



FINAL REPORT

Transit Master Plan Final Report

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Executive Summary

Transit Master Plan Background

The development program established by the Metro Mobile 2020 Task Force in 1998, which created a 20 year vision and plan of action for *The Rapid*, has already been largely realized. Rather than take a piecemeal approach to service development, *The Rapid* needed a new guiding vision.

The Transit Master Plan (TMP) was envisioned as a tool that would provide a strategic direction for *The Rapid* over the next twenty years. The TMP identifies current and future transit needs, examines alternate courses of action, and targets transit improvements that should be pursued by *The Rapid* over the next 20 years to accommodate the region's growth and enhance the quality of life for area residents. The TMP also includes an update of the 2005 comprehensive operational analysis, a review of the paratransit service (GO!Bus), and prescribes transit-supportive land use policies for corridors identified for possible BRT or modern streetcar service.

The result of the 2030 Transit Master Plan's planning process, the *Preferred Scenario*, details specific service enhancements, new programs and provides an anticipated level of local investment needed to sustain such a program. In order to generate a financial program, the TMP team developed an illustrative phasing program, showing how improvements could be implemented over the next 20 years. This program is by no means a specific roadmap for implementation. The *Preferred Scenario* is based on several assumptions, including support for additional service from the townships surrounding the six cities and availability of additional state operating support through an increased fuel tax. While the TMP identifies specific service improvements and capital projects, local needs and resources can change over time. For this reason, it is important to recognize that some recommended service improvements and capital projects may not be implemented as originally planned but may be refined, deferred or even accelerated based on future conditions.

The goal of the TMP was to develop a "People's Plan" that reflected the community's needs to form a unified and well established system. Toward this end, communication, participation and involvement in the TMP were essential ingredients in building consensus around the plan and building broad support for *The Rapid*. By integrating technical development with public engagement and input, the project team developed a strategic plan that proactively engaged both transit users and non-users to generate excitement and enthusiasm of the region's future and highlight the benefits of the proposed improvements.

Based on input from the public and the Mobile Metro 2030 Task Force (MM2030), the TMP Project Team prepared three transit development scenarios resulting in a final, *Preferred*

Scenario that was presented to *The Rapid's* Board of Directors in May, 2010. The three planning scenarios and the *Preferred Scenario* are detailed below.

Scenario Planning

One of the most remarkable results of the TMP public outreach program was the commonality of the remarks, whether they came from a resident at a public meeting, a business leader at an MM2030 meeting or from an agency representative at the Technical Advisory Team (TAT) meeting. Participants shared a great sense of civic pride. They

understood that transportation, and transit specifically, can help shape a place, and they generally wanted to use transit to help make greater Grand Rapids a vibrant, thriving place where their children would want to stay, live and work.

Public Priorities:

- #1 Expand Span of Service*
- #2 Improve Service Frequencies*
- #3 Expand Choices (BRT, Streetcar)*
- #4 Extend Service outside of ITP Service Area*
- #5 Improve Service in Underserved Areas*

Based on comments that were common among the community workshops, online surveys and visioning sessions, five transit priorities were identified: expand span of service particularly on routes that either ended in the early evening or do not have weekend service; improve service frequencies; provide customers with new types of transit service such as Bus Rapid Transit or Modern Streetcar; extend service beyond the current service area on major corridors such as Alpine Avenue, Plainfield Avenue and 28th Street; and improve service for currently underserved areas within *The Rapid* service area, such as northern Walker and southwest Wyoming.

Building on these five priorities, the project team developed three scenarios named Scenarios A, B and C. The primary focus of each scenario is as follows.

Scenario A: Improve Existing Local Services, Initiate Bus Rapid Transit

Scenario B: Improve Local Service Above and Beyond Scenario A, Initiate Regional Commuter Bus Services and Modern Streetcar Starter Line

Scenario C: Improve Local Service Above and Beyond Scenario B, Expand Regional Commuter Bus Services and Expand Modern Streetcar Network

In our most recent round of public workshops, a strong preference emerged for Scenario C. Workshop participants generally believed that Scenario C offered transit options, services and amenities that best position the region for the future, making it a more vibrant, urban community. They further indicated those same features are key in creating a lifestyle that will



retain and attract young professionals. However, while many participants preferred the vision of Scenario C, some viewed Scenario B as a more realistic candidate based on perceived support for additional local funding and the current state of the economy.

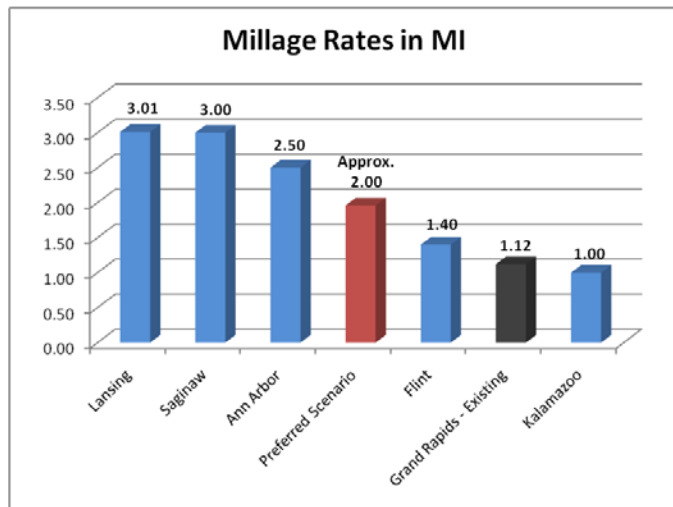
The Preferred Scenario

Based on the responses from the public and the Mobile Metro 2030 Task Force, the Project Team developed a *Preferred Scenario* that matched the vision of Scenario C but at a cost closer to Scenario B. The *Preferred Scenario* incorporated the span of service improvements from Scenario A, most of the frequency improvements from Scenarios A and B, developed Bus Rapid Transit on *The Rapid's* two most highly used transit corridors and included the full Regional Express Bus program from Scenario C as well as a Modern Streetcar starter network that would connect the West Side, downtown Grand Rapids and Medical Mile, laying the foundation for future streetcar expansion projects to West Grand and East Grand Rapids. The *Preferred Scenario* would also include improvements to the GO!Bus system including extension of GO!Bus service to new service areas, development of an Accessibility Improvement Plan, and same day booking service (subject to space available). The core improvements in the *Preferred Scenario* are summarized on the following page. On May 25, 2010, the MM2030 recommended the *Preferred Scenario*. The MM2030 urged *The Rapid's* Board to adopt the *Preferred Scenario* and encouraged them not to lose sight of the vision in Scenario C so that additional projects might be reincorporated at a later date. A map of the *Preferred Scenario* follows the summary list of projects.

Finance Plan and Millage Requirements

Both the annual 2030 operating and maintenance costs and the aggregated FY 2011-2030 capital cost for the *Preferred Scenario* are roughly double today's costs, after adjusting for inflation. Fortunately, the millage would not have to double. Since some of the new services and service improvements would occur outside of *The Rapid's* current boundaries they would be funded as contracted services. The State of Michigan is also considering an increase in the motor vehicle fuel sales tax, from 19 to 27 cents per gallon, and some of that increase could help supplement local transit funding. In addition, private sector contributions may help to fund the downtown streetcar and other extensions. Without these additional private contributions, the *Preferred Scenario* would require an increase in the local millage rate from 1.12 mills to approximately 2.00 mills.

When compared to the level of investment in transit for other urbanized areas in Michigan, the local level of investment would surpass that of Flint, but would still fall behind that of Ann Arbor, Saginaw and Lansing. The property values in greater Grand Rapids tend to be higher than those in the other cities, which generate greater revenue per mill; however, the higher millage assessments in Lansing, Saginaw and Ann Arbor indicate a willingness from their residents to invest in and support their transit systems.



Benefits of TMP Implementation

Public transit has many economic and community benefits – including both direct benefits that are derived primarily by transit riders and workers, and secondary benefits that are accrued by non-users and the community in general. These benefits include increased productivity resulting from travel time savings; reduced travel costs; access to jobs, shopping, community and medical facilities for riders; reduced congestion and greenhouse gases; energy conservation; ability to influence land use and growth; and creation of new jobs. The table shown below, summarizes *The Rapid's* economic benefits for its 2008 service levels. Taken together, *The Rapid* system in 2008 generated annual benefits of \$39.7 million in transportation cost savings, \$5.2 million in low-cost mobility benefits, \$86 million in economic impacts and 525 jobs.

The TMP *Preferred Scenario*, which nearly doubles annual operating costs (in 2010 dollars) and annual ridership, would generate annual benefits approximately twice the 2008 benefits, or about \$80 million in transportation

cost savings, \$10 million in low-cost mobility benefits, \$170 million in economic impacts, and more than 1,000 jobs. In addition, the *Preferred Scenario* would generate additional economic benefits that would result from the BRT and streetcar projects – the creation of transit-oriented developments, more sustainable and livable communities, and more efficient land use patterns. The Grand Rapids Streetcar Feasibility Study (2009) estimated that the downtown streetcar project would generate \$388 million in new housing, office, retail and hotel development

Preferred Scenario

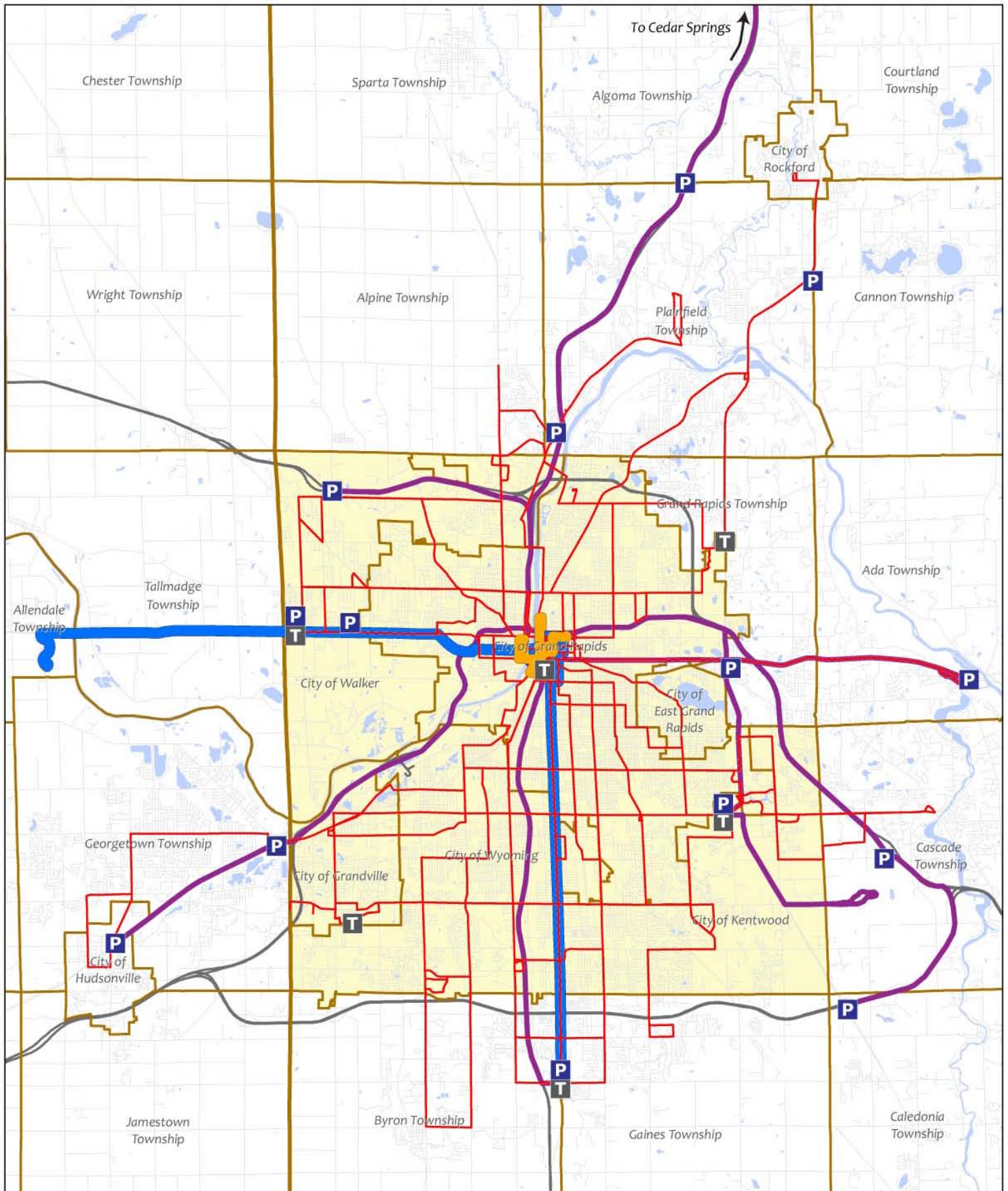
+ \$650 Million in Economic Benefits
+ 3,000 New Jobs



within ¼ mile of the streetcar line and 1,800 jobs in Kent County. An economic benefit analysis for the West Side-Medical Mile streetcar project has yet to be developed. Conservatively, the TMP's *Preferred Scenario* would generate more than \$650 million in economic benefits and 3,000 jobs for the greater Grand Rapids region.

Preferred Scenario Improvements

Expanded Span of Service (Systemwide)
Weekdays: 5am to 12am
Saturdays: 6am to 12am
Sundays/Holidays: 7am to 9pm
Improved Service Frequencies
15 min peak/off-peak on Eastern, Kalamazoo, Eastown, Alpine & Plainfield
30 min nights & weekends on most routes
Other Improvements
Extension of Routes outside of ITP service area along major corridors (i.e. Alpine, Plainfield, 28 th)
Extension of Routes outside of ITP service area south into Byron & Gaines Townships
GO!Bus Improvements
Expanded GO!Bus for New Local Bus Corridors
Accessibility Improvement Plan
Same Day Booking (Space Available)
New Services
Bus Rapid Transit
- Silver Line (Division Ave)
- Laker Line (Lake Michigan Dr)
Express Bus
- Downtown to Gerald R. Ford Int'l Airport
- Cedar Springs/Rockford (US 131 North)
- Walker (I-96 West)
- Georgetown Township/Hudsonville (I-196 West/Chicago Dr)
- Byron/Gaines Townships (US 131 South)
- Cascade/Caledonia Townships (I-96 East)
- Ada Township (East Fulton St - <i>select trips on Route 14</i>)
Modern Streetcar
- North/South (Rapid Central Station to North Monroe)
- East/West (West Side to Medical Mile via DT Grand Rapids)
New Routes
Crosstown Service
- Leonard Ave
- 3 Mile Rd
Local Service
- Georgetown Township/Hudsonville
- Walker Ave/3 Mile Rd
- Rockford/Knapp St
- Comstock Park/Belmont (W River Dr/Jupiter Ave)



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Preferred Scenario

Legend

- ~ Local Service
- ~ BRT Corridors
- ~ Regional Commuter Service
- ~ Streetcar Corridors
- P PnR Lots
- T Transfer Centers



Chapter 1: Creation of The Rapid

Agency History

Public transportation has been operated in Grand Rapids since 1963 when the City of Grand Rapids formed the Grand Rapids Transit Authority (GRTA). While it was supported by operating assistance from the state and federal governments, the City of Grand Rapids was the only local government that supported GRTA, and it did so for 15 years. By 1978, residents and employees in the surrounding jurisdictions had a sufficient need for transit service so the six cities of East Grand Rapids, Grand Rapids, Grandville, Kentwood, Walker and Wyoming voluntarily agreed to support a more regional transit service with general fund revenues, rebranded as the Grand Rapids Area Transit Authority (GRATA). Because GRATA's funding was discretionary in nature, most jurisdictions only paid the bare minimum to keep buses on the street. As one would expect, with limited revenues and rising expenses, the amount and quality of service provided by GRATA deteriorated over time.

Interurban Transit Partnership (ITP)/The Rapid

The most recent Long Range Transportation Plan was adopted in 1998. It identified 5 marquee policies:

1. Use public transportation investments as effective strategic tools to shape urban growth and development consistent with the Metropolitan Development Blueprint.
2. Give funding priority to those projects and programs that improve metropolitan and regional public transportation connections.
3. Establish guidelines for local governments that include pedestrian and transit access features in the design of all major developments and activity centers.
4. Give full consideration to future public transportation design requirements in all major transportation corridor projects.
5. Identify and provide priority funding for those projects which promote economic development and provide access to regional centers of employment and economic activity.

Clear that real progress on the 1998 plan could not be made under GRATA, the six cities worked to establish the Interurban Transit Partnership (ITP) as a State Act 196 authority with dedicated millage funding from those cities. In April 2000, the six cities approved a dedicated millage rate to support the transit agency. In October 2000, the ITP took over as the designated public transit provider and GRATA was dissolved. Shortly after incorporating under Act 196, the ITP chose to rebrand its service under the name, The Rapid, which continues to be used today. This influx of new, stable funding enabled *The Rapid* to undertake several service improvements, which quickly set the agency on the path to success. As promised in the 2000 millage effort, The Rapid undertook a comprehensive improvement plan which included the following six elements:

- Improved weekday frequencies on four local routes
- Weekday evening service on 9 local routes and GO!Bus

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- Sunday service on 7 local routes and GO!Bus
- A crosstown route on 44th Street
- The Passenger Adaptive Suburban Service (PASS) connecting neighborhoods to local routes
- Customized programs for employees needing to travel beyond regular service hours and *The Rapid* service area

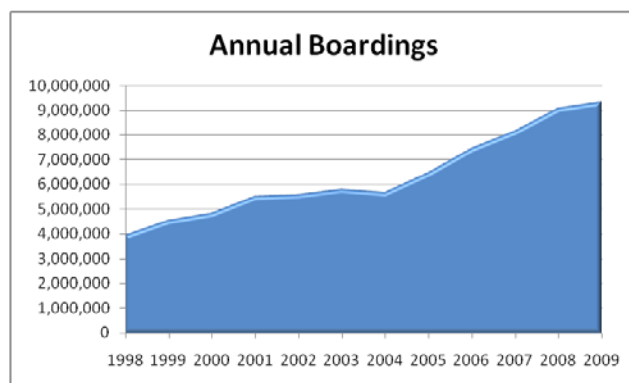
The Local Investment in Transit

The initial millage rate approved in 2000 was 0.75 mills. In November 2003, facing a decrease in state operating assistance and wanting to institute additional service improvements, *The Rapid* requested a 0.20 mill increase, bringing the total millage commitment up to 0.95. All six cities approved the request. Following a 2005 Comprehensive Operational Analysis (COA) designed to optimize *The Rapid's* existing services and implement additional service improvements, a third millage increase was requested in 2007 that would raise the millage rate to 1.12 to support the proposed improvements, and it was again approved.

