



PURPOSE AND NEED STATEMENT

Michigan / Grand River Avenue Transportation Study

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Final Draft¹

URS

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¹ Includes revision on page 3 resulting from Steering Committee action on 9/2/10.



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LIST OF ACRONYMS

AA	Alternatives Analysis
ADT	Average Daily Traffic
CATA	Capital Area Transportation Authority
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
LPA	Locally Preferred Alternative
MDOT	Michigan Department of Transportation
MPO	Metropolitan Planning Organization
MSU	Michigan State University
NEPA	National Environmental Policy Act
TAZ	Traffic Analysis Zone
TCRPC	Tri-County Regional Planning Commission
TOD	Transit Oriented Development



1.0 EXECUTIVE SUMMARY

The Purpose and Need Statement defines the framework by which a wide range of transportation modes and alignments will be identified and evaluated for the Michigan / Grand River Corridor. As part of establishing the Purpose and Need, the Study will examine demographic, land use and transportation conditions using information from various resources including, but not limited to, area stakeholders and the public.

The development of the Purpose and Need is a required initial step of the Alternatives Analysis process, as defined by the Federal Transit Administration (FTA). Obtaining FTA New Starts funding for implementation of transit improvements is a very competitive process due to funding limitations, making it important that the preferred transportation alternative directly addresses the demonstrated transportation needs in a corridor. This document is being prepared in accordance with the National Environmental Policy Act (NEPA) and up-to-date FTA New Starts guidance.

The Michigan / Grand River Avenue Corridor is centered on Michigan Avenue and Grand River Avenue running from downtown Lansing through the City of Lansing, City of East Lansing, Michigan State University (MSU), Lansing Township and Meridian Township. The project Corridor extends for one mile on either side of Michigan Avenue and Grand River Avenue, and contains fully developed urban neighborhoods, suburban neighborhoods, and a range of adjacent commercial and retail uses. The entire seven-mile corridor is currently served by regular bus service, Capital Area Transportation Authority (CATA) Route 1.

1.1 Study Goals and Objectives

In collaboration with the project Steering Committee, which includes representatives from each of the communities in the Corridor, a set of four key goals were set for the Michigan / Grand River Transportation Study:

- Improve the Corridor's safety, mobility and accessibility



- Improve multi-modal transportation that supports, sustains and grows economic value in the Corridor.
- Contribute to improvements to the overall environment (natural, social and physical) in the region, and minimize any direct negative impacts in the Corridor.
- Complement or enhance the character of the Corridor.

These goals and their related objectives (see Table 1-1), will guide the development, evaluation and selection of preferred transportation solutions for the Corridor.



Table 1-1. Study Goals and Objectives

Goal	Objectives
<p>Improve the Corridor's safety, mobility and accessibility.</p>	<ul style="list-style-type: none"> ▪ Provide enhanced transportation choices, particularly for those travelling east-west within the Corridor. ▪ Improve safety for all modes of travel. ▪ Optimize the overall capacity of the transportation system. ▪ Enhance connectivity within and to the regional transportation system. ▪ Meet Federal Transit Administration benchmarks.
<p>Improve multi-modal transportation that supports, sustains and grows economic value in the Corridor.</p>	<ul style="list-style-type: none"> ▪ Improve transportation mobility between housing and major employment and education destinations. ▪ Provide transportation services and intermodal connectivity that helps retain existing businesses, stimulate revitalization and attract new businesses along the Corridor. ▪ Support the transportation needs for growth of cultural economic development (entertainment, tourism and recreational attractions) along the Corridor. ▪ Minimize disruption to existing businesses. ▪ Provide convenience and choices to help individual travelers reduce their transportation costs.
<p>Contribute to improvements to the overall environment (natural, social and physical) in the region, and minimize any direct negative impacts in the Corridor.</p>	<ul style="list-style-type: none"> ▪ Increase the number of people using transit, walking and biking along the Corridor. ▪ Improve transportation access to major destinations and activity centers such as recreational facilities, parks, public buildings, libraries and schools. ▪ Provide accessibility to all persons regardless of economic, physical and social characteristics. ▪ Enhance the vitality and character of existing neighborhoods ▪ Ensure transportation solutions complement the policies of the Tri-County Regional Planning Commission to reduce greenhouse gas emissions and the rate of growth of vehicle miles of travel. ▪ Minimize disruptions to environmental resources such as historic structures, parks, schools, open space, wetlands, natural areas, and the median in downtown East Lansing.²
<p>Complement or enhance the character of the Corridor.</p>	<ul style="list-style-type: none"> ▪ Facilitate sustainable and efficient land use patterns that promote compact mixed-use development patterns as embodied in adopted regional plans. ▪ Promote local land use and zoning policy that encourages revitalization and infill with compact, walkable development form (density, building location and limited parking). ▪ Foster attractive multi-modal, active streetscape environments that improve the character of the Corridor.

² The Study Goals and Objectives were originally adopted by the Steering Committee on October 27, 2009. On September 2, 2010, the Steering Committee modified the sixth objective under Goal #3 to include a reference to the median in East Lansing.



1.2 Background on the Corridor

In order to provide input to the development of purpose and need statements, transportation, demographic, land use trends were examined for the Corridor. In addition, a public opinion poll was used to solicit information on the public's perception of likes, dislikes and needs.

1.2.1 *Transportation Characteristics*

The Corridor contains a large proportion of the congested roadways in the region, with many more congested segments projected by 2035. The highest levels of traffic are currently located nearest to the MSU campus, which is a major destination but also interrupts the ability for travelers to move east-west through the Corridor. In this largely urban corridor, there is a stable and growing demand for east-west trips but limited opportunities for roadway capacity expansion.

The Corridor also contains a number of public transportation services operated by CATA, including the Route 1 service along Michigan and Grand River Avenues as well as numerous fixed route buses serving trips to and within the MSU campus. These are highly-utilized services, but previous planning work has demonstrated that opportunities exist for providing more efficient, higher capacity service.

While downtown Lansing and East Lansing are highly walkable environments, the Corridor includes a number of areas that are difficult or unsafe to access by nonmotorized transportation modes such as walking and biking. In addition, the Michigan and Grand River Avenue roadway often serves as a physical barrier between areas to the south and the north. As the Corridor becomes more densely developed (as described in local and regional planning efforts), there will be a need for transportation improvements that foster a safe, friendly pedestrian environment.

1.2.2 *Population and Employment Trends*

A review of existing population and employment density shows that the greatest concentrations in the Corridor are centered on downtown Lansing, downtown East Lansing, and the MSU campus. The Corridor has a higher concentration of population and employment than the region as a whole, and is projected to be the location of future development for the region.



Population within the Corridor is expected to increase by nearly 20% between the years 2005 and 2035, with the largest increase in the core community of Lansing. Meanwhile, employment growth is expected to remain steady, with service industries showing the strongest growth, including business, medical, educational, and social services, followed by financial, insurance and real estate. Table 1-2 identifies population data and projections from the Tri-County Regional Planning Commission (TCRPC) for each community as well as the Corridor as a whole. These projections are based on TCRPC’s “Wise Growth” scenario, which encourages infill development of urban areas.

Table 1-2. Population Forecast

Municipality	2005	2035	2005-2035 % change
City of Lansing	110,178	137,200	24.5%
City of East Lansing	45,575	51,784	13.6%
Meridian Township	38,559	37,101	-3.8%
Lansing Township	8,010	9,869	23.2%
Study Corridor	70,302	83,064	18.2%

*within one mile of Michigan Ave./Grand River Ave.
Source: TCRPC Wise Growth Scenario Forecast

1.2.3 Land Use and Development

Throughout the Corridor, Michigan Avenue and Grand River Avenue primarily function as commercial arterial roadways with retail and businesses fronting the right-of-way and residential neighborhoods to the north and south. Similar to the regional plan’s focus on infill development, local planning and development efforts have centered on revitalizing the Michigan / Grand River Avenue Corridor at key nodes around downtown Lansing, the Stadium District, Frandor Shopping Center, downtown East Lansing, the MSU campus area, and Meridian Mall.

1.2.4 Public Perception

In general, respondents to an online public opinion poll appreciate many elements of the Corridor, including landmarks, institutions and businesses. They have specific dislikes, which are dominated by complaints about aesthetics/urban design and a lack of adequate bicycle, pedestrian, and public



transportation facilities. They also mention specific areas that experience congestion or safety concerns. Respondents' ideas for transportation improvements are focused on public transportation and non-motorized facilities, but also include roadway efficiency improvements.

1.3 Purpose and Need Statements

Based upon the review of the Corridor and the goals and objectives for the Study, the following statements were developed to define the purpose and need for transportation improvements.

- **Travel Needs:** Michigan and Grand River Avenues link the densest population and employment concentrations in the region and many activity centers and destinations. There is heavy east-west travel demand within the Corridor, and this demand is projected to grow over the long term. There is limited potential for roadway expansion, so additional transportation options will need to be developed for residents, workers and visitors.
- **Transportation System Efficiency:** With thousands of riders per day using Route 1 and a variety of highly efficient fixed-route buses serving the MSU campus, this is the highest ridership public transportation corridor in the region. Improvements to and expansion of public transportation in this Corridor have been identified as the highest-priority public transportation opportunity within the region. Upgraded service could positively impact the remainder of the transportation network, including improved travel times and reduced traffic congestion.
- **Economic Development and Opportunity:** The Corridor contains the major employment engines for the region. Improved regional transportation will improve the connections to a wider array of employment opportunities for residents, and make portions of the corridor more attractive for ongoing revitalization efforts. Future growth in and around the University will be aided by improved accessibility to campus from throughout the region.
- **Land Use Planning and Community Character:** Adopted local and regional plans support urban infill development and redevelopment focused on key nodes within the Corridor that are well-served by the transportation system. Transportation improvements



need to be supportive of the scale and character of development envisioned by local communities, all of which have promoted the need for multi-modal transportation solutions.

