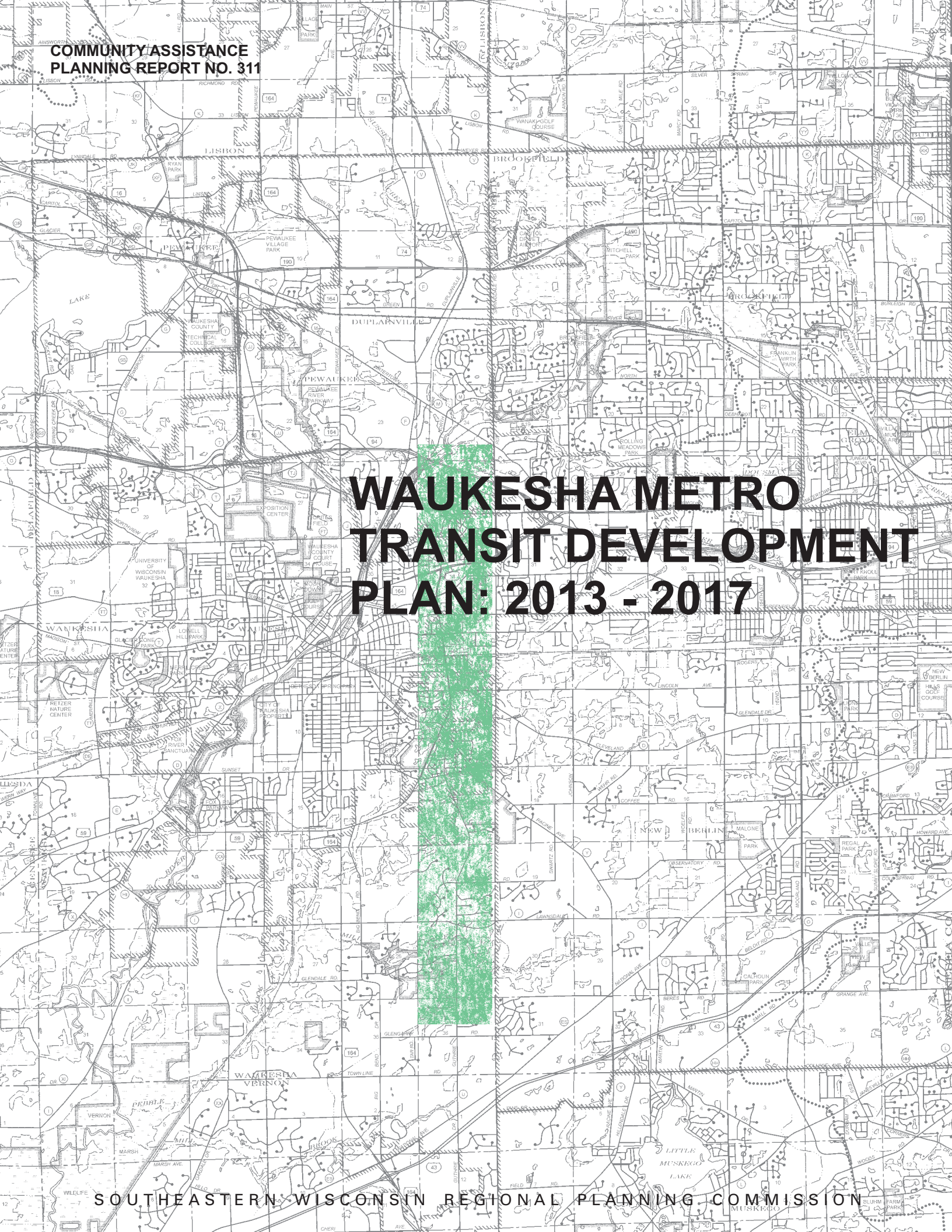
COMMUNITY ASSISTANCE
PLANNING REPORT NO. 311

WAUKESHA METRO TRANSIT DEVELOPMENT PLAN: 2013 - 2017



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WAUKESHA METRO TRANSIT DEVELOPMENT PLAN: 2013-2017

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Chapter I

INTRODUCTION

INTRODUCTION

At the request of the City of Waukesha, the Regional Planning Commission is preparing this transit development plan for the City and its environs. The last short-range transit development plan prepared by the Commission for the City covered the period from 2003 through 2007.[1] The new plan is needed in order for the transit system to respond to changes in residential, industrial, and commercial development occurring in the Waukesha area, as well as to adjust service to reflect those needed by Waukesha Metro Transit System users.

This transit development plan is being conducted within the context of the continuing regional transportation planning program. In 2006, the Commission adopted a regional transportation system plan with a design year of 2035.[2] That plan includes a public transit element that recommends a doubling of transit service in the Region over a 30-year period (see Map 1). The regional plan also has some specific recommendations that pertain to the Waukesha area:

- Improved and expanded rapid transit connections—mainly provided by buses with commuter seating and amenities operating over freeways—between Milwaukee and the other urban centers of the Southeastern Wisconsin Region. Two routes would originate in the City of Waukesha with stops in the greater Waukesha area and at two public transit stations in western Milwaukee County, as well as in the Milwaukee Central Business District (CBD). Routes would operate in both directions all day and evening, providing both traditional commuter and reverse-commute service. Buses would leave every 20 minutes during peak periods, and every 30 to 60 minutes during off-peak periods.

- Express bus service, including a route connecting the City of Waukesha to the Bluemound Road corridor, the Milwaukee CBD, and the University of Wisconsin-Milwaukee. Stops would be spaced about one-quarter of a mile apart. Express service would operate weekdays, weekday evenings, and weekends, with buses every 15 minutes during peak periods, and every 30 minutes during off-peak periods.

