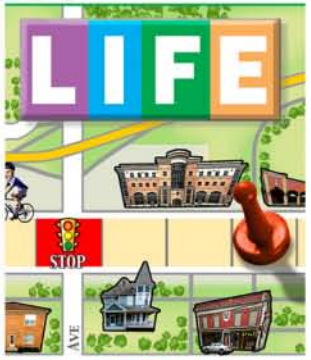

MICHIGAN STREET CORRIDOR PLAN


MICHIGAN STREET
CORRIDOR PLAN

Acknowledgements

Michigan Street Corridor Plan Steering Committee

The City would like to acknowledge the Steering Committee members. This impressive group included representatives of the institutions, neighborhoods, businesses, property owners, non-profit organizations, community health agencies, economic development focused organizations, advocacy groups, and transportation agencies. These members attended many meetings, assisted with public workshops, provided comments and made decisions on the recommendations included in the Plan. The City would like to thank the Grand Rapids Community College for allowing the Michigan Street Corridor Plan meetings to be held at their facilities, and for all of their support to ensure these meetings ran smoothly.

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Kyle Van Strien	Vice Chairperson
Reginald Smith	Secretary
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Shanna Draheim	Public Sector Consultants
Jeremy Pyne	GVSU Community Research Institute

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City of Grand Rapids
Dyer-Ives Foundation
Frey Foundation
Grand Rapids Community College
Grand Rapids Community Foundation
Grand Rapids SmartZone™ Local Development Finance Authority
Grand Valley Metro Council
Grand Valley State University
Michigan State University
Michigan Street Corridor Association
Spectrum Health
The Rapid
Downtown Development Authority/DGRI
North Monroe Business Association
Parking Commission
City of Grand Rapids Community Development Department (NSP)
Michigan State Housing Development Authority (MSHDA)
Michigan Department of Community Health (MDCH)
Michigan Department of Transportation (MDOT)
HUD Sustainable Communities Challenge Grant
Smart Growth America/Rockefeller Foundation

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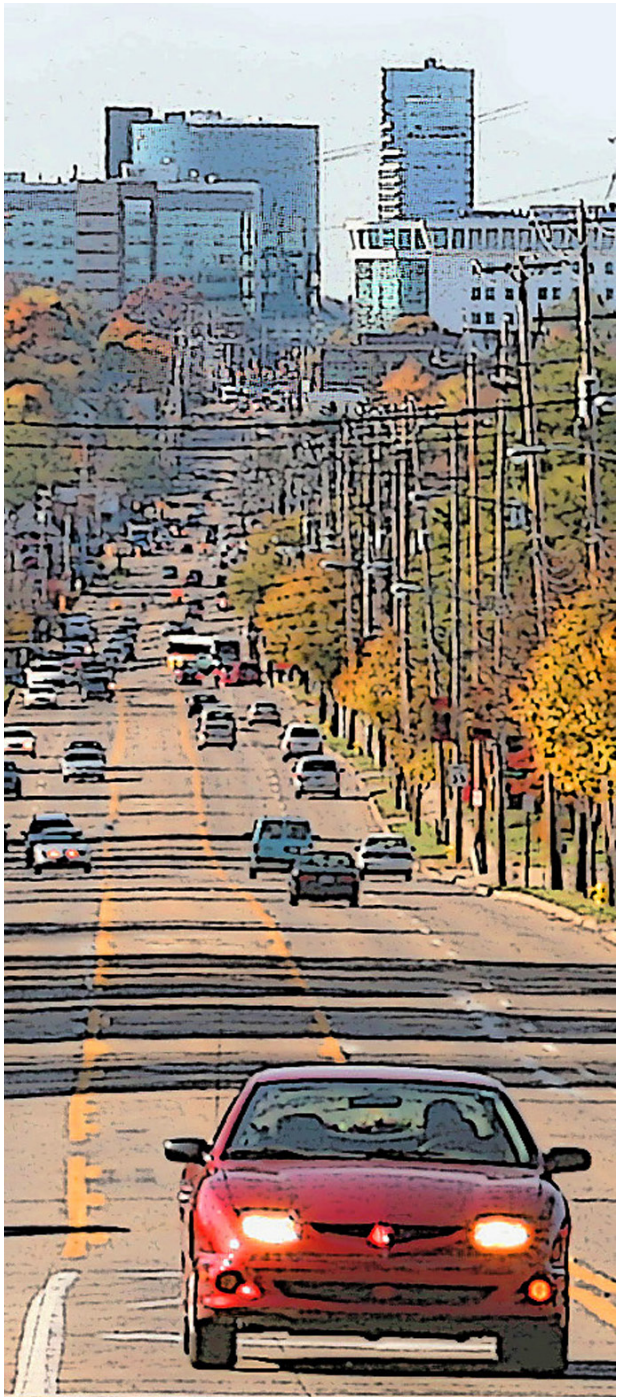


Chapter 1: Introduction

The Michigan Street Corridor has become known as the "Medical Mile," experiencing nearly $1 billion in investment over the past decade. This area comprises one of the largest employment centers in Michigan. A concentrated core of life science institutions is located on 50 acres of land and holds more than 50,000 researchers, faculty, staff, and students. Evidence of substantial economic activity is apparent. Health and education institutions include a research institute, medical school, hospitals, colleges, and universities. Two emergency rooms rely on access from Michigan Street. More than 1.25 million employees, patients, visitors, and shoppers travel into the area annually. Neighborhoods near the Michigan Street Corridor have an opportunity to gain investment and serve as an asset in the attraction and retention of a quality workforce - which can lead to reduced commuting times, lower transportation costs, and healthier workers. Six urban neighborhoods with nearly 20,000 residents surround the Michigan Street Corridor. The Belknap Lookout, Heritage Hill, and Midtown neighborhoods are closest to the Downtown core and can most directly benefit from increased investment. Demand for high-quality rental housing, for example, has been on the rise and vacancies are very low. New development projects have been proposed within these historic neighborhoods and near their edges, peeling back years of disinvestment.

Current State of Michigan Street Corridor

- Access to/from I-196 is congested
- 50,000 employees, 2 emergency rooms and 1.25 million visitors
- Not pedestrian or bicycle friendly
- Loss of neighborhood commercial services
- Desire to support institutional growth to keep jobs within the city
- Pressures on neighborhoods for parking, traffic, growth
- No sense of place
- "Building our way out" of future problems is not desired

Change is not without its challenges, however. New development has resulted in the demolition of dozens of affordable housing units, and additional losses are expected in the future. Neighborhood services have been displaced - including a bank, restaurants, pharmacy, and grocery store. Negative secondary impacts to the livability of surrounding neighborhoods include an unstable housing stock, rising congestion and parking conflicts, impaired walkability, loss of retail services and neighborhood character, and anxiety about future development. Escalating parking demands have resulted in the demolition of viable buildings that could support active uses. Over the past five years, 3,500 new parking spaces in ramps and commuter lots have been constructed. Residents and business owners have envisioned mixed-use projects that create a walkable place. Existing patterns of decision-making regarding land use and transportation must change for such a goal to be realized.

The physical capacity of Michigan Street poses a significant challenge to meet increasing traffic demand, resulting in rising traffic congestion and delay. Increased energy consumption, greenhouse gas emissions, and impaired air quality are secondary effects. Automobile traffic, if not directed to major streets, will filter into abutting traditional neighborhoods and impair the quality of life for residents. Land speculation on underutilized sites threatens to hinder redevelopment opportunities and deter new neighborhood commercial ventures in mixed-use projects. Significant and costly burdens on existing public infrastructure could occur if future development trends are not readily understood.

This plan outlines policies and strategies that will help the Michigan Street Corridor area achieve a sustainable future through initiating desired land use changes, sequencing improvements to the transportation system, and framing

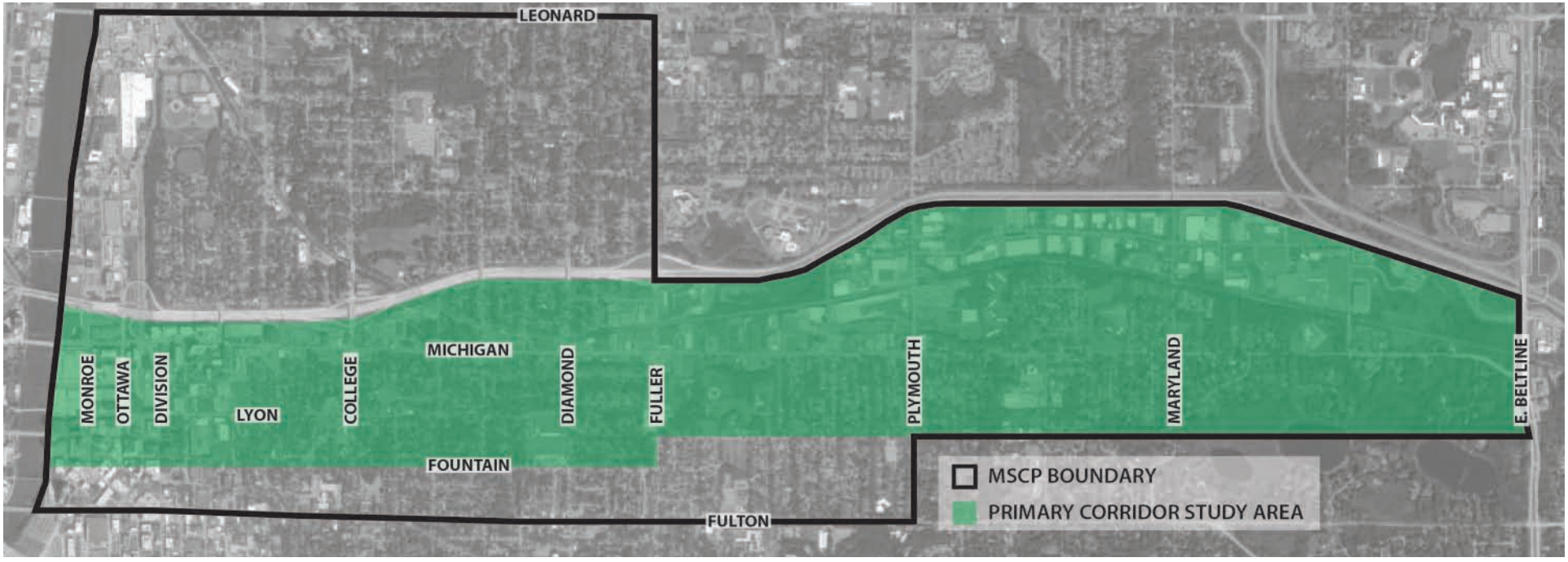


Figure 1-1. Study Area Map *- This map illustrates the Michigan Street Corridor are and the primary focus area related to this plan.*

The Corridor offers great promise and opportunity to create an economically vibrant, affordable, green, and livable center if creative land use and transportation planning efforts are implemented. When looking to the future, a number of community questions arose:

- What would a sustainable mix of land uses and transportation modes look like?
- Where is change likely to occur, and where should it be encouraged?
- How should traffic congestion be addressed?
- When should infrastructure improvements be sequenced with new development?
- What types of housing are needed and at what price points?
- How can continued institutional expansion sensitively grow side-by-side with nearby neighborhoods?
- What is the right mix of housing and accessibility/mobility options to balance traffic commuting patterns?
- How can commercial and retail uses along Michigan Street complement, and be supported by, neighborhoods and institutions?
- What are the components of placemaking and quality of life that will build a successful corridor?
- What are the roles of the city, transportation agencies, institutions, and others?

These questions provided the framework to establish a set of principles that would guide the Michigan Street Corridor Plan process from inception to completion (see section 1.2). Guiding principles were considered for each set of unique challenges, and ultimately led to the creation of each recommendation within the plan.

important community conversations. Creating an Innovation District - as called for in the Brookings report on Michigan Street – where employment, learning, living, and shopping create a dynamic environment, is important for the future of Grand Rapids and the West Michigan region. We must build a healthy city where:

- Redevelopment creates a vibrant place that realizes the community's vision.
- People of all ages, abilities, and income levels have the opportunity to find housing that meets their needs.
- People may choose to walk, bike, and/or use transit as an alternative to the car.
- Well-designed buildings, vital streetscapes, and public art contribute to quality of life.

An inclusive engagement strategy and extensive data analysis allowed the City to develop detailed recommendations in this plan. The plan's recommendations provide a framework for the Michigan Street Corridor to develop as one of the most desirable places within the United States, attracting and retaining the highest quality workforce and college graduates.

Supporters of this planning effort:

- City of Grand Rapids
- Dyer-Ives Foundation
- Frey Foundation
- Grand Rapids Community College
- Grand Rapids Community Foundation
- Grand Rapids Smart Zone Authority
- Grand Valley Metropolitan Council
- Grand Valley State University
- Michigan State University
- Michigan Street Corridor Association
- Spectrum Health
- The Rapid
- Downtown Development Authority
- North Monroe Business District
- Parking Commission/Parking Services
- Community Development (NSP)
- Michigan State Housing Development Authority (MSHDA)
- Michigan Department of Community Health (MDCH)
- HUD Sustainable Communities
- Smart Growth America/Rockefeller Foundation

This plan was made possible by the investment of time and funding by a wide range of partners, from both Federal and State units to institutions, philanthropists, and community stakeholders (see sidebar). In addition to institutional participation, steering committee members represented neighborhood associations, Disability Advocates of Kent County, Grand Rapids Public Schools, local businesses, Michigan Department of Transportation, Consumers Energy, Greater Grand Rapids Bicycle Coalition, The Right Place, and Kent County.

The Steering Committee spent months exploring alternative strategies to make sure this plan not only has ambitious long-term objectives, but is also grounded in an implementable reality. Few cities are fortunate to have the "just get it done" public-private-institutional partnership heritage that exists in Grand Rapids. This collaborative spirit holds the key to this plan's ultimate success.

1.1 Planning Context

A master plan establishes objectives and policies to manage change and guide decisions about future land use and development within a community. It also provides the foundation for setting capital improvement priorities, revising zoning regulations, and recognizing other implementation tools.

The City of Grand Rapids has developed a series of plans and zoning regulations to help guide development and infrastructure investment. In particular, the City of Grand Rapids Master Plan (2002), Complete Streets Resolution (2011), Green Grand Rapids Plan (2012), and Sustainable Streets Task Force Report (2013) outline general policies for land use, development, multi-modal transportation, and green infrastructure. The city's form-based Zoning Ordinance (2008) codified Grand Rapids' citizens' vision of a walkable, mixed-use community. Future studies, such as a new Downtown and River Corridor Plan; known as GRForward, may assist in formulating additional recommendations for this important regional center.

Various transportation agencies have regional-scale plans that include recommendations for the area. The regional transportation organization, the Grand Valley Metro Council (GVMC), has improvements along the Michigan Street Corridor included in its Long Range Transportation Plan. GVMC has also designated the Michigan Street Corridor as a corridor of regional significance, making it eligible for special funding. Several of the recommendations in the Regional Transit Master Plan prepared by The Rapid, address the Michigan Street Corridor area, in particular the Silver Line (Division Avenue) Bus Rapid Transit (BRT) route, runs for a short segment on Michigan Street and an analysis of a second BRT "Laker Line," which would travel to Michigan Street at Lafayette. A second phase of the Laker Line could extend to Plymouth Ave. and Oak Industrial Drive. A streetcar evaluation would connect the North Monroe District with the downtown and South Arena District, and provide additional transit service.

Past plans for wayfinding and streetscape design on Michigan Street contribute to a vision for the corridor. Several of the Corridor's near neighborhoods have also prepared future focused area specific plans (ASP). The Monroe North, Belknap Lookout, and Midtown (Brikyaat) plans have been incorporated into the future land use map of this Corridor Plan. Policies and recommendations from those existing plans were examined and refined to craft more precise objectives specific to the challenges and opportunities for the Michigan Street corridor.

1.2 Guiding Principles

The Steering Committee forged a set of guiding principles to assist in decision-making. These guiding principles developed from a foundation deeply rooted in the City of Grand Rapids Master Plan (2002) and Green Grand Rapids (2012). The Steering Committee also considered the broad sustainability principles of HUD, the city's Complete Streets resolution, and goals from various ongoing plans. Throughout the two-year process, community input was relied upon to refine the initial project goals into the final set of guiding principles, which were then used to evaluate the plan's alternatives and priorities.

It is important to note that these guiding principles shall set the framework for implementation guidance and determination of priorities over time. Proscriptive prioritization of projects can change, depending upon funding opportunities, community preference, or other new projects not anticipated by this plan. Therefore, these principles set the framework for nimble decision-making to be able to take advantage of implementation opportunities that advance plan objectives."

Promote organized economic investment and job growth.

We understand that our city's ability to attract and retain businesses, jobs, and households is the economic engine that drives new investment. Our city's economic health also determines our fiscal capacity to provide sound infrastructure and quality public services. We support the continued growth of institutions, industry, and businesses. It is essential to encourage new public- and private-sector partnerships to ensure this corridor remains an important regional employment hub. We believe that new public infrastructure should be synchronized with private investment so that sufficient infrastructure is provided to accommodate expansion and growth.

Accommodate a broad range of uses.

We believe that the success of the corridor does not hinge on one development sector. A broad range of housing options, compact commercial and mixed-use developments, and institutional and industrial uses that are integrated into the fabric of the corridor will create a diversified economy and a built environment that encourages walking, biking, and transit use.

Improve existing housing stock and enhance the integrity of each neighborhood's unique character.

We recognize the importance of maintaining a balance between economic growth and preserving the distinct neighborhoods that abut Michigan Street. We are committed to protecting and improving the valued characteristics of these neighborhoods while encouraging change that will make the best use of vacant and under-utilized land and buildings.

Provide a broad range of high quality housing choices and price points to meet the diverse needs of existing and new residents.

We need housing choices that appeal to different lifestyles, ages, and income levels, so that a person

of any age or ability can find housing within the Michigan Street corridor. Continued growth of the institutions, along with increased demand for "downtown living" as a result of demographic shifts, has increased the need for more dense housing. We should strive to capture as many new residents as possible within the corridor – viewing them as potential new transit riders, shoppers, workers, and business people.

Create a transportation system that is accessible, interconnected and multimodal.

We recognize the importance of a systems-wide approach to transportation that comprehensively understands the interrelationship between operations, modes, and land uses. Pedestrians, bicycles, transit, automobiles, and freight must co-exist within a constrained space. As improvements are made along the corridor, all users should be considered. We will strive to ensure that no one particular mode diminishes the potential of another, so that all people can safely and efficiently travel to and through the corridor. We seek to create new opportunities for connectivity between the "hill" and the "valley" to improve physical health, employment access, and economic growth.

Safely and efficiently move goods and people of all ages and abilities through the Corridor, with a particular focus on pedestrian safety.

We are committed to creating a pedestrian-friendly community. We believe that enhanced pedestrian crossing facilities should be used where feasible to create a user-centered environment. We support and encourage an enhanced transit system along Michigan Street that will provide quality service to institutions and neighborhoods. An efficient and well-maintained road network that minimizes negative traffic impacts for residents, businesses, industry, and visitors is important.

Improve the identity of the Corridor as a "place".

We believe that effective placemaking will lead to greater economic investment and a stronger, safer community. Quality design and the maintenance of private development and public realm will make a difference to the quality of our lives, stability of the corridor, and the ability to attract new investment. We support design approaches that honor context, compatibility, authenticity, and human scale.

Provide a healthy environment that promotes active living.

Our city's physical health is as important as its economic health. Safe and well-designed pedestrian and bicycle facilities will reduce trips by car and improve community health as people actively move to their destinations. Improving our built environment with better connections, shade and light, and places for respite will encourage physical activity and help to reduce obesity.

Use sustainable practices that will preserve and enhance natural systems and green

infrastructure, as outlined in Green Grand Rapids.

We care about the environment, the availability of resources for future generations, and the integrity of natural systems. We believe our city's competitiveness and long-term viability will depend on the quality of life investments that we make in our "green infrastructure," including streetscapes, public spaces, and environmental assets. We will work to conserve and restore natural systems, protect and enhance greenspace, and build a resilient corridor.

Establish partnerships that will seek to plan, fund, design, construct, maintain and operate efficient systems.

We make decisions and accomplish our plans in an open, inclusive, and collaborative manner. We empower people to contribute their ideas, work toward consensus, and take responsibility for achieving a shared vision of the future. We work in partnership with neighborhoods, businesses, developers, schools, non-profits, and anchor institutions to leverage our resources and expertise with the goal of creating positive change in our community.

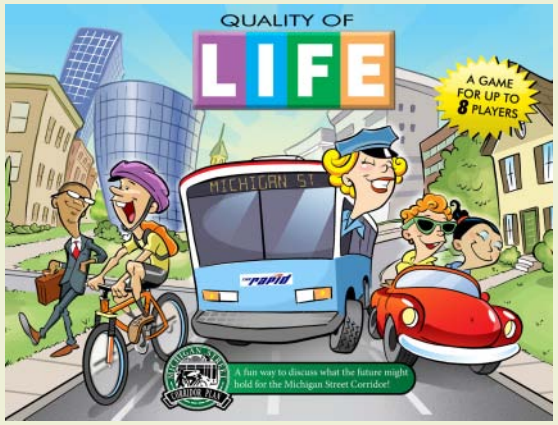
1.3 Process

An inclusive and transparent Michigan Street Corridor Plan was developed using a comprehensive community input strategy. Throughout the process, the city engaged anchor institutions[1] in a collaborative partnership with community stakeholders, landowners, neighborhood residents, and business owners. This process resulted in a corridor plan that includes strategies for mixed-use transit-oriented development, housing, multi-modal transportation, transportation demand management, safety, health, green infrastructure, and placemaking. Cumulative changes to the corridor have the opportunity to improve the area's economic status and quality of life for current and future generations. At the outset of the planning process, the Steering Committee crafted an initial set of guiding principles that were refined with community input through the planning process (listed in Section 1.2).

The Steering Committee provided consistent guidance by holding monthly meetings and work sessions over the course of two years. The diversity of the committee brought different perspectives. Anchor institutions were careful to protect current investments and future plans. Businesses shared their desire to remain and thrive. Residents expressed interest in finding ways to gain from development trends rather than suffer negative impacts. Various advocates sought a better environment for walking, biking, and transit. After steering committee members experienced what it was like to travel along Michigan Street in a wheelchair or blindfolded, all agreed that future transportation improvements need to give greater priority to pedestrians and persons with disabilities.

A series of community forums and unique public involvement techniques based on Human-Centered Design (HCD) were utilized to facilitate community engagement at each major step in the process. The direction of the planning

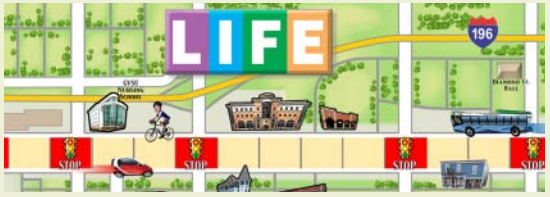
[1] Anchor institutions are nonprofit institutions that tend not to move location. They are "anchored" at the location where they were first established. Typically, such anchors are universities and non-profit hospitals (often called "eds and meds"). Spectrum Health, Grand Valley State University, Michigan State University, Grand Rapids Community College, St. Mary's/ Mercy Health and VanAndel Institute are located within the study area and comprise the anchor institutions referred to in this report.



Quality of Life Game

Modeled on the longstanding children's game "Life," the Quality of Life game had participants move their game pieces through the corridor/game board, identifying and selecting quality-of-life items they would like to see in each section (such as bus stops, grocery stores, parks, housing, etc.). The game also tried to capture user experience along the corridor with a series of questions and the creation of "alter egos" that placed a player in another person's shoes. The games were placed in public locations throughout the corridor, including coffee shops, libraries, and other public gathering spaces. Twenty-six board games were returned and 130 individuals participated.

See: http://therapidian.org/quality-life-board-game for a user-experience narrative of the game.



process was determined by the input received and by shared learning from special reports and studies as the project progressed. The City developed a consistent structure of communication by maintaining a project website that was updated as new materials were developed. and Steering Committee presentations were posted on the web after each meeting. As a result of these efforts, the Michigan Street Corridor Plan is understood throughout the community and actions to implement its recommendations are widely supported. A description of major milestone activities is listed below.

Community Forum #1 Issues Identification October 12, 2011

The purpose of this workshop was to actively engage the community in the identification of the important issues related to the corridor and to begin to develop a framework for future planning tasks. The forum included a presentation of best practices followed by breakout groups to begin to identify issues, opportunities, ideas and priorities.

Community Forum #2 Guiding Principles June 11, 2012

After the City and Steering Committee developed the guiding principles that would drive the process, the second community forum was held to engage residents and stakeholders on the principles. Metrics were developed to assist in determining successful outcomes. The forum included a presentation of the process for determining the guiding principles and allowed the community to rank the principles that were most important to them.

Community Forum #3 Alternative Development Scenarios – June 18, 2012

Based on the analysis conducted by the city and the project team, a series of alternative land use scenarios were developed to illustrate how a variety of solutions could address the current conditions in the corridor area. The land use scenarios were presented to the community to allow participants to identify elements of each option that were most desirable to fit their needs. This forum allowed the city to develop a hybrid of the scenarios that included the most highly ranked elements from each.

Community Forum #4 Refined Alternatives October 29, 2012

Over 200 participants reacted to concepts during five breakout sessions: Intersections & Interchanges; Neighborhood Connections; Designs for Michigan Street: College – Fuller; Lyon Separated Bikeway; and Tools for Implementation. Feedback was given on worksheets that asked participants to evaluate the concepts to-date based on the guiding principles/performance measures. The concepts developed during the alternatives phase are included in this plan.

Subarea Design Charrette May 11, 2013

Over 40 participants joined the project team and a private developer to offer input on a planned redevelopment project at the northeast corner of the Michigan/Diamond intersection. Identified

as a demonstration project for the plan, a day-long charrette engaged residents and stakeholders in the site's design based on the developer's pro forma. An interactive approach was used that allowed participants to build scaled-site models with blocks while professionals translated their ideas into a 3-dimensional digital format. Each team then presented their ideas to the group and the developer. Each number was ranked by participants and the developer, based on how well it achieved the guiding principles of the plan (see Section 3.7 for more detail).

Community Forum #5 Plans and Projects June 17, 2013

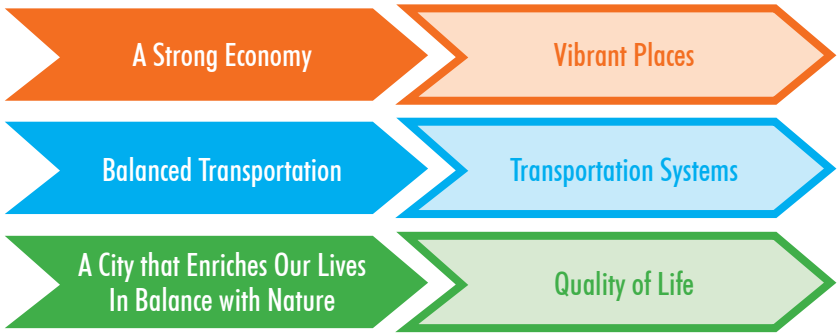
As the last chance for input before the draft plan was prepared, this forum presented refined plan concepts, preliminary action steps, and concluded with four breakout sessions, which included exercises to gain feedback on draft concepts: Housing & Land Use, the Michigan/Diamond Demonstration Project, Motorized Improvements, and Transit + Non-Motorized Improvements. The forum had a clear implementation tenor that was exciting to those in attendance.

Stakeholder Meetings - Continuous

After each community forum, the results were reported to the Steering Committee and stakeholder meetings were held as needed with agencies such as The Rapid, MDOT, and GVMC; as well as neighborhoods, such as Midtown. Suggested changes to the plan as a result of the input received were brought before the Steering Committee, who then voted to accept or decline various requests.

1.4 Organization of the Plan

The plan is organized into three primary theme chapters to insure compatibility with the City Master Plan (2002) and Green Grand Rapids Plan (2012). The chapters, as defined in those plans, are: A Strong Economy, Balanced Transportation, and A City That Enriches Our Lives and A City in Balance with Nature. The names of the chapters in the Michigan Street Corridor Plan have been modified to align with the principles and language used during the corridor planning process. Plan chapter names are: Vibrant Places, Transportation Systems, and Quality of Life.



The Michigan Street Corridor Plan recommendations support all of the Master Plan themes. Just as the objectives and policies in the Master Plan and Green Grand Rapids reinforced one another, so do the variety of recommendations contained herein interrelate. In addition

to the theme chapters, an Action Plan has been provided at the end of the document. Each recommendation was analyzed by considering multiple factors and impacts. As such, many recommendations can be found in multiple locations within this plan. Additionally, some recommendations include a more detailed technical report that can be found in the Appendix. The chart below illustrates where each recommendation can be found within the plan and whether an accompanying technical report exists for each recommendation.

Finally, each theme chapter includes a demonstration project that illustrates how the guiding principles and recommendations can be applied to a real-life project. Enthusiasm for the demonstration projects resulted in each undergoing a more refined design toward implementation before the plan was even finished. Projects and initiatives are identified in Chapter 6: Action Plan.

Figure 1-2. Table of Recommendations

CHAPTERS	HOUSING		LAND USE			TDM				
	Support affordable housing development	Promote homeownership	Introduce new land uses	Modify zoning to accomodate new land uses	Foster public-private partnerships for Development	Transportation management	Parking management	Transit enhancements	Live near work strategies	Transportation impact study regulations
A Strong Economy	■	■	■	■	■					
Balanced Transportation						■	■	■	■	■
A City That Enriches Our Lives	■	■	■	■	■			■	■	
Appendix (Technical Report)	TR	TR				TR	TR			TR

1.4.1 Vision

This Chapter highlights the big concepts of the Michigan Street Corridor Plan. It begins with an overview of existing land uses for the Corridor area. Preferred locations for various land uses, such as offices, stores, and homes are provided. Land use density and the general design, or form, of development is discussed. This plan provides a more detailed guide for land use and replaces the more general land use map in the city's overall Master Plan. Existing conditions in the transportation system are described and the concept of Complete Streets in future transportation systems is introduced. The philosophical underpinnings of the Michigan Street Plan are to integrate land use, urban design, and transportation to create a high quality, sustainable community.

1.4.2 Theme Summaries

Vibrant Places

This chapter begins by providing a detailed analysis of employment, residential and commercial conditions within the corridor and also projects how they will change in the future. The

NON-MOTORIZED TRANSPORTATION					TRANSPORTATION					GREEN INFRASTRUCTURE				
Curb ramps	Crosswalk markings	Streetscape buffer	Visual interest/Landmarks	Audible pedestrian signals	Ottawa/Ionia interchange	Hastings reconfiguration	Michigan/College intersection	Michigan Street intermittent median	Michigan Street reduction from 5 to 3 lanes	Enhance existing parks/open space	Streetscape improvements	Railroad corridor greenway	Low-impact development streetscaping	Enhance pedestrian bridges over I-196
										TR				

Residential Market Potential Update offers a variety of programs and policies to address market rate and affordable housing, rental and homeownership, and displacement as the corridor continues to develop. The results of a Corridor Profile by Grand Valley State University's Community Research Institute provides detail on missing retailers that could be attracted to mixed-use developments.

The second part of this chapter presents the steps that led to the future land use plan that was developed over a series of workshops with the Steering Committee, stakeholder groups, and the community. The future land use plan incorporates a variety of housing densities, mixed-use designations for specific types of commercial markets, nodes of activity around existing and future transit infrastructure, and the expansion of anchor institutions. Building types that address the "missing middle" of housing options is presented as a potential amendment to the Zoning Ordinance.

The Michigan/Diamond Redevelopment special study was identified as a demonstration project that brings the recommendations of this chapter to life. The city worked collaboratively with a developer, architect, and the project team to ensure that the guiding principles forged by the Steering Committee and the community were considered during the design of this development. This work resulted in an implementable mixed-use transit-oriented project based on market realities that was in alignment with the community's vision. This study has already influenced the construction of several projects along the corridor.

Transportation Systems

The transportation plan developed for the corridor consists of five distinct elements: transportation demand management, pedestrians, transit, bicycles and motorized transportation. The recommendations within each category were the result of extensive analysis and community input. A key learning from the planning process was that the corridor cannot build its way out of congestion by providing greater capacity for automobiles. The steering committee worked with experts to develop Transportation Demand Management (TDM) strategies to establish a new mobility paradigm that would not hinder growth and development.

The pedestrian element of the transportation plan was forged by on-site analysis of the existing pedestrian conditions in the corridor with the assistance of Disability Advocates of Kent County. Best practices are cited to create a set of recommendations that includes better crosswalk conditions, landscaping, and wayfinding. Spectrum Health also conducted its own analysis of pedestrian conditions and recommendations of

their study have been included, such as reducing crossing length at the Michigan/Coit intersection and providing audible crossing signals.

The Rapid was engaged to determine future transit enhancements that are currently planned or could be developed to provide better service within the corridor. A variety of connections and improvements were recommended, ranging from providing more express service on Michigan Street to a potential commuter rail line. The route for the Rapid's second Bus Rapid Transit (BRT) Laker Line is proposed to connect to Michigan Street and provide enhanced service to the corridor.

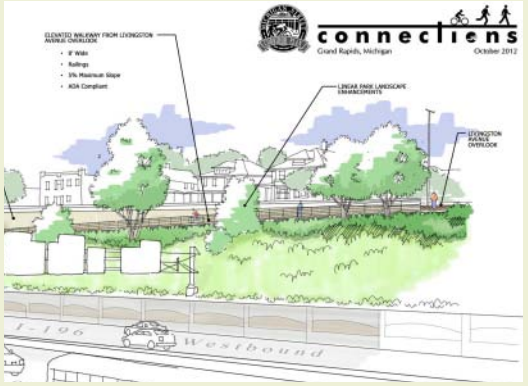
The Greater Grand Rapids Bicycle Coalition assisted in determining the best options for providing bicycle facilities. It was determined that Lyon Street was the most viable East-West route, with several other streets providing connections to Michigan Street and adjacent neighborhoods. The Lyon Separated Bikeway was identified as a demonstration project. After Lyon Street was selected as the most viable location for bicycle facilities, concepts were developed for each segment of the street. Through analysis of best practices and input from the community, a two-way separated bikeway became the most desired facility for Lyon Street. Other treatments, such as shared bike-auto lanes and buffered bike lanes, were determined to best accompany the separated bikeway within challenging segments in order to create a comprehensive system connecting bicyclists from the Grand River to the East Beltline.

Several alternatives for interchanges and intersections were developed to illustrate possible treatments and reconfigurations of transportation operations within the corridor to increase mobility and access to Michigan Street to make better use of the street network. These alternatives were vetted by the Steering Committee, stakeholder groups, and the community in order to determine which improvements should be studied further. The alternatives rated highest by the community were analyzed in more detail, resulting in a package of feasible improvements.

Quality of Life

This chapter identifies opportunities for improving the quality of life for residents of the corridor area. The Health Impact Assessment (HIA) outlines how each element of the Michigan Street Corridor Plan (e.g., transportation, land use, housing, infrastructure, etc.) impact the health and welfare of residents and visitors in the corridor. The HIA determined that improved non-motorized transportation, improved transit, access to fresh foods, and reduced vehicle emissions were strategies that could be targeted to improve overall public health within the area.

To address some of the issues identified in the health impact assessment, the steering committee wanted to ensure that green infrastructure was prioritized in the corridor. The green infrastructure plan identifies opportunities to enhance existing open space, create/enhance non-motorized connections, enhance streetscaping and wayfinding as recommended in previous planning efforts, and identify long-term projects that will enhance quality of life.



The Hastings Linear Park was identified as a demonstration project that will incorporate several elements of the green infrastructure plan. The Neighbors of Belknap Lookout Association partnered with the city and consultants to complete a comprehensive neighborhood plan for the Belknap Lookout neighborhood. A recommendation of this plan is to develop a linear park that would border Hastings Street and I-196 and connect from College to the bluff, down to Division Avenue. The linear park will provide an improved buffer between the neighborhood and the expressway, while creating a public space that will better connect the Belknap Lookout neighborhood, the Michigan Street Corridor, and North Monroe.

1.4.3 Technical Reports

All of the recommendations found in this plan were generated through a combination of technical analyses and an abundance of community input. The technical analyses were conducted by a variety of experts in specific elements applicable to the Michigan Street Corridor. Elements of each technical report can be found throughout the plan, as many became final recommendations. Reports are summarized below to provide an understanding of the foundation of the plan's analysis and recommendations. The Appendix provides a compilation of the full reports.

Phase 1 - Summary Report

This study summarizes the existing conditions, data collected, project goals, issues, and opportunities identified in the beginning of the planning process. The summary explains the methodology for collection of data and the initial observations of transportation and land use conditions, as well as initial public involvement techniques used to engage the public from the start of the process.

U3 Ventures

This study evaluated the employees and students that occupy the Michigan Street Corridor, specifically Spectrum Health, Grand Valley State University, Michigan State University, Grand Rapids Community College, Van Andel Institute and St. Mary's Hospital/Mercy Health. Home address, income and tenure/status were analyzed to understand the demographics of these organizations to inform dialogue about housing choice, transportation modes, and retail demand.

Residential Market Potential Update

This study was conducted in order to determine the market potential for newly introduced housing units, both new construction and adaptive re-use, that could be leased or sold in the corridor over the next five years. This analysis was based on projected housing demand. The market potential of the Michigan Street Corridor is approximately 5,870 new housing units over the next five years, representing less than 33 percent of the total annual market potential for the City of Grand Rapids.

Residential Market Potential Update - Stakeholder interviews

A series of interviews were conducted by the project team with various stakeholder groups knowledgeable about affordable housing to understand their perspective, their assessments of current affordable housing demand, and their understanding of the barriers to mixed-income developments within Grand Rapids.

Residential Market Potential Update - Policies and Programs

A set of policies and programs were developed by the project team to provide a catalog of solutions that can maximize the capture of the potential housing market and the impact of investment in new housing, including alternative homeownership strategies. These programs and policies have proved to be effective in similar communities throughout the United States, and several can apply to both affordable and market-rate housing.

Phase 2 - Traffic Analysis Results

This study was conducted to determine the feasibility of transportation improvements within the Michigan Street Corridor. The analysis was performed by using advanced traffic modeling that allowed engineers to determine the actual traffic impacts each improvement would have in the near-, mid-, and long-term. The analysis was compared to a baseline traffic model that illustrated the condition if no improvements were made. The output from this analysis allowed the city, stakeholders, Steering Committee, and community to make informed selections of transportation improvements.

Phase 3 - Traffic Synchro Results

The purpose of this study was to further analyze improved access to the Michigan Street Corridor by enhancing access to and from I-196 at both the Ottawa Avenue and College Avenue interchanges, with a focus on avoiding additional right-of-way requirements. This study analyzed 37 key intersections and transportation improvements that were identified by the Steering Committee after they reviewed the analysis of the entire corridor in the Phase 2 Traffic Analysis Results. The analysis of this report identified potential phasing of improvements, how they would impact current and future traffic conditions, and estimated costs of each improvement.

Transportation Demand Management - Recommendations and Implementation

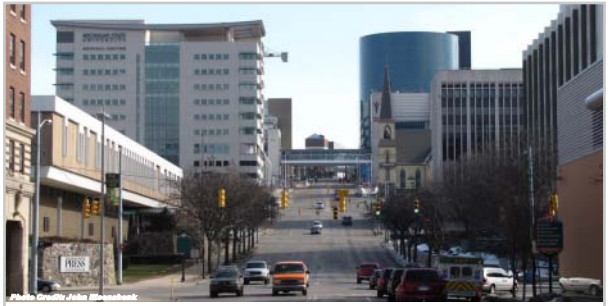
Transportation Demand Management (TDM) is a collection of strategies intended to reduce the number and length of automobile trips, especially single-occupant vehicles, in the AM and PM peak hours. Through analysis of the corridor and stakeholder engagement, the City was able to determine a menu of TDM strategies that address the unique transportation problems in the corridor. These strategies include transportation management, parking management, transit solutions, and live-near-work programs. These strategies, in combination with the Transportation Plan, provide the City with a framework of actions to address transportation issues in the corridor.

Lyon Street Separated Bikeway

The goal of Complete Streets is to accommodate all users and all modes, but it is not always feasible on all streets. The constrained roadway width of Michigan Street, combined with building placement, truck traffic, and insufficient sidewalk width made the addition of on-street bicycle facilities undesirable. Lyon Street is a parallel street two blocks away that was identified as an opportunity to provide an enhanced two-way bicycle facility on a low-volume residential street as an alternative to Michigan Street. This study brought the project to 30 percent design completion.

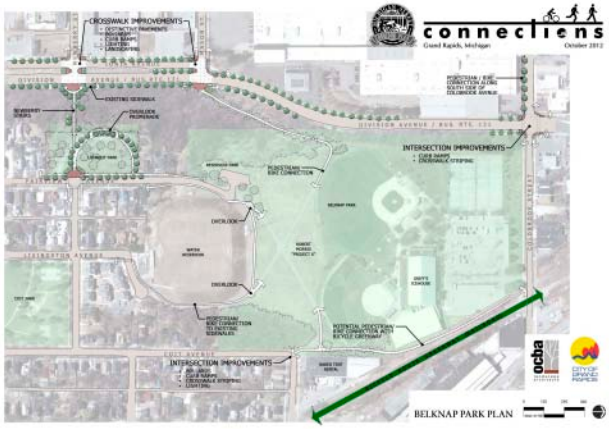
Connections Study

Non-motorized connections between the Belknap Lookout, Downtown, Michigan Street, and North Monroe were evaluated in this study. Lacking or



Transportation Demand Management

Michigan Transportation Reform Demonstration Project



poor connections between and within these districts deter people from walking and biking. The study evaluated routes to connect the hill to the valley and improve non-motorized facilities at critical crossings and streets. Streetscape recommendations are also included.

Health Impact Assessment

This study evaluated existing conditions along Michigan Street relative to public health. The purpose of the HIA was to assist the community in understanding ways to prevent disease, injury, and disparities while improving public health. Correlations between health indicators and Michigan Street Corridor Plan themes were evaluated. Understanding the root causes of poor public health and its relationship to the physical design of the Medical Mile Corridor was an important consideration as Plan alternatives were developed.

CID + BID Feasibility Study

Corridor Improvement Districts (CID) and Business Improvement Districts (BID) are both effective tools for strategically capturing tax dollars that can be used to fund improvements within a specified district. The City and project team assessed the feasibility of each of these tools for the corridor. It was determined that both tools have the potential for providing sustainable revenue support for public improvements and marketing of the corridor. It was also determined that the corridor meets the minimum legislative requirements set forth for establishing and implementing both a CID and a BID.

1.5 Plan Review and Adoption

In 2014, the Michigan Street Corridor Plan draft was released for public review and comment. In 2015 the Grand Rapids Planning Commission held a public hearing on the draft document. The revised Corridor Plan was presented to the Planning Commission and, as authorized by Public Act 285 of 1931 and Chapter 62 of the City code, adopted by the Grand Rapids Planning Commission in 2015 as an amendment to the 2002 Master Plan for the City of Grand Rapids. The plan amendment was then officially adopted by the City Commission in 2015.

Chapter 2: Vision

2.1 Introduction

A Master Plan establishes the type, character, and density of development that is appropriate in different areas of the community, including where new development might occur and where resources should be directed to revitalize or reuse already developed areas. It also provides a framework for determining what public investments in streets and other infrastructure will be needed. Corridor planning has been among the most popular type of integrated land use/transportation planning, due to its ideal scale: it is a large enough area to consider transportation systems, but small enough to consider the details of site and street level planning and design.

A series of Figures (maps, images, and tables) are included within this document to illustrate how written recommendations should be translated into future land use and transportation patterns. While these recommendations are presented on separate maps for clarity and readability, they are interrelated and should be considered as one whole. Important maps include:

- *Future Land Use Map*
  Map 2-2, page 22
- *Transportation Plan: Bikes*
  Map 4-11, page 78
- *Transportation Plan: Transit*
  Map 4-12, page 83
- *Green Infrastructure Plan*
  Map 5-14, page 116

This Chapter begins with an overview of existing land uses for the Corridor area. Preferred locations for various land uses, such as offices, stores, and homes are provided. Land use density and the general design, or form, of development is discussed. Existing conditions in the transportation system are described and the concept of Complete Streets in future transportation systems is introduced. The philosophical underpinnings of the Michigan Street Plan are to integrate land use, urban design, and transportation to create a high quality, sustainable community.

2.2 Existing Land Uses and Development Patterns

The character of Michigan Street changes dramatically through the study area from a high-density employment district to a quiet, leafy residential street. Land uses and the density of development transitions from the Grand River to the East Beltline as well as from Michigan Street into the neighborhoods that surround it. Steep slopes of the natural landscape present numerous design challenges,

1. Michigan State University College of Human Medicine
2. 25 Michigan St. Medical Offices
3. 35 Michigan St. Medical Offices
4. Helen DeVos Children's Hospital
5. Spectrum-Health Lemmen Holton Cancer Pavillion
6. Spectrum Health North Office Building
7. Spectrum Health Parking Ramp 7
8. Spectrum Health Parking Ramp 8
9. Spectrum Health Cook Institute
10. Grand Valley St. University Cook-DeVos Center for Health Sciences
11. Van Andel Institute
12. Spectrum Health Butterworth Hospital
13. Spectrum Health Meijer Heart Center
14. Spectrum Health Musculoskeletal Center
15. Helen Devos Children's Outpatient Center
16. Crescent Park
17. Grand Rapids Community College
18. Spectrum Health Renucci Hospitality House
19. Spectrum Health Parking Ramp 6
20. Van Andel Education Institute Science Academy

for example, the elevation from Coit to Division avenues drops 100 feet. Steep slopes also separate the Heritage Hill and Midtown neighborhoods and commercial uses on the south side of Michigan Street. Manmade barriers, such as the Gerald R. Ford I-196 Freeway and a rail corridor, limit lot depths and have served as a dividing line between neighborhoods and Michigan Street's intense development for decades. Existing corridor land uses and development patterns can be broken into three distinct areas. Map 2-1 illustrates the various typologies.

The area in pink, from the Grand River to College Avenue, is a concentrated node of institutional development. This area contains buildings that range from one to twelve stories in height. Buildings are located at the sidewalk and lack pedestrian scale. Parking is placed in ramps, and pick-up/drop-off areas are located in front of a number of buildings. Uses that could activate the street, such as gift shops, coffee shops and pharmacies are located within buildings and do not have a storefront presence to encourage pedestrian traffic. Properties abutting the Federally-designated Heritage Hill Historic District to the south must consider appropriate transitions in massing and scale. Underutilized properties, such as surface parking lots, are viewed as holding places for development. These properties are located on the east end of the institutional development area, near College Avenue. An analysis of existing institutional land holdings and leased space speaks to anticipated land use changes:

- The recent acquisition of the five former Grand Rapids Press properties by Michigan State University will draw additional institutional development West, down the Michigan St. hill to Monroe Avenue and into the North Monroe district.

