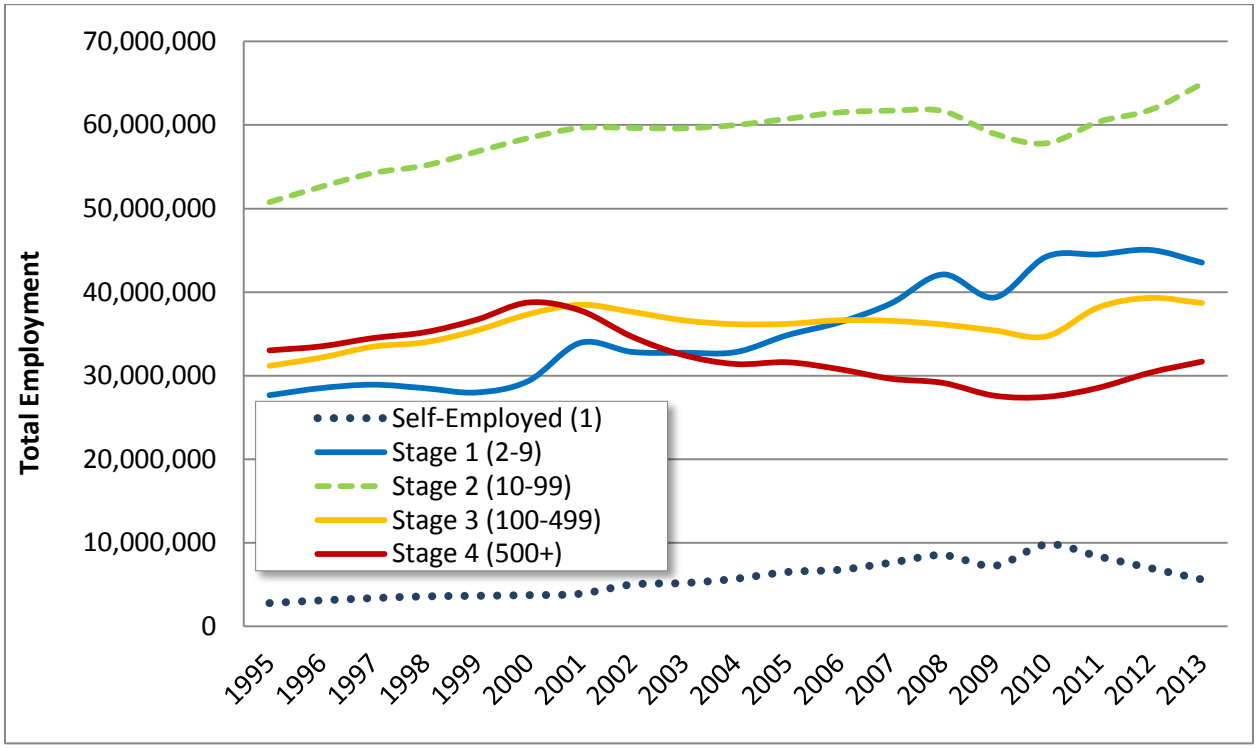
Sources: Wisconsin Department of Administration Demographic Services Center

Appendix B – Employment Trends by Establishment Stage

St. Croix County Employment 1995 to 2013 - Total Employment by Establishment Stage



St. Croix County Employment 1995 to 2013 - Total Employment by Establishment Stage



Source: National Establishment Time Series Database Extracted from YourEconomy.org

Appendix C – Tapestry Categories with High Potential for Participating in Bicycling

The following Tapestry categories show the ten largest market potential indices (e.g. likelihood) for participating in road bicycling.

Tapestry Code 01 - Top Rung: Residents of Top Rung neighborhoods are mature, married, highly educated, and wealthy. The median age is 45.4 years; one-third of the residents are in their peak earning years of 45–64. More than 77 percent of these households are composed of married couples; half of them have children. Except for the presence of children, this is a low-diversity, monochromatic market.
www.esri.com/~/media/Files/Pdfs/data/esri_data/pdfs/tapestry-singles/01_top_rung.pdf

Tapestry Code 02 – Suburban Splendor: Suburban Splendor residents are in families in growing neighborhoods. Approximately 80 percent of the households consist of married-couple families, with or without children. Household growth in these suburbs is 2 percent annually. The median age is 40.5 years, and half of the population is aged 35–64 years. Diversity is low with a predominantly white population.
www.esri.com/~/media/Files/Pdfs/data/esri_data/pdfs/tapestry-singles/02_suburban_splendor.pdf