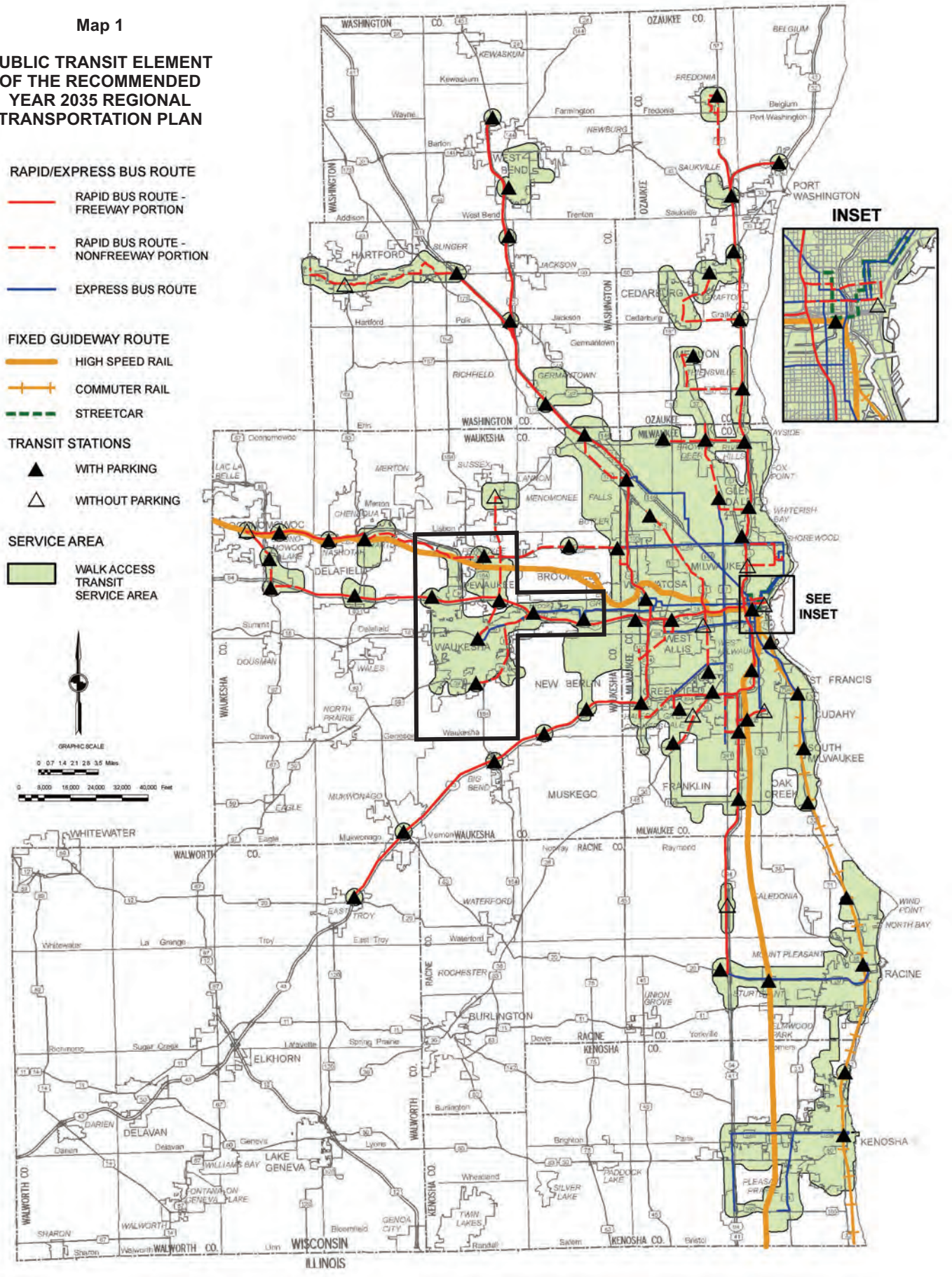
---

[1] *See SEWRPC Community Assistance Planning Report No. 246,* Waukesha Area Transit System Development Plan: 2003-2007*, October 2003.*

[2] *See SEWRPC Planning Report No. 49,* A Regional Transportation System Plan for Southeastern Wisconsin: 2035*, June 2006.*

Map 1

PUBLIC TRANSIT ELEMENT OF THE RECOMMENDED YEAR 2035 REGIONAL TRANSPORTATION PLAN



- Improved and expanded local bus service provided by the existing Waukesha Metro Transit System. Service would be extended to existing and proposed residential areas on the developing fringe of the City of Waukesha and in both the City and Village of Pewaukee, as well as to industrial and commercial development on both the south side of the City of Waukesha and in the City of Pewaukee, providing more frequent service and extending service to developing areas. Local bus service in the City of Waukesha would operate weekdays, weekday evenings, and weekends, with buses every 20-30 minutes during peak periods, and every 30-60 minutes during off-peak periods.

This transit development plan should be considered as an initial stage of implementation of the adopted regional plan. The plan is short-range in nature, covering the period 2013-2017, and is based on a review of the existing City transit system, and analyses of the travel habits, patterns, and needs of system users based on an on-bus survey conducted in 2008. The plan, completed in 2012, proposes a set of recommended service changes for the transit system and identifies the forecast ridership, service levels, and operating and capital expenses that would be expected from implementing the changes. The plan recommendations will be reconsidered and refined as part of a more comprehensive Waukesha County transit development plan to be completed by 2014.

This transit development plan will be documented in the following chapters of this report:

- Chapter II, "Existing Transit System", which describes the Waukesha Metro Transit System serving the City of Waukesha and environs, the ridership demographics of the system, and summarizes the other major transit services presently available in the Waukesha area.

- Chapter III, "Objectives, Principles, and Standards", which provides a set of transit service objectives and supporting performance standards and design criteria.