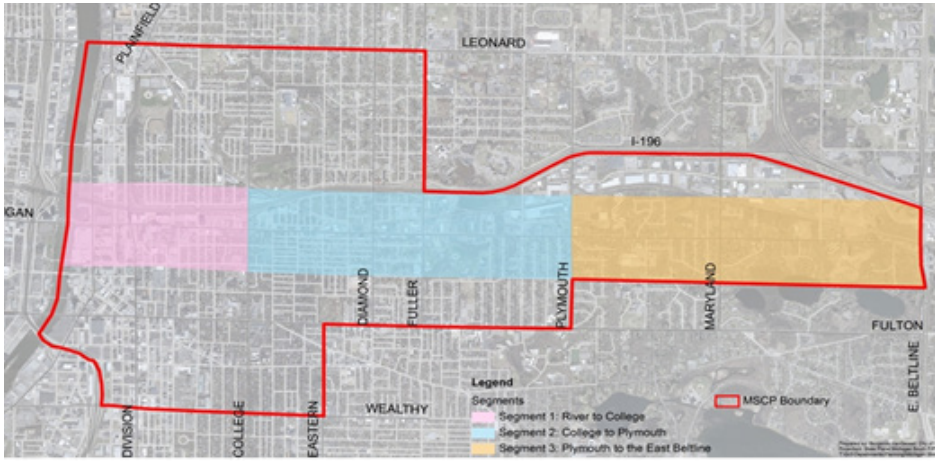
- Spectrum Health is presently leasing office space on the other side of the Grand River in the Bridgewater Place building, as well as in Monroe North at the Brass Works Building. It also owns several underutilized properties near College Avenue.

- Van Andel Institute has acquired properties along Division Avenue to provide for future expansion needs.

- Grand Rapids Community College is not expected to acquire additional properties; however, a large centrally located parking ramp and the former football field present development opportunities.

- Finally, an 18-acre land holding by Grand Valley State University in the Belknap neighborhood between Clancy and College Streets (W-E), Hastings and Trowbridge (S-N), encompasses more than 100 housing units. It is expected that this acquisition north of the Ford Freeway will be a dramatic land use change.

The area in blue, from College Avenue to Plymouth St., consists of a mix of uses including homes, fast-food drive-through restaurants, medical offices, retail businesses, and light industry. Building setbacks, exposed parking lots, and numerous curb cuts give an anonymous, auto-oriented character to the corridor. Homes and small apartment buildings are located mostly on the south side of Michigan Street, where property abuts the Heritage Hill Historic District and/or is constrained by topography. National retailers, such as Ace Hardware, Walgreens, and Family Dollar, have demonstrated interest

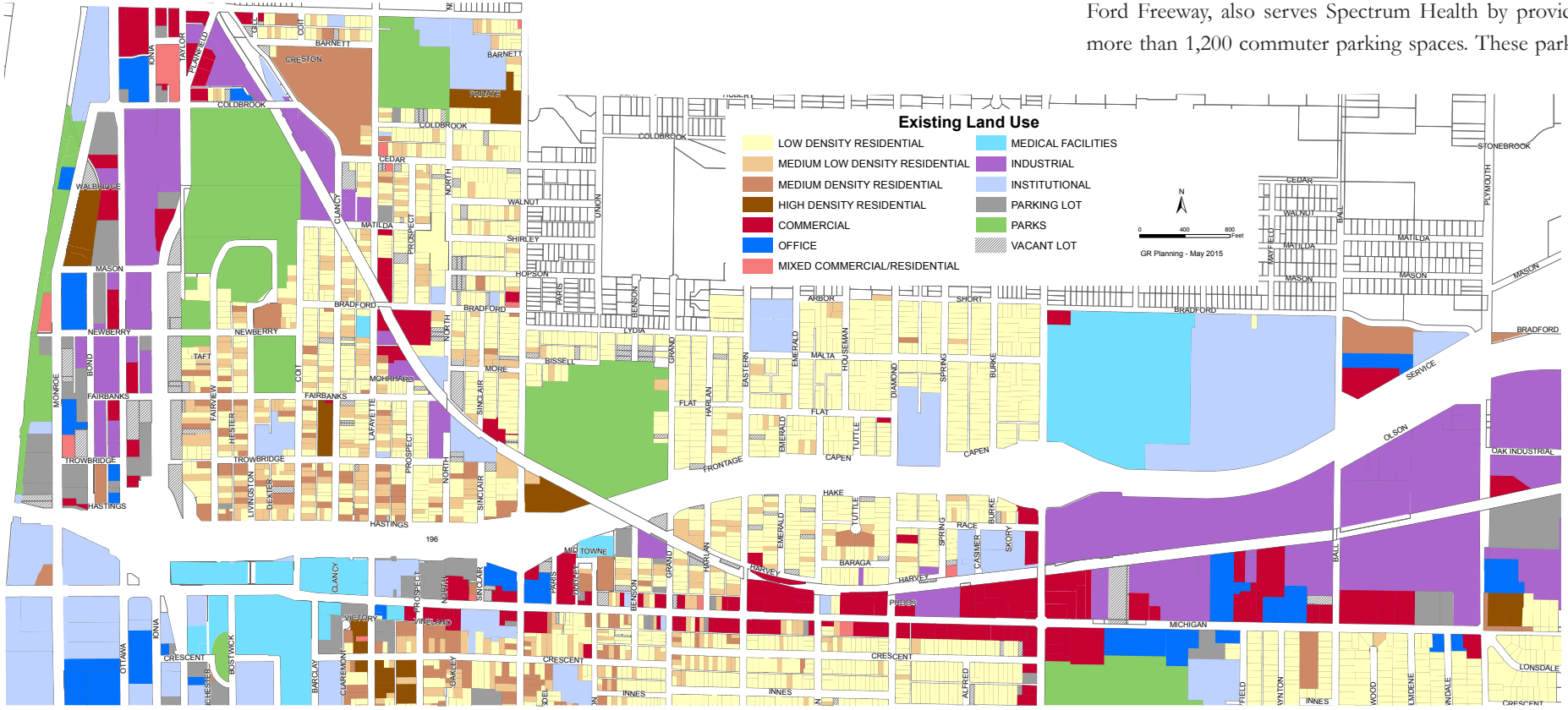


Map 2-1. Michigan Street Corridor Development Areas

in this section of Michigan Street due to the high traffic volume and proximity to Downtown. Medical offices that service the nearby institutions have been increasing their presence, however, in many cases developers have been able to place offices on upper floors or behind active uses such as was done at Mid Towne Village. Light industrial uses exist within the middle of this district and emerge as a predominant land use on the north side of Michigan Street between Fuller and Plymouth avenues. This area has the greatest opportunity for land use change; possessing the potential to provide needed services to adjacent neighborhoods as well as the employees and students of the anchor institutions. Existing single-use buildings surrounded by parking lots can be redeveloped into compact, mixed-use, and multi-story buildings.

The yellow area, from Plymouth to the East Beltline, transitions quickly into residential neighborhoods with single-family homes, churches, and synagogues that have generous lawns, large building setbacks, and large lots. The existing character of the Michigan Street frontage east of Plymouth is not anticipated to change from its present low-density residential character. However, the land located behind lots fronting on the north side of Michigan Street – in Oak Industrial Park - may evolve over time. This area has numerous successful light industrial uses located within it that are expected to continue to grow. The Oak Industrial Park is one of only four areas for industry within the City of Grand Rapids, as many former industrial areas along the Grand River have been converted into mixed-use. Land located near Plymouth, between Michigan Street and the Ford Freeway, also serves Spectrum Health by providing more than 1,200 commuter parking spaces. These parking

Map 2-2. Existing Land Use



lots are viewed as an important component to increasing usable floor area for productive uses on the hill to maximize density and proximity, which are key factors for success among the institutions.

2.3 Future Land Use

The future vision for the Michigan Street Corridor is very different from what we see today. Recent developments, such as Mid Towne Village located at Michigan St. and Union Avenue, illustrate the development potential of the area. A variety of factors contributes to this new trend, which will help shape future development patterns. Key factors include:

- Market needs
- Development costs and the ability to secure financing
- Employment and housing trends
- Age, income, and other characteristics of residents in the "market area"
- Level of demand and programs for healthcare and higher education
- Accessibility offered by the transportation system
- Capacity and quality of City infrastructure and services
- Regulations on land uses and density

Some of the development factors are "external," meaning they are based on what happens in Michigan, the Great Lakes Region, or even internationally. But many can be impacted by decisions made by local investors and community leaders. One of the overriding purposes of this Plan is to set a framework for continued investment in the future. This will be accomplished by ensuring land use decisions are coordinated through a partnership between public and private sectors.

To evaluate future land use, different potential patterns were considered. These scenarios varied by type, arrangement, and density of land use. The alternatives were compared for their consistency with the following performance metrics:

- Increase in the number of jobs and square footage of new development
- Vacancy and foreclosure ratios
- Planning/zoning or form-based code regulations to allow a variety of uses, provided the form fits the plan and external impacts are addressed
- Increases in housing value, number of new housing units, and improved "Jobs-Housing-Employment" ratios
- An increase in employees living in the Corridor area
- Increases in walking, biking, and transit ridership
- Amount of commercial reinvestment and new investment
- An increase in development/density in the vicinity of existing or potential transit stops/stations
- Housing and transportation costs

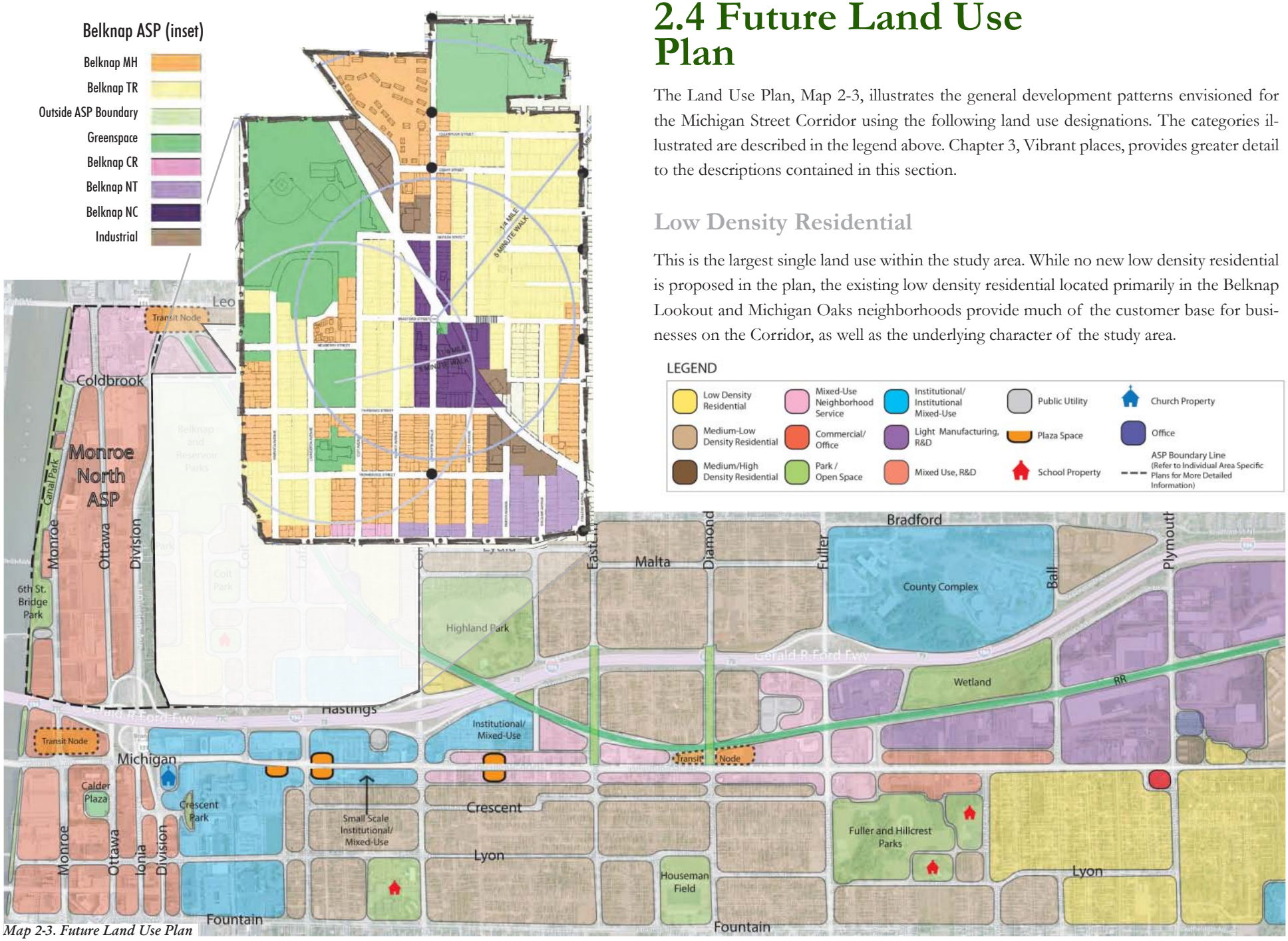
Land use scenarios were refined through public comment, various visioning exercises, and transportation modeling of the impacts that could be expected with each alternative. In general, preservation of neighborhood character, transit-oriented development, and pocket plazas had the broadest appeal. In addition, the Belknap Lookout, Midtown, Heritage Hill, and Monroe North neighborhoods in the study area have prepared Area Specific Plans for their neighborhoods. Those plans have been reflected within the Michigan Street Corridor Plan Future Land Use map.

2.4 Future Land Use Plan

The Land Use Plan, Map 2-3, illustrates the general development patterns envisioned for the Michigan Street Corridor using the following land use designations. The categories illustrated are described in the legend above. Chapter 3, Vibrant places, provides greater detail to the descriptions contained in this section.

Low Density Residential

This is the largest single land use within the study area. While no new low density residential is proposed in the plan, the existing low density residential located primarily in the Belknap Lookout and Michigan Oaks neighborhoods provide much of the customer base for businesses on the Corridor, as well as the underlying character of the study area.



Map 2-3. Future Land Use Plan

Medium-Low Density Residential

This residential type is located primarily in the Fulton Heights, Midtown, and Heritage Hill neighborhoods. They are characterized by tree-lined streets and well-kept homes within walking distance of the Corridor. It is vitally important that the integrity of the neighborhoods be preserved. To that end, this Plan has identified a portion of Midtown to become Medium-Low Density Residential between I-196 and the railroad tracks and between Grand Avenue and Spring Avenue.

Medium-High Density Residential

The residential type is found in the form of multi-family dwellings without a ground floor retail use, such as at the north east corner of Plymouth and Michigan. This housing type could serve as an intermittent use between major transit stops along Michigan Street, or used as a buffer between Mixed-Use Neighborhood Service development and abutting Medium-Low Density Residential neighborhoods. Section 3.5.2 highlights a number of new housing types that could be applied to the Michigan Street Corridor.

Mixed Use, R & D

This land use is often categorized by, and comprised of, residential uses, particularly in the form of live/work units. This plan identifies this use differently to accommodate a broader range of buildings and functions. This land use occurs in two segments of the Corridor.

- The largest segment is in the northern portion of the Downtown and Monroe North area south of Leonard between the Grand River and Division Avenue. The Monroe North Area Specific Plan has proposed this area to:

  "Transition from industrial to higher-density mixed-use development. A mix of housing, shopping, jobs, and recreation opportunities is anticipated at densities that capitalize on the river-

Future Land Use Type	Residential Density	Height
Low-Density Residential	Reflects existing	2.5 stories by right, 3 stories with Planning Commission Special Land Use
Medium-Low Density Residential	Reflects existing	2.5 stories by right, 3 stories with Planning Commission Special Land Use
Medium-High Density Residential	60-80 units/acre	3 stories by right, 4 stories with Planning Commission Special Land Use
Mixed Use R&D	60-80 units/acre	3 stories by right, 4 stories with Planning Commission Special Land Use
Mixed Use Neighborhood Service	No requirement	3 stories by right, 7 stories with bonuses
Institutional/Institutional Mixed-Use	No requirement	8 stories by right, 15 stories with bonuses
Light Manufacturing	Residential not permitted	3 stories by right

Figure 2-2. Future Land Use, Density and Height. *The proposed density and height maximums of this table reflect what is presently allowed in similar districts in the Zoning Ordinance.*

front location and serve as an extension of, and complement to, the Downtown Area."

- The second area is along Michigan Street east of Fuller Avenue. Unlike Monroe North, this area is intended to be integrated with new light manufacturing opportunities. In addition, this district encourages housing and commercial services, which will support the adjacent light manufacturing and surrounding neighborhoods. One possible design would be a three-story building with artisan workshops or art studios on the first floor with residential above. The residences could be the owners of the first floor space (e.g., "live-work" or "residential studios").

Mixed Use Neighborhood Service

This district will provide the most dramatic change to the physical appearance to Michigan Street. It is located mostly along the Michigan Street frontage between College and Fuller. The intent of this district is to create transit-oriented development (TOD) (see Section 3.6) that supplies goods and services to the adjacent neighborhoods and creates a compact business district that has a lively, transit supportive and pedestrian-oriented environment. Key components of this district include:

- Location of buildings at or close to the right-of way line
- Multiple-story buildings oriented to the street with retail uses on the ground level and office and residential uses on upper floors
- Placement of off-street parking to the rear of the development with limited mid-block curb cuts
- Spaces for sidewalk cafes and public gathering areas
- Development of an attractive streetscape with improved landscaping, lighting, seating, and civic spaces

Commercial/Office

There are a few existing exclusively commercial/office uses within the Michigan Street Corridor area that are maintained as commercial/office in this future land use plan. These office uses include a Bank of America branch and two small medical offices that serve the surrounding neighborhoods within the Corridor. The parcels are zoned Mid-Century Neighborhood Commercial, and are recommended to maintain this zoning designation. New office space should be developed within a mixed-use building on upper levels.

Institutional and Institutional Mixed Use

Much of this land use is concentrated at the west end of the Corridor in an existing life science/educational core between the Grand River and College Avenue.
The Corridor Plan has identified three areas for

expansion:

- The parcels fronting Michigan Street east of Lafayette Avenue to College Avenue
- The GVSU-owned property on Lafayette Avenue north of I-196 in the Belknap Lookout-Neighborhood. For this site, the design of buildings adjacent to residential uses on the north should be residential, such as maisonette apartments (see page 47)
- The triangular collection of properties north of Michigan Street between College Avenue, I-196, and the railroad tracks

For these three areas, and for properties within the established life science/educational core area that may be redeveloped, the intent is to promote development that is more mixed-use, walkable, and better integrated with the adjacent neighborhoods. The Grand Rapids Master Plan has identified a number of goals to achieve this intent:

- Encourage the use of alternate modes of transportation to reduce traffic and parking demands.
- Promote the development of complementary office, housing, retail, and support services to create a mixed-use environment.
- Locate smaller-scale structures and lower-density uses on neighborhood and business district edges for better integration of the institutions into the community.
- Develop a more pedestrian-scaled environment by orienting buildings to the street and placing parking areas on the interior of the site.
- Orient active uses, such as pharmacies, coffee shops, and gift shops to the street.
- Design public/civic spaces on the street and within the development to encourage a more vibrant streetscape environment.

Light Manufacturing/Research and Development

The purpose of this district is two-fold:

- To provide expansion opportunities for light manufacturing similar in type and scale to the development that occurs in the Oak Industrial Park
- To attract new research and development business related to the life science and high tech industries

Since this district is across the street from the Fulton Heights neighborhood, it is vitally important that proper screening, landscaping, building scale, site layout, and streetscape design be incorporated into any new development plans.

Public Utility

Two small areas on the Corridor contain electrical substations and are designated as public utilities.

Michigan Street serves many different users:

- 50,000 researchers, faculty, staff, and students
- 1.25 million annual visitors
- 2 emergency rooms
- 20,000 residents in surrounding neighborhoods
- Delivery trucks providing goods
- 28,000 monthly commuter shuttle riders
- 1,300 transit boardings/day

2.5 Transportation and Land Use Relationship

Primary travel modes change over time. They shape, and are shaped by, land use patterns. Grand Rapids' citizens support the coordination of transportation and land use decisions to:

- Reduce dependence on the automobile
- Provide choices in travel modes to balance needs for automobile and truck access with the long-term objectives of improving transit and making streets more walkable
- Create a system of bike routes

Michigan Street serves many different users; their needs must be a strong consideration in any approach. Implementation of the Future Land Use map cannot effectively occur without evaluating the existing transportation system and creating an aggressive strategy to change past auto-oriented practices if our community wishes to realize the full economic development potential of underutilized sites. Chapter 4 of this Plan provides a detailed analysis of the steps necessary to change the current transportation system.

This plan provides the opportunity to anticipate land use and transportation infrastructure needs over time. In many cases, it is anticipated that changing conditions will allow for opportunities to align and leverage public and private improvements in tandem to create a new shift in development and transportation practices along the corridor. The challenge will be to quickly adapt to changing conditions and create a supportive environment that facilitates the Plan's Guiding Principles.

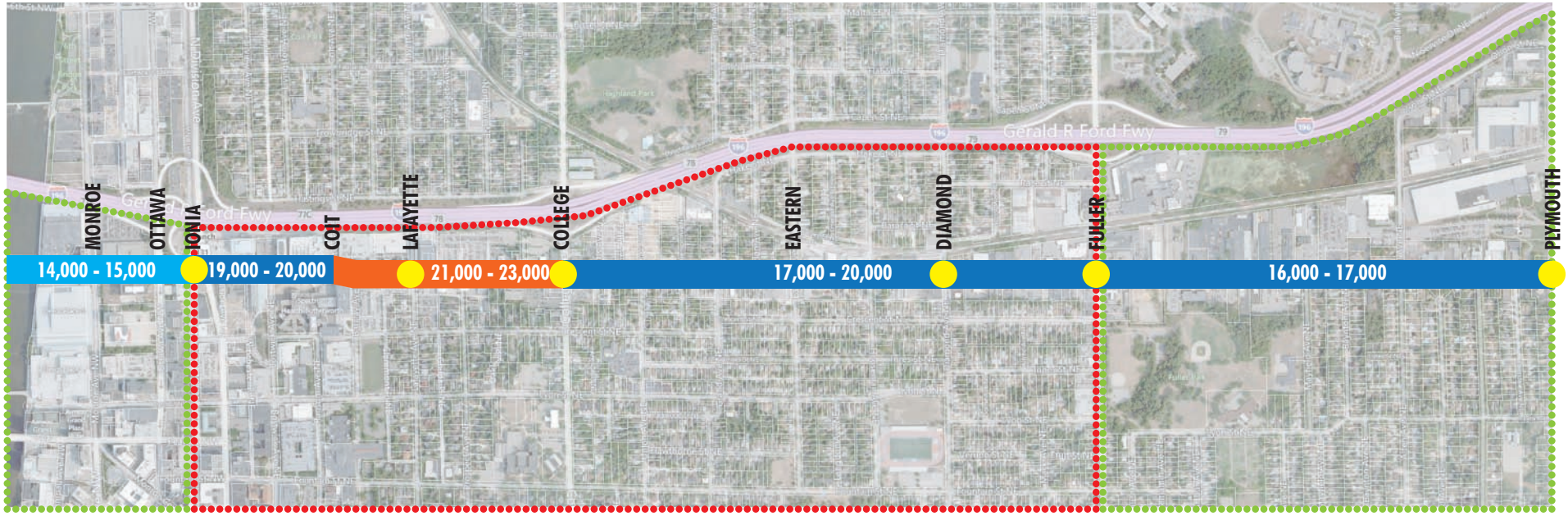
2.5.1 Existing Transportation System

The growth along the Michigan Street Corridor offers many benefits to the city and region. One of the impacts of this growth is the strain placed on the existing transportation system because of increased traffic demand. As land uses have intensified along the corridor over time, Michigan Street and its intersections were widened to accommodate automobiles at the expense of adequate sidewalk widths. On-street parking has largely been removed thereby eliminating a barrier between pedestrians that must walk at the back of the curb alongside moving vehicles.

The road cross-section of Michigan Street follows the intensity of adjacent land use patterns. From the Grand River traveling East, Michigan Street is comprised of a six-lane cross-section. An additional bus lane extends from the Division Avenue bridge to the front of Spectrum Hospital. Continuing eastbound, a five-lane cross-section is maintained to College Avenue, which then changes to a two-lane cross-section with time-restricted on-street parking in the business district to Fuller Avenue. A four-lane cross-section with no on-street parking extends to Plymouth Avenue, where, the road then narrows past the intersection to two lanes with shoulders for non-motorized use. Near the East Beltline, the road widens again to four lanes.

Traffic volumes range from 14,000 to 23,000 Average Daily Traffic (ADT). The Level of Service (LOS) along the Michigan corridor deteriorates significantly during peak hours (LOS D/E). Particularly at Lafayette and College Avenues where traffic is highly congested, drivers frequently experience delays and sit through multiple signal cycles before progressing. Map 2-3 illustrates daily traffic counts throughout the most congested area of the corridor. The area shown in red (21,000 - 23,000 ADT) fails to meet its daily parking demand by 600 spaces. The five intersections in that same area also have the most vehicle crashes.

Map 2-3. Context Map – *This graphic illustrates the key existing traffic conditions, including traffic volumes, parking conditions, and high crash locations*



LEGEND

- 10,000 - 15,000 DAILY VEHICLES
- 10,000 - 15,000 DAILY VEHICLES
- 20,000 - 30,000 DAILY VEHICLES
- HIGH CRASH LOCATION
- PARKING DEMAND MET
- PARKING DEMAND UNMET

Four highway interchanges in close proximity to Michigan Street influence traffic operations. The Ottawa/Michigan interchange has the second highest crash rate in the city, caused by attempted left turns from right lanes onto Michigan Street. "The Fix on I-196," a $40 million MDOT project, reconstructed two miles of highway and five bridges. Michigan Street became the primary local detour route during I-196's complete closure in 2010 and managed approximately twice the typical daily vehicle volumes (40,000+ ADT). This event provided a glimpse of what travel could look like if future development occurs without strong consideration for alternative transportation modes -- including walking, biking, and transit -- and the implementation of traffic management strategies (see Section 4.3 Transportation Demand Management).

Increased traffic at the Michigan/College intersection, especially in the morning and evening rush hours, is one example of how development can impact an area. Initially, the city studied a variety of typical design options to increase capacity by adding lanes at this intersection. It soon became apparent that improvements to this intersection alone would only be a band-aid. As additional development continues, a number of other street improvements would be required. A reactive piecemeal process with a series of street capacity improvements could be in conflict with

Figure 2-2 View of Sidewalk near Michigan and College Intersection

many of the city's goals for a vibrant, walkable place that will endure. To ensure that this type of process does not occur, the city expanded the intersection evaluation into a more comprehensive process to take a long-term look at the land uses, design, and multi-modal transportation for the Michigan Street Corridor.

The typical response to address this type of traffic impact on transportation is to widen the streets and intersections to accommodate the traffic. This approach will not work in the Michigan Street Corridor for several reasons:

1. The existing right-of-way (ROW) is very limited (existing homes and businesses are located in close proximity to the ROW).
2. Funding for road widening projects is constrained and grants are highly competitive.
3. Road widening would sacrifice (presently substandard) pedestrian space.
4. City policies call to balance limited public rights-of-way between all users, not just automobiles.
5. Congestion typically occurs for a very short duration of the day and is not constant.
6. Additional road width would not fit the desired character of the Michigan Street Corridor (See Section 2.3 Future Land Use).

Current transportation systems within the corridor are auto-oriented. This Plan emphasizes that our transportation system must be better understood in order to devise a comprehensive strategy that will facilitate future land development and increase the accessibility and mobility for people and goods that move through the corridor. Capacity gains from the system must be obtained through innovative strategies that will allow additional land development to occur without further burdening a constrained system.

2.5.2 Future Transportation System

This Plan integrates the components of multiple modes of transportation, mixed land uses, and pedestrian-oriented building design to benefit people of all ages and abilities by increasing access to regional employment centers, creating a safe and healthy environment, and supporting the creation of pedestrian-friendly communities. Multi-modal transportation involves a series of improvements to shift some of the travel from automobile to walking, bicycling, or transit. In addition, the mixture of land uses proposed will entice people to walk between uses, even if they drive into the area and park (a "park and walk" philosophy).

Aging population:
- 1 in 5 seniors do not drive
- Most seniors outlive their ability to drive by 7 - 10 years (AARP)

Young people:
- 1 in 4 do not have a driver's license
- In 2001-2009:
  - vehicle trips declined by 23 percent
  - trips by bike increased 24 percent
  - walking was up 16 percent
  - trips by transit rose 40 percent

Expense:
- Average cost of owning and operating one (1) automobile (2013): $9,122/year
- Average household transportation costs (Grand Rapids MSA, 2009): $14,676/year

Ability:
- 20 percent of Americans have a disability that limits their daily activities
- Nearly half of people 65 and older have a disability

Consensus was reached among stakeholders, residents, advisory groups, City officials, planners and engineers, and staff from the various transportation agencies. The goal is a strong transportation system that provides safe conditions and reasonably smooth flow for automobiles, but also emphasizes travel for transit users, pedestrians, and bicyclists. Recommendations in the plan promote "Complete Streets," an approach for a multi-modal transportation system that meets the needs of all types of travelers.

This approach is important for Michigan Street, given that institutional uses provide regional services for healthcare and education. Accessibility to those services is critical for the people of West Michigan. According to Census data, approximately one-third of the general population does not drive due to age, ability, cost, choice, or other reason.

Using a Complete Streets approach (see Figure 2-3), the Steering Committee paid particular attention to improvements for pedestrians. This focus alters how the public right-of-way is regarded in design. The traditional starting place to begin a street layout is the centerline of the street to accommodate vehicles. The design then moves outward to the edges of the right-of-way, typically leaving the remnants of space for other users. A Complete Streets approach reverses this and focuses on what other users, particularly pedestrians, require for a safe and comfortable walk, and then works inward to the street centerline to determine the most appropriate Level of Service for vehicles. In a constrained space with high traffic volumes, a number of design challenges arise. Because of this, Complete Streets does not equate to all transportation modes being equal, nor can all modes be accommodated on every street. This Plan recommends that bicycle facilities be placed on Lyon Street, rather than on Michigan Street, because of constrained space and heavy traffic. (See 4.5.1 Lyon Separated Bikeway)

What is a Complete Street?

A system of streets planned, designed, operated, and maintained so all legal users may safely, comfortably, and conveniently move along and across streets.

Who are All Users?

Pedestrians, Motorists, Bicycles, Trucks, Children, Elderly, People of all abilities

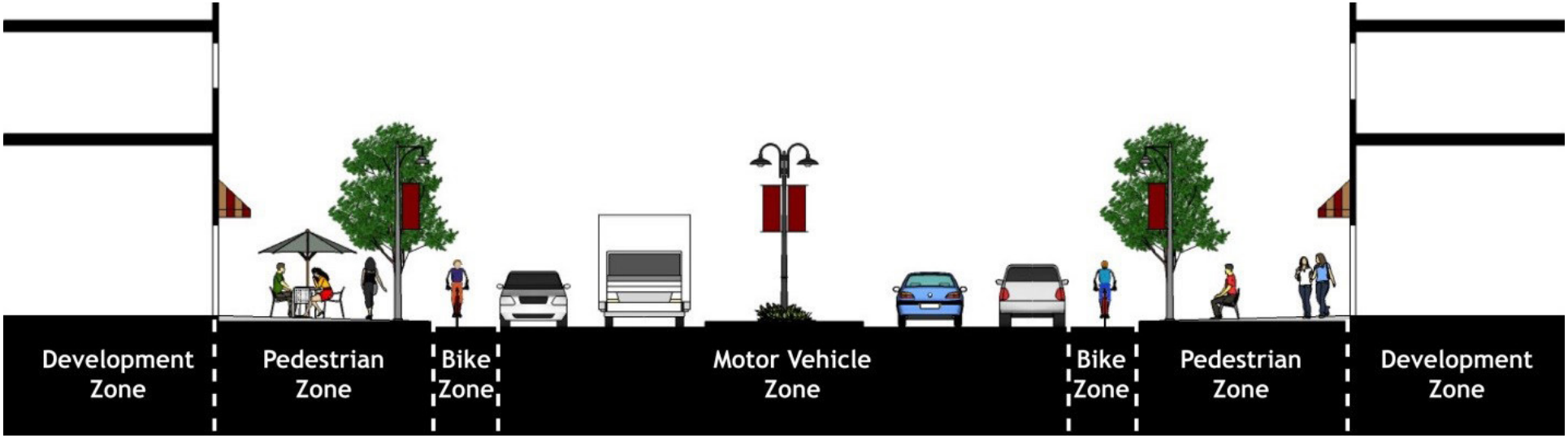


Figure 2-3. Complete Streets – *This graphic illustrates how "Complete Streets" can apply to a typical street by providing space that accommodates vehicles, bicyclists, pedestrians, and development.*

2.6 Summary

Existing land use patterns and transportation systems within the Michigan Street Corridor must evolve from an auto-centric to a people-centric form. Past practices of developing lots for a single purpose surrounded by surface parking and streets that are designed to move cars with great efficiency impairs the ability of our community to maximize land in a way that is beneficial to growing institutions, neighborhoods, and a high quality of life. Providing mixed-use, dense development that is multi-modal enhances the corridor's potential for additional growth and development while also providing opportunities for increased mobility and livability. The following chapters of this Plan describe the concepts necessary to achieve this vision and provide illustrative examples that prove the feasibility of the recommendations contained herein.

Chapter 3: Vibrant Places

3.1 Introduction

Land uses and buildings create "place" at the most fundamental level. Their composition influences the context of our community. We build great neighborhoods, vital business districts, and thriving areas for commerce by understanding the interaction and dynamics between land use, urban form, and transportation. These are often summarized as the "3Ds" of density, diversity, and design.

- Density refers to the concentration of housing or employment per unit area.
- Diversity refers to the mix of land uses, including different types of employment (retail, institution, services), as well as residential. The greater mix of land uses that are within a com-

What Makes a Vibrant Place?

Diversity of Uses

- Attracts more people
- Provides a broader range of services for the neighborhoods
- More employment opportunities
- Extends street life over a longer portion of the day

Density of Development

- Promotes walkability
- Lessens traffic congestion
- More convenient for shopping
- Creates opportunities for housing

Well Designed Public Realm

- Consistent and well maintained streetscape and sidewalks
- Space for cafés and plazas
- Sustainable Design – stormwater management
- Street trees and green spaces
- Amenities – seating, lighting, and public art.

Well Designed Private Realm: Buildings

- Appropriate mass and height to street
- Quality architecture and detailing
- Ground level window display

Well Designed Private Realm: Site

- Pedestrian/transit oriented urban form
- Buildings placed along, and oriented to, the street to create outdoor rooms
- Parking placed behind buildings

Balance of Transportation Options

- Serves all users and all modes – people, transit riders, cyclists, autos, and freight
- Accommodates all abilities

pact area, the greater opportunities there are to walk, to combine trips, and create a more efficient transportation system.

- Design refers to the characteristics of the streets, street network, and buildings. The urban design and layout of the corridor will make a big difference in how well an area can promote walking and transit use.

The concept of "placemaking" suggests that local policies, land development, and infrastructure investments can be made to create a place or detract from it. The citizens of Grand Rapids have declared their intentions through this planning effort to determine how the built environment should enhance and influence their daily lives. A carefully considered development framework combines the types and density of development, design, proper policies and ordinances, and infrastructure capacity to create a complete vision for the future.

As each development component finds its place, there can be inherent tensions in looking at a single site, versus what might be occurring on a block, within an entire neighborhood, along the corridor, or even on a citywide or regional basis. It will be important to consider larger geographies beyond one site to appropriately accommodate the community's priorities.

This Chapter provides specific analyses and recommendations for anchor institutions, neighborhoods, and mixed-use commercial to give direction on future development patterns. The desired outcome is to ensure development is contributing to both the short- and long-term economic health of the city and improving the lives of all persons by creating vibrant places.

3.2 Vision and Priorities

The Michigan Street Corridor Plan explores the relationship between institutional, residential, and commercial uses more fully within the concentrated area of Michigan Street, from the Grand River to the East Beltline (west to east), and Fulton Street to Trowbridge (south to north). The influence of anchor institutions and their potential to effect positive change that contributes to the creation of a vibrant community are discussed. Transitions between uses and considerations for building massing and scale are also addressed.

3.3 Plan Recommendations

To provide a basis for achieving these visions, plan recommendations focus on the type and scale of uses and the character of development appropriate within the Michigan Street Corridor. Plan recommendations focus on:

- Populations working, enrolled in, and visiting anchor institutions within the corridor
- Transitions in development character
- Residential building and housing type
- Mixed-use development approaches

3.4 Anchor Institutions[1]

In a global economy, businesses' most important "raw material" is skilled and dedicated workers. As a result, colleges, universities, healthcare institutions, and research facilities are critical economic resources, as well as important job generators in and of themselves. Consistent with national trends, service jobs (including those associated with healthcare) are the fastest growing sector of the Grand Rapids employment market; most of these jobs are located along the Michigan Street Corridor.

The City of Grand Rapids has maintained a consistent level of engagement with representatives of the various institutions to determine policies that could be crafted to leverage their investment toward revitalization on the Michigan Street Corridor. An Anchor Study was conducted by U3 Ventures of six major institutions within the study area. (The report is part of the compendium of project reference material.) The purpose of this evaluation was to inform the planning process by identifying opportunities to enliven the institutional character of the district, and to recommend place-based strategies for how the institutions could influence development within the corridor.

Consider that these six institutions employ more than 20,000 persons, but of those, only 2.6 percent live in the corridor plan area. What if just an additional one percent of those employees lived in nearby adjacent neighborhoods or in the upper levels of mixed-use buildings along

Institutions as Enterprise

Health and education institutions are unique entities that are important to our economy:

- Institutions of national and international significance
- Purchasers of goods and services
- Curators and generators of arts and culture
- Drivers of development and commercial activity
- Human resources with purchasing power that can influence housing and the local economy

[1]Anchor institutions are nonprofit institutions that tend not to move location. They are "anchored" at the location where they were first established. Typically, such anchors are universities and non-profit hospitals (often called "eds and meds"). Spectrum Health, Grand Valley State University, Michigan State University, Grand Rapids Community College, St. Mary's/Mercy Health, and Van Andel Institute are located within the study area and comprise the six anchor institutions referred to in this report.

Michigan Street? How might traffic congestion be affected? Would the need for parking be reduced? How would local businesses benefit?

A mapping exercise was conducted of employees and students from these institutions. This information provided guidance for the future land use plan as well as traffic modeling to better understand commuting patterns of persons traveling daily along Michigan Street. The analysis revealed:

- Employees that reside in the study area tend to be younger and work less time at their institution, consistent with a "downtown" population.
- There are more than 1,000 new employees hired every year, which provides an opportunity to capture some of these employees as new residents.
- A high number of Grand Rapids Community College students do not live within the planning area; only five percent of full-time students and 4.4 percent of part-time students live nearby. Grand Rapids Community College serves the region as a commuting school.
- In contrast, 66 percent of the students who attend Michigan State University College of Human Medicine live in the immediate area, most residing at Icon on Bond, Boardwalk, or River House Condominiums.
- There are 2,000 daily shuttle riders from Grand Valley State University's Pew Campus on Fulton St. to its Cook-DeVos Center for Health Sciences on Michigan St.

In general, educational institutions contribute a relatively low percentage of residents from their student base, with the exception of Michigan State University. This reveals

the potential for Grand Rapids Community College and Grand Valley State University to reach the same levels of residency that Michigan State University holds. Below is a brief overview of the key institutions and employment centers within the Corridor at the time the plan was prepared:

Table 3-1. New Hires

NEW HIRES			
	2010 Employee Hires	Total Employees	% of Employee Population
GRCC	30	697	4%
GVSU	40	254	16%
MSU*	17	73	23%
SMH*	278	2,491	11%
Total	365	3,515	**10%**
VAI**	14	285	5%
Spectrum**	800	16,000	5%
Estimated Total	**1,179** New hires each year	19,800	6%

* Have hired more in 2011 than 2010
** Estimated 5% hire rate

EMPLOYMENT RESIDENTIAL SUMMARY

	Employees	% in Study Area
Spectrum	16,041	2.6%
SMH	2,491	3.3%
GRCC	697	4.2%
GVSU	251	3.2%
MSU	73	3.9%
VAI	n/a	n/a
Total	**19,553**	**2.6%**

Table 3-2. EmployeeResidential Summary

Grand Valley State University
- 3,000 students enrolled (at Cook-DeVos Center)
- 254 employees (at Cook-DeVos Center)
- $57 million in investment

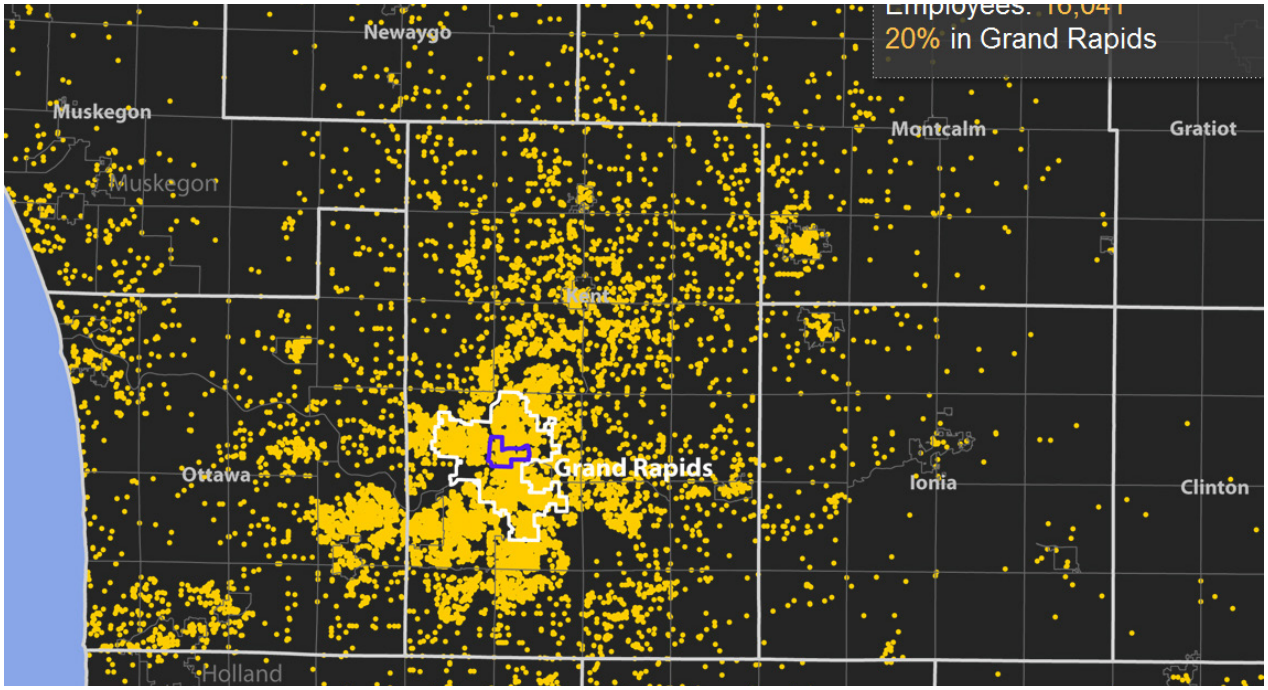
Grand Rapids Community College
- 18,000 students enrolled
- 700 employees
- $50 million in investment

Michigan State University College of Human Medicine
- 360 students
- 125 employees
- 107 million in investment

Spectrum Health
- 16,000 employees
- 964 hospital beds
- 56,000 visitors annually
- $627 million in investment (multiple projects)

St. Mary's Health
- 2,500 employees
- 344 hospital beds
- 93,000 visitors annually
- $60 million in Corridor investment

Van Andel Institute
- 284 employees
- 45 students/researchers
- $170 million in investment (VAI Phase II)



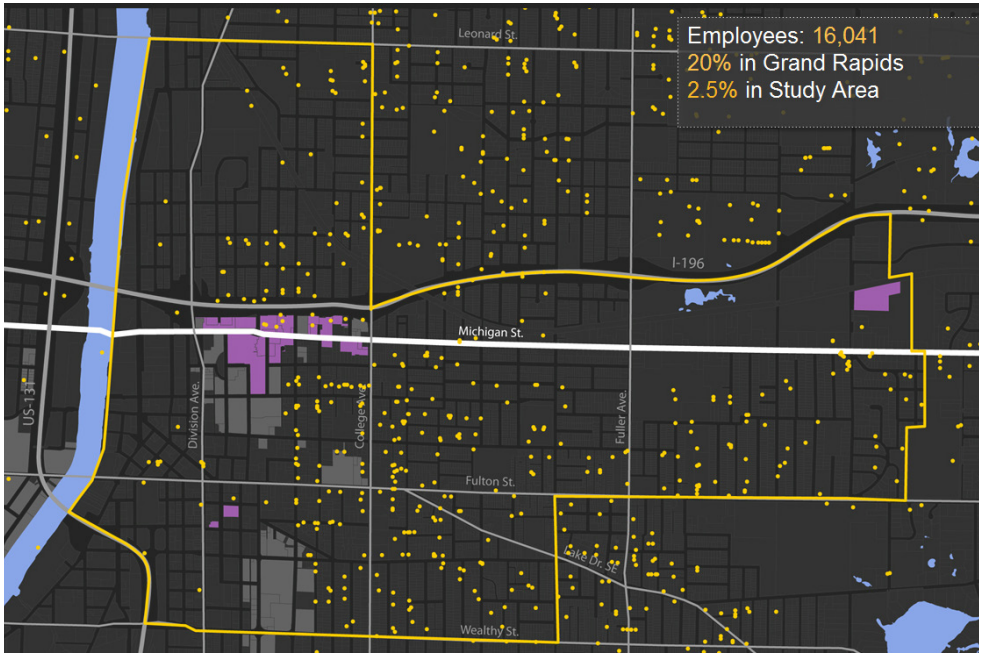


Figure 3-1. Spectrum Health Employee Residence - *These maps illustrate the regional and local dispersion of Spectrum Health employees. Each dot represents the location of one employee's residence. The map above shows dispersion of employees in the Grand Rapids region. The map on the left shows dispersion of employees within the MSCP study area. Source: U3 Ventures*