- **Community Involvement:** Local and regional planning efforts have involved a wide cross-section of the public in addressing transportation issues. This Study should focus on building a true public consensus around a locally preferred alternative.



2.0 PLANNING CONTEXT

The Michigan / Grand River Avenue Transportation Study is being conducted by CATA, along with its planning partners in municipal, township, county and regional governments. The purpose is to analyze local multimodal transportation improvements in the Corridor.

A Purpose and Need Statement defines the framework by which a wide range of transportation modes and alignments will be identified and evaluated. As part of establishing the Purpose and Need for transportation improvements, previous planning efforts in the Corridor have been examined.

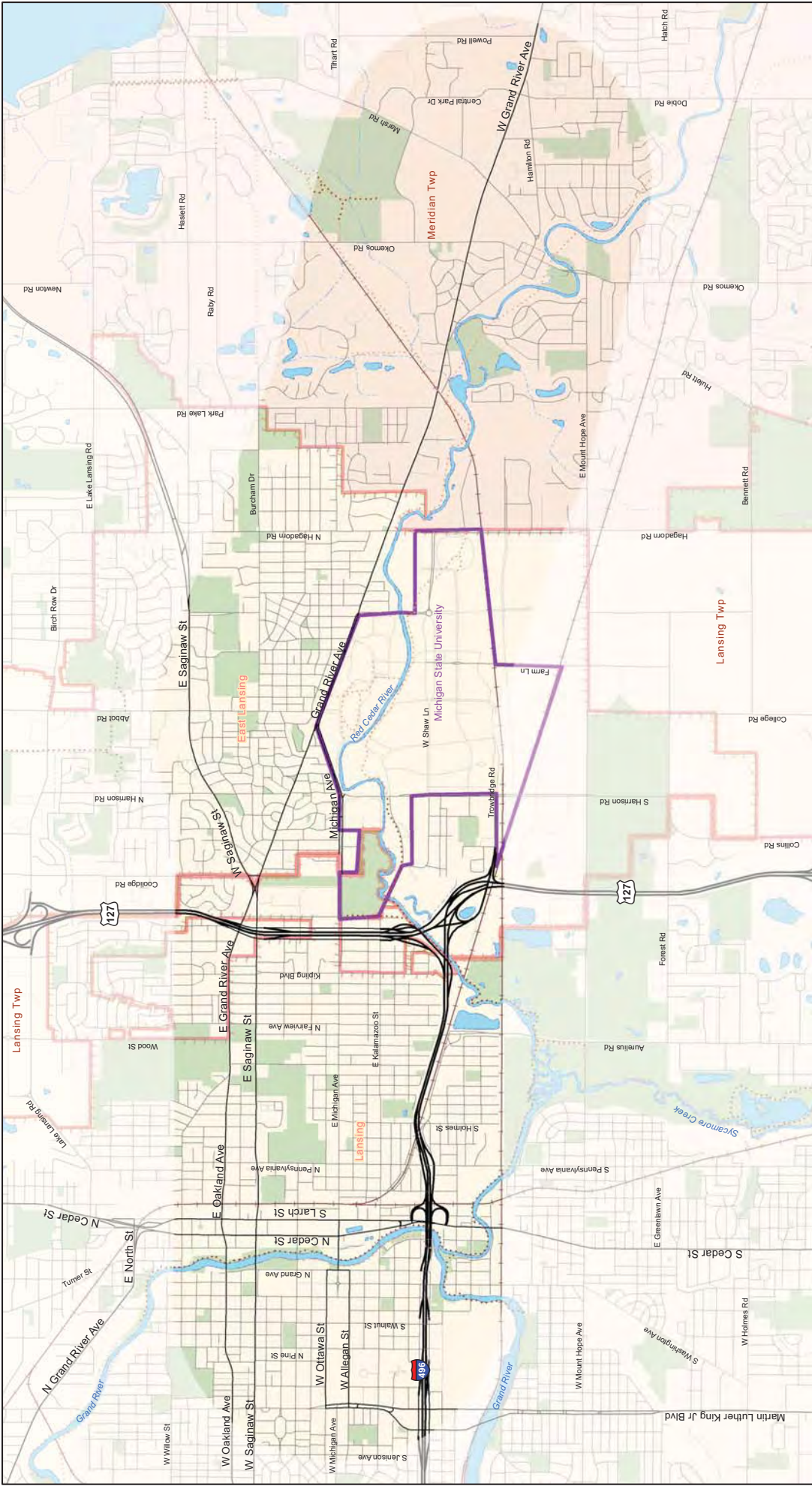
2.1 Description of Corridor

The Grand River / Michigan Avenue Corridor (illustrated in Map 2-1) is centered on Michigan Avenue and Grand River Avenue running approximately seven miles east from downtown Lansing through the City of Lansing, Lansing Township, City of East Lansing and Meridian Township. In order to examine a broad range of potential transportation improvements, the Corridor being studied extends for a mile on either side of Michigan and Grand River Avenues.

The Corridor represents the most active transportation corridor in the Lansing metropolitan area and the most densely populated portion of Mid-Michigan. Anchored on one end by the State Capitol and on the other by the premier regional shopping destination (Meridian Mall), and with the state's largest university in the center, it contains many of the region's major destinations and largest employers.

2.2 Regional and Local Transportation Plans

State, regional and local plans identify the importance of the Michigan / Grand River Avenue Corridor, not only to the individual communities but to the region as a whole. Continued investment in economic revitalization and transportation facilities is the focus of a number of recent plans, as is the continued growth and densification of land uses in the Corridor.



Legend

- Primary Road - Limited Access
- Primary Road
- Secondary Road
- Local and Rural Road
- Existing Trail
- Proposed Trail
- Railroad
- Water Feature
- City Limits
- Park - Open Space
- MSU
- Study Area

Michigan/Grand River Avenue Transportation Study

**Corridor
Base Map**



In order to build from the work done on previous planning studies, a full review of recent plans was undertaken at the outset of the Michigan / Grand River Avenue Transportation Study. A summary of this previous planning work can be found in Technical Memorandum 1: Review of Previous Planning (attached as Appendix A to this report). Some of the most relevant recent plans include:

- The *Michigan Avenue Corridor Conceptual Development Plan (2009 Draft version)* looks to revitalize and beautify the Michigan Avenue corridor to make it more walkable, attract a larger base of customers and create a pleasant living environment. The Plan is an outgrowth of the decision to create a Corridor Improvement Authority along Michigan Avenue that will allow local governments develop and fund a shared vision for the corridor.
- The Tri-County Region's *Transit Development Plan (2008)* identifies the need to improve service reliability and frequency along CATA Route 1 service, which serves east-west trips through the Michigan / Grand River Avenue Corridor.
- CATA's *Comprehensive Operational Analysis Report (2008)* analyzed whether existing public transportation was meeting the community's mobility needs in a cost-effective way. The report analyzes CATA's existing route operations and presents service improvement alternatives. Many of the near-term service recommendations are focused on CATA's Route 1 and the various routes serving the MSU campus – these are currently the most well-utilized routes CATA's system and have the most potential for increased service efficiency.
- The City of East Lansing's *Comprehensive Plan (2006)* identifies the current conditions in each area of the City, the planning challenges faced, and the Goals, Objectives and Actions that will shape the future. A consistent finding along the Michigan/Grand River roadway corridor is the need to improve pedestrian and bicycle linkages across the corridor, which links the MSU campus to the densest commercial and residential areas of the City.
- *Tri-County Regional Growth: Choices for the Future* is the long-range (2035) transportation and land use plan developed by TCRPC. The preferred regional vision set forth in the plan is a “Wise Growth” scenario that focuses on reduced congestion, preservation of agricultural and open space, reduction of air pollution, and reinvestment in existing population and employment centers.



3.0 TRANSPORTATION CHARACTERISTICS

Communities in the Michigan / Grand River Corridor are experiencing a host of transportation related problems and needs. This section describes the existing transportation conditions in the corridor, including a discussion of the following issues:

- The Corridor contains a large percentage of the congested roadways in the region, with many more congested segments projected for 2035. In this largely urban corridor, there are limited opportunities for capacity expansion.
- The Corridor contains a number of highly-utilized public transportation services, including the numerous routes serving trips to and within the MSU campus. At the same time, numerous opportunities exist for providing more efficient, higher capacity service.
- While downtown Lansing and East Lansing are highly walkable environments, the Corridor includes a number of areas that are difficult or unsafe to access by nonmotorized transportation modes such as walking and biking.

Additional data and materials on transportation characteristics in the Corridor can be found in Appendix B (Technical Memorandum 2: Existing and Future Conditions).

3.1 Roadways

3.1.1 *Physical Roadway Conditions*

Michigan and Grand River Avenues are major east-west arterials through the Corridor. These two roadways join up in East Lansing, nearly halfway between the Capitol and Meridian Mall. In general, the roadway facilities include two to three lanes operating in both directions, with notable features including on-street parking through much of Lansing and a center median through East Lansing.

3.1.2 *Traffic Volumes and Patterns*

The portions of the corridor with the highest levels of average daily traffic (ADT) are located around the MSU campus, along with the segments of Michigan and Grand River immediately to the east and west. Specifically, Grand River Avenue between Michigan and Okemos Road has a consistent ADT of more than 27,000 per weekday. Traffic volumes along the corridor are shown in Table 3-1.