- Chapter IV, "Evaluation of Waukesha Metro Transit System", which describes how well the existing transit services meet the performance standards, thereby identifying service-related problems, successes, and deficiencies.

- Chapter V, "Alternative Transit Service Changes", which documents the alternative transit service improvements for 2013 through 2017 that were considered by the Waukesha Transit Commission.

- Chapter VI, "Recommended Transit Development Plan", describes the transit system ultimately recommended by the Waukesha Transit Commission; and

- Chapter VII, "Summary and Conclusions", which provides a brief overview of the significant findings and recommendations of the study.

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Chapter II

EXISTING PUBLIC TRANSIT SYSTEM

INTRODUCTION

This chapter describes in detail the characteristics of the City of Waukesha Metro Transit system, along with brief descriptions of other connecting public transit service providers in the study area. The chapter first presents a description of Waukesha Metro Transit, including service operations, bus fleet, ridership, and costs. A summary of the other major public transit service providers in the study area follows, including local and intercity bus service, taxicab service, and the principal human services transportation providers for seniors and people with disabilities.

WAUKESHA METRO TRANSIT

Public transit service was initiated in the Waukesha area in 1895 with the construction of an electric railway line between Waukesha and Waukesha Beach, a popular recreation area located on Pewaukee Lake. The electric railway line eventually extended from Watertown to Milwaukee operating on local streets in the City of Waukesha before service was discontinued in 1951. It was not until 1941 that local bus service was inaugurated in the City of Waukesha by Waukesha Transit Lines, now known as Wisconsin Coach Lines, Inc. Continuous declines in ridership and profits during the postwar period, and failure to obtain Federal and State transit assistance through the City in the mid 1970's, resulted in extreme financial difficulty for the private operator, who ultimately ceased operation of regular local service in 1976, and school tripper service in 1977. After a referendum to provide publicly-funded demand-responsive transit service in the City failed in 1977, a second referendum concerning a publicly-owned, privately managed fixed-route bus system was successful in 1980. On August 31, 1981, after over five years without regular local transit service, Waukesha Metro Transit began operation.

Administrative Structure

The City of Waukesha owns Waukesha Metro Transit and operates it using a private management firm, Professional Transit Management, Ltd., under the direct supervision of the Transit Director, a City of Waukesha employee. The Waukesha Transit Commission, whose members are appointed by the Mayor and confirmed by the Waukesha Common Council, sets the policy for the transit system and has all the powers necessary to make acquisitions, operate, and manage the transit system. The Waukesha Common Council has the ultimate responsibility for review and approval of certain important matters, including the annual budget for the public transit program.

Fixed-Route Bus Service
Waukesha Metro Transit provided bus service during 2010 using a system of fixed routes, shown on Maps 2 through 4. The current operating characteristics, service levels, and fares for the system are summarized below.

Fixed Routes
The transit system operates 10 bus routes in a radial route network: all the routes originate from the Downtown Transit Center, located at 212 E. St. Paul Avenue, and provide service to the outlying portions of the City. Most of the routes operate almost entirely within the City of Waukesha, with some exceptions:

- Route No. 1 extends to the Brookfield Square Shopping Center, providing service principally along Bluemound Road in the City and Town of Brookfield. The extension of Route No. 1 between Goerke's Corners and Brookfield Square is financed by Waukesha County and is considered to be part of the Waukesha County transit system. A short extension into the Brookfield Highlands residential area several times each weekday is financed by the Town of Brookfield.

- Route No. 9 extends to the Waukesha County Technical College (WCTC) Pewaukee campus in the Village of Pewaukee.

- Short segments of Route Nos. 2, 5, and 6 pass through the Town of Waukesha.

The schedules of most routes are designed so that they meet at the Downtown Transit Center every 35 minutes during weekday peak periods and every hour at all other times. This cycle, or "pulse," scheduling allows passengers the opportunity to transfer conveniently between bus routes and complete a trip with a minimum of delay. During weekday midday and evening periods, and on Saturday, the schedules of all routes are not fully coordinated resulting in wait times of 30 minutes for some transferring passengers. This is because four of the nine routes (Route Nos. 3, 4, 7, and 8) operate with a 30 minute round trip running time and are paired with each other to operate as through-routes. Route Nos. 3 and 8 leave the transit station at the same time as all the other routes, return to the Transit Center 30 minutes later, and then leave as Route Nos. 7 and 4, again returning to the Transit Center 30 minutes later.