Most recently, *The Rapid* came back in May 2009 requesting additional local funding support to operate the Silver Line Bus Rapid Transit project along Division Avenue. The request for an additional 0.12 mills, which would not begin to be collected until 2012, was narrowly defeated 52% to 48%. The existing millage rate, 1.12, will expire in 2013 with a final collection of millage in 2012.

2000 to 2010: Transit Growth in Greater Grand Rapids

As *The Rapid* began to implement service improvements ridership began to grow in response to the implementation of new buses and service improvement. Much of the service enhancements were related to evening and weekend services, typically the least productive periods for transit service. While the amount of service operated (annual revenue vehicle hours) only grew by 56% between 2000 and 2009, annual boardings on local bus service more than doubled, rising from 4.2 million unlinked passenger trips in 2000 to 9.3 million in 2009.



The dramatic growth in ridership was not *The Rapid's* only accomplishment over the decade. *The Rapid* undertook a major capital improvement program, expanding the vehicle fleet to 119 buses and 66 paratransit vehicles; constructing Rapid Central Station, the first LEED-certified transit facility in the U.S.; and initiating upgrades to the Wealthy Operations Center. In recognition of the agency's accomplishments, *The Rapid* was named APTA's 2004 Outstanding Public Transportation System in the U.S. for systems its size (between 4 and 30 million annual trips).



Chapter 2: Charting a Vision for the Future

The existing Long Range Transportation Plan adopted in 1998, had been largely realized. However, rather than take a piecemeal approach to service development, *The Rapid* needed a new guiding vision for the future of the Greater Grand Rapids area.

Development of the 2030 Transit Master Plan

The Mission Statement of *The Rapid* is “to create, offer and continuously improve a flexible network of regional public transportation options and mobility solutions.” The timing for this effort is perfect and crucial in continuing to meet the visions set forth by *The Rapid* in the ever growing and changing inter-urban area. The TMP will result in a tactical analysis of current and future conditions and the needs of the municipalities that reside within *The Rapid* service area.

The Transit Master Plan (TMP) was envisioned as a plan that would provide a strategic direction for *The Rapid* over the next twenty years. The TMP identifies current and future transit needs, examines alternate courses of action, and targets transit improvements that should be pursued by *The Rapid* over the next 20 years to accommodate the region's growth and improve the quality of life. The TMP also includes an update of the 2005 comprehensive operational analysis, a review of the paratransit service (GO!Bus), and prescribes transit-supportive land use policies for corridors identified as possible BRT or modern streetcar lines.

The result of the 2030 Transit Master Plan's planning process, the *Preferred Scenario*, details specific service enhancements, new programs, and provides a projected level of local investment needed to implement and sustain such a program. In order to generate the financial plan, the TMP team developed an illustrative phasing program, showing how improvements could be implemented over the next 20 years. This program is by no means a specific roadmap for implementation. The *Preferred Scenario* is based on several assumptions, including support for additional contractual services outside the six cities and the availability of additional state operating support through a proposed fuel tax increase for transportation. While the TMP identifies specific service improvements and capital projects, local needs and resources can change over time. For this reason, it is important to recognize that some recommended service improvements and capital projects may not be implemented as originally planned but may be refined, deferred or even accelerated based on local conditions. Conversely, new projects may be added if there are funding and resources as well as public support to take advantage of those opportunities.

Chapter 3: A People's Plan

Outreach and Consensus Building

The goal of the TMP was to develop a “People’s Plan” that reflected community needs and vision for the future of transit in greater Grand Rapids. This vision must stretch beyond individual jurisdictions to form a unified and comprehensive system. Toward this end, communication, participation and involvement in the TMP were essential ingredients to building consensus around the plan and building broad support for *The Rapid*. By integrating technical analysis with public engagement and input, the project team developed a strategic plan that proactively engaged both transit users and non-users to generate excitement and enthusiasm for the region’s future and highlight the benefits of the proposed improvements.

Mobile Metro 2030 Task Force

The Mobile Metro 2030 Task Force (MM2030) was activated as part of the TMP to play a key role as regional advisors. Their mission was to ensure that key stakeholder groups were appropriately represented and that, going forward, they continue to act as conduits between their constituency group and *The Rapid*. The Task Force was made up of representatives from the business community, residents, local governments, educational and healthcare institutions, non-profit agencies, environmental advocates, young professionals, transit riders, and representatives for seniors and people with disabilities.



The Mobile Metro 2030 Task Force, beginning in October 2009, met throughout the course of the TMP’s development and its members were critical conduits between the community and civic organizations and *The Rapid* as needs and potential projects were identified. Because the Task Force captured a cross-section of the greater Grand Rapids community, they were an excellent sounding board as the project team bundled the projects in possible implementation scenarios.

On February 16, 2010, *The Rapid* and the project team held a visioning workshop with the Task Force to discuss short and long term needs, conduct a voting exercise allowing MM2030 members to identify issues of key importance, and then concluded with a group discussion on areas of consensus. The areas of consensus were as follows and echoed the sentiments we heard from the community workshops:

- Expansion of *The Rapid* service area to provide regional service, beyond the current six cities.

- Improvements in the current service (e.g. more frequent service, more stops, improved GO!Bus service for the ADA and senior community members).
- Advancement of BRT service on Division Avenue and possibly elsewhere.
- Identification of key suburban areas and to serve those areas with Park and Ride lots and commuter bus service.
- Encouragement of transit oriented development via public policies, parking rates in downtown Grand Rapids, site design, etc.
- Greater emphasis on attracting new “choice riders” (those who have access to a car, yet choose to take transit).

After consideration of the public input, an examination of the technical analysis, and their own deliberations, on May 26, 2010, the MM2030 recommended a *Preferred Scenario* to *The Rapid's* Board for adoption at its June 30, 2010 meeting. An adopted *Preferred Scenario* will guide transit service improvement and expansion in the greater Grand Rapids area over the next 20 years.

Technical Advisory Team

The coordination between *The Rapid* and the Metro Mobile 2030 Task Force was also complemented by a Technical Advisory Team (TAT). The TAT was comprised of officials from the six cities, Kent County Road Commission, Gerald R. Ford International Airport, Grand Valley Metropolitan Council (GVMC) and the Michigan Department of Transportation. The TAT met bi-monthly to review project progress, coordinate the TMP with other ongoing regional plans, and provide a perspective of local issues and concerns.

Community Workshops – Issues and Needs

After working with *The Rapid* and GVMC to develop some basic information on how the region was expected to grow over the next twenty years and where those future residents might travel to and from, the project team set out to engage residents in the six cities through six community workshops. Each workshop began with an open house, followed by a short presentation and ended with a question and answer session, providing opportunities for public input into the process. The dates and times of the initial six meetings are listed below.

- 1) Wyoming: Nov. 4, 6-8 pm
- 2) Kentwood: Nov. 5, 6-8 pm
- 3) East Grand Rapids: Nov. 11, 6-8 pm
- 4) Grand Rapids: Nov. 12, 7-9 pm
- 5) Grandville: Nov. 17, 6-8 pm
- 6) Walker: Nov. 18, 6-8 pm

At each workshop, the project team listened to residents voice their opinions regarding existing service and ideas for new service. While some comments were very specific (for example, Route 24 - Burton needs weekday evening service or a concrete pad at a particular stop), most comments were more



broadly based (for example, a general need for improved night and weekend service). The specific comments were recorded for *The Rapid* to possibly address in the short-term or through the COA update and the broad comments were condensed into fifteen issues that the public was then asked to prioritize in an online survey.

Online Survey

Upon completion of the first round of Community Workshops, the TMP project team developed an online and printed survey to gauge the community's interest in specific transit improvements. The survey asked two questions that were critical in helping identify priorities for the TMP. The first group of questions asked respondents to identify their top five priority issues out of the fifteen issues identified in the workshops. The second group of questions asked respondents whether each improvement was very important, somewhat important, important or not important.

On the "Top 5" question, the two most critical issues were extending service hours, specifically for weekday evenings, weekends and holidays (21.9% reported as the #1 issue) and increased service frequencies (18.0% reported as the #1 issue). Other Top 5 issues included more modal choices, such as BRT and Streetcar, expanded service into the county and new routes serving underserved, or unserved, corridors inside the service area. Table 3-1, below, shows the tabulation of the priorities for the 15 issues.

Table 3-1: Transit Master Plan Survey - Top 5 Issues

Issue	#1	#2	#3	#4	#5
a. Increased service frequency	18.0%	13.3%	11.2%	7.2%	6.2%
b. Extended service hours (specifically, evenings and weekends)	21.9%	15.1%	13.3%	9.5%	5.8%
c. Providing more express and limited stop service	2.8%	4.3%	4.7%	8.7%	8.2%
d. More choices in transit, such as Bus Rapid Transit (BRT) and streetcar	11.3%	9.7%	8.3%	3.8%	8.2%
e. Enhanced service to under-served areas	10.6%	10.0%	10.4%	9.1%	10.1%
f. Improved accommodations for seniors and disabled	2.8%	5.4%	1.8%	3.0%	2.3%
g. Increased county-wide service	11.0%	10.4%	9.4%	7.6%	7.4%
h. More park-n-ride lots	1.4%	1.1%	1.8%	2.7%	4.3%
i. More passenger amenities (such as bus shelters and benches)	3.2%	2.9%	5.4%	8.0%	8.2%
j. Increased public-private partnership opportunities	0.0%	3.2%	1.4%	3.4%	1.9%
k. Improvements to the time it takes to travel by bus	5.3%	9.7%	8.3%	10.3%	9.7%
l. Fare payment options that make boarding quicker and purchasing passes more convenient	4.6%	5.7%	7.9%	10.3%	8.9%
m. Better connections or more direct service to downtown Grand Rapids employment, medical services, and entertainment destinations	4.6%	3.9%	8.6%	8.4%	7.8%
n. Improvements to passenger information	0.0%	0.7%	3.2%	3.4%	3.9%
o. Enhanced integration with Amtrak and other transportation modes	2.5%	4.7%	4.3%	4.6%	7.0%

On the “Important” question, the issues’ importance was similar to that of the Top 5. Extended service hours was the most important, with 85.3% of all respondents ranking the issue as either Very Important or Important. Other issues that rated highly as Very Important or Important included increased service frequency (84.0%), improvements to travel time (79.6%), better connections or more direct service to downtown Grand Rapids, medical services and entertainment destinations (79.6%) and new routes serving underserved, or unserved, corridors inside the service area (78.2%). Table 3-2, below, shows how Important or Very Important the issues were to the survey respondents.

Table 3-2: Transit Master Plan Survey - Top 5 Issues

Issues	Very Important	Important	Combined
a. Increased service frequency	49.5%	34.5%	84.0%
b. Extended service hours (specifically, evenings and weekends)	54.9%	30.4%	85.3%
c. Providing more express and limited stop service	17.3%	41.5%	58.8%
d. More choices in transit, such as Bus Rapid Transit (BRT) and streetcar	31.1%	30.0%	61.2%
e. Enhanced service to under-served areas	44.6%	33.6%	78.2%
f. Improved accommodations for seniors and disabled	24.4%	34.9%	59.3%
g. Increased county-wide service	42.3%	29.6%	71.8%
h. More park-n-ride lots	10.0%	32.1%	42.1%
i. More passenger amenities (such as bus shelters and benches)	22.2%	35.3%	57.5%
j. Increased public-private partnership opportunities	14.2%	31.3%	45.5%
k. Improvements to the time it takes to travel by bus	43.7%	35.8%	79.6%
l. Fare payment options that make boarding quicker and purchasing passes more convenient	37.4%	35.6%	73.0%
m. Better connections or more direct service to downtown Grand Rapids employment, medical services, and entertainment destinations	39.4%	40.1%	79.6%
n. Improvements to passenger information	19.0%	37.6%	56.6%
o. Enhanced integration with Amtrak and other transportation modes	21.5%	32.4%	53.8%

What We Heard From the People

One of the most remarkable results of the TMP public outreach program was the commonality of the remarks, whether they came from a resident at a public meeting, a business leader at an MM2030 meeting or from an agency representative at the TAT meeting. Participants shared a great sense of civic pride. They understood that transportation, and transit specifically, can help shape a place, and they generally wanted to use transit to help make greater Grand Rapids a vibrant, thriving place where their children would want to stay, work and live. The primary difference was which projects they felt could best help the community and which were most cost-effective and feasible over a 20-year planning horizon.

Regarding improvements to the local bus network, there was general consensus that *The Rapid* needed to provide evening, weekend and holiday services on most, if not all, of their routes. Certain parts of the service area, such as the Burton Street corridor, are inaccessible via transit during these periods. There



was also general consensus that more frequent services should be provided particularly on routes that operate with 60 minute frequencies. Another issue that was shared among most participants was a need for improved downtown circulation. The Downtown Area Shuttle (DASH) is administered by the City of Grand Rapids Department of Parking Services but is operated by *The Rapid* and by design primarily serves parking lots in and around downtown Grand Rapids. It is also open to the public.

Any recommended improvements in the local bus service, such as expanded spans of service and holiday service, would also apply to GO!Bus. Programs that would make GO!Bus easier to use, such as a same day reservation program, were also discussed.

There was also broad support for new types of transit services, although participants expressed preferences for certain transit technologies over others. Most participants had been exposed previously to Bus Rapid Transit through the millage request effort for the Silver Line, were very supportive of the project and wanted to see it included in the TMP. Most thought BRT could be an effective transit option on other corridors in greater Grand Rapids. Most people also thought there was a need to bring people from communities outside the service area into downtown Grand Rapids using an express/commuter service. The modern streetcar, while generally supported as a transit technology, had the widest range of opinions. The opinions ranged from the circulator service provided by the streetcar being necessary but that it could be provided by rubber-tired vehicles to people wanting streetcar or light rail connecting Grand Rapids to the airport, Lake Michigan, Kalamazoo and Lansing.

Chapter 4: The State of *The Rapid*

The Rapid: A Comparison to Other Transit Agencies

The six cities opted to partner with each other to support *The Rapid* and *The Rapid*, in turn, promised to provide a return on that investment, by delivering service as effectively and efficiently as possible. As part of the 2030 Transit Master Plan, the project team was asked to evaluate *The Rapid's* performance relative to ten peer systems.

The ten peer systems were selected based on system size and regional demographic characteristics. Criteria used to choose the peer systems included urban area population and physical size, annual vehicle revenue hours, and annual unlinked passenger trips. System performance measures were computed for each peer system using annual National Transit Database (NTD) reports. The selected peer systems were:

- **Akron, Ohio:** Metro Regional Transit Authority (Metro)
- **Ann Arbor, Michigan:** Ann Arbor Transportation Authority (AATA)
- **Dayton, Ohio:** Greater Dayton Regional Transit Authority (GDRTA)
- **Flint, Michigan:** Mass Transportation Authority (MTA)
- **Lansing, Michigan:** Capital Area Transportation Authority (CATA)
- **Louisville, Kentucky:** Transit Authority of River City (TARC)
- **Madison, Wisconsin:** Metro Transit System (Metro)
- **Nashville, Tennessee:** Metropolitan Transit Authority (MTA)
- **Rochester, New York:** Regional Transit Service (R-GRTA)
- **Toledo, Ohio:** Toledo Area Regional Transit Authority (TARTA)

Bus Service – How Much Service is Needed?

One of the questions the public asked in the first round of workshops was, “How much service do we need?” A comparison of how much service the peer agencies currently provide, relative to their service area population gives a partial answer. The amount of service demanded may vary by city due to size of the transit dependent population or the ability of the transit system to attract choice riders.

Despite a greater-than-average service area population, *The Rapid* is slightly below the peer average with respect to the amount of bus service provided, meaning we have less service than comparable cities. As displayed in Table 4-1, *The Rapid's* annual bus revenue miles, bus revenue hours, passenger trips, and peak buses operated are all below average of the peer systems.

Table 4-1: Demographic and Operating Characteristics of Peer Systems' Bus Service

City	Service Area Population	Service Area Square Miles	Vehicles Operated in Maximum Service	Annual Unlinked Passenger Trips	Annual Bus Revenue Hours	Annual Bus Revenue Miles
Grand Rapids (Rapid)	482,740	185	104	8,620,000	323,500	4,114,200
Peer Average	471,339	245	131	10,060,460	324,700	4,374,480
Akron (Metro)	542,899	420	95	5,501,400	226,400	2,672,500
Ann Arbor (AATA)	204,530	81	61	5,954,800	185,200	2,349,200
Dayton (GDRTA)	559,062	274	138	10,277,100	457,600	6,823,400
Flint (MTA)	436,141	258	98	5,466,700	174,600	3,208,500
Lansing (CATA)	276,898	136	80	10,797,300	238,800	3,149,000
Louisville (TARC)	754,756	283	205	15,175,700	619,700	7,764,400
Madison (Metro)	245,181	72	168	13,433,100	366,800	4,706,200
Nashville (MTA)	573,294	484	120	9,701,700	321,200	4,381,500
Rochester (R-GRTA)	694,394	293	203	17,473,600	436,100	5,122,600
Toledo (TARTA)	426,230	149	144	6,823,200	220,600	3,567,500

In 2008, *The Rapid* provided 0.67 annual bus revenue hours of service for every resident in the service area. The peer average was 0.74 annual bus revenue hours per resident, with a range between a low of 0.40 (Flint, MI) and high of 1.50 (Madison, WI). Portland, OR, a city many members of the MM2030 and the public admired and thought Grand Rapids should model itself after, provides 1.26 annual bus revenue hours per resident, which does not account for their light rail and streetcar services. *The Rapid* clearly has room to grow as a system, but only if the region is willing to invest in the service enhancements.

Bus Service – How Productive is *The Rapid*?

In terms of fixed-route service utilization (i.e. ridership relative to service provided), *The Rapid* reported slightly lower total trips per bus-hour and bus-mile than the peer average; however, the overall service productivities have trended upward between 2000 and 2008, as the public responded to the improved transit service by using it more. Table 4-2, below, shows increasing productivity over *The Rapid's* first nine years of service.

Table 4-2: Fixed-Route Service Productivity Trends (FY 2000 - FY 2008)

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	% Change
Passenger Trips Per Revenue Hour	18.41	18.29	19.58	21.63	21.59	22.12	23.90	25.96	26.65	45%
Passenger Trips Per Revenue Mile	1.36	1.33	1.42	1.61	1.61	1.68	1.80	1.92	2.10	54%

Bus Service – How Cost Efficient is *The Rapid*?