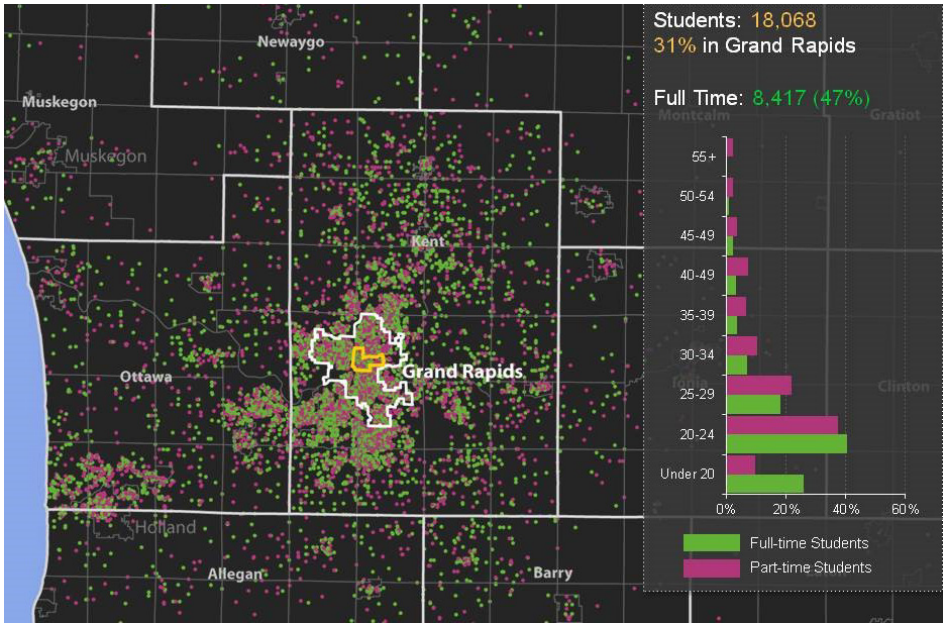
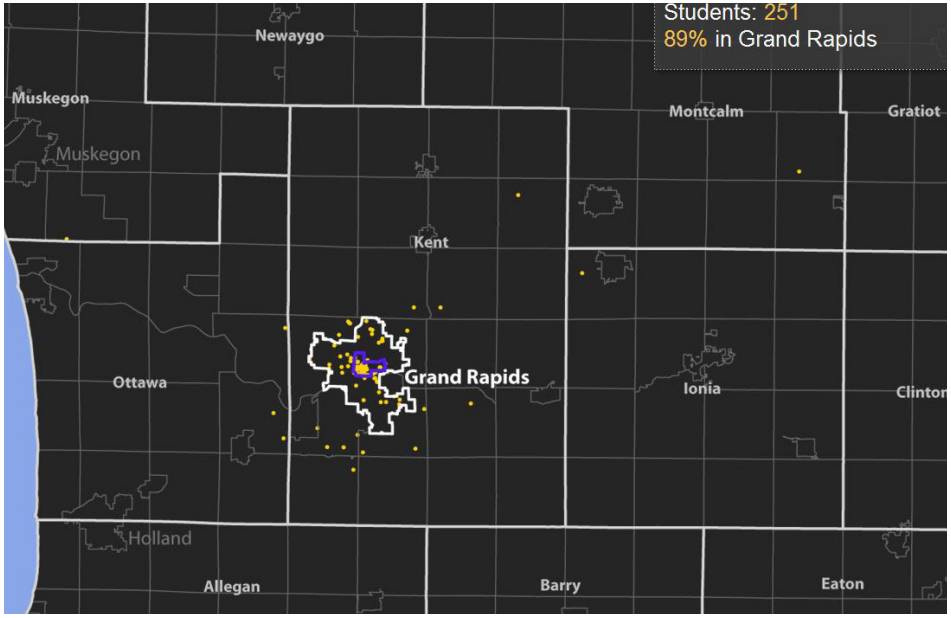
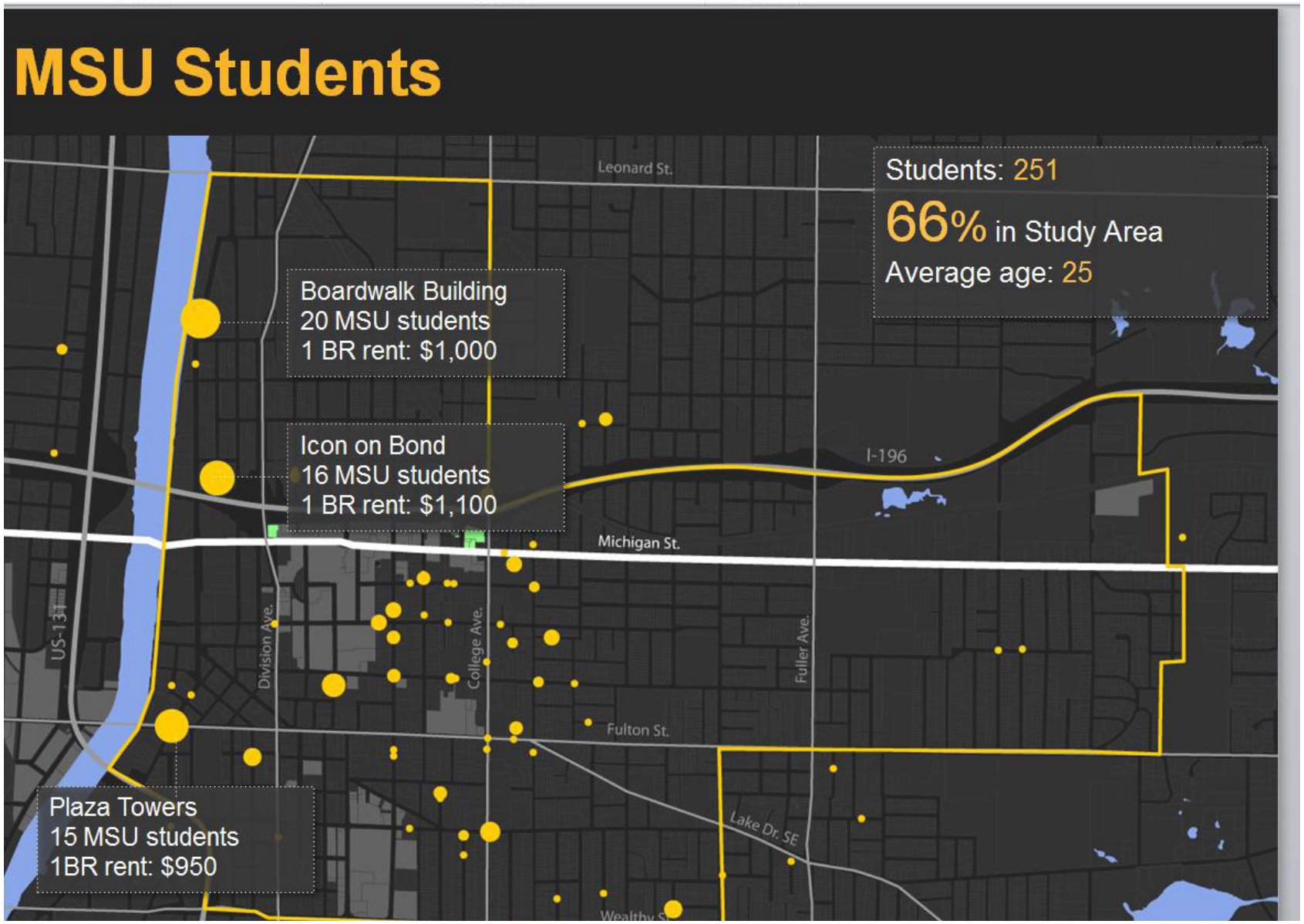


Figure 3-2. Grand Rapids Community College Student Residence *-These maps illustrate the regional and local dispersion of GRCC students. Each dot represents the location of one student's residence. The map on the left shows dispersion of students in the Grand Rapids region. The map on the right shows dispersion of students within the MSCP study area. Green dots refer to full-time students, and pink dots refer to part-time students. Source: U3 Ventures*

Figure 3-3. MSU College Of Human Medicine Student Residence *- These maps illustrate the regional and local dispersion of MSU students. Each dot represents the location of one person's residence. The map on the right shows dispersion of students in the Grand Rapids region. The map on the opposite page shows dispersion of students within the MSCP study area*



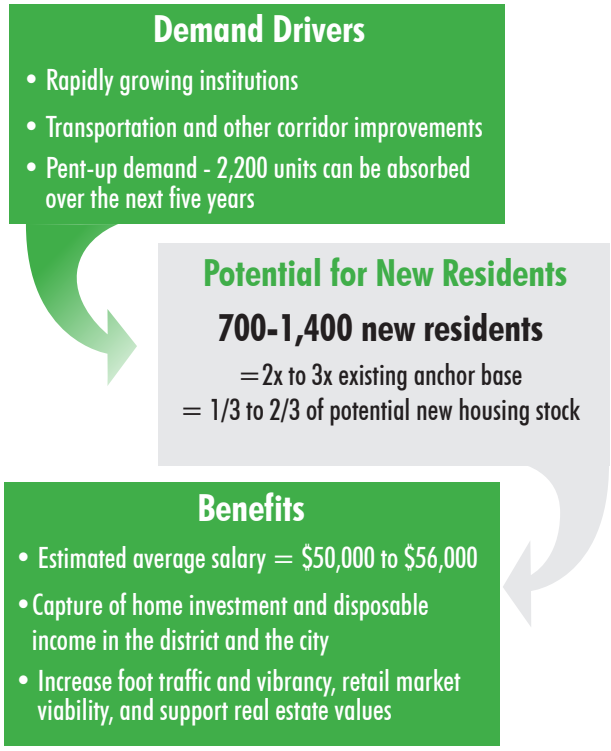

MSU Students
Students: 251
66% in Study Area
Average age: 25
Boardwalk Building
20 MSU students
1 BR rent: $1,000
Icon on Bond
16 MSU students
1 BR rent: $1,100
Plaza Towers
15 MSU students
1BR rent: $950
Leonard St.
I-196
Michigan St.
US-131
Division Ave.
College Ave.
Fuller Ave.
Fulton St.
Lake Dr. SE

3.4.1 Institutional Expansion

Recent property acquisitions by Michigan State University and Grand Valley State University on Michigan Street and in the Belknap Lookout neighborhood, respectively, will cause significant land use changes in the future. MSU is preparing to construct a new biomedical research center on the former Grand Rapids Press site, near the intersection of Michigan and Monroe. Properties owned by the Grand Rapids Press were sold in a bundle and include two riverfront parcels, as well as several other properties located to the north of I-196. The acquisition of 18 acres in the Belknap neighborhood by Grand Valley State University, in the area bounded by Coit (W) to College (E) and Trowbridge (N) to Hastings (S) will also create change. The neighborhood may eventually experience a loss of more than 100 housing units as an anticipated 50-year build-out of the area serves the burgeoning life sciences corridor.

Future growth of anchor institutions is inevitable, given current ownership patterns. It is important to acknowledge that preserving neighborhoods, creating walkable streets, and managing traffic and parking demand must also be a high priority in any development plan for growth. Institutional uses must be integrated into the fabric of the community. There are a number of ways to mitigate potential adverse impacts on surrounding neighborhoods when expansion occurs. This Plan recommends that anchor institutions develop within a mixed-use development context that:

- Incorporates higher density housing to provide compatible transitions to existing single-family neighborhoods
- Provides ground level retail and services along major streets
- Emphasizes the quality of the pedestrian environment
- Reduces traffic and parking demand by encouraging the use of transit, carpooling, cycling, and walking
- Controls the amount, location, and design of surface parking



This mixed-use approach to planning for institutional expansion will not only protect the livability of adjacent neighborhoods, it will also present a positive image of the city to visitors from the metropolitan region and beyond. A series of specific design guidelines for institutional expansion were developed in the 2002 Master Plan and are included here for ease of reference.

Institutional Expansion in an Urban Context

Connectivity

- Encourage the use of alternate modes of transportation to reduce traffic and on-site parking demands.
  - Encourage transit use by employees and visitors.
    - Provide excellent transit service to major employment destinations.
    - Provide attractive transit stops and well-lit pedestrian connections.
    - Provide incentives for transit use (e.g., paid employee transit passes).
  - Connect to the citywide pedestrian and bikeway systems.
  - Encourage the development of employer-as sisted housing programs to encourage employees to live within walking/biking distance.
  - Encourage/require the formulation and imple-mentation of transportation demand management programs (e.g., assistance in car pooling; priority parking for car pool vehicles).
- Encourage the development of complementary office uses, medium-density housing and retail and support services as part of the institutional mixed-use district to reduce dependence on cars.

Transitions and Edges

- Locate smaller scale structures and lower density uses on neighborhood and business district edges.
  - Encourage medium-density residential and/or office uses on neighborhood edges.
  - Encourage office and/or residential uses with ground floor retail and service uses on primary streets in and adjacent to business areas.

Public Space Organization

- Orient major institution entries to primary streets.
- Incorporate public/civic spaces, especially where they can benefit both the institution and the surrounding community.

Parking

- Encourage shared district parking that is located to meet the needs of both the institutional mixed-use development and the adjacent business area.
- Consider reducing off-street parking requirements (establishing maximum, rather than minimum standards) in districts that are served by transit and bike routes and have strong pedestrian links to nearby neighborhoods.
- Encourage the development of structured parking to reduce the amount of land required to meet parking needs.
  - Where parking ramps face a primary business area street, encourage the incorporation of ground floor commercial space.

Uses and Densities

- Encourage a mix of institutional, office, retail, service and residential uses.
  - Locate lower density uses on neighborhood and business area edges.
  - Encourage medium-density residential and/or office uses on neighborhood edges.

(continued on next page)

- Encourage office and/or residential uses with ground floor retail and services on primary streets in and adjacent to business areas.

Scale

- Step down the scale of new buildings from larger and taller institutional structures in the interior of the block to allied office and/or residential structures along business area and neighborhood edges.
  - Choose building heights that create a transition to adjacent residential and business area structures (2 to 3 stories).
  - Allow building heights on the primary business area frontage to increase as they step back from the street.
- Articulate the massing of the lower scale perimeter structures on neighborhood edges (in and out from the street) to echo the rhythm of adjacent single-family residences.

Placement

- Place buildings on the primary business area street to maintain the streetwall established on adjacent blocks.
- Provide a deeper, landscaped setback on block fronts facing the neighborhood to buffer the increased density of development.

Orientation

- Locate ground level storefronts and building entries on the primary business area street to provide pedestrian scale and interest.
- At a minimum, include windows overlooking secondary (neighborhood edge) streets to provide "eyes" on the street.

Building entries on these streets are also appropriate for office uses and are essential for residential uses.

Parking

- Locate the parking required to serve the institutional mixed-use development within the interior of the block/development. Surface parking lots should not be located on the perimeter of the institutional mixed-use block.
  - Encourage the development of structured parking and parking that is shared with the adjacent business area.
  - Encourage the development of "liner" buildings between parking decks and adjacent blocks/development edges.
- Provide primary vehicular access to the institutional mixed-use development, and its parking and service areas, from the primary street, or access from secondary (neighborhood) streets immediately behind new mixed-use structures facing the primary street, to minimize traffic impacts on the neighborhood.

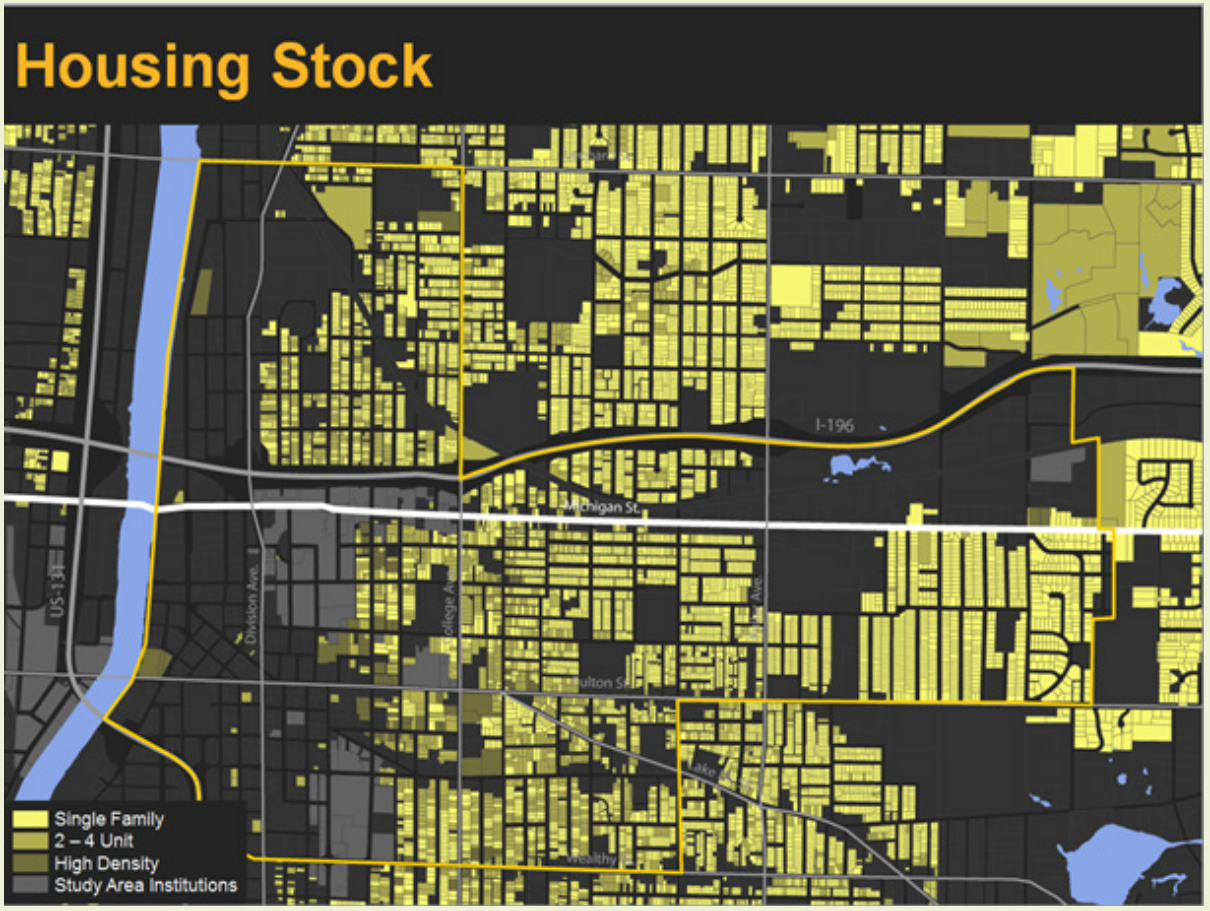
3.4.2 Opportunity

The concentration of major anchor institutions within such a small area provides a tremendous opportunity to meet many of the Michigan Street Corridor Plan objectives if more employees and students are attracted to live in the study area. Employee and student auto trips could be converted to walking, bicycling, and transit trips, thereby reducing traffic congestion, the need for parking, and providing opportunities for daily physical activity.

Apart from easy access to employment, many individuals are looking to live near vibrant places. Anchor institutions have the opportunity to establish a development pattern that reinforces what their employees desire within an urban context. Additional residents, employees, and students can lead to the development of retail storefronts and quality of life amenities in close proximity. A high-quality, convenient living environment can be useful in the attraction and retention of employees. Based on study data, many younger workers are seeking a broad range of housing types. New investment can increase home values and stabilize the housing stock in city neighborhoods.

3.5 Neighborhoods

Great neighborhoods are the foundation of a great city; they are the physical and social expressions of our community. Diverse housing types at different price points to meet the needs of people of all ages and incomes are important. So, too, is convenience to shopping and services, safe streets, green open spaces, and overall appearance. Education and economic opportunity for residents is important, including public education, jobs and job training, strong neighborhood organizations, and collaborative decision-making. The median year of construction for housing stock in the neighborhoods that border Michigan Street is 1932, older than the city average of 1951. The predominant housing type is detached single family (see Figure 3-4).



There has been new investment and construction in these neighborhoods over the past decade. Projects such as Newberry Place in the Belknap Lookout neighborhood, Mid Towne Village in the Midtown neighborhood, and the conversion of the Bethlehem Lutheran Church in Heritage Hill have added unique new housing types in the form of townhouses, condominiums, and apartments in residential neighborhoods. New neighborhoods have also emerged as furniture factories in Monroe North have been converted into lofts. New construction in the downtown includes River House Condominiums.

Figure 3-4. Housing Stock, City of Grand Rapids

3.5.1 Target Market Analysis

A Target Market Analysis report was prepared as part of this planning effort to analyze the market potential for housing — created both through adaptive re-use of existing non-residential buildings as well as through new construction — that could be leased or sold in the Michigan Street Corridor over the next five years. A copy of the full report can be found as part of the Appendix.

The Grand Rapids housing market is recovering from the Great Recession, but weak housing prices, large numbers of foreclosed and/or abandoned houses, and challenging development financing and mortgage underwriting still persist. These factors have taken a significant percentage of potential homebuyers out of the market. However, contrary to typical performance during economic recessions with high unemployment levels, rental occupancies and values have continued to rise. From the market perspective, the assets of the Michigan Street Corridor Study Area that make the neighborhoods within it attractive places to live include:

- Easy access to Downtown Grand Rapids.
- Proximity to major medical, educational, and religious institutions located within the Study Area.
- Easy access to many of the cultural venues of the region, such as the Van Andel Arena, the Civic Theatre, and the Children's Museum.

The housing market study sought to answer the following questions regarding the potential growth of housing within the Michigan Street Corridor in order to provide a framework for how the City addresses land use decisions and development patterns:

How many households have the potential to move into the Study Area each year (depth and breadth of the market)?

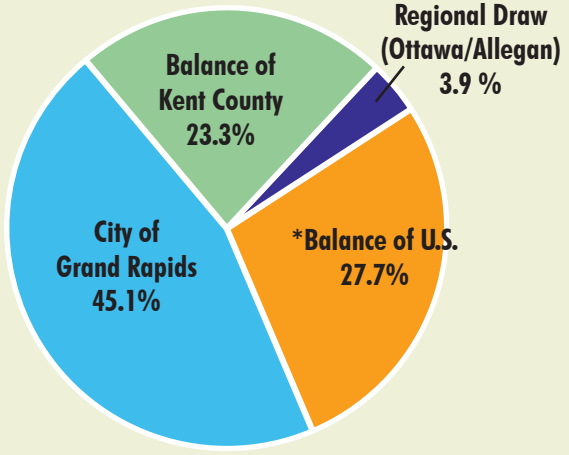
- The potential for new households within the Michigan Street Corridor is 5,870 units over 5 years.
- This number accounts for less than 1/3 of the 17,750 potential new households within the City of Grand Rapids.

How quickly will they rent or purchase the new units (absorption forecasts)?

- In comparison with national trends, new residential development along the Corridor could capture up to 10 percent of the potential annual market within the next two to three years, and up to 12 percent of the potential annual market over the next three to five years.
- At a conservative annual capture rate of just 10 percent of the potential renters, up to 250 new mixed-income rental units — including tax-credit (affordable) and market-rate units — could be absorbed per year.
- At a conservative annual capture rate of 8.5 percent of the potential purchasers, up to 229 new mixed-income for-sale units — condominiums, townhouses, and single-family detached — could be absorbed per year.

Where are potential renters and buyers of new and existing housing units in the Michigan Street Corridor Study Area likely to move from (draw the areas)?

Figure 3-5. Annual Residential Market Potential by Draw Area



* The draw area from outside the region (the balance of the U.S.) illustrates a critical migration pattern as investment and jobs in the City continue to grow.

source: Zimmerman/Volk Associates

What is the range of affordability for new households?

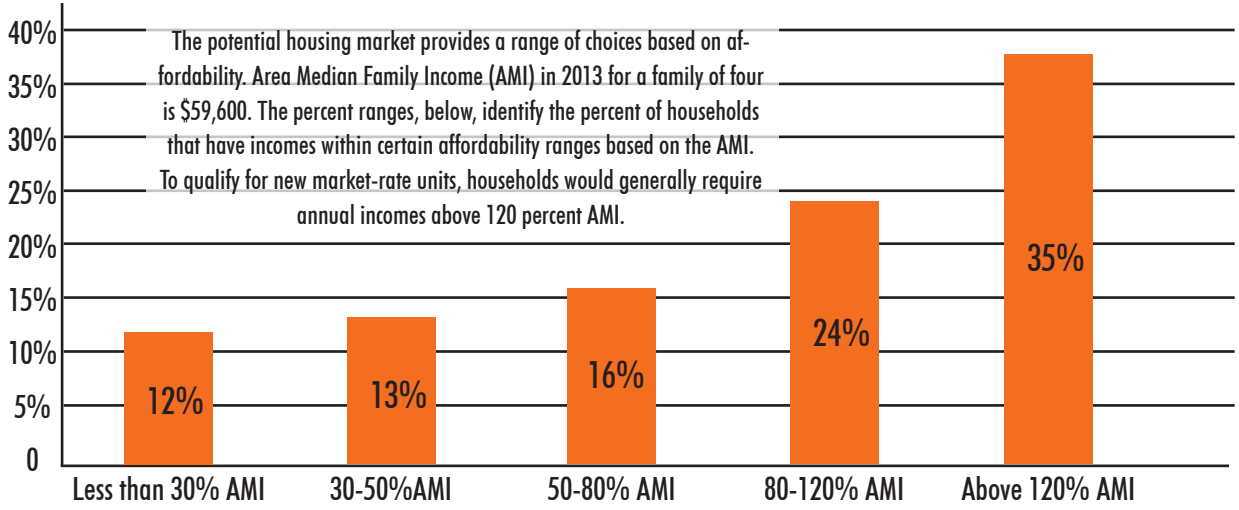


Figure 3-6. Household Affordability, source : Zimmerman/Volk Associates

What are the new housing preferences (rental or ownership, multi-family or single-family)?

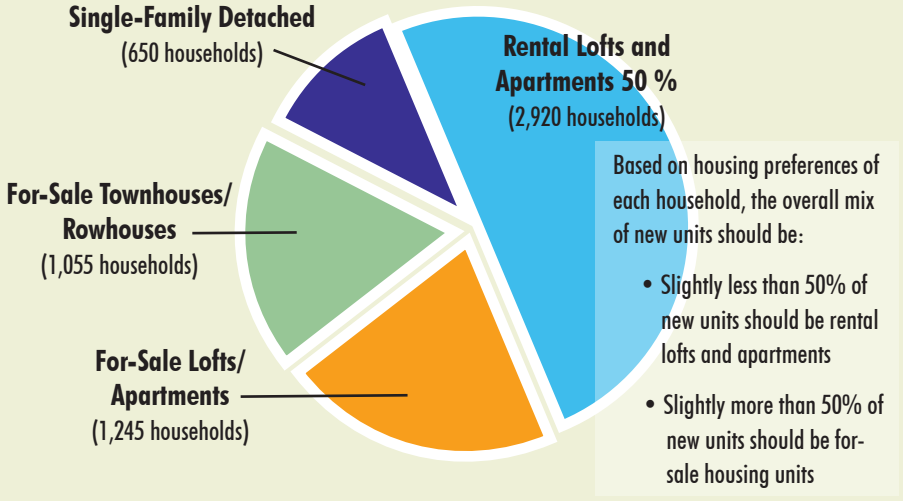


Figure 3-7. Recommended Composition of New Housing Units, source: Zimmerman/Volk Associates

Who are the households that represent the potential market for new and existing units in the Study Area (the target markets)?

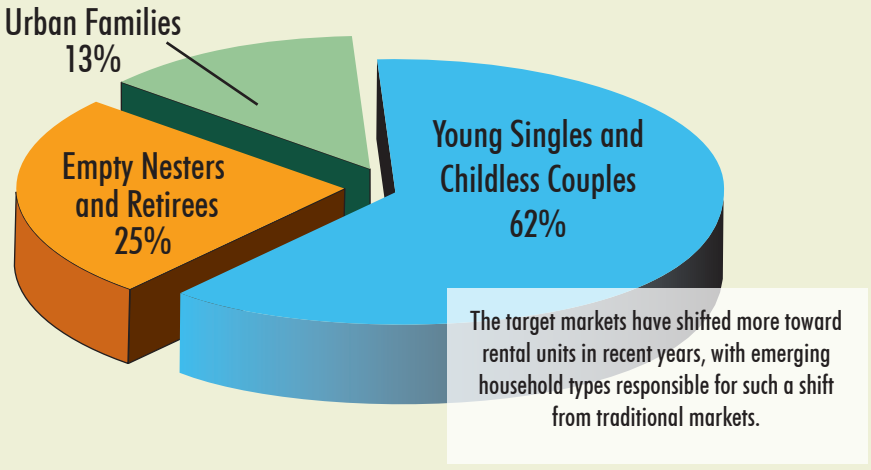


Figure 3-8. Anticipated Household Types

Based on these projections, the Michigan Street Corridor could support between 479 and 567 new affordable- and market-rate housing units annually for the next five years. The analysis revealed that the Michigan Street Corridor has a supply-side problem. There is high latent demand for new housing types, but little available product that can be readily delivered.

There is a high concentration of affordable housing within the study area: close to 60 percent of rental properties are income-restricted. Given the demand trend and sluggish development response, affordable housing for individuals that fall below 120 percent AMI will need to be carefully watched. The high level of demand has begun to impact the pricing of market rate units. Rents for studio apartments rose, on average, from $695 per month to $725 per month (350 to 600 square feet) between 2011 and 2013.

3.5.2 Neighborhood Change

City neighborhoods are always changing. There are challenges and opportunities that such changes can bring.
From the market perspective, major challenges to new residential development in the Michigan Street Corridor Study Area include:

- High rents and prices: Without incentives or subsidies, the high costs of land and site assembly, buildings, materials, labor, and the typically high cost of adaptive re-use, are likely to drive rents and prices beyond the reach of many potential residents of new units within the Study Area.
- Financing challenges: Mortgages are still difficult to obtain for many potential buyers. In addition, restrictive mortgage underwriting and development finance continues to be a challenge to developers.
- Neglected, dilapidated, or vacant properties: Vacant properties and empty lots are a deterrent to potential residents, because they contribute to the perception that those areas are neglected and/or dangerous neighborhoods.

From a neighborhood perspective, issues and challenges related to the demand for new residential development in established areas surrounding Michigan Street include:

- Land speculation: Individuals and property management companies have begun to assemble large numbers of homes and properties in the Belknap Lookout neighborhood for redevelopment.
- Neglected, dilapidated, or vacant properties: Speculators are not willing to invest in properties that they plan to demolish in the future. Vacant homes attract criminal activity, graffiti, and poor behavior, thus creating a cycle of disinvestment that impairs the quality of life for residents who remain.
- Uncertainty and stress: Remaining residents worry about the loss of cohesion and sense of community in their neighborhood. Safety issues, together with the feeling of being in limbo due to speculator property interests and developer purchase offers, increase anxiety about an unknown future.
- Remnants. Small parcels are left behind rather than becoming part of a larger development project, making redevelopment of these areas more difficult in the future.

It is important that the retention of quality housing be considered as part of an overall strategy in areas where change is not planned. Educating landlords about their responsibility as owners to maintain properties in good condition, rather than simply viewing properties as a revenue stream plays an important part in quality of life for residents. New construction in areas of change should reflect quality construction and compatible design with existing areas. Well-designed transitions between new and existing buildings is important as well

3.5.3 New Building & Housing Types

New construction must be developed with sensitivity toward existing neighborhood context, character, and density. Some of the residential housing types in demand, as described in the Target Market Analysis section, will require new building and housing models to be introduced within the Corridor. Several of these housing types are not familiar to Grand Rapids' neighborhoods or the development community. Nationally, these are known as the "missing middle" housing types – housing that has not been developed in the past 100 years in most communities. These new building and housing types are described and illustrated below. These transect areas follow the pink, blue, and yellow shaded areas as shown on the Map 2-1 Michigan Street Character Types.

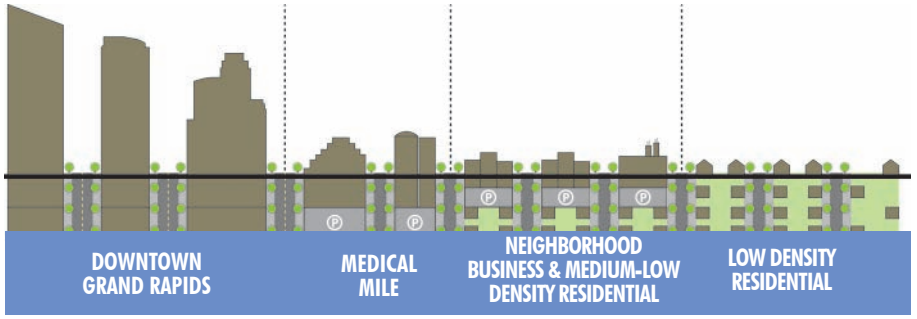
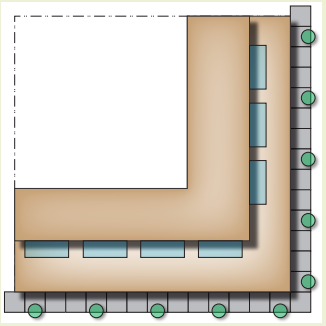


Figure 3-9. Michigan Street Corridor Transect - *This graphic illustrates the typical development patterns located throughout the Michigan Street Corridor, from the downtown core east to the East Beltline. Source*

Figure 3-10. Housing Typology Transect -
Typical housing typologies found in Downtown Grand Rapids and the Michigan Street Corridor area, as well as proposed housing typologies that would provide a variety of housing options . Source

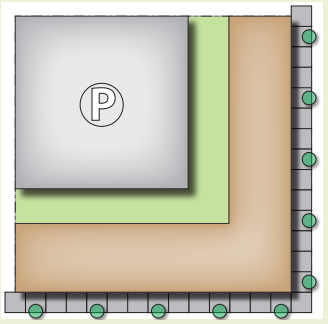
Housing types not regularly found in Grand Rapids include the loft building, liner building, maisonette, mixed-use research and development (R+D), and, to some extent, the duplex, triplex, and fourplex. There are some examples scattered throughout the community, however, many of these models were constructed 100 years ago. If new, mid-rise, and low-rise multi-family development is to be adapted to city neighborhoods, then the intent of each of these housing types and the most appropriate setting for each must be understood. The following section provides additional detail, highlighting residential living options from more dense (such as might be found in Monroe North) to less dense (in neighborhoods). It is recommended that the Zoning Ordinance be evaluated for its ability to accommodate emerging housing types

Loft Building



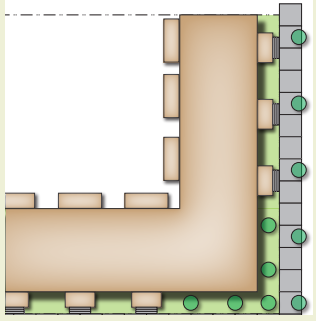
Adaptive re-use of older warehouses or manufacturing buildings or a new-construction building type inspired by those buildings. The new-construction version usually has double-loaded corridors. Unit interiors typically have high ceilings, are fully finished, and are partitioned into individual rooms. Units may also contain architectural elements reminiscent of "hard lofts," such as exposed ceiling beams and ductwork, concrete floors, and industrial finishes, particularly if the building is an adaptive re-use of an existing industrial structure. An example of a desired loft building is the proposed Michigan/Diamond development that was initiated as part of this Plan.

Liner Building



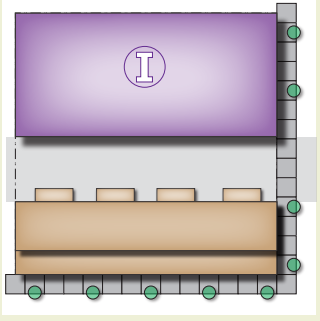
An apartment building with apartments and/or lofts lining two to four sides of a multi-story parking structure. Units are typically served from a single-loaded corridor that often includes access to parking. Ground floors typically include a traditional apartment lobby and can include maisonette apartments, retail, or some combination of the two. These could be frontage buildings along Michigan Street to help retain a vibrant street frontage with parking structures in the rear.

Maisonette



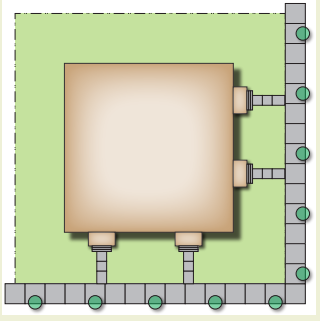
Three- or four-story buildings with elevations that resemble a row of townhouses. The interior combines single-level and two-level apartments. Each unit has its own street entrance and attached garage, accessed from the rear of the building. One potential location for maisonettes in the Corridor would be along Trowbridge Street at the edges of the proposed Grand Valley State University institutional buildings. The maisonettes would act as a buffer between the GVSU development and the residential neighborhood to the north.

Mixed-Use R+D/ Residential Studios



Units or buildings that accommodate non-residential uses in addition to, or combined with, living quarters. The typical unit is a building, either attached or detached, with a principal dwelling unit that includes flexible space that can be used as office, retail, or studio space, or as an accessory dwelling unit. This type of building could be located in Mixed-Use Neighborhood Service areas and Mixed-Use R+D areas.

Duplex/Fourplex



A two- or four-unit house with a garage, either attached or detached. Often, these units are created by subdividing larger, single-family homes to accommodate multiple tenants. Each unit typically has its own entry or shares an entry with one other unit. Ideally, duplexes and fourplexes are built on a corner location, allowing units to have frontage on either the main or side street. Duplexes and fourplexes could be used as infill units in medium-low density residential neighborhoods at major intersections, at the edges of the neighborhoods, and adjacent to non-residential uses.

3.6 Mixed-Use and Transit-Oriented Development

The area between College and Fuller avenues will provide the most dramatic change to the physical appearance of Michigan Street over the next decade. The intent of this district is to supply goods and services to adjacent neighborhoods and create a compact neighborhood business district that has a lively, pedestrian-oriented streetscape environment. An attractive and thriving business corridor can benefit surrounding neighborhoods, particularly if land uses meet the day-to-day needs of the residents. Employees and students traveling within the corridor will be able to gather in coffee shops, restaurants, and places that encourage collaboration and innovation. These public places on neutral ground where people can gather and interact are frequently referred to as "third places."

The "how to create a vital mixed-use district" is not limited to east of College Avenue. There is great development potential between Lafayette and College avenues for anchor institutions to apply such a design philosophy. Often, institutional buildings will have a coffee or gift shop, cafeteria, or bookstore. These uses can be given their own storefronts and also serve the public. There are multiple benefits to this approach. First, the street becomes more pedestrian-friendly and safe as the sidewalk becomes activated. Second, additional revenue can be gained to support the institution's ancillary services as a greater number of people have the potential to become customers, which will reduce the amount of potential subsidies for the operation. Finally, as mixed uses become visible they contribute to the texture and richness of an urban context.

3.6.1 Types and Scale of Uses

The Michigan Street Corridor business district is made up of a variety of commercial uses, including retail, restaurant, hotel, entertainment, service, and office. These have been developed at a variety of scales (or sizes); some buildings have been designed to emphasize access by automobiles, while others have been oriented for pedestrians -- or a balance between the two. These considerations – scale and transportation orientation – are important in determining which kinds of mixed-use development will fit compatibly into the corridor. Upper-level residential uses are a new and emerging land use that is expected to greatly influence the scale of development in the future.

As sites are developed, the most obvious change will be replacing existing single-story, single-use buildings and their large parking lots with multi-story, mixed-use buildings that have parking below ground or in a structure. The Zoning Ordinance currently provides waivers for uses that have shared-use parking areas: office users park during the day and residents park in those same spots at night. Reductions, or waivers, for parking requirements are also allowed if a proposed building is in close proximity to transit, offers a share car program, provides bike parking, or participates in a payment in lieu program for public parking.

The transportation orientation of a new mixed-use building is an important determining factor of its design. Some uses, by the very nature of the products and services they offer, attract more automobile traffic, and are more dependent on auto access than others. These uses include, for example, drive-through restaurants, gas stations, and repair shops -- even medical offices that provide regional services. Careful site planning and architectural design can make even large-scale uses (with large amounts of off-street parking) and auto-oriented uses more pedestrian-friendly. But a concentration of auto-oriented uses – or a poorly designed one at a critical location -- can undermine the walkability of the business district.

The Community Research Institute of the Dorothy A. Johnson School of Philanthropy and Nonprofit Leadership at Grand Valley State University developed a profile for the Michigan Street Corridor to identify missing services and retail opportunities that could be incorporated into new mixed-use projects. The report estimates that the total amount of dollars leaving (or "leaking" from) the corridor was in excess of $48 million. Food and drinking places, in particular, were cited as being in short supply with nearly $87 million in potential revenue being lost to other commercial areas.

The opportunity to capture the buying power of residents and commuters that pass through the corridor is compelling. More than half of the people that work in the corridor earn more than $40,000 per year. Resident income is split evenly between low and low-moderate incomes to higher incomes. Therefore, it is important to note that commercial services should not only target higher incomes but also focus on serving all incomes so that surrounding neighborhood residents can benefit from increased retail and food offerings.

	2013
Total Leakage	**$ (48,577,917)**
General Retail	$ 38,372,802
Building Materials, etc.	$ (12,023,296)
Health and Personal Care	$ (23,393,040)
Clothing and Apparel	$ (1,714,822)
Food and Beverage	$ 12,725,566
Super Markets and Grocery	$ 14,011,509
Convenience Stores	$ (583,747)
Food and Drinking Places	$ (86,950,719)
Full Service Restaurant	$ (37,412,155)
Limited Service Eating Restaurant	$ (20,458,683)
Drinking Places - Alcoholic	$ (18,511,548)

Figure 3-11. Retail Leakage in the Michigan Street Corridor, 2013
Source: GVSU CRI, 2013

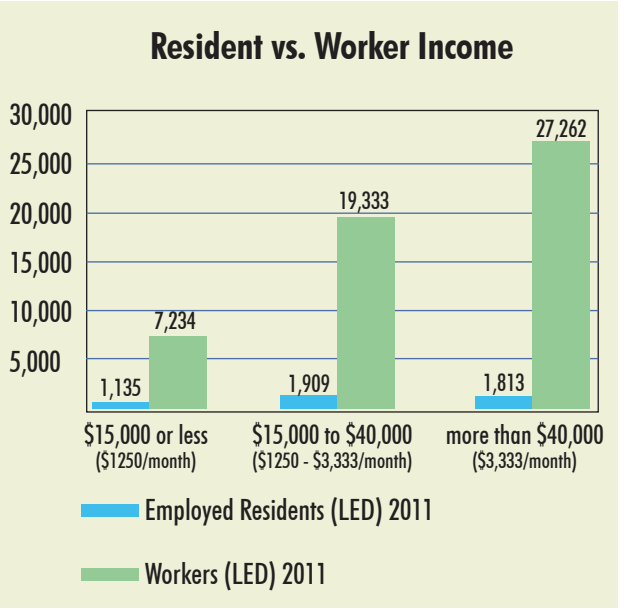


Figure 3-12. Resident and Worker Income, 2011
Source: GVSU CRI, 2013

Common Characteristics of a Mixed-Use Center/TOD

- A mixed-use retail "core" that includes:
  - Shops, services, offices, restaurants, entertainment, civic, and residential uses in buildings that are oriented to the street
  - A transit stop
  - Public spaces for shared activities
- A connected street system that defines small blocks, is designed for walkability, and links the mixed-use center to surrounding neighborhoods
- A range of housing types for people of all incomes and ages
- An "edge" zone that creates a transition in residential densities and building scale adjacent to existing single family neighborhoods

3.6.2 Transit Oriented Development (TOD)

Transit-Oriented Development (TOD) encourages the use of public transportation systems by directing compact, high-density mixed-use development to a transit corridor and identified nodes or stations. The development provides increased accessibility and mobility for pedestrians, bicyclists, and transit users while establishing a heightened sense of place. The 2002 Master Plan referred to these areas as "Mixed-Use Centers." Through the corridor plan effort, it became clear that Michigan Street has the potential to become a highly successful TOD district. An intentional re-design of commuter shuttle systems and routes provided by The Rapid could significantly change driving and development patterns within the corridor (see Chapter 4 – Transportation Systems).

The incorporation of housing, shopping, jobs, and services within a concentrated area reduces the need to travel by car to every destination and further supports an enhanced transit service. Seventy-two (72) percent of household trips are one mile or less. In Michigan, 90.5 percent of those trips are made by car. Michigan Street has the potential to improve the health of residents, workers, and visitors by encouraging active lifestyles (see Chapter 5 – Quality of Life).

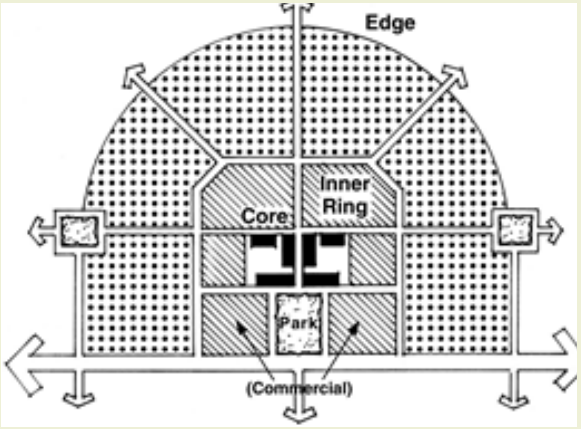
Mixed-use TOD can also improve the local economy, improve property values, maximize building footprints, increase commerce with new customers that make frequent trips, and raise the population of the area. Inviting building designs, thoughtful interfaces between public and private land, and increasing access to the district through multiple transportation modes will increase activity. Additional secondary benefits include:

- Safer pedestrian and bicycle environments
- Improved accessibility for persons of all abilities
- Increased walk-by traffic for local businesses
- More convenient access to businesses for local residents
- Less congestion and associated fuel emissions
- Creation of a "sense of place" for the community

Figure 3-13 . TOD Zones *-This graphic illustrates the density of development that should be located within each key walking distance from a transit station or stop. The highest density uses should be located within 1/8 mile of transit stations/stops to take advantage of the economic development benefits associated with rapid transit, while lower density residential uses should be located within 1/2 mile of transit stations/stops to provide convenient access for residents.*

The Future Land Use Map (Map 2-2) incorporates "best practice" TOD principles for a corridor that is served by bus, with an eye toward more premium types of transit service in the future, such as Bus Rapid Transit (BRT) (See Chapter 4 – Transportation Systems, Section 4.6). This plan focuses on incorporating the following key principles in the future development of the Michigan Street Corridor:

- High commercial intensity is located within the corridor area that will expand maximum building heights, encourage high floor-to-area ratios, or minimize lot coverage limitations to provide greater development potential.
- Uses are intensified over time, such as increased building heights or allowing surface parking lots to be replaced by buildings and parking structures.
- Transit-supportive uses and density are concentrated at nodes. This includes commercial and mixed uses that provide activity throughout the day and into the evening, such as retail, restaurants, personal and business services, high-density residential (including senior housing), universities, civic centers, and upper-story office and residential.
- Parking is limited in core TOD areas. Regulations, like maximum parking standards, parking space reductions, shared parking, payment-in-lieu of parking programs, and floor-to-area ratios (or requiring them where they do not exist), can be applied for this purpose.
- Incentives are provided to reduce parking, or encourage structured lots over surface lots.
- Amenities are included in the standards for site plan review for bicyclists, pedestrians, and transit riders, including wider sidewalks, bike storage facilities, bus shelters, lighting, and landscaping.
- Parking is placed in the rear yard (or side, only if necessary) to provide safer pedestrian access to store fronts.



- Core uses: general merchandise such as a supermarket, drugstore, hardware store
- Inner ring uses: office, school, healthcare
- Approximate retail gross square feet: 150,000 - 275,000 GSF
- Approximate trade area: 3-5 miles
- Population to support: 55,000+

Preferred locations for TOD nodes have been identified on the Future Land Use Map. These locations are near major intersections:

- Monroe/Michigan (Silver Line BRT and potential streetcar stations)
- Bostwick/Michigan (Silver Line BRT station)

- Lafayette/Michigan (GVSU Cook-DeVos Center for Health Sciences/Laker Line BRT)
- Diamond/Michigan (See Section 3.7 Diamond Avenue Plan/Laker Line BRT Phase I)
- Plymouth/Michigan (commuter lot location/ Laker Line BRT Phase II)

Additional future study of these proposed locations will be required in conjunction with The Rapid and the anchor institutions. Significant land use changes, including the development of a new Michigan State University biomedical research center and the acquisition of properties in the Belknap Lookout neighborhood by Grand Valley State University, will be key considerations. The findings described in Chapter 4 – Transportation Systems make it clear that enhanced transit service and land development that is transit-supportive will be essential for the future of the corridor.

3.7 Demonstration Project – Diamond Avenue

The Michigan Street demonstration project provides an example of how mixed-use development can occur in a manner aligned with the Plan's guiding principles. The Michigan/Diamond intersection was identified as an important transit node along the corridor. Diamond Avenue runs continuously north and south, connecting the Uptown business districts to Michigan Street and across I-196 past Leonard Street, making it an ideal location for the creation of a demonstration project. This example provides a glimpse of potential redevelopment at the northeast corner of Michigan and Diamond while also establishing some tangible strategies for future projects throughout the corridor. Further, the method of engagement in the project's design highlighted the value of public involvement; it is anticipated it will lead to similar strategies in future design efforts.

