Gap Analysis (Task 3.3)

THE GRAND VISION™
Land Use & Transportation Strategy

Report prepared by

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1.0 Gap Analysis

A gap analysis is an exercise to consider our current path, our preferred path and the difference between the two. Most often a gap analysis is a tool used in business, marketing, and economic environments. Here, a gap analysis approach will be applied to the Grand Vision regional transportation and land use planning project. In this case, the gap is the difference between the current and the preferred regional development paths measured in the year 2035. To the extent possible, the gap is described in measurable terms. Once the difference is identified, the report will consider factors that cause the gap and then identify tools to close the gap. Note that because of limitations in providing projected metrics, measurable statistics are provided through the year 2035 while more general regional vision documentation is provided on a 50 year time horizon.

The Grand Vision project was created initially with a focus on the TC-TALUS transportation model area, which includes the City of Traverse City, nine townships in Grand Traverse County and Elmwood Township in Leelanau County. The Grand Vision has expanded into a six-county study with a regional focus. Because of the change to the study area, the *Gap Analysis* itself will identify trends and gaps at the regional level. Some issues may be more germane to cities and villages while others apply most directly to rural townships.

The public involvement component of the Grand Vision project began with eleven scenario planning workshops, followed by the Vision Decision public polling process to create a preferred future scenario. The preferred future scenario was adopted in the V*ision* document in April 2009. The *Vision* document uses engaging text and graphics to describe how citizens want the region to be 50 years from now. The *Socioeconomic Report (Task 3.2)* was written to document the scenario planning workshops and the demographic projection numbers associated with them. The *Travel Demand Model Methodology Report (Task 4.3)* was written to document the activities associated with the TC-TALUS area transportation model during the Grand Vision project. The final *Socioeconomic Report* is dated August 2009 and the final *Travel Demand Model Methodology Report* is dated December 2009.

Several studies and surveys were conducted to lay the foundation for the public involvement activities. A literature survey was performed to synthesize the existing land use and transportation studies and plans in the region *(Past/Existing Transportation and Land Use Trends Report – Task 1)*. An origin and destination study was carried out to document travel patterns in the region *(Transportation Modeling Methodology Report – Task 4.3)*. Also, a study was done to discover regional values *(Community Values and Guiding Principles Report – Task 2)*. The reports referenced in parentheses above are available on the project website at www.thegrandvision.org.

After the scenario planning workshops were completed, a set of four possible future scenarios were created. The scenarios were based on ideas and themes from the public workshops. Scenario A was called the “Trend” scenario and it showed a collective growth pattern that projected past and existing land use patterns into the future. Scenario B was called “Rural by Design” and it located new growth in planned clusters of development in rural areas rather than in the urban nodes. This put people in closer contact with nature while protecting natural features and agriculture through careful design. Scenario C was called “Villages” and it put most new growth in villages around the region with some additional growth

in Traverse City and Cadillac. Scenario D was called "City Focused" and it put most new growth in Traverse City and Cadillac.

During the Vision Decision polling process, the public strongly supported the idea of putting new growth in areas where some growth already existed. The "Villages" scenario received the most support and strong support was also given to the "City Focused" scenario. The final *Vision* document presents a synthesis of the public preference for growth in the region's cities and villages from a long-range policy standpoint.

Each of the four possible future scenarios was created using EnvisionTool, an ArcGIS plugin that allows users to create and analyze growth scenarios. EnvisionTool has a suite of urban and regional planning tools that can be used to model the development of buildings on a site-by-site basis as well as create and evaluate multiple land use scenarios. It seamlessly integrates with Microsoft Excel to provide near-instant analysis of scenario decisions. Using EnvisionTool, analyses were performed on each of the four possible future scenarios across the six-county region to create the land use indicators in this report. Transportation indicators were created using the TC-TALUS transportation model for the model area. The indicators are quantifiable measures of the scenario's performance and the difference between them is the gap.

The final Vision map that is part of the *Vision* document was created through a combination of GIS base layers for rural lands and InDesign notations for urban areas, which created a visually appealing product. The green of the base map represents areas in the combined categories of "The Rural Landscape." InDesign was used to add a layer of purple color to represent areas of downtowns and cities and a pink color to represent villages and main streets. There was no specific land use or socio-economic data associated with the final Vision map and the map results could not be quantified and analyzed. This was done because the Vision map is an illustrative map. Its function is to guide regional policy decisions in general terms by reminding decision makers of public preferences about how the region should grow. The preferred future presented in the Vision map is most closely associated with the "Villages" scenario.

There is a gap between the "Trend" scenario and the preferred future. This report reviews and comments on how the "Trend" scenario differs from the other possible future scenarios considered during the Vision Decision process with respect to both land use and transportation. Comparisons with the "Villages" scenario are emphasized since it is closest to the regional Vision. In addition to identifying and describing the gap between the current and preferred futures, the *Gap Analysis* provides a general description of transportation and land use tools and policy changes needed to achieve this desired future. A more specific implementation plan with measurable goals will be presented in two future documents to address transportation and land use. Technical transportation recommendations will be provided in a report titled *Recommended Transportation Strategies* (Task 5.1) and land use recommendations will be provided in a report titled *Preferred Land Use Vision* document (Task 5.2). A more detailed description of the final regional Vision is contained in the *Vision* document.

2.0 The *Vision* document's guiding principles

The *Vision* document included a series of guiding principles that describe where the citizens of the six-county region want to go. In this section, the guiding principles are listed in italics and followed by a discussion of associated, measurable indicators. Note that some are more directly related than others and some indicators influence more than one of the guiding principles. This discussion is provided to facilitate the connection between the statistical measures and the goals of the Grand Vision. The list is not exhaustive but it is provided to make the numbers more meaningful through a direct connection. To prevent repetition in the document, not all indicators are addressed for each goal.

2.1 Increasing employment opportunities and economic prosperity

Strengthen the local economy with more jobs offering security and a living wage in cities and villages around the region. Train the workforce for Michigan's new economy with a quality education and opportunities for lifelong learning.

A stronger economy in the six-county region includes more jobs with security and a living wage. The scenario planning process used employment numbers as a control for the workshop exercises. Each scenario had approximately the same number of jobs but the type and location varied between them. One goal of this guiding principle is to locate jobs in cities and villages around the region. This is measurable most directly in terms of the number of new jobs provided through *Downtown*, *Village*, and *Main Street* development types. Measures of infill employment and walkable employment are also indicators of businesses locating in cities and villages. Job security comes in part from creating a business environment where businesses can be successful. Land use and transportation decisions contribute to a successful business environment in a measurable way by providing affordable workforce housing near places of employment to support a stable labor supply and an efficient transportation system to get people and supplies in and out of the area with minimal delay. Moreover, a region filled with natural beauty and rural landscapes raises the quality of life and is attractive to skilled workers. A living wage is defined in part by the cost of housing and transportation. Affordable housing and decreased transportation costs both leave more money available to employees for other living expenses.

2.2 Improving the region's transportation network

Maintain and improve the existing road system and place new investment in public transportation and expand bicycling and pedestrian infrastructure. Prepare for passenger rail service to Cadillac and Traverse City.

Measures of transportation performance were created by Kimley-Horn and Associates (KHA) through a traffic modeling exercise. There is statistical information available regarding vehicle miles travelled (VMT), vehicle hours travelled (VHT), additional lane miles, transit ridership, time lost, fuel wasted, and air quality measured in pounds of emissions for each scenario. These are all helpful in evaluating where we are going compared to where we want to be with the transportation system. The regional vision supports a shift in the transportation system to give people more choices about how they move around. The transit system experiences a steady increase in funding and ridership. At the same time, people are walking and biking for lots of reasons including health, efficiency, cost, and environmental benefits. Land use components also contribute to maximizing transportation system efficiencies. Increased density and

mixed-use development types both provide opportunities for shorter trips and transit service. This, in turn, reduces congestion and maximizes efficiencies on the existing road system. Also, opportunities to promote rail connections between Cadillac and Traverse City and to the rest of the state are monitored and encouraged.

2.3 A group of unique villages that together form a region

Create a group of unique villages and cities that are active and charming places with a main street or a downtown.

Only the words *unique* and *charming* are not measurable in this guiding principle. The development types associated with each scenario are a direct indicator of how well it aligns with this principle. Other indicators such as the amount of land consumed or preserved are measures of the region's development footprint. Active places are those where people are moving around outside of a car. They can be measured by the amount of mixed uses, development density, transit ridership, and walkable dwelling units (DUs), and employment.

2.4 Expanding housing choices in the region

Provide more variety in housing choices to match peoples' needs and preferences for lower cost, higher efficiency, central location, and low-maintenance lifestyle options.

A housing needs assessment was performed as part of the Grand Vision project. It provides a plethora of data regarding the housing supply and demand based on demographic and employment trends. It is a gap analysis in itself with regard to housing. The results of the assessment were presented in a PowerPoint presentation during the Grand Vision project and are summarized in Section 4.1 of this report. The scenarios are compared to the housing needs assessment to determine how well they match the future housing needs of the six-county region. While some of the demand is generated based on income and a need for affordable housing, other factors are driven by a lifestyle preference.

2.5 Celebrate food, farming, and rural development as a definitive part of our economy, our culture, and our identity.

Farming and rural development are measurable outcomes of the scenarios in terms of the amount of vacant land consumed through new development and, conversely, the amount of agricultural and forest land consumed. The amount of cluster development and rural housing is another measure of the support of this principle as higher levels of rural housing development will hinder active agricultural operations.

2.6 Protecting and preserving the water resources, forests, natural areas, and the scenic beauty of the region.

This principle is measured directly by the amount of agricultural and forest land consumed under each scenario and by the amount of vacant land consumed by development. These factors are also related to

the preservation of the scenic beauty of the region. The preservation of forest land can also be an indicator of water resource protection.

2.7 Incorporating a sustainable energy focus into building, transportation and economic development.

Sustainable energy in economic development and building may not be directly tied to the Grand Vision indicators. However, many of the transportation indicators provide support for more sustainable energy choices. These include VMT, VHT, transit ridership, and carbon emission levels. At the same time, more compact development allows more opportunity for walking and biking on shorter trips, and walkable employment figures indicate a land use pattern where car trips can be replaced by walking. Other factors address issues like electric cars, wind energy, or LEED certified buildings but they are indicators of sustainability.

3.0 Tipping Point Analysis

A "tipping point" analysis is performed on the building types to understand the development feasibility of each of the building types. The "tipping point" focuses on the interaction between the regulatory system and the market. Building types are examined to determine if the rent, lease, or sales prices from a new project will outweigh the associated costs and risks and produce a return that is suitable for development. The building types are combined to create development types.