Compared to its peers, *The Rapid* was one of the most cost efficient systems (i.e. cost per unit of service) according to all cost efficiency metrics, and on the operating expenses per vehicle revenue-hour metric, was the most efficient. Table 4-3, below, shows *The Rapid's* cost effectiveness relative to the ten peer

systems. Over the years, *The Rapid* has delivered on its promise to provide as much service for as low a cost as possible.

Table 4-3: Peer System Cost Efficiency Measures (2008 NTD)

City	Total Operating Expenses			
	Total Operating Expenses per Passenger Trip	Total Operating Expenses per Vehicle Revenue Hour	Total Operating Expenses per Vehicle Revenue Mile	Total Operating Expenses per Peak Vehicle
Grand Rapids (Rapid)	\$2.94	\$78.22	\$6.15	\$243,320.19
Peer Average	\$3.27	\$101.41	\$7.53	\$250,982.77
Akron (Metro)	\$4.56	\$110.71	\$9.38	\$263,831.58
Ann Arbor (AATA)	\$3.19	\$102.53	\$8.08	\$311,275.41
Dayton (GDRTA)	\$4.23	\$94.94	\$6.37	\$314,819.57
Flint (MTA)	\$2.73	\$85.41	\$4.65	\$152,165.31
Lansing (CATA)	\$2.33	\$105.54	\$8.00	\$315,051.25
Louisville (TARC)	\$3.49	\$85.58	\$6.83	\$258,705.85
Madison (Metro)	\$2.92	\$106.97	\$8.34	\$233,554.76
Nashville (MTA)	\$3.33	\$100.58	\$7.37	\$269,227.50
Rochester (R-GRTA)	\$2.98	\$119.57	\$10.18	\$256,860.10
Toledo (TARTA)	\$3.66	\$113.12	\$6.99	\$173,294.44

GO!Bus Service – How Much Service is Needed?

Of the ADA/Paratransit systems evaluated, *The Rapid's* GO!Bus service ranked third in annual passenger trips provided, third in peak vehicles operated, fourth in vehicle revenue hours and fourth in vehicle revenue miles. The GO!Bus service statistics relative to the ADA/Paratransit service provided by the peer agencies are shown below in Table 4-4.

ADA/Paratransit service is typically the most expensive service to provide per unit of service and typically agencies operate as little of it as possible. *The Rapid* opts to provide more paratransit service than is legally required by the Americans with Disabilities Act (ADA). For example, GO!Bus service is provided from one location to another within the six cities, regardless of whether a fixed route is operated in the area on the day and time the paratransit ride is needed. Because GO!Bus already goes above and beyond the minimum requirements, there is far less room for service improvement than was the case with fixed-route services.

Table 4-4: Demographic & Operating Characteristics of Peer Systems' ADA/Paratransit Service

City	Population	Service Area Square Miles	Vehicles Operated in Maximum Service	Annual Unlinked Passenger Trips	Annual Vehicle Revenue Hours	Annual Vehicle Revenue Miles
Grand Rapids (Rapid)	482,740	185	102	421,200	176,500	2,534,600
Peer Average	471,339	245	87	324,610	157,300	2,489,090
Akron (Metro)	542,899	420	88	214,000	104,800	1,368,400
Ann Arbor (AATA)	204,530	81	38	224,700	107,900	1,621,800
Dayton (GDRTA)	559,062	274	83	287,800	176,100	2,522,300
Flint (MTA)	436,141	258	112	672,300	279,900	5,475,900
Lansing (CATA)	276,898	136	95	514,400	182,300	2,753,800
Louisville (TARC)	754,756	283	147	417,600	270,100	4,283,000
Madison (Metro)	245,181	72	77	286,100	115,200	1,844,600
Nashville (MTA)	573,294	484	96	315,200	145,400	2,276,900
Rochester (R-GRTA)	694,394	293	39	179,300	98,000	1,565,500
Toledo (TARTA)	426,230	149	94	134,700	93,300	1,178,700

The 2005 Comprehensive Operational Analysis (COA)

The Rapid's first COA was completed in October 2005. The analysis provided a comprehensive assessment of *The Rapid's* fixed-route bus services. The COA's service recommendations focused on the following improvements:

- Improve system connectivity
- Improve service frequency
- Improve service hours, later evening
- Expand on non-downtown transfer opportunities
- Eliminate 45-minute route frequencies
- Eliminate confusing out-of-direction route patterns
- Eliminate unproductive service
- Expand service into new areas, where warranted
- Expand weekend services

Since completion of the COA, nearly all of the cost-neutral service recommendations have been implemented by *The Rapid*. Additionally, voters approved a local millage increase in May 2007 which allowed for the implementation of several enhancements recommended by the COA. These changes included increased frequency on a number of key routes, more evening service, more weekend service, and the addition of the new Route 18 - West Side.

Most of the COA recommendations were implemented by 2010, with the exception of changes related to extension of routes into areas beyond the six cities. Most improvements beyond the six cities were not implemented because those jurisdictions did not opt to support them financially.

The 2010 Comprehensive Operational Analysis (COA) Update

The 2010 COA update component of the Transit Master Plan concentrates on identification of additional service improvements that could be implemented over the next five years. The process includes:

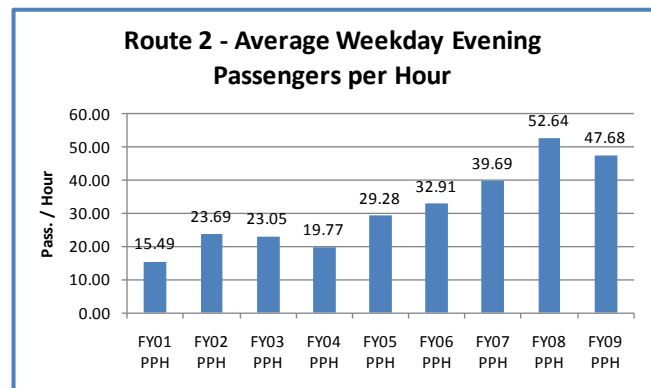
- A review of existing ridership and performance to determine the rate of success for each of the COA changes
- Identification of routes where high ridership might indicate overcrowding and routes where low ridership might indicate the need for service modifications
- Identification of additional improvements to address service needs
- Estimation of costs for proposed service improvements
- Determination of which improvements could be implemented in the next five years, under *The Rapid's* current financial resources

Recent Service Successes

Several routes have experienced dramatic performance improvements over the past several years. These routes' successes indicate that they may be good candidates for additional service enhancements. The routes' performances are detailed below.

Route 2 – Kalamazoo

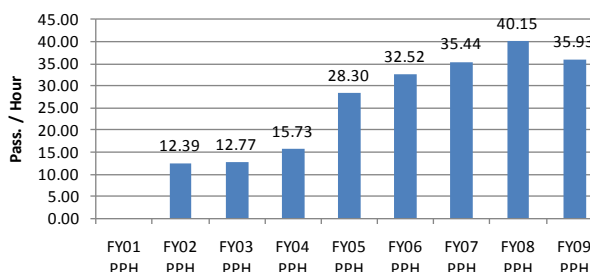
Route 2 – Kalamazoo has experienced increased ridership and improved performance over the past few years. Most notably, these gains have been experienced on weekday evenings and on weekends. Since 2001 evening ridership has risen from 179 (average weekday evening) to 276 in 2009, with a low of 160 in 2004 and a high of 305 in 2008. The passengers per hour metric during this timeframe reflects significant improved productivity. From 2001 to 2009, passengers per hour has increased by 208%. Saturday performance has also increased significantly, with passengers per hour increasing by 67% from 2001 to 2009 (16.65 to 27.73 passengers per hour).



Route 4 – Eastern

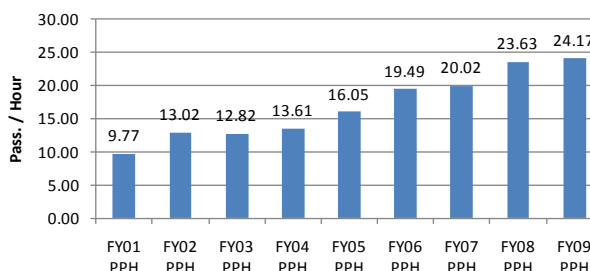
Route 4 – Eastern has also experienced increased ridership and improved performance over the past few years. Most notably, these gains have been experienced on weekday evenings and on weekends. Since 2002 evening ridership has risen from 52 (average weekday evening) to 242 in 2009. The passengers per hour metric during this timeframe reflects significant improved productivity. From 2002 to 2009, passengers per hour has increased by 190%.

**Route 4 - Average Weekday Evening
Passengers per Hour**



Saturday performance has also increased significantly, with passengers per hour increasing by 147% from 2001 to 2009 (9.77 to 24.17 passengers per hour).

**Route 4 - Average Saturday
Passengers per Hour**

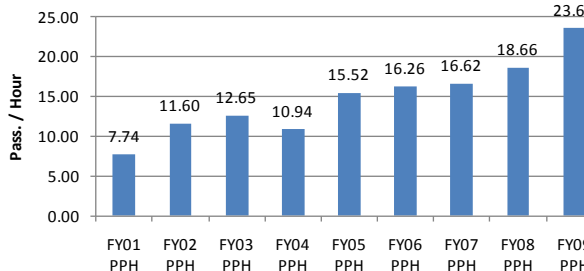


Sunday ridership and performance has also grown significantly. Sunday service began in 2005 carrying 116 passengers on a typical Sunday. Sunday ridership has now grown to 448 on a typical Sunday (2009), resulting in a growth in passengers per hour of 79% in 4 years (from 13.85 to 24.80).

Route 8 – Grandville / Rivertown Crossings

Route 8 – Grandville / Rivertown Crossings has also experienced increased ridership and improved performance over the past few years. Most notably, these gains have been experienced on weekday evenings and on weekends. Since 2001 evening ridership has risen from 82 (average weekday evening) to 132 in 2009. The passengers per hour metric during this timeframe reflects significant improved productivity. From 2001 to 2009, passengers per hour has increased by 205%.

**Route 8 - Average Weekday Evening
Passengers per Hour**

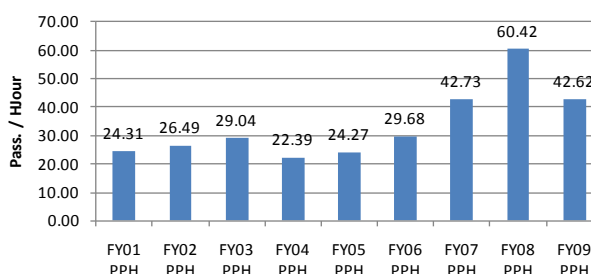


Saturday performance has also increased significantly, with passengers per hour increasing by 122% from 2001 to 2009 (9.85 to 21.87 passengers per hour).

Route 9 – Alpine

Route 9 – Alpine has experienced significant ridership and performance growth across all days and time periods over the past several years. Since 2001, weekday average daily ridership has grown by 64%, Saturday by 55% and Sundays by 57%. Additionally, average weekday evening service ridership has grown by 137% (from 114 to 270), resulting in an increase in passenger per hour of 75% (from 24.31 to 42.62).

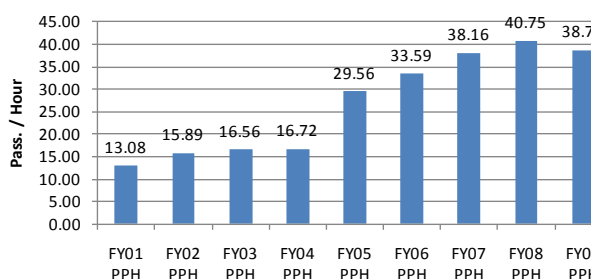
**Route 9 - Average Weekday Evening
Passengers per Hour**



Route 11 – Plainfield

Route 11 – Plainfield has experienced significant ridership and performance growth across all days and time periods over the past several years. Since 2001, weekday average daily ridership has grown by 45%, Saturday by 31% and Sundays by 61%. Additionally, average weekday evening service ridership has grown by 111% (from 79 to 167), resulting in an increase in passenger per hour of 196% (from 13.08 to 38.77).

**Route 11 - Average Weekday Evening
Passengers per Hour**



Analysis of Current Service

Based on the direction given by *The Rapid* staff and input from the public, much of the service needs analysis focuses on where to improve service coverage, service frequencies and spans of service for non-contract service.

Service Coverage Analysis

The service coverage analysis identified areas within *The Rapid* service area that are underserved during specific time periods. Figures 4-1 and 4-2 illustrate the existing transit system service frequency and coverage during the weekday peak and midday service periods. On weekdays, fixed route transit service generally exhibits the same geographical coverage during the daytime hours. However, geographical service coverage changes after 8:30 pm as some routes end service early. Figure 4-3 illustrates *The Rapid's* transit system service frequency and coverage on weekdays after 8:30 pm. Routes 18, 24 and 44 do not currently operate on weekday evenings. This results in loss of service for the area immediately west and northwest of the downtown area (although some of these areas are still within walking

distance of existing Routes 7 and 12). Of greater significance is the loss of crosstown service in the southern half of the transit system. The lack of evening service of Routes 24 and 44 results in a significant loss in east-west mobility, limiting all east-west travel to Route 28 operating along 28th Street. Mobility is further impaired during the evening hours as Route 28 only operates at 60 minute service frequencies. The result may be riders traveling significantly out of their way to go north to Rapid Central Station then back south to their ultimate destination.

Weekdays

- Route 3 - does not operate evening service after 8 pm
- Route 17 - ends evening service early at about 10:25 pm
- Route 18 - does not operate evening service after 7:30 pm
- Route 24 - does not operate evening service after 7:45 pm
- Route 44 - does not operate evening service after 8:15 pm
- Route 37 - does not operate evening service after 6:50 pm

Saturday service coverage, shown in Figure 4-4, is very similar to weekday peak and midday service coverage. Although systemwide coverage is fairly consistent with weekday service, mobility is hindered by less frequent service levels (addressed further in the next section). After 5:00 pm on Saturdays, service coverage is dramatically reduced. Routes 3, 5, 10, 13, 14, 24 and 44 do not operate and all other routes other than Route 1 (30 min) and Route 17 (45 min) operate at 60-minute service frequencies. As part of the TMP outreach, the public expressed an interest in having service on Saturday night until midnight.

Saturdays

- Route 3 - does not operate evening service after 8 pm
- Route 5 - does not operate evening service after 6:15 pm
- Route 10 - does not operate evening service after 6:36 pm
- Route 13 - does not operate evening service after 6:40 pm
- Route 14 - does not operate evening service after 6:40 pm
- Route 24 - does not operate evening service after 6:50 pm
- Route 44 - does not operate evening service after 7:15 pm

Sunday service coverage, shown in Figure 4-5, is reduced from weekday and Saturday as a result of the following routes not operating on Sundays: Routes 3, 5, 7, 12, 13, 14, 17, 18, 24 and 44. Because these routes do not operate on Sundays, mobility is constrained with many of the crosstown oriented trips forced to traverse through Rapid Central Station to get to their destinations. The only crosstown service provided on Sundays is Route 28, which provides limited service at 60-minute service frequencies. As with Saturdays, mobility is limited on Sundays due to less frequent service levels. Additionally, the public also expressed a desire for holiday service, which *The Rapid* does not currently operate.

Service Frequency

After service is established on a particular route, the service frequency provided generally has the greatest impact on ridership volumes. This has been supported by *The Rapid's* efforts to improve service frequencies throughout the system over the past several years. More frequent service creates many benefits including reduced wait times both at bus stops and transfer locations, improved transfer connections, reduced need to reference published schedules, greater flexibility in travel path options resulting from reduced transfer times, and a higher positive perception of the quality of service provided by transit and non-transit users. Although *The Rapid* has made very significant improvements in providing more frequent service, there still are areas, times of day, and days of the week in which a minimum level of service frequencies are provided.

During the peak period on weekdays, the most frequent service is operated on the most productive routes (Routes 1, 2, 4, 6, 9 and 11) and is generally operated at 15-minutes between Rapid Central Station and the short-run locations (generally mid-route). 15-minute service frequency is also achieved along Grandville Avenue and Clyde Park Avenue between Rapid Central Station and Burton Street through the combination of Routes 10 and 16. Nineteen of *The Rapid's* twenty-one routes are operated at 30-minute service frequencies. Routes 17 and 44 which are operated at 60-minute service frequency. During the midday period on weekdays, most of the transit service provided operates at 30-minute service frequencies. Differences between the peak and midday service periods relate to no short-run service on Route 1, 2, 4, 9 which results in 30-minute service along the entirety of these route alignments, and Routes 3, 14 and 18 operate only 60-minute service (in addition to Route 17 and 44 that run every 60 minutes all day).

On Saturdays, currently six routes operate with 30-minute service frequencies (Routes 1, 2, 4, 6, 9 and 28) with the remaining fifteen routes operating with 60-minute service frequencies. The majority of 30-minute service is concentrated in the southeastern quadrant of *The Rapid* service area (with the exception of Route 9 in the northwestern quadrant). This results in greater mobility challenges in the southwest, west and northeastern areas of *The Rapid* service area. After 5:00 pm on Saturdays, service levels are dramatically reduced. Several routes do not operate and all of the remaining routes other than Route 1 (30 min) and Route 17 (45 min) operate at 60 minute service frequencies.

On Sundays, currently two routes operate 30-minute service frequencies (Routes 1 and 2) with nine routes operating 60-minute service frequencies. The 30-minute service is concentrated in the south and southeastern quadrant of *The Rapid* service area. This results in greater mobility challenges in the southwest, west and northeastern areas of *The Rapid* service area.