Project Process

The project approach placed a large emphasis on the process and strategies to achieve the desired vision while keeping in mind the end product. It is anticipated that the final development project at Michigan and Diamond may not precisely match the solution illustrated in the plan. However, its fundamental components will endure and inform other development projects. The guiding principles developed by the community, and endorsed by the Steering Committee, were used as a platform for the developer to begin considering the mix of potential uses for the property.

Successful process components included:

- Clarifying the project's influences, such as the Plan's guiding principles, the developer's objectives/aspirations, and the site's significance in the redevelopment of the Michigan Street Corridor.
- Interactive engagement with the community, primarily through a community charrette session with a focus on "hands on" input to the design process and exploration of multiple scenarios.
- Refinement of the plans as influenced by the community into a solution that is financially viable and succeeds in achieving the corridor vision.
- Translating the Plan's guiding principles into a tangible guide for future development along the corridor.

Sense of Place

Community involvement sessions have consistently mentioned the lack of "place" experienced along the corridor. As noted in Chapter 2 – Vision, development has not evolved consistently. Utilizing the "3D's" – density, diversity, and design – described in Section 3.1 , a more consistent development pattern will contribute to a cohesive identity for the corridor.

This demonstration project illustrates how to establish strong edges, activate the street, and create an appropriate building scale along Michigan Street. It also explores new models for integration of residential and retail uses that contribute to a sense of place. An important ingredient in the project is the introduction of residential and retail/restaurant uses to bring a 24-hour-a-day presence, generating activity by accommodating a variety of uses to improve safety and contributing to continued attraction for businesses and residences.

Demonstration Project Objectives

- Create a viable development that embraces the Guiding Principles of the Michigan Street Corridor Plan.
- Establish a better street front relationship by employing urban streetscape principles.
- Provide sufficient support on-site (parking, service, amenities) to avoid negative impacts to adjacent properties.
- Solve circulation questions with Wendy's drive-through in a more urban (pedestrian-friendly) manner.
- Create momentum so that adjacent sites along the Michigan Street Corridor can realize development improvements.
- Provide a range of uses onsite including:
    1. Retail space on the ground level
    2. Grocer on the corner of Michigan and Diamond
    3. Flexible design to accommodate multiple use types (office/medical office, residential, retail)
    4. Residential space on upper floor(s)
    5. Parking (to adequately support the various uses on the site, to explore district-wide parking options in collaboration with the City)
- Create on-street parking

Specific Developer Objectives

In preparation for the charrette, the developer analyzed preliminary cost models including specific, targeted uses such as apartments and a grocer. A pro forma was created by the developer to better understand the requirements of a financially viable project. These uses and support requirements would need to be maintained in order for the project's financial feasibility models to work.

The Charrette

The intent of the design charrette was to engage neighbors and other stakeholders in an interactive, hands-on, fun, and creative session. Participants included local residents, business owners, and other interested parties. The expectation was that the session would produce actual concepts and be the primary influence for meeting both community and developer objectives.

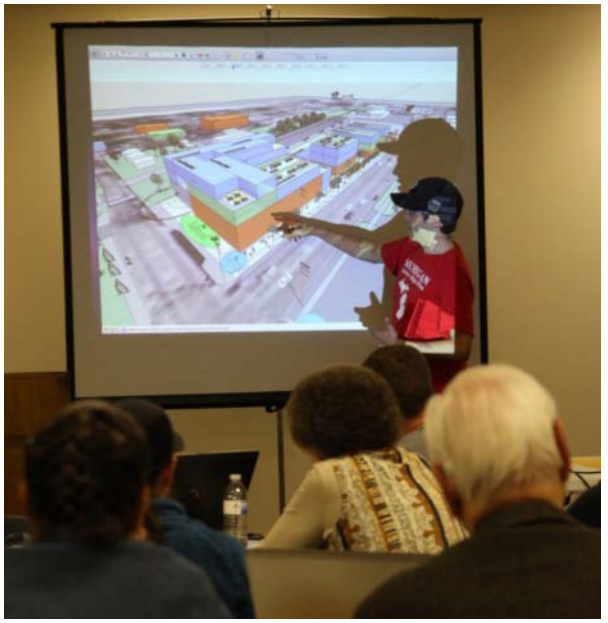
The format included a brief "stage-setting" by the project team followed by a four-hour creative work session. The participants were divided into four groups and equipped with scaled, color-coded blocks representing the preferred uses of the developer. A turn template was also provided for delivery truck movements.

Each of the four groups (consisting of six to eight participants) had an architectural animator to translate their physical blocks into a computer animation. The project team members were available to answer questions and to provide input/reaction to ideas. The groups were instructed to develop their concepts, and to be able to state the basis for their concepts and respective design attributes. The session continued with a presentation by each group with reactions by all. In total, the four groups created six concepts (two groups completed two concepts) and over 40 people, including facilitators, participated.

The Charrette concluded with each participant "grading" each concept to allow the overall group to understand which they felt best aligned with the Michigan Street Corridor Plan's guiding principles. These principles were the criteria for the grading sheets.

The developer and project team were supplied with an ample amount of relevant and useful ideas from the Charrette. Elements from nearly every Charrette concept were considered or utilized. The preferred alternative includes the following key elements:

- Position the grocer on the corner of Michigan and Diamond for visibility and to provide the site's "anchor."
- Step back street facades to establish a mid-rise scale for pedestrians, while maintaining proper densities.



- Consolidate on-site parking as much as possible to the northeast of the site (the deepest portion of the site and near the electrical sub-station), however providing surface parking convenient for grocer's patrons.
- Create pedestrian-friendly connections to link people to streets, parking, uses, etc.
- Place the transit station in a visible and convenient location.
- Develop a more "urban" response for the Wendy's drive-thru
- Incorporate outdoor spaces into the upper levels with both balconies and roof terraces.
- Provide street-side parking on Michigan St. to create a "buffer" for pedestrians from vehicular traffic and parking that is more convenient for retail customers.

- Consider sustainable features, such as rainwater collection, consolidated energy reuse/recycle systems, energy efficient architecture, and optimal solar orientation.
- Create a well-defined street edge, but also provide movement north/south for vehicles and pedestrians.
- Consolidate ingress/egress along Michigan Street.
- Utilize exterior materials familiar to the area (brick, stone, glass, metal) and incorporate important urban elements (transparency at the street, sidewalk cafés), yet create a fresh aesthetic that establishes the development's sense of place.
- Make all of the residential units accessible (elevator, grade level, or ramps).
- Screen the parking structure with vegetated screen.

Key architectural principles established during the demonstration project process can be applied to other sites along the Corridor:

- At street edges, utilize urban strategies for retail uses such as a high percentage of transparency, pedestrian-scaled elements, outdoor spaces, lighting, signage, and parallel parking.
- Maintain two- to four-story edges. Step back when density dictates more area.
- Encourage use of elevated outdoor spaces such as rooftops and balconies.
- Incorporate sustainable strategies including consolidation of energy use and renewable energy.

Figure 3-14. Michigan/Diamond Overall Site - *This image illustrates the overall proposed development at the intersection of Michigan and Diamond (looking North)*

Figure 3-15. Michigan/Diamond Grocery Perspective - *This image illustrates the proposed development as viewed from the intersection of Michigan and Diamond (looking East)*

- Scalable, flexible designs to respond to future influences/market shifts.
- Materials/detailing should be a familiar palette, yet provide distinction to help establish a sense of place. Variation in design is important in a vibrant and diversified urban setting.

The Developer's Economic Picture

This project, which is the result of the most collaborative effort in the developer's company history, will transform the neighborhood. After working with the landowners and stakeholders in the area, the team has developed a plan that will add significant economic value to the Michigan Street corridor. The plan includes approximately 120,000 square feet of new development along with parking, a transit station, and green space to create a place where neighbors can live, work, and play.

- The development contains 40,000 square feet of retail. The plan includes rebuilding spaces for two current occupants (Wendy's and the Party Cooler). Additional retail spaces are provided for restaurants and shops to support the area. An urban grocery store is planned. The developer is currently working with potential grocers to occupy the space, which will add a much-needed service in the area.
- As proposed, the project includes 80,000 square feet of market-rate rental residences. Mostly one and two bedroom, these housing units will be designed to support the needs of the local market and accommodate growing demand in the neighborhood.

At current market rents for retail and residential, it is likely the project will not provide appropriate returns to entice equity investors and provide adequate comfort to lenders without City, State, and Federal development support incentives. Through judicious use of current incentives and financing, the project can be a financial success as well as a significant benefit to the community.

3.8 Objectives and Policies

The following objectives and policies summarize what needs to be done to achieve the plan recommendations presented on the preceding pages so that the Michigan Street Corridor can become a vibrant place. It should be noted that additional objectives are provided in other chapters pertaining to balanced transportation and quality of life that also contribute to the creation of a vibrant place.

Guiding Principle: Improve the identity of the Corridor as a "place."

Objective: Encourage a diversity of uses

1. Encourage a mix of uses by block and building. Avoid single-use, single story developments.
2. Provide density or height bonuses to projects that are mixed-use.
3. Accommodate appropriately scaled institutional uses.
4. Modify zoning to accommodate new land uses as they emerge.
5. Encourage rehabilitation and infill development.
6. Accommodate larger scale commercial uses where existing parcel configurations and shared parking can be supported.
7. Educate property owners, developers, and lenders to the advantages of mixed-use development.

8. Evaluate the expansion of Oak Industrial Park for research and development, and light industrial uses.

Objective: Provide opportunities for density

1. Concentrate high-density mixed-use projects along Michigan Street and in the Monroe North business district to capitalize on transit investments, provide additional housing units, and add vitality to business areas.
2. Encourage the re-structuring of existing commercial areas as more compact, mixed-use, transit-oriented centers.
3. Replace Traditional Business Area (TBA) zoning district in the zoning ordinance with Transit-Oriented Development District (TOD) zoning designations where appropriate.
4. Employ on-street parking, shared parking lots, and parking decks, and locate and design off-street parking to minimize its impact on the pedestrian character of the district and adjacent neighborhoods.

Objective: Focus on design, particularly in areas of transition

1. Follow design guidelines that prescribe transitions between institutional uses and neighborhoods.
2. Protect neighborhood edges by creating incremental transitions in use intensity and building scale.
3. Review the Zoning Ordinance to ensure that proper massing and height is provided for along Michigan Street.
4. Ensure that all transportation modes are considered in site planning, including pedestrians, bicyclists, automobiles, and delivery vehicles.
5. Ensure that persons of all abilities are considered in building and site design.

Guiding Principle: Improve existing housing stock and enhance the integrity of each neighborhood's unique character.

Objective: Recognize existing housing stock and neighborhood context

1. Build on the special assets of older neighborhoods by encouraging housing reinvestment and by establishing and administering building and maintenance codes that encourage renovation and improve housing quality.
2. Encourage the preservation and reuse of historically and architecturally significant structures/areas.
3. Support area-specific plans that promote the compatibility of new development and rehabilitation projects that contribute to the visual character of the surrounding context.

4. Aggressively educate and enforce housing maintenance requirements in instances where land speculators' unoccupied homes contribute to the decline of the living environment for remaining residents.

Guiding Principle: Provide a broad range of high quality housing choices and price points to meet the diverse needs of existing and new residents.

Objective: Promote a broad range of high quality housing choices

1. Encourage a mix of affordable, mid-price, and upper-end housing choices through a combination of preservation, rehabilitation, and new construction.
2. Encourage the availability of a variety of housing types and costs (e.g., owner-occupied and rental serving young adults, seniors, low- and moderate-income households, special needs populations, middle and upper income households) to meet the diverse needs of existing residents and to attract new residents to the city.
3. Allow for new housing products, for example, small-lot single-family housing, site condominiums, upper story residences in commercial districts, and accessory apartments.
4. Educate property owners, developers and lenders to the advantages of, and demand for, a variety of different housing types.
5. Amend the Zoning Ordinance to better address missing medium-density building typologies (see Section 3.5.2 – New Building and Housing Types).
6. Work with neighborhoods to determine appropriate development densities and locations for new housing types.

Objective: Support affordable housing development

1. Explore creating inclusionary zoning policies to require a certain percentage of affordable units for each development project that has ten or more units.
2. Provide density bonuses to developers who provide a percentage of affordable units.
3. Provide gap funding on adaptive reuse and new construction to aid in the financial feasibility of affordable or mixed-income properties.
4. Promote shared-equity/shared-appreciation homeownership programs whereby a non-profit or government agency helps reduce the purchase price of homes. When the buyer eventually sells, the contributing agency shares the appreciation value of the home to maintain long-term affordability.
5. Promote City of Grand Rapids and MSHDA's Down Payment Assistance Program that provides no-interest loans as well as MSHDA's Property Improvement Program for home improvement loans.
6. Establish Employer-Assisted Housing programs to encourage employers to provide forgivable loans for down payments, property im-

provements, or closing costs for homes in the study area.

7. Establish a Community Land Trust to acquire and hold land to reduce the costs to just the home itself.

8. Promote Limited-Equity Cooperatives to provide resident-controlled multi-family housing and ensure long-term affordability.

9. Create a lower-income tax abatement program.

10. Develop "linkage fees" which charge developers to allocate resources to affordable housing programs or a payment in lieu program.

Guiding Principle: Establish partnerships that will seek to plan, fund, design, construct, maintain, and operate efficient systems.

Objective: Foster public - private partnerships for redevelopment

1. Develop a charrette program for future developments (multi-lot developments, large-scale developments) that establishes parameters and engages users, similar to the Michigan/Diamond Avenue Demonstration Project.

2. Partner with anchor institutions and The Rapid to design future transit-oriented development (TOD) nodes.

3. Provide investors and developers easy access to economic, market, workforce, and real estate information.

4. Give technical assistance for small life sciences businesses to foster entrepreneurship, business start-ups, and local ownership.

5. Use public investments to strategically leverage desired economic development in appropriate locations.

6. Help to coordinate economic development initiatives within the metropolitan region.

7. Provide the transportation, utility, and technology infrastructure needed to support economic growth.

Chapter 4: Transportation Systems

4.1 Introduction

In the recent past, transportation decisions have been made based on traditional concepts of safe and efficient motor vehicle operations. The result of this conventional approach is that the environment for pedestrians, bicyclists, and transit riders is often overlooked, making streets less safe and uncomfortable for pedestrians to use. Overbuilding for a single transportation mode, rather than considering the effects of decisions on all modes and users, impacts public health (see Chapter 5) and deters the use of other modes that could assist in reducing traffic congestion, greenhouse gas emissions, and lowering transportation costs for vulnerable populations.

The 2002 Master Plan addressed Balanced Transportation as a central theme. Green Grand Rapids amplified the discussion by introducing Complete Streets in its Connections chapter. The Michigan Street Corridor Plan provides a deeper understanding of transportation from a systems-wide approach. Data collection and modeling of the Corridor allowed city staff, consultants, stakeholders, and the community to focus on the interdependencies of each transportation mode. The conversation began with trying to solve a congestion problem at one intersection, and ended with a Plan that demonstrates there is a greater whole than the sum of the parts.

4.2 Vital Streets Approach

The underlying philosophy expressed in City plans, and affirmed by the City Commission's Sustainable Streets Task Force and the affirmative public vote for Grand Rapids' Vital Streets Initiative, is that "City streets and rights-of-way will be accessible, attractive and safe, serving all people of our community; contributing to the livability of our neighborhoods and business districts; and increasing economic opportunity to individuals, businesses and new development."[1] Designing safe streets for all users – pedestrians, bicyclists, transit riders, freight and automobile drivers - is important because it considers safety for people of all ages and abilities, such as children, the elderly, and the disabled. All users need safe and varied routes to accommodate their individual travel needs. All users and all modes will be accommodated when feasible, with first priority given to pedestrians.

Complete Streets plus green infrastructure equals Vital Streets. Green infrastructure is necessary to manage stormwater flows and improve water quality before water enters the Grand River (see Chapter 5). Trees, for example, directly absorb stormwater and provide shade for pedestrians on a hot summer day. The inclusion of green infrastructure within public rights-of-way contributes to the creation of a vibrant place (see Chapter 3, Introduction sidebar). The City's Vital Streets approach is an important underpinning of future street reconstruction projects as well as retrofits within existing curb lines. This chapter will not specifically address cross-section design, but rather focuses on the paradigm shift needed towards other transportation modes if Michigan Street is to continue to experience significant growth and investment.

4.3 Transportation Demand Management

Growth within the Michigan Street Corridor and associated travel generation has become an increasing concern for the city, neighbors, and the institutions. Road widening is not viewed as a sustainable, desirable, or feasible alternative to address capacity needs. Preventing additional economic investment and new development is not a reasonable option either. Cities now look at "demand management" as a way to reach the same goal of increasing the capacity of an existing transportation system by focusing on many approaches, not just the needs of motor vehicles. The paradigm shift is to demand multiple transportation systems for pedestrians, cyclists, and transit riders, not just one system for vehicles. The key is to provide a full range of highly attractive transportation options, a strong mix of land uses (see Chapter 3), and incentives to change travel behaviors.

[1]Sustainable Streets Task Force Report, August 13, 2013

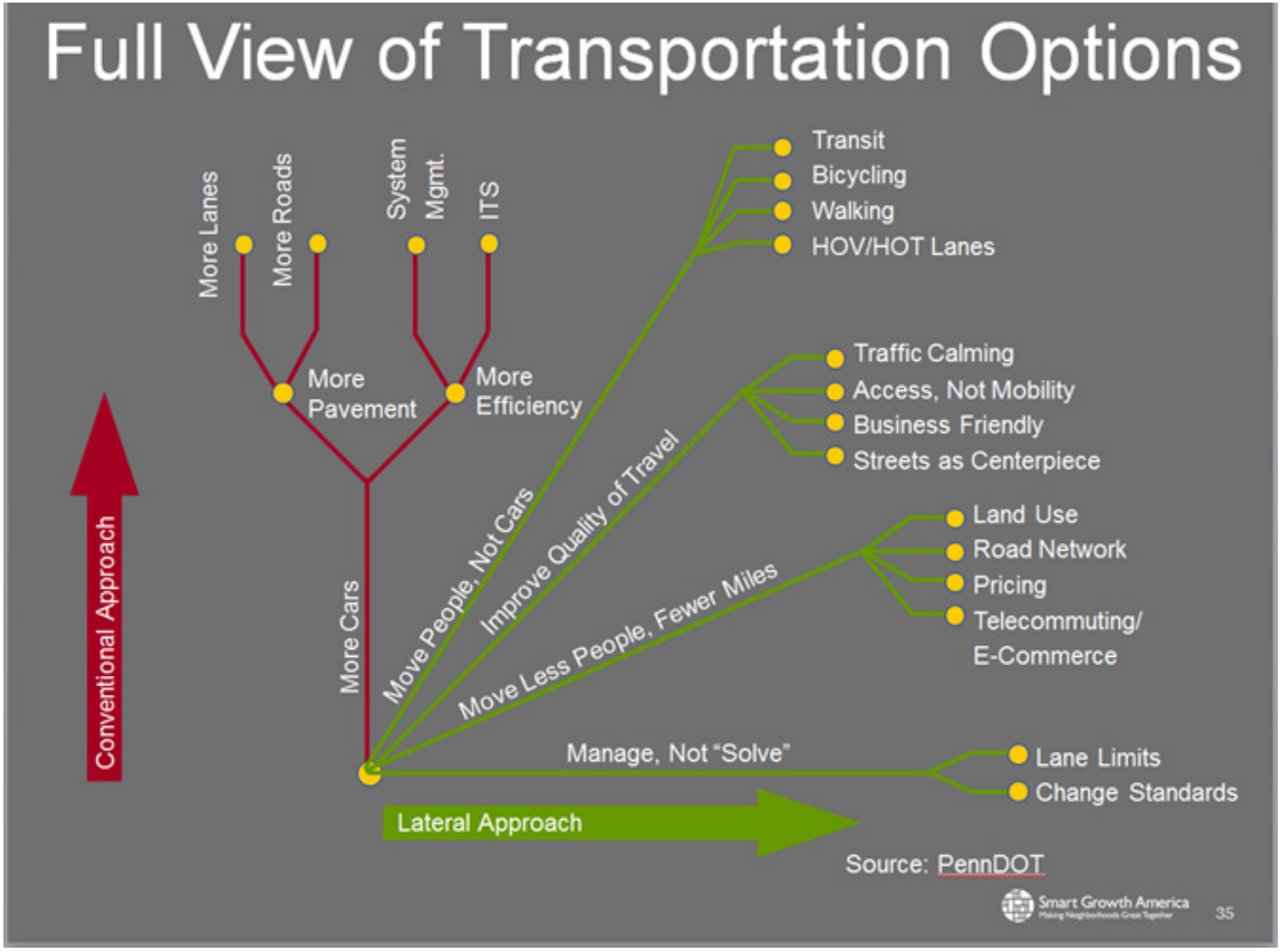


Figure 4-1. Transportation Options - *This diagram illustrates in red the "conventional" methods of addressing congestion. The green "lateral approach" demonstrates that there is a range of tools that can be applied to better manage traffic congestion.*

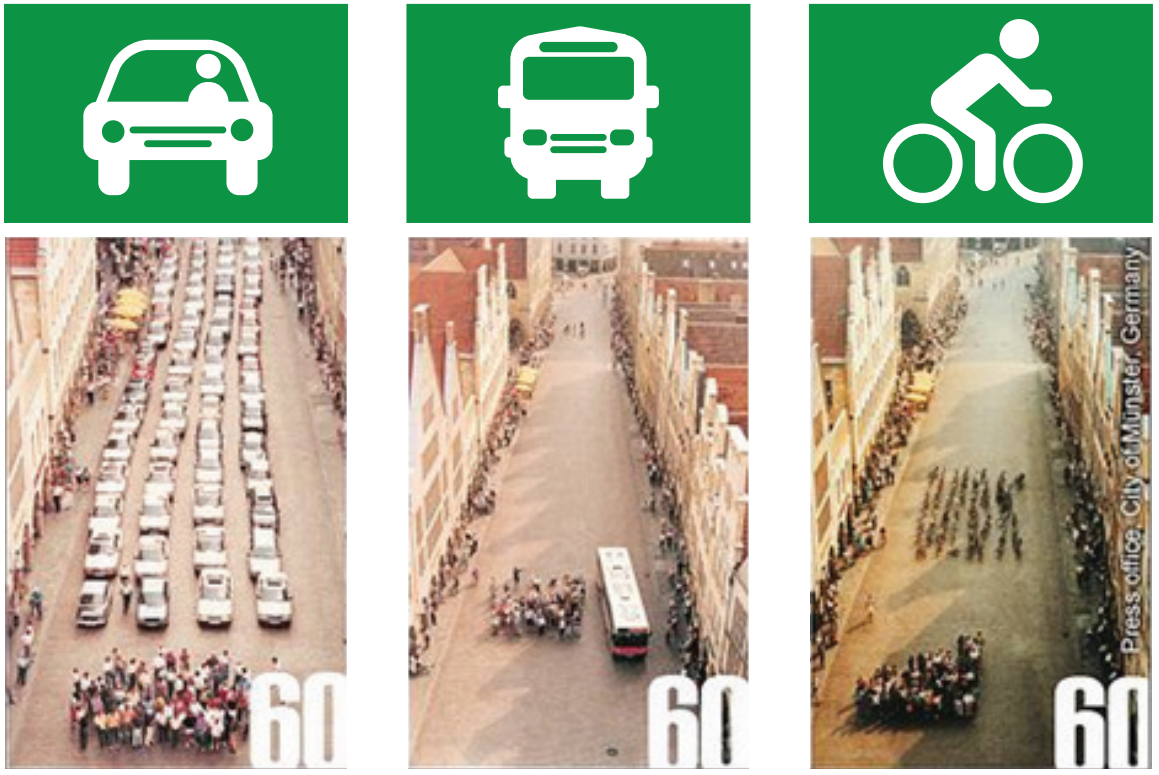


Figure 4-2. Roadway Space Consumption – *This graphic illustrates the amount of street space 60 travelers occupy when utilizing different modes of transportation.*

Transportation Demand Management (TDM) seeks to do two things: 1) promote more efficient modes of travel to move more people in the same amount of roadway space, and 2) spread the travel demand across more hours of the day to take advantage of space and capacity when it is available. TDM seeks to reduce auto trips and, hopefully, vehicle miles traveled, by increasing travel options. Figure 4-2 shows the area of street needed to accommodate the same number of people in various modes.[2]

To optimize TDM on the Michigan Street Corridor, a more coordinated and holistic approach is required beyond the separate and isolated practices previously employed. Leading practices from across the country contain common elements:

- Integrated TDM programs across multiple employers and institutions closely coordinated with the municipality and transit authorities.
- Strong regional leadership and coordination of TDM strategies, often including mode split targets with regular measurement and reporting of performance and progress.
- Pricing and incentives to influence mode choice and travel demand.

- Expanded transportation options, which can include improvements to cycling and walking options as well as transit and ridership strategies.
- Incentives to use alternative modes, which includes commuter benefits for transit use and flexible scheduling.
- Parking management, which includes a host of parking incentives and disincentives.
- Adoption of public policies that imbed TDM into the land development process.
- Broad and effective education, outreach, and promotion programs that not only improve the public's awareness of alternative modes, but actively assist them in their day to day travel planning and choices, as well as improving health.

4.3.1 Michigan Street Mode Share Targets

Corridor stakeholders wanted to set a high bar for strategic and sustainable travel management. To better understand existing conditions, an extensive transportation modeling program was undertaken. It ranged from a larger regional traffic view using MXD (3-D) modeling software to a local street focus that contained refined land uses and intersection analyses using Synchro simulation software. Modeling included enhancements of adding streets, restricting turns, and improvements in distinct sub-zones of the project area. The study calculated alternative plans for new highway ramp configurations, additional housing, and AM/PM traffic influences of the anchor institutions (see Section 4.7.1 Modeling Methodology for modeling methodology and recommended street improvements).

The traffic models acknowledged that auto capacity within the Michigan Street corridor is finite; with four lanes in each direction, the corridor can move about 4,000 cars per hour -- a number already achieved at certain times of the day. Ironically, as more cars converge on the corridor, fewer and fewer autos are actually able to get through due to gridlock and congestion. The Michigan Street Corridor Plan Steering Committee pushed for aggressive mode share targets so that future growth could be accommodated. Projected development by 2035 predicts that the corridor will have 15,000 daytime employees arriving and then leaving over two peak hours (7,500 per hour) and up to 10,000 new residential units. Figure 4-3 identifies the current mode share, a 10 percent mode shift target, and an audacious goal which the Committee felt was feasible with very intentional actions.

4.3.2 Shifting the Mode Share

The planning process evaluated existing pedestrian, bike, and transit systems within the Corridor to determine current system capacity (see sidebar). Spectrum Health, Grand Valley State University, and Grand Rapids Community College have initiated various efforts to integrate transit and rideshare opportunities for employees and students with varying degrees of success. For example,

Current Transportation System Capacity

- Travel lane capacity = 1,000 cars/hour (x) 4 lanes = 4,000 cars/hour
- Bus = 40 passengers/bus (x) 29 buses = 1,160 bus seats/hour
- Bus Rapid Transit = 40 passengers/bus (x) 9 buses = 360 bus seats/hour
- Bikes = 1,000 bikes/bike lane/hour (x) 2 lanes (x) 2 directions = 2,000 bikes/hour
- Pedestrian capacity is influenced by sidewalk width, condition, buffers, and crossing ease

MODE SHARE TARGETS

Mode	Current Share	10% Mode Shift Target	Audacious Goal (2035)
Walk	3-5%	10%	12%
Bike	0.2%	2%	5%
Transit (Bus + Shuttle)	1-2%	5-10%	20%
Carpool/Ride Share	–	15%	20%
Auto (Single Occupancy)	95%	70%	45%

Table 4-3. Mode Share Targets – This table illustrates the existing and proposed usage of each mode of transportation within the Michigan Street Corridor area

EFFECTIVENESS OF POTENTIAL TDM STRATEGIES

Strategy	Details	Employee Vehicle Trip Reduction Impact
Transportation management	Ranges from association (high impact) to information only (low impact)	30% - 2%
Non-motorized improvements	Bicycle and pedestrian systems, incentives, and improvements	8% - 1%
Transit solutions	Universal pass, intermodal connections, branded services	20% - 5%
Live near work	Housing or home search assistance	15% - 1%
Parking management	Previously free parking and/or parking cash-out	30% - 17%

Source: Nelson\Nygaard Consulting Associates Inc. and Smart Growth America

GVSU has contracted with The Rapid for 10 years and has four dedicated routes serving its students/campus. These institutions, along with Van Andel Institute and Michigan State University have expressed a strong interest in a more integrated approach to service the corridor. There are a number of strategies that can be employed to facilitate the adoption of alternate modes, which will encourage a shift. Some methods are more effective than others in reducing vehicle trips.

The concept of meeting the needs of all users that might use alternate transportation systems requires a careful analysis of the types of people who are likely users of transportation facilities. Figure 4-4 explains the typical characteristics of different types of travelers. For example, a "convinced and committed" bicyclist with experience and confidence will be more comfortable using a bike lane than a "no way, no how!" user. Similarly, those riding transit that have never used the system, may need additional information before they feel "confident but cautious." A variety of transportation facilities are needed so that all of these users can travel safely.

GENERALIZED TRAVELER TYPES

Typology	Description
Convinced and Committed	Regular transit, telecommuting, or non-motorized travel users; early adopters either by commitment, choice, or condition (economic limitations to travel choice).
Confident, but cautious	Travelers who may have used non-private auto travel modes in the past or occasionally, but do not use them routinely; perhaps because they have other choices and/or they feel alternate modes do not conveniently and reliably meet their needs.
Curious but Skeptical	Travelers who have not tried alternative travel modes, but would consider trying them if they had sufficient information about how to use them and confidence that the option would meet their needs and be reliable. Lack of information and skepticism about reliability are major barriers to current use.
No way, no how!	Travelers who may or may not have tried alternative commutes, but are nonetheless not interested in using them even occasionally.

Figure 4-4 . Generalized Traveler Types – *This table describes typical travelers by their level of comfort/experience using transit. Source: Nelson\Nygaard Consulting Associates Inc. and Smart Growth America (adapted from City of Portland, OR)*

4.3.3 Systems Performance

We achieve what we measure. If Michigan Street is to become a truly multi-modal corridor that successfully meets the needs of all users, then a system that uses regular measurement and reporting of performance and progress is necessary. Ridership, fare box revenue, vehicle miles travelled, CO2 emissions, and regular counts of pedestrians and bicyclists are metrics that can be applied to the corridor.

Historically, transportation system performance has been based primarily on motor vehicle traffic speed, delay, and safety; with measures of success focused on moving traffic with fewer stops and points of conflict. As a result, wider roads to encourage throughput, larger intersections, and faster travel meant that automobiles were prioritized above other modes for improvements and investment. Level-Of-Service (LOS) ratings (typically with A=best and F=worst), have been widely used to evaluate problems and potential solutions for automobile traffic. Because letter grading is used, similar to school grades, the scoring is easy to understand and has been the standard measure of transportation impacts for decades.

Multi-Modal Level-of-Service Indicators are rating systems that consider factors used to evaluate the effectiveness of all travel modes. For example, arterial streets are more likely to prioritize auto travel over downtown streets that will favor the pedestrian and transit modes. Therefore, on downtown streets, the Target LOS for pedestrians should be at a Grade A, B, or C, and the Target LOS for automobiles at a C, D, or E, depending on the strength of priorities that are established.

Figure 4-5 illustrates how different improvements to alternative modes of transportation (pedestrian, bicycle, and transit) can directly increase their "level of service" while directly reducing that for vehicles. The transportation industry strives for vehicle operations to maintain LOS of "D" or better, so an appropriate balance needs to be developed between all modes of transportation by mitigating the negative impacts that improvements to pedestrian, bicycle, and transit facilities may have, particularly for emergency vehicles on Michigan Street.

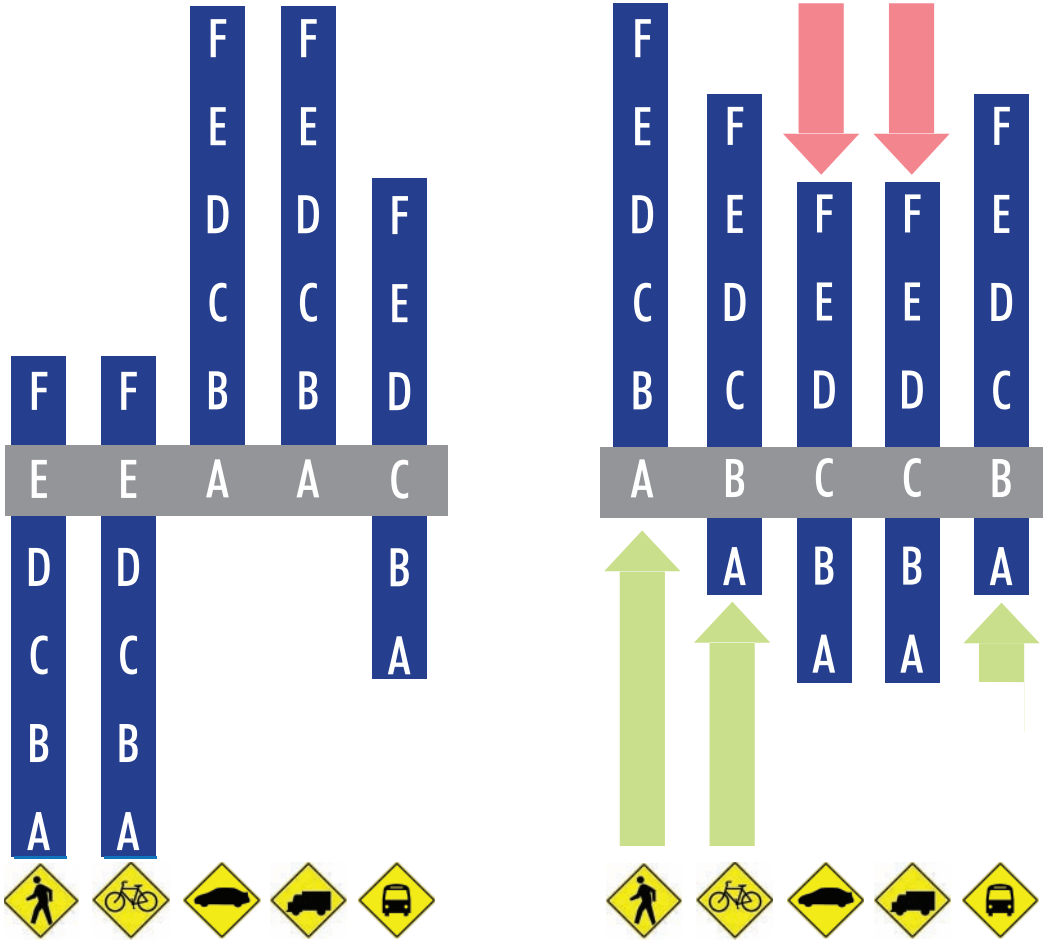


Figure 4-5. Multi-Modal Level of Service –
This illustration shows the current conditions of Michigan Street and typical improvements that can create a multi-modal Corridor.

TDM Implementation

A key conclusion from the planning process was that the corridor cannot build its way out of congestion by providing greater capacity for automobiles. The steering committee worked with experts to develop Transportation Demand Management (TDM) strategies to develop alternative coping mechanisms for growth. Transportation management, parking management, transit solutions, and live-near-work programs were identified as the core TDM strategies that address the issues uncovered by the city's analysis of the corridor. As a result of examining TDM options, Downtown Grand Rapids, Inc. (DGRI) created a TDM coordinator position, hiring an individual who will develop and facilitate these programs on a full-time basis. See Chapter 6 Action Plan for additional recommendations.

Achieving better "grades" for alternative travel modes (walking, biking, and transit) requires a concerted effort to improve the environment for those users, especially where they are the priority user. The following list includes a variety of capital improvements that can be made as well as less costly programming and planning efforts to help improve the multi-modal level of service provided:

- Higher level of transit (more frequent, more capacity, stations instead of stops, etc.)
- Premium bicycle facilities and connections
- New pedestrian connections/crossings
- Target specific number of employees to live within Corridor
- Variable (higher) parking prices and/or permitting
- Shuttles to parking/North Monroe/other housing
- Bikeshare program
- Ensure all residents are within one mile of a trail, ½ mile of a bike lane, and ¼ mile of a signed bike route
- Educate all road users to promote safe and respectful behavior
- Support legislation and enforcement practices that target dangerous conduct
- Bike to work challenge (twice per month)

The possible paths to pursue transportation demand management are virtually limitless, however not all may have the same level of effectiveness for the Michigan Street Corridor at this current point in its evolution, while others – such as enhanced pedestrian and bicycle accommodations – are well underway already.

4.4 Non-Motorized Travel: Pedestrians

Pedestrians are the most vulnerable travelers on Michigan Street. Transit users are also pedestrians, as are people who leave their car to frequent one of the many merchants along the corridor. A pedestrian's needs are quite basic: comfortable, safe, and interesting places to walk, and destinations within walking distance. A highly walkable corridor includes a range of ingredients – a clear path, places to walk to (destinations), shade, refuge, a buffer between fast moving vehicles, and short and easy crossing distances. Some blocks along Michigan Street are fairly walkable where pedestrians are buffered from traffic with landscape strips. In many areas, however, narrow sidewalks are barely distinguishable among the multiple curb cuts and lack any buffer from auto traffic. A transformative change is needed for Michigan Street to be an inviting and safe place to walk.

① A mixed-use development pattern that is compatible with walking; trips are short, and can be made on foot.

② Continuous sidewalks of appropriate width

③ Safe and frequent locations for crossing

④ Buffers from traffic in the travel lane

⑤ Interesting and inviting streetscapes and buildings, which address the street with observable doors and windows.

⑥ Comfortable places to sit and wait (particularly for transit).

⑦ Streetscape of trees and lighting that provide shade, security, and help define the pedestrian realm.

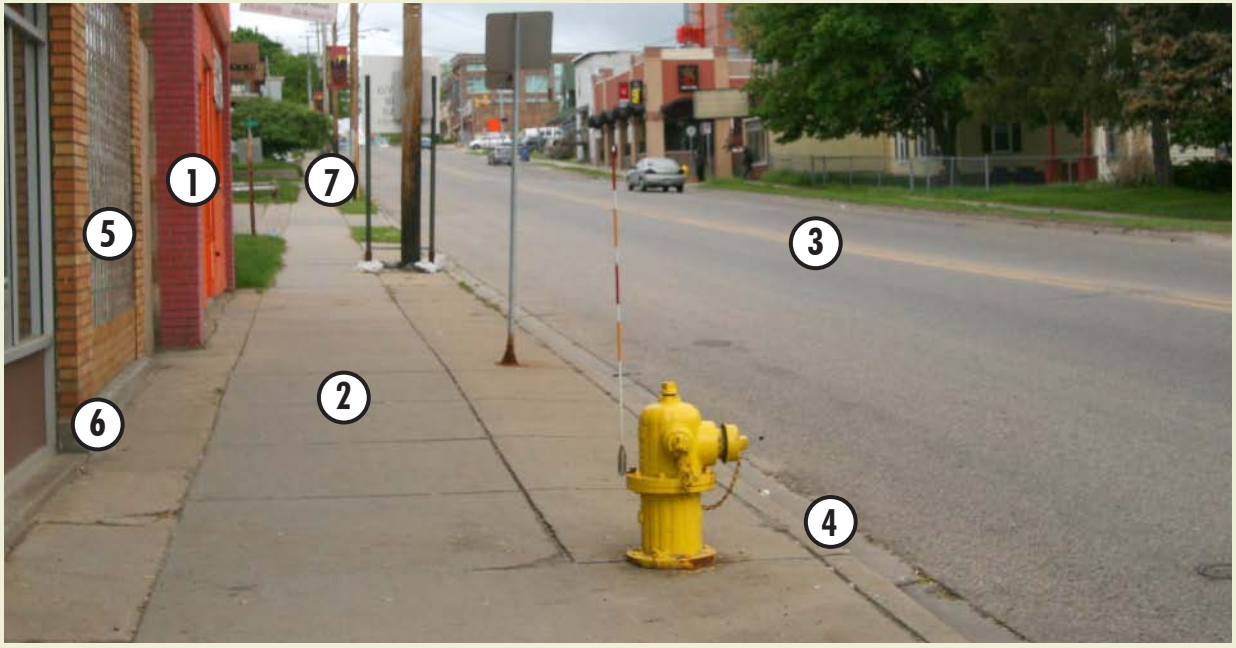


Figure 4-6. What the Pedestrians Need. *This graphic illustrates how the features listed above could be applied to an existing segment within the Michigan Street Corridor.*

4.4.1 Pedestrian Level of Service

The Multi-Modal Level-of-Service (LOS) analysis that was completed for the Michigan Street Corridor Plan revealed that, while automobiles generally had a LOS rating of "A," the average rating for pedestrians and bicyclists was an "E." In order to understand current pedestrian conditions within the Corridor and craft recommendations for pedestrian-oriented design, committee members and city staff participated in a series of walking tours with the assistance of Disability Advocates of Kent County. In addition, the City conducted a walkability audit to determine a general pedestrian level of service (LOS) for each segment of Michigan Street. Figure 4-7 (following page) lists the factors considered when determining pedestrian LOS.

The criteria in Figure 4-7 were applied to segments of Michigan Street, beginning downtown at Monroe Avenue and extending to Plymouth St. The pedestrian LOS audit (see Figure 4-8) revealed a variety of conditions, with LOS ranging from "A" in downtown Grand Rapids to "E" at several locations within the primary business segment of the Michigan Street Corridor, where most of the neighborhood services on Michigan Street can be found.

PEDESTRIAN LEVEL OF SERVICE (LOS) AUDIT METHODOLOGY

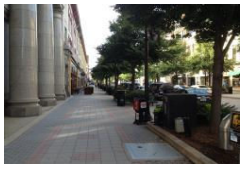
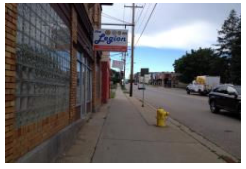
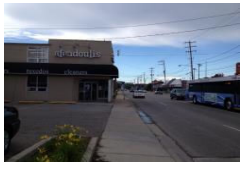
	A	B	C	D	E	F
Character Image						
Description	LOS "A" is characteristic of conditions in the downtown core, where the sidewalk is wide and shaded, and pedestrians are safely buffered from vehicle traffic.	LOS "B" is characteristic of the area just east of the downtown core, where the sidewalk is wide and partially shaded, and pedestrians are safely buffered from vehicle traffic.	LOS "C" is characteristic of the area near most of the major institutions, where the sidewalk is narrow but in good condition, although not consistently shaded. Pedestrians are only buffered from vehicle traffic by a small parkway.	LOS "D" is characteristic of a large portion of the Michigan Street Corridor, where sidewalks are narrow and only in fair condition, and not consistently shaded. Pedestrians are buffered from vehicle traffic by a small hardscape area.	LOS "E" is characteristic of a large portion of the Michigan Street Corridor, where sidewalks are narrow and in poor condition, and not shaded. Pedestrians are not buffered from vehicle traffic.	LOS "F" is characteristic of an area where sidewalks do not exist.
Sidewalk Width	10 ft.	5-10 ft.	5 ft.	5 ft.	5 ft.	None
Buffer	6 ft. landscape with street trees	5 ft. landscape	2-3 ft. landscape	2-3 ft. hardscape	Curb/gutter	None
Tree Canopy	Mature trees in excellent condition providing full shade	Mature trees in fair condition providing full shade	Medium trees in fair condition providing some shade	Saplings in excellent condition providing no shade	Saplings in poor condition providing no shade	None
Pedestrian Crossing	Wide crossing with audible countdown signal every 400 ft.	Wide crossing with countdown signal every 400 ft.	Wide crossing with standard signal, one per segment	Narrow crossing with standard signal, one per crossing segment	Narrow crossing with no signal, one per segment	None

Figure 4-7. Pedestrian Level Of Service (Los) Audit Methodology – *This table illustrates the methodology that was used when analyzing the existing pedestrian level of service (LOS) within the Michigan Street Corridor area.*

Figure 4-8. Pedestrian Level of Service (LOS) Audit Results – This map illustrates the results of the onsite pedestrian level of service (LOS) audit and images of existing pedestrian conditions within each segment.

4.4.2 Improving the Pedestrian Environment

The citizens of Grand Rapids have set pedestrian improvements as the priority for Michigan Street. Whether it is walking to a shopping destination or to one of the institutions on the Medical Mile hill, new approaches are needed to improve the pedestrian environment. Institutions such as Spectrum Health and Michigan State University have expressed concern about pedestrian crossing locations and safety as employees, students, and visitors access their facilities. Easy, comfortable access to businesses and jobs from adjacent residential neighborhoods by foot is also necessary if mode share targets are to be reached. The connectivity of the Michigan Street Corridor to the Grand River, Belknap Lookout neighborhood, Monroe North Business District, and Downtown are addressed in Chapter 5 Quality of Life and are viewed as a critical component of improving pedestrian accessibility and mobility within the Michigan Street Corridor.

A complex set of tools is needed to re-balance the corridor, which has been widened over time to provide sufficient capacity for automobiles at the cost of the pedestrian environment. The significance of the corridor as a regional destination, reduced connectivity to the street grid because

of I-196, and the amount of daily traffic prohibits the removal of vehicle travel lanes. Opportunities do exist, however, in both existing cross-sections and as the Corridor redevelops. These tools will improve the pedestrian Level of Service (LOS) within the Michigan Street Corridor.

Streetscape Buffers

Streetscape buffers are essential along the Corridor because they provide separation between the pedestrian and cars. As there is no on-street parking in most locations, when combined with high traffic volumes pedestrians feel exposed and uncomfortable. Opportunities include:

- Adding landscaping and streetscaping elements in areas where sidewalks are wide, to soften the environment, and provide shade and visual separation.
- The dedicated bus lane in front of Spectrum's campus, between Bostwick and Coit, could be abandoned for a pedestrian plaza, which would shorten the crossing distance at the Michigan and Coit intersection.
- Redevelopment of land between College and Fuller into high-density mixed-use projects can facilitate the creation of new, protected on-street parking framed by curbed bulb-outs, adding windows can increase visual interest, and new uses can activate the street with outdoor dining (see Figure 4-9).

Figure 4-9. On-street parking added as part of a redevelopment project at Michigan and Fuller

Curb Ramps

Improve accessibility at intersections, particularly in the medical district where pedestrians needing these amenities will be more frequent. Many of the curb ramps currently are diagonally aligned, which sends the pedestrian into the center of the intersection rather than in the direction of the crosswalk. Maintaining sidewalk alignment through the intersection is an important consideration.

Curb Radii

At intersections where few large trucks are expected to be making right turns, curb radii should be as small as possible, no wider than 15 feet. If large trucks do occasionally make right turns, they may need to cross the centerline. The safety tradeoffs between better accessibility and safer crosswalks should be weighed against the risk of large trucks crossing the centerline on occasion. At intersections where a larger turning radius is appropriate due to frequent right turns by trucks, an edge that directs the pe-

destrian in correct alignment with the crosswalk is of great benefit for a safe and efficient crossing.

Crosswalk markings

Michigan Street is quite wide, particularly in the medical district where there is substantial pedestrian activity. Pedestrian crossings should be highlighted through bold markings to send motorists the message that they are crossing a pedestrian path and should use caution.

- Widen crosswalk markings beyond standard applications found in most business districts.
- Utilize color and texture changes that meet industry standards to alert motorists to expect pedestrians and provide tactile clues to keep crossing pedestrians in the crosswalk. Paving blocks, which could become uneven, are not recommended.