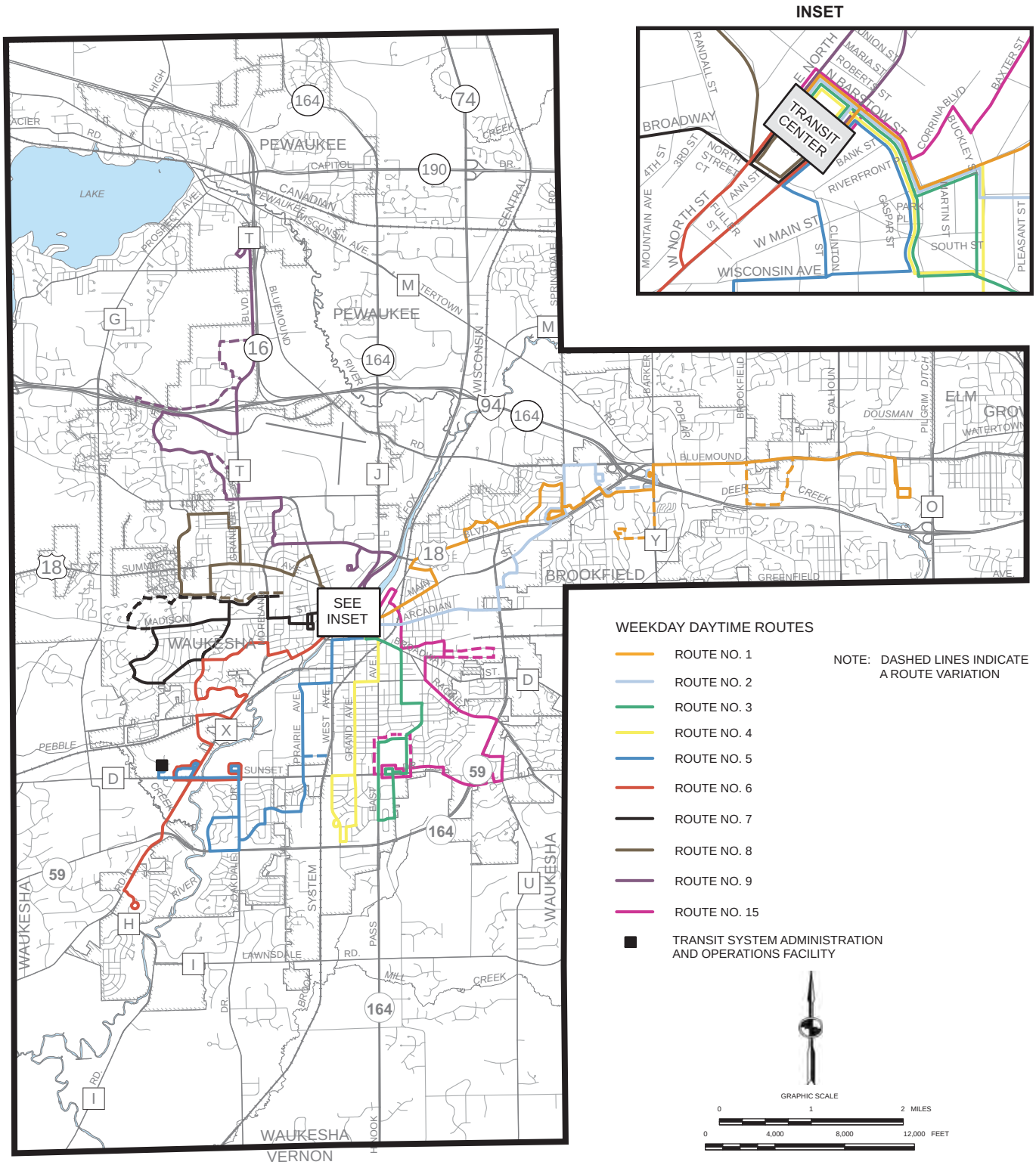
Service Levels
The 2010 operating characteristics and service levels for the routes of the transit system are presented in Table 1. Route Nos. 1, 2, and 4 operate seven days a week, excluding holidays. Route Nos. 3, 7, and 8 operate six days a week, excluding Sundays and holidays. Route Nos. 5 and 6 are combined during weekday evenings and weekends into Route No. 5/6. Similarly, Route Nos. 7 and 8 are combined on Sundays into Route No. 7/8. In general, the routes with the most frequent service also have the longest service hours, and could be considered "core routes"—Route Nos. 1, 2, 4, and 8. These core routes generally operate with 35-minute headways during the peak periods and 60-minute headways during the off-peak periods and weekends. (Route No. 1 operates with 30-minute headways at all off-peak periods.) The remaining routes generally operate with 70-minute headways during the peak periods and 60-minute headways during the off-peak periods and weekends.

Fares
Table 2 displays the fares charged in 2010 for fixed-route bus service. The base adult cash fare is $2.00, with reduced fares offered for students, seniors, and people with disabilities. Passengers can also purchase books of 10 tickets, monthly passes, and special Saturday/Sunday "Super Transfers," good for unlimited riding Saturdays or Sundays. Free 90-minute transfers are issued upon request at the time the fare is paid, and may be used to transfer to any route, including the route from which the transfer was issued. Tickets and passes can be purchased at 15 locations throughout the Waukesha area, which range from supermarkets to colleges to banks.

Paratransit Service for People with Disabilities
In addition to fixed-route bus service, the City of Waukesha also provided paratransit service during 2010 to serve the travel needs of people with disabilities. This service complies with Federal regulations implementing the