Figure 4-1: Existing Weekday Peak Headways

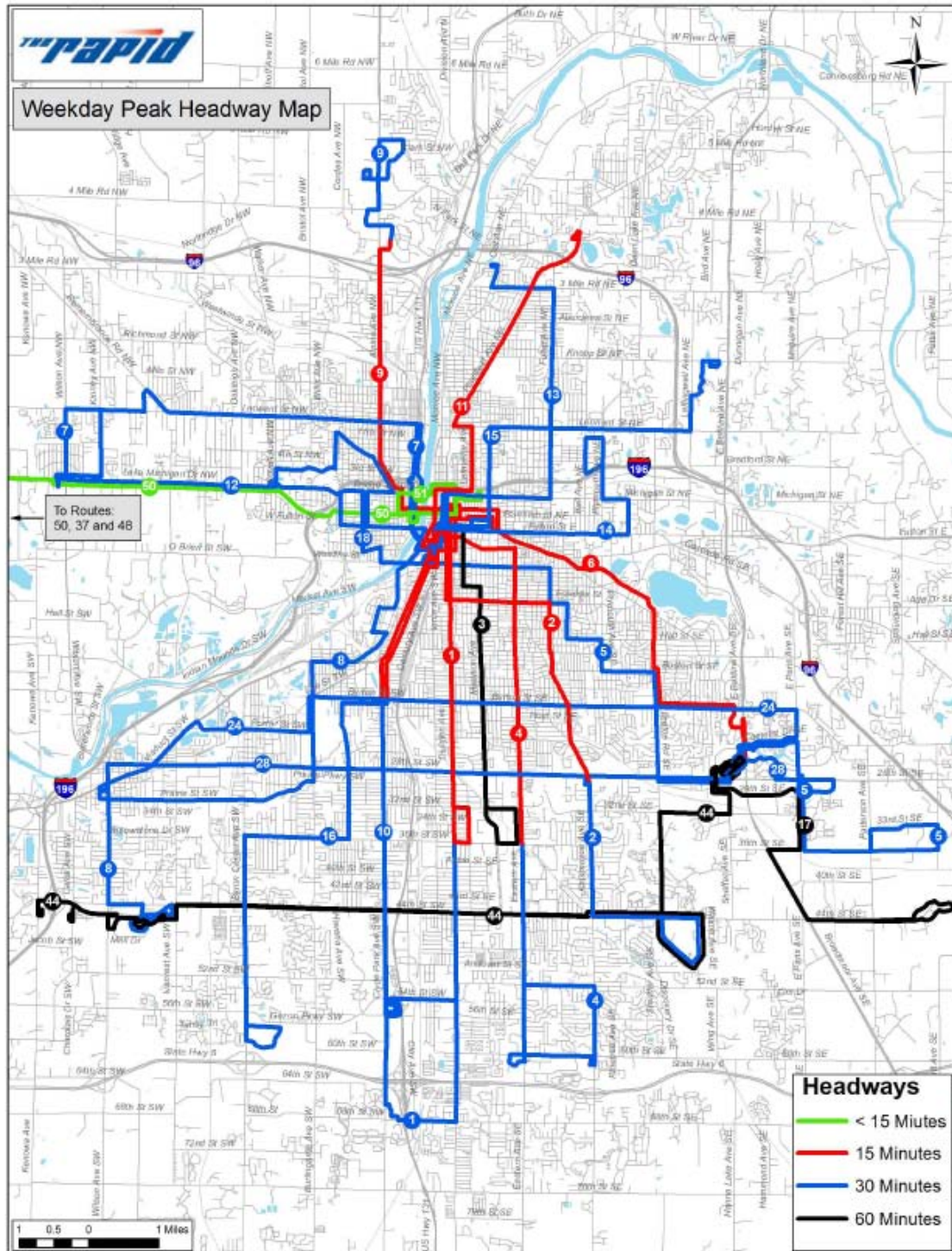


Figure 4-2: Existing Weekday Midday Headways

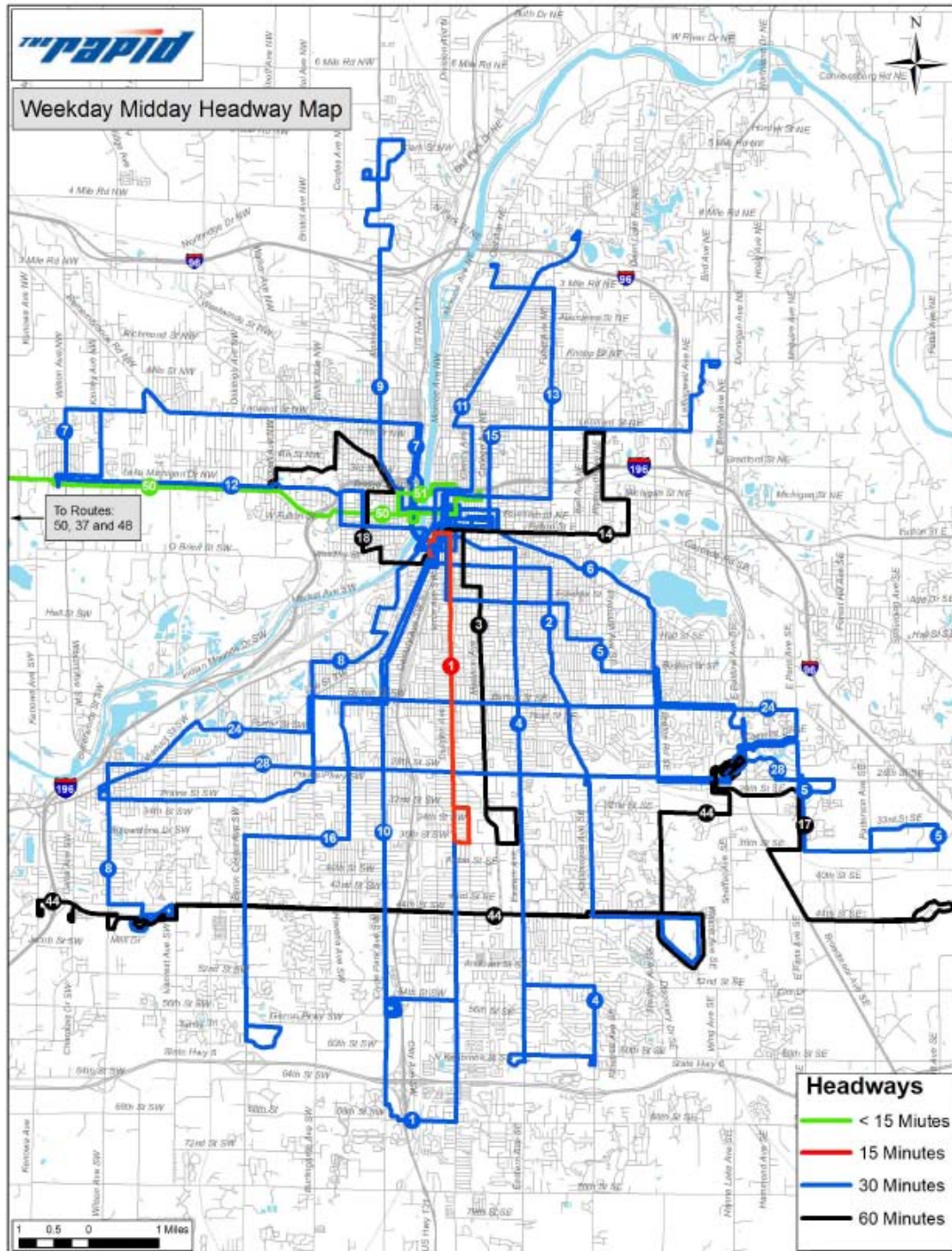


Figure 4-3: Existing Weekday Evening (after 6:45pm) Service Coverage

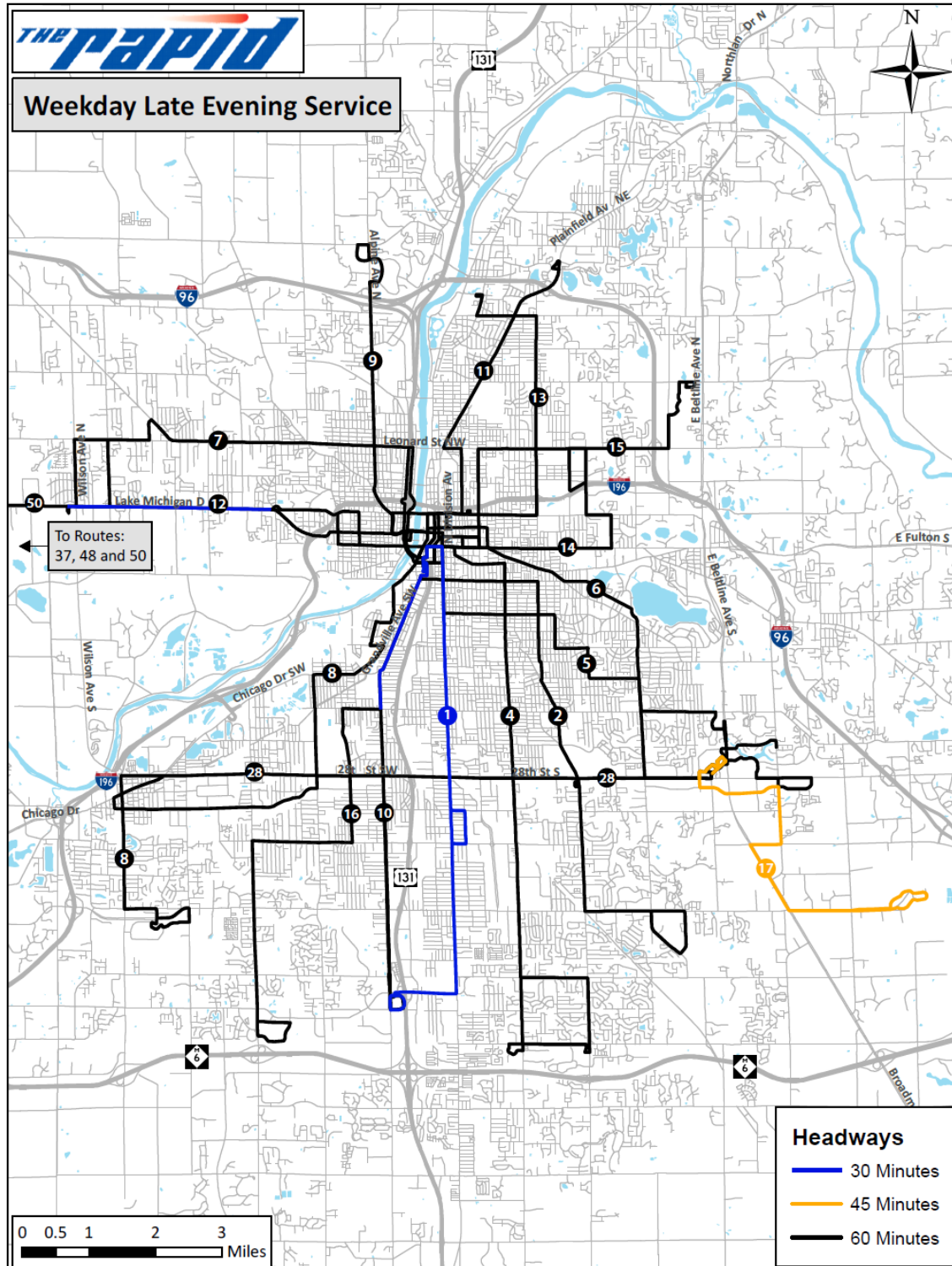


Figure 4-4: Existing Saturday Midday Service Frequencies

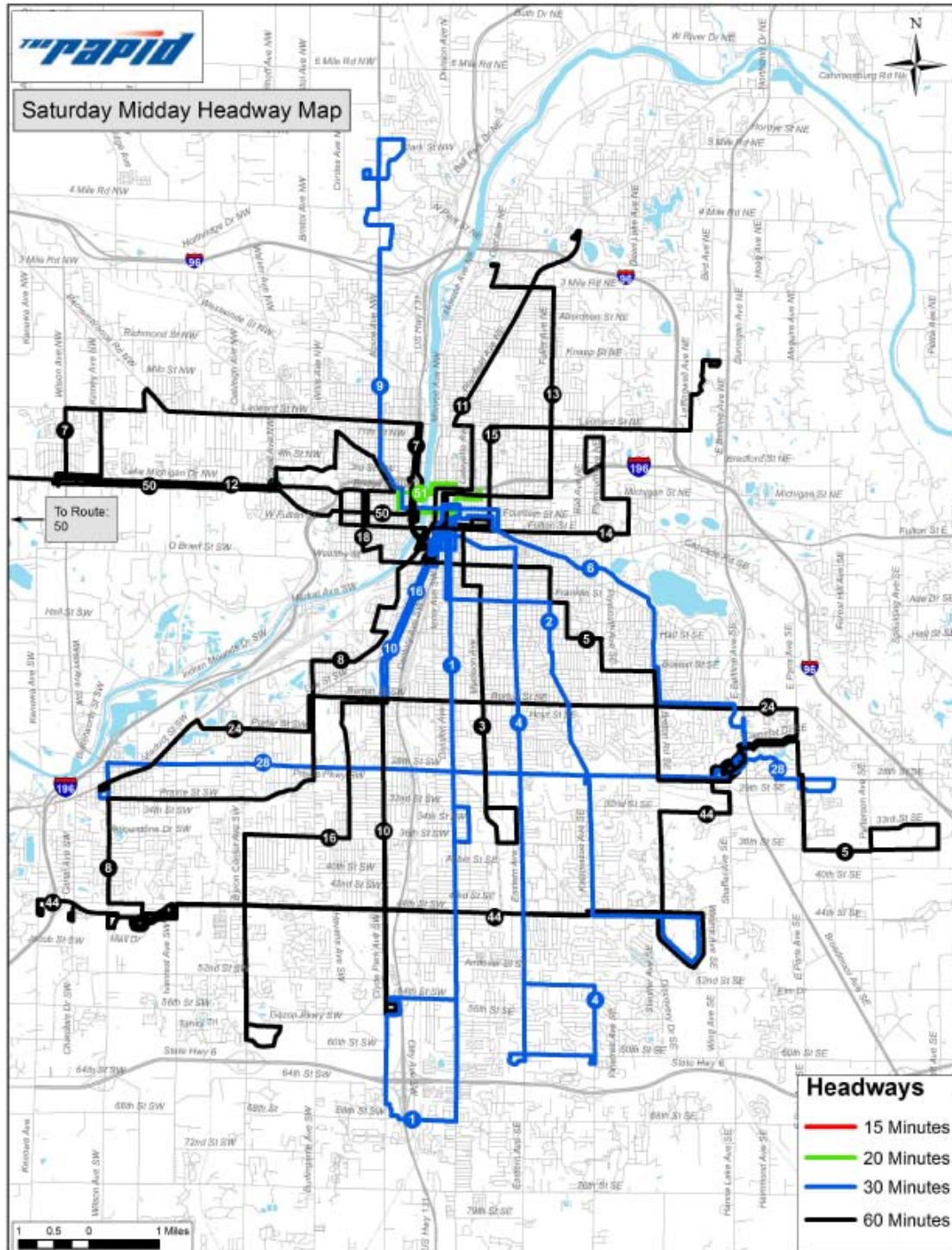
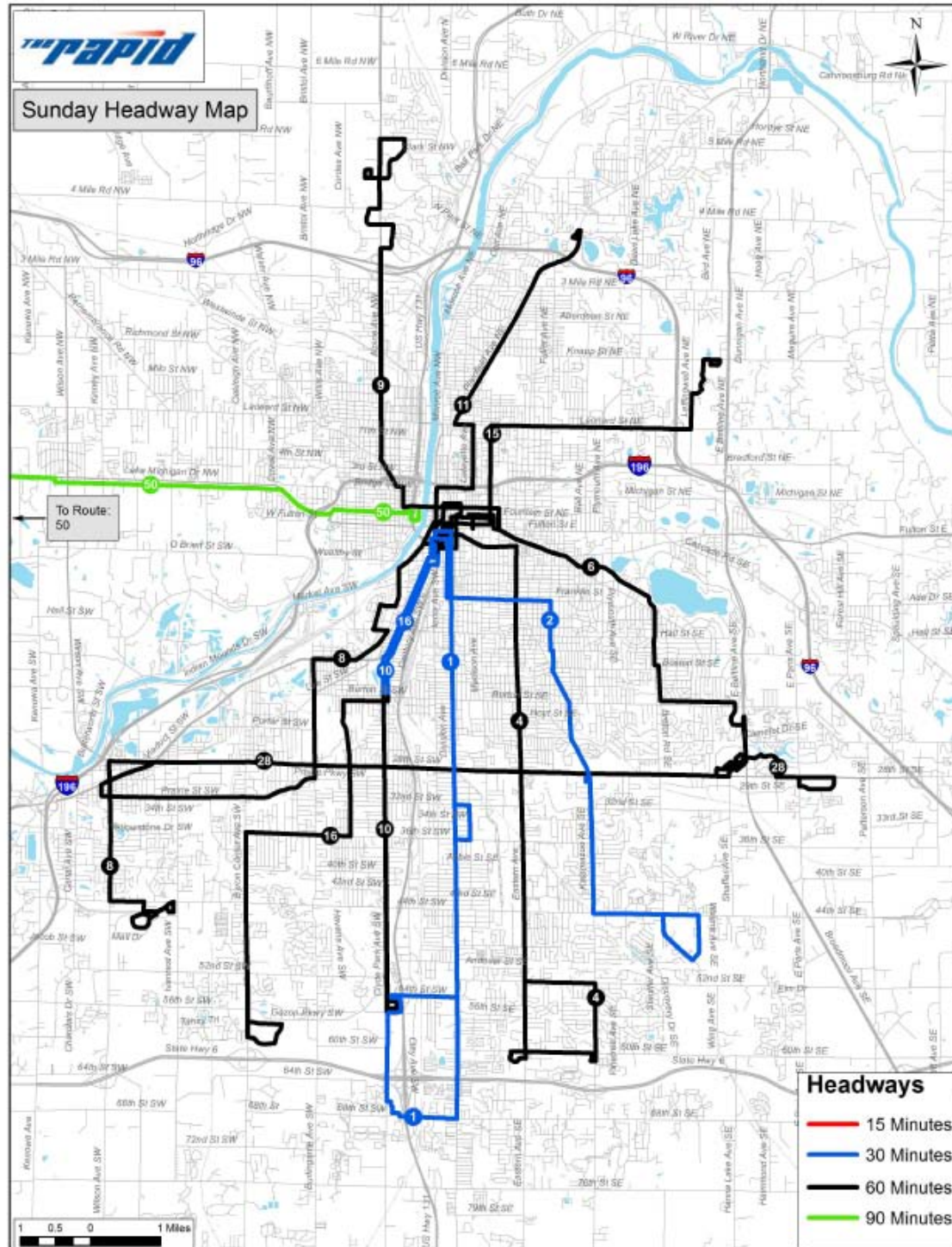


Figure 4-5: Existing Sunday Service Frequencies



Chapter 5: What Will Greater Grand Rapids Look Like in 2030?