Table 3-1. Existing Corridor Traffic Volumes

Roadway	Segment	2007 ADT
Ottawa St.	Walnut St. to Capitol Ave.	2,000
Allegan St.	Pine St. to Capitol Ave.	3,200
Capitol Ave.	Ottawa St. to Allegan St.	3,500
Michigan Ave.	Capitol Ave. to Cedar St.	8,900
Michigan Ave.	Morgan Ln. to Harrison Rd.	19,200
Michigan Ave.	Harrison Rd. to Grand River Ave.	19,800
Grand River Ave.	Coolidge Rd. to Michigan Ave.	16,000
Grand River Ave.	Michigan Ave. to Hagadorn Rd.	27,500
Grand River Ave.	Hagadorn Rd. to Park Lake Rd.	28,300
Grand River Ave.	Park Lake Rd. to Okemos Rd.	27,400
Grand River Ave.	Okemos Rd. to Marsh Rd.	20,500
Grand River Ave.	Marsh Rd. to Central Park Dr.	17,300
Grand River Ave.	Central Park Dr. to Cornell Rd.	17,500

Source: Michigan DOT

The increase of traffic volumes along Grand River Avenue is likely due to the presence of the MSU campus, which is a major destination but also physically interrupts the ability to move east-west through the Corridor.

In recent years, the University has taken steps to relieve this network bottleneck by moving automobile trips off of the northern portion of its campus, both by improving roadway access from the south (creation of a direct access point at Trowbridge Road, recently completed grade separation project on Farm Lane) and by encouraging alternative modes such as public transportation and biking.

Meanwhile, traffic in Meridian Township has seen a steady increase over recent years, boosted by additional residential growth and continued commercial development around Meridian Mall.



3.1.3 Traffic Congestion

A survey of the regional roadway network indicates that existing congestion is most severe in and around East Lansing and Michigan State University. Aside from Michigan Avenue and Grand River Avenue, numerous collector streets and feeder routes in the area are at or approaching capacity during peak periods.

Projections for congestion show a marked increase of congested roadway segments by 2035. This includes many additional congested segments directly along the Grand River and Michigan Avenues. Most of the Grand River Avenue portion of the corridor is congested or near-congested by 2035.

3.2 Public Transportation Services

Public transportation services within the Michigan / Grand River Avenue Corridor currently includes local fixed-route bus service, dial-a-ride service and paratransit. Each of these services is provided by CATA. System ridership has grown significantly in the past ten years, boosted in large part by taking on operation of MSU campus service beginning in 1999. This not only added to the size of the system, but increased usage of routes that do not serve campus because of the new connections that resulted. CATA has also added a number of new services in the past ten years, such as the urban demand response (dial-a-ride) service.

Table 3-2. CATA Ridership, 1997-2007

Service Type	1997 Annual Ridership	2007 Annual Ridership
TOTAL	4,150,116	10,682,792
Fixed Route	3,841,631	10,038,119
SpecTran (paratransit)	225,879	337,478
Urban Demand Response	n/a	40,731
Rural Service	82,606	85,592
Other Services	n/a	141,203
n/a = service was not available at this time Source: Capital Area Transportation Authority		



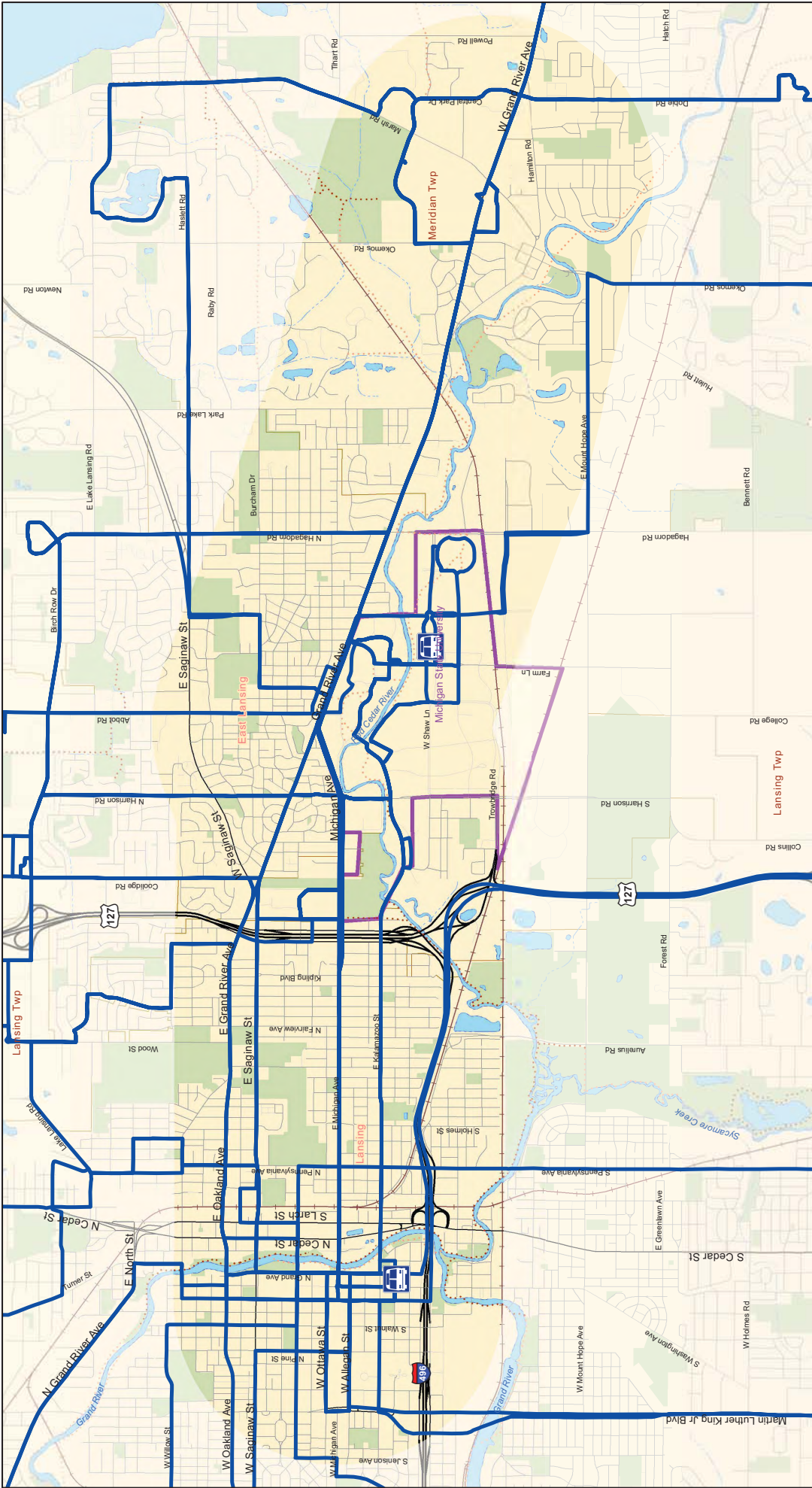
3.2.1 Existing Public Transportation Service

The Michigan / Grand River Avenue Corridor is currently served by a number of CATA buses, including the most regular and highest-ridership local bus service, Route 1, which travels regularly from Downtown Lansing to Meridian Mall along Michigan and Grand River Avenues. Most of the bus routes in the greater Lansing area emanate from the CATA Transportation Center, located near the intersection of Grand Avenue and Kalamazoo Street. Map 3-1 identifies the geographic extent of bus routes serving the Corridor.

Aside from its network of on- and off-campus fixed route bus routes, CATA operates the following special services in the Corridor:

- Campus bus service (“Spartan Services”) for MSU operates 24/7 during the fall and spring semesters. These include a set of fixed-route buses offering either weekday or weekend service.
- Two types of dial-a-ride service are provided within the Corridor: Meridian Redi-Ride is a curb-to-curb service for trips within Meridian Township; and CATA Rural Service (CRS) is an advance-reservation, curb-to-curb service for those travelling in the outlying areas of Ingham County.
- The Williamston/Webberville Connector is a regularly scheduled service connecting Meridian Mall to the Ingham County communities of Williamston and Webberville.

In addition to bus stations, benches and shelters along the portions of the corridor served by fixed-route buses, there are expanded public transportation facilities at key locations within the corridor.



Legend

- Primary Road - Limited Access
- Primary Road
- Secondary Road
- Local and Rural Road
- Existing Trail
- Proposed Trail
- Railroad
- Water Feature
- MSU
- CATA Transit Center
- Bus Route
- Park/Open Space
- Study Area



Michigan/Grand River Avenue Transportation Study

Existing Public Transportation System



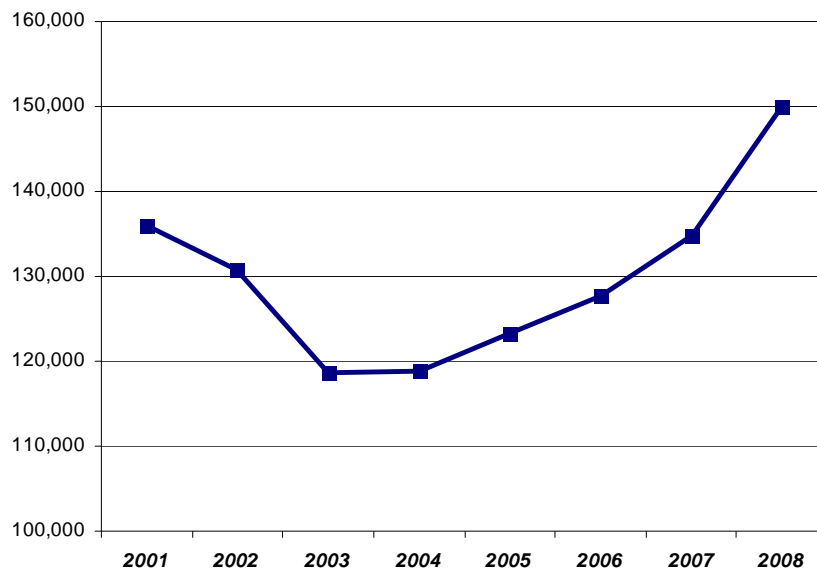
- CATA Transportation Center (CTC): Constructed in 1997, this facility is located on Grand Avenue between Lenawee and Kalamazoo Streets in downtown Lansing. The CTC is a transfer point for 16 routes, and includes a customer information center; trip planning assistance; indoor seating area; bus pass and token sales; lost and found; bike lockers; coffee shop; public restrooms and telephones; and Greyhound/Indian Trails buses.
- MSU/CATA Transportation Center (MSU-CTC): Built in 2002, this facility is located on MSU's campus in the ground level of the parking ramp between North and South Shaw Lanes. The facility includes transfer points for all campus routes; indoor seating area; convenience store; restrooms; ATM and vending machines; and a community police office.