In the Grand Vision, the tipping point analysis was done in the process of creating the building types. The building types were then used to create the development types. To create the building types, a spreadsheet was used like a calculator. Numbers were entered for costs, rents, height, and other indicators until the result was a marketable structure that matched the target building character. A 3-story main street building is one example. When the numbers worked, the information was entered into the building type sheet. Then the spreadsheet was modified again to get to the next building type. For example, to move from a 3-story mainstreet building to a 5-story mainstreet building, the entry for height was modified and then other variables were adjusted as needed until a profitable tipping point was achieved. To move to a completely different building type, the spreadsheet was cleared and the exercise started again.

A series of building types, developed through the tipping point analysis, were combined to create a specific combination of buildings called a development type. The development types were used to build the possible future scenarios. Overall, twelve development types were created and used to build the four possible future scenarios in the Grand Vision project. They were *Downtown, Village, Main Street, Activity Center, Highway Commercial, Office Park, Industrial, Compact Neighborhood, Residential Subdivision, Large Lot Subdivision, Rural Cluster, and Rural Residential*. These are also the building blocks that are described in the *Vision* document.

The development types were unique combinations of building types in each scenario. For example, a *Village* development type was created for each scenario but it had different housing and employment characteristics in each scenario. The same was true of the other eleven development types. Once a development type was created for a scenario, it contained the same collection of individual building types each time it was used in building the scenario. The differences within the overall control totals become a shaping force for the resulting land use patterns.

Here is a specific example of the characteristics of the *Village* development type in the four possible future scenarios considered during the Grand Vision project. Both the housing and employment characteristics are part of the *Village* development type.

Table 1 *Village* Development Type: Housing Characteristics

Village Development Type	Total Vacant Acres	Total Redevelopment Acres	Total DU* Allocation	Single Family	Townhome	Multifamily	Infill DU*	Total Walkable DU*
Trend	19	162	564	45	111	408	425	564
Rural by Design	100	323	1,602	128	316	1,158	851	1,602
Villages	183	485	2,650	212	522	1,916	1,278	2,650
City Focused	197	559	2,948	236	581	2,131	1,032	2,948

*DU=Dwelling Units

Source: Fregonese Associates, Inc. (FAI)

The housing characteristics were defined by the number of vacant acres dedicated to the use, the number of housing units that could be accommodated through redevelopment, the number and type of dwelling units, and the walkable characteristics. The *Village* development type in the "Trend" scenario contained fewer dwelling units than the other scenarios because more of the housing in the "Trend" scenario was provided in other residential development types. There is a greater variety of housing choices in the *Village* development types created as alternatives to the "Trend" scenario. More dwelling units are provided through infill development and more housing units are within a walkable distance of employment and shopping. Although the distribution of housing and employment was allocated differently between development types, the overall quantities in each scenario were held constant.

Table 2 *Village* Development Type: Employment Characteristics

Village Development Type	Total Employment Allocation	Retail	Office	Infill Employment	Walkable Employment	Parks
Trend	1,040	485	555	784	1,040	3
Rural by Design	2,953	1,376	1,577	1,569	2,953	9
Villages	4,884	2,276	2,608	2,355	4,884	14
City Focused	5,433	2,532	2,901	1,902	5,433	16

Source: FAI

The *Village* development type has more jobs in each of the scenarios providing an alternative to the "Trend." In each scenario, the *Village* development type classifies all of the new jobs as walkable and none of them as industrial. The alternative scenarios have more land dedicated to parks. These characteristics reflect the difference in what a village is and how it performs in each scenario. The land use scenario can be analyzed numerically because the scenarios are built using development types with quantifiable measures of size, employment, dwelling units, and other characteristics.

The Grand Vision takes a six-county, regional approach to coordinated transportation and land use planning. As a regional effort, the *Gap Analysis* is approached more generally than it would be if the study area was smaller. In a smaller study area, it would be possible to make specific recommendations such as lowering parking standards, waiving fees, etc. But as a regional effort, this report deals with a larger environment at a less detailed level. Each township, city, and village can get the desired building

types through a range of policy combinations. The initial tipping point analysis assures that each of the building types can be built in the region so long as the local jurisdiction is on-board.

4.0 Land Use Gap

During the Grand Vision's public input activities, the land use indicators for the four possible future scenarios were created using a software program called EnvisionTool. This GIS add-on program uses Microsoft Excel to analyze land use scenarios. The land use indicators were produced from EnvisionTool for the entire six-county study area.

4.1 Housing

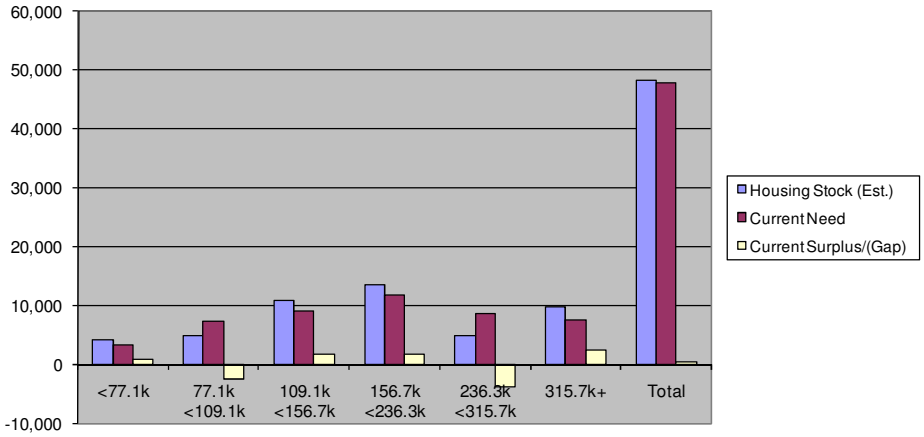
A detailed housing needs assessment was done earlier in the Grand Vision process in preparation for the creation of the possible future scenarios. The housing needs assessment is an estimate of regional housing demand in the year 2035. It is based on projected population and employment data for the region in 2035. Details of population projections are available in the *Socioeconomic Report (task 3.2)*. Projected housing needs (2035) are compared to the existing housing stock (2006) in the Traverse City Micropolitan Statistical Area at each price range. The housing needs assessment considered the micropolitan statistical area's current and future housing needs in constant 2006 dollars. The Traverse City Micropolitan Statistical Area is defined by the United States Census Bureau as Benzie, Kalkaska, Grand Traverse, and Leelanau Counties. A Micropolitan Statistical Area must have at least one urban cluster of at least 10,000 but less than 50,000 in population. Findings from the analysis were presented as part of PowerPoint presentations at several Grand Vision events and the annual Community Housing Choices Conference in 2008 and 2009.

One of the guiding principles of the Grand Vision is to provide a range of housing choices to meet people's changing needs and preferences. Meeting the diverse housing needs of the six-county residents has a ripple-effect on the community. For example, a diverse housing stock can support economic development initiatives through the attraction and retention of young workers who find appealing and affordable housing. Affordable housing throughout this report means that *less than 30% of household income is spent on housing costs*. Housing is also an area that can address sustainable energy through new construction and renovation projects. Both a strengthened local economy and a focus on sustainable energy are guiding principles of the Grand Vision.

During the housing needs assessment, the existing housing stock and projected housing stock for owner-occupied and rental housing units were considered separately. The monthly cost of the housing units was measured against U.S. Census employment and income data to determine the amount of affordable housing available. It also took into account shifting demographic trends. Americans are growing older. Household sizes are growing smaller. A majority of new households won't have children living in them. The number of two-parent families is declining. The assessment found that the region's housing stock is centered on middle-income, owner-occupied housing; that future demand is strong for workforce affordable housing; and that there is an additional demand for higher-end owner housing, particularly in the $236,000 to $315,000 price range.

For rental housing, monthly rental rates are grouped into six price categories, which are listed on the following charts and tables. Owner occupied units are grouped by the value of the units, which are also listed on the associated chart and table below. The current housing stock was described in terms of existing units in each price category. The current need for housing units in each price category, and the

difference between the two is shown as the current surplus or shortage of housing units in each price category. Again, the current year for this assessment is 2006. **Figure 1.0** shows the current housing balance for owner units and **Figure 2.0** shows the current housing balance for rental units.



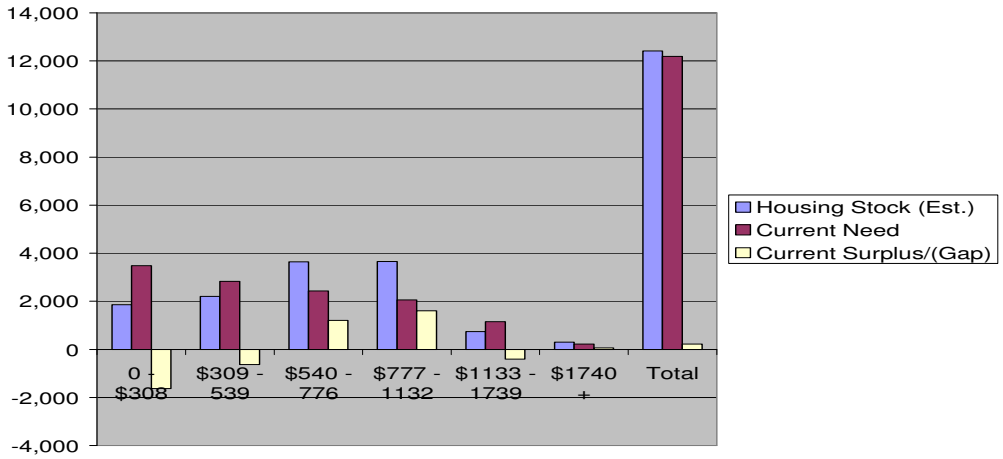
Source: FAI

Figure 1 Current Housing Balance (Owner Units)

Table 3 Current Housing Balance (Owner Units)

Ownership units value	<77.1k	77.1k <109.1k	109.1k <156.7k	156.7k <236.3k	236.3k <315.7k	315.7k+	Total	%Ownership units affordable at household income	<$25k	$25k <35k	$35k <50k
Housing Stock (Est.)	4,209	4,837	10,956	13,505	4,802	9,886	48,196	% of estimated housing stock	8.82%	10.13%	22.95%
Current Need	3,356	7,385	9,133	11,828	8,599	7,447	47,747	% of estimated housing need	7.03%	15.47%	19.13%
Current Surplus/(Gap)	854	(2,548)	1,823	1,677	(3,797)	2,440	449	Cum % of estimated surplus/(gap)	1.79%	-3.55%	0.27%

Source: FAI



Source: FAI

Figure 2 Current Housing Balance (Rental Units)