GVMC's 2035 Long-Range Transportation Plan Update

The Grand Valley Metropolitan Council (GVMC), the Metropolitan Planning Organization (MPO) for the greater Grand Rapids area, is in the process of updating its 2035 Long Range Transportation Plan (LRTP). In September 2009, GVMC held five sub-regional meetings to gather population and employment projection data from local jurisdictions. These sub-regional meetings provided an opportunity for jurisdictions to discuss future local transportation, land use, and development issues. Using U.S. Census estimates, American Community Survey (ACS) data, Regional Economic Model Inc. (REMI) data, input from the sub-regional meetings and Claritas employment data, GVMC staff built upon the 2009 base year population and employment numbers to produce area-wide projections for population and employment increases between 2009 and 2035. GVMC projected some interim year forecasts (2014, 2018 and 2025) but did not generate a forecast for 2030. In the absence of detailed socioeconomic projections for 2030, the 2035 forecast was utilized to identify areas of transit-supportive employment and residential density.

GVMC's most recent 2035 LRTP demographic projections, referred to as their "Modest" projection, estimated a 31% increase in population and a 21% increase in jobs over the 25-year period. Prior to the demographic projections generated in 2009, GVMC's LRTP had been based on much more optimistic assumptions, referred to as their "Aggressive" projection, which estimated a 42% increase in population and only a 51% increase in jobs by 2035. Taken together, these Modest and Aggressive projections frame the likely growth in the Grand Rapids area over the next 25 years. Plots of 2035 employment and population density are shown below in Figures 5-1 ("Modest") and 5-2 ("Aggressive").

Both the Modest and Aggressive density maps indicate significant population and employment densities downtown, along South Division St., on the West Side/GVSU Pew Campus, and other urban core areas. In addition, both future scenarios show modest densities in areas where *The Rapid* does not currently operate, such the Georgetown Township/Jenison area, 3 Mile Road in Walker, Ada Village, east 28th Street/Cascade Village and Patterson Avenue in Kentwood.

The Aggressive Projections show the greatest density of people and jobs located in downtown Grand Rapids and immediately south, west, east, and northwest of downtown. Other areas with additional density included Knapp's Corner, the Woodland Mall area, the M-6 corridor, the Wyoming Town Center, the area surrounding Rivertown Crossings, Metro Health Hospital/Gezon Parkway, Plainfield Avenue in Plainfield Township and 4-Mile Road in north Walker.

Figure 5-1: 2035 “Modest” Projection Population and Employment Density

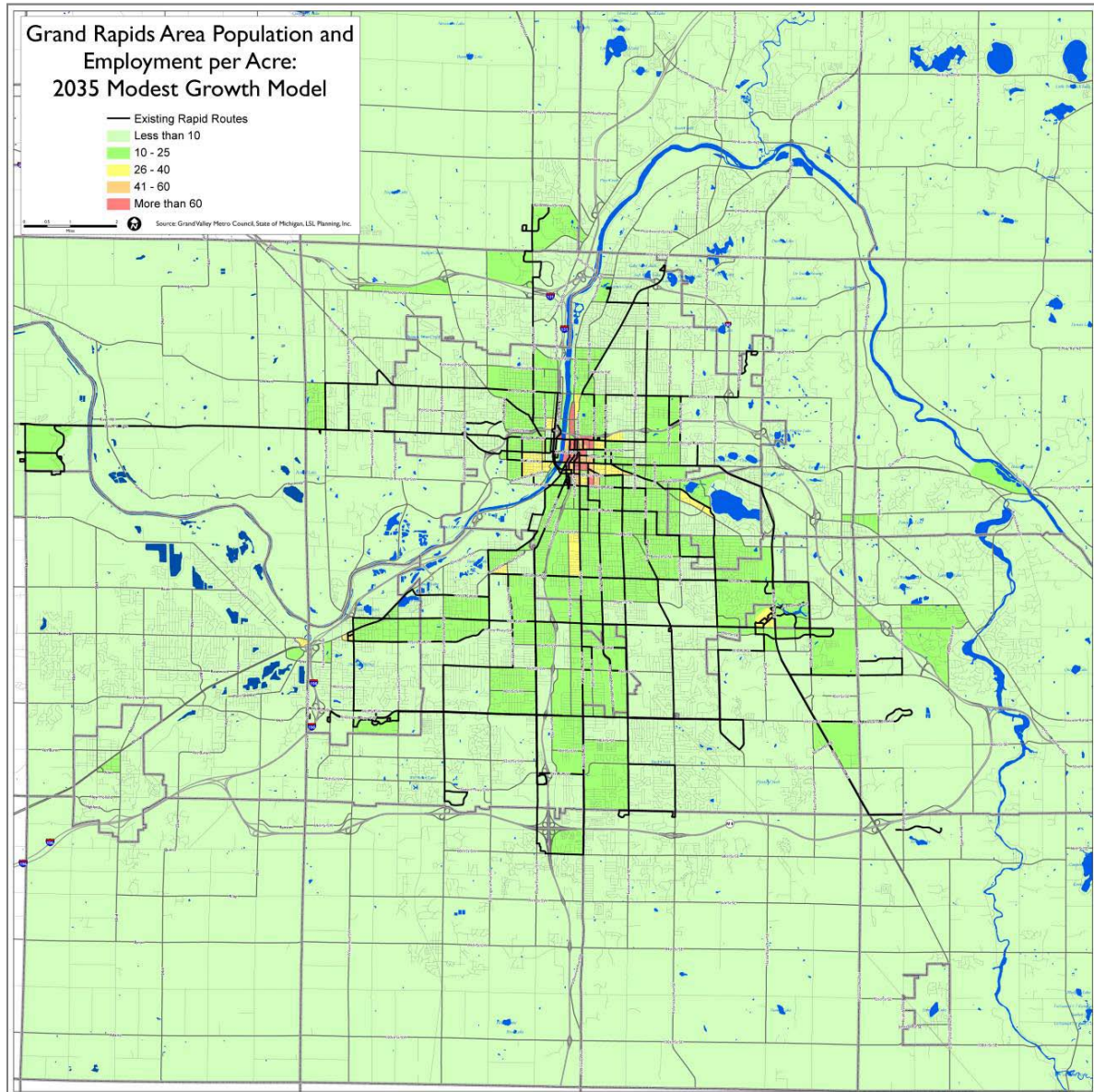
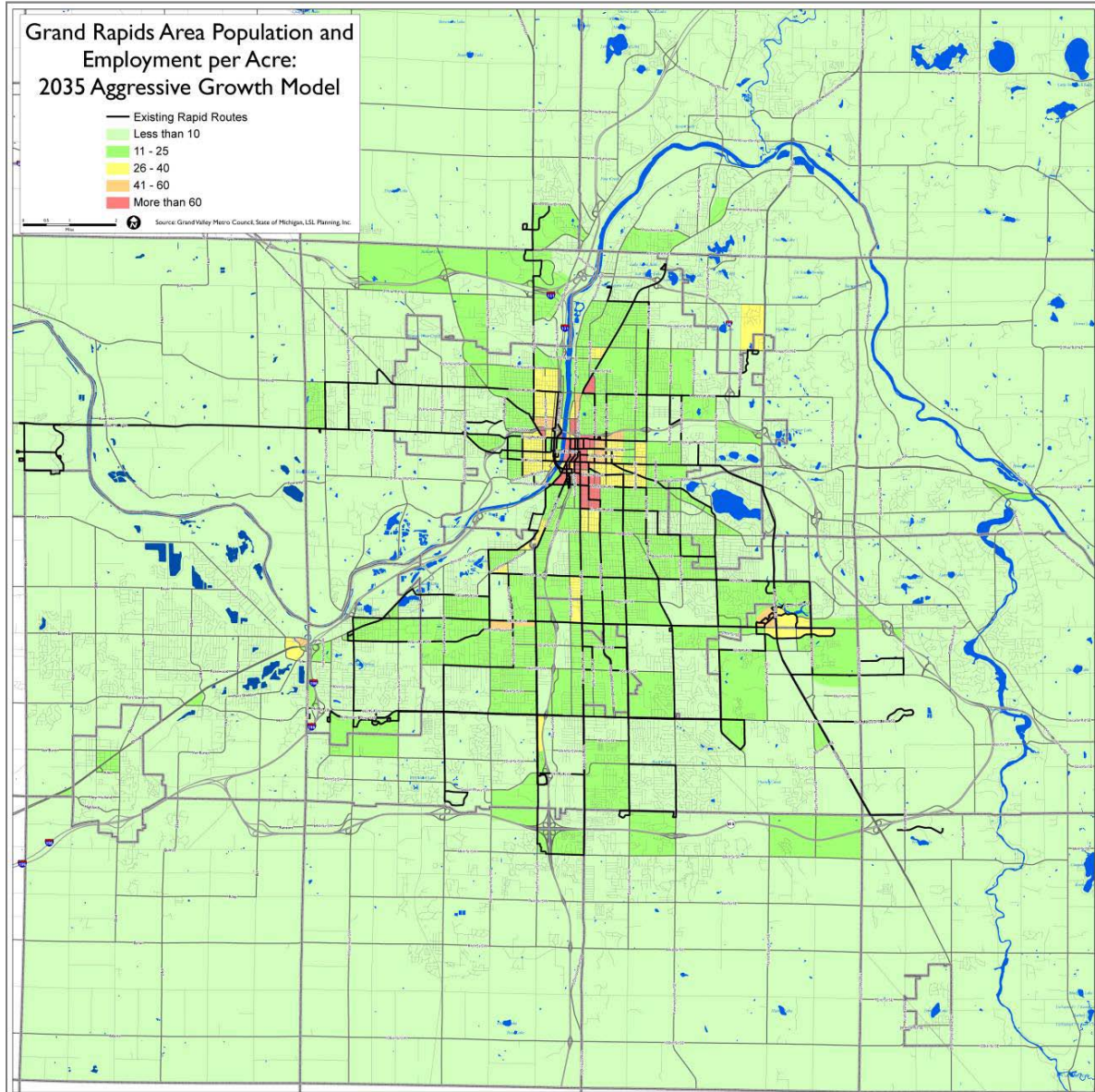


Figure 5-2: 2035 “Aggressive” Projection Population and Employment Density



How Might Transit Investments Influence Future Land Use?

Because transportation investments have the ability to shape the location and urban form of development, one component of the TMP was an analysis of the six cities' plans for future development. The TMP project team analyzed the Grand Rapids region's master plans (Future Land Use and Transportation Elements) to identify what the current policies and plans were for transit-oriented development. A description of each city's plan is listed below.

City of Grand Rapids: The Grand Rapids Master Plan recommends transit, pedestrian, and bicycle access for traditional, neighborhood business areas to reduce dependence on cars, and to minimize traffic volumes and parking demands. Land use recommendations focus increased housing densities, mixed-use centers, and major job centers to transit routes. Transit related objectives and policies include improved and expanded transit service in support of implementing the 1996 LRTP, and assessing the feasibility of fixed guideway routes and alternative transit modes within the city and region. Other policies support transit-related enhancements when planning and designing street improvement projects. The plan supports a coordinated approach to land use and transportation planning, making transit convenient, efficient, and affordable by locating higher density housing on, or within walking distance of transit routes. Transit-supportive development densities are proposed for neighborhood, village, and sub-regional mixed-use centers. Future commercial, business, and employment uses are planned as nodes throughout the city based on existing land use patterns. Major employment and activity centers are planned for transit service.

City of Wyoming: Transit is included as an essential component of the City of Wyoming's Master Plan. The land use vision discusses transit and transit oriented development, particularly regarding major commercial corridors, including Division Avenue, M-6 interchange areas, and employment clusters. A city is envisioned where residents and workers will have the option of using an efficient, safe, and dependable public transit system as a viable alternative to the private automobile. The future land use map indicates mixed use areas with sufficient density and intensity to facilitate transit ridership and with a variety of activities around future transit stations. Division Avenue corridor recommendations include public transit by providing: sheltered transit stops; where possible, bus pullouts outside of travel lanes; and increased residential densities. A mixed-use transit oriented-style development is envisioned around the 28th Street and Division Avenue intersection.

City of Kentwood: The City of Kentwood identifies Transit Corridors as a subsection of the Traffic/Transportation/Transit Network Planning Principles that are addressed throughout their Master Plan. The implementation of a balanced ownership/rental housing policy includes the targeted redevelopment of high density residential properties that are supported by adjacent transit routes. Key transit issues are identified for the 28th Street corridors. Actions include upgraded and more frequent transit stops with amenities, links from transit stops to public and private services, and enhanced amenities at transit stops, including sidewalk linkages. All current transit corridors are identified as the potential location for TOD. Guidelines to encourage TOD and mixed use development are also recommended. The Great Transit, Grand Tomorrow Study identifies several Kentwood corridors that could benefit from enhanced transit service. This study further recommends Kentwood should reinforce and enhance these corridors and other future corridors, with opportunities for transit and park and ride lots through specific actions.

City of Walker: The City of Walker's Master Plan includes several subarea plans, three of which accommodate high density residential, as well as concentrations of commercial, business, and employment uses. The Standale Subarea promotes mixed-use development including residential, commercial, and office uses in a "downtown setting", with development of higher density residential in surrounding neighborhoods. The Alpine Avenue Subarea recommends developing higher density



residential uses that allow a blend of different types of homes, ranging from small lot single-family to townhomes and flats in new neighborhoods. The area surrounding the I-96 corridor is planned for a mix of uses including industrial, office, commercial, single family, and a mixed-use village center.

City of East Grand Rapids: The City of East Grand Rapids' Master Plan recognizes the need for a regional transit authority and includes several statements supporting transit in the Grand Rapids region. A subarea plan for the Gaslight Village (downtown East Grand Rapids) calls for high density, mixed-use development, including commercial, mixed-density residential, and business/office. Specific actions related to transit include working with *The Rapid* and other area communities to upgrade transit service and facilities at major sites and activity nodes.

City of Grandville: Transit is mentioned only as a community service and any specific issues, goals, or strategies pertaining to transit are not mentioned. Downtown Grandville is planned for mixed use redevelopment as is the area surrounding the intersection of Ivanrest Avenue and 44th Street. Implementation strategies include an overhaul of the City's zoning ordinance to allow for higher densities and mixed use development where appropriate.

Future State Support for Transit – The Transportation Funding Task Force (TF2)

The Transportation Funding Task Force (TF2) was created in response to Public Act 221 of 2007. The purpose of the Task Force was to "review the adequacy of surface transportation and aeronautics service provision and finance" in Michigan, review strategies for maximizing return on transportation investment, and evaluate the potential of alternative strategies to replace or supplement transportation taxes and fees. A major and consistent focus of the group has been the need to support economic activity and personal mobility.

The TF2 determined that Michigan was under-investing in transportation and that transit funding, in particular, was funded at a level of one-tenth to one-half of the investment made by comparable states. Further, the TF2 recommended that Michigan needed to at least double its current investment in transportation. The consequences of failing to increase its transportation funding included continued deterioration of transportation facilities and services and the loss of up to \$1 billion in matching federal funds each year.

The TF2 explored three scenarios – "Do Nothing" which is a continuation of current funding sources and levels; "Good" which would restore 126,000 Michigan jobs, maintain the state's roads and bridges in good condition, and enable transit systems like *The Rapid* to make modest improvements in its services and facilities; and "Better" which would sustain 240,000 Michigan jobs, leverage up to \$1.9 billion in federal funds, and position Michigan as one of the nation's leaders in economic competitiveness. The TF2 "Good" and "Better" funding recommendations would increase the total annual funding for Intermodal Passenger programs (including public transit) in Michigan from about \$241 million ("Do Nothing") to \$773 million ("Good") and \$1.3 billion ("Better").

Michigan's Comprehensive Transportation Fund (CTF) has been the primary source of state funding for public transit since its creation in the 1970s. The CTF is primarily funded by auto-related sales tax (about



one-third) and transfers from the Michigan Transportation Fund (about two-thirds), which in turn is largely funded by vehicle registrations and fuel taxes (19 cents per gallon on gas and 15 cents per gallon on diesel). Historically, the CTF has provided operating funds to *The Rapid* and other transit systems but the percentage of operating funds has steadily declined in recent years. The TF2 found that the current CTF funding for public transit discourages system growth, discourages cost efficiencies, makes annual funding less predictable, and increases the funding burden on local governments.

The outlook for *The Rapid* and other transit systems in the state is largely dependent on the state's willingness to implement the TF2's "Good" or "Better" funding recommendations. If Michigan invests in the TF2 "Good" funding scenario, many of the transit improvements described in this Transit Master Plan can be readily implemented with little or no increase in local funding. However, if Michigan fails to implement any new funding sources for transit, the responsibility to fund the improvements described in the TMP would rely on local sources for implementation.

Chapter 6: Development of Future 2030 Planning Scenarios

Planning Methodology

Using the common priorities identified by the public and by the Mobile Metro 2030 Task Force, the project team developed three planning scenarios to gauge the public's response to potential mixes of project types and the level of investment needed to support each. The three scenarios, named A, B and C, were designed to be cumulative, in that all improvements in Scenario A would carry over into Scenario B and likewise, all improvements in Scenario B would carry over into Scenario C. The primary foci of the three scenarios are as follows:

Scenario A: Improve Existing Rapid Services and Initiate Bus Rapid Transit

Scenario B: Improve Existing Rapid Service above and beyond Scenario A, Initiate Regional Express Bus services and Initiate Modern Streetcar starter line

Scenario C: Improve Existing Rapid Service above and beyond Scenario B, Expand Regional Express Bus services and Expand In-town Modern Streetcar network

Scenario A

Scenario A was envisioned as a minimum level of investment that would primarily address the public's top two issues, the needs for improved service frequencies and expanded hours of service. The primary concern regarding frequencies was on routes that operate with 60-minute service. If a transit-dependent patron misses a bus, the 60-minute wait for the next bus is a huge burden. The 60-minute wait is also a deterrent to choice riders. By 2030, Scenario A improves weekday peak service on Route 44 from 60 minutes to 30 minutes, weekday off-peak service on Routes 14 and 18 from 60 minutes to 30 minutes and weekday nights, weekends and holiday service on Routes 2, 4, 6, 9 and 11 to 30 minutes.

Addressing the concern that several corridors are inaccessible via transit after 6:45pm on weekdays, a standard weekday span of service of 5:00am to 12:00am would be used systemwide. On weekends, the span of service would be shortened to 6:00am to 10:00pm systemwide. Additionally, *The Rapid* does not currently provide service on holidays. Scenario A would extend service to holidays, using Sunday service frequencies and spans of service.