Map 2

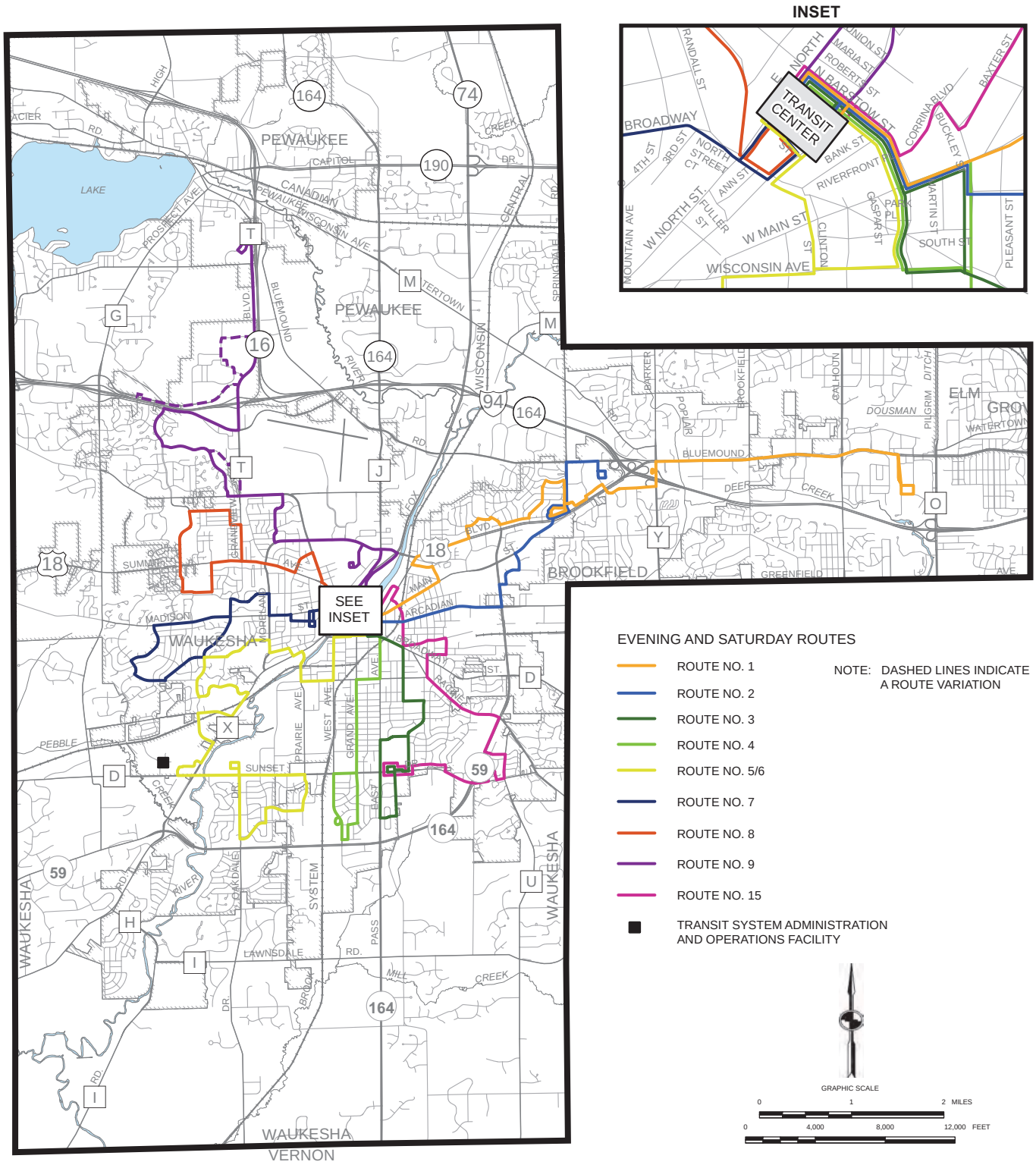
WAUKESHA METRO TRANSIT WEEKDAY DAYTIME ROUTES



Source: Waukesha Metro Transit and SEWRPC.

Map 3

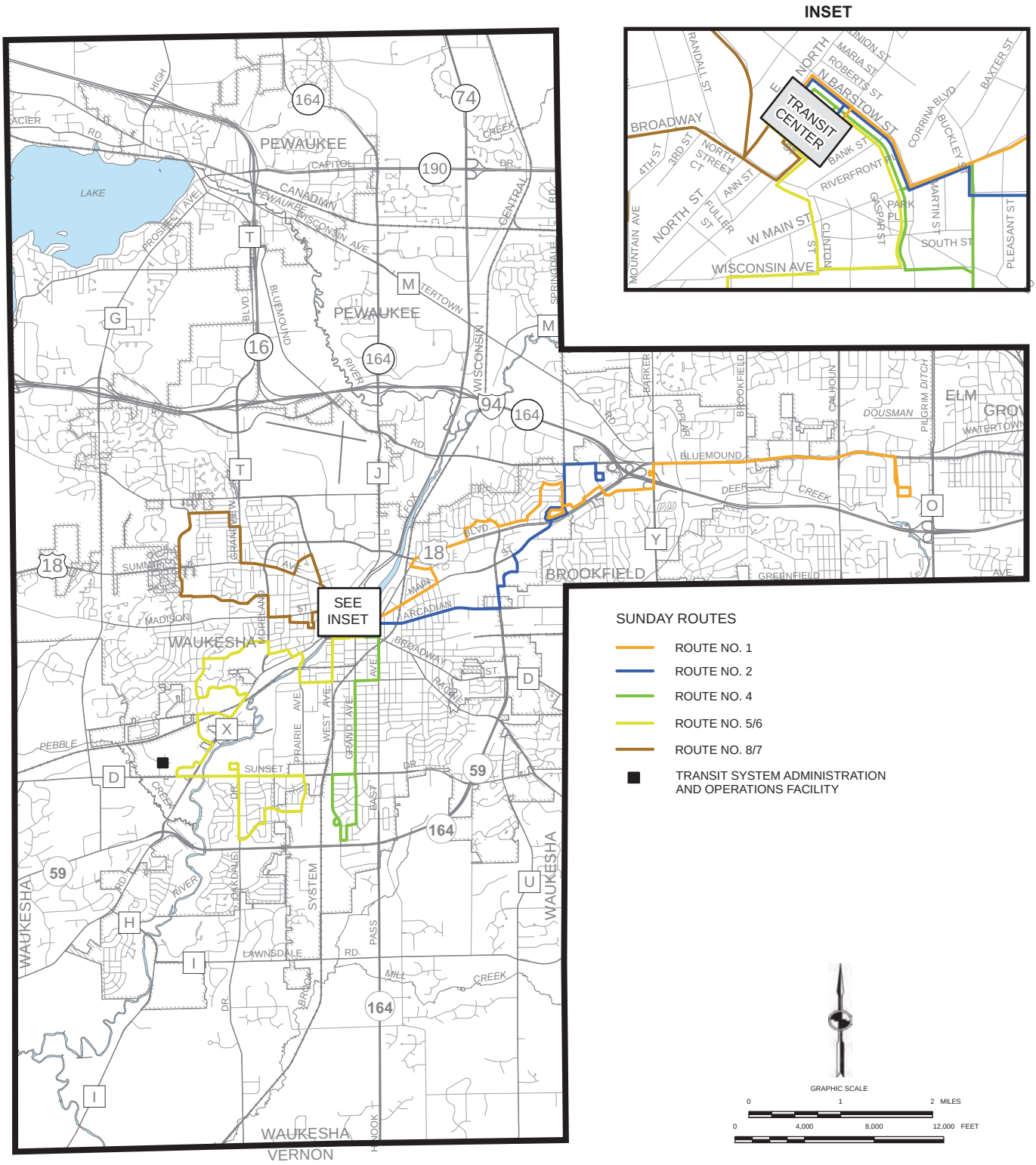
WAUKESHA METRO TRANSIT WEEKDAY EVENING AND SATURDAY ROUTES