Tapestry Code 03 – Connoisseurs: Residents of Connoisseurs neighborhoods are somewhat older, with a median age of 48.2 years. Approximately 70 percent of the population is married. Although residents appear closer to retirement than child-rearing age, 30 percent of the households are married couples with children living at home. Ethnic diversity is negligible.
www.esri.com/~/media/Files/Pdfs/data/esri_data/pdfs/tapestry-singles/03_connoisseurs.pdf

Tapestry Code 04 – Boomburbs: The newest additions to the suburbs, these communities are home to busy, affluent young families. Both the neighborhoods and the families are growing. Boomburbs is the fastest-growing market in the United States; the population has been growing at a rate of 1.59 percent annually since 2010. It is also home to one of the highest concentrations of young families with children. The median age is 36.1 years; one-fifth of Boomburbs residents are between 35 and 44 years of age. There is little ethnic diversity in the population; most of the residents are white.
www.esri.com/~/media/Files/Pdfs/data/esri_data/pdfs/tapestry-singles/04_boomburbs.pdf

Tapestry Code 08 – Laptops and Lattes: With no homeownership or child-rearing responsibilities, residents of Laptops and Lattes neighborhoods enjoy single life in the big city. Most households are singles who live alone or with a roommate. The average household size remains constant at 1.9. The median age is 38.1 years. Although most of the population is white, Asians represent 10.4 percent of the total population (almost two-and-one-half times the national level).
www.esri.com/~/media/Files/Pdfs/data/esri_data/pdfs/tapestry-singles/08_laptops_and_lattes.pdf

Tapestry Code 09 – Urban Chic: Urban Chic residents are professionals who live a sophisticated, exclusive lifestyle. More than half of these households are married-couple families, similar to the U.S. proportion. Fewer than half of them have children. Unlike the United States, there is a smaller proportion of single parents and a higher proportion of singles and shared households. The median age is 43.3 years; the diversity index is 49.
www.esri.com/~/media/Files/Pdfs/data/esri_data/pdfs/tapestry-singles/09_urban_chic.pdf

Tapestry Code 14 – Prosperous Empty Nesters: Approximately 6 in 10 householders in Prosperous Empty Nesters neighborhoods are aged 55 years or older. Forty percent of the households are composed of married couples with no children living at home. Residents are enjoying the move from child-rearing to retirement. The median age is 48.5 years. Population in this segment is increasing slowly, at 0.47 percent annually; however, the pace will probably accelerate as the Baby Boomers mature. Prosperous Empty Nesters residents are not ethnically diverse; approximately 90 percent are white.
www.esri.com/~/media/Files/Pdfs/data/esri_data/pdfs/tapestry-singles/14_prosperous_empty_nesters.pdf

Tapestry Code 15 – Silver and Gold: With a median age of 61.3 years, Silver and Gold residents are the second oldest of the Tapestry segments. More than 70 percent are aged 55 years or older. Most residents have retired from professional occupations. Half of the households are composed of married couples without children. This segment is small, less than 1 percent of all U.S. households; however, annual household growth is 0.66 percent since 2000. Residents of these neighborhoods are not ethnically diverse; 93 percent of them are white.
www.esri.com/~/media/Files/Pdfs/data/esri_data/pdfs/tapestry-singles/15_silver_and_gold.pdf

Tapestry Code 23 – Trendsetters: On the cutting edge of urban style, Trendsetters residents are young, diverse, and mobile. More than half the households are singles who live alone or share the rent with a roommate. Families comprise the remainder. With a median age of 35.5 years, this segment is slightly younger than the U.S. median. Ethnically diverse, 13.7 percent of the residents are Asian and 23 percent are Hispanic; both percentages are well above those of the U.S.
www.esri.com/~/media/Files/Pdfs/data/esri_data/pdfs/tapestry-singles/23_trendsetters.pdf

Tapestry Code 55 – College Towns: With a median age of 24.4 years, College Towns is the third youngest of all the Tapestry segments. Most residents are aged between 18 and 34 years and live in single-person or shared households. One-fourth of households are occupied by married-couple families. The race pro le of this market is somewhat similar to the U.S. profile. Approximately three-fourths of the residents are white.
www.esri.com/~/media/Files/Pdfs/data/esri_data/pdfs/tapestry-singles/55_college_towns.pdf

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