Echoing the recommendations from the 2005 COA and 2010 COA update, routes on major arterial corridors, such as Alpine Avenue, Plainfield Avenue and 28th Street would be extended into surrounding townships, contingent on funding commitments from those communities. A new local route for Georgetown Township and City of Hudsonville in eastern Ottawa County would also be operated, but again would be contingent on a local commitment to fund the service. Two Bus Rapid Transit corridors were also proposed on *The Rapid's* two highest ridership corridors, Division Avenue (Silver Line) and Lake Michigan Drive (Laker Line). A limited-stop bus service between Gerald R. Ford International Airport and downtown Grand Rapids, similar to the recently discontinued Air Porter service, would be implemented, with potential interim stops at Woodland Mall and the MDOT Grand Rapids-Kentwood Park and Ride lot at the I-196/East Beltline Avenue interchange. Four new crosstown routes would also be developed, on 3 Mile Road, Leonard Street, Wilson Avenue and East Beltline Avenue, allowing *The*

Rapid patrons access to locations without a transfer at Rapid Central Station. Lastly, circulator service in downtown Grand Rapids, currently structured to serve parking (DASH) and university students (GVSU-CHS Express and GRCC) are not designed to serve travel needs between Rapid Central Station and downtown or circulate people during the lunch period between employment centers, such as the Medical Mile, and restaurants downtown without significant out of direction travel. In Scenario A, the circulator service would be restructured to serve a broader customer base and potentially build a case for a modern streetcar circulator beyond the TMP's 2030 planning horizon. GO!Bus service would be expanded to cover any areas served by the expanded fixed-route service and spans of service. A same-day reservation program (if space is available) would be initiated and an ADA facility accessibility improvement plan would be developed to identify and implement enhancements that will improve access to service for elderly and disabled patrons. Due to the expanded fleet requirements for Scenario A, a second bus maintenance facility was also included in the program.

Scenario B

Scenario B expanded the service enhancements to existing routes by elevating service on Routes 2, 4, 6, 9 and 11 to BRT standards (10 minutes peak, 15 minutes off-peak on weekdays), improving 30-minute weekday peak routes (Routes 1, 5, 8, 10, 12, 13, 16 and 28) to 15-minute weekday peak service and bringing most of the weekend and holiday service up to 30-minute frequencies (Routes 7, 14, 15, 18 and 24).

The focus of Scenario B, however, is implementation of new types of service. In downtown Grand Rapids, a portion of the circulator service developed in Scenario A would be converted from bus to streetcar. The "starter line" alignment would be aligned north to south connecting Rapid Central Station, the Van Andel arena, downtown Grand Rapids and North Monroe. A second type of service focused on capturing commuter trips would provide peak period bus service between suburban park and ride lots and downtown Grand Rapids. Scenario B included three new commuter routes, on US 131 North to the cities of Rockford and Cedar Springs, on US 131 South to 76th Street, serving Byron and Gaines Townships, and on I-196 South/Chicago Drive, serving the Jenison community in Georgetown Township and City of Hudsonville. Additionally, select limited stop trips would be provided on Route 14 - East Fulton, which would generally provide local service between Ada Village and downtown Grand Rapids.

Scenario C

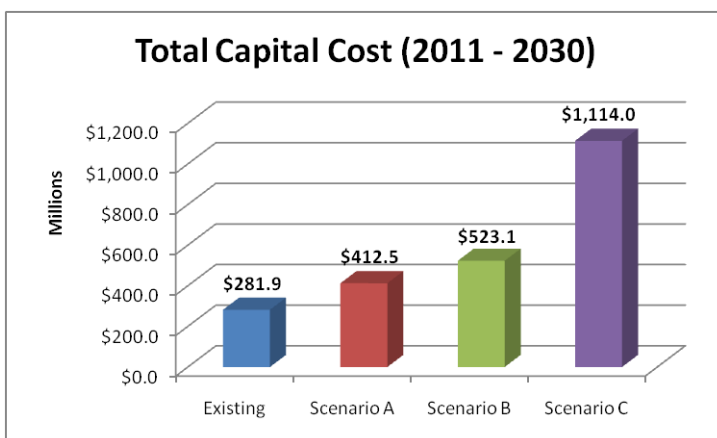
Scenario C made small improvements to local bus service improvements beyond what was proposed for Scenario B and those improvements were focused on expansion of service either at near or beyond *The Rapid's* service boundary. New local routes were added to provide local service between the City of Rockford and Knapp's Corner at the intersection of Knapp Street and East Beltline Avenue, to northwest Walker via Walker Avenue and 3 Mile Road, to Comstock Park and Belmont via West River Drive. Two crosstown routes were also added to provide east-west connectivity in Byron and Gaines Townships.

The primary focus of Scenario C was to expand the new commuter and streetcar services introduced in Scenario B. Scenario C added two more commuter routes, to northwest Walker, in the vicinity of the

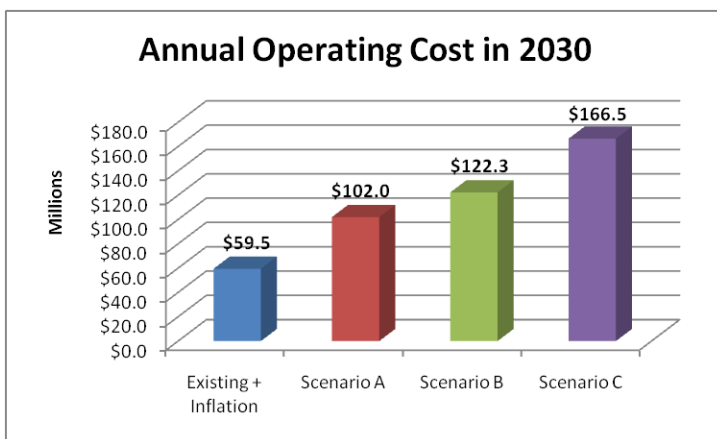
Fruit Ridge Avenue interchange, and to Cascade and Caledonia Townships. Scenario C expanded the modern streetcar network to serve both sides of the river in downtown Grand Rapids, the Medical Mile corridor along Michigan Street and a corridor between Grand Rapids and East Grand Rapids that would serve the Eastown and Gaslight districts.

Scenario Financing

For the three planning scenarios, the project team developed illustrative phasing programs to implement the enhancements over the 20-year life of the TMP. Improvements that required minimal or no new capital investments, such as span of service and off-peak frequency improvements were fast-tracked, while projects that required project development activities, such as engineering and environmental clearance, were mostly phased in between 2020 and 2030. For each improvement, annual capital and operating and maintenance (O&M) estimates were developed and then incorporated into a 20-year cash flow forecast.



For the capital programs, the scenarios ranged from a 20-year total program cost of \$412 million to \$1,114 million. Scenario A represents approximately 50% growth in the capital program. Most of the growth in cost was due to the increased bus fleet size and a new, second bus maintenance facility.



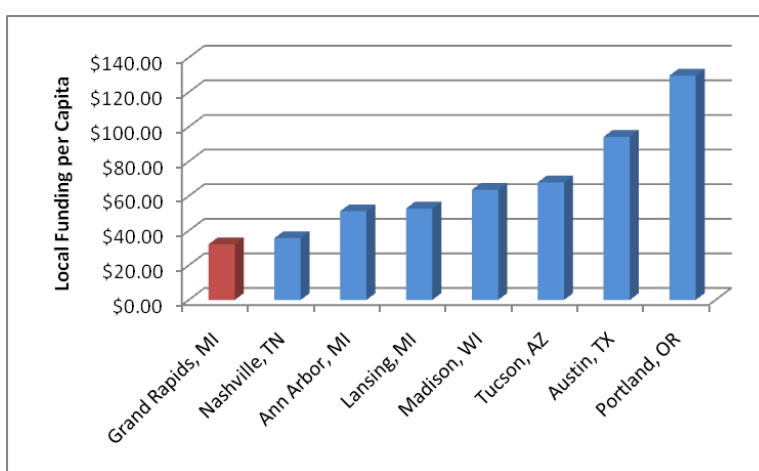
Scenario B was approximately an 85% increase and Scenario C was 300% increase over the existing system. Most of the costs in Scenarios B and C were due to Park and Ride facility, modern streetcar construction (track and rail maintenance facility) and streetcar fleet purchases.

Because the operating costs increase as improvements and new services are implemented, a 2030 annual O&M cost was used to illustrate the relative differences between the existing level of service and the three planning scenarios.

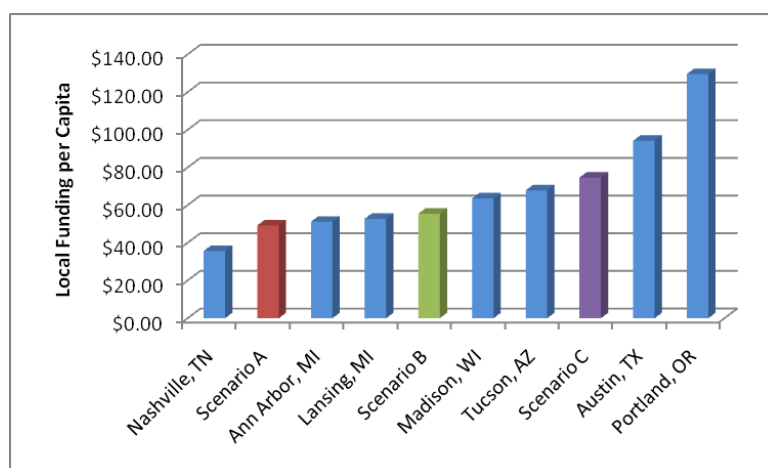
Scenario A represents 70% growth over existing service's O&M costs (inflated to 2030 dollars). Most of the growth in Scenario A's cost was due to the service frequency and span of service improvements. Scenario B represents approximately 105% growth over existing service's O&M cost, and includes the new costs related additional frequency improvements, new regional commuter and modern streetcar services. Scenario C represents approximately 180% growth over existing service's O&M cost, with most of the new costs being attributable to the new local and crosstown routes and the expansion of the streetcar network.

Targeting the Appropriate Level of Investment – A National Perspective

One of the questions the public asked in the first round of workshops was, "How much service do we need?" To fashion a response to that question, the TMP project team selected a sample of peer agencies to see how those agencies' current levels of investment in public transportation relates to the total population in their service area. Clearly, each urbanized area may have unique demographic characteristics that may lend the



agency to provide more or less transit service, but they provide a backdrop against which the existing and proposed TMP service levels can be evaluated.



When compared to the other transit agencies, *The Rapid* receives the lowest level of local funding per capita. Other cities in Michigan, such as Ann Arbor and Lansing report almost twice as much local funding for public transportation than the Grand Rapids area. When comparing the levels of investment for the three 2030 planning scenarios, the local funding per capita metric begins to shift Grand Rapids into a more comparable position. It should be noted, however, that the other

agencies' levels of investment were held constant over the 20-year period and no increases in local funding for service enhancement or expansion was assumed.

Scenario A would shift *The Rapid* into a funding level just below that of Ann Arbor and Lansing. Scenario B would require a marginal increase that would bump *The Rapid* into a funding level just above that of Ann Arbor and Lansing. With Scenario C, *The Rapid* would enter the realm of systems that are either constructing or have constructed urban rail projects (modern streetcar in Tucson, AZ and commuter rail in Austin, TX). Nashville, TN has regional commuter rail service, but it is not operated by Nashville MTA.

The Public's Response to the Three Planning Scenarios

The Rapid held its second series of community workshops for the Transit Master Plan in four locations: Walker, Kentwood, Wyoming, and Grand Rapids. A special forum was also held at LaGrave Church that was sponsored by Concerned Citizens for Improved Transit, the Kent County Essential Needs Task Force Transportation subcommittee, Faith in Motion, and the Disability Advocates of Kent County. The meeting format was similar to that of the November meetings - an informal open house setting encouraging participants to view and ask questions about a variety of project displays and talk one-on-one with *The Rapid* staff and consultants. The dates and times of the five meetings are listed below.

- 1) LaGrave Church: May 11, 11:30 am-1:30 pm
- 2) Rapid Central Station: May 11, 5:30-7:30 pm
- 3) Walker: May 12, 6-8 pm
- 4) Kentwood: May 13, 6-8 pm
- 5) Wyoming: May 19, 6-8 pm

Throughout the five workshops, a strong preference emerged for Scenario C. Workshop participants generally believed that Scenario C offers transit options, services and amenities that would best position the greater Grand Rapids region for the future by making it a more vibrant and urban community. They further indicated those same features are going to be important in helping create a lifestyle that will retain and attract a young, professional workforce. Surprisingly, the sentiment for Scenario C was shared among all types of meeting participants: from riders to non-riders, from college students to retirees, and from different ethnicities and cultural backgrounds.

"I would be very disappointed if in 20 years the only improvements to our transit system were Scenario A or B. I think we would fall significantly behind other cities, who are continuing to invest in transit.

This would have negative impacts for Grand Rapid's economic future."

There were some in attendance, who generally expressed an interest in Scenarios B or C while voicing concerns about increases in taxation due to the current economic climate. Only a few participants expressed an interest in just incorporating the improvements from Scenario A into the 2030 TMP. In general, most comments indicated support for a level of investment per capita somewhere between Scenario B and Scenario C.

The Mobile Metro 2030 Task Force also expressed a general support for the vision behind Scenario C, but there was again some discussion about whether it was feasible (i.e. would the people vote for a millage to support it). Based on the comments received from the second round of public workshops and feedback from the MM2030, the TMP project team went back and reviewed the projects in the three



planning scenarios to identify the projects that best matched the public and MM2030's interests and developed a fourth scenario, called the *Preferred Scenario*.

Chapter 7: The 2030 *Preferred Scenario*

Rationale

While there was widespread support for improvements proposed for Scenario C among the public and members of the MM2030, many still felt that the Scenario C level of investment may not be achievable. A number of the public comments and MM2030 members were more comfortable with the local funding per capita for Scenario B which would put Grand Rapids slightly ahead of Ann Arbor and Lansing's current levels of funding per capita but below that of other peer systems (Madison, Tucson, Austin and Portland). In response to these comments, the project team attempted to create a *Preferred Scenario* that captured the "vision" from Scenario C while maintaining the cost target of Scenario B.

Proposed Services and Projects

The *Preferred Scenario* incorporates the span of service improvements from Scenario A, most of the frequency improvements from Scenarios A and B, develops Bus Rapid Transit on *The Rapid's* two most successful transit corridors and includes the full regional commuter bus program from Scenario C as well as a modern streetcar starter network that would connect the West Side, downtown Grand Rapids and Medical Mile, laying the foundation for future streetcar expansion projects north to West Grand and east to East Grand Rapids. The *Preferred Scenario* would also include improvements to the GO!Bus system including extension of GO!Bus service to new fixed-route corridors, development of an Accessibility Improvement Plan, and same day booking service (subject to space available).

As TMP service improvements are implemented, *The Rapid* will vigorously monitor the services to ensure that service is being operated as efficiently and effectively as possible. Any of the TMP improvements within *The Rapid* service area will be required to meet the performance criteria established in *The Rapid's* Service Standards Guide. Improvements outside of *The Rapid* service area are encouraged to meet *The Rapid's* Service Standards guidance, but may not be required to, under the condition that the sponsoring jurisdictions are willing to financially support the services.

The specific improvements of the *Preferred Scenario* are described below.

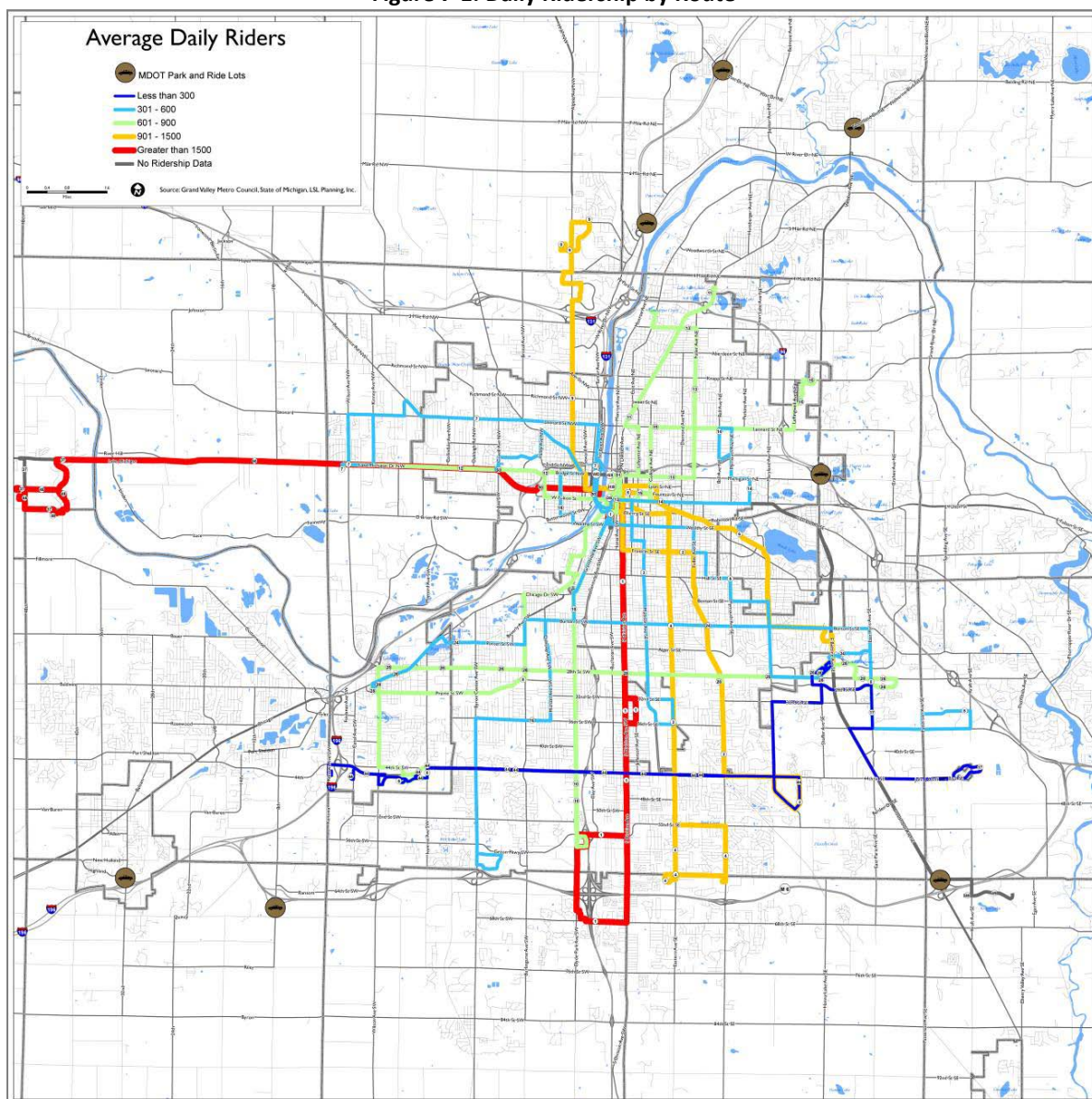
Span of Service

The span of service recommendations from Scenario A would generally be incorporated into the *Preferred Scenario*, subject to a few adjustments requested through public comment. The public stated a strong preference towards having service until midnight on Saturdays. For the *Preferred Scenario*, service would be operated on all routes from 5:00am to 12:00am on weekdays and Saturdays and from 7:00am to 9:00pm on Sundays and holidays. *The Rapid* should test the recommended span of service extensions on all routes. If productivity and cost effectiveness performance measures fall below the recommended Service Standards, the span of service may be adjusted.