Source: Waukesha Metro Transit and SEWRPC.

Map 4

WAUKESHA METRO TRANSIT SUNDAY ROUTES



Source: Waukesha Metro Transit and SEWRPC.

Table 1

WAUKESHA METRO TRANSIT OPERATING AND SERVICE CHARACTERISTICS BY ROUTE: 2010

Bus Route	Round Trip Route Length (miles)	Service Availability					
		Weekdays		Saturdays		Sunday	
		Start Time First Trip	Start Time Last Trip	Start Time First Trip	Start Time Last Trip	Start Time First Trip	Start Time Last Trip
1	19.0	5:55 a.m.	10:05 p.m.	8:20 a.m.	9:40 p.m.	9:20 a.m.	6:40 p.m.
2	10.8	5:55 a.m.	9:15 p.m.	8:50 a.m.	9:50 p.m.	9:50 a.m.	5:50 p.m.
3	7.1	6:11 a.m.	8:45 p.m.	8:20 a.m.	9:20 p.m.	- -	- -
4	7.4	5:43 a.m.	9:15 p.m.	8:00 a.m.	9:50 p.m.	9:00 a.m.	6:50 p.m.
5	12.9	6:00 a.m.	6:15 p.m.	- -	- -	- -	- -
5/6	16.9	6:37 p.m.	9:15 p.m.	8:14 a.m.	9:50 p.m.	9:14 a.m.	6:50 p.m.
6	16.2	6:07 a.m.	6:15 p.m.	- -	- -	- -	- -
7	7.1	5:46 a.m.	9:15 p.m.	8:50 a.m.	6:50 p.m.	- -	- -
7/8	6.4	- -	- -	- -	- -	9:20 a.m.	6:20 p.m.
8	6.6	5:32 a.m.	8:45 p.m.	8:20 a.m.	6:20 p.m.	- -	- -
9	18.2	5:41 a.m.	9:15 p.m.	8:15 a.m.	6:50 p.m.	- -	- -
15	13.0	6:01 a.m.	6:15 p.m.	8:50 a.m.	6:50 p.m.	- -	- -
System Total	141.6	5:43 a.m.	10:05 p.m.	8:15 a.m.	9:50 p.m.	9:20 a.m.	6:50 p.m.

Bus Route	Service Frequency (Minutes)					
	Weekdays				Saturday	Sunday
	A.M. Peak (6 a.m. - 9 a.m.)	Midday (9 a.m. - 3 p.m.)	P.M. Peak (3 p.m. - 6 p.m.)	Evening (after 6 p.m.)	All Day	All Day
1	35	30	35	30	30	30
2	35	60	35	60	60	60
3	70	60	60	60	60	- -
4	35	60	35	60	60	60
5	70	60	70	- -	- -	- -
5/6	- -	- -	- -	60	60	60
6	70	60	30-70	- -	- -	- -
7	70	60	70	60	60	- -
7/8	- -	- -	- -	- -	- -	60
8	35	60	35	60	60	- -
9	35	60	35	60	60	- -
15	70	60	70	- -	60	- -

Bus Route	Buses Required[a]					
	Weekdays				Saturday	Sunday
	A.M. Peak (6 a.m. - 9 a.m.)	Midday (9 a.m. - 3 p.m.)	P.M. Peak (3 p.m. - 6 p.m.)	Evening	All Day	All Day
1	3.0	3.0	3.0	3.0	3.0	3.0
2	2.0	1.0	2.0	1.0	1.0	1.0
3	0.5	0.5	0.5	0.5	0.5	- -
4	1.0	0.5	1.0	1.0	0.5	0.5
5	1.0	1.0	1.0	- -	- -	- -
5/6	- -	- -	- -	1.0	1.0	1.0
6	1.0	1.0	1.0	- -	- -	- -
7	0.5	0.5	0.5[b]		0.5	- -
7/8	- -	- -	- -	- -	- -	0.5
8	1.0	0.5	1.0[b]	0.5	0.5	- -
9	2.0	1.0	2.0	1.0	1.0	- -
15	1.0	1.0	1.0	- -	1.0	- -
System Total	13.0	10.0	13.0	9.0	9.0	6.0

[a] *Fractions indicate a single vehicle which operates over two routes during a time period.*

[b] *The number of buses required does not include buses needed to make special "school tripper" runs.*

Source: Waukesha Metro Transit and SEWRPC.