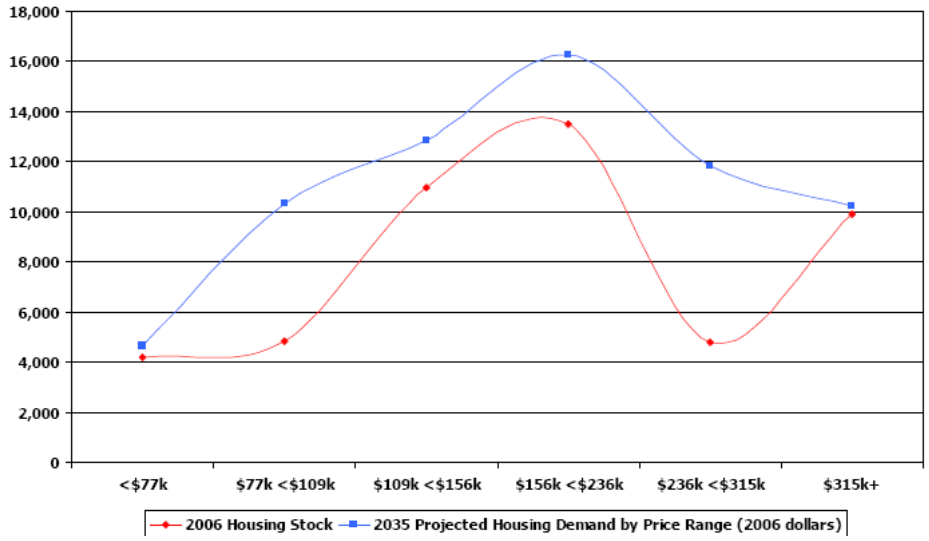
Table 4 Current Housing Balance (Rental Units)

Rental units monthly rent	0 - $308	$309 - 539	$540 - 776	$777 - 1132	$1133 - 1739	$1740 +	Total	%Rental units affordable at household income	<$15k	$15k <25k	$25k <35k	$35k <50k
Housing Stock (Est.)	1,857	2,207	3,648	3,656	744	298	12,411	% of estimated housing stock	14.97%	17.79%	29.39%	29.46%
Current Need	3,481	2,834	2,435	2,057	1,153	229	12,190	% of estimated housing need	28.05%	22.84%	19.62%	16.58%
Current Surplus/(Gap)	(1,624)	(627)	1,212	1,599	(409)	69	220	Cum % of estimated surplus/(gap)	-13.09%	-18.14%	-8.37%	4.52%

Source: FAI

For owner-occupied units, there is an under-supply of housing units in the $77,100-$109,000 price range and in the $236,300-$315,700 category. These two categories are just over the lowest and just under the highest price points. In all other owner-occupied categories, there is an over-supply. Looked at in terms of income, there is a shortage of owner-occupied housing units for households with an income of $25,000-$35,000. This category of "workforce housing" makes up an estimated 15.5% of the regional housing need.

For rental units, there is an under-supply of housing units in the lowest two price ranges. There is also an under-supply of housing in the $1,133-$1,739 category. This indicates a need for more high- and low-end options in the rental housing market. In terms of income, there is a shortage of affordable rental units for households making less than $35,000 per year. Again, there is a shortage of workforce housing and also a shortage of below-market housing options that serve low-income households and some senior citizens. People in this income category account for a combined estimated 62% of the housing stock and 71% of the estimated housing need. Statistically, this is a priority issue for the six-county region.



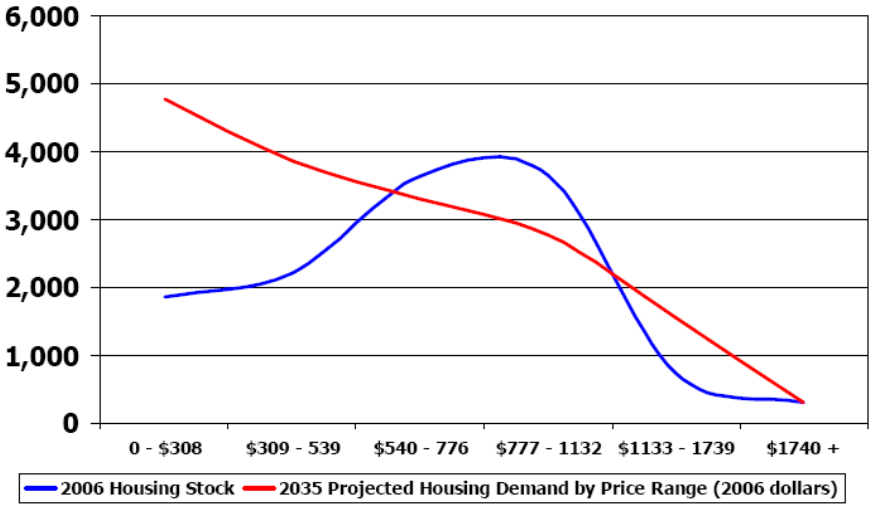
Source: FAI

Figure 3 Current Stock and Future Need (Owner)

Table 5 Current Stock and Future Need (Owner)

	<$77k	$77k <$109k	$109k <$156k	$156k <$236k	$236k <$315k	$315k+
2006 Housing Stock	4,209	4,837	10,956	13,505	4,802	9,886
2035 Projected Housing Demand	4,652	10,326	12,836	16,267	11,838	10,237

Source: FAI



Source: FAI

Figure 4 Current Stock and Future Need (Rental)

Table 6 Current Stock and Future Need (Rental)

	0 - $308	$309 - 539	$540 - 776	$777 - 1132	$1133 - 1739	$1740+
2006 Housing Stock	1,857	2,207	3,648	3,656	744	298
2035 Projected Housing Demand	4,776	3,868	3,306	2,783	1,558	309

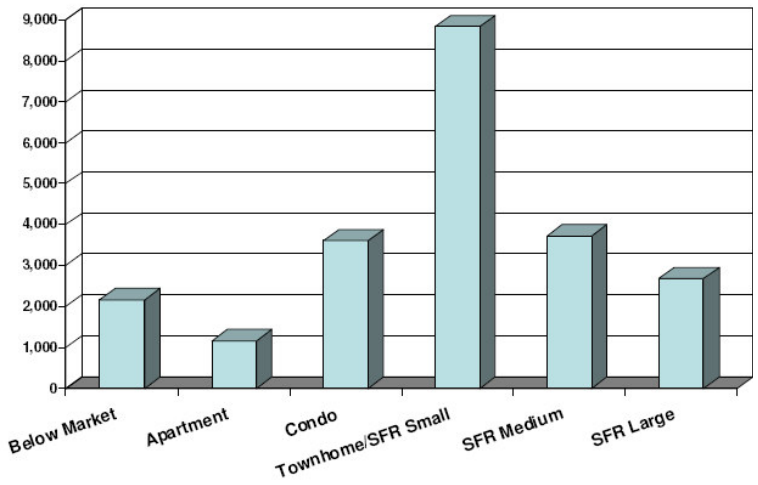
Source: FAI

When the current rental housing stock is compared to the projected rental housing demand, there is a gap at every level. There is a need for both additional low-cost and high-cost rental units and there is a projected oversupply of rental units in the two middle price categories: $540-776/month and $777-$1,132/month. There is combined oversupply of 1,215 rental units in the two middle categories.

For the owner occupied housing units, there is a need for more housing units in each price-range but the need is greatest in the $77,000-$109,000 category with a gap of 5,489 additional housing units and in the $236,000-$351,000 category with a gap of 7,036 additional housing units.

In addition to a housing analysis by owner-type and cost, the Grand Vision housing analysis considered a projected amount of additional housing needed by these housing types. *Below market housing* is subsidized housing. *Apartments* are units in multi-family structures that are available for rent and have a shared main entrance. The term *Condos* is used to describe a multi-family housing unit that is similar to an apartment but is available for sale. The price of a condo varies; some will fill part of the market need for high-end, luxury housing. *Townhomes* are multi-family dwelling units where each unit has its own exterior entrance door. Townhomes may be owner-occupied or renter-occupied and may have a variety of price points. *SFR (single-family residential) small* represents compact neighborhoods with a density ranging from four to eight units per acre. *SFR medium* represents suburban style subdivision development with a density between one-half and two acres. *SFR large* includes large lot and rural housing with lot sizes from 2 to 80 acres.

Figure 5 and **Table 7** show the results of the housing analysis as it relates to the number of housing units needed by housing type. This was an important first step in creating the building types and development types for each scenario.



Source: FAI

Figure 5 Estimated Housing Units Needed by Type (2006-2035)

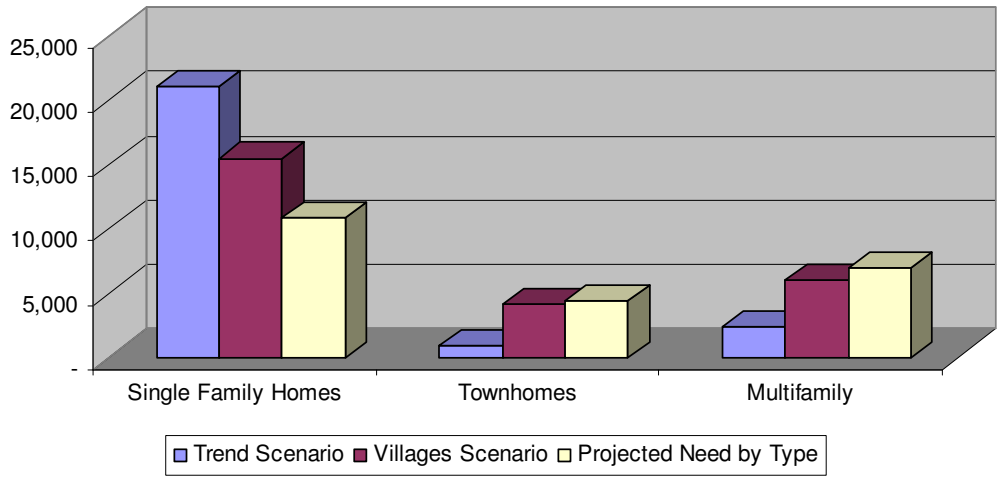
Table 7 Estimated Housing Units Needed by Type (2006-2035)

	Below Market	Apartment	Condo	Townhome/SFR	SFR Medium	SFR Large
Housing Units	2,168	1,150	3,598	8,835	3,727	2,673

Source: FAI

Meeting the needs of the regional housing market over the next 30-50 years requires attention to the cost, the type, and the form of ownership. In the "Trend" scenario, most new dwelling units are single-family homes. In the "Villages" scenario there are fewer single-family units when compared to the trend scenario but even then there is an oversupply. The "Villages" scenario offers more townhomes and multi-family dwelling units than the "Trend" scenario.

The grouping in **Figure 6**, the *Dwelling Unit Comparison* chart, does not separate dwelling units by type and cost. It puts all of them into one of three categories. All single-family homes are in one category. All townhomes are in one category. All apartments and condominiums are grouped into a multi-family category. Grouped this way, multi-family homes includes below market, apartments and condos. Additionally, the total number for townhome/SFR was divided equally between the townhome and single-family residential categories. The projected need data is taken from the Housing Needs Assessment study, which is also the source for **Figure 5** above. Note the type and quantity of dwelling units in the "Villages" scenario is more closely aligned with the estimated new housing units needed by type.



Source: FAI and Mead & Hunt, Inc.