Service Frequencies

Improvements in service frequencies were a core component of the three planning scenarios and are also a critical element of the *Preferred Scenario*. A reference map showing average weekday boardings by route is shown below in Figure 7-1.

Figure 7-1: Daily Ridership by Route



The two highest ridership routes, *Route 1* on Division Avenue and *Route 50* on Lake Michigan Drive, are recommended for limited-stop Bus Rapid Transit service. The proposed service frequencies for BRT would be 10 minutes (or less) for weekday peak periods, 15 minutes for weekday off-peak periods and 30 minutes on weekday evenings, weekends and holidays. The corridors would also have underlying local service (Lake Michigan's local service would only extend west to Standale Meijer), with 30-minute service during all periods.

Route 2 - Kalamazoo, Route 4 - Eastern, Route 6 - Eastown, Route 9 - Alpine and Route 11 - Plainfield, all routes with higher than average ridership, are recommended for frequency improvements from 30 minutes to 15 minutes during the weekday off-peak period. All five routes would also operate with 30-minute frequencies on weekday evenings, weekends and holidays.

Routes with average ridership: *Route 5 - Wealthy, Route 8 - Rivertown, Route 10 - Clyde Park, Route 13 - Michigan, Route 16 - Wyoming/Metro Health and Route 28 - 28th Street Crosstown*, would have weekday peak frequencies set at 15 minutes and then 30-minute frequencies during the weekday off-peak, weekday evenings, weekends and holidays.

All remaining fixed-route service would operate with 30-minute peak frequencies and depending on the route either operate with 30- or 60-minute frequencies during the weekday off-peak, weekday evenings, weekends and holidays. The intention of these improvements is to create service that is more convenient and will attract more riders. However, if the frequency improvements do not attract sufficient ridership to justify the investment (i.e. the route no longer meets *The Rapid's* Service Standards), the frequencies may be restored to previous levels.

The modern streetcar services are proposed to operate with 7.5-min service during the weekday peak period and 15-minute service during weekday off-peak, weekday evening, weekend and holiday periods. Commuter buses would only operate during the weekday peak periods and are proposed to operate on 30-minute frequencies.

Service Expansion

Geographic expansion of *The Rapid's* fixed-route service is proposed to be accomplished through the extension of existing routes along major corridors and into growth areas and the addition of new routes. Routes proposed for extensions are detailed below.

Route 1 - Division: The Silver Line BRT is proposed to be extended to 76th Street in a second phase. Both the BRT service and the underlying local route are proposed to be extended south of 76th Street and terminate at a new transfer center/park and ride facility. Trips to the Meijer on Clyde Park are not currently included in the *Preferred Scenario* for the BRT or local service, however service to this location would still be available via Route 10.

Route 2 - Kalamazoo: Route 2 is proposed to be extended to the Gaines Marketplace Shopping Center at Kalamazoo Avenue and Marketplace Drive.



Route 4 - Eastern: Route 4 is proposed to be extended to a new transfer center/park and ride facility near the intersection of Division Avenue and 76th Street. In the interim, while the park and ride facility is awaiting construction, the route is proposed to be extended to the Gaines Marketplace Shopping Center at Kalamazoo Avenue and Marketplace Drive.

Route 5 - Wealthy: Route 5 is proposed to be extended beyond its current terminal points at Woodland Mall (short-turn) and 36th Street and Patterson Avenue to Cascade Village via 28th Street. The extension would also serve the MDOT Park and Ride facility in front of the 28th Street Meijer.

Route 9 - Alpine: Route 9 is proposed to be extended beyond its current northern terminus point at the Alpine WalMart. Alternating trips would operate between Alpine Avenue and 6-Mile Road and the MDOT Comstock Park and Ride (accessed via Lamoreaux Drive and W River Drive). Additionally, all trips are proposed to operate beyond 4 Mile Road, currently a short-turn location for select morning trips and evening and weekend service.

Route 10 - Clyde Park: Route 10 is proposed to be extended to 76th Street and terminate at a new transfer center/park and ride facility to be located near the intersection of Division Avenue and 76th Street.

Route 11 - Plainfield: Route 11 is proposed to be extended beyond its current northern terminus point at Plainfield Avenue and Elmdale Street. Trips would be extended to serve the entire Plainfield Avenue corridor, ending at East Beltline Avenue.

Route 14 - East Fulton: Route 14 is proposed to be extended east on Fulton Street beyond Lakeside Drive to Ada Village. The route would serve outbound employment trips to Amway and inbound commuter trips to the Fulton Street corridor and downtown Grand Rapids. Route 15 - East Leonard would be reconfigured to serve the Kent County Jail loop on Plymouth Avenue, Service Road and Ball Avenue.

Route 16 - Wyoming/Byron Center: Route 16 is proposed to be extended to 84th Street to serve Byron Center. South of 36th Street, trips would loop to Byron Center via Burlingame Avenue and Byron Center Avenue and the direction of service on Burlingame Avenue and Byron Center Avenue would alternate between trips.

Route 28 - 28th Street Crosstown: Route 28 is proposed to be extended beyond its current eastern terminal point at 28th Street and Acquest Avenue to Cascade Village.

The following six new local routes are proposed.

Leonard Street Crosstown: This route was requested by the public to provide contiguous service across Leonard Street without a diversion into downtown Grand Rapids/Rapid Central Station. The route is proposed to operate on the Route 7 – West Leonard and Route 15 – East Leonard alignments along



Leonard Street and would add new service between Scribner Avenue and College Avenue. Service would operate on 30-minute frequencies during all periods.

3 Mile Road Crosstown: This route was developed to provide local service to the existing and emerging employment nodes along 3 Mile Road. The route would operate between Standale Meijer and Knapp's Corner via Wilson Avenue, 3 Mile Road, Alpine Avenue, 4 Mile Road, W River Drive, N Park Street, Coit Avenue, 3 Mile Road, Leffingwell Avenue and Knapp Street. Service would operate every 30 minutes during all periods, except on weekday evenings, when service would operate every 60 minutes.

Walker Avenue/3 Mile Road: This route was developed to provide a local connection between the existing and emerging employment nodes in northwest Walker and downtown Grand Rapids/Rapid Central Station. The route would operate between Rapid Central Station and the Walker City Hall via Monroe Avenue, Bridge Street, Stocking Avenue, Walker Avenue and 3 Mile Road and would loop on Wilson Avenue, Remembrance Road and Kinney Avenue. Service would operate on 30-minute frequencies during the weekday peak period and on 60-minute frequencies during all other periods.

Comstock Park/Belmont: This route was developed primarily to serve commercial and residential properties north of Grand River along W River Drive. The route would operate between Rapid Central Station and the Plainfield Charter Township offices in Belmont via Monroe Avenue, Ann Street, Turner Avenue, W River Drive, Jupiter Avenue and would loop on Post Drive and Belmont Avenue. Service would operate on 30-minute frequencies during the weekday peak period and on 60-minute frequencies during all other periods.

Rockford/Knapp: This route was developed to provide local service between downtown Rockford and the *The Rapid's* proposed transfer center at Knapp's Corner. The route would operate via M-44 (East Beltline Avenue/Northland Drive/Wolverine Boulevard) and E Division Street before looping through downtown Rockford. Service would operate on 30-minute frequencies during the weekday peak period and on 60-minute frequencies during all other periods.

Georgetown Township/Hudsonville: This route was developed to provide local service between the City of Hudsonville and Georgetown Township in southeastern Ottawa County and the Grand Rapids metropolitan region and provide a connection to one of *The Rapid's* proposed transfer centers at Rivertown Crossings via Wilson Avenue, Chicago Drive, Main Street, Baldwin Street and loop on 28th Avenue, Balsam Drive, Allen Street and 36th Avenue. Service would operate on 30-minute frequencies during the weekday peak period and on 60-minute frequencies during all other periods.

Regional Express Bus

New weekday peak period services are proposed to serve the commuter travel market between residential areas outside of *The Rapid's* current service area and the Medical Mile and downtown Grand Rapids. All routes would terminate at Rapid Central Station. Routes are currently proposed to enter downtown Grand Rapids via the I-196/College Avenue exit and Michigan Street to serve Medical Mile before traveling through the downtown.

These services are relatively low cost to operate due to their limited spans of service. For the purposes of the TMP, all of the commuter routes are proposed to operate at 30-minute frequencies, and are subject to commitment of funding from entities other than *The Rapid*, such as Kent County, individual townships, private contractors, etc. The following routes are proposed for commuter service.

US-131 North: This route would originate at a Park and Ride in Cedar Springs near the US-131/17 Mile Road interchange, travel south on US-131, serve another Park and Ride for the Rockford community near the US-131/10 Mile Road interchange, then travel south on US-131 towards downtown Grand Rapids.

US-131 South: This route would originate at a Park and Ride/Transfer Center in the Cutlerville community near the US-131/76th Street interchange, then travel north on US-131 towards downtown Grand Rapids.

Chicago Drive/I-196 West: This route would originate at a Park and Ride/Transfer Center in the Hudsonville community near the Chicago Drive and Van Buren Street intersection, then travel north on Chicago Drive, serve another Park and Ride for the Jenison community near the I-196/Chicago Drive interchange, then travel east on I-196 towards downtown Grand Rapids.

I-96 West: This route would originate at a Park and Ride/Transfer Center in northwest Walker near the I-96/Fruit Ridge Avenue interchange, then travel east on I-96 towards downtown Grand Rapids.

I-96 East: This route would originate at a Park and Ride/Transfer Center in Caledonia Township near the M-6 and Broadmoor Avenue interchange, then travel east on M-6, west on I-96, serve another Park and Ride for Cascade Township near the I-96/28th Street interchange, then continue west on I-96 towards downtown Grand Rapids.

East Fulton Street: Local fixed-route service is proposed to be extended east on East Fulton Street to Ada Village. Due to heavy commuting activity from Ada and Lowell via M-21/Fulton Street, a new Park and Ride facility is recommended near Ada Drive and Fulton Street. Select trips during the peak period would be shifted from local, all-stop service to limited-stop service to improve travel times for commuters traveling into downtown Grand Rapids.

Gerald R. Ford International Airport: A limited-stop bus service between Gerald R. Ford International Airport and downtown Grand Rapids, similar to the recently discontinued Air Porter service, would be



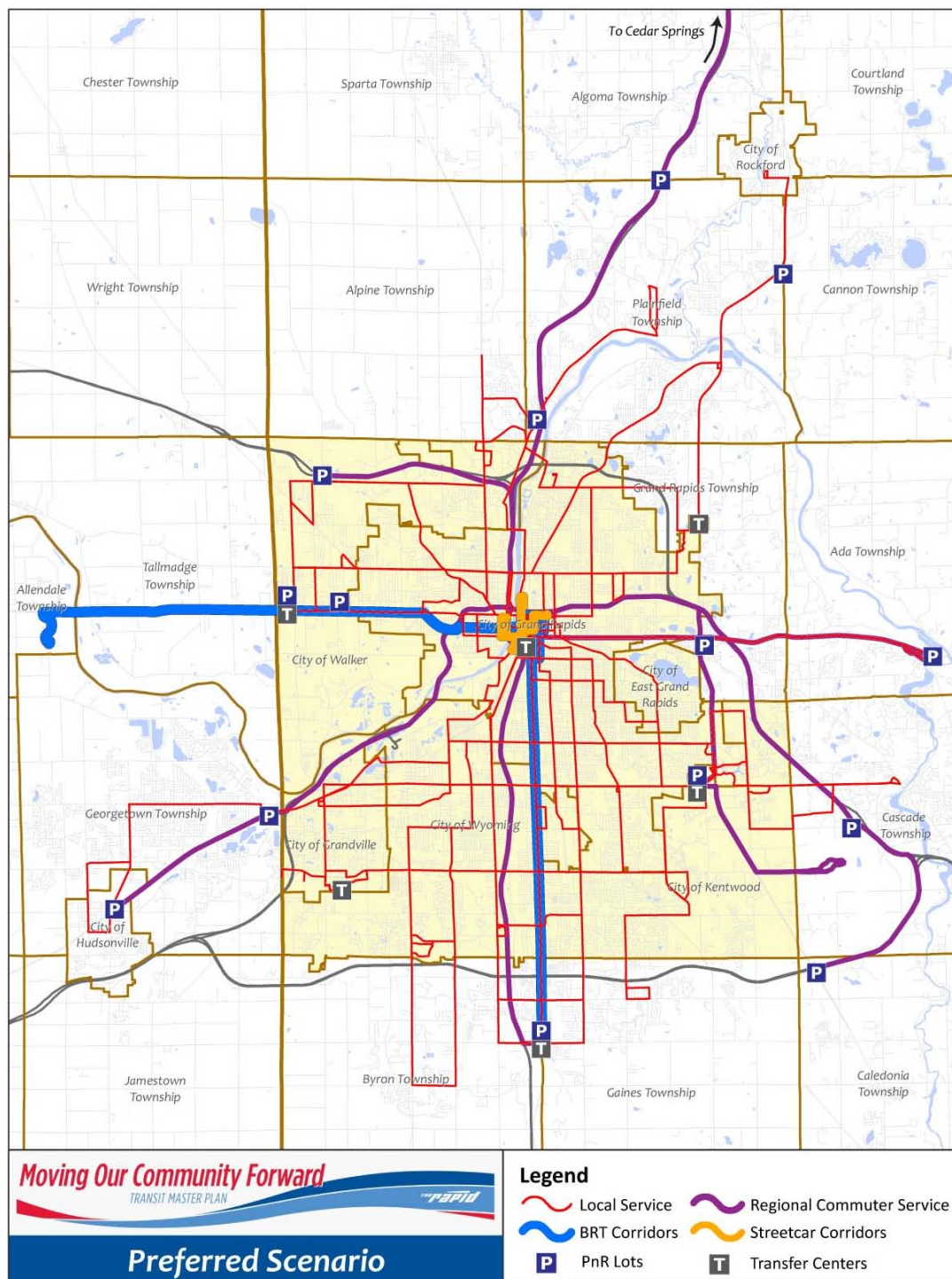
implemented with interim stops at Woodland Mall and the MDOT Grand Rapids-Kentwood Park and Ride lot at the I-196/East Beltline Avenue interchange. The Airport Express is proposed to operate every 60 minutes during all periods.

Modern Streetcar

Of the three planning scenarios, two contained streetcar projects. Scenario B included the streetcar “starter line” with service between Rapid Central Station, downtown Grand Rapids and North Monroe. Scenario C had a more robust system with streetcar service on both sides of Grand River, service along the Medical Mile and service to East Grand Rapids. In discussions with the public and the MM2030, there was a general sense that the TMP needed more than just the single streetcar project in Scenario B. For the *Preferred Scenario*, a “starter system” is proposed that would include the Scenario B “starter line” and a second line that would connect DASH parking lots and the Grand Valley State University Pew Campus on the west bank of the Grand River with downtown Grand Rapids and then extend up Medical Mile. The two streetcar routes would effectively replace circulator service currently provided by DASH and the GVSU CHS Express, and would provide a core downtown network that future extensions could tie into. Both modern streetcar routes are proposed to operate with 7.5-min service during the weekday peak period and 15-minute service during weekday off-peak, weekday evening, weekend and holiday periods.

In the interest of maintaining an affordable system cost for the Transit Master Plan, the Preferred Scenario does not currently include a streetcar project connecting East Grand Rapids to downtown Grand Rapids. As fiscal projections for *The Rapid* improve, the Board of Directors may re-incorporate this project other streetcar corridors or corridor extensions back into the Transit Master Plan’s list of projects. Currently, *The Rapid’s* Board has established a Streetcar Steering Committee charged with developing an implementation plan for a modern streetcar system in Grand Rapids. The initiation and implementation of a modern streetcar system in the greater Grand Rapids area will be subject to future Board decisions, public support and availability of funds to build and operate such a system.

Figure 7-2: Preferred Scenario



Projected Costs

Both the annual 2030 operating and maintenance costs and the aggregated FY 2011-2030 capital cost for the “Preferred” Scenario are roughly double today’s costs after adjusting for inflation. For the total capital cost, the 20-year program would cost approximately \$570 million. This cost includes vehicle and major component replacement, new facility construction (park and ride lots, shelters, a second bus maintenance facility and a streetcar maintenance facility and storage yard) and installation of the streetcar track and catenary systems. Table 7-1, below, shows the *Preferred Scenario’s* capital cost relative to *The Rapid’s* existing service and the three planning scenarios.

Table 7-1: Preferred Scenario Capital Cost (2011-2030)

Total Capital Cost, 2011 - 2030		
	Cost (M\$)	% Change
Existing	\$281.9	n/a
Scenario A	\$412.5	46%
Scenario B	\$523.1	86%
Scenario C	\$1,114.0	295%
Preferred	\$570.3	102%

The annual operating cost in 2030 is also about double that of the existing system after adjusting for inflation. The annual O&M cost once all of the TMP improvements are constructed and in operations is estimated at about \$120 million. The O&M cost includes all costs associated with operations (e.g labor, fuel, insurance, etc.) and administration. Table 7-2, below, shows the *Preferred Scenario’s* O&M cost relative to *The Rapid’s* existing service and the three planning scenarios.

Table 7-2: Preferred Scenario Annual O&M Cost (2030)

Annual Operating Cost in 2030		
	Cost (M\$)	% Change
Existing + Inflation	\$59.5	n/a
Scenario A	\$102.0	71%
Scenario B	\$122.3	106%
Scenario C	\$166.5	180%
Preferred	\$119.6	101%

Mobility Benefits

The primary benefit of public transit improvements is represented by how many riders would use *The Rapid* services. Chapter 1 described how *The Rapid* has increased its annual ridership from 4.2 million riders in fiscal year 2000 to 9.3 million riders in FY 2009.

Table 7-3, below, compares the projected 2030 annual ridership, by service type, to 2009 actual ridership. The *Preferred Scenario* improvements would result in an increase in annual ridership from 9.3 million to 16.0 million, a 71% increase. Almost 90% of the new ridership would be generated by new services such as BRT (Silver Line and Laker Line), regional express bus, and the downtown streetcar.