Reduce curb cuts

Opportunities for redevelopment provide the greatest benefit to reduce curb cuts and avoid vehicle/pedestrian conflicts. The Zoning Ordinance requires that parking be located behind or adjacent to storefront buildings. Alley and/or side street access to development sites can assist in completing the street wall while also directing turning movements in appropriate locations. Over time, as whole blocks are redeveloped, the center-turn lane of a five-lane cross-section could potentially be converted into a boulevard as center turn movements are eliminated.

Places to Rest

Walking up the steep grade of Michigan Street from Division Avenue to Coit can be daunting and not always pleasant. Seating in the form of benches, or planters that double as a seat wall, would be particularly appropriate given both the hill and the fact that a wide range of individuals of varying ages and abilities utilize the Corridor.

Amenities

The development pattern along the core of the medical service area has turned "inward," so services such as coffee and gift shops are located inside the buildings, and not facing the street. While some of these services are offered to the public, there is little indication to a passerby that they exist. For Michigan Street to be a truly pedestrian-oriented area, the land development and building patterns need to contribute positively to the pedestrian experience. Most important is to provide a friendly face to the street (with windows and doors that allow the pedestrian to see what is inside), provide landmarks and metering of walking distance, and services to pedestrians in need of rest or refreshment.

Art and Visual Interest

Features such as sculptures, fountains, or storefront businesses can serve as a helpful amenity for both wayfinding and providing interest and character. In places where there are voids, or buildings are not at pedestrian scale, small details at eye level can make a walk interesting. Many visitors are unfamiliar with the area, and may be dealing with a family emergency, thus the provision of additional landmarks can provide a sense of place (see also Chapter 5 Quality of Life).

Shorten Crossing Distance

Signalized intersections are the most desirable locations for pedestrians to cross the street; however, they also usually have longer crossing distances than non-signalized intersections. Dedicated right-hand turn lanes should be avoided wherever feasible to preserve shorter crossing distances for pedestrians.

Audible Pedestrian Signals

Audible signals assist the visually impaired and provide another method of signaling to car drivers that pedestrians are expected to be present. The need for audible pedestrian signals (APS) on Michigan Street requires further consideration. In general, priority for installing APS is as follows:

- Potential demand or request for accessible pedestrian signals;
- Traffic volumes during times when pedestrians might be present, including:
  - Periods of low traffic volumes (when audible cues to traffic aren't available), OR
  - High turn-on-red volumes;
- The complexity of traffic signal phasing, which makes it more challenging to assess a safe crossing phase; and
- The complexity of intersection geometry, which could make it challenging to get properly aligned with the crosswalk.

Along Michigan Street, several intersections were considered for their suitability for APS. The following observations were made:

- Barclay/Michigan: This intersection has the most optimal design for accessible crossings, and its location in the center of the medical district indicates demand. The high buildings in this area make it more difficult to hear the audible cues for crossing safely. This is a high priority for APS installation.
- Michigan/Coit: This location, similar to Barclay, has higher demand for accessible crossings and reasonable pedestrian design. This is a priority location for APS installation.
- Lafayette/Michigan: The southbound right turn lane (from Michigan) leads to high right-turn-on-red volumes, which can make crossing challenging. In the short term, a "no turn on red during pedestrian phase" or similar sign could be installed. An audible signal should be installed if a northbound right turn lane is added in the future.
- Michigan/College: This intersection is at the edge of the medical district. Multiple vehicle turning movements make this area difficult to navigate. "No turn on red during pedestrian phase" or similar sign would assist with crossings. It is a poor environment for pedestrians at best, and an APS installation would have only a marginal improvement.

In locations where APS might not be used, it is recommended that countdown pedestrian signals be installed throughout the corridor.

Add and Maintain Sidewalk

To the East of Plymouth, and from Michigan to I-196 on Fuller, there is no sidewalk. As the opportunity arises, expansion of the sidewalk network should be considered. In addition, sidewalk connections into neighborhoods should be reviewed to make sure that railroad crossings and other areas are easily accessible. The east side of Fuller, between Michigan Street and I-196, should be a high priority area for installation. Sidewalks should be regularly maintained, including prompt snow removal.

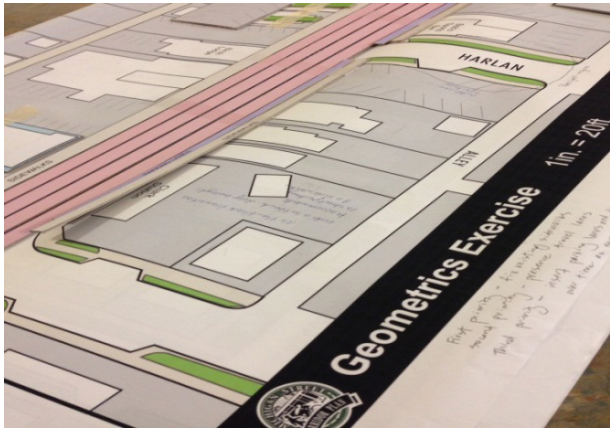
Fuller Ave., between Michigan and I-196

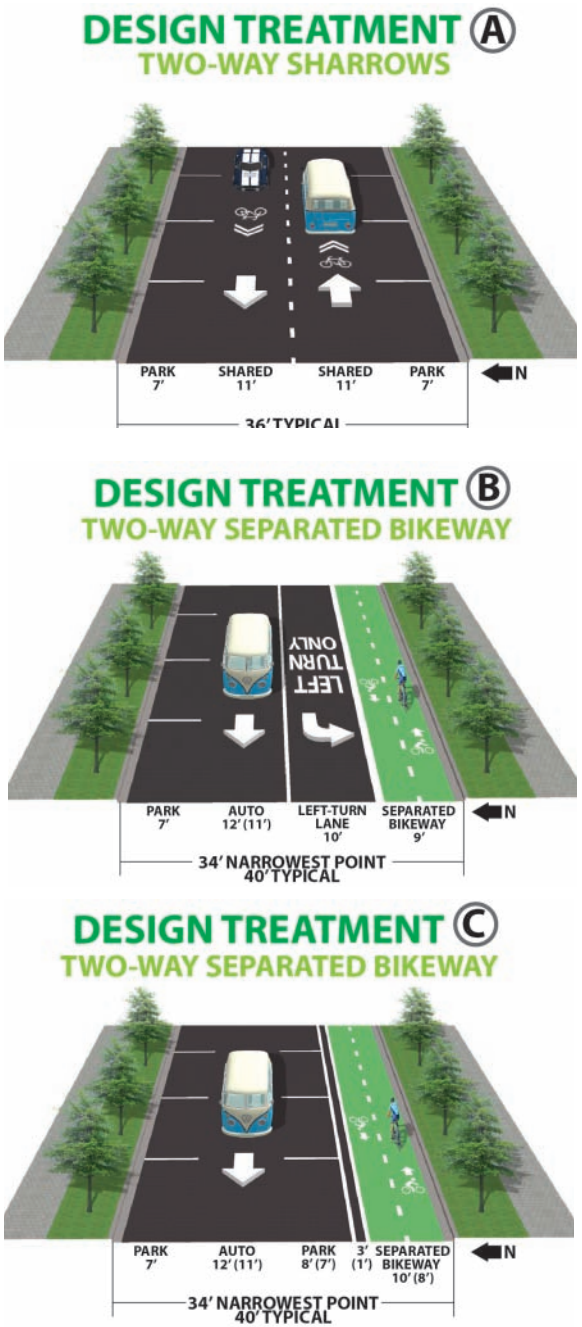
4.5 Non-Motorized Travel: Bicycles

Grand Rapids has a strong bicycle culture and an increasing number of bicyclists. One of the Plan's goals is to make bike travel a more attractive mode choice. Similar to pedestrian travel, conditions are not suitable for bicyclists along Michigan Street. Traffic volumes and speeds combined with the tight right-of-way (ROW) conditions, discourage bicycling for all but the most experienced bicyclists. In addition, the Michigan Street hill from Division Avenue to Coit can be intimidating even to skilled cyclists. During the plan process there was extensive discussion about the amount of space available along the Corridor for bicycle infrastructure. At a Community Forum, participants used scaled cardboard pieces to represent parking lots, travel lanes, on-street parking, sidewalks, and bike lanes. It became readily apparent that placing bike lanes on Michigan Street was not feasible due to limited right-of-way available and safety concerns.

Bicycles are a critical element of a comprehensive approach for a fully functioning transportation system. A number of students, researchers, employees, and residents use cycling as their primary travel mode to destinations along the Corridor. Several goals were established to push the conversation on how best to accommodate bicycles. These goals included:

- Complement the city's overall adopted bike plan map to determine routes.
- Develop a bike transportation system that will attract the highest volume of users (i.e. most casual bicyclists will be more comfortable on streets with lower volume, low speed traffic).
- Create a system that links neighborhoods and destinations together.
- Establish a network of bikeways that separates the bicyclists from pedestrians and improves the compatibility of bicyclists with motorists (where practical).





4.5.1. Lyon Separated Bikeway

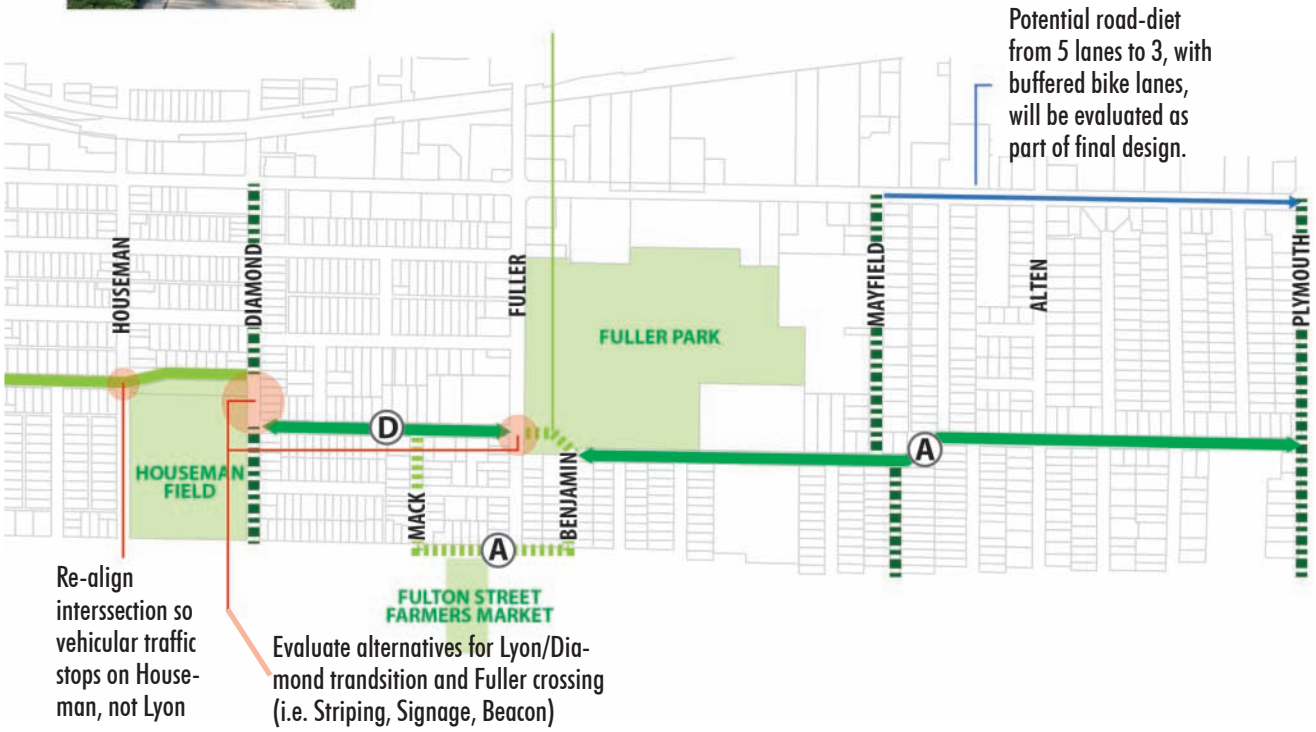
While bikes remain legal to use on Michigan Street, engagement with the community revealed that only expert bicyclists would be comfortable utilizing it as a route. Due to the concerns with ROW and safety on Michigan Street, a network approach to improve biking within the entire Corridor area was used. After several alternatives were studied the Steering Committee determined that a separated bikeway on Lyon Street was the best option for the Corridor. Lyon Street is a low-volume street with additional capacity that connects the Michigan Oaks, Midtown, and Heritage Hill neighborhoods to the Grand River. The street has a residential context with a good tree canopy, which makes for a greatly improved user experience over Michigan Street.

The Lyon Separated Bikeway could be located along the south side of Lyon Street between Division Avenue and Diamond Avenue. The bikeway would be buffered from parking and travel lanes by designated striping and could be identified by green paint throughout the entire segment and/or where the bikeway crosses intersections. The bikeway will allow for two-way bicycle traffic and will occupy eight feet of the ROW, allowing for two seven-foot on-street parking lanes and one 11-ft. travel lane. A bike signal system would be used at intersections. Traffic modeling of Lyon Street revealed that there would be minimal impact to automobile operations.

Figure 4-9. Lyon Separated Bikeway Plan – This graphic illustrates the Lyon Separated Bikeway plan and four different design treatments.

Due to ROW restrictions and steep slopes in other segments of Lyon Street, the Separated Bikeway will extend to the Grand River at its west terminus and Plymouth Avenue at its east terminus. These segments consist of both one- and two-way automobile traffic, dedicated bike lanes, and sharrows, depending on the condition and ROW available. The plan process produced design drawings, which provide additional detail for constructability, markings, signal changes, and other considerations. Those plans serve as Appendices to this summary.*

Widen existing path in Fuller park to create separate space for bicyclists and pedestrians



**As part of the GRForward process, the Central Campus Plan for GRPS is further evaluating Lyon Street for campus purposes. In addition, an upcoming Vital Streets Plan is expected to make additional recommendations on protected bicycle facilities*

Figure 4-10. Lyon Separated Bikeway Visualizations – These images illustrate different design treatments applied to Lyon Street.

4.5.2 Corridor Connections

Several north-south streets have been identified as potential bicycle infrastructure connections to Michigan Street (Fountain, Division, Coit, Barclay, Lafayette, Union (S of Michigan Street), Eastern, Diamond, Mayfield, and Plymouth). These streets could accommodate treatments similar to many of the east-west segments, but are also dependent on the condition and ROW available.

In addition, a bicycle greenway is proposed alongside the rail corridor that would connect the Michigan Street Corridor to Muskegon and Lowell. The rail corridor tunnels underneath the East Beltline and the I-196 Freeway. It is relatively uninterrupted with major street crossings (see Figure 4-11 Lyon Separated Bike Plan). This greenway could become a bike freeway and serve as a regional connector for individuals given its linkage to surrounding communities. The bikeway was discussed extensively in concept and some people imagined it eventually being able to serve as a light rail facility for commuters. Enhancements to this corridor will require coordination with railroad owners as this remains an active line.

The bottom of Michigan Hill connects to the bicycle and trail system along Monroe Avenue and the Grand River. Bicycle commuters residing in northern Kent County have begun to use the on-street bicycle facilities on Monroe and the recently constructed cycletrack from Guild to North Park Streets. The river trail system will connect from Ful-

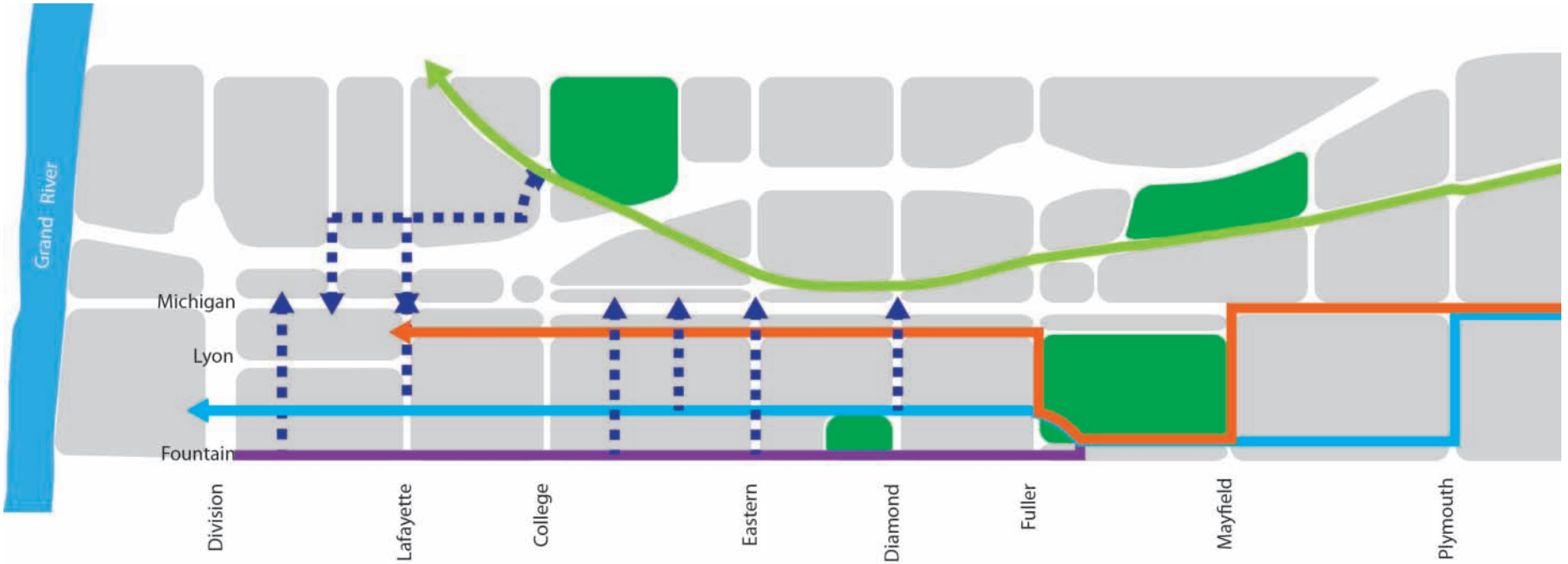


Figure 4-11. Lyon Separated Bike Facilities Plan – *This graphic shows proposed bicycle route enhancements.*

ton Street (S) to Leonard Street (N). Continued extensions of the trail system to the south and north will provide better access to the Downtown core and Michigan Street over time.

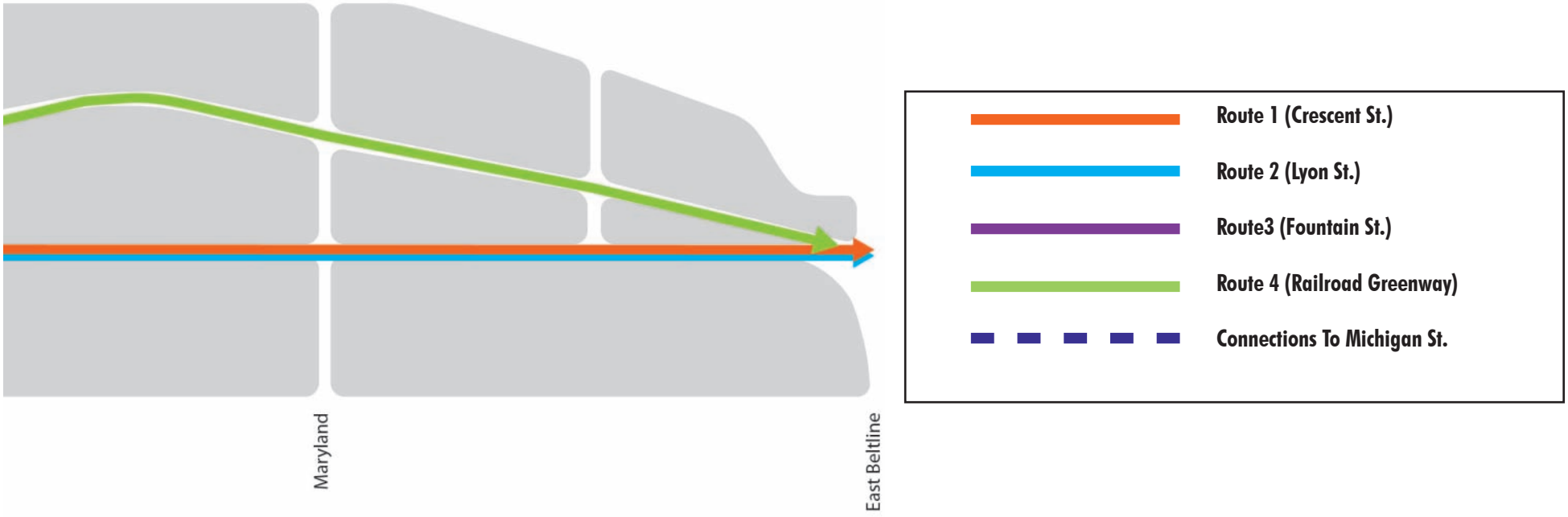
4.5.3 Improving the Bicycling Environment

Well-designed bicycle facilities are a significant component to establishing bicycling as a robust transportation mode. In order for bicycling to be a fully viable form of transportation in Grand Rapids, however, other programs and facilities are necessary to truly facilitate an increase in the number of daily trips by bicycle. These efforts will assist in improving the bicycle Level of Service (LOS) within the Michigan Street Corridor:

Bicycle Parking

Bicycle parking facilities can be classified into two broad categories: short-term and long-term.

- Short-term bicycle parking is usually in the form of bike racks found in business districts. At the present time, there is little bicycle parking adjacent to businesses on Michigan Street, however, businesses like Rylee's Ace Hardware have provided racks in convenient locations.
- Secure, long-term bicycle parking facilities provide protection against theft, vandalism, and weather, and reinforce the idea that biking is a convenient and accessible mode of transportation. Examples of these facilities include lock-



ers, monitored bicycle parking, restricted access bicycle parking, and personal storage. The anchor institutions have identified a strong need for long-term bicycle parking. Opportunities for shared secured bike parking, particularly near to the Lyon Street Separated Bikeway, should be explored.

Showers and Clothing Storage

Bicycle shower and clothing storage locker facilities are logical investments. The lack of shower and clothing storage locker facilities at destinations is a significant barrier for bicyclists. US Green Building Council (USGBC)'s Leadership in Energy and Environmental Design (LEED) standards provides points for the provision of such facilities; and countries such as Germany require all employers to install facilities for the convenience of their employees.

Bicycle repair station at Brewery Vivant.

Bicycle Repair Stations

Bicycle Repair Stations are places where bicyclists can work on their bicycles, and are typically placed in dense areas. One of the most significant barriers for potential bicyclists is the fear of getting a flat or having their bicycle need repair when far away from work or home. Bicycle repair stations offer a place to change a tire, tighten loose bicycle parts, and perform routine maintenance. The types of tools a Bicycle Repair Station might have on hand are: an air pump, screwdrivers, wrenches, and tire levers. Cables may be used to fasten the tools to minimize theft and vandalism. Brewery Vivant has installed a bicycle repair station on Cherry Street (see photo).

Bicycle Share

Bicycle Share Stations can be placed throughout the city to provide a way for employees, commuters, and residents to make short trips by bike instead of by car. Bicycle share programs have been effectively implemented worldwide. A bicycle can be checked out with a membership card that can be purchased online or with a credit card at a payment kiosk, and can be dropped off at any other bicycle share location.

Bicycle Loan Program

A fleet of lender bicycles available to employees or students to use as a commute alternative has been successful in larger cities and communities with a significant college population like Grand Rapids. Bicycles could be purchased new or obtained from police auctions, repaired, painted and engraved with ID numbers, and made available free of charge. Depending on demand, bicycles may be made available through reservations or on a rotating basis. The bicycles should be lower-end and heavy-duty. An employer's responsibilities would be limited to an annual maintenance inspection and repairs as necessary. The objective of the program is to encourage employees to try bicycling to work and short trips as an alternative, without making a major investment.

Bicycle Signs and Banners

One way to help provide encouragement for cycling is with bike route signage. Erecting placards on appropriate streets would let motorists know that bicyclists are also using the roadways. This low-cost improvement would go a long way towards raising the collective consciousness among Corridor residents and visitors.

Bicycle Maps and Online Tools

Bicycle Maps are extremely important to bicycle facility users. Maps in combination with bikeway signage can assist bicyclists with trip planning and are also important to

those who are using the bicycle system for the first time. The Greater Grand Rapids Bicycle Coalition provides a Bike Grand Rapids map that could be distributed to students and employees. The map is also available online.

Facilities Maintenance

The maintenance of bicycle facilities, such as clearing gravel and filling potholes, will improve the quality and safety of the facility for users. Well-maintained facilities will assist in advancing TDM goals as their good condition will encourage riding. As bicycle facilities are developed, the operations and maintenance costs associated with asset management for the new facility should be anticipated in the lifecycle cost of the new infrastructure

4.6 Transit

Enhanced transit facilities are absolutely essential to accommodate the upward trend in traffic and proposed land use changes within the Corridor. It is critical for the City, The Rapid, and anchor institutions to continue to collaborate on ways to improve transit service and amenities to meet the goal of increased transit use. Successful implementation of an aggressive transit program could result in transit shifting from the current mode share along the Michigan Street Corridor of one to two percent to 20 percent of trips by transit.

Currently, there is not a comprehensive, integrated transit approach to serve Michigan Street. If anchor institutions were able to consolidate their investments in transit operations, and even parking, with each other and The Rapid into a branded circulator route the corridor could see real progress toward defined mode share targets (see Section 4.3.1. Mode Share Targets). Participation from Spectrum Health is absolutely critical given its large number of workers. The benefits of an integrated system are numerous:

- The Rapid operates transit as its exclusive mission; with resources and staff expertise for planning and operations of transit service. It is also able to leverage Federal investments and collect fares, which can assist in defraying costs that private operators must spend for their own system.
- Transit routes could be optimized with greater utilization of transit infrastructure (buses) with a coordinated approach.
- Premium service, such as high-frequency routes and/or Bus Rapid Transit (BRT), could be provided free to students and employees with financial assistance from the institutions. Young talent values transit and is seeking out cities that prioritize it. Enhanced transit can serve as an attraction and retention tool.
- A branded system can be a partnership with the major employers, including naming rights and image.

Grand Valley State University serves as a model of what is possible with intentional actions to curb parking on its campus, provide enhanced services to its faculty and students, and reduce vehicle trips. The current Route 50, is a testament to the impacts of transit investment over time.

4.6.1 Current State

On an average day, almost 900 people daily get on and off Rapid buses along Michigan Street between Monroe and Plymouth (sometimes multiple times). Transit ridership has increased 11 percent in the last five years and 31 percent in the last 10 years. The Rapid provides services that include traditional bus, as well as park and ride services contracted by the City's Parking Services Department known as DASH. Spectrum Health has its own shuttle system, operating 18 shuttle buses with average daily ridership of 800 persons from commuter lots.

Five routes operate along Michigan Street:

- Route 11 Plainfield – operates primarily north-south, but runs along Michigan Street between Monroe Avenue and Lafayette Street, continuing north through the Creston business district.
- Route 13 Michigan/Fuller – one of the longest bus routes along Michigan Street, operating between Ottawa Avenue and Fuller Avenue, continuing north to 3 Mile and the veterans' facility.
- Route 14 East Fulton – operates primarily parallel to Michigan Street on Fulton Street, but runs along Michigan between Plymouth Avenue and Lakeside Drive.
- Route 19 Michigan/Fuller South – operates between Monroe Avenue to Fuller Avenue, continuing south through East Hills, Eastown, and Baxter to the Madison Area.
- Route 51 GVSU Health/Sciences/West DASH lot (a.k.a. DASH to the Hill) – operates between the GVSU lot and the Health Sciences building, along Michigan Street between US-131 and Lafayette Avenue.

The Rapid has instituted a number of improvements and special programs, including Next Bus technology and bike racks. The Rapid created a shuttle service for the Monroe North Business Association in December 2012. The route serves the DASH North lot and is a partnership between The Rapid, Downtown Grand Rapids, Inc., and the Parking Services Department. Service is funded through the Monroe North TIFA.

On August 25, 2014 the Silver Line Bus Rapid Transit (BRT) system opened to great fanfare as the first BRT system in Michigan. The route connects the three cities of Grand Rapids, Kentwood, and Wyoming. There are two stations that directly serve the Michigan Corridor: one at Ransom and Crescent, located next to Spectrum's employee entrance and Grand Rapids Community College,

and the other at Michigan Street and Bostwick, in front of Van Andel Institute and Michigan State University's College of Human Medicine. The position of the Corridor at the terminus of this system makes it a prime destination for regional transit users and provides precedence for expanding and enhancing transit from this point of access. Expansion of the system is possible with the Laker Line (Route 50) that is proposed to connect to Michigan Street and end at Lafayette Street, at GVSU's Cook-DeVos Center for Health Sciences.

4.6.2 Advancing Transit in the Corridor

A number of improvements and enhancements to the existing transit system would facilitate an improved transit Level of Service within the Michigan Street Corridor. The goal is to provide high quality, reliable service while also focusing on strengthening connections to existing and planned transit routes that serve the Grand Rapids region. Transit improvements should go hand-in-hand with pedestrian and bicycle improvements due to the interrelationship of these modes. Figure 4-12 illustrates where transit improvements are recommended.

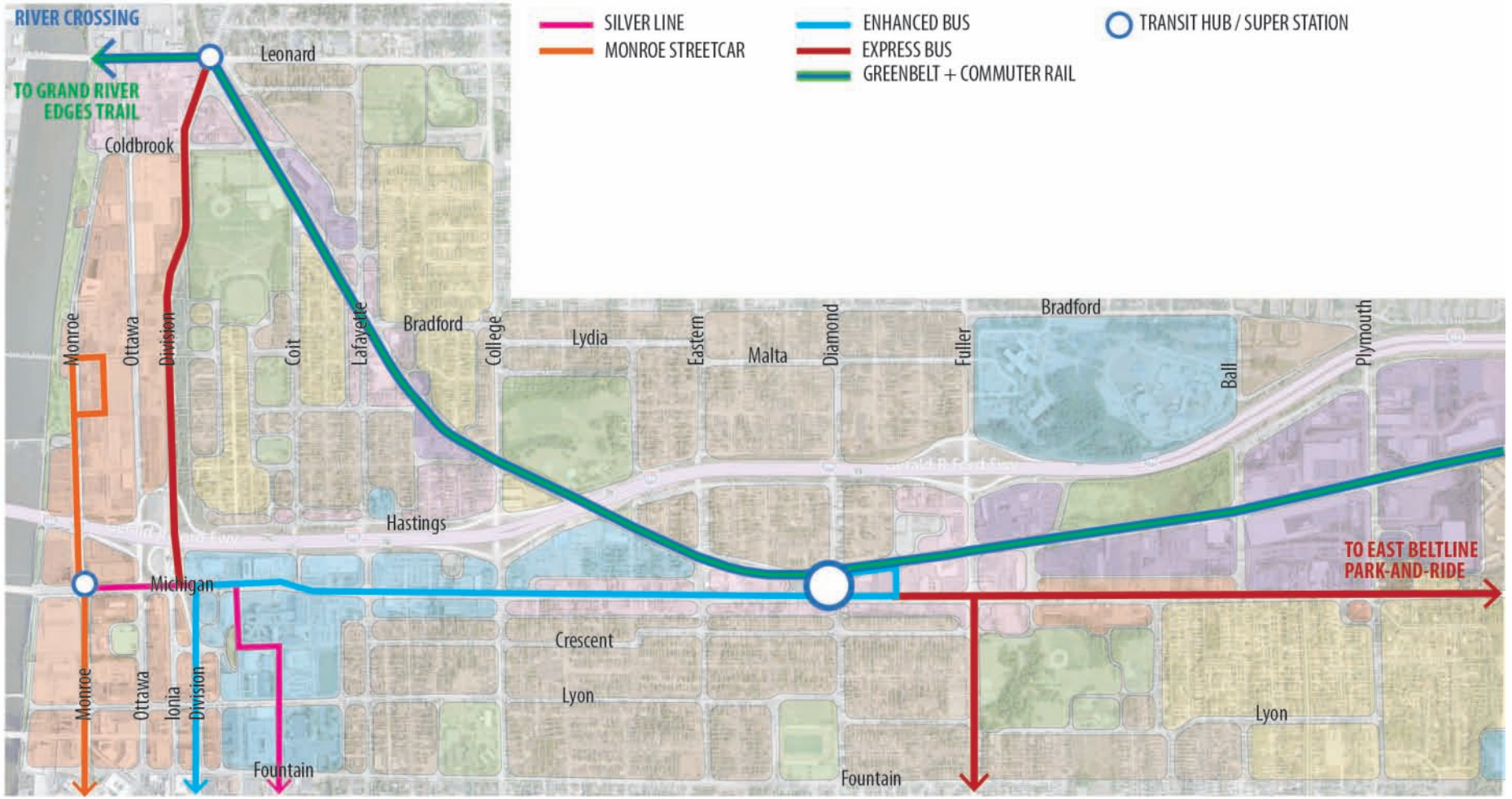


Figure 4-12. Transit Plan – *This map illustrates proposed improvements to transit within the Michigan Street Corridor area.*

Express Bus

The current system of bus routes serving the Michigan Street Corridor does not provide the level of service that is necessary to achieve an aggressive mode share change. At the present time, riders coming from the west (GVSU students and faculty) must transfer from the Route 50 line to travel up to the Cook-DeVos Center for Health Sciences. Eliminating the transfer and shifting the current express bus route to travel up Michigan to Lafayette Street would be the first step in providing enhanced services. An expansion of express bus service could continue to the east, to Plymouth, where there is presently no service.

A Michigan Street circulator with maximum 10-minute headways throughout the day, primarily on weekdays between 6:30 a.m. and 7:30 p.m., would accommodate shift workers and students. If the route extended from the western end of Michigan Street and extended east to Plymouth, it would create a three-mile long one-way route. A loop serving GRCC would add an additional mile. To maintain 10-minute headways, the route would require three vehicles to operate, plus one spare. Integrating the Silver Line BRT and Express Bus at the new Medical Mile station would expand system connectivity.

Branding of the system is important to attract new riders. Branding should extend through the whole realm of the service, from signage and furnishings, to vehicle paint scheme, to informational materials. As the circulator would be designed for short, local trips, travel time would be relatively short. Even so, Wi-Fi is an important amenity for many workers.

Enhanced Bus/Bus Rapid Transit.

This line would be a Phase II extension of the planned Laker Line BRT that will connect Grand Valley State University's Allendale Campus with their Pew Campus and other downtown locations. This system could be developed in conjunction with a park-and-ride station along Lake Michigan Drive for commuters arriving from the Lakeshore, at Plymouth on the existing Spectrum Health park-and-ride lots, and/or near the East Beltline MDOT park-and-ride lot to serve commuters arriving from the north and east (see Map 6-1). The Silver Line BRT provides service to commuters arriving from the south.

This system would be similar to the Silver Line, and could include stations instead of stops, pre-pay kiosks, and "real time" information (see sidebar). "Branded" vehicles with amenities could be used that would attract riders who might not choose to ride a traditional bus. New vehicles would greatly assist in identifying a new brand of service -- one that reflects a cleaner, greener, more urban corridor. Full 40-ft. transit vehicles are recommended for this service to accommodate the existing demand.

BRT systems typically have dedicated lanes to allow transit to move more freely. The tight Michigan Street right-of-way will make dedicated lanes a challenge, however, there is potential for dedicated transit lanes in some segments. One option could be a reversible "transit only" lane that goes in the same direction as peak hour traffic, while the transit vehicle going in the other direction shares lanes with other vehicles.

Monroe Streetcar

Plans for a streetcar on Monroe Avenue from Downtown Grand Rapids to the Monroe North neighborhood are currently being prepared under direction of The Rapid. This streetcar line could serve as a connection between several neighborhoods and destinations in the downtown area. The Silver Line BRT, and proposed express and enhanced bus service on Michigan Street, could connect with the Monroe Streetcar via the designation and development of a transit node at the Michigan/Monroe intersection.

Components of Enhanced Bus/Bus Rapid Transit (BRT) service:

- Defined stations
- Level boarding at high quality stations
- 60-ft. buses that have multiple doors, sleek styling, and onboard visual/automated next stop announcements
- Traffic signal priority for transit vehicles
- Frequent bidirectional service for a substantial part of weekday and weekend days
- Branded service through use of a distinct name, logo, color scheme, bus wrap, and set of visual identifiers
- Off-board fare payment
- "Real time" bus arrival information available at stations and through web/mobile apps on desktop computer or smartphone
- Wi-Fi on board
- Typical corridor length of five to 20 miles

The streetcar system could provide additional access to the Michigan Street Corridor for adjacent neighborhoods.

Commuter Rail

The Commuter Rail line would be a long-term system alternative to allow the current rail line serving the Michigan Street Corridor to be utilized for both passenger and freight transportation. This is the same line proposed as a bike greenway in the interim. The planned transit hub at the Michigan/Diamond intersection would provide a direct connection for commuting transit riders. The Commuter Rail line could terminate at its intersection with Plainfield Avenue in the Monroe North neighborhood, providing further connections to the overall transit system by linking to the planned express bus line.

Individual Methods

There are a number of methods to encourage voluntary behavior change in employees and students that can reinforce transit use, some of these include:

- Offering vanpools, carpools, rideshare and ride matching, and car-sharing.
- Employer subsidies for alternate mode use, such as free bus passes provided by Spectrum Health, and rebate programs that cost-share the savings of a parking space with the employee.
- Services such as a "guaranteed ride home" program.
- Live-near-work housing assistance programs that help pay for a down payment or rent to encourage employees to walk or bike from home.

Land Use Patterns

Chapter 2 Vision, and Chapter 3 Vibrant Places provide information regarding the desire to build transit-oriented development along the Corridor. Land use patterns that are focused on high-density mixed-use environments are supportive of transit and can assist in promoting ridership. This Plan supports that vision as policy, and the City of Grand Rapids Zoning Ordinance reinforces this view with development regulations. An integrated transportation-land use approach is essential for a sustainable and prosperous corridor.

4.7 Autos

Transportation infrastructure investments within the Michigan Street Corridor area, including the Gerald Ford Freeway I-196, have been substantial to accommodate ever-increasing volumes of vehicular traffic as growth and development have occurred along the Corridor and in Downtown. Understanding current and projected transportation needs was an important component of this Plan to be better able to evaluate existing conditions and future challenges. Projected growth provides the opportunity to anticipate what improvements will be needed when and where, to better leverage resources and optimize the entire transportation network.

4.7.1. Modeling Methodology

Part of the evaluation process tested the benefits of different alternative modes (non-auto) with computer modeling. Typical network and intersection models estimate the number of vehicles traveling along streets and through intersections today and in the future. Those models do not always comprehend the implications of different land use patterns and approaches that encourage more trips by walking, bicycle, or transit. The EPA's MXD (mixed-use) model was used for Michigan Street given the expressed vision of the corridor to be mixed-use and transit-oriented.

The MXD spreadsheet model was recently developed for the USEPA Office of Smart Growth. It estimates internal capture trips, walk trips, and transit trips through a spreadsheet tool. Internal capture rates within the Corridor calculated by the MXD spreadsheet are in the 10-15 percent range, which is significantly higher than for suburban areas because the model assumes that some daily trips are non-auto. The highest calculated capture rates are those with the best jobs-housing balance. After accounting for non-motorized trips, the remaining person trips are converted to vehicle trips and assigned to the network. The 2035 forecasted traffic volumes were then used as inputs to the MXD (Mixed Use Development) model. The results of the MXD model were then used as inputs for the Synchro analysis.

A 2008 Synchro model was obtained from the City of Grand Rapids and used as a base to develop the 2035 design year Do-Nothing (DN) Synchro model during the AM and PM peak periods. The "Do-Nothing" condition takes

Modeling for the Michigan Corridor

Modeling begins with the regional travel demand model developed and maintained by the Grand Valley Metropolitan Council. The refined subarea model was then developed by the project team, which included three stages:

1. Adding model detail.
2. Moving from a daily 2009 model to 2011 morning and afternoon peak hour models.
3. Making model enhancements to account for the effects of mixed-use development – especially through estimating the number of non-motorized trips in dense, mixed-use areas.

The subarea model was then used to provide a base for the Synchro modeling, with additional model detail included:

- Transportation Analysis Zones (TAZs)
- Network detail (streets, one-way coding, turn restrictions at Ottawa off-ramp)
- Trip generation enhancements (medical employment, community college employment)

Two iterations of the model were then performed to convert the person trips back to auto trips for traffic evaluation with the MXD spreadsheet.

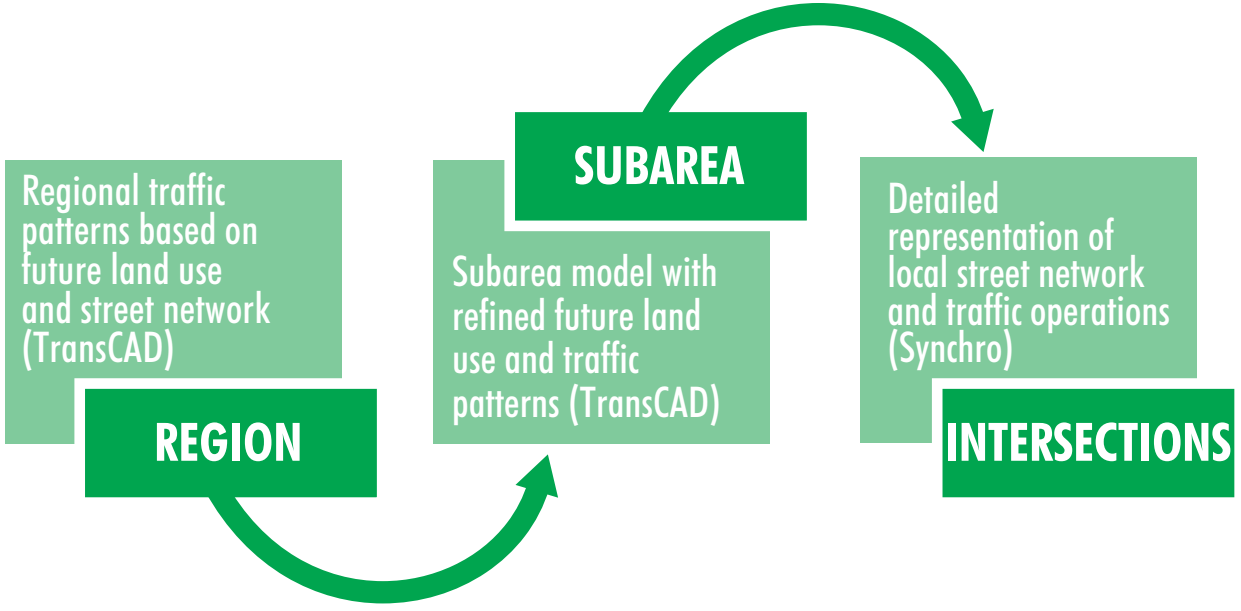


Figure 4-13. Modeling Methodology – *This graphic illustrates the methodology used to model existing and future traffic operations within the Michigan Street Corridor area. Source: Smart Mobility, Inc.*

the existing network (plus any committed projects) and adds projected 2035 traffic to it, thus creating a condition if "nothing is done"– no improvements beyond those already committed to be built. The 2035 DN Synchro model was then used as a base to develop the Build Alternatives.

4.7.2 Modeling Findings

The mode share targets described in Section 4.3.1 of this Chapter were developed based on the desire to maintain mobility within the corridor and gain capacity through enhanced pedestrian, bicycle, and transit modes (non-auto). Still, even with achievement of the audacious mode share target for each mode, it was found that the corridor would benefit from physical improvements for motor vehicles over time.

Thirty-seven intersections were evaluated as part of the modeling process. As intersections are where the greatest traffic challenges arise, the findings have been summarized in Figure 4-14 . Complete findings of the models can be obtained from the City of Grand Rapids Traffic Safety Department. Recall that Level of Service (LOS) ratings are like school grades – with "E" and "F" equating to failure, or extensive congestion. Many of the intersections that received LOS E or LOS F ratings are generally identified as LOS C or LOS D today.

Figure 4-14. PM Peak Intersection Findings for 2035 – *This table reflects various turning movements at intersections along the Michigan Street Corridor (e.g. "EB/WB" stands for Eastbound or Westbound; "L/R" is left or right; and "T" is through) and the number of seconds that would be spent waiting at each intersection as "delay ".*

FINDINGS (FAILING TURNING MOVEMENTS – PM PEAK HOUR)

2035 No- Build PM Peak Hour LOS

Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Over All LOS	Avg. Control Delay[1]
Michigan and Monroe	F	F		E	C	C	C	D		F	D	D	E	65.8
Michigan and Ionia	F	A	-	-	D	F	C	F	C	-	-	-	F	166.5
Michigan and Lafayette	C	D		C	E		C	D		C	D	C	D	48.8
Michigan and College	F	B		C	E		C	C		F	C	C	D	47.1
Michigan and Fuller	D	D		C	D		E	D		D	D		D	46.2
Lyon and Division	F	-	A	B	C		B	F	-	-	D		E	64.6
Fountain and Division	E			-	-	-	B	D	-	C	C		D	41.7
Fulton-Fuller	C	E		C	D	C	B	D		E	B		D	40.8

[1] Based on Synchro 8 HCM 2000 (Signalized) Report

4.7.3 Future Modeling

Typically, a developer must prepare a traffic impact study for projects over a certain threshold. Consistent with the Plan's focus on all modes of transportation, the traffic impact study should be repackaged as a transportation impact study. The distinction is that this new type of study will require an analysis of not just traffic, but also walking, bicycling and transit potential. Such a study would describe the current situation for all types of travel. The study could then outline improvements that would improve or greatly improve travel for all users. In some cases, a slightly lower vehicle level of service (a D or possibly an E for some movements) may be acceptable if substantial upgrades were being made that could potentially decrease the auto use that would otherwise be expected.

Such improvements could include wider sidewalks, sidewalk amenities, better pedestrian crossings or signals, pedestrian refuge islands, and bicycle parking. Employers could demonstrate a reduction of their traffic impact through "trip planning" that includes programs such as priority parking for carpools, or provision of transit passes and/or bonuses to those that carpool or do not drive to work (much less costly to the employer than building on-site parking). Employers could also commit to variable

shift times and other methods to reduce their impact during the street system's peak periods. The TDM Coordinator should coordinate with the city's traffic engineer on these commitments, which could be linked to the development approval.

4.7.4 Improving Vehicular Connectivity and Mobility

Various alternatives for Michigan Street at the identified intersections were assessed and analyzed. The Corridor Plan Steering Committee and the community were asked to provide comment and share concerns on each potential alternative. Alternatives were then rated on the benefit that they would add to reduce automobile congestion in the corridor as opposed to cost (see Figure 4-15 for Cost-Benefit Comparison). Next, a package of corridor solutions was developed to form a comprehensive approach to reduce auto congestion by distributing traffic differently than today. The rows in grey were dropped from consideration due to their low benefit.

The preferred alternatives were then packaged in a series of implementation phases. The phases were determined based on cost, potential benefit to ease congestion, and likelihood of implementation. Implementation of each alternative may be dependent upon the timeline of newly proposed projects and development plans.

In addition, given the timeline for major improvements to progress it will be important to continue community conversations about proposed changes to the motorized transportation system to insure that the intent and vision of prior planning efforts and the guiding principles of this corridor plan are carried forward in an appropriate manner.