3.2.2 Corridor Ridership

The baseline demand for public transportation trips in the Corridor can be determined in part by the ridership trends on CATA Route 1, which travels from downtown Lansing to Meridian Mall.

Ridership on this line has risen significantly in recent years, as shown below in Figure 3-1.

Figure 3-1. Average Monthly Ridership on CATA Route 1, 2001 – 2008



Source: Capital Area Transportation Authority



Ridership trends on Route 1 mirror broader trends toward increased public transportation usage throughout the region. The most highly-utilized and efficient bus routes in the CATA system are those which provide access to or circulate within the MSU campus.

3.2.3 Public Transportation Challenges and Opportunities

A *Comprehensive Operational Analysis* of the CATA system conducted in 2008 identified a number of route improvement recommendations. The major recommendations had to do with Route 1 service along Michigan and Grand River Avenue, the route with the highest ridership and most frequent service in the CATA system. The key recommendations for this route generally are to expand and improve service to better serve this market, and include:

- Improve reliability of service, which varies greatly throughout the day with many trips between 10 and 25 minutes late. Service reliability is as (or even more) important than travel time for maintaining and attracting ridership.
- Expand service hours and increase service frequency during peak hours.
- Introduce limited-stop service that is faster and more direct during the peak periods.

The study provided additional recommendations for the bus routes currently serving the MSU campus, including more efficient scheduling and shifted routing to take advantage of the grade separation project recently completed on Farm Lane that better connects the commuter lots to the main campus. As the University continues to emphasize a more pedestrian friendly and safe campus environment, it is expected that additional opportunities will exist to increase usage of the public transportation system in this area.

3.3 Pedestrian and Bicycle

Nonmotorized transportation system includes elements such as paths, trails, sidewalks, bike lanes, and other facilities used by pedestrians and bicyclists. The presence of these facilities will often impact the effectiveness of other modes of transportation; in particular public transportation, where users typically need to walk to and from stations or stops and a safe, friendly environment is needed.



3.3.1 Pedestrian and Bicycle Pathways

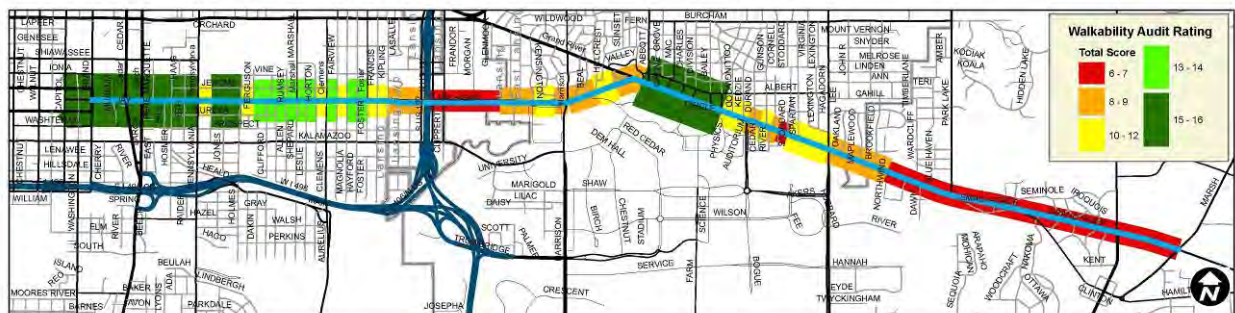
Nonmotorized pathways (i.e., sidewalks) line both sides of Michigan and Grand River Avenues. The width varies, with narrower 5- to 7-foot pathways in the eastern portion of the Corridor and wider sidewalks in Lansing and East Lansing. In general, the pathways are designed for pedestrian use, but could be used by bicyclists in areas with low pedestrian volumes, such as Meridian Township; however, many sections are less than 8 feet wide. There are no designated bike lanes.

Nonmotorized connections from intersecting streets vary by communities. Sidewalks exist along all intersecting side-streets in the cities of Lansing and East Lansing. In Meridian Township, major roadways such as Marsh and Okemos Roads have some form of pathway; however, most local side streets do not. MSU has an extensive pathway system that connects to the Corridor in East Lansing. Pedestrian crossings are provided at most signalized intersections; however, in lower density areas the spacing between signalized crossings is greater. In downtown Lansing and East Lansing there are enhanced crosswalks with textured pavement and center medians providing refuge for pedestrians.

3.3.2. Walkability

Walkability is a measurement of the quality of nonmotorized facilities combined with the compactness and connectivity of development. Downtown Lansing and East Lansing are highly walkable environments with wide sidewalks, and while other portions of the corridor rate low for walkability. Figure 3-2 displays a rating of the walkability along the primary Study corridor.

Figure 3-2. Corridor Walkability



Source: URS/LSL Planning



3.4 Travel Patterns

Existing and future travel patterns will help determine the level of transportation improvements that are most needed for the Corridor. Two important factors for the Michigan / Grand River Avenue Corridor are expected to be employment commuting (work trips) and student travel patterns.

3.4.1 Employment Commuting Patterns

Work trips typically provide the most regular and predictable travel patterns in an urban area, and are the most likely to place a strain on the transportation system during the congested, peak-hour periods. An analysis of the Corridor communities based on the 2000 Census indicates that there is a significant amount of travel within the Corridor for work commuting, as well as nearly 60,000 work trips into the Corridor from outside areas (see Table 3-3).

Table 3-3. Work Trips by Corridor Community, 2000

From/To	Lansing City	Lansing Twp.	East Lansing City	Meridian Twp.	Outside Corridor
Lansing City	29,128	1,748	5,156	2,915	15,188
Lansing Twp.	1,841	522	451	260	1,568
East Lansing City	4,873	389	11,846	2,425	3,945
Meridian Twp.	5,819	565	4,825	5,141	4,623
Outside Corridor	41,213	3,965	8,709	5,334	n/a
Note: Includes Ingham County portion of the Lansing and East Lansing only Source: 2000 Census					

For these trips, driving alone is the most common mode of work travel within the Corridor, particularly for residents of Meridian Township (see Table 3-4). There are comparatively high levels of public transportation and walking trips for residents of East Lansing, likely due to the presence of the students at Michigan State University.



Table 3-4. Mode to Work by Place of Residence, 2000

Area	Total Workers	% Drive Alone	% Carpool	% Public Transport	% Walked	% Other Means	% Work at Home
Ingham Co.	139,265	78.7%	9.8%	2.1%	5.2%	1.1%	3.0%
Lansing	56,450	78.7%	12.9%	2.7%	2.4%	0.8%	2.5%
East Lansing	23,495	60.5%	8.0%	4.1%	21.4%	3.3%	2.6%
Okemos CDP	12,130	87.1%	5.4%	1.3%	1.5%	0.5%	4.1%

Source: 2000 Census

3.4.2 Student Travel Patterns

The MSU community consists of 45,000 students, 4,500 faculty and professional staff, and 6,000 employees. Together, this community and its visitors generate approximately 110,000 trips per day within the limits of campus.

A major factor is the travel patterns of MSU students, who are most likely to make multiple trips to multiple locations around campus, and most likely to use alternative trip modes such as public transportation, walking and biking. As a result of student travel, the MSU campus has a “peak hour” of traffic during every class change period from 8 am until 10 pm. During the fall and spring semesters, more than 16,000 students live in MSU’s 23 undergraduate halls, one graduate hall, and three apartment villages. For these students, walking is a viable option for travelling to classes, although there is also an extensive set of bus services that cater to trips for on-campus residents.

Still, it is estimated that roughly 58% of students live off-campus. These students are more likely to use public transportation or an automobile to travel to class. CATA ridership has consistently grown through serving these off-campus to on-campus trips throughout the day.



4.0 DEMOGRAPHICS, EMPLOYMENT AND LAND USE

Population and employment characteristics, combined with density, land use form and the availability of travel choices, influence whether travel is by driving, walking, biking or public transportation. Demographic and employment estimates for the Corridor were derived from the TCRPC regional forecasts, supplemented by local plans and census data. Additional data and materials can be found in Appendix B (Technical Memorandum 2: Existing and Future Conditions).

4.1 Population and Household Growth

4.1.1 Population Growth and Density

Population in the Corridor is expected to increase by more than 18% between the years 2005 and 2035, with the largest increase in the community of Lansing (see Table 4-1). The projections are based upon the regional “Wise Growth” scenario, which focuses on infill development in urban areas. As a result, there is a limited amount of household development in Meridian Township.