Figure 6 Dwelling Unit Comparison

Table 8 Dwelling Unit Comparison

	Single Family Homes	Townhomes	Multifamily	Total DUs
Trend Scenario	21,041	922	2,374	24,338
Villages Scenario	15,466	4,131	5,969	25,566
Projected Need by Type	10,817	4,417	6,916	22,150

Source: FAI

One of the gaps in the housing supply is in the type of dwelling unit. The "Trend" scenario will create an oversupply of single-family homes. The housing study estimates that the region will need approximately 10,800 single-family homes by 2035 at a variety of densities and the "Trend" scenario will create almost double that number. The "Villages" scenario provides a number in the middle. The "Trend" scenario falls short in the townhome and multifamily categories while the "Villages" scenario comes very close to meeting the projected need.

Another gap in the housing supply is the number of owner-occupied dwelling units in several price ranges. As noted earlier in this section, there is a need for more owner-occupied housing units in each price-range between 2006 and 2035 but the need is greatest in the $77,000-$109,000 category and in the $236,000-$351,000 category. The larger gap in these two categories indicates that an adjustment is needed to the current trend to meet future market demand for specific price points. These housing units can be provided through a range of different dwelling unit types across all price ranges.

Causes

There may be social, regulatory, financial, and other causes of the oversupply of single-family housing units and the associated undersupply of other housing options in the six-county region. Single-family housing is the largest component of the existing housing stock in the region. It's the "norm" and it's what people are used to seeing. It's understandable and safe. A proposed SFR development typically doesn't bring crowds of concerned citizens out to public meetings. Communities anticipate SFR development and have designated land on current zoning maps. The financial systems understand SFR developments and have systems in place to support them. Market studies provide predictability in SFR developments regarding costs and sales. Insurance, investors, and banks are able to support the traditional development form. Other types of development may not find this support built into the existing social, regulatory, and financial systems.

Conversely, proposals for multi-family housing (MFR) projects including apartments, condos, and townhouses face challenges in the current system. One challenge is regulatory. The locations available for MFR developments are limited by a community's zoning map. Land zoned for MFR development needs to be located in areas where it will be successful in the community both financially and socially. MFR development has traditionally been viewed in zoning practice as a use that is not compatible with SFR development. That perception has resulted in separation distances and buffer requirements. The separation has sometimes put MFR developments on high volume roads near large parking lots with only driving connections to the community. But for residents of an MFR development, connections to schools, services, employment and shopping are desirable characteristics. Attractive locations with landscape features and community spaces designed for people are also important. Location, connection, and design features are all important parts of creating a quality urban environment.

If land is not already designated for MFR residential development, a developer begins the development process with a request for rezoning. A proposed development may be viewed by residents as a threat to the safety and security they value in the region. Concerned citizens may bring objections of noise, traffic, and crime to public meetings. Citizens may have concerns about the size or the appearance of the housing units or the impact on the nearby housing values. Justified or not, this type of resistance presents a challenge to elected and appointed officials.

Once the zoning designation is in place, the next challenge is likely to be the land use regulations themselves. Communities regulate location, density, and the uses permitted as part of an MFR development. All of these requirements have an impact on the market forces driving the creation of MFR housing. For example, if allowable densities are placed lower than the tipping point, proposed developments will be marginally profitable or unprofitable. In this case, market forces will not fill the gap. Communities also regulate the site development requirements and the types of uses that may be allowed as part of an MFR development. Zoning regulations may exclude the types of development that will fill the gap.

Christopher B. Leinberger is the Director of the University of Michigan's real estate graduate studies and a Visiting Fellow in the Metropolitan Policy Program at the Brookings Institute. His book, *The Option of Urbanism; Investing in a New American Dream*, addresses financial and regulatory impacts in the real

estate market in the United States and is an excellent resource on this topic. Leinberger's research found that people are willing to pay a premium ranging from 40% to 200% on a price per square foot basis for a walkable urban place as opposed to a competitive near by drivable suburban place. At the same time he notes financial and regulatory challenges to developing this type of development. The price premium is an indicator that there is a pent-up demand for walkable urbanism and, according to Leinberger, the market is slowly responding.

Closing the Gap

The most direct action that local units of government can take to close the gap between the "Trend" pattern of housing and that of the Vision is to review local planning and zoning documents. A Master Land Use Plan lays the foundation for the land use regulations that follow. The Vision of a variety of housing choices should be included in the planning document. The zoning ordinance is the key land use regulatory tool that can enable or hinder the creation of new housing options in the community. Multi-family residential development and mixed-use development need to be permitted options both on the zoning map and in the zoning text. The land use regulations should allow for and encourage the creation of pleasant living spaces with a variety of transportation connections.

In addition to the regulatory framework, the arena of public opinion is another system to be addressed. Public education initiatives can help to build community support for a change in the public form. These can be directed to elected and appointed officials through training channels; to children through school activities; and to the larger community through public awareness campaigns. An understanding of peoples' needs and community benefits will bring support from a variety of citizens and community groups.

There are other public and private initiatives that can adjust the housing market trends. One option is a targeted approach to creating low-income housing units. These may be required with some financing programs or they may be encouraged through bonus provisions in local zoning ordinances. Another tool is housing rehabilitation programs that can preserve existing, affordable housing units in a safe and attractive condition. Also, employer-assisted housing programs support the creation of workforce housing through the private sector. An affordable housing trust fund is another tool to help create new housing types.

The financial framework is another hurdle to closing the gap in housing choices. Christopher Leinberger notes that "real estate professionals, for the most part, only know how to build and finance suburban and semirural product..."[1] From this perspective, professional education may be part of the solution. In addition, Leinberger promotes a change to construction financing by providing short, medium, and long-term financial support to match the investment interests of different groups. Leinberger notes, however, that this can only be successful when communities are committed to maintaining permanent urban centers and limiting fringe development and sprawl.

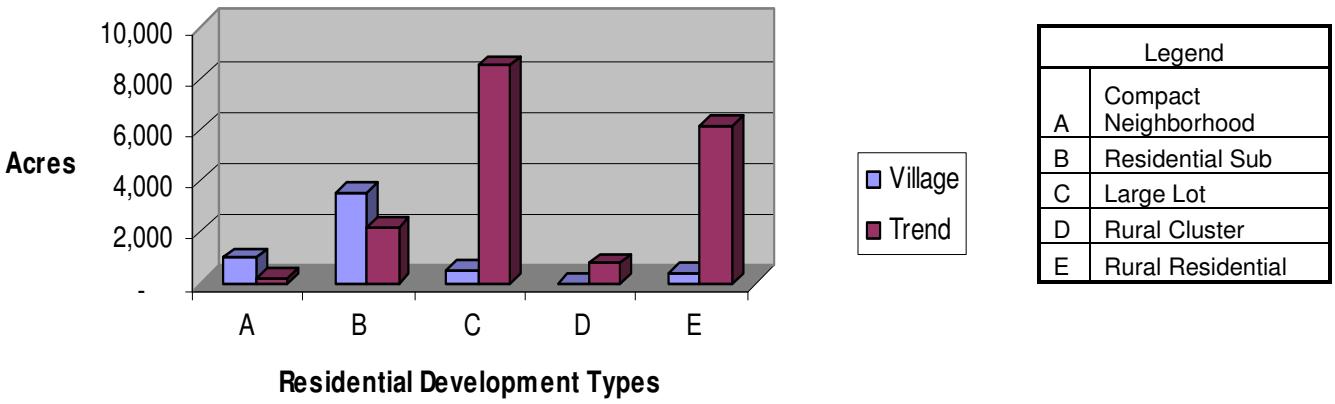
[1] Christopher B. Leinberger, "Building for the Long Term" (Urban Land, November/December 2003) 94-98.

4.2 Urban development

The Grand Vision promotes a pattern of urban development that emphasizes building in areas where there is already development—in existing cities and villages around the region. This goal was included in the preferred regional Vision in part because it reduces the amount of agricultural and vacant land converted to urbanized uses discussed in **Section 4.3**. It is also preferred because it supports the village development pattern which is a much loved part of the region's urban landscape.

Several measurements reflect the physical development pattern in terms of acreage. The residential and commercial development types can both be measured in acreage. Another measure of the gap between the "Trend" and the preferred scenario is the number of new jobs and dwelling units provided in the *Downtown*, *Village*, and *Main Street* development types. The regional Vision provides a higher concentration of employment and housing in these walkable urban categories.

The preferred regional Vision places new development in existing cities and villages. **Figure 7** below shows a comparison between the amounts of vacant land consumed by residential development types in the "Trend" and the "Villages" scenarios. The two most noticeable differences are in the *Large Lot* and *Rural Residential* development types. There is almost no vacant land consumed in the preferred regional Vision in those two categories. In the "Trend" scenario, there are approximately 15,000 acres of vacant land converted to residential use in those two categories alone. Overall, the "Trend" scenario converts 17,747 acres of vacant land to residential use while the "Villages" scenario converts 5,494. This is a gap of 12,253 acres.



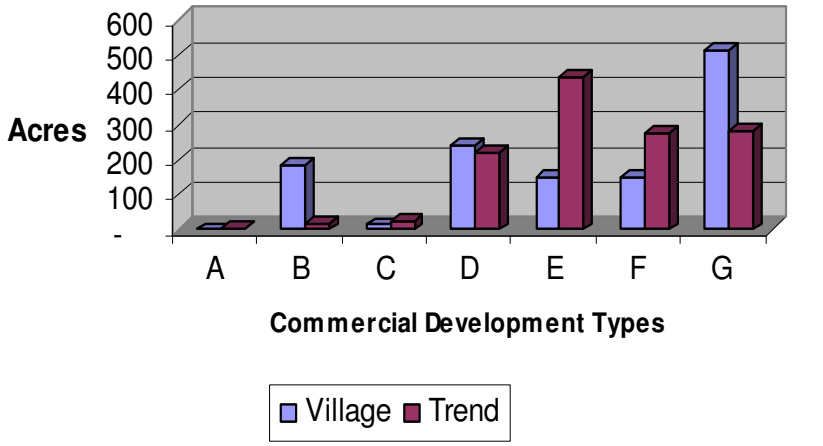
Source: FAI and Mead & Hunt, Inc.

Figure 7 Vacant Acres Consumed by Residential Development Types

The amount of vacant land for commercial provides a similar indicator. The "Trend" development pattern has very little land consumed for any of the walkable commercial categories (A-C) while the preferred scenario shows a comparatively large amount of vacant land consumed in the compact neighborhoods and residential subdivision categories. Conversely, the "Trend" development pattern has a higher amount of vacant land converted in the auto-oriented commercial categories of highway commercial and office park. The *Activity Center* development type is almost equal between the two scenarios. The *Activity Center* is an auto-oriented development type that occurs at major intersections. It is also a form of mixed-

use development that can be created from an existing corridor commercial, or strip-development land use pattern.

Numerically, the gap between the amounts of vacant land converted for commercial uses is 1,249 acres in the "Villages" scenario and 1,258 acres in the "Trend" scenario. The amount of land converted is almost identical in terms of acres. The gap comes in the distribution of acres between development types.