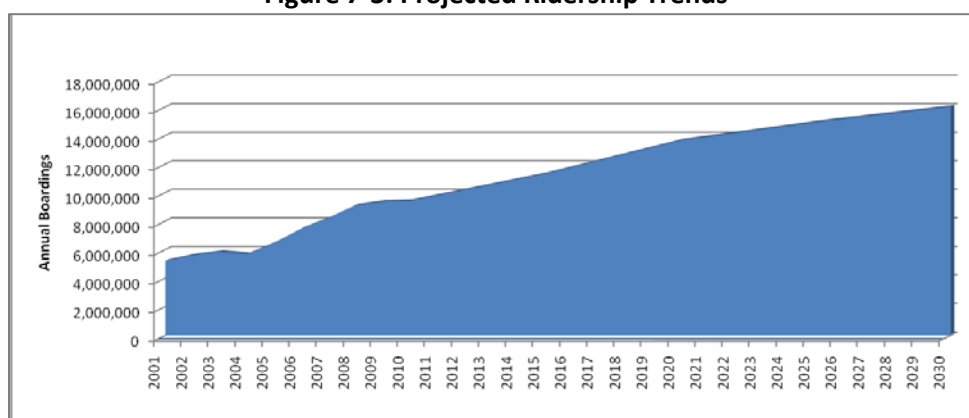
Table 7-3: Projected 2030 Rapid Ridership, by Service Type

Service Type	Annual Riders (2009)	Annual Riders (2030)	Percent Change
Go!Bus	442,000	482,000	9.0%
Vanpool	30,000	32,000	6.7%
Modern Streetcar	n/a	2,721,000	n/a
Commuter	n/a	754,000	n/a
BRT	n/a	2,536,000	n/a
Local	8,866,000	9,478,000	6.9%
System Total	9,338,000	16,003,000	71.4%

Future ridership projections were developed for the *Preferred Scenario* using the following methods: (1) future ridership for service frequency and span of service improvements were derived by applying elasticity measures to existing (FY 2009) ridership by route; (2) future ridership for local bus route extensions and new express bus routes was based on a comparison of population and population density for new service areas relative to similar existing services; (3) future ridership for GO!Bus services was based on a cohort analysis that projected increases in disabled and senior populations from 2008 to 2030; and (4) future ridership projections for the Silver Line and Downtown Streetcar were based on previous projections.

Figure 7-3, below, relates historic ridership trends for the past nine years to the future projections for the *Preferred Scenario*. Future annual ridership, by all service types, is projected to increase to 11.3 million in 2015, 13.6 million in 2020, 14.9 million in 2025 and 16.0 million in 2030.

Figure 7-3: Projected Ridership Trends



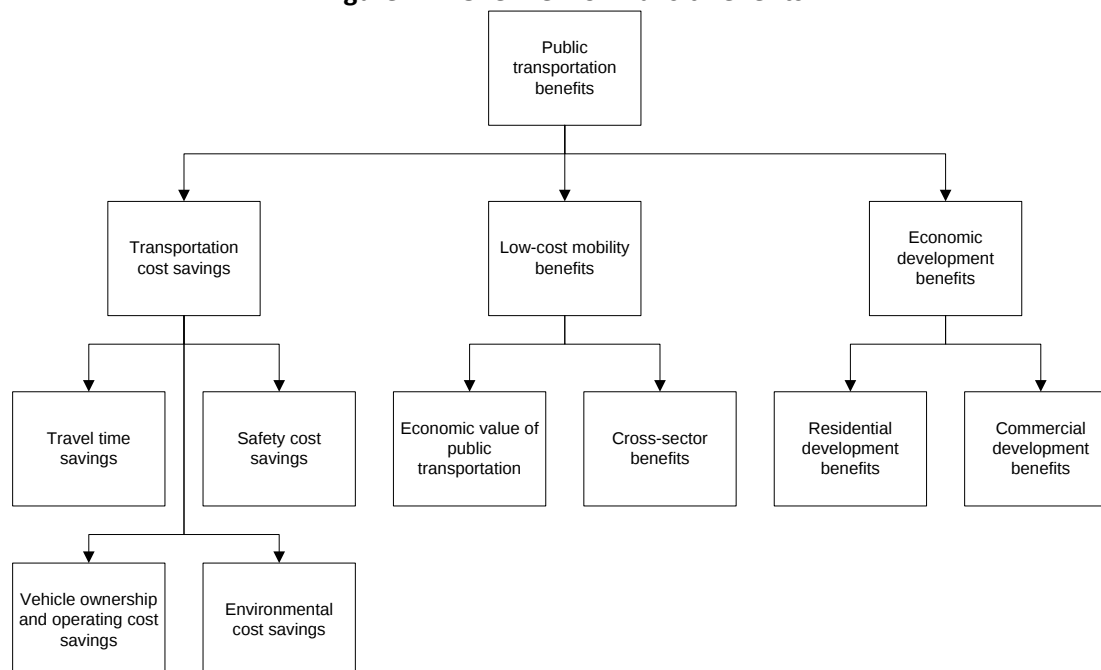
Economic and Community Benefits

Public transit has many economic and community benefits – including both direct benefits that are derived primarily by transit riders and workers, and secondary benefits that are accrued by non-users and the community in general. These benefits include increased productivity resulting from travel time savings; reduced travel costs; access to jobs, shopping, community and medical facilities for riders; reduced congestion and greenhouse gases; energy conservation; ability to influence land use and growth; and creation of new jobs. The benefits of public transportation fall into the following three main categories:

- **Transportation Cost Savings** – These are the savings in vehicle ownership and operating cost (purchase/lease, insurance, fuel consumption, etc.), travel time, accidents and environmental emissions (such as carbon monoxide, nitrogen oxides and volatile organic compounds) due to less congestion and fewer miles traveled by personal vehicles in the presence of transit. These savings in resources imply greater disposable household income for other purposes. The two main benefits are the reduction in travel for personal vehicles, and travel in less congested conditions for vehicles remaining on the roadway network.
- **Low-cost Mobility Benefits** – These are the benefits from providing low-cost mobility to transit-dependent households. The benefits include: the economic value to access services such as healthcare, education, retail, and attractions (affordable mobility benefits), and budget savings for welfare and social services, such as unemployment and homecare, due to the presence of transit (cross-sector benefits).
- **Economic Development Benefits** – Proximity to transit can have a positive effect on residential property values and commercial activities due to the increased availability of travel opportunities, and the ability of others to access the residence and commercial centers by transit. Economic development benefits are mainly found in corridors with fixed guideway projects (i.e., BRT and streetcar).

Figure 7-4 illustrates the benefits of public transportation described above.

Figure 7-4: Overview of Transit Benefits



Source: Michigan Department of Transportation, "Economic and Community Benefits of Local Bus Transit Service (Phase One)", Final Report, May 4, 2010, prepared by HDR | Decision Economics

More than 9 million trips are made on *The Rapid* system annually. It is generally accepted that the overall benefits of these trips extend beyond just transit riders. Through improved mobility, safety, air quality and economic development, public transit also benefits users of the roadway network and the community at large. HDR | Decision Economics has developed an economic model to estimate transportation cost savings, low-cost mobility benefits and economic development benefits for Michigan DOT. HDR applied this model to *The Rapid* to estimate its existing (2008) transit benefits. The analysis employs methods developed for the Federal Transit Administration (FTA) with data compiled in the Public Transportation Management System (PTMS). The findings are listed below.

Transit Expands Mobility

- *Facilitates access to jobs and medical care* – A majority of trips made by *The Rapid* patrons are for work or medical purposes. A number of those patrons (especially those with low income, no access to a car, or with disabilities) rely entirely on *The Rapid* for their mobility needs. If public transit was no longer available they would require homecare or they would no longer be able to go to work. An estimated \$1.8 million in cross-sector benefits (i.e., homecare cost savings and welfare cost savings) in 2008 are attributable to *The Rapid*.
- *Provides greater access to education* – *The Rapid* operates a number of bus routes that serve Grand Valley State University (GVSU), Grand Rapids Community College (GRCC) and other local colleges and universities and offers discounted fares to students, faculty and staff. In the absence of *The Rapid*, many of these students may have to postpone or change their plans to attend college unless they have other transportation options.

Transit Stimulates the Economy

- *Creates jobs in Michigan* – For every 10 jobs created in the public transit sector, 6 additional jobs are created in the rest of the economy as a result of the multiplier effect. It is estimated that *The Rapid's* operations sustained a total of 525 jobs and contributed \$61.0 million in economic output in Michigan in 2008.
- *Encourages economic development* – Public transportation facilities and corridors act like a catalyst to economic development – in the form of more job opportunities, higher income, increased tax base, increased productivity and property value appreciation – thereby helping build strong, stable, livable neighborhoods.

Transit Alleviates Traffic Congestion

- *Shortens commutes* – Investing in public transit is an effective congestion management strategy. A full bus can take more than 30 cars off the road. The choice of transportation mode for commute helps reduce congestion delays during rush hours.
- *Frees up time for other activities* – Thanks to *The Rapid*, travelers saved more than 264,000 person hours of travel in 2008. This means more time spent with families, at work and on other activities (such as shopping and recreation) that can also generate revenue.

Transit Saves Money

- *Reduces the cost of transportation* – When people use public transit instead of a more costly alternative (personal car or taxi) they save money, which in turn can be spent on food, healthcare, housing and other staples. In 2008, out-of-pocket cost savings totaled \$32.9 million for *The Rapid* riders.
- *Increases tax savings for commuters* – The 2009 American Recovery and Reinvestment Act (ARRA) raised the monthly limit commuters can deduct from their paychecks on a pre-tax basis from \$120 to \$230 to pay for their commute. Employers who enroll in the program also save money since this transit benefit cap is not subject to payroll taxes.

Transit Protects the Environment

- *Improves air quality* – By taking cars off the road, public transit can decrease vehicular emissions of air pollutants such as volatile organic compounds and nitrogen oxides, the principal contributors to smog, as well as carbon monoxide and sulfur dioxide.
- *Reduces carbon emissions* – New technologies (hybrid engines) and cleaner energy sources (compressed natural gas and electricity) help reduce vehicular emissions of carbon dioxide (CO₂), one of the main greenhouse gases that contribute to global warming.

Transit Saves Lives

- *Lowers the risk of accidents* – In general, transit riders are less likely to be involved in a crash than those who use personal vehicles. Thus transit use reduces the number of injuries and deaths on the road and their related costs (medical treatment, police services, property damage, etc.). In 2008, accident cost savings attributed to *The Rapid* amounted to \$800,000.

- *Reduces respiratory and other air pollution-related illnesses* – By reducing emissions of air pollutants, public transit reduces air pollution-related illnesses such as asthma, chronic obstructive pulmonary disease and lung cancer.

Transit Brings the Community Together

- *Provides a vital transportation link for senior citizens and persons with disabilities* – Public transit ensures that persons with disabilities and the growing number of senior citizens remain actively involved in their communities and have access to the full range of facilities and services. *The Rapid* offers discounted fares to senior citizens and provides ADA paratransit service to persons with disabilities.
- *Expands social and recreational opportunities in rural areas* – More than two thirds of public transit agencies in Michigan are located in rural areas. *The Rapid* not only serves the urban area of Grand Rapids but also rural portions of Kent County with County Connection. *The Rapid* also participates in RideLink, a network of area transportation providers that offer transportation to persons aged 60 or older, including medical, recreational and shopping trips throughout Kent County.

Table 7-4, below, summarizes *The Rapid's* economic benefits for its 2008 service levels. Taken together, *The Rapid* system in 2008 generated annual benefits of \$39.7 million in transportation cost savings, \$5.2 million in low-cost mobility benefits, \$86 million in economic impacts and 525 jobs.

Table 7-4: Summary of Rapid Economic Benefits (2008)

Benefits	\$ Million
Riders' out-of-pocket cost savings	\$32.90
Other transportation cost savings	\$6.80
Transportation cost savings	\$39.70
Affordable mobility benefits	\$3.40
Cross-sector benefits	\$1.80
Low-cost mobility benefits	\$5.20
Total annual benefits	\$44.90
Economic impact of riders' out-of-pocket cost savings	\$25.00
Economic impact of transit operations	\$61.00
Total economic impact	\$85.90

The TMP *Preferred Scenario*, which nearly doubles annual operating costs (in 2010 dollars) and annual ridership, would generate annual benefits approximately twice the 2008 benefits, or about \$80 million in transportation cost savings, \$10 million in low-cost mobility benefits, \$170 million in economic impacts, and more than 1,000 jobs. In addition, the *Preferred Scenario* would generate additional economic benefits that would result from the BRT and streetcar projects – the creation of transit-oriented developments, more sustainable and livable communities, and more efficient land use patterns. The Grand Rapids Streetcar Feasibility Study (2009) estimated that the downtown streetcar project alone would generate \$388 million in new housing, office, retail and hotel development within ¼

mile of the streetcar line and 1,800 jobs in Kent County. Altogether, the TMP plan would generate more than \$650 million in economic benefits and nearly 3,000 jobs for the Grand Rapids area.

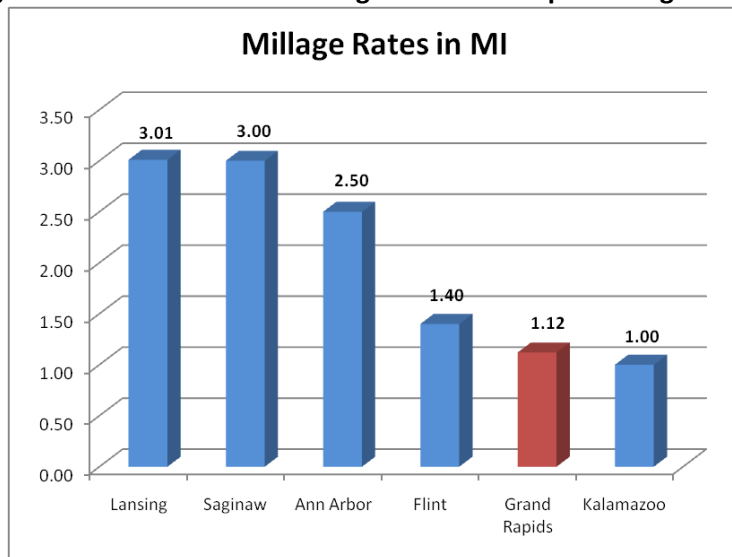
Finance Plan and Millage Requirements

While the overall capital and operating costs for the TMP *Preferred Scenario* are about double that of the existing system in 2030, due to the contributions from the State of Michigan and federal discretionary funding programs, the local level of investment (i.e. millage) would not have to double.

Because some of the new services and service improvements would occur outside *The Rapid's* current boundaries they would be funded as contracted service. The State of Michigan is also considering an increase in the motor vehicle fuel sales tax, from 19 to 27 cents per gallon for unleaded fuel, which could help supplement local transit funding. Any remaining deficit would need to be funded through local sources, either as millage or as local jurisdictional or private contributions for the streetcar services. Based on an illustrative phasing program developed by the project team, the *Preferred Scenario* could require increases to 1.4 mills on or before 2013, then to 1.8 mills in 2018, and finally to 2.0 mills in 2028, as service enhancements and new projects are brought into revenue service.

When compared to other Michigan cities, *The Rapid's* current millage is among the lowest. Current millage rates are shown below in Figure 7-5. Even Flint, with a 1.4 transit millage, is more invested in public transportation than *The Rapid's* six cities. Notably, the cities of Ann Arbor, Saginaw and Lansing have mill rates that are more than double *The Rapid's* current 1.12 mills.

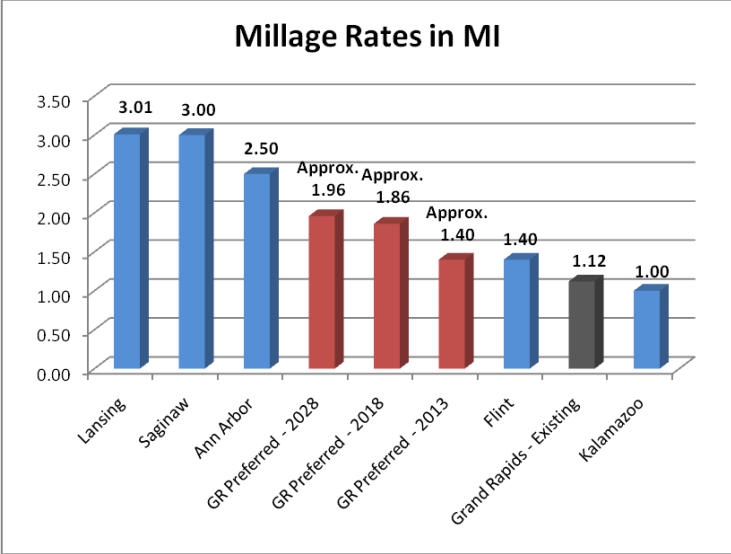
Figure 7-5: Current Transit Millage Rates in Sample Michigan Cities



Using an illustrative phasing program developed by the project team for the TMP *Preferred Scenario*, by 2028 the local contribution to support transit service could be supported by an approximately 2.0 mill

assessment. When compared to current levels of funding for other cities in Michigan, a 2.0 millage would be higher than Flint, but would still be lower than Ann Arbor, Saginaw and Lansing. Potential millage requirements as services are implemented over time are shown below in Figure 7-6.

Figure 7-6: Comparison of Potential Millage Rates for *The Rapid*



Future Expansion

The project list for the TMP’s *Preferred Scenario* was intended to be visionary but achievable within the 20-year planning horizon established for the TMP. Some service enhancements from the Scenario B planning scenario and several new services from Scenario C were not included in the *Preferred Scenario*, in the interest of maintaining an affordable system cost. As economic conditions improve or if *The Rapid’s* Board of Directors decides to be more aggressive with the future expansion program, some of these service improvements may be reincorporated into the TMP.

For example, future plans may consider additional service frequency improvements, new crosstown routes (Walker Avenue and East Beltline), and future streetcar extensions from the West Side north to Leonard Street, an extension on Michigan Street east to Eastern Avenue and a corridor between downtown Grand Rapids and East Grand Rapids that would serve the Easttown and Gaslight districts.

Appendix A: Transit Master Plan Technical Memoranda

- Project Management Plan
- Peer Analysis
- Regional Context
- COA Update
- Analysis of Paratransit Operations
- Funding Strategies
- Service Standards and Design Guide
- Transit Oriented Development Guidebook