Alternative	Benefit	Cost
Alternative 1 College to 2-way (Fulton to Fountain)	LOW	LOW
Alternative 2a Reconfigure Ottawa Ramps; Dual Left at Michigan	HIGH	HIGH
Alternative 2b Complete Redesign of Interchange	VERY HIGH	VERY HIGH
Alternative 3a Dual-Left EB (PM Peak Hour Only) at Michigan/Fuller	HIGH	MODERATE
Alternative 3b Dual-Left EB (Permanent) at Michigan/College	HIGH	HIGH
Alternative 4 Convert Michigan to 3-lanes with Bike Lanes (East of Mayfield)	LOW-MODERATE	VERY LOW
Alternative 5 Upgrade Hastings to 2-Way Collector with Intersection Improvements at College	MODERATE	MODERATE
Alternative 6 Lyon 2-Way Separated Bikeway	HIGH	MODERATE

Figure 4-15. Cost-Benefit Comparison of Modifications – *This table represents the Cost-Benefit of various approaches to reduce vehicular congestion on Michigan Street. Consideration of benefits included improved function of the corridor and to other modes. For example, the Lyon bikeway does not provide a substantial benefit to cars, but would be of significant benefit to cyclists.*

Phase 1
Michigan/Ottawa Intersection (Alternative #2A)

This preferred alternative proposes expansion of I-196 eastbound (EB) off-ramps at the Michigan/Ottawa intersection from one lane to three lanes with direct access onto eastbound (EB) Michigan Street by providing dual south-bound (SB) left-turn lanes (a move previously allowed with the Fix on 196). With the dual SB left-turn lanes, two receiving lanes are needed on the EB Michigan Street leg between Ottawa and Ionia Avenue.

This interchange has a lot of potential to reduce congestion at the Michigan/College intersection. It was observed through Synchro analysis that the direct access to EB Michigan Street from the I-196 EB off-ramp resulted in an approximate 20 percent traffic diversion from the Michigan/College intersection.

Dual SBLs at the Ottawa Avenue/Michigan Street intersection are anticipated to improve level of service for a limited period, allowing the City and MDOT to develop and implement a longer-term solution for the I-196/Ottawa/Ionia interchange area. Additional opportunities to access the Ottawa/Ionia freeway on-ramps from streets other than Michigan Street, such as Division Avenue, would also help to better connect the street network and provide alternate routes. It was determined that any interchange reconfiguration beyond the dual left (Ottawa to Michigan) improvements would need to be studied further. As such, the City is moving forward, partnering with MDOT, Grand Valley Metro Council, and Grand Valley State University to analyze the interchange and produce a final recommendation for improvements.

Michigan/College Intersection (Alternatives #3A and 3B)

Several alternatives were developed that would modify the College Avenue and Michigan Street intersection by adding capacity, providing additional green time, and modifying the signal phasing. Several improvement options were analyzed and dropped due to excessive right-of-way requirements that would involve street widening, lack of a substantial benefit, and/or lack of community support, such as a roundabout or a continuous flow intersection. These preferred alternatives may not be needed depending on the success of other interventions. The two preferred alternatives are:

Disappearing Left with Split Phase (Alternative 3A):
This option converts one EB through-lane to a second EB left turn lane during peak hour periods, and restricts the westbound (WB) left. Geometric alignment issues would not allow both a dual left from EB Michigan to NB College and a left from WB Michigan to SB College. This alternative includes the possible addition of a WB right turn lane and a second SB right turn lane. Right-of-Way (ROW) will be required from the NE and NW quadrants. Even though this alternative assists in lower ROW acquisitions and achieving LOS D, it was observed that it would immediately create confusion for drivers, especially for EB left-turn lane turning traffic because dual left-turns will be activated during peak hours only. Driver behavior typically adjusts over time, as people become familiar with the condition.

Dual Protected Lefts (Alternative 3B):
This long-term alternative would add a second EBL turn with protected phasing. This option includes the addition of a WB right turn lane and a second SB right turn bay. ROW will be required from the NW and NE quadrants and the SW quadrant, which will impact sidewalk width and business operations for Bagel Beanery (NW quadrant) and possibly the dry cleaners (SW quadrant). The proposed changes (along with improvements to the Hastings/College intersection) will result in all turning movements operating at LOS D or better through 2035. However, this alternative requires substantially greater ROW acquisition and construction costs than Alternative 3A; and widening would further impair the pedestrian environment at a very challenging location.

Hastings Street initial concept.

Phase 2
College/Hastings Intersection (Alternative #5)

This preferred alternative converts Hastings Street, west of College Avenue NW, from one-way to two-way by moving the street intersection further to the north. As a result, it would provide direct access to College and better connect the Belknap area into the street grid due to limited access points constrained by I-196, topography, and a rail line.

The intent of this recommendation was to reduce congestion at the College Avenue and Michigan Street intersection by providing an alternate route by knitting together an additional piece of street grid. A new segment of Hastings Street, as a connection further to the north by the railroad bridge, would tie directly to College Avenue with a new signalized intersection that would allow two-way traffic. The signal would stop SB College traffic to allow Hastings traffic onto College Avenue, then onto I-196. It would also provide another crossing away from the interchange to connect to the east side of College and Highland Park. It is assumed that this alternative route will reduce the eastbound left turning traffic at the College Avenue and Michigan Street intersection, thus reducing congestion to I-196.

The traffic impacts associated with Grand Valley State University's land acquisition north of I-196 is part of further evaluation to determine the most appropriate access location. This alternative may have acquisition costs and higher constructability costs. Even with these factors, this is a prudent alternative to consider because the longer-term improvements will be needed to address failing turning movements at the Michigan/College intersection.

Lyon 2-Way Separated Bikeway (Alternative #6)

Please refer to Section 4.5.1 for information on the Lyon Bikeway.

Phase 3
Ottawa/Ionia Interchange (Alternative #2B)

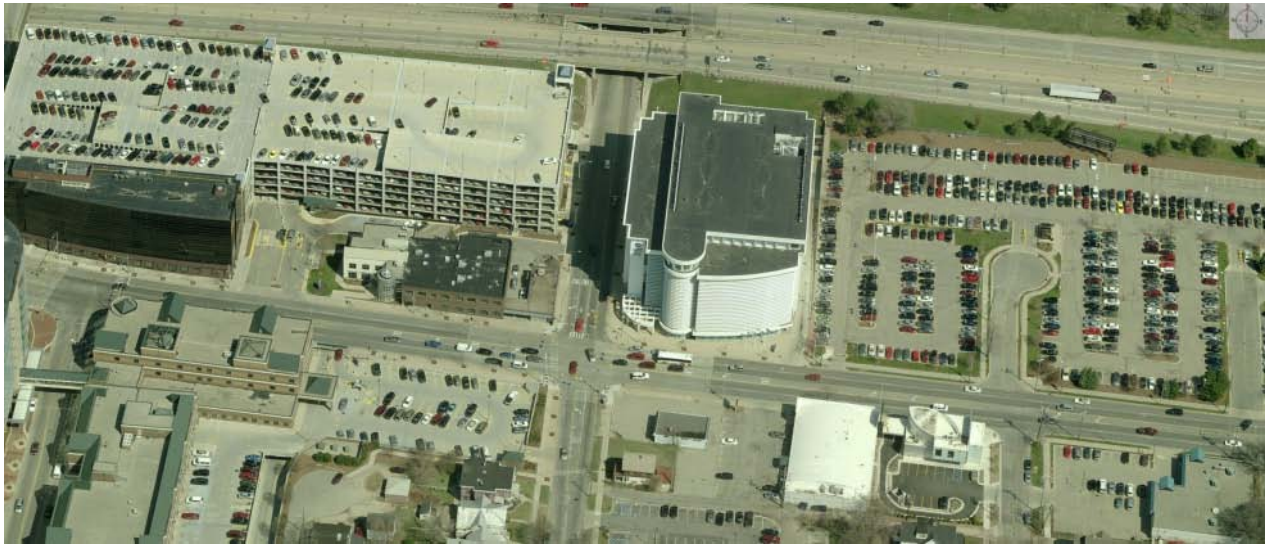
Long-term reconfiguration of the Ottawa/Ionia interchange will focus on creating easier movements for vehicles to enter and exit the expressway. The Michigan Street Corridor and the Monroe North District are expected to grow continually through institutional investment, new business, and new housing. This reconfiguration should focus on creating better connections from the expressway to the neighborhoods, which could include evaluation of one-way streets. This reconfiguration will also reduce congestion throughout the entire network, especially at the Michigan/College intersection. Additional study to fully evaluate interchange and intersection operations is recommended.

4.8 Parking

At present, parking along the Michigan Street Corridor is largely a private resource. There is no publicly managed off-street parking in the Michigan Street Corridor. On-street parking is not allowed in the Downtown and "Hill" area of Michigan Street, nor on the majority of cross streets in the immediate vicinity. While on-street parking is permitted in segments further to the east, this parking is generally unmetered given the availability of free off-street lots. Currently, employees, students, and other affiliates of many institutions utilize peripheral streets in residential neighborhoods for parking. The Grand Rapids Parking Commission is implementing a residential permit parking program in the Belknap Lookout neighborhood to attempt to mitigate "spill over" parking effects occurring in the residential area north of I-196 near the major institutions. This is the first residential parking permit program in the city.

While an abundance of parking exists along the Corridor – primarily in structured ramps – there is little to no coordinated parking management. Each institution provides parking relative to their own estimated parking needs and sets pricing according to their own internal policies and practices. While allowed by zoning, the institutions do not generally participate in shared parking arrangements. While some institutions contract for DASH or independent shuttle bus service from lots outside the heart of the Corridor, this, too, is generally done in isolation.

There is much common ground however. Leaders from the institutions agreed that building parking is expensive and a cost most would like to avoid to the maximum extent feasible (while remaining accessible, operational, and competitive). Those leaders acknowledge that land is valuable and demand for its active use (vs. vehicle storage) will



continue to grow in the future. Increasing traffic associated with continued growth in vehicular trips (in turn associated with parking provision and management) is a significant concern. Finally, all have a vested interest in, and demonstrated commitment to, the long-term success and sustainability of the Michigan Street Corridor – not only with regard to traffic and parking -- but also with a desire to create a great place that is an attractive, accessible destination.

An additional parking challenge exists on the east end of the Corridor. The manufacturing industries located in Oak Industrial Park have cited the need for land to grow their businesses. Valuable property that could serve business expansion needs is presently being utilized for employee and customer parking. A thoughtful parking approach that would allow for shared parking areas and enhanced transit services would assist in alleviating the current constraints that are limiting growth opportunities.

4.8.1 Parking Management

Given the large volume of vehicles that travel to and through the corridor daily, it is important to focus efforts on the single-occupancy vehicle drivers that frequent it. Students and employees are the best groups to target new parking strategies due to the ability of the Rapid, City of Grand Rapids Parking Services and others to partner with anchor institutions. The needs of the Michigan Street Corridor have grown such that individualized approaches will not be nearly as effective as a collective approach to meet growing parking demands.

Regional solutions, such as park and ride lots, can provide the opportunity for multiple users to park closer to home and without bringing their vehicle to Michigan Street. The Silver Line BRT provides service from south of Grand Rapids up to Michigan and Bostwick. A proposed lot at Lake Michigan Drive and Maynard by GVSU would provide access from the lakeshore along the Route 50/proposed Laker Line BRT. The Spectrum Health parking lots near Plymouth provide a parking resource at the west end of the Michigan corridor.

There are a number of strategies that can be employed to improve parking conditions within the Michigan Street Corridor area. These strategies are focused on the development of new policies that will manage parking demand and supply more efficiently.

Explore creation of a Parking Management District

The high concentration of employment and service/visitor/student activity in the Medical Mile, and the presence of several major stakeholders, makes collaboration important. This includes the employers, institutions, The Rapid, Downtown Grand Rapids, Inc. (DGRI), and the City of Grand Rapids. A collaborative working group to share data and strategies would be a very good first step in coordinating parking approaches. A Parking Management District (PMD) is possible on Michigan Street because there is a strong need to better manage the entirety of the transportation system so that future growth and development in the Corridor can be facilitated. Common concerns regarding high land costs and the financial cost of parking that competes with core institutional missions can draw together new and exciting partnerships. Grand Rapids has the opportunity to be a national leader in demonstrating the effectiveness of collaborative parking management.

Parking Requirements

Incentives, such as reduced parking requirements, for developments that put in place programs to reduce parking demand should be utilized. These may include offering employees transit passes, charging for parking, or giving stipends for those that carpool, walk, or bike to work.

Priority Parking

The most convenient spaces could be reserved for carpool vehicles and vehicles that use electric, natural gas, or hybrid power.

Reform Pricing and Permits

Appropriately pricing parking and strategically managing employee and visitor permits is a good first step to determining the true unmet need for parking after market-based management is applied. The continued high demand

for "front door" parking indicates that parking pricing is well below demand-management levels. Employers/institutions can contemplate pricing structures that would allow the user to pay based on frequency of use in order to equalize the opportunity for alternative commute modes.

Shared Facilities

The use of shared remote lots, shuttle services, and/or enhanced transit can help alleviate parking stress for near-in areas for the institutions and industries. Given that parking structures have a finite life cycle, opportunities should be sought to consolidate approaches between the various employers to address parking supply. Within the business district, numerous single-purpose lots could be used and/or managed by several businesses with differing business hours.

Provide On-Street Parking

New development projects have the ability to add on-street parking in front of mixed-use structures by increasing the building setback along the roadway. This approach provides visible parking for customers and visitors while at the same time buffering pedestrians from moving traffic.

4.9 Objectives and Policies

The following objectives and policies summarize what needs to be done to achieve the plan recommendations presented on the preceding pages so that the Michigan Street Corridor can effectively balance transportation modes. It should be noted that additional objectives are provided in other chapters pertaining to vibrant places and, particularly, quality of life that also contribute to a more effective transportation system.

Guiding Principle: Create a transportation system that is accessible, interconnected, and multimodal.

Objective 4.1: Achieve aggressive mode share targets before 2035

1. 12 percent of all trips will be by walking.
2. 5 percent of all trips will be by bicycling.
3. 20 percent of all trips will be by transit.
4. 20 percent of all trips will be by carpool or rideshare.
5. 45 percent of all trips will be by single occupancy vehicle.

Objective 4.2: Change traffic impact studies to transportation impact evaluations

Guiding Principle: Safely and efficiently move goods and people of all ages and abilities through the Corridor, with a particular focus on pedestrian safety.

Objective 4.3: Pedestrians will experience Level of Service (LOS) A

1. Realign existing ramps so that they are perpendicular with each crossing, where the sidewalk alignment allows.
2. Reconstruct curb radii to be no greater than 10-15 feet, on secondary streets.
3. Use enhanced color and color crosswalk markings where feasible
4. Reconstruct key crosswalks with special paving treatment/materials.
5. Install curb planters with street trees and under-story plantings.
6. Install low-impact design (LID) treatments (infiltration planters) intermittently.
7. Install pedestrian amenities and seating areas to provide "breaks" in sidewalk.
8. Install public art that could provide landmarks and enhance wayfinding.
9. Install audible pedestrian signals or count-down signals at identified intersections along Michigan Street (for example Ottawa, Ionia, Barclay, Coit, Lafayette, and College) and identify intersections for future pedestrian signals.
10. Avoid the addition of dedicated right hand turn lanes wherever feasible.

Also see Chapter 5 recommendations

Objective 4.4: Bicyclists will experience LOS B

1. Install Lyon Bikeway infrastructure, wayfinding, and amenities on Lyon Street and designated north-south connections.
2. Explore the creation of a shared-use path along the existing railroad.
3. Explore a conversion of Michigan Street from five lanes to three lanes east of Plymouth, where traffic volumes do not require five lanes.
4. Provide secure bike parking facilities.
5. Provide additional bicycle "infrastructure," such as repair stations and showers.
6. Develop a bike share or bike loan program.
7. Provide bike route information and wayfinding.

Also see Chapter 5 recommendations

Objective 4.5: Transit riders will experience LOS B

1. Expand express bus service to travel along Michigan Street, to Michigan/Lafayette (at a minimum).
2. Provide Bus Rapid Transit (BRT) from Monroe to Plymouth, connecting to the Silver Line and as part of the proposed Laker Line or as an extension of the Laker Line.
3. Offer vanpools, carpools, rideshare and ride matching, and car-sharing.
4. Provide employer subsidies for alternate mode use, such as free bus passes, and rebate programs that cost-share the savings of a parking space with the employee.
5. Implement a "guaranteed ride home" program.

Also see Chapter 5 recommendations

Objective 4.6: Automobile drivers and passengers will experience LOS C or D

1. **Ottawa/Ionia Reconfiguration**
   a. Expand I-196 off-ramps from one to three lanes.
   b. Modify intersection signal to allow access to EB Michigan Street via dual SB left-turns.
   c. Prepare Access Justification Report (AJR) to determine reconfiguration options.
   d. Reconstruct Ottawa/Ionia interchange.
2. **Hastings Reconfiguration**
   a. Acquire right-of-way along Hastings or properties by the railroad tracks.
   b. Reconfigure Hastings/College intersection to allow for two-way traffic, possibly with a new street

Also see Chapter 5 recommendations for Hastings linear park

3. **Michigan/College Intersection Reconfiguration***
   a. Modify intersection signal to allow "peak-hour only" dual EB left-turns.
   b. Acquire right-of-way at NW and NE quadrants for right-turn bays.
   c. Construct right-turn bays at NW and NE quadrants.
   d. Acquire additional right-of-way for permanent EB dual left-turns.
   e. Convert "peak-hour only" dual EB left-turn to permanent dual EB left-turns.

** These recommendations are tentative solutions, and may not be needed depending upon the success of other interventions. Consideration must be given to pedestrian impacts.*

Guiding Principle: Establish partnerships that will seek to plan, fund, design, construct, maintain, and operate efficient systems.

Objective 4.7: Implement Transportation Demand Management strategies (TDM)

1. Establish a Transportation Management Association
   a. Determine the organizational structure and desired outcomes.
   b. Define the service area and services.
   c. Develop a funding structure.
   d. If necessary, receive legislative authorization.
   e. Develop work plan.

2. Explore the creation of a Parking Management District
   a. Determine organizational structure, desired outcomes, and funding.
   b. Define and establish authority.
   c. Develop initial and long-term work plan.
      i. Establish baseline parking supply and demand
      ii. Reform parking pricing
      iii. Coordinate with other TDM strategies

3. Pursue transit solutions
   a. Establish partnerships with institutions.
   b. Consolidate shuttle operations into a branded "choice-rider" service.
   c. Implement an "eco-pass."

4. Encourage live-near-work housing assistance programs that help pay for a down payment or rent to encourage employees to walk or bike from home.
   a. Explore employer "supply side" opportunities and strategies.
   b. Expand and encourage employee housing support.
   c. Pursue initial pilot projects

Guiding Principle: Improve the identity of the corridor as a "place"

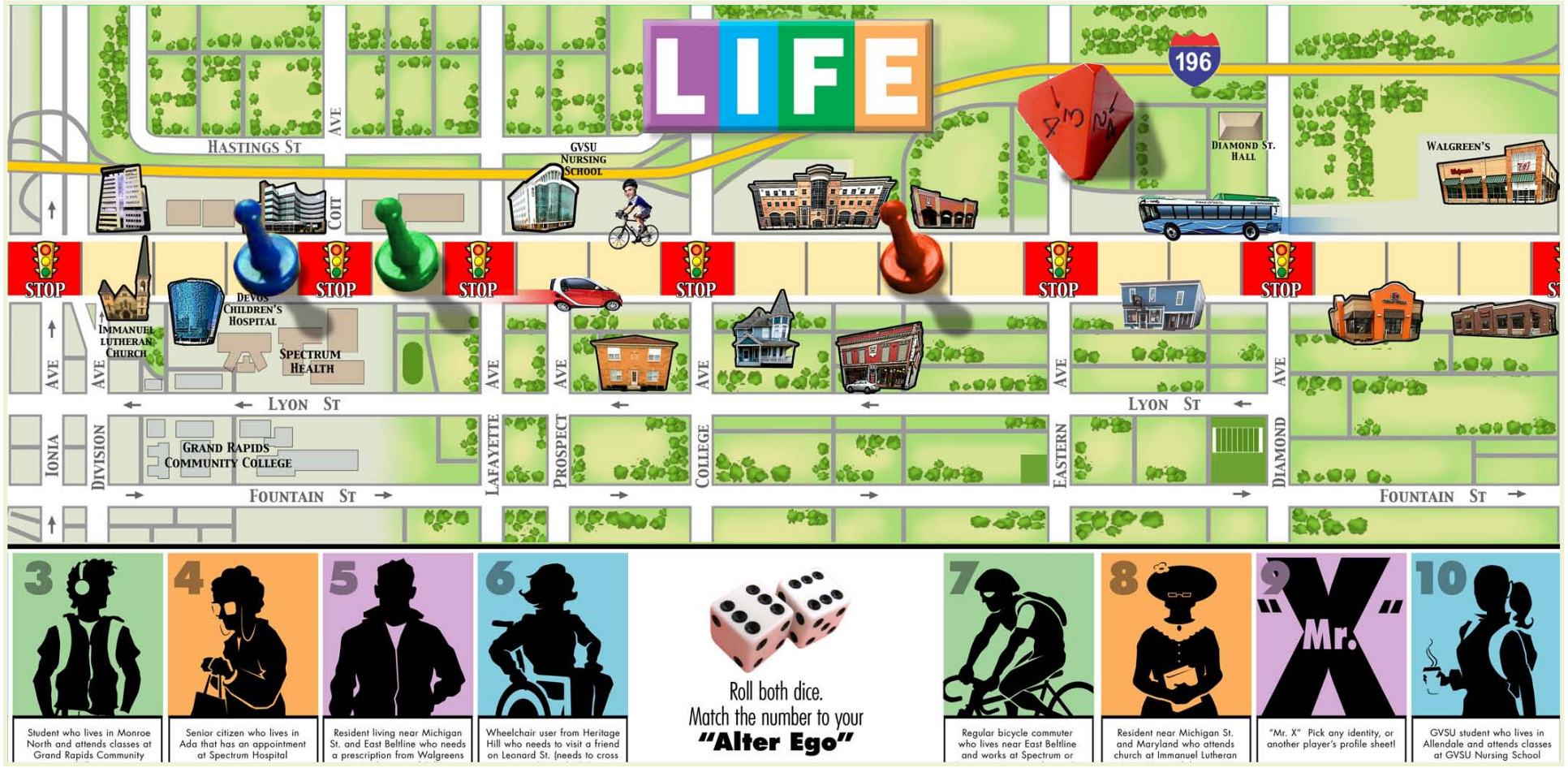
Objective 4.8: Recognize redevelopment projects as opportunities to improve the public realm

1. Provide on-street parking with new projects to buffer pedestrians from travel lanes, where appropriate.

2. Encourage windows and outdoor cafés facing Michigan Street.

3. Utilize access management techniques to consolidate curb cuts as redevelopment occurs to facilitate the construction of an intermittent median from Diamond to Fuller.

4. Develop an identity for the corridor at major gateway intersections.



Chapter 5: Quality of Life

5.1 Introduction

Community sustainability revolves around creating a strong economy, caring for our natural and human habitat, and providing equitable opportunities for people to engage in civic life. Land use and transportation decisions have a direct impact on the movement of goods and services, as well as accessibility and mobility. Decisions can degrade or improve the natural and built environments; influencing daily movement which, in turn, affects human health. The way in which our community is designed can enliven a corridor and create a people-focused place, rather than one dominated by automobiles.

Figure 5-1 Sustainability Concepts

Social	Environmental	Economic
Health and Well-Being	Transportation	Health Care Costs
Community Connectedness	Land Use	Access to Goods and Services
Social Inclusion	Placemaking	Talent Attraction and Retention
Safety	Green Infrastructure	Property Values

A general framework for sustainability links together two of the 2002 Master Plan and Green Grand Rapids Plan themes of A City that Enriches our Lives and a City in Balance with Nature. These themes bring together the social, environmental, and economic considerations of our actions in the built environment. Ultimately, the goal of sustainability is to enhance people's well-being while not compromising the ability of future generations to meet their own needs.

The compact development pattern desired (see Chapter 3 Vibrant Places) and supported by multi-modal transportation alternatives (see Chapter 4 Transportation Systems) can help meet sustainability goals, decrease energy use, reduce greenhouse gas emissions, conserve land and water resources, and aid in the creation of unique and accessible communities. A balanced and integrated approach is therefore necessary to meld together land use and transportation aspects of the built environment with design

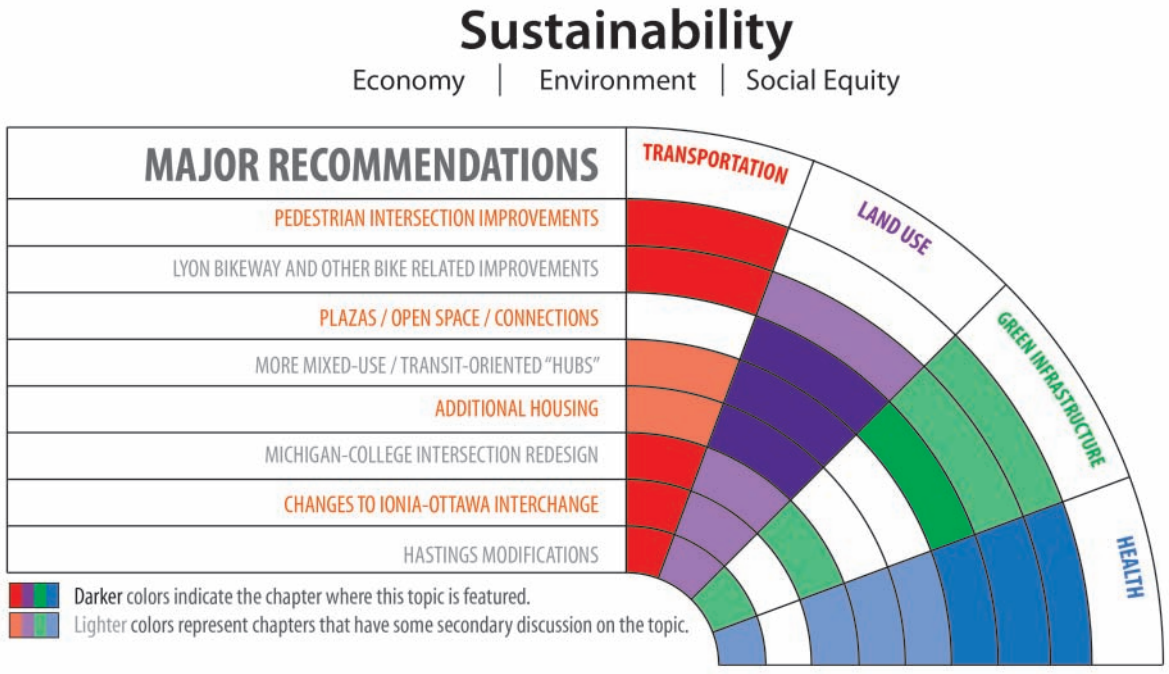


Figure 5-2 Intersection of Physical Improvements with Topic Areas

considerations to meet the needs of people and businesses, as well as the natural environment. Influencing aspects within the Corridor include:

- Active transportation infrastructure to encourage bicyclist and pedestrian activity
- Access to health care services and fresh food
- Educational institutions that increase awareness
- A more balanced mix of housing and jobs to reduce traffic demands
- Housing variety to address the needs of, and attract, a diverse community
- Public art that enriches the cultural environment
- Gathering places that bring people together to socialize
- Parks and recreational amenities that provide connectivity and greenspace
- Trees and green infrastructure to provide shade, improve air and water quality, and connections to nature

Major plan recommendations for built environment improvements are identified in Figure 5.2. This Chapter explains the public health and green infrastructure considerations that should be applied to the Michigan Street Corridor.

5.2 Community Health

An often overlooked aspect of community health is the relationship that land use and transportation design have on individual health. The physical design of a community is a major factor in whether people will walk or bicycle more frequently, not just for recreation, but as a more frequent travel choice. Several of the social and behavioral determinants of health shown in Figure 5-3 cannot be influenced by the physical environment; however recommendations in this plan do address some key determinants.

Figure 5-3. General Determinants of Health and Well Being – *This graphic illustrates indicators for health and well-being – the items that are highlighted are focused on in more detail within this chapter. . Source:Adapted from: R. Bhatia, Health Impact Assessment: A Guide for Practice. Human Impact Partners, Oakland, Cal., 2011.*

Determinants of health and well-being, in fact, provide direct correlations to the concepts of social and economic sustainability with a community when the environment (land use and transportation) becomes modified:

- Social inclusion is possible when all members of society have access to multiple modes of transportation, which allows a user to make choices based on their abilities and constraints, as well as the distance, purpose and requirements of their trip.
- Physical health is improved for users that can achieve exercise as part of their regularly daily activities (such as errands) in a compact mixed-use environment - which is more likely to be continued than an exercise regime.

Lack of physical activity costs everyone.

- 31.7% of adults and 16% of children in Michigan are obese
- 1 in 3 people will be diagnosed as diabetic
- Managing diabetes costs insurance companies approximately $40,000 per year
- In 2008, Michigan spent $3.1 B in obesity related medical costs
- Michigan Department of Community Health has estimated obesity medical costs at $12.5 B by 2018

- Income is retained within a household if alternate, less expensive modes of transportation are available (non-auto) which can equate to an increase in disposable income for healthy foods and quality housing.
- Accessibility to goods and services increases with a variety of transportation modes, which provides a broader range of mobility options for a wider range of socio-economic groups.
- Mental health rises when people can experience a sense of place and social connection; and physical activity through active transportation can reduce stress.
- Safety in numbers occurs when more people walk, bike and use transit because driver awareness is raised.
- Air and noise pollution, fossil fuel consumption, greenhouse gas and ozone emissions can be reduced by shortening trips with compact land use patterns, pedestrians, bikes, and transit.[1]

While public health may be a seemingly disparate issue from discussions about the physical environment, recent dialogue about skyrocketing health care costs, an increasingly obese population, rising diabetes diagnoses, and other climbing chronic diseases have brought into focus the need for a comprehensive approach to battle the health care crisis. Recent research documents the strong link between health and the design of the physical environment. Given that the Michigan Street Corridor also has the monikers of the "Medical Mile" and "Health Hill" it was important to evaluate how altering the physical environment of the Corridor could benefit the health of residents, employees, visitors and students that live nearby, conduct business in, and/or travel to and through the corridor on a regular basis. A Health Impact Assessment[2] was conducted as part of this Corridor Plan to reveal the number of ways public health and safety could be influenced.

Benefits of Pedestrian- and Bicycle-Oriented Design

- Active Communities = longer lifespan for residents
  - Reduces obesity
  - Reduces heart disease
  - Reduces diabetes
- Increase in physical activity reduces stress
- Businesses that provide walk/bike opportunities for employees during the workday report a ~30% reduction in sick-leave absenteeism, health care use, and worker's comp and disability claims
- Reduction in healthcare costs and insurance premiums

5.2.1 Health Impact Assessment

To assess and identify opportunities, various indicators were matched to the root causes and related planning objectives within the Health Impact Assessment of the Michigan Street Corridor. Figure 5-4 shows how a lack of walking, street design, and congestion can contribute

[1] Adapted from the Strathcona County Integrated Transportation Master Plan.

[2] City of Grand Rapids. December, 2012. Michigan Street Corridor Plan: A Health Impact Assessment. References to "studies" in this summary should be referenced back to the Health Impact Assessment document for citations.

HEALTH INDICATORS, CONTRIBUTING BEHAVIORS, AND ROOT CAUSES

Health Indicator	Behavior	Root Cause	Related MSCP Elements
Overweight and Obesity	- Poor Diet - Little Walking - No Bicycling - Driving	- No food stores - Limited access to healthy food or restaurants - Few accessible drop-off points for GO! Bus - Few green spaces to walk to and/or enjoy - Few designated walking routes - Driving and parking are subsidized - Sidewalks are not plowed in winter - Some unappealing sidewalks/storefronts - Economic disparities	- Access to fresh food - Pedestrian-friendly design - Bicycle-friendly design
Personal Injury	- Jay-walking - Speeding cars/buses - Walking without shade	- Crosswalks are too far from MSU medical school parking lot - There are places in the corridor where walking doesn't feel safe - Bike lanes are not protected from cars - Poor awareness of walkers and bikers among motorists - Too few curb cuts for disabled individuals	- Pedestrian-friendly design - Bicycle-friendly design
Asthma and Heat-Related Illness	- Driving - Breathing carcinogens - Traffic congestion - Too much time in direct sun or heat - People with cars given priority	- Lack of frequent mass transit and biking options - Use of Michigan St. as a highway on-and-off ramp - Lack of incentives to live and work in the community - Automobile dependency - Proximity to I-196 - Infrastructure caters to cars more than cyclists or pedestrians - Limited number of trees for shade - Urban heat island	- Reducing vehicle emissions - Pedestrian-friendly design - Bicycle-friendly design - Use of green infrastructure

Figure 5-4. Health Indicators, Contributing Behaviors, and Root Causes – *This table illustrates the correlation between behavior and health indicators as well as the elements within this plan that address these issues.*
Source: Public Sector Consultants

to unhealthy and/or unsafe behavior. By addressing those root causes it is expected that some behavior traits will also change. A more in-depth look at the four preferred Corridor elements (pedestrian-friendly design, bike-friendly design, fresh food access, and emissions reductions) is provided along with how these behaviors are impacted.

5.2.2 Transportation and Health

Physical activity can help lower the risk of obesity, and in turn can lower risk for other chronic diseases. Conversely, research has also shown that time spent inactive while com-

How does Transportation Relate to Health?

- For each hour spent in a car per day, the odds of obesity increase by 6%
- For each kilometer spent walking each day, the incidence of obesity decreased by 4.8%
- Commuting from the East Beltline to downtown by bike could burn 344 calories per day, or 1 pound in 10 days
- Commuting from Fulton Heights to the DeVos Pediatric Clinic by walking could result in losing 24 pounds per year
- Each acre of trees has the potential to use 2.6 tons of CO2 each year

muting is negatively associated with total cholesterol and diastolic blood pressure. Active travel (walking and cycling) has been shown to be significantly related to lower levels of self-reported obesity and diabetes.

Bike and pedestrian design elements that slow traffic, provide safe crossings, help decrease driver distraction, and help separate pedestrians, bikes, and vehicles can create safer streets and reduce the rate and severity of accidents. The following are key transportation factors that can impact health and safety along the Michigan Street Corridor:

Distance from Housing to Work. Research indicates a vast majority of employees and students live beyond a walking distance to their employer or school. While some employees and students in the Michigan Street Corridor area live within walking or bicycling distance to work or school, most do not. Land use that promotes proximity between housing and jobs, as described in Chapter 3, has been shown to reduce vehicle miles traveled. Numerous studies found that access to jobs (closer proximity within a 4 mile radius) more effectively reduces vehicle miles traveled than access to shopping and services, though both are associated with decreases in miles traveled. As employment in the Michigan Street Corridor grows, alternatives that create stronger jobs-housing balance could help address air pollution and associated health issues. Attractive non-motorized or transit linkages can also increase the number of people that will choose not to drive.

Transit. Studies show that most people that use public transit are more physically active through walking and biking to and from transit stations than those that drive. One reason for the Transit-Oriented Development land use design proposed in this plan is that residents living near transit stations are five times more likely to commute via public transit than other residents in a region. It is has been shown that almost one-third of people using public transit to commute to work meet the daily recommended amount of physical activity.

Transportation is Largest GHG Contributor in Grand Rapids

In 2009, the City of Grand Rapids developed the Energy Efficiency and Conservation Strategy (EECS) as a vision document and a benchmarking tool. The EECS contains an inventory of the community's greenhouse gas (GHG) emissions. The inventory determined that Transportation (57%) was the largest contributor to GHG emissions, followed by Residential (23%).

Air Quality. Asthma and heat related illness can be impacted by emissions of air pollutants from vehicles in the Corridor. Vehicle emissions can be reduced through greater use of public transportation and ride sharing, as well as increased use of non-motorized transportation modes such as walking and biking. Asthma is the leading chronic condition among children in the United States, and it is estimated that in 2010, seven million children 17 years of age and under had asthma. Therefore, a reduction in emissions, with resulting improvements in air quality, can have a significant impact.

Tree Canopy. The Corridor is lacking the presence of trees, which can buffer pedestrians from moving cars and trucks, provide safety, and entice more people to walk. Tree canopy is also critical for cleaning air (filtering pollutants, increasing oxygen, and reducing carbon dioxide), providing shade to vulnerable populations, lowering ground temperatures which can alter building emissions, and reducing UV exposure and risk of skin cancer.

Sidewalk Design. Some sidewalks along Michigan Street

are too narrow or located too close to the street, which is uncomfortable for pedestrians (see Section 4.4). These barriers can become even more discouraging during winter months, when snow accumulation and tire spray creates additional hazards.

Accessibility. Lack of audible signals, tactile strips, and pedestrian-activated signals will deter use by those with physical or ability challenges. This is particularly relevant in the Michigan Street Corridor given the large number of medical patients that visit the Corridor each day. As Michigan Street is a regional destination, it is important to consider how people arrive and will travel to their desired location for employment, health care, education, shopping, or other services.

Linear Connections. The railroad Corridor north of Michigan Street offers a unique dual use opportunity. While the railroad will most likely continue to operate, the Corridor and areas immediately adjacent could be used for a bicycle route and pedestrian greenway. This Corridor is an important piece of the proposed bicycle route system and is a key element for connecting the various neighborhoods and City-owned parks.

Freeway Bridge Pedestrian Enhancements. One of the goals of this plan is to improve the walkability of not only the Michigan Street Corridor but also the pedestrian connections to the adjacent neighborhoods. Providing a comfortable sidewalk connection to the neighborhoods north of I-196, especially on the bridges is important. Fortunately, many of the sidewalks on the bridges have been widened as a result of the recent "Fix on I-196" freeway reconstruction. However, additional amenities such a landscaping, lighting, seating and other pedestrian amenities should be added.

Figure 5-5. Streetscape Bridge Concept. Source: SmithGroupJJR

5.2.3 Access to Fresh Food

In contrast to suburban centers with multiple supermarket options, the Michigan Street area lacks a grocery store. There are no major full-service grocery stores in the study area apart from value markets and neighborhood stores including Save-A-Lot, and two Family Fare locations on Leonard and Fulton. Lack of fresh food results in increased consumption of unhealthy meals at low-cost, fast-service restaurants. Recent improvements to the Fulton Street Farmers Market, the new Grand Rapids Downtown Market, and several grocery stores accessible by transit have improved food access. But attracting a full-line grocery store into the Michigan Street Corridor area is one of the plan's goals. Similar benefits can also be realized with access to specialty food shops, like butcher shops, cheese shops, bakeries, etc.

Currently, the United States Department of Agriculture (USDA) identifies two low-income areas near the Michi-

gan Street Corridor with limited access[3] to healthy and affordable food. Low-income and urban residents are more likely to shop at smaller local stores that typically carry less healthy food (including a lack of produce or nutritious foods) at higher prices. This results in poor nutrition and overall health. Efforts should be undertaken to understand the best type of grocer to locate to the area, location preferences, and the types of incentives required to secure a vendor for healthy foods.

5.3 Healthy Design

Design can deter or encourage different types of human behavior. The creation of a strong pedestrian environment that encourages walking not only calls for a diverse range of uses, but it also necessitates intentional design within the public realm (the street right-of-way). The physical placement and design of buildings, as described in Chapter 3: Vibrant Places, establishes the built context. Additional thinking is presented in this section to address several values that are generally considered necessary to improve public health outcomes and enhance the quality of life along the Michigan Street Corridor. These include:

- Encourage walking with inviting streetscapes (such as a "buffer" from autos, vibrant storefronts, convenient pedestrian crossings, and defined destinations)
- Improve air quality by providing a range of transportation options
- Shift the existing low-density land use pattern east of College Ave to one that is transit-oriented (compact mixed-use development)
- Provide a safe, comfortable, and secure environment using "Crime Prevention Through Environmental Design" principles
- Create an accessible community for persons of all abilities to community assets and services

Discussions regarding pedestrian encouragement can be found in Section 4.4.2 Improving the Pedestrian Environment of Chapter 4: Transportation Systems, where a range of transportation options are offered to improve and enhance the mobility, accessibility, and functionality of the Corridor for all people. Streetscape recommendations are included in Section 5.5.4. This section addresses creating a safe and accessible environment.

5.3.1 Crime Prevention Through Environmental Design (CPTED)

The Michigan Street Corridor Plan seeks to create a safe and friendly environment where residents can live, work, and play. One concept that will be used to ensure this type of environment is Crime Prevention Through Environmental Design (CPTED). CPTED emphasizes that proper design, with effective use and management of the built environment, can lead to a reduction in the incidence of fear of crime while improving community vitality and overall quality of life. The degree to which a person feels safe, whether from a real or perceived threat, is an important consideration in the urban environment. The Michigan Street Corridor is a safe place with low crime, however, given the high number of visitors in the area as well as employees and students that live in the surrounding region it is important to apply CPTED principles to enhance visibility and social comfort.

[3] Limited access, or "food deserts" are census tracts where at least 500 people and/or 1/3 of the population within the census tract live more than one mile from a supermarket or large grocery store

The approach focuses on incorporating "natural" or "passive" strategies that rely upon elements such as lighting, sightlines, entry design, landscaping, and planned social activities[4] . Strategies most often used by the Grand Rapids Police Department, and incorporated into design requirements of the City of Grand Rapids Zoning Ordinance, include: Natural Surveillance, Territorial Reinforcement, Natural Access Control, Maintenance, and Target Hardening.

- **Natural Surveillance** is a design concept that increases the perception of human presence and eliminates hiding places. The goal is that people are easily viewable to passersby and those using the property so that there is a feeling of being observed. The use of clear storefront windows, in particular, is effective in "seeing" and "being seen". Lighting is another tool that assists in providing comfort to pedestrians.

- **Natural Access Management** is intended to guide people through a space through the use of real or perceived barriers such as fencing or plantings, and other wayfinding elements such as lighting, signage and artwork. The objectives are to provide orientation and a pedestrian-friendly environment; as well as to make non-compliance obvious.

- **Territorial Reinforcement** is a strategy to create and/or extend the property's sphere of influence, which is the perception that someone is in control of an area because it has defined borders. This strategy distinguishes what is private space from public space by using landscaping, art, pavement designs, signage and fences; as well as the orientation and strategic placement of buildings.

- **Target Hardening** is a strategy to enhance the physical security a property through the use of locks, cameras, door and window types, security alarms, and other crime prevention methods.

Additional techniques can include the physical maintenance and upkeep of an area to maintain cleanliness and programming street level activities or events. The use of CPTED as a design tool to build a safe environment can more effectively and efficiently use resources and reduce public safety costs, increase investment within the Corridor area, and encourage the area to thrive.

[4]Adapted from American Planning Association PAS QuickNotes No. 42 "Community CPTED"

Universal Design

The U.S. Access Board has developed 7 principles which are used to determine criteria for achieving universal access, including:

- Equitable use ensures that the design is useful to people with diverse abilities.
- Flexibility in use strives to achieve design that accommodates a wide range of individual preferences and abilities.
- Simple and intuitive use focuses on ease of under standing, regardless of the user's experience, knowledge, language skills, or current concentration level.
- Perceptible information is where the design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
- Tolerance for error minimizes hazards and the adverse consequences of accidental or unintended actions.
- Low physical effort requires that the design can be used efficiently and comfortably with a minimum of fatigue.
- Size and space for approach and use provides enough room for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility.

5.3.2 Universal Design

The Michigan Street Corridor planning process included the engagement of citizens in helping to prioritize design principles for future development within and along the Corridor. Citizens and the Steering Committee felt that it was critical that all buildings and public spaces be accessible to all. Universal Design principles, Universally Designed buildings, products, and can encourage proper design environments are inherently accessible to older people, people without disabilities, and people with disabilities. The term "Universal Design" was coined by the architect Ronald L. Mace to describe the concept of designing all products and the built environment to be aesthetic and usable to the greatest extent possible by everyone, regardless of their age, ability, or status in life.

By using these principles for Universal Design (sidebar), the livability of the area will be enhanced and improved. In order to create a sense of continuity and advance quality of life along the Michigan Street Corridor public spaces and private buildings should feature the concepts of Universal Design to allow easy and comfortable access to all places, for persons of all abilities. Some specific features might include wider hallways, no-step entrances, LED lighting in specific areas, easy-to-use door knobs or automatic doors, an open layout, varied counter heights, knee clearance beneath sinks, water bottle filling stations, and more. The Universal Design of buildings, public parks, and public spaces in the Michigan Street Corridor will serve to integrate and build a functional, inclusive community. Applying these same principles to housing along the corridor will facilitate the live-work-shop dynamic in the corridor across a full spectrum of abilities.

5.4 Active Transportation

Improvements to the non-motorized network can promote healthier, safer, and happier living. Connectivity is one of the Corridor Plan's guiding principles. Chapter 4: Transportation Systems highlights key work that needs to be accomplished along Michigan Street for pedestrian improvements. It includes bike-friendly recommendations, and highlights a parallel separated bikeway along Lyon Street. Non-motorized transportation, also known as "active transportation", encourages people to be physically active. This concept is an important component of this plan document because it is critical for neighborhoods and business districts to physically connect people with places. Investments in these areas knit together the social fabric of our community, increase interest among talented individuals that seek places to live without the necessity of a car, and awaken opportunities for economic investment as resources are used to create a more accessible and inviting community that enhances quality of life. Non-motorized infrastructure is a necessity if the Plan's goal of "mode shift" is to be realized. Better access to employment centers, housing, recreation, greenspace, and shopping can be provided for all persons by design.

5.4.1 Non-Motorized Plans to Reference

Michigan Hill and the I-196 Gerald R. Ford freeway provide a challenging environment for pedestrian and bicycle access. The Neighbors of Belknap Lookout Association, the Monroe North Tax Increment Finance Authority and the North Monroe Business Association have completed a variety of studies (Belknap Area Specific Plan, MOBL NOBL Circulation Study and the Monroe North Area Spe-

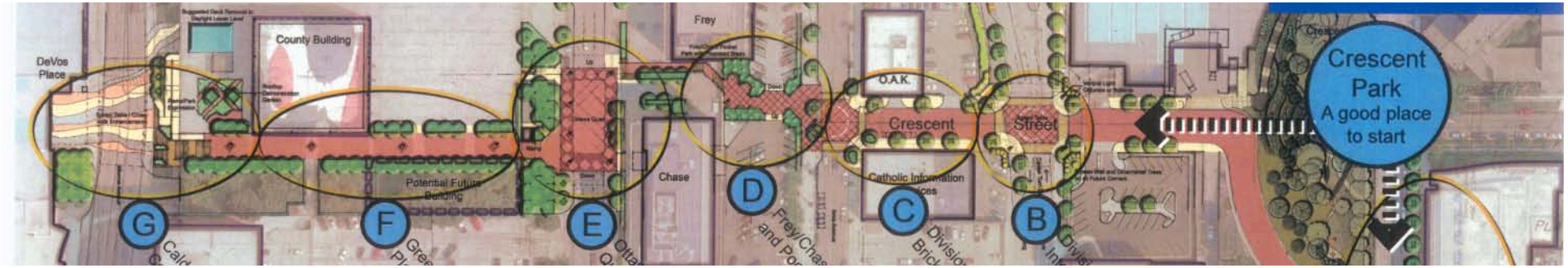


Figure 5-6. Crescent Street Connectivity Study, *Source:*

cific Plan), to examine ways in which the Belknap neighborhood and Monroe North business district could better connect to one another, Downtown, the Grand River, and institutional uses south of I-196. These efforts informed the redesign of the Lafayette Street underpass and Coit Street bridge during the "Fix on I-196" reconstruction. A number of these plan recommendations have yet to be implemented.