Legend	
A	Downtown
B	Village
C	Main Street
D	Activity Center
E	Highway Comm.
F	Office Park
G	Industrial

Source: FAI and Mead & Hunt, Inc.

Figure 8 Vacant Acres Consumed by Commercial Development Types

Another way to look at the gap in urban development is through the number of housing units and jobs provided through compact, walkable development types compared to those provided through suburban or auto-oriented development types. **Table 9** presents data on the amount of housing units and jobs that are achieved through infill development in areas in walkable, commercial areas.

Table 9 Infill Development Patterns in Walkable Commercial Development Types

	Trend	Villages	Trend	Village
Development type	**Infill DU**	**Infill DU**	**Infill Employment**	**Infill Employment**
Downtown	582	449	902	695
Village	425	1,278	784	2,355
Main Street	632	1,230	1,364	2,654
Total	**1,639**	**2,956**	**3,050**	**5,704**

Source: FAI

The number of dwelling units provided in different categories overall was reviewed in **Section 4.1**. Here we consider the amount of infill housing that is provided in walkable urban areas. The number of infill dwelling units provided in the "Villages" scenario is almost double that of the "Trend" scenario. The overall number of dwelling units is held constant between scenarios so that in the preferred future scenario, an additional 1,317 dwelling units are provided as infill development rather than as development

on vacant land. Employment is also provided as infill at an approximate rate of 2:1. Notice especially the gap between the numbers of jobs provided in the "Villages" scenario (2,355) through infill employment and the "Trend" scenario (784) in the *Village* development type—a gap of 1,571 jobs. This strongly supports the "Villages" scenario emphasis on placing new development in villages around the region. Some of the new development is achieved through infill development within the existing urban footprint.

Causes

Much of the loved urban landscape, as seen in town and village centers and along main streets cannot be replicated due to current land use regulations. Regulatory barriers appear in local zoning ordinances, in the zoning map, permitted land use districts, and development requirements. This issue is similar to the discussion of the housing gap in **Section 4.1**.

Public infrastructure, or lack of public infrastructure, can also cause the gap between the "Trend" scenario and the preferred, regional Vision. Community sewer and water service is necessary to achieve the Vision's dense, urban development patterns in cities and villages around the region. These systems will most likely be public systems but may also be designed privately to support a single development. In addition, other public infrastructure will be needed to make communities functional and desirable at the higher densities including community parking facilities, urban parks and plazas, and attractive streetscapes. Technological infrastructure will also be needed to encourage housing and employment around the region.

The financial system may also provide challenges and barriers to mixed-use, walkable development types similar to the situation discussed in **Section 4.1**.

Closing the Gap

Local units of government can help to close the gap by reviewing their zoning ordinance and making revisions as needed. The zoning ordinance should include a mixed-use zoning district for village, mainstreet and downtown development. Mainstreets and existing or future transit corridors should also include zoning tools to permit the desired type of mixed-use development. Density limitations and site development requirements should be carefully reviewed. To encourage the preferred development type, incentives can be built into the zoning ordinance. One example of an incentive is an area where mixed-use developments are allowed by right or without permit fees (or both). Form Based Codes (FBCs) are a regulatory tool that create a predictable urban form and should be considered as a tool to encourage mixed-use in cities, villages, mainstreets, and town center developments. The Form Based Codes Institute provides this definition: *Form-based codes foster predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code. These codes are adopted into city or county law as regulations, not mere guidelines. Form-based codes are an alternative to conventional zoning.* For more information on Form Based Codes, visit the Form Based Codes Institute at www.formbasedcodes.org.

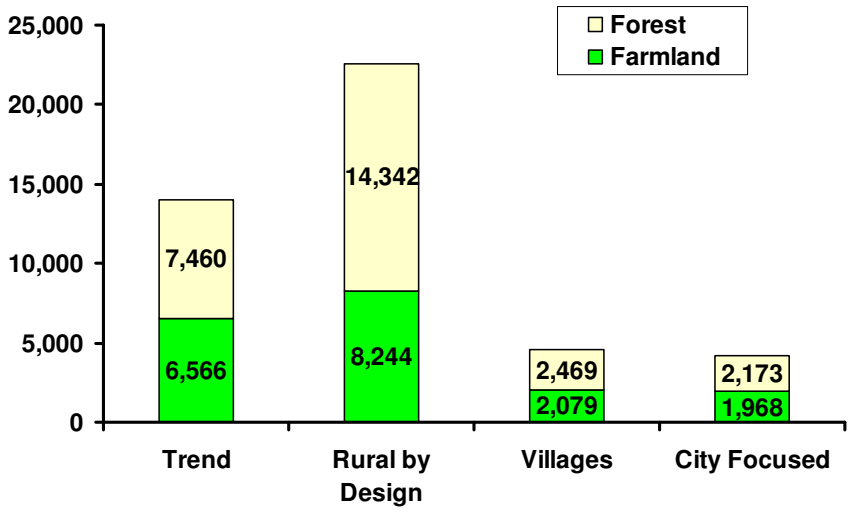
Local units of government can also begin to explore the issue of providing public sewer and water or expanding existing services if needed. Initial steps include preliminary design and financing options. These first steps may be enough to put communities in a position to attract development in urban centers

and secure grant funding or other financial support. Currently, each local unit of government is responsible for financing its own infrastructure. Financing comes in part from outside lending sources. Some money is designated within the general fund for exploratory activities and matching dollars. Local tax capture districts are another way to provide local funding for infrastructure. The traditional approach may be ineffective or impossible in the current economic climate. The region may need to consider a more creative approach to funding sewer infrastructure in order to achieve the regional Vision.

In places where sewer service is limited or unavailable to serve more dense development patterns, a decentralized wastewater system may be another alternative to supporting density. In a 1997 Report to Congress, the Environmental Protection Agency (EPA) concluded that "adequately managed decentralized wastewater systems are a cost-effective and long-term option for meeting public health and water quality goals, particularly in less densely populated areas."[2] The EPA has further noted that "such a program, if properly executed, can protect public health, preserve valuable water resources, and maintain economic vitality in a community."[3] Information and additional resources are available through the EPA, the Michigan Department of Natural Resources and Environment, and the County Health Department.

4.3 Farm and forestland

The preferred regional Vision will consume approximately 4,500 acres of farm and forest land compared to the "Trend" scenario's approximately 14,000 acres. The citizens of the six-county region were clear in their desire to protect the region's water quality and preserve the farm and forestlands that contribute to the rural character, the scenic beauty, and the environmental health of the region. The largest single land use in the six-county region is forest. There is a preservation or gap of 4,487 acres of farmland and 4,991 acres of forestland between the "Trend" scenario and the "Villages" scenario.



Source: FAI

Figure 9 Acres of Farm and Forestland Consumed

[2] US EPA Septic (On-site) Systems, Overview, http://cfpub.epa.gov/owm/septic/index.cfm
[3] Ibid

The preservation of farm and forest land is complemented by an urban development pattern with a smaller footprint. They are two parts to the whole solution. The regional Vision, which is similar to the "Villages" scenario, has a compact, denser development pattern. It places new development in areas where there is already existing urban development. Some of the new development is accomplished as "infill" development and some is an expansion of the city or village area.

Compact, walkable residential and commercial development patterns both support the Vision by reducing development pressure on rural lands. Here are two examples. More new single-family homes in the "Villages" scenario are built in compact neighborhoods and residential subdivisions. There are only 522 new homes built in large lot subdivisions compared to 10,219 in the "Trend" scenario. There is also a shift away from auto-oriented commercial development types although it does not cease altogether. For instance, in the *Highway Commercial* development type, there are 3,048 retail jobs in the "Trend" scenario and 1,037 in the "Villages" scenario. The overall number of retail jobs is similar between the two scenarios but the location shifts into more compact, walkable development types that consume less land.

There are other initiatives introduced in the Vision document's Guiding Principles that are not quantifiable with land use or transportation indicators but will play a role in supporting farmland as a viable, economic activity in the region. Economic success in agriculture activities will reduce the pressure to convert farmland to another use. The conservation of large parcels and areas devoted to agriculture reduce conflicting uses that threaten agricultural activity. Both the regulatory framework and community initiatives can support the economic success of agriculture.

Causes

The conversion of farmland and forestland to other uses occurs because it's permitted and because it's profitable. The market value of farmland and forestland is lower than the value of the same land for residential or commercial uses. The economic strength of agriculture varies from year to year. Property owners may sell land for financial profit as a way to cover operating losses or as a way to fund retirement.

Local land use regulations often see farmland and forestland as a holding zone until it is developed to a different use. Future land use plans may allow for these lands to be converted to residential or commercial use through a rezoning process. To maintain a rural atmosphere, communities plan long-term for SFR zoning districts with minimum lot sizes of five to ten acres. The result is a patchwork of large lot and rural residential developments.

Local units of government receive tax revenue from the properties located within their jurisdiction. Commercial developments in a rural township can provide much needed local revenue for the community with little to no cost for additional infrastructure. Businesses are attracted by a lower tax rate, less costly development standards, and a faster permitting process. To accommodate commercial development, local zoning maps may show a strip commercial district along the community's major road or at a major intersection.

This combination of public and private economic influences and regulatory systems all contribute to the gap between the amount of forestland and farmland conserved in the "Trend" scenario when compared with the preferred regional Vision.

Closing the Gap

From a regulatory perspective, some of the goals of the Grand Vision can be supported with changes to local zoning ordinances. Conservation design through planned unit developments will allow rural development to occur in a way that protects farmland, forestland, and other natural resources. Zoning provisions in cities and villages that create higher density in urban areas will compliment rural preservation activities such as changing minimum lot sizes. Actions that strengthen the agricultural economy in the region will also help to close the gap.

The State of Michigan's Zoning Enabling Act, Act 110 of 2006, Section 506, requires that each local zoning ordinance include an option for open space preservation but it also includes a list of limitations, conditions and exceptions. Local units of government should consider zoning provisions that go beyond this minimum standard to a more comprehensive approach to conservation design. Communities should also look for incentives to encourage its use. Incentives might include bonus density to offset the additional design and construction costs and an accelerated review process. A restrictive traditional zoning option can also be a type of incentive by modifying existing minimum lot size requirements. Conservation design can also be required for developments over a threshold size.

Neighborhood commercial services in Planned Unit Developments (PUDs) can replace the strip commercial designations along state highways. It will be largely the role of the townships to restrict commercial development in rural areas. At this point, the local tax revenue system does not reward townships who support the Grand Vision's land use plan. Instead, it provides an incentive for decentralized commercial development. Townships may philosophically support the regional approach to land use because it supports and preserves agriculture and the rural way of life that residents enjoy. However, the local revenue system is based on amount of development. More development translates into a higher tax base. This also affects the residents' way of life. A system of regional revenue sharing or regional service systems would reduce the local financial benefit from commercial development and remove the systemic incentive.