Table 2

FARES FOR FIXED-ROUTE BUS SERVICE PROVIDED BY WAUKESHA METRO TRANSIT: 2010

Fare Category	Adults (ages 18 through 64)	Students[a] (ages 5 through 18)	Seniors (ages 65 and older) and Persons with Disabilities[b]
Cash	$2 per trip	$1.35 per trip	$1 per trip
Transfers	Free	Free	Free
Saturday/Sunday Supertransfer [c]	$3.00	$3.00	$3.00
Monthly Passes	$44.00	$31.00	$33.00
Metro tickets	10 for $17.50	10 for $12.50	10 for $10

[a]*To qualify, a person must be between the ages of 5 and 18 and present a valid identification of enrollment in an elementary or secondary school.*

[b]*To qualify, a person must show a Medicare or a Waukesha Metro Transit Reduced Fare identification. Individuals may apply for the Elderly/Disabled Reduced Fare Identification Card via the Waukesha Metro Transit Website or at the Transit Center Customer Service window.*

[c]*The Saturday/Sunday Supertransfer allows an individual to ride Waukesha Metro Transit all day on Saturday or Sunday for $3.00.*

Source: Waukesha Metro Transit and SEWRPC.

public transit requirements of the Americans with Disabilities Act (ADA) of 1990. These regulations require each public entity providing fixed-route transit service to provide paratransit service to people with disabilities as a complement to its fixed-route service.

The eligibility requirements for, and service characteristics of, the City's paratransit service in 2010 are summarized in Table 3. The paratransit service is directly provided by the transit system through the Waukesha Metrolift program and provides curb-to-curb transportation to people with disabilities who are unable to use the fixed-route bus service. Metrolift is available during the same service periods as the fixed bus routes, and serves the entire area within three-quarters of a mile of all fixed bus routes. Metrolift uses small transit buses for the service. Adult fares for Metrolift service in 2010 were $3.75 per trip, slightly less than twice the adult cash fare. Users are generally required to make reservations no later than the day before the trip. In addition to this paratransit service, all of the buses in the transit system fleet are accessible to individuals using wheelchairs.

Equipment and Facilities

Table 4 shows the Waukesha Metro Transit's bus fleet in 2010. The fleet consisted of 30 heavy-duty, diesel-powered buses, 24 of which were 35-foot long urban transit buses used on the fixed routes of the transit system. The remaining six buses were shorter (30/32 feet long) urban transit buses used for the Metrolift paratransit service. The normal service life for a 35-foot long urban transit bus is 12 years. Ideally, transit systems should have a range of vehicle ages in the fleet to avoid having to replace a large number of vehicles in any one year, aiming for a bus fleet with an average age of six years. Waukesha Metro Transit does have a staggered estimated year of replacement for the bus fleet, so that the transit system does not estimate replacing more than four vehicles per year; however, the bus fleet had an average age of 8.6 years in 2010, which was slightly older than the ideal age of six years.

Waukesha Metro Transit system has two facilities, both of which are shown on Maps 2 through 4:

- The Downtown Transit Center, located in the block bounded by St. Paul Avenue, Mary Street, North Street, and Brook Street. The Transit Center was built in 2004 and has an indoor passenger waiting area, restrooms, and a customer service window where passengers can purchase fares, acquire identification cards, check the lost and found, and make inquiries. The transit center also has a raised platform where each route has its own bus bay, allowing for easy transfers. The second and third stories of the building are occupied by a parking ramp.

Table 3

OPERATING AND SERVICE CHARACTERISTICS OF THE COMPLEMENTARY PARATRANSIT SERVICE FOR INDIVIDUALS WITH DISABILITIES (METROLIFT): 2010

Characteristics	Complementary Paratransit Service Provided by the Metrolift Program
Eligibility	• Individuals with disabilities whose physical or cognitive disability prevents them from using the fixed routes of the Waukesha Metro Transit System. Users must be certified through an application process.
Response Time	• Service provided on next-day reservation basis
Restrictions or Priorities Placed on Trips	• None
Fares	• $3.75 per one-way trip (cash fare). $35.00 for 10 tickets.
Hours and Days of Operation	• Monday-Friday: 5:30 a.m. – 10:45 p.m. Saturdays: 8:00 a.m. – 10:20 p.m. Sundays: 9:00 a.m. – 7:30 p.m. No Service on Holidays
Service Area	• Metrolift operates within three-quarters of a mile of a Waukesha Metro Transit System route.

Source: Waukesha Metro Transit and SEWRPC.

Table 4

WAUKESHA METRO TRANSIT VEHICLE FLEET: 2010

Manufacturer	Year of Manufacture	Estimated Replacement Year	Number of Vehicles	Seats per Vehicle	Accessibility Equipment	
					Wheelchair Lift/Ramp	Kneeling Feature
Bluebird	1995	2010	2	19	Lift	No
Gillig	1998	N/A[a]	4	31	Ramp	Yes
Gillig	1998	2011	3	31	Ramp	Yes
Gillig	1998	2012	4	31	Ramp	Yes
Gillig	1998	2013	3	31	Ramp	Yes
Gillig	2004	2016	3	32	Ramp	Yes
Gillig	2004	2017	4	32	Ramp	Yes
Bluebird	2007	2019	4	13	Lift	Yes
Gillig	2008	2020	3	32	Ramp	Yes
Average Age/ Total Buses	8.6 years	- -	30	- -	- -	- -

[a] *The City of Waukesha does not anticipate a need to replace four of the 31-seat Gillig buses.*

Source: Waukesha Metro Transit and SEWRPC.

- The Waukesha Metro Transit System administration and operations facility is located on the southwest side of the City at 2311 Badger Drive. The facility consists of a single-story building built in 1985 and expanded in 1995. The facility is used for administration, meeting rooms, bus storage and maintenance, and vehicle cleaning and servicing.