In addition, the Crescent Street Connectivity Study, commissioned by Grand Action, was developed to link Crescent Park to Monroe Avenue and Bostwick Street from Crescent to Lyon Streets. Connectivity between these large blocks was lost during the era of Urban Renewal, which joined together tracts of land from Michigan Street to Lyon Street between Ionia, Ottawa, and Monroe Avenues. Vandenberg Plaza, where Alexander Calder's sculpture La Grande Vitesse sits, comprises one of the large blocks. The goal of the Study was to provide a safe, comfortable, and interesting walk with small pocket parks and shorter blocks that would connect the anchor institutions on Michigan Hill to places of employment, amenities such as DeVos Place, and the Downtown. The steep 10% grade of Michigan Street and high traffic volumes at the Ottawa/ Ionia interchanges establishes the demand for alternate pedestrian routes. This plan, which has yet to be implemented, is an important component in connecting major employment destinations

As implementation opportunities arise, these plans should be referenced for future land development concepts and infrastructure projects. The need for improved connections continues to be a priority for the community - as evidenced by the amount of time and effort that has been expended over the years. Our community will become more sustainable by rebuilding lost infrastructure (stairs), reinforcing existing infrastructure connections, and creating new enhanced corridors that improve access for people on and around Michigan Street, Downtown, the Grand River, and North Monroe district.

5.4.2 Connections Plan

As part of the Michigan Street Corridor Plan an even deeper dive into key "Connections" was undertaken, including:

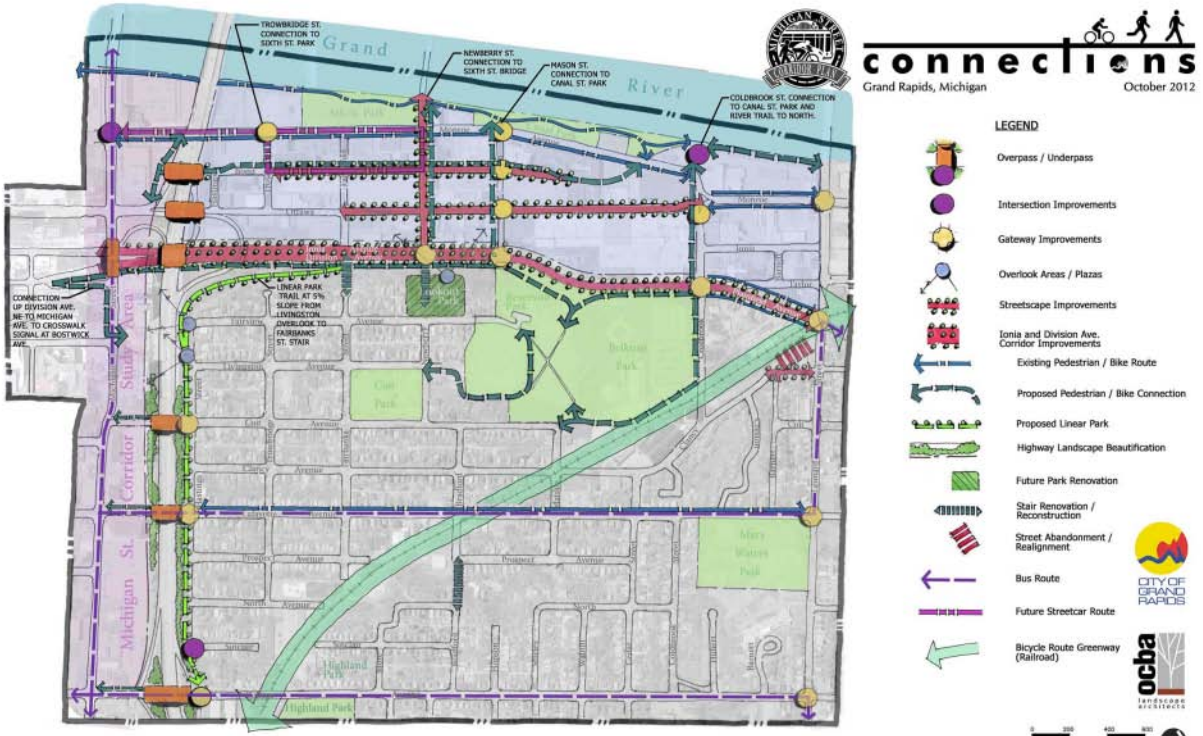
- Division Ave. Corridor from Coldbrook St. to Michigan St.
- Monroe North and the Belknap neighborhood
- Bond Ave. Corridor from Coldbrook St. to Michigan St. through the I-196 underpass to the new MSU development at Michigan St. and Monroe Ave
- Improving pedestrian connections between Monroe North, the Belknap neighborhood and

existing parkland along the Grand River

- Improving the pedestrian connection from Belknap Park to Division Ave
- Improving connections to, from and within the Monroe North area
- Hastings Linear Park connection from the Livingston Ave. Overlook to Division Ave.

The project that garnered immediate support and action is the Hastings Linear Park connection from Livingston Avenue to College Avenue where there is an opportunity to create gateways and improve connectivity for pedestrians and bicyclists. It is along Hastings Street, which is north of and runs parallel to I-196. This area is of particular importance given the acquisition of land by Grand Valley State University for a future campus between Clancy and College Avenues. Bicycle and pedestrian infrastructure is critically needed to deter and mitigate automobile traffic in this geographically constrained area. I-196 runs well below the grade of both Hastings and Michigan Street to the south, and a rail corridor is located to the north. A linear park and non-motorized path along Hastings would help connect the neighborhoods to the north with the Michigan Street Corridor to the south via several bridges over the expressway.

The preferred alternative, as shown, includes gateway improvements complete with landscaping at the major north/south Avenues along with a non-motorized walk-



ing path south of Hastings. The Neighbors of Belknap Lookout immediately applied for were successfully granted resources from the Dyer-Ives Foundation to partially fund the Coit Avenue gateway and walking path from Coit to Livingston. This is considered the first phase of a multi-phase project and is meant to build excitement for subsequent phases, and of special interest, continuing the Hastings walkway northwesterly, around and down the hill to connect with the North Monroe Area.

Connecting the Belknap bluff to the river valley is particularly challenging. Still, additional connections are particularly important as the area north of I-196 continues to grow. Three sets of stairs historically connected the homes of factory workers to the manufacturing center below. Only one set of stairs remains; it is heavily used by large numbers of people as a means of access to the Grand River and North Monroe District for exercise, recreation, and to access centers of employment. The Connections Plan envisions wrapping the Hastings Linear Park around Belknap Hill and down to Division Avenue to provide ADA access between the two geographies. Reconstruction of the historic stairs should be considered a priority, as should the ability of persons to safely cross Division Avenue. The

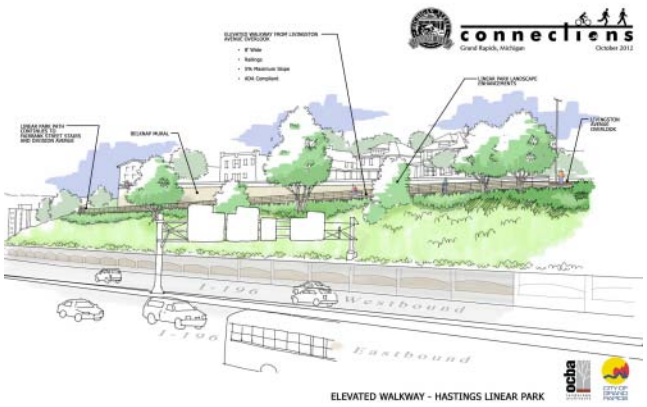


Figure 5-7. Elevated Walkway as an Extension of Hastings Linear Park

Figure 5-8. Improved Newberry Stairs and Pedestrian Crossing Area

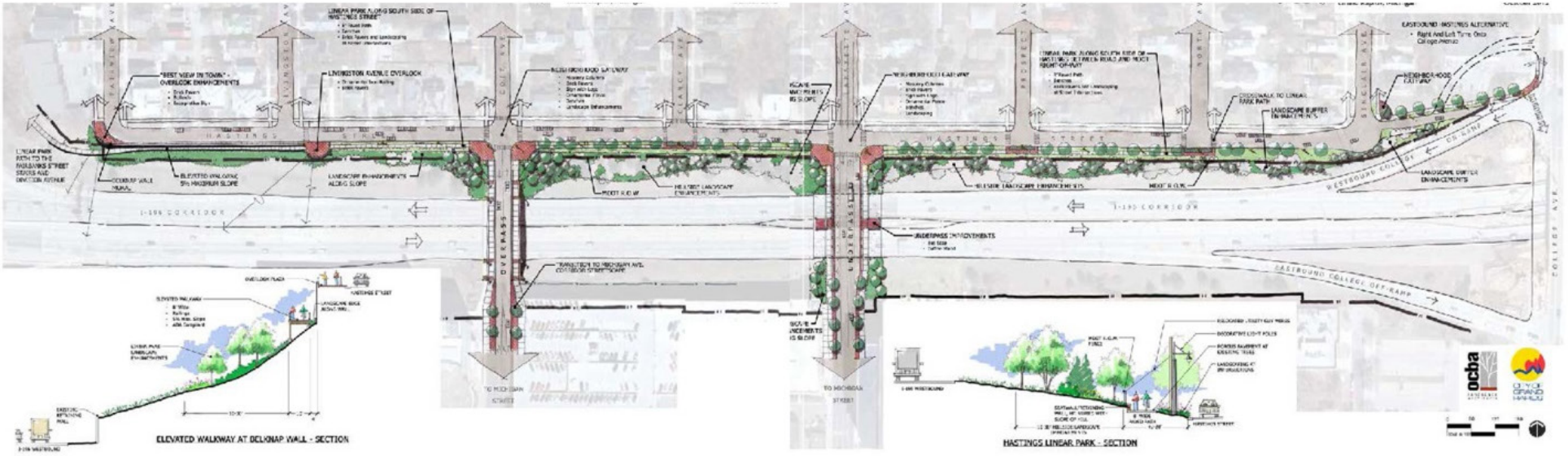


Figure 5-6. ***Hastings Linear Park Concept*** *– A swath of land between Hastings and the expressway is an unused part of the I-196 right-of-way. Several options were explored with the M-DOT to provide a non-motorized link along Hastings in that sliver of land. Source: OCBA*

parallel nature of Division and Ionia Avenues offers the opportunity to reconfigure these roadways into a boulevard cross-section that can facilitate pedestrian crossings and serve as a gateway into Downtown Grand Rapids.

Detailed plans for the North Monroe Business District illustrate a strong focus on streetscape improvements that will add tree canopy and connect the District to the Grand River. Public investments, such as along Monroe Avenue with landscaped medians and wide sidewalks, is an excellent example of a public investment that has encouraged the private sector to invest in the rehabilitation of former furniture factories into residential lofts and offices. Figure 5-9. illustrates a boulevard cross-section, with clear pedestrian crossing areas, in addition to improved stairs and enhanced streetscapes to connect this formerly industrial area that is transitioning into a dense, mixed-use neighborhood.

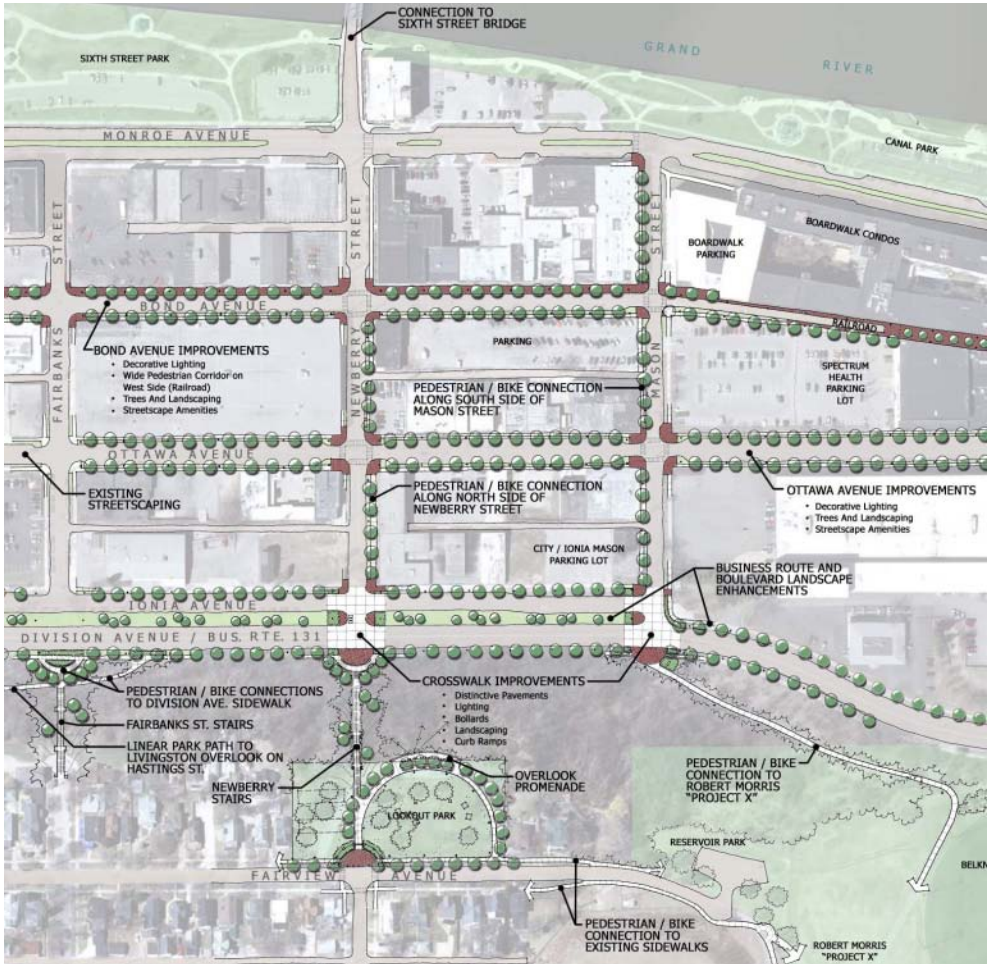


Figure 5-9. North Monroe Business District connections to Belknap neighborhood and the Grand River

5.5.3 Streetscape

The **Michigan Hill Urban Design and Streetscape Concepts** Report, created by Grand Rapids in 2007, focuses on improvements within the public right-of-way (ROW) and the area from back of curb to building front. This report analyzed the existing streetscape conditions along Michigan Street and provided recommendations for improvements, including a defined sidewalk cross-section, screening of surface parking, gateways, bridge connections, streetscape elements/amenities, and funding strategies.

The Michigan Street Corridor Plan aims to build on the progress created by the Streetscape Concepts Report by identifying two character segments that will receive different streetscape enhancements. The first, located from the Grand River to Plymouth Avenue, is where most pedestrian activity occurs and should receive more intensive streetscaping treatments. The second segment, located from Plymouth Avenue to the East Beltline, is a primarily low-density residential neighborhood that could be effectively enhanced by simply extending the sidewalk system to the East Beltline and installing a marked, on-street bicycle lane.

Elements identified in the Streetscape Concepts Report include:

- **Paving.** Scored concrete is recommended in the 7-foot-wide sidewalk zone with 12-inch-wide concrete bands in a contrasting color located perpendicular to the street. The scoring pattern and concrete bands provide visual interest and a sense of scale. The colored concrete bands also present an opportunity for adding "life science" content to the streetscape by including text or images etched into the pavement.

- **Landscaping.** The portion of the right-of-way adjacent to the street should be occupied by curbed planters with street trees planted approximately 30 feet on center and understory plantings of grass, groundcover and/or massed perennials or low shrubs. Street trees should be carefully selected to ensure their health, protect against disease, and maximize the efficiency of possible future replacement.

  Curbed planters should also be incorporated with low-impact design techniques (i.e. infiltration planters) to divert runoff from the sidewalk before it reaches the street. Infiltration planter segments are designed as a shallow basin with inlets and outlets cut into the curb edge and a central weir (located perpendicular to the street) to collect and infiltrate runoff. Plants that thrive in wet conditions and are salt tolerant should be selected for use in infiltration basins.

- **Crosswalk Treatments.** Ladder style striping should be used to delineate crosswalks at the majority of intersections on Michigan Street; however, a special paving treatment could be

Concepts

- Allow for seating and other amenities in higher volume use areas (such as retail)
- 2 sets of 2 individual seats placed on a low wall facing each other
- Bollards define edge of seating area
- Porous pavers placed in amenity zone

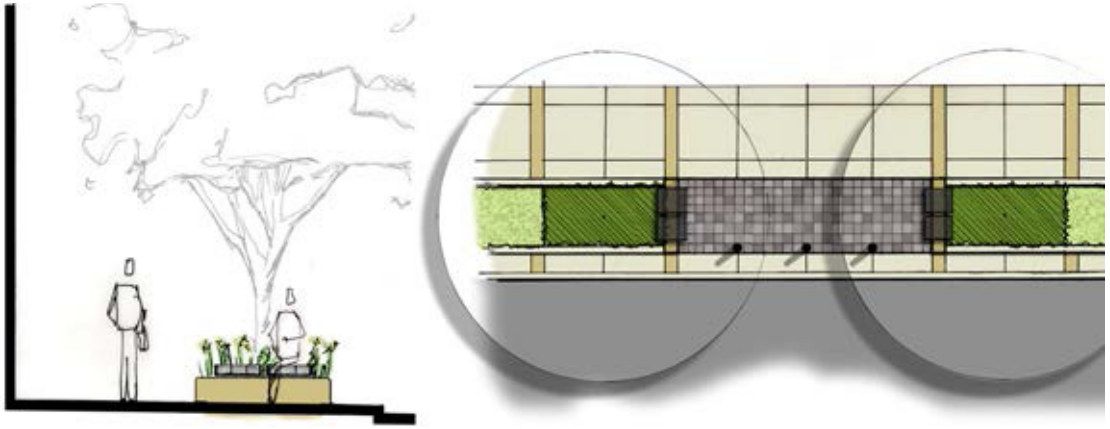


Figure 5-11. Streetscape Paving Concept. *Source: Smith GroupJJR*

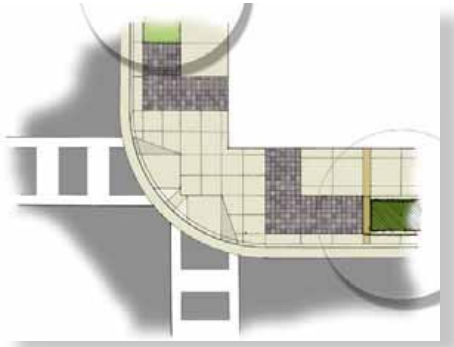


Figure 5-13. Streetscape Crossing Concept.
Source: Smith GroupJJR

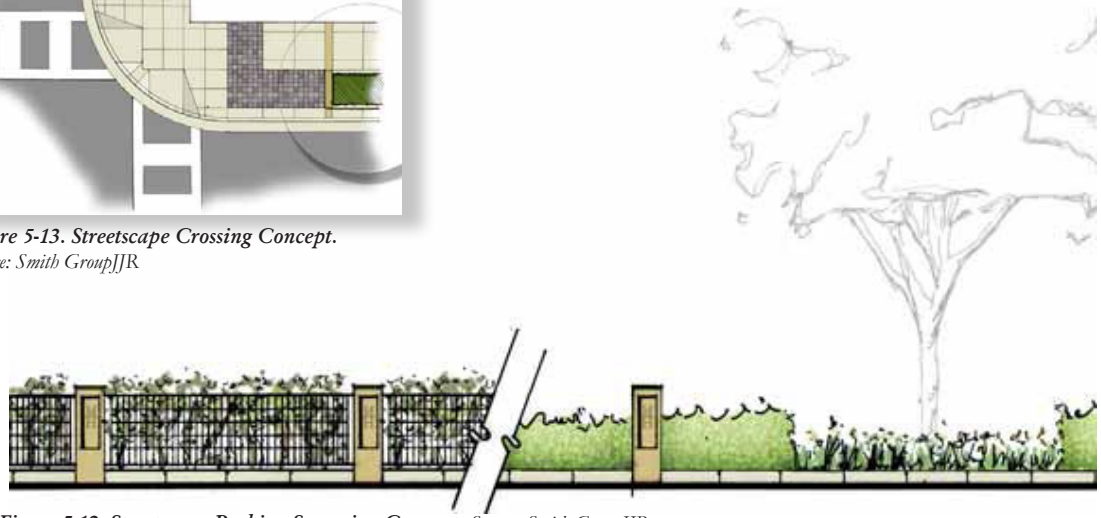


Figure 5-12. Streetscape Parking Screening Concept. *Source: Smith GroupJJR*

Components of a Well Designed Public Realm

- Consistent and well maintained streetscape and sidewalks
- Space for cafes and plazas
- Sustainable Design – stormwater management
- Street trees and green spaces
- Amenities – seating, lighting and public art.

used at intersections with higher pedestrian volumes. A special paver color could be used at these locations to create a high contrast with the street's asphalt paving to maximize visibility.

5.5 Placemaking and Public Art

Placemaking aims to strengthen connections between people and the places they share. Encouraging social interaction in well-designed spaces is important for a high quality of life, as well as the attraction and retention of residents and workers. Vibrant public places where people want to gather, live, work, and play improves mental health, encourages people to be more active, and offers the opportunity for the sharing of ideas. Public spaces may include public plazas, streets, parks, riverfront, and any other type of open space. Proper planning, design, and management of these spaces help to create a livable community. There are a number of existing placemaking opportunities throughout the Michigan Corridor, and others yet to be realized as redevelopment occurs.

Parks/Open Spaces

The study area contains a number of existing parks and open spaces which, for the purposes of this plan, includes school properties (see Green Infrastructure Plan Figure 5-14). Existing parks and open spaces should continue to be maintained and improved. Programming opportunities within these spaces should be considered to ensure active use and build a sense of community. Two new open space features proposed in this plan are linear parks on Eastern and Diamond that extend from Michigan Street north over I-196. These spaces could contain enhanced streetscaping elements, designated bike and pedestrian zones, and public art. The unique feature of these linear parks is their extension over the expressway, providing a safe and comfortable connection from the neighborhoods north of I-196 to the Michigan Street Corridor area.

Plaza Spaces

One of the elements to creating a lively, pedestrian oriented environment is the introduction of small pedestrian plazas along Michigan Street. The exact locations of these spaces will be determined as new development and redevelopment occurs along the corridor. Ideally, these locations would be integrated into proposed transit stations and stops, as well as future bike route crossing points. The size of the plazas may vary but all should include landscaping, seating, space for outdoor cafes and art.

Public Art

Public art can help to create a sense of place that celebrates a community's unique history, interprets the natural environment, engages and inspires the public and adds beauty to be enjoyed by all. Grand Rapids' heritage as a center for the arts should continue to be reinforced. Building on this enthusiasm, the Michigan Street Corridor can be a prime location for supporting public art such as unique streetscape features, public works projects, and other "functional art," including custom bike racks, tree grates, storm drains, benches, garbage bins, light posts, and newspaper stands. Consideration should be given to encouraging public art in both public and private development projects.

Several art-related concepts were identified during the planning process:

- **Art Walk.** Select art from Art Prize, the Grand Rapids Art Museum, or donors could be placed along the Hastings linear park, railroad greenway, or at key points along pedestrian-ways.

- **Bike Rack Art.** Bike racks could be designed as attractive public art that still functions as a place to secure bikes.
- **Transit Art.** Transit stops or stations could incorporate art features or station branding elements.
- **Building and Site Art.** Building design, even parking structures, are an opportunity to create art. The bridge at Helen DeVos Children's Hospital, for example, is a unique and striking structure as is the metal-work that wraps the skin of the building. Sculptures and other art can also be displayed at plazas or within building common areas.
- **Gateways**. Michigan Street has a number of potential "gateway" locations throughout corridor – from the river crossing near Monroe Avenue; the Ottawa, College, and Fuller interchanges; and neighborhood connections such as on Coit Street. These areas offer unique opportunities to create an identity for the Corridor using art and/or landscaping. Such elements could assist visitors in wayfinding through the area

5.6 Climate Resiliency

The "Grand Rapids Climate Resiliency Report", created by the West Michigan Environmental Action Council (WMEAC) in partnership with the Grand Rapids Office of Energy and Sustainability in 2013, defines resiliency as "the ability of a community to simultaneously balance ecological, economic, and social systems to maintain or increase quality of life in an uncertain, dynamic climate future" (viii). Climate change impacts were assessed within the Report in terms of how they would affect residents' quality of life and the ability of key sectors to provide services and benefits. The Michigan Street Corridor Plan defines a vision that assists in making the community more climate resilient in cases of drought, temperature change, flooding, and storms:

- Economic systems have been addressed through mixed-use and dense development land configurations and the encouragement of multimodal transportation options (Chapter 2: Vision, Chapter 3: Vibrant Places and Chapter 4: Transportation Systems).
- Social systems in the Corridor are recognized within this Chapter 5: Quality of Life as it pertains to the importance of human health and safety.
- Ecological systems in the Corridor are addressed through parks and greenspaces, storm water management, and the urban tree canopy; also contained herein.

5.6.1. Parks and Greenspaces

Parks, pools, splash pads, and natural recreation areas can all be viewed as potent climate-resiliency features that enhance quality of life and make Grand Rapids more resilient. Parks and greenspaces are important management tools to minimize flooding, provide shade, and create places of respite. Splash pads can cool families on hot days that do not have air conditioning. Public parks and other open spaces provide access to the outdoors for passive or active recreation. These recreational amenities encourage healthy lifestyles and help retain and attract residents. Developing an interconnected green infrastructure can also improve non-motorized movement throughout the City.

Why is green infrastructure important for health?

Recent studies have determined that the inclusion of natural environments within cities can have incredible impacts on a variety of elements that attribute to quality of life. The studies revealed that people living in cities with daily access to natural environments benefited from:

- Decrease in blood-pressure
- Decrease in stress
- Decrease in body mass index (BMI)
- Increase in energy
- Increase in attention
- Increase in restoration
- Increase in NK cells and anti-cancer protein
- Increase in sense of safety
- Increase in sense of community/interaction with neighbors
- Increase in academic achievement (e.g. cognitive functioning, standardized test scores, graduation rates, percentage of students attending college, fewer occurrences of criminal behavior)

The Green Infrastructure Plan illustrated in Figure 5-14 identifies important public greenspaces, key nodes for gateway improvements, and corridors where green infrastructure would be most beneficial. Tree canopy along major streets is defined in this plan and refined further in the Connections plan for the Belknap and North Monroe areas (Figure 5-9 in Section 5.4.2). The concept of utilizing the existing rail corridor as a bikeway provides an important opportunity to link wetlands located to the east of Fuller with Highland Park, as well as Belknap and Reservoir Parks. The proposed Hastings linear park (Figure 5-6) would provide additional usable greenspace within the Belknap neighborhood and the addition of a traffic signal at a Hastings connector (by the railroad tracks) would facilitate access to Highland Park. The population density and intensity of development in this urban context underscores the importance of these scarce green resources.

5.6.2 Low-Impact Development

Low Impact Development (LID) is an approach aimed at conserving natural resources and protecting the environment by strategically managing rainfall close to its source, minimizing impervious coverage, using native plant species, and conserving and restoring natural areas during site development or redevelopment. Increased precipitation and more intense wet-weather events are anticipated with climate change. The Grand River flood of 2013 tested storm water and flood protection infrastructure. Heavy downpours are now twice as frequent as they were a century ago. Both summer and winter precipitation has been above-average for the last three decades, the wettest period in a century. Design techniques focused on the use of applications modeled after nature, rather than building costly infrastructure, and water quality restoration systems are the best feasible option for climate resiliency.

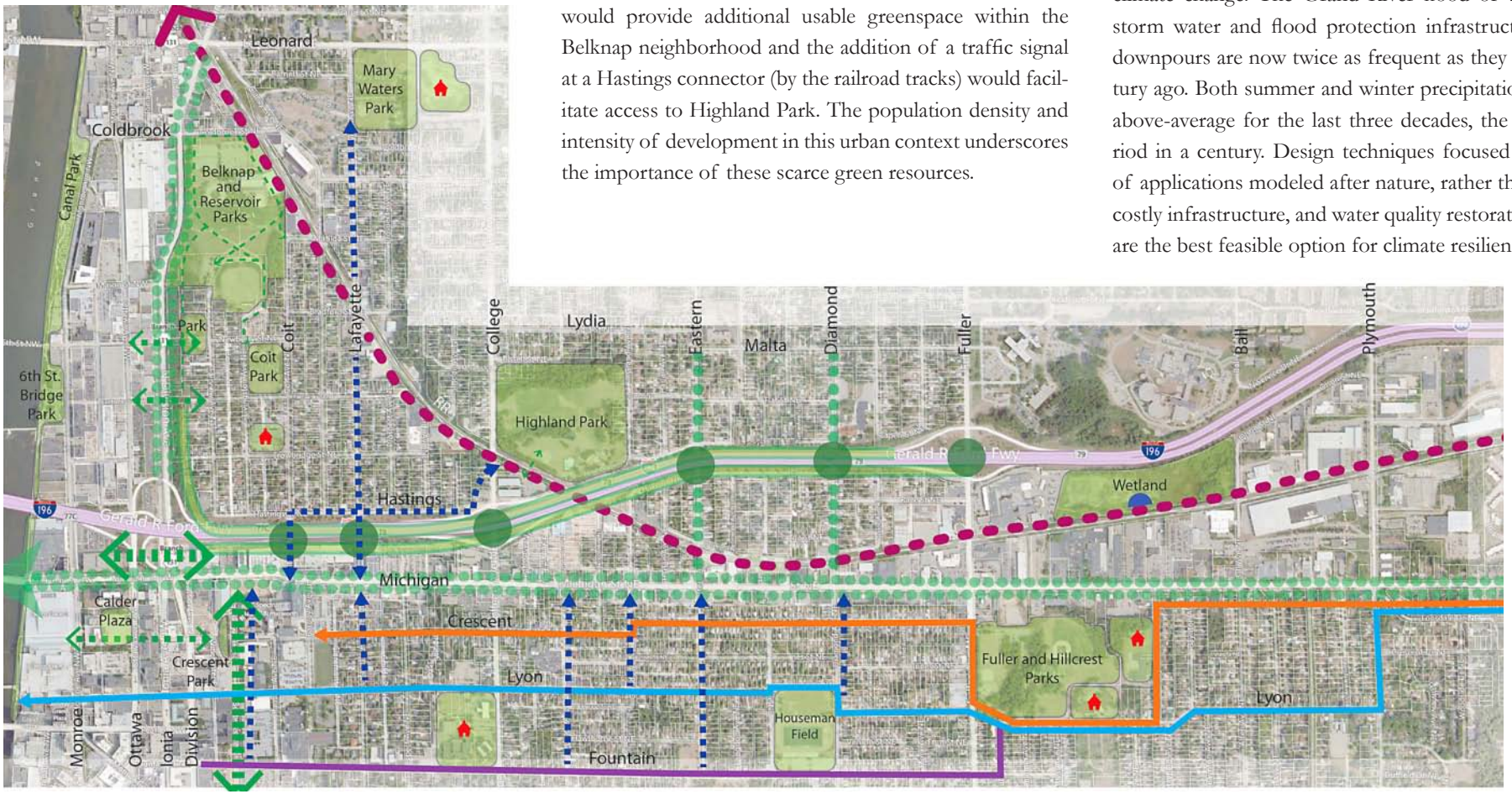
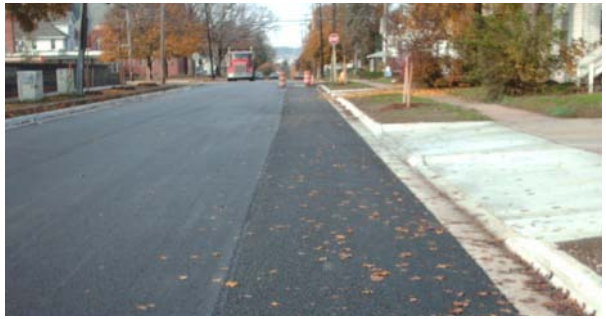


Figure 5-14. Green Infrastructure Plan. *Source Progressive AE*

While LI Development is encouraged wherever it can be applied, it is specifically warranted in areas where vegetation may be installed in lieu of impervious surfaces (i.e. pavement). It can be utilized in open spaces, rooftops, streetscapes, parking lots, sidewalks, and medians. In many cases, these beneficial design alternatives offer a significant long-term cost savings, even when factoring in some additional maintenance costs. Design options to consider include use of rain gardens, native plant species, street trees (i.e. Planter Boxes, Tree Pits), bioswales and porous pavement.

Bioretention (Rain Gardens) & Bioswales should be considered in areas between the new or existing sidewalk where driveways are removed and in areas where the road median is relocated or enlarged. Larger drainage areas may require a combination of facilities and overflow areas should be provided for larger rain events. Plant species should be salt tolerant, provide aesthetic benefits and be low maintenance. Sidewalks should be designed to direct runoff into these areas, and maintenance agreements should be included as part of any approval.

Native Street Tree Planters are recommended where earth is disturbed due to the removal or relocation of a driveway or median crossover. Maximizing exposed soil around the tree will facilitate water infiltration; however, tree grates and planter options can be applied in more urban or high pedestrian traffic areas. Street tree species should be varied to minimize the potential of invasive threats.



Porous pavement may be considered instead of impervious applications (i.e. asphalt or concrete) in parking areas or the road gutter. To function properly, porous pavement requires adequate subsurface soil conditions, overflow connection to a storm sewer or other final discharge location and by routine vacuum or sweeping maintenance. Porous

Low-Impact Development Benefits

Incorporating green infrastructure into private site design and public road projects provides numerous benefits to property owners, regulatory agencies and the general public:

- Reduces municipal infrastructure and utility maintenance costs (e.g., streets, curbs, gutters, storm sewers).
- Reduces stormwater runoff volume and improves stormwater quality
- Increases energy and cost savings for heating, cooling, irrigation
- Protects community character/ aesthetics
- Reduces salt usage and snow removal on paved surfaces
- Protects/restores the water quality of rivers and lakes
- Improves air quality
- Improves urban wildlife and habitat opportunities
- Provides additional stormwater capacity for non conforming sites without modern detention facilities

Figure 5-15. Low Impact Development for Vital Streets

		Restrictions		
LID Practice	Benefit	ROW Width	Proper Soils	Utility Reference
Bioswales	Q,V	❖	❖	○
Bump Outs	Q,V,T	❖	❖	○
Porous Parking	Q,V	❖	○	○
Porous Alleys	Q,V		○	○
Porous Sidewalks	Q,V		○	
Street Trees	Q,V	❖	○	
Street Narrowing	V,T	○		
Water Quality Devices	Q	○		❖

Q - Water Quality V - Water Volume T - Traffic Calming ❖ - Required ○ - Preferred

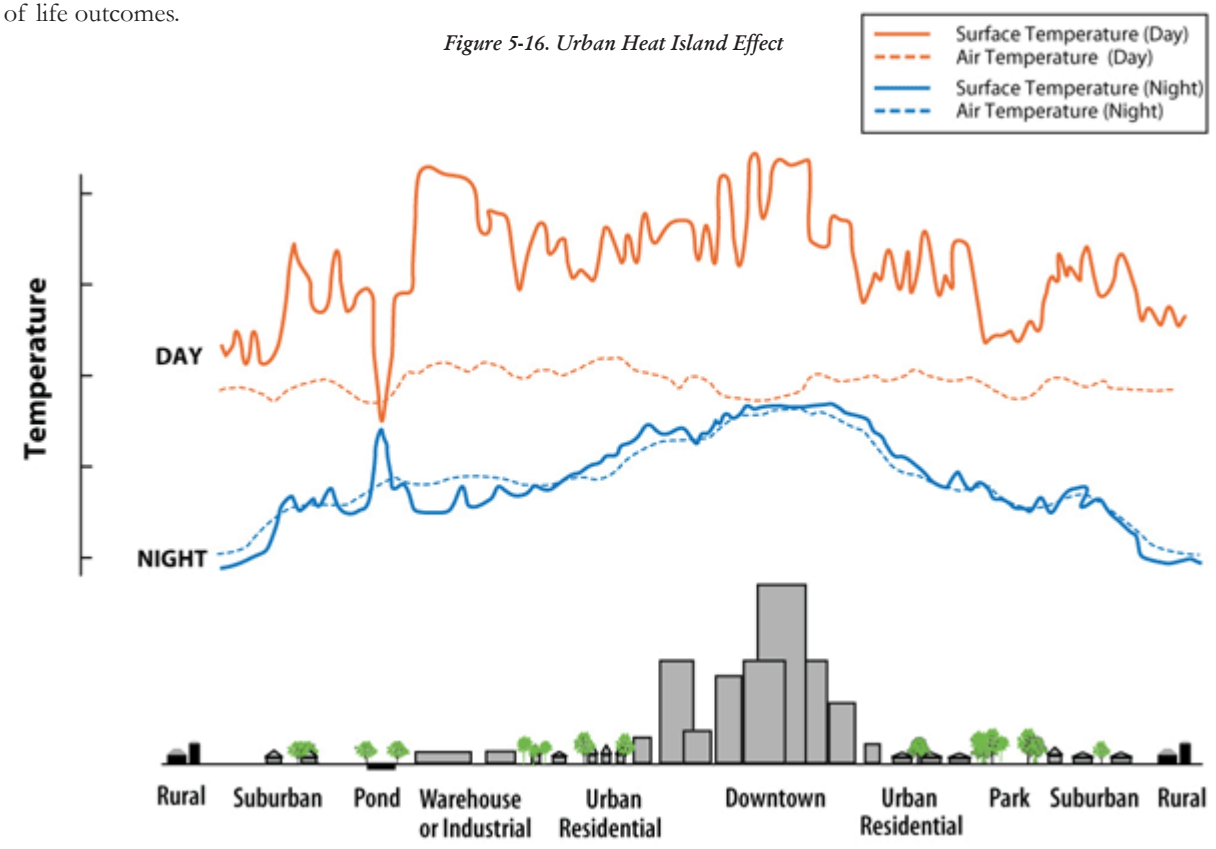
pavement should not be installed in areas where there is a potential for soil contamination.

The City of Grand Rapids Environmental Services Department has completed a Storm Water Master Plan and a Storm Water Asset Management Plan that provides a great deal of information regarding desired condition of stormwater infrastructure and future investments. City streets will be a major component of future infrastructure work to be designed to include Low-Impact Development solutions as part of Vital Streets implementation (Complete Streets with green infrastructure). Road right-of-way width, proper soils and utility locations are important restrictions to understand. Figure 5-15 identifies the best applications for specific stormwater benefits and quality of life outcomes.

5.6.3 Tree Canopy

Trees in Grand Rapids (the urban forest canopy) provide substantial environmental, economic and quality of life benefits. Trees absorb carbon, dust, and soot from the air; generate oxygen; reduce noise levels; absorb stormwater; and prevent soil erosion. Trees create shade to reduce summer temperatures (the urban heat island effect), which is a risk factor for heat-related illnesses, especially among vulnerable populations such as children and seniors. They improve aesthetic qualities, increase pavement life, and have been shown to relieve stress. Tree shade also helps to reduce energy costs for cooling homes and businesses in the summer months. Research has also

Figure 5-16. Urban Heat Island Effect



shown that trees increase residential property values and contribute to higher retail sales in shopping areas.

Landscaping Policies. Planning for more green space and trees throughout the Corridor can save money that would otherwise be spent on air pollution mitigation. Landscaping with trees also makes economic sense, since property values and commercial benefits can increase. Sufficient parkway and soil volume for street trees is important if Michigan Street is going to have a tree canopy that works effectively in creating a walkable, pedestrian-oriented environment. Given the amount of limited space, tree plantings on private property should be encouraged and/or incentivized.

Heat Island Effect. Heat islands can result from built up areas without shade, trees, soil, or plants available to absorb the sun's heat. Lack of shade and extreme temperatures can cause heat-related illness. These could be particular issues in the study Corridor given the urban context and large vulnerable population of health/medical patient visitors each day. Michigan Street's Health Impact Assessment also identifies the opportunities for trees to assist in addressing air pollution-related asthma.

Right Tree, Right Place. An initiative was developed by Consumers Energy to help communities better understand tree clearances and power lines called "Right Tree, Right Place". This initiative provides tree planting guidelines, tree trimming guidelines, descriptions of vegetation management, minimum power line clearances, and safety. Right Tree, Right Place aims to reduce the impact that trees have on utilities, especially since they are responsible for 30% of all power outages. Right Tree, Right Place provides a list of trees that will not grow tall enough to interfere with electrical lines, and provides clearance guidelines for each type of line. These standards should be kept in mind for all new plantings/developments within the Michigan Street Corridor area given that there are a number of high-voltage power lines located on the north side of Michigan Street and connect to surrounding areas.

TREE CLEARANCE GUIDELINES

Electric Line Type	Voltage	Suggested Clearance
Distribution	4,800 to 14,400	10 feet from wire in yard and other maintained areas 15 feet from either side of pole in undeveloped areas
Transmission	46,000	15 feet from wire in yards and other maintained areas 40 feet from either side of pole or tower depending on construction style in undeveloped areas
Transmission	138,000	20 feet from wire in yard and other maintained areas 45 to 60 feet from either side of pole or tower depending on construction style in undeveloped areas
Transmission	345,000	75 feet from either side of structure

Figure 5-17. Tree Clearance Guidelines. *Source: Consumers Energy*

5.7 Objectives and Policies

The following objectives and policies summarize what needs to be done to achieve the plan recommendations presented on the preceding pages so that the Michigan Street Corridor and the surrounding area can enhance the quality of life for residents, employees, visitors and students that live nearby, conduct business in, and/or travel to and through the corridor. It should be noted that additional objectives are provided in other chapters pertaining to vibrant places and transportation systems that also contribute to improved quality of life.

Guiding Principle: Provide a healthy environment that promotes active living

Objective 5.1: Build a compact, walkable, mixed-use environment

See Sections 3.8, and 4.9 for Objectives and Policies

Objective 5.2: Reduce contributing behaviors for obesity

1. Improve the pedestrian environment (see Chapter 4, Objective 4.3).
2. Make traveling by bicycle a feasible and safe option (See Chapter 4, Objective 4.4).
3. Encourage active commuting for employees and students.
4. Increase access to healthy food, such as attracting a grocer to the proposed Michigan/Diamond project.
5. Improved perceived safety by applying Crime Prevention Through Environmental Design (CPTED).
6. Improve accessibility using Universal Design Principles.
7. Implement the Michigan Hill Urban Design and Streetscapes Concept Report.

Objective 5.3: Reduce personal injury

1. Improve the pedestrian environment by designing for all users.
2. Expand the City of Grand Rapids' bike safety education program.

Objective 5.4: Reduce asthma and heat-related illnesses

1. Achieve aggressive mode share targets before 2035 to reduce vehicle emissions (see Chapter 4, Objective 4.1).
2. Increase tree canopy along Michigan Street and other travel routes to provide shade.

Guiding Principle: Create a transportation system that is accessible, interconnected, and multi-modal

Objective 5.4: Improve connectivity

1. Implement the MOBL NOBL Circulation Study.
2. Implement the Crescent Street Connectivity Study.
3. Implement the Hastings Linear Park Plan.
   a. Construct the linear park and path from Livingston (W) to College Avenue (E).
   b. Build the Elevated Walkway from Hastings Linear Park to Division Avenue.
   c. Provide landscape plantings, seating and other amenities to the linear path.

4. Implement the Connections Plan.

   a. Improve and/or reconstruct stairs between Belknap and North Monroe.

   b. Create a boulevard cross-section that combines Division and Ionia Avenues.

   c. Provide enhanced pedestrian crossing areas on Division to the north of I-196; and at Newberry, Livingston, and Coldbrook Streets.

   d. Improve streetscapes in the North Monroe District.

   e. Improve and reinforce connections to the Grand River, Downtown, and places of employment

5. Explore the creation of a shared-use path along the existing railroad.

Guiding Principle: Improve the identity of the corridor as a "place"

Objective 5.5 Enhance public infrastructure

1. Improve I-196 freeway bridges that connect with neighborhoods using landscape, lighting, seating and other amenities.

2. Enhance and maintain existing parks and greenspaces.

3. Experiment with "Lighter, Cheaper, Quicker" (LQC) interventions to test creative ideas.

4. Introduce small pedestrian plazas along Michigan Street, particularly at transit stations and stops.

5. Maximize "gateway" locations throughout the corridor at key connector points, such as the Ottawa, College, and Fuller interchanges, and streets that connect into neighborhoods, such as Coit or Diamond Avenues.

6. Install functional art such as bike racks and benches.

7. Introduce art along linear pathways.

Objective 5.6 Enhance private facilities

1. Encourage innovative building design that encourages an art aesthetic, such as the Helen DeVos Children's Hospital.

2. Introduce art into plazas and building common areas.

Guiding Principle: Use sustainable practices that will preserve and enhance natural systems and green infrastructure, as outlined in Green Grand Rapids

Objective 5.7 Create a resilient community

1. Invest in the rehabilitation and maintenance of existing parks.
2. Create new parks where possible, such as Hastings Linear Park.
3. Use Low-Impact Development to manage stormwater naturally.
4. Focus on streets as opportunities to improve water quality and reduce water volume entering into the man-made storm water infrastructure system.
5. Encourage LED lighting for all public/exterior fixtures.
6. Develop a program to encourage tree plantings on private property.
7. Provide trees with enough land and soil volume to create a productive tree canopy.
8. Use "Right Tree, Right Place" planting methodology under power lines.

Chapter 6: Action Plan

This plan is full of recommendations to help the Michigan Street Corridor area attain the Vision, Guiding Principles and Objectives described in previous chapters. Those policy statements evolved through extensive community engagement, stakeholder input and technical analysis. This Chapter consolidates all of those ideas into an Action Plan that lists recommendations and provides priorities for implementation.

6.1 Recommendation Identification

This plan was developed over a two-year period, preceded by an extensive data collection phase. Input from residents, businesses, stakeholder groups, anchor institutions, government agencies, city staff and others assisted identifying im-

Measurements of Success

Successful implementation can be confirmed by data that demonstrates desired outcomes are becoming evident. Regular collection and monitoring of data is necessary. The collection and evaluation of data, such as the following, would be useful in documenting progress:

- New employees versus traffic counts to determine if the travel demand techniques are effective
- Transit ridership and travel time reliability
- Pedestrian and bicycle counts
- Miles of sidewalk and bicycle improvements that increase the pedestrian/bike quality of service
- New housing starts and supply of both affordable and market rate housing
- New types of housing
- Square footage of new development (amount of new tax base) consistent with the land use plan and design guidelines
- Number of new trees
- Public heath indicators

portant issues. Priorities were set at Community Forums and affirmed by the Steering Committee. Many people gave their valuable time to participate, especially Steering Committee members, neighborhoods, and agency staff. A collaboration of organizations provided the funding for this effort, including the city, institutions, philanthropy, and other public agencies. That commitment to this planning effort brings with it high expectations that the recommendations will be implemented. Therefore, this plan is not just a policy guide for corridor, it is a call to action for implementation to begin immediately.

The Steering Committee discussed the merits of project prioritization over the need to establish a nimble framework that would afford flexibility, given the number of partners and projects that are needed for implementation as well as the pace of change the community is experiencing. It was determined that the Guiding Principles (see Section 1.2) would establish the standard for implementation as grants and other opportunities arose. Use of the Guiding Principles provides the benefit of being better able to pair and leverage public and private investments together, while also continuing to advance the community's vision. The Action Plan table (see Section 6.3) in this Chapter describes short, medium, and long-term objectives to assist in providing additional direction on "next steps".

6.1.1 Types of recommendations

Recommendations described throughout the Plan chapters vary from programs, policies, and regulations; to the physical design and construction of improvements in public and private spaces including street rights-of-way, parks, and private development.