Regulatory systems can support agriculture with land use policies that consider agriculture as a long-term land use designation rather than a temporary holding zone. Optional primary agriculture zones can provide extra protection from incompatible uses to agricultural land owners. Local zoning can also allow opportunities to diversify local farming operations with retail sales on site or value-added processing activities that make farming more profitable.

In the Grand Vision scenario, less agricultural land is urbanized. The free market system can be a tool to encourage and support the continued use of land for agriculture and managed forests. If agriculture and forestry are profitable, there will be less pressure to convert the land to an urbanized use. The Taste the Local Difference program that promotes local farm foods, helps schools serve them, links new farmers to land and other resources, and supports food and farm business networks is one example of this idea that

is already underway in the region. Another example is the Michigan Commercial Forest program. The Commercial Forest program provides a property tax reduction to private landowners as an incentive to retain and manage forestland for long-term timber production. Landowners participating in this program pay a reduced property tax. Additionally, the State of Michigan pays $1.20 per acre annually to each county where land is listed in the program.

Permanent conservation of farmland and forestland is another tool to protect it from conversion to other uses. Permanent conservation easements can be placed on land either through a voluntarily donation or through a purchase arrangement known as "purchase of development rights" or PDR. The PDR program was created to preserve agricultural land. It allows landowners to receive the difference between the agricultural value and the development value for the land from a combination of state and local funding. In exchange, the owner places a permanent development restriction on the property but retains ownership. This process can be accomplished through private funding through a similar program called "transfer of development rights" or TDR. A TDR program designates a sending (rural) and a receiving (urban) zone. Development rights can be purchased from property owners in a sending zone and applied to a property in a receiving zone.

5.0 Transportation Gap

The preferred regional land use vision is a village-style development pattern around the region. Within the villages, there is increased investment in roads to complete the local street grid. This reduces traffic congestion in the village as drivers chose from a variety of route options. The shorter block lengths are easier for walking and there is increased investment in pedestrian infrastructure. The higher density development nodes locate more housing units and jobs in closer proximity to central transit stops making transit more effective between villages and cities.

The transportation indicators for the Grand Vision scenarios were created as an export from the TC-TALUS area transportation model, which includes the City of Traverse City, nine townships in Grand Traverse County, and Elmwood Township in Leelanau County. Consequently, the transportation indicators report how each scenario performed within the TC-TALUS model area.

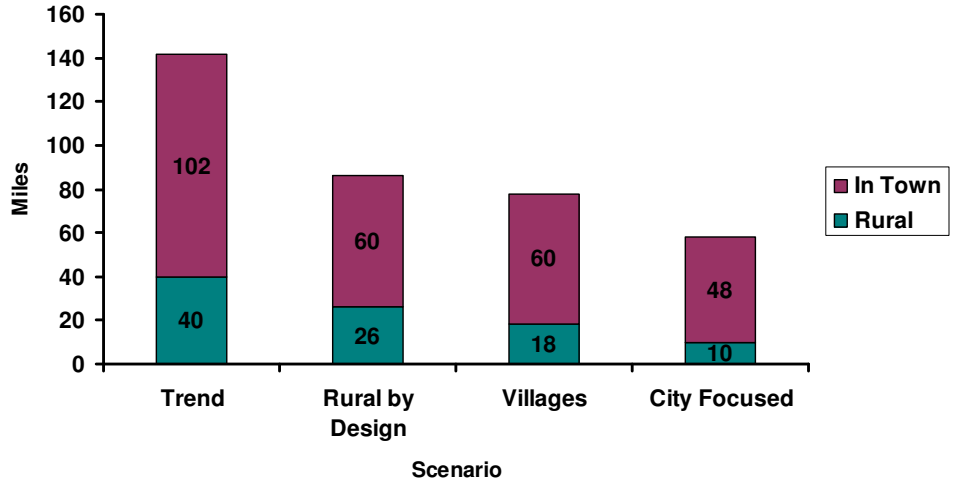
This TC-TALUS model area encompasses most of the high-volume traffic roads in the region and also the eleven "corridors of significance," which have been identified as the ten highest priority transportation corridors for improvement in the region. It does not, however, include the City of Cadillac nor does it include the many villages around the region that are emphasized in the preferred regional Vision. It has value for the Grand Vision study because it identifies systemic patterns in the transportation system that result from different approaches to land use. The transportation model measurements of vehicle miles traveled (VMT), vehicle hours traveled (VHT), and other indicators are only for the model area defined above rather than for the six-county area.

More information on how the scenarios were modeled for both land use and transportation is provided in the *Grand Vision Socio-Economic Report (Task 3.2)*. There was one single analysis of the scenarios using the initial Travel Demand Model (TDM) that produced one set of transportation indicators. A detailed account of the technical details of the traffic modeling activities of the Grand Vision are provided

in a Grand Vision report entitled *Travel Demand Model Methodology (Task 4.3)*. The information provided here is based exclusively on the data created as a result of the scenario analysis. Adjustments were made to the TDM by Kimley-Horn, Associates in cooperation with the staff of the Michigan Department of Transportation to achieve a final TDM but that model was not used to analyze the scenarios.

5.1 Roads

The number of additional lane miles was one indicator established for each of the four possible future land use scenarios. The total number of lane miles was broken down into the number of new rural roads and the number of roads needed "in town." A detailed discussion of the development of the transportation indicators can be found in the Grand Vision report entitled *Travel Demand Model Methodology (Task 4.3)* dated December 2009. The "Trend" scenario is an auto-dependent scenario and has the highest number of lane miles in each category as shown in **Figure 10**.



Source: Kimley-Horn Associates (KHA)

Figure 10 Additional Lane Miles Added

The transportation indicators show that there is a difference of 64 additional lane miles needed between the "Trend" and the "Villages" scenarios from 2006-2035. Over thirty years, this is a difference of just over two miles per year. From this perspective, the lane miles are roughly equivalent. From a cost perspective, the difference is $128 million dollars over thirty years or just over four million dollars each year. Transportation infrastructure costs were established for the Grand Vision's transportation workshops based on industry standards. Those costs are shown in **Table 10**.

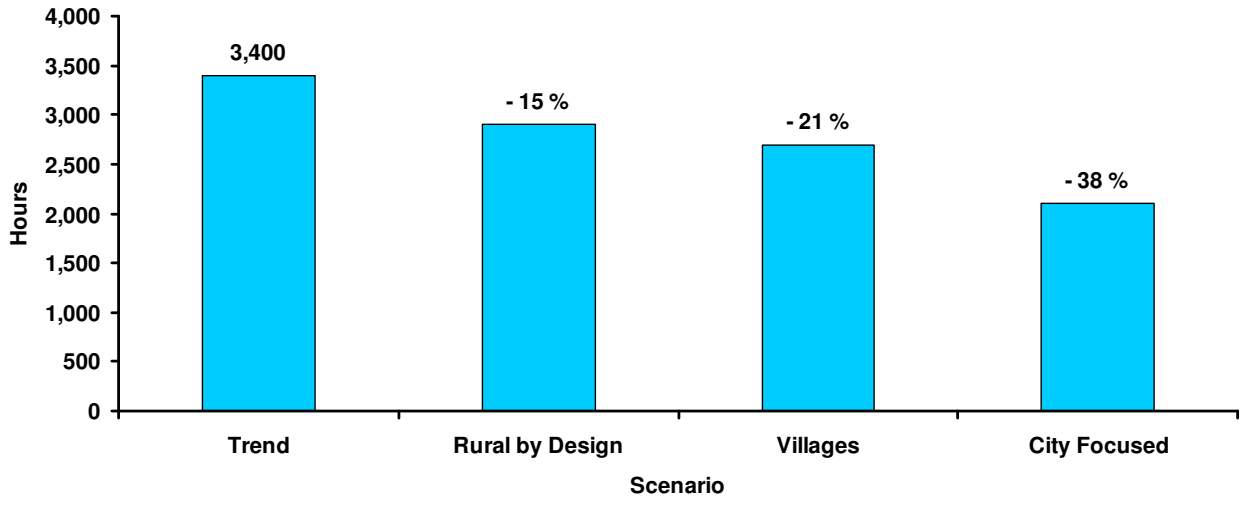
Table 10 Transportation Project Costs for Transportation Workshop

Project	Cost per mile
Commuter Rail	$14 million
Light Rail	$30 million
Bus Rapid Transit	$10 million
Streetcar	$4 million
Regional Bus	$1-2 million
Urban Bus Circulator	$1-2 million
Roadway Widening	$5 million (highways)/ $2 million (non-highways)
New Roadway	$2 million (per lane)
Street Diet / Traffic Calming	$300,000
Pedestrian / Bicycle friendly streetscapes	$800,000 (per square mile)
Multi-Use Path	$750,000

Source: Kimley-Horn, Associates (KHA)

The reduced need for additional lane miles in the preferred regional Vision could make dollars available for other transportation projects including street diets, transit services, and non-motorized infrastructure.

There is increased congestion in the road network in all future scenarios but the increase is highest in the "Trend" scenario. The delay is shown in the transportation model as hours of traffic delay. The *Socioeconomic (Task 3.2)* report included delay numbers produced by the base model (without the 4-D processing) because the base model numbers were used in the scorecard. The output from both the base model and the model with 4-D processing are included in the *Travel Demand Model Methodology* report dated December 2009. Although the numbers change between the models, in each case the scenarios perform similarly in relation to each other. The four possible future scenarios performed as shown below with the 4-D processing. A more detailed explanation of 4-D processing is contained in the *Travel Demand Methodology Report, page 30.*



Source: KHA

Figure 11 Daily Hours of Congestion Delay

In the TC-TALUS model area, the "Trend" scenario experiences 3,400 hours of congestion delay daily. This amount goes down to 2,700 hours in the "Villages" scenario, which is most closely associated with the preferred regional Vision. The "City Focused" scenario measured a further reduction to 2,100 hours of congestion daily. A recent study by the Transportation Research Board (TRB), part of the National Academy of the Sciences, supports this correlation between compact, walkable development patterns and congestion delay. A TRB special report offers these two findings as part of *Special Report 298: Driving and the Built Environment: The Effects of Compact Development on Motorized Travel, Energy Use, and CO2 Emissions (2009)*[4]:

> ***Finding 1:*** *Developing more compactly, that is, at higher residential and employment densities, is likely to reduce vehicle miles traveled (VMT).*
>
> ***Finding 2:*** *The literature suggests that doubling residential density across a metropolitan area might lower household VMT by about 5 to 12 percent, and perhaps by as much as 25 percent, if coupled with higher employment concentrations, significant public transit improvements, mixed uses, and other supportive demand management measures.*

The complete TRB report can be viewed on the organization's webpage at www.trb.org. Both the Grand Vision transportation indicators and the TRB report link higher density to lower carbon emissions through the lower VMT rate. A lower VMT rate also supports the Grand Vision's sustainable energy goal.

Causes

Additional lane miles might be constructed to relieve congestion in the existing road system or to serve areas of new development. The addition of roads that complete links in an existing grid system can also reduce trip distances and give travelers more route options.