Table 4-1. Population Forecast

Municipality	2005	2035	2005-2035 % change
City of Lansing	110,178	137,200	24.5%
City of East Lansing	45,575	51,784	13.6%
Meridian Township	38,559	37,101	-3.8%
Lansing Township	8,010	9,869	23.2%
Corridor*	70,302	83,064	18.2%

*within one mile of Michigan Ave./Grand River Ave.
Source: TCRPC Wise Growth Scenario Forecast

Maps 4-1 and 4-2 show the density of residents per acre for the Corridor in 2005 and 2035. The greatest concentration of population density is in East Lansing, around downtown and MSU. There are also areas of moderate density in the neighborhoods adjacent to Michigan Avenue in Lansing. By 2035, much of the Corridor is projected to be more densely populated.



4.1.2 Transit Dependent Population

An important consideration for any analysis of multimodal transportation options is the presence and need among “transit dependent population,” generally defined as working-age household members without access to a car. Map 4-3 shows the location of high concentrations of transit dependent population within the Corridor.

4.2 Employment

Employment is an important variable in assessing transportation needs. The larger the employment concentration, the larger the need for accessibility via a number of transportation options.

Employment centers are currently dispersed along most of the Corridor, with concentrations in East Lansing and Lansing. The locations of major employers are shown in Map 4-6.

4.2.1 Major Employers

The Lansing region remains dependent on several large employers as the core of its economic well-being, with the top five employers accounting for more than 20% of the jobs. Each of the top five employers are based in the Corridor (see Table 4-2).

Table 4-2. Top 10 Employers in Greater Lansing Region

Company	Type of Business	# Employees	Based within Corridor?
State of Michigan	Government	14,355	Yes
Michigan State University	Higher Education	10,500	Yes
General Motors	Automobiles	6,300	Yes
Sparrow Health System	Health Care	6,000	Yes
Lansing Community College	Higher Education	3,180	Partially
Ingham Regional Medical Center	Health Care	2,500	No
Lansing School District	Education (K - 12)	2,106	Partially
Meijer	Retailer	2,000	No
Auto Owners Insurance	Insurance	1,500	No
Peckham, Inc.	Rehab & Manufacturing	1,400	No

Source: Lansing Regional Chamber



4.2.2 Employment Growth and Density

The Corridor will see steady growth in employment over the next 30 years. Service producing industries will show the strongest growth, including business, medical, educational, and social services, followed by financial, insurance and real estate. Table 4-3 shows the projected growth in employment by municipality and for the Corridor.

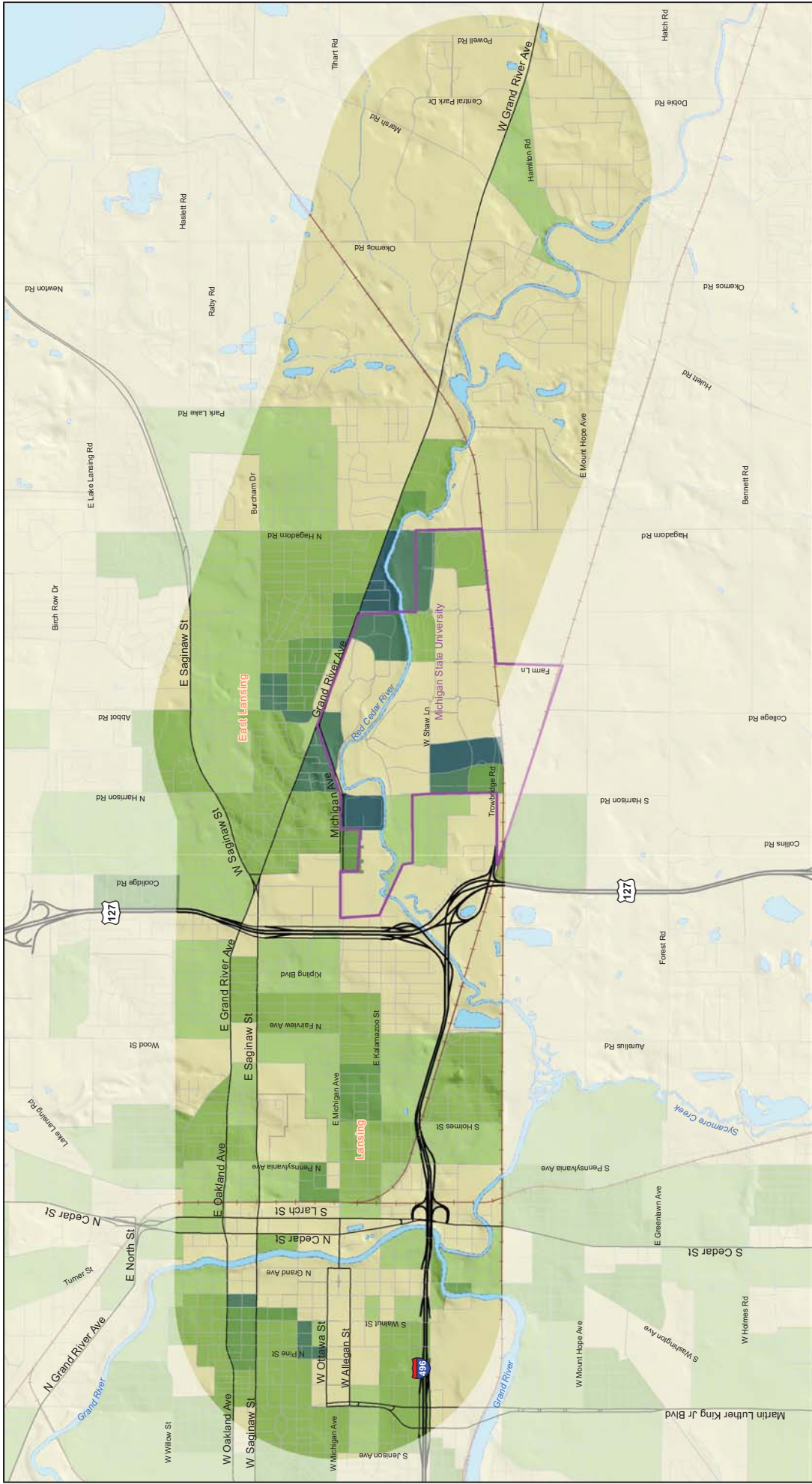
Table 4-3. Projected Employment Growth

	2005	2035	Total Net New Jobs	Total % change
	Total	Total		
City of Lansing	114,995	124,214	9,219	8.0%
City of East Lansing	30,537	34,319	3,782	12.4%
Meridian Township	20,705	22,457	1,752	8.5%
Lansing Township	10,081	10,598	517	5.1%
Corridor*	95,926	101,377	5,451	5.7%
Ingham County	206,385	223,117	16,732	8.1%

*within one mile of Michigan Ave./Grand River Ave.
Source: TCRPC Wise Growth Scenario Forecast

Maps 4-4 and 4-5 show existing and projected employment densities. Key trends include:

- The largest numeric growth in employment is projected in the city of Lansing. A significant portion of this will be in the downtown and along the Corridor.
- East Lansing is projected to have the largest percent growth in employment. This can be attributed to growth in University and University related jobs, including research and development.
- Meridian Township is projected to experience employment growth as a result of continued development of retail and service businesses around the Meridian Mall and office development in the southern portion of the Township.