In some cases the city of Grand Rapids will be the leading organization through its policies and oversight of public infrastructure projects and private development. But the majority of the recommendations will involve participation by others – developers, institutions, neighborhood organizations, business owners, employers, transportation agencies, state agencies, non-profits, advocacy organizations and others. Implementation is expected through the continued collaborative efforts of all those groups that helped craft this document.

6.1.2 How will implementation be measured?

This plan began by acknowledging the consequences of maintaining past practices into the future would not be fiscally, economically, or environmentally in the best interest of Grand Rapids. Continued trends also would not address the social or quality of life factors that are so important to retain and attract an important talent-based workforce. Investment in existing neighborhoods and business districts is also needed. A variety of groups desire accessibility improvements for those with disabilities, better streetscapes, the addition of neighborhood services within close proximity, enhanced transit, safer routes for cyclists, as well as the many other objectives described earlier in this Plan that equate to a high quality of life.

A wide variety of data sources were used to establish the base line condition for the plan. This included traffic and pedestrian counts, crash data, walking tours, housing information, property tax information, demographic data, and community health statistics, among many others.

6.1.3 Who will be responsible for the implementation and funding?

"Plan the work, work the plan" is the motto needed for this document. A great deal of work and investment went into the creation of the plan, and a wide variety of partners will be working to implement the plan and provide resources over the course of the next 10+ years. Many implementation partners were involved in the plan's preparation, but new partners will be tapped as opportunities arise in the future.

The City of Grand Rapids

Ultimately, the city is the key player in implementation. The city sets the basis for action with policies and ordinances. In addition to regulations, funding will come from the city's annual allocation for capital improvements and resources will be leveraged insomuch as possible with grants from the Michigan Department of Transportation (MDOT), Grand Valley Metro Council (GVMC), or other sources to support projects like sidewalks, bikeways, and street improvements.

Many city departments have a role but especially Planning, Economic Development, Community Development, Traffic Safety, Engineering, and Parking Services. Decisions by the City Commission, Planning Commission, Parking Commission, and others will also shape the investment priorities. Considerable staff time for planning, coordination, design, inspections and monitoring of the improvements will also be necessary.

Numerous local, regional, state, and federal agencies will also play a critical role in assisting with implementation of plan recommendations.

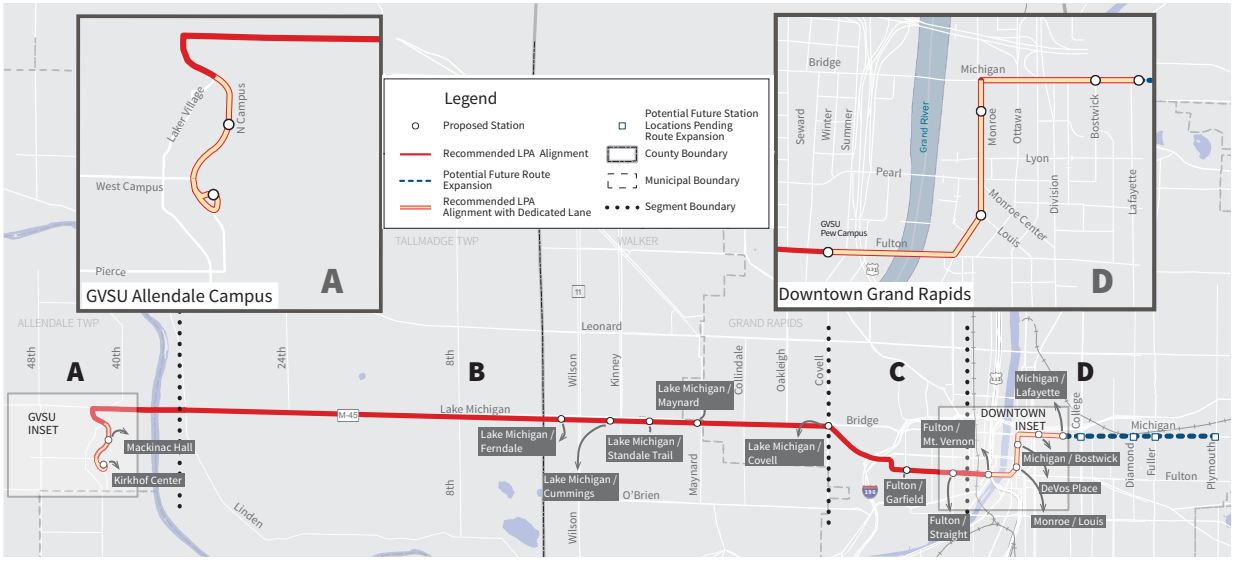
Transportation

Funding assistance for studies, matching funds for transportation improvements, and implementation of certain recommendations will come from local, regional, state, and federal agencies such as Grand Rapids, GVMC, MDOT, Federal Highway Administration, and others. Regional and State agencies were involved in the plan's development to determine the feasibility of specific recommendations. Transportation examples include:

- Before this document was completed, funding support was secured for a more detailed analysis of the I-196 interchanges, Division Avenue crossings, and College/Hastings connections from MDOT, GVMC, and with a matching contribution by Grand Valley State University.
- A new position for a Travel Demand Management specialist was filled by Downtown Grand Rapids, Inc (DGRI).

Map 6-1.

Laker Line Corridor Study Map



Key project support over the past two years (2012-2014) demonstrates how important economic development assistance is to the Michigan Street Corridor and the growth of Grand Rapid's economy.

Source: City of Grand Rapids Economic Development Department

- Transit stop improvements, service enhancements and eventually rapid transit service along the corridor will be provided by the RAPID. Some of those improvements are already underway, such as plans for the Laker Line, linking the Grand Valley State University campuses in Allendale and downtown Grand Rapids. A new streetcar feasibility study is also nearing completion.
- Additional work has commenced with the Rapid, City of Grand Rapids, DGRI, Parking Services, Spectrum Health, Grand Valley State University, Van Andel Institute, Grand Rapids Community College, and Michigan State University to coordinate parking management, improve transit accessibility and frequency, explore cost sharing models for transit operations, and expand concepts to create a multi-modal corridor.

Housing

The City's Community Development Department, Grand Rapids Housing Commission, Michigan State Housing Development Authority (MSHDA), and the U.S. Department of Housing and Urban Development (HUD) play an important role to ensure that high quality housing at a variety of different price points is available for residents. Housing examples include:

- Grand Rapids Housing Commission, with support from HUD, is in the process of redeveloping Creston Plaza with a combination of single-family homes and townhomes.
- Community Development targeted Neighborhood Stabilization Program (NSP) dollars within the Corridor Plan area.
- MSHDA and Community Development are participating in conversations with private developers on ways in which to create mixed-income units as part of mixed-use redevelopment projects

Economic Development

Economic development resources will be essential in implementing the land use vision expressed in the plan. The City of Grand Rapids Economic Development Department, The Right Place, and Michigan Economic Development Corporation (MEDC) provide local, regional, and statewide support to the significant manufacturing sector that serves the employment base found on the east end of the Michigan Street Corridor. These groups will also play a central role in facilitating corridor redevelopment with high-density, mixed-use transit-oriented projects that contribute to placemaking through the use of economic incentives and development support. Projects such as the Michigan/Diamond demonstration project found in Chapter 3, Section 3.7 will be realized through the efforts of these groups.

Health

The Kent County Health Department, Michigan Department of Community Health, Michigan State University, and other institutions should explore and expand on the

Address	Private Investment ($)	New Jobs	Retained Jobs	Incentives
833 Michigan St. NE	6,150,000	60	0	TIF, CRP
555 Midtown St. NE	30,900,000	70	0	TIF, MBT, CRP
740 Michigan St. NE	16,150,000	15	0	TIF, CRP, NEZ
555/601 Michigan St. NE	5,100,000	10	0	TIF, CRP, NEZ
1655 Michigan St. NE	2,897,000	119	54	IFT, BDP
460 Fuller Ave. NE	850,000	0	21	IFT
	$62,047,000	247	264	

Figure 6-1. Michigan Street Projects

work of the Health Impact Assessment (see Chapter 5, Section 5.2.1.). Recommendations signify strong support for active transportation opportunities, which will achieve multiple desired outcomes of this Plan.

Neighborhood Associations

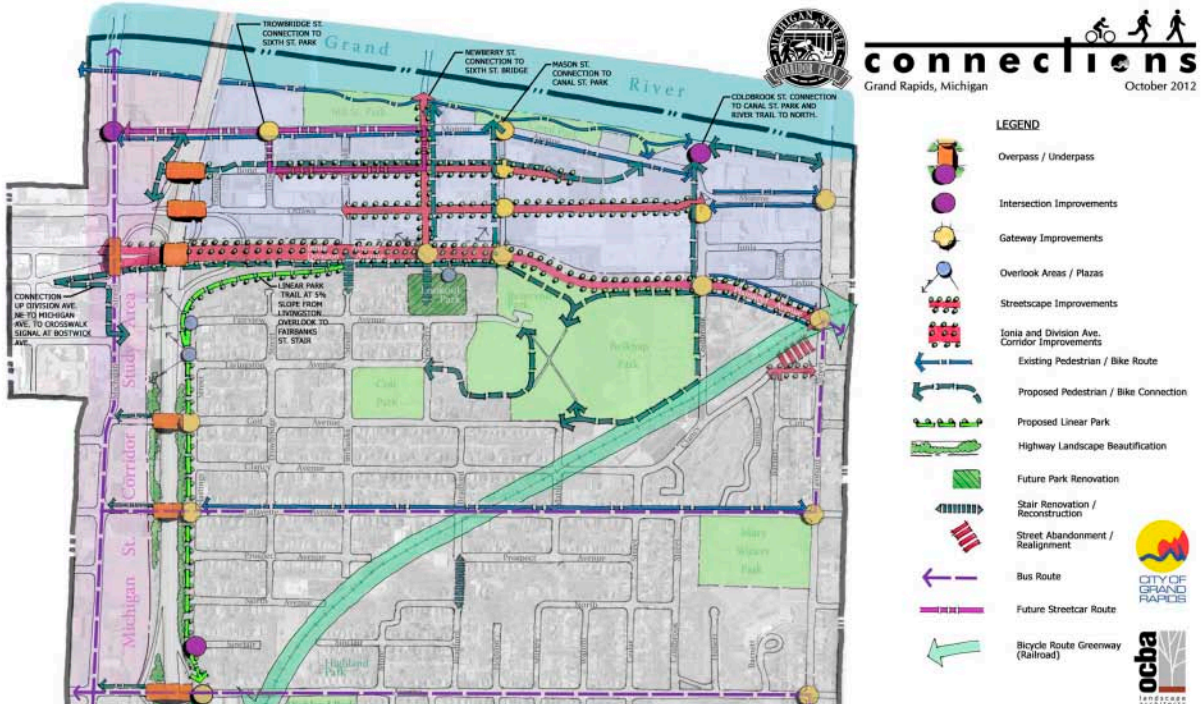
Existing Neighborhood Area-Specific Plans (ASPs) were integrated into the Michigan Street Corridor Plan recommendations. These organizations will be involved in several aspects of implementation, particularly: infill housing, provision of new housing types, construction of multi-modal transportation improvements, and the creation/improvement of greenspaces. Implementation examples include:

- Two new multi-family housing development projects were recently approved by the City Commission in the Belknap neighborhood, in conformance with the neighborhood's ASP.
- The Dyer-Ives Foundation has awarded a grant to the Neighbors of Belknap Lookout for first-phase construction of the Hastings Linear Park. An MDOT enhancement grant application has been submitted to fully fund the project.

Neighborhoods play a particularly important role in determining how change is managed within the corridor. It will be important for neighborhoods, city staff, stakeholders, and business owners to work together to find viable and mutually beneficial solutions to changing conditions

Business Association

The Michigan Street Corridor Association (MSCA) in conjunction with corridor stakeholders has been exploring fi-



Acronyms

TIF – Tax Increment Financing from State and Local taxes for certain activities incurred in the redevelopment of a property.

CRP – Community Revitalization Program, a State grant and loan program with grant and/or loan amount based on a percentage of the eligible investment in a project.

BDP – Business Development Program, a State grant and loan program with grant and/or loan amount based on new job creation and private investment.

IFT – Industrial Facilities Tax Abatement which provides an approximately 50% reduction in the State and Local millage rates levied on new real and personal property investments for a period of up to 12 years.

NEZ – Neighborhood Enterprise Zone is a tax abatement program which provides for a reduction in the State and Local millage rate levied against new or rehabilitated residential property for a period of up to 15 years.

MBT – Michigan Business Tax Credit is a State program that provides a credit that can be claimed against a company's Michigan Business Tax liability. The credit may also be monetized through syndication (selling).

nancing tools to facilitate right-of-way improvements and revitalization within the Michigan Street Corridor. The work of this group began as a direct result of CID + BID Feasibility Study as part of this Michigan Street Corridor Plan (see Appendix).

Two tools have been used in other district throughout the city, Corridor Improvement District (CID) and Business Improvement District (BID). This approach uses Tax Increment Financing (TIF) and layers a special assessment of real properties within the development district. A CID helps fund qualifying public infrastructure improvements, marketing initiatives, and economic growth projects. BID funds can be used for such things as maintenance, public safety/hospitality, business development, marketing, landscaping, capital improvements, and paid staff.

The feasibility study was conducted to determine if a CID and a BID could be developed in the Corridor. Both tools would utilize special tax captures or property assessment in a legally defined development district and predetermined formula to potentially provide sustainable revenue support for public improvements and marketing along the Corridor.

A CID generates its revenue through TIF. A TIF district essentially captures the increase of property taxes within its boundary from commercial and other redevelopment.

CID Scenarios

Two potential CID boundaries were created and each was assessed based on assumptions of both 0.5% growth and 2.0% growth.

- Scenario 1, in which the CID boundary would include only properties fronting Michigan Street, would generate over $100,000 annually assuming 0.5% growth and over $500,000 annually assuming 2.0% by year 30.

- Scenario 2, in which the CID boundary would include additional secondary street frontage, would generate over $130,000 annually assuming 0.5% growth and over $700,000 annually assuming 2.0% growth in year 30.

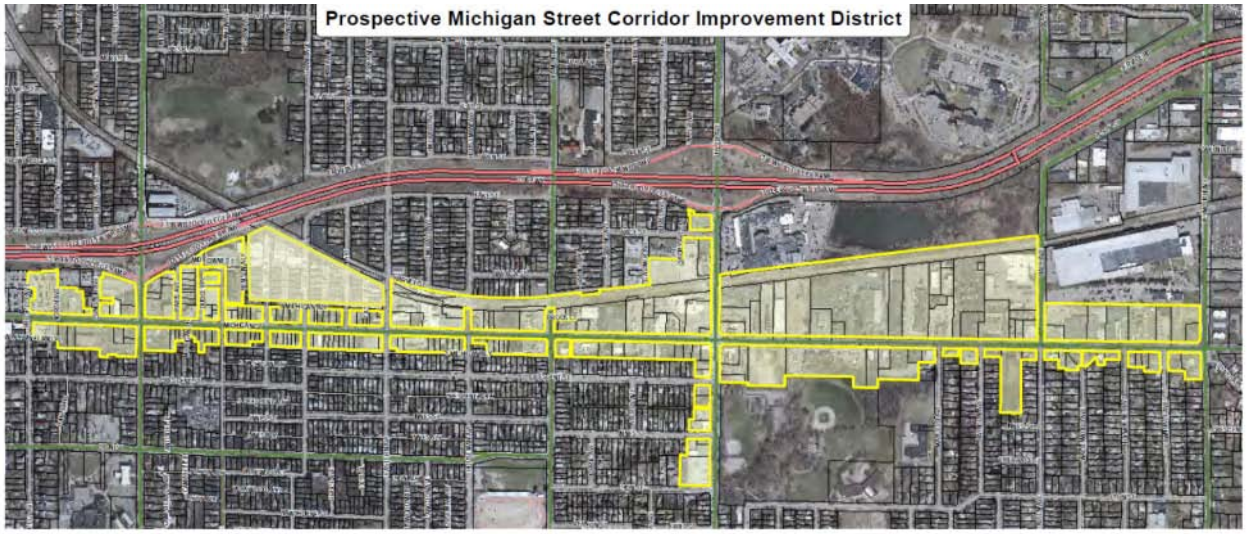


Figure 6-2. Prospective Michigan Street CID – This map illustrates boundaries within the Michigan Street Corridor area that meet the criteria to develop a Corridor Improvement District (CID) Source: Neighborhood Ventures

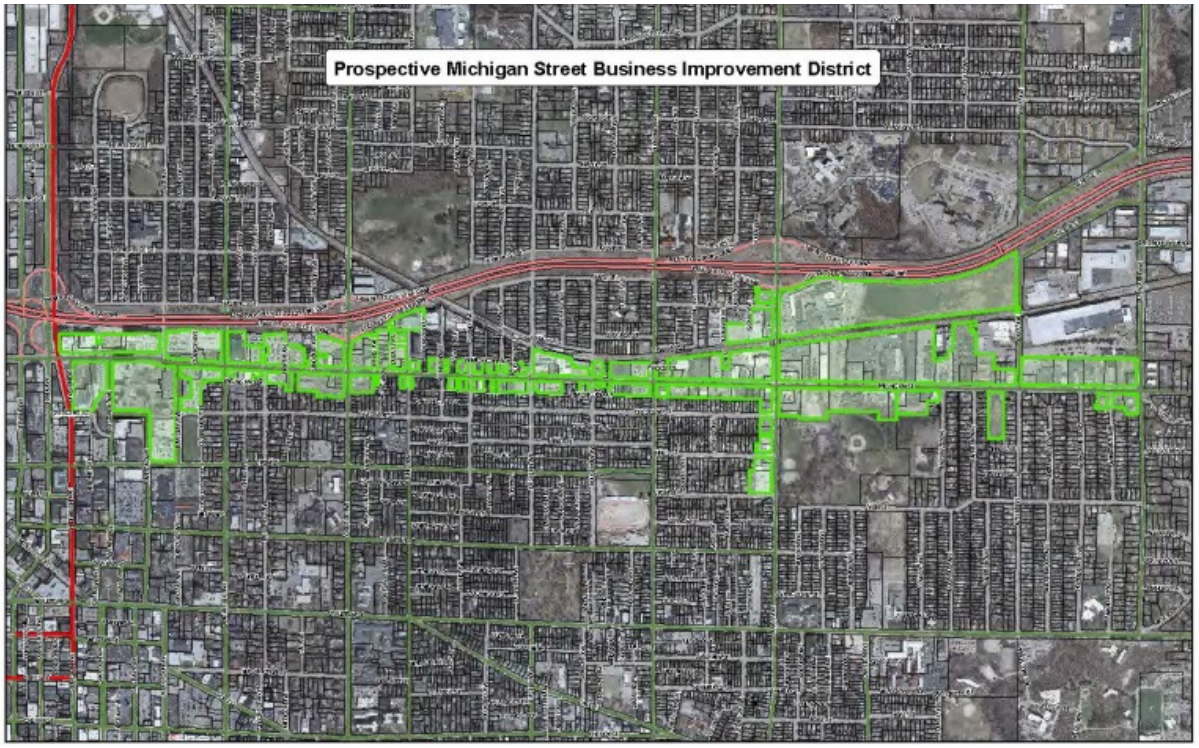


Figure 6-3. Prospective Michigan Street BID - This maps illustrates boundaries within the Michigan Street Corridor area that meet the criteria to develop a Business Improvement District (BID) Source: Neighborhood Ventures

This tax capture is able to then fund public capital improvement projects to improve the public environment of the district.

A BID generates its revenue through a special assessment created by property owners within the district. Members of the BID develop an annual special assessment for all participating property owners in a predetermined formula. The primary element that differentiates a BID from a CID is that a BID is not restricted by the change in property values within the district, allowing greater flexibility and control by the property owners.

Institutions

Leadership from the corridor's anchor institutions to advance implementation efforts is critically important. Continued investment from these institutions will bring jobs and prosperity that benefits the region, city and nearby businesses and neighborhoods. Key actions include parking management, transportation management, investments in enhanced transit, and live near work strategies (see Appendix _ Recommendations and Implementation: Transportation Demand Management for Grand Rapids' Michigan Street Corridor). Such efforts will help realize the desired outcomes identified in the plan as well as reduce the cost of construction and maintenance of parking facilities. Further, the design and development of new buildings provides opportunities to embrace plan recommendations to improve walkability and placemaking.

Corridor Improvement District Project List

A series of improvements are being recommended by the Michigan Street CID/BID Steering Committee. These include:

- Street planters
- Commercial façade improvements
- Traffic management
- Bus shelters
- Surface treatments (streets and sidewalks)
- Wayfinding signage
- Public art/murals
- Landscape irrigation
- Streetscape improvements
- Parking lot improvements
- Trolley/shuttle service
- Pocket park/greenspace
- Noise mitigation measures
- Public benches
- Trash cans/recycling bins
- Pedestrian access and safety improvements
- Communications with neighborhoods and universities
- Conversion of vacant properties to commercial or mixed-use
- Business incubators
- Revolving business micro-loan fund
- Business directory

HUD Livability Principles

1. **Provide more transportation choices.**
   Provide a transportation network with safe, reliable and convenient choices for all types of travelers to reduce crashes, decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, and promote public health.
2. **Promote equitable, affordable housing.**
   Expand location and energy-efficient housing choices so that people of all ages, abilities, incomes, races and ethnicities can find housing that meets their needs, and is affordable.
3. **Enhance economic competitiveness.**
   Improve economic competitiveness through reliable and convenient access to employment centers, educational opportunities, health and other services.
4. **Support existing communities.**
   Encourage reinvestment through such strategies as transit-oriented, mixed-use development and redevelopment of obsolete and underutilized properties to take advantage of the urban infrastructure that is in place.
5. **Coordinate policies and leverage investment.**
   Align policies and funding to encourage collaboration, leverage funding and increase the combined effectiveness of all levels of government to plan for future growth in jobs, business prosperity, and housing.
6. **Value communities and neighborhoods.**
   Enhance the unique characteristics of the Michigan Street corridor and the nearby historic neighborhoods through public and private investment toward healthy, safe, walkable and bikeable neighborhoods.

Advocacy Organizations

A variety of advocacy groups helped the Corridor Plan Steering Committee, general public and city staff understand the perspectives of their constituents. Among those were advocates for those with disabilities, seniors, and bicycle riders. It is hoped and expected that those groups will continue to provide input and resources so that their needs are considered throughout implementation phases.

Private Sector

In addition to the institutions, there is a wealth of private sector investment within the corridor area. The Plan's ambitious goal to transform the corridor into concentrated, mixed-use, and transit-pedestrian oriented place rests with the private sector. There was tremendous interest in this plan by the private sector including small business owners, local investors and developers focused on creative mixed-use projects. One of the Demonstration Projects during the planning process was a joint public-private design charrette where a developers design team worked with the city's team and the neighborhood to design a project that met the developers needs and was embraced by the neighborhood. That process serves as a model for how redevelopment projects can be designed in the future.

6.2 Relationship Between the Plan's Guiding Principles and the HUD Livability Principles

This Plan was funded in part by a "Sustainable Communities" grant from the U.S. Department of Housing and Urban Development. The Sustainable Communities Livability Principles were used as a foundation for this plan, and the work of the community and steering committee augmented those principles to reflect local language and values into the Corridor Plan's Guiding Principles. Figure 6-4 illustrates how the Michigan Street Corridor Plan Guiding Principles align with the six HUD Livability Principles.

6.3 Action Plan

Recommended actions to implement the Michigan Street Corridor Plan are expressed in the Action Plan Table. The Table is organized around the six HUD Livability Principles, type of action for implementation, and expected time frame in the columns. The rows identify the pertinent policy or objective that captures a larger concept expressed in the Plan, with key recommendations associated with the objective listed. Chapter reference locations are also supplied.

HUD Livability Principles

Michigan Street Corridor Plan Guiding Principles

Goals/Principles	Enhance Economic Competitiveness	Coordinate Polices and leverage investment	Provide more transportation choices	Value communities and neighborhoods	Support existing communities	Promote equitable and affordable housing
Promote organized economic investment and growth	■	■		■		
Accommodate a broad range of uses	■	■		■		■
Improve existing housing stock and enhance the integrity of each neighborhood's unique character				■	■	■
Provide a broad range of high quality housing choices and price points to meet the diverse needs of existing and new residents	■			■	■	■
Create a transportation system that is accessible, interconnected and multimodal	■	■	■			
Safely and efficiently move goods and people of all ages and abilities through the corridor, with a particular focus on pedestrian safety	■		■	■		
Improve Identity of the Corridor as a "place"	■		■	■	■	
Provide a healthy environment that promotes active living and increases clean air		■	■		■	
Use sustainable practices that will preserve and enhance natural systems and green infrastructure, as outlined in Green Grand Rapids		■		■	■	
Establish partnerships that will seek to plan, fund, design, construct, maintain and operate efficient systems	■	■	■	■		

* Filled in blocks indicate alignment between a Michigan Street Corridor Plan Guiding Principle and a HUD Livability Principle

Michigan Street Corridor Plan
Action Plan

The Action Plan Table summarizes the recommendations from various plan chapters. The following guide illustrates how to use the various parts of the table.

These columns identify the HUD Livability Principles related to the recommendation, a large check ✔ means this is a primary focus of the recommendation, a lighter check ✓ means there is a secondary benefit related to that principle

This column notes which chapter describes the recommendation in more detail. In some cases a recommendation and its benefits may be noted in several places, but this points to the main discussion. For example, pedestrian improvements are in the transportation chapter, but also noted in the discussion in Chapter 5 about community health.

The last column identifies the general time frame that was established when the Plan was adopted. These may be adjusted in the future based on the availability of city staff time, funding, and new opportunities

The first column identifies the related policy or objective from the plan

The second column lists the various recommendations throughout the chapters

		HUD Livability Principles							Type of Action Needed				
		Enhance economic competitiveness	Coordinate policies and leverage investment	Provide more transportation choices	Value communities and neighborhoods	Support existing communities	Promote equitable and affordable housing	Chapter Location For description see:	Program	Regulation	Capital Projects	Private Sector Initiative	Time Frame
Objective	*Continue city program that provides gap funding on adaptive reuse and new construction to aid in financial feasibility of affordable/mixed-income properties*	✓	✓		✓	✓	✔	*ch ##, pg ##*	✓			✓	*Ongoing*

These columns note the type of recommendation:

Program: Implementation will be through a program sponsored by the city or another public or quasi-public entity.

Regulation: Implemented through city regulations or design standards such as zoning, street design standards, code enforcement and other ordinances.

Capital Project: Projects that involve design and construction of a public project such as sidewalk improvements, bikeways, intersection or street improvement, streetscape in the right-of-way and park amenities.

Partnership/Private Sector Initiative: Action will largely be by the private sector or involve public-private partnerships between the city or government agency with the institutions, businesses, home builders and developers. But this also includes homeowners making investments in their homes.

Recommended Time Frames:

Ongoing: A program or project that was already underway when the plan was completed.

Short-Term: Implementation is expected within 3-5 years, many anticipated to start within the first two years if city resources permit.

Mid-Term: Implementation is expected to take 5-10 years.

Long-Term: Implementation is expected to take 10-15 years, though in many cases steps are identified to begin the process, such as where a new study is needed.

Michigan Street Corridor Action Plan

The following goals, objectives, projects, and action steps provide a frame work for crafting Michigan Street into an economically vibrant, affordable, green and livable corridor.

✓ = Primary Benefit
✓ = Secondary Benefit
✓ Action Required

Guiding Principles and Plan Objectives	HUD Livability Principles						Location in Plan	Type of Action Needed				Time Frame
	Provide more transportation choices	Promote equitable, affordable housing	Enhance economic competitiveness	Support existing communities	Coordinate policies and leverage investment	Value communities and neighborhoods		Program or Policy	Regulation	Capital Projects	Partnership or Private Sector Initiative	
Promote Organized Economic Investment and Job Growth												
The Michigan Street Corridor Plan has been designed to insure that as the corridor continues to grow. The recommendations below describe an aggressive growth strategy that considers the necessary supporting infrastructure needed to support desired future development.												
Accommodate a Broad Range of Uses.												
Encourage a diversity of uses												
Encourage a mix of uses by block and building	✓		✓	✓	✓	✓	*p. 22, 48*	✓	✓		✓	*Short-term*
Provide density or height bonuses to mixed-use projects				✓	✓		*p. 22, 48*	✓	✓			*Short-term*
Accommodate appropriately scaled institutional uses			✓	✓		✓	*p. 38*			✓		*Short-term*
Encourage rehabilitation and infill development			✓	✓	✓	✓	*p. 42*	✓				*Short-term*
Accommodate larger scale commercial uses where existing parcel configurations and shared parking can be supported			✓	✓			*p. 22, 48, 94*	✓			✓	*Short-term*
Educate property owners, developers, and lenders to the advantages of mixed-use development			✓	✓	✓		*p. 22, 48*	✓				*Short-term*
Evaluate the expansion of Oak Industrial Park			✓	✓	✓		*p. 22, 24*	✓				*Mid-term*
Consider creation of a new light manufacturing/R+D district			✓	✓	✓		*p. 22, 24*		✓			*Mid-term*
Provide opportunities for density												
Concentrate high-density mixed-use projects	✓	✓		✓		✓	*p. 41, 45, 50*	✓	✓			*Short-term*
Encourage transit-oriented development around transit stops	✓		✓	✓	✓	✓	*p. 50*		✓			*Short-term*
Rezone Michigan Street, between College and Fuller, as a Transit-Oriented Development District (TOD) zone district	✓		✓	✓	✓	✓	*p. 22, 50*		✓			*Short-term*
Employ on-street parking, shared parking lots, and parking decks	✓		✓	✓	✓		*p. 94*			✓	✓	*Short-term*
Focus on design, particularly in areas of transition												
Follow design guidelines that prescribe transitions between institutional uses and neighborhoods				✓	✓	✓	*p. 39*	✓	✓			*Short-term*
Protect neighborhood edges by creating incremental transitions in use intensity and building scale				✓	✓	✓	*p. 39, 51*		✓		✓	*Short-term*
Review the Zoning Ordinance to ensure that proper massing and height is provided for along Michigan Street				✓	✓	✓	*p. 31*		✓			*Mid-term*
Ensure that all transportation modes are considered in site design	✓		✓	✓	✓	✓	*p. 28, 62*		✓			*Short-term*
Ensure that persons of all abilities are considered in building and site design	✓	✓	✓	✓	✓	✓	*p. 28, 62, 108*	✓	✓			*Short-term*

Guiding Principles and Plan Objectives	HUD Livability Principles: Provide more transportation choices	Promote equitable, affordable housing	Enhance economic competitiveness	Support existing communities	Coordinate policies and leverage investment	Value communities and neighborhoods	Location in Plan	Type of Action Needed: Program or Policy	Regulation	Capital Projects	Partnership or Private Sector Initiative	Time Frame
Improve the identity of the Corridor as a "place".												
Recognize redevelopment projects as opportunities to improve the public realm												
Provide on-street parking with new projects to buffer pedestrians from travel lanes	✓		✓	✓	✓	✓	*p. 52, 72, 94*				✓	*Short-term*
Encourage windows and outdoor cafés facing Michigan Street	✓			✓		✓	*p. 73, 106*		✓		✓	*Short-term*
Utilize access management techniques to consolidate curb cuts	✓		✓			✓	*p. 73*	✓	✓	✓	✓	*Short-term*
Develop an identity for the corridor at major gateway intersections				✓		✓	*p.114*	✓				*Mid-term*
Enhance public infrastructure												
Improve I-196 freeway bridges that connect with neighborhoods using landscape, lighting and other amenities	✓		✓	✓	✓	✓	*p.105*			✓		*Long-term*
Enhance and maintain existing parks and greenspaces				✓	✓	✓	*p.115*			✓		*Short-term*
Introduce small pedestrian plazas along Michigan Street, particularly at transit stations and stops	✓		✓	✓	✓	✓	*p.50*		✓	✓	✓	*Long-term*
Maximize “gateway” locations throughout the corridor at key connector points				✓		✓	*p. 73, 105*			✓	✓	*Long-term*
Install functional art such as bike racks and benches	✓		✓	✓		✓	*p.115*			✓	✓	*Mid-term*
Introduce art along linear pathways				✓		✓	*p. 73, 115*			✓	✓	*Long-term*
Enhance private facilities												
Encourage innovative, artistic building design				✓		✓	*p.114*				✓	*Short-term*
Introduce art into plazas and building common areas				✓		✓	*p. 73, 114*				✓	*Mid-term*
Improve existing housing stock and enhance the integrity of each neighborhood’s unique character.												
Recognize existing housing stock and neighborhood context												
Encourage housing reinvestment		✓		✓	✓	✓	*p. 22, 23*	✓				*Short-term*
Encourage the preservation and reuse of historically and architecturally significant structures/areas		✓		✓	✓	✓	*p. 57, see 2002 MP*	✓				*Short-term*
Support area-specific plans that promote the compatibility of new development and rehabilitation projects		✓		✓	✓	✓	*p. 4, 22*	✓				*Short-term*
Aggressively educate and enforce housing maintenance requirements		✓		✓	✓		*p. 44*	✓	✓			*Short-term*
Avoid "piecemeal" redevelopment that leaves remnant residential homes				✓	✓	✓	*p. 44*	✓	✓			*Mid-term*

Guiding Principles and Plan Objectives	HUD Livability Principles: Provide more transportation choices	Promote equitable, affordable housing	Enhance economic competitiveness	Support existing communities	Coordinate policies and leverage investment	Value communities and neighborhoods	Location in Plan	Type of Action Needed: Program or Policy	Regulation	Capital Projects	Partnership or Private Sector Initiative	Time Frame
Provide a broad range of high quality housing choices and price points to meet the diverse needs of existing and new residents.												
Promote a broad range of high quality housing choices												
Encourage a mix of affordable, mid-price, and upper-end housing choices through a combination of preservation, rehabilitation, and new construction		✓		✓	✓	✓	*p. 41*	✓				*Short-term*
Encourage a variety of housing types and costs		✓		✓	✓	✓	*p. 45*	✓				*Short-term*
Educate development community about the need for a variety of different housing types and price points		✓		✓	✓	✓	*p. 45*	✓				*Short-term*
Amend the Zoning Ordinance to better address "missing middle" and other emerging housing products		✓		✓	✓	✓	*p. 45*		✓			*Short-term*
Work with neighborhoods to determine appropriate development densities and locations for new housing types		✓		✓	✓	✓	*p. 44*	✓	✓			*Short-term*
Support Affordable Housing Development*												
Explore creating inclusionary zoning policies		✓			✓	✓	*p. 58*	✓	✓			*Short-term*
Provide density bonuses for affordable units		✓		✓	✓	✓	*p. 58*		✓			*Short-term*
Provide gap funding on adaptive reuse and new construction		✓		✓	✓	✓	*p. 58*	✓				*Short-term*
Promote shared-equity/shared-appreciation homeownership programs		✓			✓	✓	*p. 58*	✓				*Short-term*
Promote City of Grand Rapids and MSHDA's Down Payment Assistance Program		✓			✓	✓	*p. 58*	✓				*Short-term*
Establish Employer-Assisted Housing programs		✓		✓	✓	✓	*p. 59*	✓				*Short-term*
Establish a Community Land Trust		✓			✓	✓	*p. 59*	✓				*Mid-term*
Consider promoting limited-equity cooperatives		✓			✓	✓	*p. 59*	✓				*Mid-term*
Create a lower-income tax abatement program		✓			✓	✓	*p. 59*	✓				*Mid-term*
Develop "linkage fees" or a payment in lieu program		✓			✓	✓	*p. 59*	✓				*Mid-term*
** recommendations were provided as part of the Target Market Analysis by Zimmerman/Volk Associates (Appendix)*												
Create a transportation system that is accessible, interconnected, and multimodal.												
Achieve aggressive mode share targets before 2035												
12 percent of all trips will be by walking	✓		✓	✓	✓	✓	*p. 65*	✓		✓	✓	*Long-term*
5 percent of all trips will be by bicycling	✓		✓	✓	✓	✓	*p. 65*	✓		✓	✓	*Long-term*
20 percent of all trips will be by transit	✓		✓	✓	✓	✓	*p. 65*	✓		✓	✓	*Long-term*
20 percent of all trips will be by carpool or rideshare	✓		✓	✓	✓	✓	*p. 65*	✓		✓	✓	*Long-term*
45 percent of all trips will be by single occupancy vehicle	✓		✓	✓	✓	✓	*p. 65*	✓		✓	✓	*Long-term*

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Create a transportation system that is accessible, interconnected, and multimodal. (continued)												
Improve Connectivity												
Implement the MOBL NOBL Circulation Study	✓		✓	✓	✓	✓	*p. 108*			✓	✓	*Mid-term*
Implement the Crescent Street Connectivity Study	✓		✓	✓	✓	✓	*p. 108*			✓	✓	*Mid-term*
Implement the Hastings Linear Park Plan	✓		✓	✓	✓	✓	*p. 111*			✓	✓	*Short-term*
Improve and/or reconstruct stairs between Belknap and North Monroe	✓		✓	✓	✓	✓	*p. 111*			✓	✓	*Mid-term*
Create a boulevard cross-section that combines Division and Ionia Avenues	✓		✓	✓	✓	✓	*p. 111*			✓		*Short-term*
Provide enhanced pedestrian crossing areas on Division to the north of I-196	✓		✓	✓	✓	✓	*p. 111*			✓		*Short-term*
Improve streetscapes in the North Monroe District	✓		✓	✓	✓	✓	*p. 110*			✓	✓	*Short-term*
Improve and reinforce connections to the Grand River and Downtown	✓		✓	✓	✓	✓	*p. 110, 112*			✓	✓	*Short-term*
Explore the creation of a shared-use path along the existing railroad	✓		✓	✓	✓	✓	*p. 78*	✓		✓	✓	*Long-term*
Change Traffic Impact Studies to Transportation Impact Evaluations												
Safely and efficiently move goods and people of all ages and abilities through the Corridor, with a particular focus on pedestrian safety.												
Pedestrians will experience Level of Service (LOS) A												
Realign existing ramps so that they are perpendicular with each crossing, where the sidewalk alignment allows	✓		✓	✓	✓	✓	*p. 72*			✓		*Mid-term*
Reconstruct curb radii to be no greater than 10-15 feet, on secondary streets	✓		✓	✓	✓	✓	*p. 72*			✓		*Mid-term*
Use enhanced color and color crosswalk markings where feasible	✓		✓	✓		✓	*p. 73, 113*			✓		*Short-term*
Restripe stop bars and crosswalks to improve visibility	✓		✓	✓		✓	*p. 73*			✓		*Short-term*
Examine raised crosswalks near the medical center	✓		✓	✓	✓	✓	*p. 73*			✓	✓	*Short-term*
Install curb planters with street trees and under-story plantings	✓		✓	✓		✓	*p. 72*		✓	✓	✓	*Short-term*
Install low-impact design (LID) treatments (infiltration planters) intermittently	✓		✓	✓		✓	*p. 72*		✓	✓	✓	*Short-term*
Install pedestrian amenities and seating areas	✓		✓	✓		✓	*p. 73*		✓	✓	✓	*Mid-term*
Install public art and enhance wayfinding	✓		✓	✓		✓	*p. 73*			✓	✓	*Mid-term*
Install audible pedestrian signals or count-down signals	✓		✓	✓	✓	✓	*p. 74*			✓		*Short-term*
Avoid the addition of dedicated right hand turn lanes wherever feasible	✓		✓	✓		✓	*p. 73*	✓				*Short-term*
Shorten crosswalk lengths by constructing curb extensions in tandem with closing the right-turn only lane on Michigan, between Bostwick and Barclay	✓		✓	✓	✓	✓	*p. 72*			✓	✓	*Short-term*
Install sidewalk east of Plymouth, and on Fuller between I-196 and Michigan	✓		✓	✓	✓	✓	*p. 74*			✓		*Short-term*
Replace center turn-lanes with medians as curb cuts are reduced				✓	✓	✓	*p. 73*	✓		✓	✓	*Short-term*

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Safely and efficiently move goods and people of all ages and abilities through the Corridor, with a particular focus on pedestrian safety. (continued)												
Bicyclists will experience LOS B												
Install Lyon Bikeway infrastructure, signals, wayfinding, and amenities on Lyon Street and designated north-south connections	✓		✓	✓	✓	✓	*p. 80*			✓		*Mid-term*
Explore the creation of a shared-use path along the existing railroad	✓		✓	✓	✓	✓	*p. 78*	✓				*Long-term*
Explore a conversion of Michigan Street from five lanes to three lanes east of Plymouth, where traffic volumes do not require five lanes	✓		✓	✓	✓	✓	*p. 77*	✓				*Mid-term*
Provide secure bike parking facilities	✓		✓	✓	✓	✓	*p. 80*			✓	✓	*Short-term*
Provide additional bicycle "infrastructure," such as repair stations and showers	✓		✓	✓	✓	✓	*p. 80*				✓	*Short-term*
Develop a bike share or bike loan program	✓		✓	✓	✓	✓	*p. 80*			✓	✓	*Short-term*
Provide bike route information and wayfinding	✓		✓	✓	✓	✓	*p. 80*	✓				*Short-term*
Transit riders will experience LOS B												
Consolidate bus service to Michigan Hill/expand Line 50 route	✓	✓	✓	✓	✓	✓	*p. 76*				✓	*Short-term*
Provide enhanced transit to Plymouth Avenue	✓	✓	✓	✓	✓	✓	*p. 84*				✓	*Short-term*
Implement the Laker Line Bus Rapid Transit (BRT) Phase I, to Lafayette	✓	✓	✓	✓	✓	✓	*p. 84*			✓	✓	*Mid-term*
Implement the Laker Line Bus Rapid Transit (BRT) Phase II, to Plymouth	✓	✓	✓	✓	✓	✓	*p. 84*			✓	✓	*Long-term*
Offer vanpools, carpools, rideshare and ride matching, and car-sharing	✓		✓	✓	✓	✓	*p. 85*	✓			✓	*Short-term*
Provide employer subsidies for alternate mode use	✓	✓	✓	✓	✓	✓	*p. 85*				✓	*Short-term*
Implement a "guaranteed ride home" program	✓		✓	✓	✓	✓	*p. 85*	✓			✓	*Short-term*
Automobile drivers and passengers will experience LOS C or D												
Reconfigure Ottawa/Ionia interchange	✓		✓	✓	✓		*p. 89, 92*			✓	✓	*Mid-term*
Reconfigure Michigan/College intersection, if necessary	✓		✓	✓	✓		*p. 90*			✓		*Long-term*
Reconfigure Hastings Street, to connect to College Avenue	✓		✓	✓	✓		*p. 92*			✓	✓	*Mid-term*
Provide a healthy environment that promotes active living.												
Build a Compact, Walkable, Mixed-Use Environment												
Reduce Contributing Behaviors for Obsesity												
Improve the pedestrian environment	✓		✓	✓		✓	*p. 71*			✓	✓	*Mid-term*
Make traveling by bicycle a feasible and safe option	✓		✓	✓		✓	*p. 79*			✓	✓	*Mid-term*
Encourage active commuting for employees and students	✓		✓	✓	✓	✓	*p. 108*				✓	*Short-term*
Increase access to healthy food (e.g. a grocer at proposed Michigan/Diamond project)	✓		✓	✓	✓	✓	*p. 105*				✓	*Mid-term*
Improve perceived safety by applying Crime Prevention Through Environmental Design (CPTED)	✓		✓	✓	✓	✓	*p. 106*		✓		✓	*Short-term*
Improve accessibility using Universal Design Principles	✓		✓	✓	✓	✓	*p. 108*	✓	✓	✓	✓	*Mid-term*
Implement the Michigan Hill Urban Design and Streetscapes Concept Report	✓		✓	✓		✓	*p. 112*			✓	✓	*Long-term*

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Provide a healthy environment that promotes active living. (continued)												
Reduce Personal Injury												
Improve the pedestrian environment by designing for all users	✓		✓	✓		✓	*p. 108*			✓	✓	*Mid-term*
Expand the City of Grand Rapids' bike safety education program	✓			✓	✓	✓	*p. 108*	✓				*Short-term*
Reduce Asthma and Heat-Related Illnesses												
Achieve aggressive mode share targets before 2035 to reduce vehicle emissions	✓			✓		✓	*p. 104*	✓	✓	✓	✓	*Long-term*
Increase tree canopy along Michigan Street and other travel routes to provide shade	✓			✓		✓	*p. 104*	✓	✓	✓	✓	*Mid-term*
Use sustainable practices that will preserve and enhance natural systems and green infrastructure, as outlined in Green Grand Rapids.												
Create a Resilient Community												
Invest in the rehabilitation and maintenance of existing parks				✓		✓	*p. 115*			✓		*Short-term*
Create new parks where possible, such as Hastings Linear Park				✓		✓	*p. 109*			✓		*Mid-term*
Use Low-Impact Development to manage stormwater naturally				✓	✓	✓	*p. 116*			✓	✓	*Short-term*
Focus on streets as opportunities to improve water quality and reduce water volume entering into the man-made storm water infrastructure system				✓	✓	✓	*p. 116*			✓		*Short-term*
Develop a program to encourage tree plantings on private property				✓	✓	✓	*p. 118*	✓			✓	*Short-term*
Provide trees with enough land and soil volume to create a productive tree canopy				✓	✓	✓	*p. 118*	✓				*Short-term*
Use "Right Tree, Right Place" planting methodology under power lines				✓	✓	✓	*p. 118*	✓				*Short-term*
Establish partnerships that will seek to plan, fund, design, construct, maintain, and operate efficient systems.												
Foster Public - Private Partnerships for Redevelopment												
Create a Corridor Improvement/Business Improvement District	✓		✓	✓	✓	✓	*p. 127*	✓			✓	*Short-term*
Develop a charrette program	✓	✓	✓	✓	✓	✓	*p. 52*	✓				*Mid-term*
Partner for future transit-oriented development (TOD) nodes			✓	✓	✓	✓	*p. 52*	✓				*Short-term*
Provide investors and developers easy access to economic, market, workforce, and real estate information			✓	✓	✓	✓	*p. 14*	✓				*Short-term*
Give technical assistance for small life sciences businesses			✓	✓	✓	✓	*p. 126*	✓				*Short-term*
Use public investments to strategically leverage desired economic development in appropriate locations			✓	✓	✓	✓	*Chapter 2*	✓				*Short-term*
Help coordinate economic development initiatives			✓	✓	✓		*p. 126*	✓				*Short-term*
Provide the transportation, utility, and technology infrastructure needed to support economic growth			✓	✓	✓		*p. 125*			✓		*Long-term*

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Establish partnerships that will seek to plan, fund, design, construct, maintain, and operate efficient systems. (continued)												
Implement Parking and Transportation Demand Management Strategies												
Establish a Transportation Management Association	✓		✓	✓	✓	✓	*p. 66*	✓				
Explore the creation of a Parking Management District, including establishing authority and work plan	✓		✓	✓	✓		*p. 94*	✓				*Short-term*
Consolidate bus and shuttle operations into a branded "choice-rider" service	✓			✓	✓		*p. 84*				✓	*Short-term*
Reform parking pricing and permits	✓	✓		✓	✓	✓	*p. 94*				✓	*Mid-term*
Establish shared parking arrangements	✓	✓		✓	✓	✓	*p. 94*				✓	*Short-term*
Encourage live-near-work housing assistance programs	✓	✓	✓	✓	✓	✓	*p. 41, 104*	✓			✓	*Long-term*
The partnerships necessary to implement the Michigan Street Corridor Plan are further identified in Chapter 6, Section 6.1.3												