One of the reasons the "Trend" scenario needs a higher amount of new lane miles than the other scenarios is because there is a lack of transportation alternatives. The transportation system in the "Trend" scenario has less investment in transit and non-motorized transportation infrastructure. There is also a greater separation distance between home and work and school. As distances increase, people are less likely to walk. Because the transportation system remains fairly auto-dependent, more people drive. This creates higher traffic volumes on the existing road system.

Another reason for the gap in the number of lane miles needed is the more suburban development pattern of the "Trend" scenario. New development stretches into new areas or green field sites. While the roads directly associated with new private development are paid for with private development dollars, the spread of population and employment into new areas creates new travel patterns, new areas of congestion, and a need for new transportation links. Compare this to the regional Vision where new development happens in areas where there is already existing development and much of it occurs as infill development. There is very little development along transportation corridors, which helps maintain the efficiency of the system. Trips in a downtown, a mainstreet, or a village are shorter and more walkable.

[4] *Special Report 298: Driving and the Built Environment: The Effects of Compact Development on Motorized Travel, Energy Use, and CO2 Emissions (2009)* (Washington, D.C.: National Research Council of the National Academies, 2009).

Also, an established grid street pattern offers more opportunities to absorb the new trips than a suburban commercial corridor.

A related cause of the need for more lane miles in the "Trend" scenario is the absence of mixed-use development that is part of the preferred regional Vision. Mixed-use development offers the opportunity to live, work, and play in a single location. Mixed-use developments offer residents the opportunity to eliminate driving trips to the bank, the dry cleaner, the coffee shop, or the convenience store by putting them in the same location. Compact, mixed-use development can also be an effective location for a transit stop, offering another alternative to driving trips.

Activity centers are an auto-oriented form of fairly dense, mixed-used development with a collection of big box retailers, offices, restaurants, and multi-family housing. There are existing activity centers in the region and the "Villages" scenario projects another 240 acres will be devoted to new activity centers around the region by 2035, which is almost identical to the "Trend" scenario. While this development type seems "at odds" with the regional vision, it does fill a market need and is a recognized development type. However, as activity centers are developed or redeveloped, changes to development guidelines could encourage new design practices to minimize the internal auto-oriented design and emphasize the creation of public spaces and use of green infrastructure. This could include the creation of public plazas, smaller surface parking areas, pedestrian infrastructure, transit centers, and more green areas.

Closing the Gap

Similar to the discussion of housing and urban development, there are regulatory tools to help close the gap between the "Trend" scenario and the preferred regional Vision. The preferred regional Vision balances investment in the road system between maintaining the existing road system and strategic investments in new lane miles. Some of the new lane miles will be additional lanes on congested road sections and other improvements will be in urban areas to improve connectivity within the local street network. In addition to new road systems, there are several techniques to make the existing road system more efficient through reduced congestion. They include demand management, supply side operational improvements, and expanding modal options.

Demand management programs work with the goal of reducing the number of vehicles on the road. These initiatives address driver behavior though economic, educational, and environmental initiatives. Economic tools make it more costly to drive and park at peak hours in congested locations. Strategies include fares and tolls for roads as well as parking rates. Higher costs at peak times and in prime locations can encourage people to choose a different mode or time of travel. Educational initiatives include efforts to inform the public of current transportation options and to inform policymakers of the impacts of their decisions on the transportation network. Environmental initiatives include employer-based programs to encourage flexible work schedules, carpool or vanpool programs, and the promotion of transit usage. They also include coordinated land use techniques including growth management and transit oriented design policies. Some of the solutions are related to regional land use patterns. Communities should review their land use regulations and make sure it is legal to create mixed-use and other walkable, urban development forms in existing downtowns, mainstreets, and villages. Conversely,

communities should be aware of planning and zoning documents that permit or encourage green field development as the path of least resistance.

Operational improvements are geared toward improving the "supply side" of the transportation system by making the transportation system operate as efficiently as possible. This is done by addressing the physical environment, the traffic flow, and through the use of technology. Improvements to the physical environment include intersection upgrades, access management, and the elimination of bottlenecks. Improvement to traffic flow is addressed through traffic signal improvements and techniques like reversible lanes that allow the direction of travel to be changed during peak travel hours. Intelligent Transportation Systems use technology to improve traffic operations by providing drives with data on delay times and alternate route options. Technology is also being used to quickly identify crashes and other traffic obstructions.

Modal options focus on ways to give people transportation choices beyond just driving alone in their cars. These include improved transit service, investment in physical facilities, and informational initiatives. New transit routes and more frequent transit service can improve efficiency and increase ridership. Investments in park-and-ride lots, high occupancy vehicle lanes, dedicated bus lanes, and transit centers can also support carpool and transit trips. Informational programs can encourage and coordinate rideshare programs and increase awareness of existing pedestrian and bicycle networks and services. Here again, employers can be a partner by supporting carpool programs at the worksite.

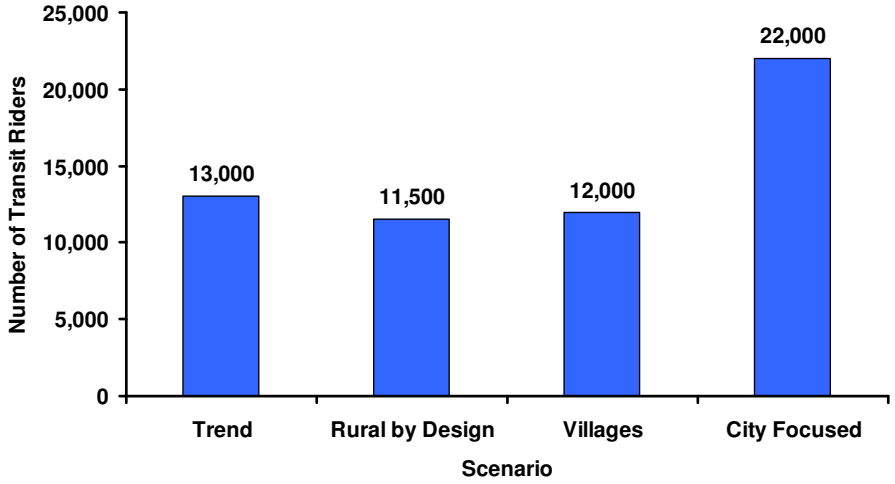
5.2 Public transportation

The public expressed support for a variety of transportation choices during the Grand Vision's public input process. At the scenario planning workshops, there was support for expanded bus service and additional modes of public transit including bus rapid transit (BRT) or a streetcar in Traverse City. But the Grand Vision is an exercise in considering tradeoffs and choices. Sometimes a preferred scenario has unanticipated consequences.

The desire for a dispersed pattern of population centers in villages around the region appears at first glance to have a negative impact on daily ridership. In the "Trend" scenario, the daily transit ridership is projected at 13,000 riders per day. In the "Villages" scenario that most closely models the preferred regional Vision, the transit ridership number drops by 1,000. This could be partially the result of increased walking trips replacing transit trips, which is another successful way to reduce automobile trips. It could also be a result of the limited geographic area of the Travel Demand Model (TDM) when compared to the six-county regional study area. But it also reflects the challenge of serving a dispersed population in a large region with transit service.

During the Vision Decision polling process, there was also strong support for the "City Focused" scenario, which placed most new population and employment growth in Traverse City and Cadillac. In this scenario, the transit ridership goes up to 22,000 riders per day. The large population concentrations in a few dense, urban areas are more effectively served by transit. The residents of the region will be

challenged to balance their preference for smaller population concentrations in villages around the region with the desire for public transit service.



Source: KHA

Figure 12 Daily Transit Ridership (2035)

Table 11 Daily Transit Ridership (2035)

	Trend	Rural by Design	Villages	City Focused
Total Transit Ridership	13,000	11,500	12,000	22,000
Walked to Transit	9,750	8,625	9,000	16,500
Bike to Transit	2,600	2,300	2,400	4,400
Drive to Transit	650	575	600	1,100

Source: KHA

Causes

One of the guiding principles of the Grand Vision is to increase public transportation services regionally and in the cities. The preferred regional Vision is a village development pattern with compact nodes of development spread around the region. The villages are too small to support a dedicated transit system. Rather, transit will serve to connect villages with each other and with the cities in the region. Although the output from the TDM model does not define a gap in absolute numbers, it does raise awareness that there may be challenges to increasing public transit service in the preferred regional Vision.

Some part of the gap is related to the transportation system itself. Cost and convenience are two factors that make a difference to riders. Rising fuel costs during 2008 raised transit ridership and pushed park-and-ride lots beyond capacity in areas around the country and cost will continue to influence ridership. On the other hand, bus pass programs can also encourage transit trips by lowering trip costs.

The transit route and timing are essential elements of convenience. The transit service needs to connect housing to jobs and services. For the regional Vision, this means connecting villages around the region with each other and with city centers beyond county lines. The amount of time it takes to make the trip

will also influence people's decision to drive or ride. The amount of congestion on the road can increase trip time in the car while regular transit service and dedicated bus lanes can reduce the time of a transit trip. Amenities at the transit stop and along the route to help make the trip easier and more comfortable can also help boost ridership.

Land use patterns also make transit more or less successful based on the ability to connect population and employment nodes. When housing and jobs are spread out in sprawling, suburban patterns or across rural areas, transit service is less effective. The cost per rider is higher and people have farther to walk at the beginning and end of the trip, which discourages transit travel. Conversely, compact land use patterns in city and village centers and at key development nodes can make transit more effective. More riders are within a short walk of transit stops at the beginning and end of the trip. A report from the Urban Land Institute proposed the following minimum densities for supporting transit:

Table 12 Minimum Densities for Supporting Transit

	Local Bus, Intermediate Service	Local Bus, Frequent Service	Light Rail	Transit
DU per acre	7	15	9	12
Residents per acre	18	38	23	30
Employees per acre	20	75	125+	N.A.

Source: Ten Principles for Successful Development around Transit[5]

Closing the Gap

Antrim County Transportation, Benzie Transportation Authority (Benzie Bus), Bay Area Transportation Authority (BATA), Kalkaska Public Transit Authority, and the Cadillac/Wexford Transit Authority offer transit services in the six-county region. These public transportation systems are already in place and they can be strengthened with additional amenities, expanded routes, and incentives to increase ridership. A rural transit strategy focused on fixed-route "village connectors" would support the preferred regional Vision of village development around the region.

Through the Grand Vision public input process, citizens expressed a preference for increasing regional mobility options including public transportation. At the regional level, a regional transit and non-motorized analysis study to designate transit routes and coordinating multi-modal centers will be key to the success of the regional transportation network. This type of study will address both the location of transit routes and identify priority routes for initial investments. If density is high enough in Traverse City, the potential for a streetcar within and near Downtown Traverse City can be studied.

The locations of transit routes, priority corridors, and multi-modal centers need to be supported by local land use decisions to place higher density development at key nodes in the system. Whether the transit system is local or regional, local land use authorities can provide for nodes of compact, higher density development along major corridors and in population centers.