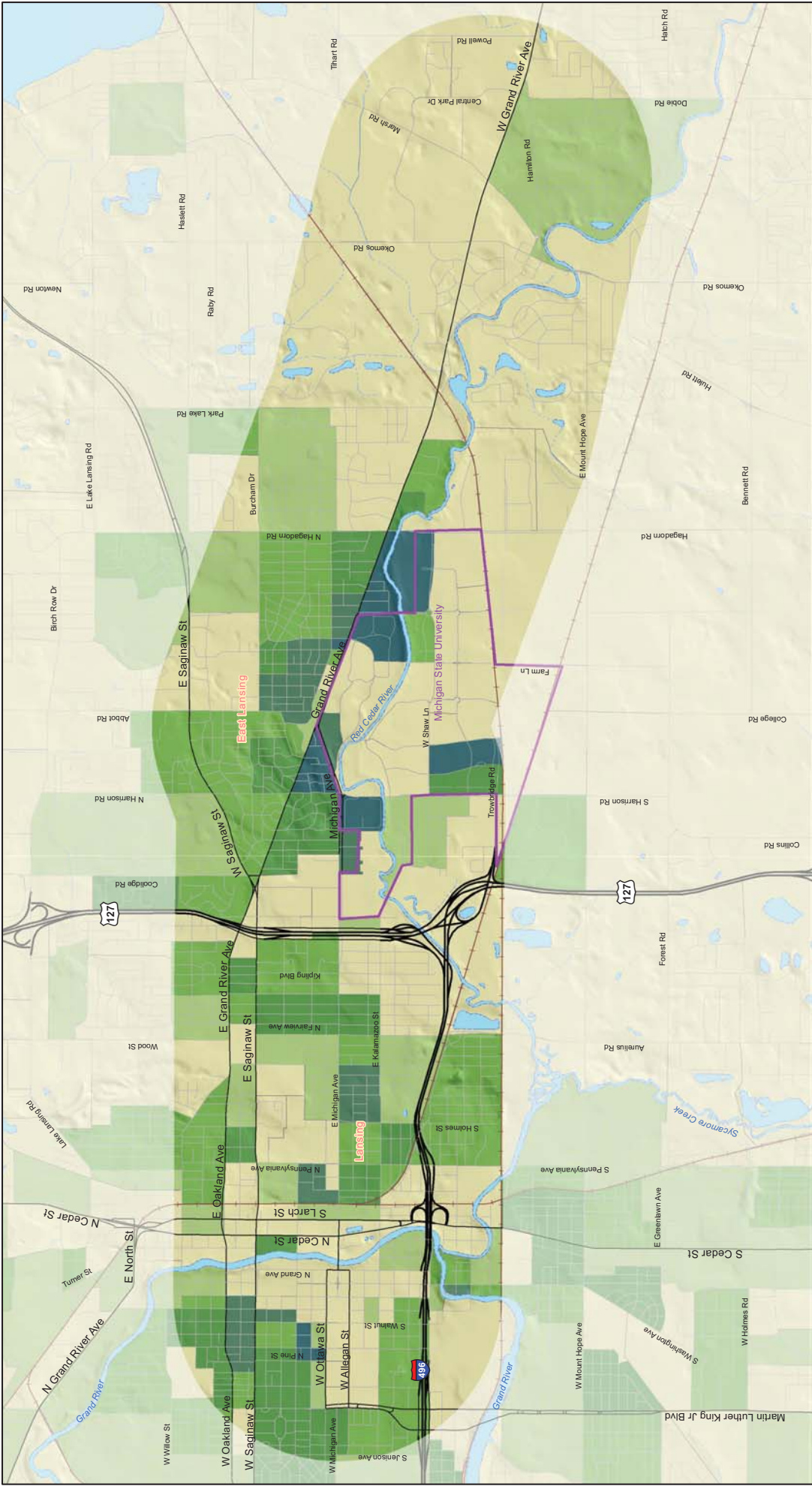
Legend

2005 Population per Sq. Mile



Michigan/Grand River Avenue Transportation Study

2005 Population Density



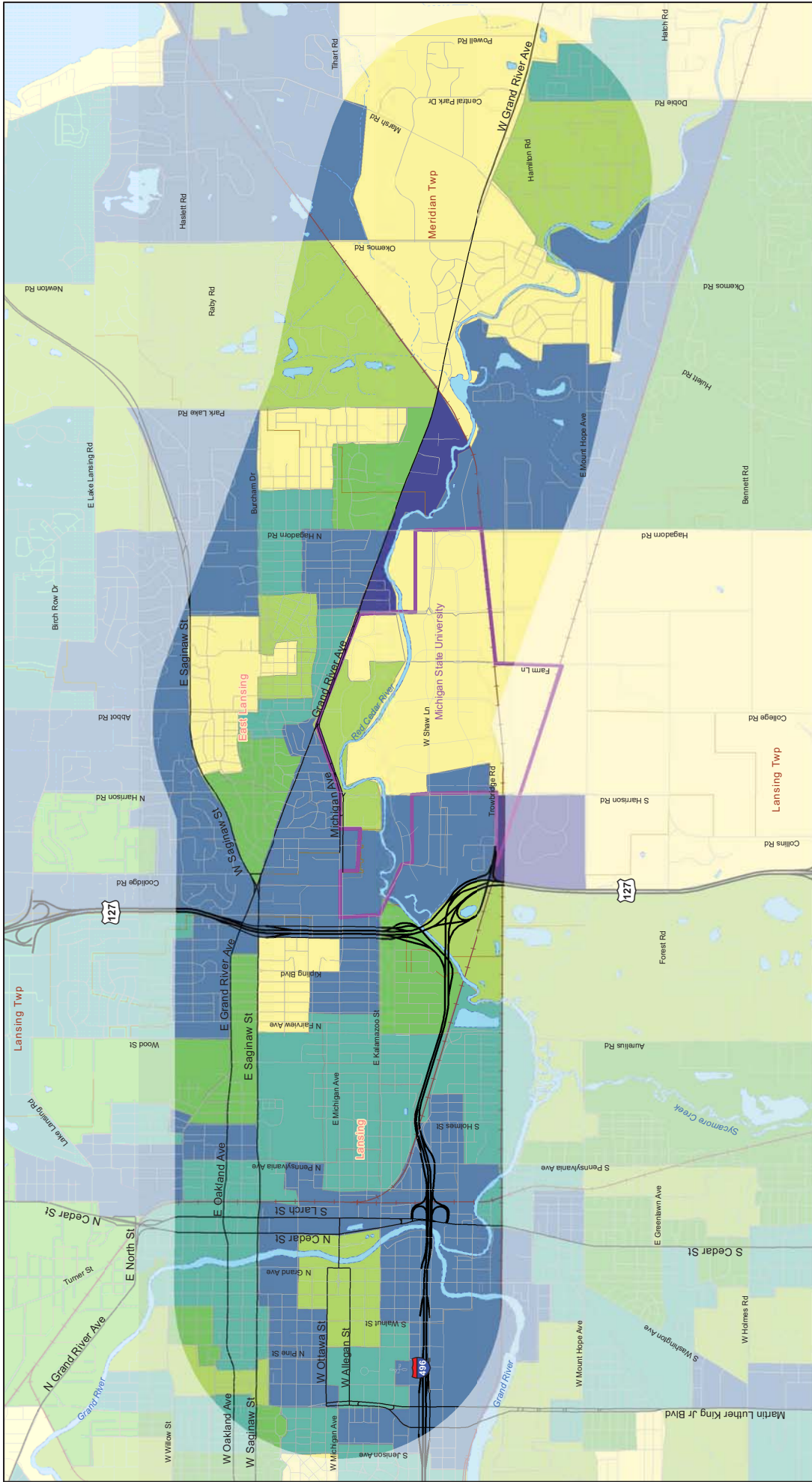
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2035 Population per Sq. Mile



Michigan/Grand River Avenue Transportation Study

Projected 2035 Population Density



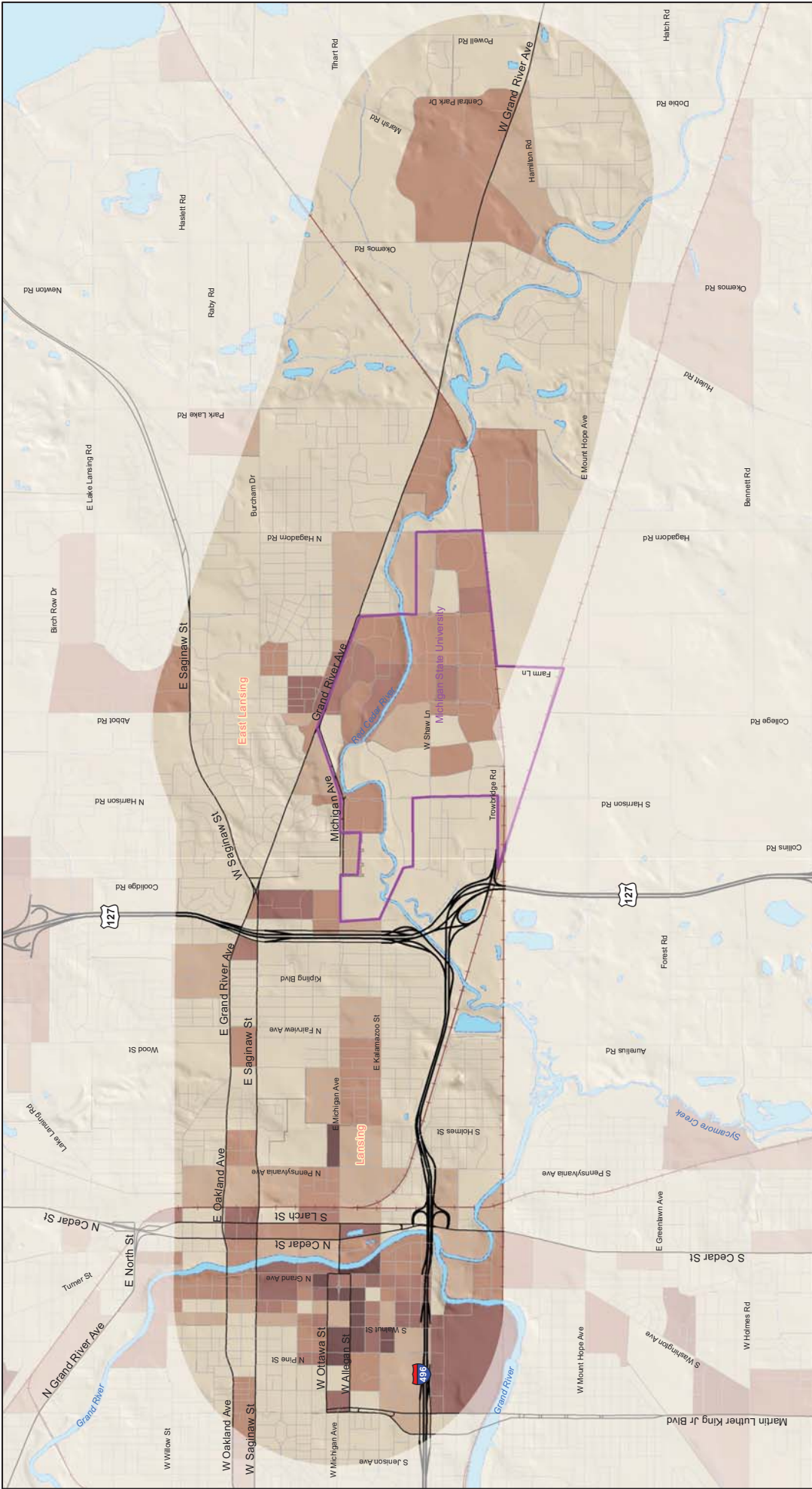
Miles
0 0.25 0.5 1

- Legend**
- Primary Road - Limited Access
 - Primary Road
 - Secondary Road
 - Local and Rural Road
 - Railroad
 - Water Feature
 - MSU
 - Study Area