[5] Robert Dunphy, Deborah Myerson, and Michael Pawlukiewicz, *Ten Principles for Successful Development around Transit* (Urban Land Institute, 2003).

6.0 Employment Gap

The location of new employment in terms of its relationship to the region's urban development patterns was discussed in **Section 4.2**. There, a distinction was made between infill development rates vs. green field locations. Here we consider the location of new jobs geographically around the region.

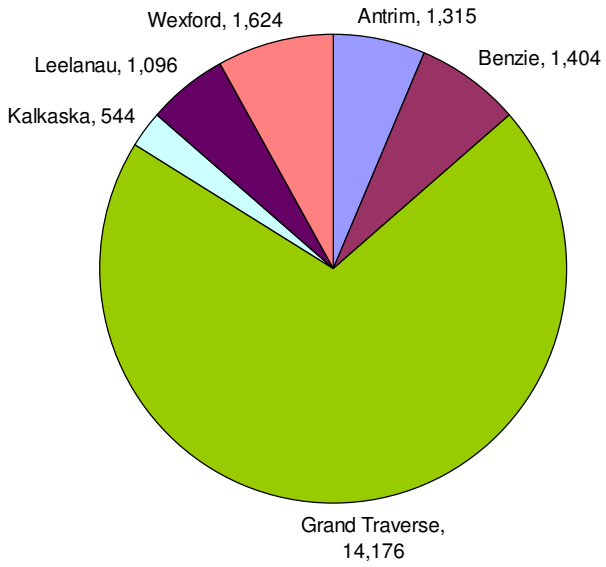
In the "Trend" scenario, most of the new jobs in the region are located in Grand Traverse County. In the "Villages" scenario, which is closest to the regional Vision, new jobs in the six-county region are more equally distributed between counties. The number of new jobs in Grand Traverse County is reduced by almost half in the "Villages" scenario. Those jobs move to each of the other counties with Kalkaska, Leelanau, and Wexford each having gains of more than 1,500 jobs and Kalkaska County having the largest percentage increase. Antrim County has the smallest increase.

Table 13 "Trend" and "Villages" Scenarios: Jobs Added (2006-2035)

Jobs Added 2006-2035				
	Trend	**Villages**	**Change**	
Antrim	1,315	1,628	313	24%
Benzie	1,404	2,046	642	46%
Grand Traverse	14,176	7,881	(6,295)	-44%
Kalkaska	544	2,204	1,660	305%
Leelanau	1,096	2,798	1,702	155%
Wexford	1,624	3,440	1,816	112%

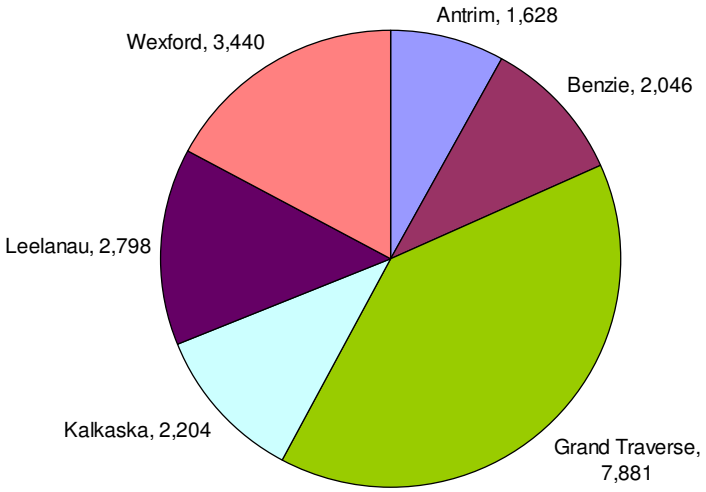
Source: FAI

Here the data is shown graphically in pie chart form:



Source: FAI

Figure 13 "Trend" Scenario: Jobs Added (2006-2035)



Source: FAI

Figure 14 "Villages" Scenario: Jobs Added (2006-2035)

Overall, the "City Focused" scenario keeps most of the employment in Grand Traverse County with development concentrated in Traverse City. Wexford and Kalkaska Counties also see an employment increase in the "City Focused" scenario with jobs being added in and around Cadillac and Kalkaska. Kalkaska County adds an additional 1,000 jobs and Wexford adds an additional 2,000 jobs. Other counties lose employment in the "City Focused" scenario.

Table 14 Four Scenarios: Jobs Added (2006-2035)

Jobs Added				
	Trend	**Rural by Design**	**Villages**	**City Focused**
Antrim	1,315	1,151	1,628	602
Benzie	1,404	2,250	2,046	1,039
Grand Traverse	14,176	9,540	7,881	12,566
Kalkaska	544	2,186	2,204	1,451
Leelanau	1,096	2,049	2,798	1,015
Wexford	1,624	3,078	3,440	3,626
Total	20,159	20,254	19,997	20,299

Source: FAI

Causes

One of the causes of the gap between the "Trend" future and the preferred regional Vision is the difference in investment in urban infrastructure. The preferred regional Vision places concentrated growth in cities and villages around the region. This is reflected in the distribution of employment and housing in the "Villages" scenario. The villages in the region grow into communities where people chose to live, work, and play through the addition of infrastructure and public amenities.

In the preferred regional Vision, villages invest resources to create a pleasant, walkable center. Investment is also made in community parking, water and sewer systems, and connections to

neighborhoods and parks. The same pattern is seen along local main streets and in the region's two downtown areas. Investment is also made in communications infrastructure to support businesses development across the region. This higher level of public investment is necessary for businesses with infrastructure needs and is attractive to businesses as a place that is appealing and affordable to prospective employees. The villages in the "Trend" scenario have a lower level of public investment.

Another reason for the gap is a change in regulatory standards to allow for a variety of commercial land uses and higher intensity land uses. In addition to the public investment, public regulations in the "Villages" scenario permit a range of building types and uses. Multi-story buildings are prevalent and mixed-uses are permitted and encouraged. A range of housing choices is located within walking distance of the village center or main street. Employment opportunities also exist because regulations in the villages and along main streets permit and welcome small-scale retail and offices, as well as small manufacturing or processing businesses.

Closing the Gap

To close the gap, small and large urban areas in the region need to invest in physical infrastructure. This includes sewer, water, sidewalks, parking areas, bike racks, and other functional amenities. While this idea is straightforward, the reality is a challenge. The challenge is who will pay for them and where the money will come from. Tax capture authorities and public bond initiatives through local units of government are two traditional funding methods for municipal projects. Regional collaboration or cooperative agreements may open the door to new funding networks such as regional utilities authorities and public-private partnerships.

Other amenities add to the aesthetic appearance of the community and improve the quality of life. These types of improvements are part of "placemaking" which is the process of creating places that will attract people because they are pleasurable or interesting. Streetscape improvements, benches, banners, planters, pocket parks, plazas, and public art can all contribute. Public activities sponsored by public or private organizations can also be part of creating special places. These might include concerts, parades, picnics, and contests.

Another tool for closing the gap between the "Trend" scenario and the preferred regional Vision is through regulatory changes. First, municipalities need to make sure that the type of development described in the regional Vision is possible. This includes provisions for mixed-use, dense urban development patterns and a wide range of permitted commercial uses. As discussed in **Section 4.2**, Form Based Codes are one tool for creating this type of development pattern. Beyond simply permitting the uses, communities can encourage preferred development styles and types through incentives in the review and permitting process.

7.0 Conclusion

The *Gap Analysis* report considers and compares the "Trend" scenario with the preferred regional Vision for land use, transportation, and employment. The difference between the two is the gap. Understanding the gaps between where the region is going and where it wants to go is the first step in formulating an action strategy to close them. There are gaps in the land use and transportation systems. There are regulatory causes that can be addressed through local land use authorities. There are market forces that can be adjusted through incentive programs. There are social perceptions that can be changed through education and public outreach. In short, changes can be made from the business as usual approach to adjust the course of transportation systems and land use patterns in the region.

The housing needs analysis that was performed as part of the Grand Vision study provided extensive data about the future housing needs of the six-county region. The shortage of workforce housing is arguably the largest system gap based on the percentage of the population affected. As noted in **Section 4.1**, the housing stock will need to add approximately 3,500 rental dwelling units to the workforce and below market housing stock by 2035 to meet the projected need. There are gaps in other parts of the owner-occupied and rental housing markets that can be closed through changes to current land use regulations and financial systems. Developers can finance and build the type of housing the region needs.

Housing in the six-county region is more broadly tied to the larger issue of urban form. Urban form is how the region grows in terms of physical structures and development footprints. It also includes "placemaking" efforts related to public amenities. The preferred regional Vision calls for the creation of unique cities and villages with a main street or a downtown. The Vision map shows the new development located in existing cities and villages around the region with a development footprint smaller than that of the "Trend" scenario. The new growth is assimilated partially through a pattern of infill development. Several recommendations in this report include a charge to local authorities to examine land use regulations. They will permit and encourage the desired urban form as expressed through the regional Vision document and map.

In order to achieve the desired density of urban development, public infrastructure improvements are essential. New or expanded community systems for sewer and water will be necessary to serve small lot single-family homes, multifamily residential buildings and mixed-use developments. Other public infrastructure including shared parking, streetscape amenities, and public plazas will also contribute to the creation of attractive, desirable urban areas. Technical infrastructure is also important to attract new businesses and new residents to small village areas. This is a big task for small, local governments. Limited budgets and small staffs may not stretch this far. But the Grand Vision is a regional plan and the solutions may also be regional. The capacity of the system can be expanded within these constraints. There are opportunities, either formally or informally, to share staff and information resources toward a common goal.

In the transportation system, there is a gap between the new lane miles needed in the preferred regional Vision compared to the "Trend" scenario. This is achieved in part because the Vision's compact, urban land use pattern results in shorter trips, lower VMT, and less congestion. It is also because the preferred

regional Vision provides more transportation choices through investment in transit and non-motorized systems. To close the gap between the Vision and the "Trend" scenario, the region will shift some spending away from new roads to spending on transit and non-motorized transportation infrastructure. Room can be made in shrinking budgets to accommodate funding for transit, bike lanes, and pathways.

The region's choices about transit investment will be influenced in part by the density of housing and employment development in urban areas and in nodes along current and future transit corridors. Higher density urban development can be served more efficiently by transit than a dispersed pattern of suburban or strip commercial development. Communities can plan ahead for transit service in local land use planning activities.

The "Trend" scenario might be described as the path of least resistance. It's the direction the region will grow if things continue forward along the same path. But that path will not create the kind of place that residents want over the next fifty years. There are gaps between how the region is growing and how it wants to grow. This report has identified gaps between the trend and the preferred scenario in land use, transportation, and employment in quantifiable terms to establish the difference. Commentary is included about the cause of the gaps and ways to close them. A future report, the *Preferred Land Use Vision* report, will include more detailed information about the tools to close the gaps, a strategy to prioritize the activities and suggested benchmarks to track their success.