- Transit Dependent Population**
- 501 - 830
 - 201 - 500
 - 101 - 200
 - 51 - 100
 - 1 - 50
 - 0

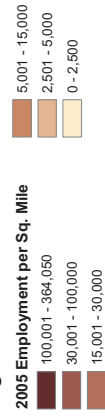
Michigan/Grand River Avenue Transportation Study

Transit Dependent Population, 2000



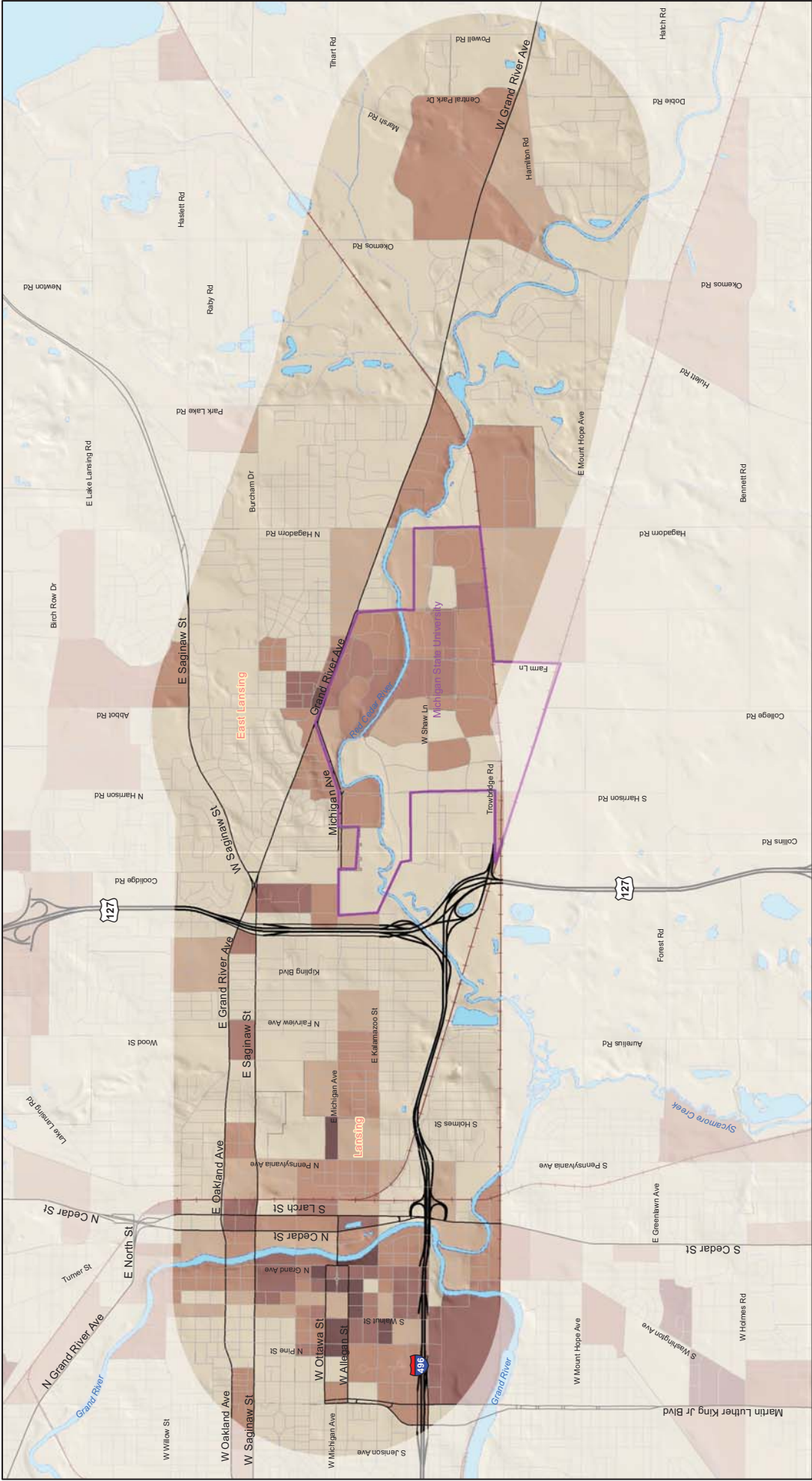
Legend

2005 Employment per Sq. Mile



Michigan/Grand River Avenue Transportation Study

2005 Employment Density



Legend

2035 Employment per Sq. Mile



Michigan/Grand River Avenue Transportation Study

Projected 2035 Employment Density



4.4 Land Uses and Major Destinations

4.4.1 Existing Land Uses

The land uses within the Corridor range from suburban to downtown urban core. A majority of the frontage along Michigan and Grand River Avenues is nonresidential, including commercial and institutional uses, interspersed with residential uses along certain segments.

- **Lansing:** The Lansing segment of the Corridor is predominantly commercial uses along the corridor and residential neighborhoods behind the commercial frontage. East of US 127 is predominantly larger-scale, auto-oriented commercial around the Frandor Shopping Center.
- **Lansing Township:** Lansing Township occupies a short segment of the Corridor between East Lansing and Lansing. The area is primarily auto-oriented commercial.
- **East Lansing:** The west side of the city is more residential in character with single family subdivisions, small apartment buildings and small scale neighborhood commercial. The MSU campus occupies the south side of the Corridor. Downtown East Lansing features high-density multi-story, mixed-use development fronting on Grand River Avenue.
- **Meridian Township:** Meridian Township is predominantly a suburban commercial development pattern. The western portion contains smaller-scale commercial and residential uses, while the eastern end is the regional commercial center with larger-scale uses.

There are a number of development projects underway along the Corridor. The greatest amount of development is expected in East Lansing with several major high-density, mixed use developments. There are also several commercial developments proposed in Meridian Township.

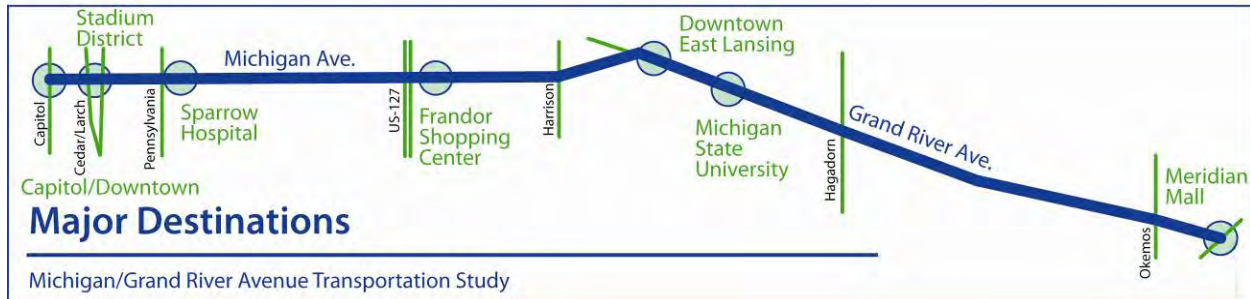
4.4.2 Major destinations

There are a number of major destinations in the Corridor (See Figure 4-1). Some of the major destinations are as follows:

- **State Capitol:** The State of Michigan Capitol is at the western end of the Corridor in downtown Lansing. This includes the State Capitol building, which sets directly at the west terminus of Michigan Avenue, as well as state administrative offices.



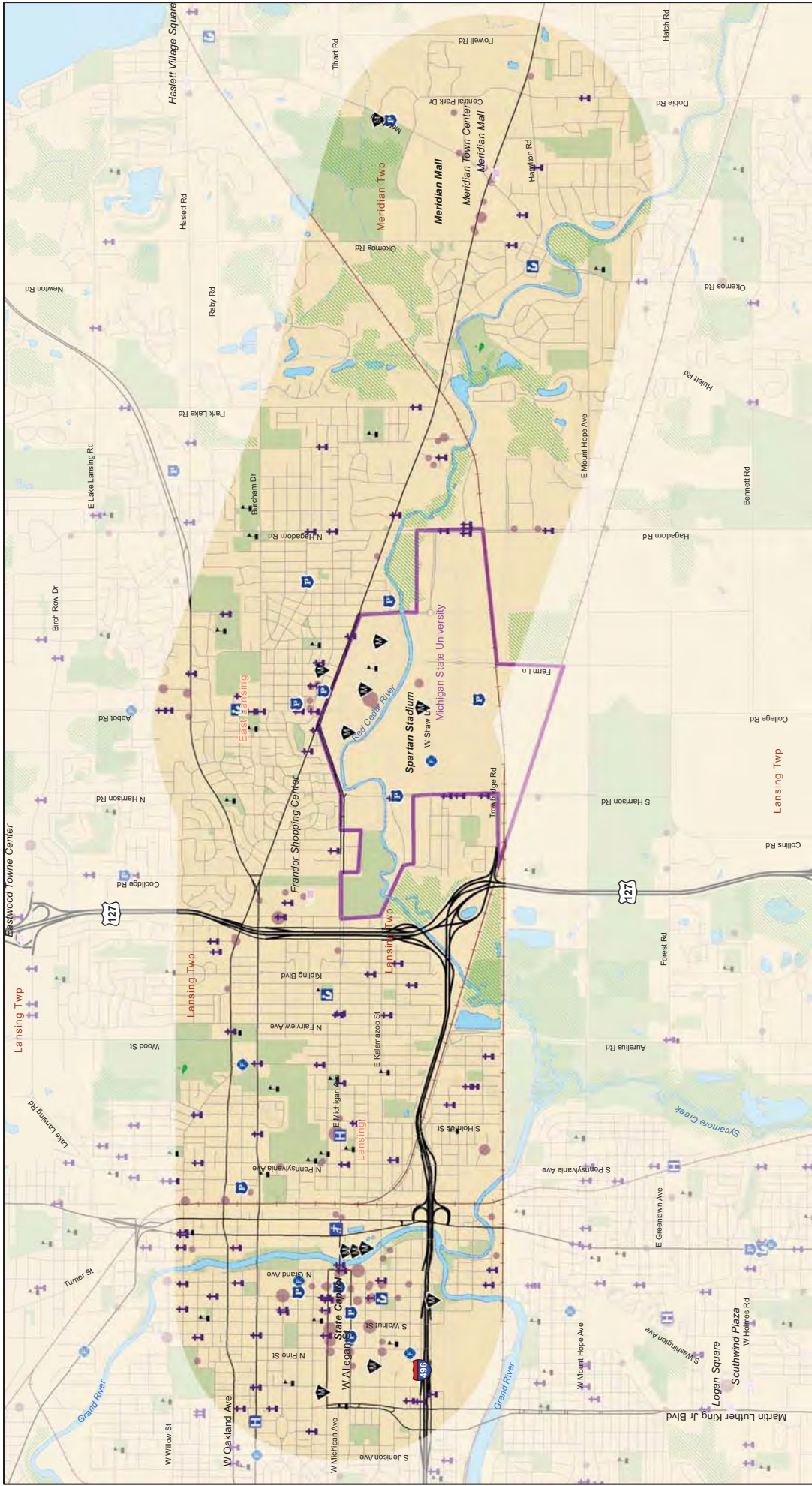
Figure 4-1. Major Destinations



- **Downtown Lansing:** Downtown Lansing includes offices, retail, shopping, dining, and entertainment, hotels, conference centers and Lansing Community College.
- **Stadium District:** The stadium district is an emerging entertainment district just east of downtown, centered on Oldsmobile Park, home of the Lansing Lugnuts baseball team.
- **Medical Center:** Sparrow Hospital is located on Michigan Avenue east of downtown. This hospital and adjacent medical office buildings are the regional center for cancer, trauma, pediatrics, orthopedics, neonatal intensive care and neurological care.
- **Frandor Shopping Center:** The Frandor Shopping Center is located in Lansing near the boundary of East Lansing. It is an older retail shopping center that has undergone numerous expansions and renovations and currently contains nearly 600,000 square feet.
- **Harrison Road/West Campus:** Two of MSU's major visitor destinations are located along Harrison near Michigan Avenue: the Kellogg Center (hotel/conference center) and the Breslin Center (home of MSU's basketball teams and many concerts/special events).
- **Downtown East Lansing:** Downtown East Lansing is a vibrant mixed-use downtown. In addition to commercial uses that serve the student population, it is a regional dining and entertainment destination.



- **Michigan State University:** The 5,200-acre MSU campus is the largest in the state and one of the largest nationwide with over 45,000 students, 4,500 faculty members and 6,000 staff.
- **Meridian Mall.** The east end of the Corridor is anchored by the Meridian Mall, which contains 125 retailers in nearly one million square feet of gross leasable floor area.



Legend

- Park, Open Space
 - Potential Conservation Area
 - Police
 - Fire Station
 - Hospital
 - Library
 - Religious Facility
 - School
 - Museum
 - Sport Venue
 - Shopping Center
- Average Number of Employees**
- 75 - 175
 - 176 - 375
 - 376 - 750
 - 751 - 4000
 - 4001 - 7500

Michigan/Grand River Avenue Transportation Study

Trip Generators



5.0 PUBLIC PERCEPTIONS

Effective public participation facilitates understanding and improves decision making by providing a reasonable opportunity for all interested parties to provide input, identify issues and concerns. The Study will use a broad array of methods for distributing information about the process and findings, as well as soliciting input. Both general public and the decision makers will have the opportunity to understand the local interests, opportunities, problems and available transportation options.

To gain information and insights from residents and interested stakeholders early on in the Study process, an online public survey was conducted. The survey consisted of three questions:

1. What do you really like about the Michigan/Grand River Avenue area from the State Capitol to Meridian Mall?
2. What don't you like about the Michigan/Grand River Avenue Corridor from the State Capitol to Meridian Mall?
3. What transportation enhancement(s) have you seen in other cities along major roads like Michigan/Grand River Avenue that you would like to see here in the next 10 years?

5.1 Public Input on Likes

Input on what people like about the area most often relates to the quality and character of the corridor rather than its transportation function. Respondents like the quality and diversity of commercial establishments and those areas that they perceive as being characteristic of good urban design, architecture or streetscape. Survey respondents like the downtown areas of Lansing and East Lansing, the views of the Capitol, and the campus of Michigan State University campus.

The second most frequent type of response about the corridor, however, relates to mobility and accessibility. For example, respondents noted that “one-way divided streets make traffic flow appropriately” and that Michigan/Grand River “is my fastest commute and also intersects other sites of convenience for me (groceries, mall, other).” This contrasts with the least frequent type of response, which relates to the corridor’s walkability and bikeability.



5.2 Public Input on Dislikes

The most frequent “dislike” for the area is perceived visual or aesthetic inadequacies, with respondents citing areas of poor urban design, landscaping, architecture or conflicting land uses.

Related to transportation, there were many responses regarding the functioning of Michigan/Grand Avenue as a primary traffic artery. Many respondents commented on excessive vehicle congestion and thought that the traffic signals were too numerous, and were frustrated at what they saw was poor signal timing. Others cited poor pavement conditions.

A considerable amount of attention is directed to non-motorized transportation. While a few respondents liked the pedestrian or bicycle character of the corridor, the greatest number of responses noted inadequacies related to bike and pedestrian facilities; or they had safety concerns about traveling by bike or foot. Answers on this theme include “It’s dangerous to ride my bike on the corridor” and “Not enough bike pathways or lit corridors in the winter.”

Some of the responses that relate to the transportation function of the road can be grouped into specific locations along the corridor. For instance, respondents expressed concern for the pedestrian and driver safety issues and property maintenance issues in the Frandor area. Similar concerns about the lack of safe bicycle and pedestrian facilities were noted for the Hagadorn Road and MSU campus areas, with the compounding issue of vehicle congestion.

5.3 Public Input on Transportation Enhancements

Enhancements related to public transportation and non-motorized facilities were the most common among respondents. Numerous respondents expressed interest in light rail transit, streetcar, trolley, cable car or bus rapid transit. Respondents also mentioned improved bus stops and facilities. Several respondents expressed a desire for a multi-modal transportation hub in Meridian Township, while two responses mentioned an Amtrak station on Grand River Avenue. The focus on walking and biking carried over from the second question, with a large number mentioning bicycle lanes/paths.

Responses related to roadway improvements, as a category, represented the fewest number of responses. They addressed access management, the construction of roundabouts, and the coordination of traffic signals.



6.0 NEED FOR IMPROVEMENTS

Local and regional authorities in the Michigan / Grand River Avenue Corridor recognize the need to develop transportation alternatives to manage growth and increasing congestion. According to the goals for this Study, these improvements will need to offer an opportunity to enhance mobility and accessibility throughout the Corridor; foster economic development; contribute to an improved social and natural environment; and complement the character of the Corridor.

Based upon these goals, an examination of corridor conditions, and input from the public, the following statements were developed to define the purpose and need for transportation improvements in the Michigan / Grand River Avenue Corridor.

- **Travel Needs:** Michigan and Grand River Avenues link the densest population and employment concentrations in the region and many of the region's activity centers and destinations. There is heavy east-west travel demand within the Corridor, and this demand is projected to grow over the long term. There is limited potential for roadway expansion to meet future demand due to the existing developed character of the Corridor and the lack of major east-west arterials through the MSU campus. Additional transportation options need to be developed for residents, workers and visitors to the Corridor.
- **Transportation System Efficiency:** With thousands of riders per day using CATA's Route 1 and a variety of highly efficient fixed-route buses serving the MSU Campus, the Corridor contains the highest ridership public transportation corridor in the region. Improvements to and expansion of the public transportation system in this Corridor have been identified as key needs within the CATA network of services, and the highest-priority public transportation opportunity within the region. Upgraded service options through the Corridor have the opportunity to positively impact the remainder of the transportation network in the region, including improved travel times for existing users and reduced traffic congestion along Corridor roadways.
- **Economic Development and Opportunity:** The Corridor contains the major employment engines for the region. A focus for the Corridor communities is on enhancing economic opportunities in the face of ongoing reductions in formerly strong industries. Improved



regional transportation will improve the connections to a wider array of employment opportunities for residents of the Corridor, and make portions of the corridor more attractive for ongoing revitalization efforts. Future growth in and around the University will be aided by improved accessibility to campus from throughout the region.

- **Land Use Planning and Community Character:** Adopted local and regional planning policies support urban infill development and redevelopment focused on key nodes (e.g., downtown Lansing, downtown East Lansing) within the Corridor. Regional “wise growth” efforts seek to focus population and employment growth within existing developed areas well-served by the transportation system. Transportation improvements within the Corridor need to be supportive of the scale and character of development envisioned by the City of Lansing, City of East Lansing, Lansing Township, Meridian Township and Michigan State University, all of which have promoted the need for multi-modal transportation solutions in their adopted planning guidance.
- **Community Involvement:** Local and regional planning efforts have involved a wide cross-section of the public in developing solutions to the transportation issues facing the Corridor. Ongoing, more detailed development of transportation options will need to focus on public education and building consensus around a locally preferred alternative.