Ridership and Service Levels

Ridership and service levels on the transit system for the five-year period, 2005 through 2009, are shown in Table 5. Since 2005, the amount of service provided over the total system dropped by about 11 percent in terms of annual revenue vehicle hours. Despite this, ridership has remained steady, increasing slightly from about 762,000

Table 5

ANNUAL RIDERSHIP AND SERVICE LEVELS ON WAUKESHA METRO TRANSIT: 2005-2009

Characteristic	Year					Five-Year Average
	2005	2006	2007	2008	2009	
Primary Service Area Population	67,580	67,750	67,880	68,030	68,800	68,008
Fixed-Route Bus Service						
Service Provided						
Revenue Vehicle-Hours	60,361	58,619	52,895	51,488	50,998	54,872
Revenue Vehicle-Miles	827,791	790,999	701,921	682,177	674,976	735,573
Ridership						
Revenue Passengers.....	585,063	575,034	632,328	658,420	605,838	611,337
Boarding Passengers.....	741,795	741,008	780,470	819,046	742,570	764,978
Paratransit "Metrolift" Service						
Service Provided						
Revenue Vehicle-Hours	7,724	8,485	8,441	9,286	9,289	8,645
Revenue Vehicle-Miles	79,710	86,461	79,606	88,520	90,543	84,968
Ridership						
Revenue Passengers.....	19,736	20,088	18,920	21,801	21,257	20,360
Boarding Passengers.....	20,491	21,127	20,128	23,268	22,782	21,559
Total System						
Service Provided						
Total Revenue Vehicle-Hours	68,085	67,104	61,336	60,774	60,287	63,517
Total Revenue Vehicle-Miles	907,501	877,460	781,527	770,697	765,519	820,541
Ridership						
Total Revenue Passengers.....	604,799	595,122	651,248	680,211	627,095	631,697
Total Boarding Passengers.....	762,286	762,135	800,598	842,314	765,352	786,537

Source: Waukesha Metro Transit, Wisconsin Department of Administration, National Transit Database, and SEWRPC.

boarding passengers in 2005 to about 765,000 boarding passengers in 2009, an increase of about 0.4 percent. Ridership numbers decreased in 2009 from the previous year largely as a result of the fare increase that took effect in September of 2008 and the recession beginning in the fall of 2008 which likely reduced the number of work trips being made on the transit system. The ridership increases in 2007 and 2008 may also reflect the effect higher motor fuel prices had on increasing demand for transit travel during those years.

Table 5 also presents the ridership on the City's complementary paratransit service for people with disabilities provided through the Metrolift program. From 2004 through 2009, about 20,400 trips annually were made on this service.

Operating and Capital Costs

Waukesha Metro Transit's operating expenses are funded through a combination of farebox revenues, and Federal, State, and local funds. Capital expenditures are funded through a combination of Federal and local funds. Table 6 summarizes the recent trends in operating expenses, revenues, and public assistance for the transit system for the period 2005-2009, while Table 7 shows information on transit system capital expenditures over this same period. The following observations may be made on the basis of an examination of the information:

- During the five years from 2005 through 2009, average annual expenditures for operating the transit system amounted to about $4.5 million. Of this total, about $0.8 million, or 16.8 percent, was covered by farebox and other miscellaneous revenues. The remaining $3.7 million, or 83.2 percent, was average annual public operating assistance, which is funded through Federal and State transit programs, and local property taxes from the City of Waukesha and Waukesha County. The City provided an average of about $1.0 million annually for the transit system, while the County provided about $70,000, and the Town of Brookfield provided about $5,000.

Table 6

ANNUAL OPERATING EXPENSES AND REVENUES FOR WAUKESHA METRO TRANSIT: 2005-2009

Characteristic	Year					Five-Year Average
	2005	2006	2007	2008	2009	
Costs, Revenues, and Public Assistance						
Operating Expenses	$4,063,877	$4,346,805	$4,538,784	$4,887,912	$4,598,453	$4,487,166
Operating Revenues	724,246	707,592	726,555	771,163	834,613	752,834
Required Public Assistance	3,339,631	3,639,213	3,812,229	4,116,749	3,763,840	3,734,332
Percent of Expenses Recovered through Revenues	17.8	16.3	16.0	15.8	18.1	16.8
Source of Public Assistance Funds						
Federal	$898,656	$934,698	$730,350	$778,139	$524,503	$773,269
State	1,535,717	1,743,525	1,973,104	2,051,596	2,171,012	1,895,991
Local						
City of Waukesha	841,050	891,290	1,033,843	1,210,423	981,058	991,533
Waukesha County	60,500	65,169	70,022	71,574	81,409	69,735
Other	3,708	4,531	4,910	5,019	5,858	4,805
Subtotal Local	905,258	960,990	1,108,775	1,287,014	1,068,325	1,066,072
Total	$3,339,631	$3,639,213	$3,812,229	$4,116,749	$3,763,840	$3,734,332

Source: Waukesha Metro Transit and SEWRPC.

Table 7

ANNUAL CAPITAL PROJECT EXPENDITURES BY FUNDING SOURCE FOR WAUKESHA METRO TRANSIT: 2005-2009

Characteristic	Capital Expenditures by Year[a]					Five-Year Average
	2005	2006	2007	2008	2009[b]	
Capital Project Type						
Bus Fleet Replacement or Rehabilitation	$880,000	- -	$1,011,000	$520,000	- -	$482,200
Fleet Expansion	- -	- -	- -	- -	- -	- -
Facility Renovation or Replacement	85,000	- -	- -	- -	$235,000	64,000
Other	197,500	$265,364	104,854	103,373	1,171,902	368,599
Total	$1,162,500	$265,364	$1,115,854	$623,373	$1,406,902	$914,799
Source of Funds						
Federal	$930,000	$212,291	$892,683	$498,698	$1,381,112	$782,957
City	232,500	53,073	223,171	124,675	25,790	131,842
Total	$1,162,500	$265,364	$1,115,854	$623,373	$1,406,902	$914,799

[a]*Capital expenditures are listed by grant award year, not by actual expenditures per year.*

[b]*In 2009, about $1,276,000 of capital expenditures were 100 percent Federally-funded under the stimulus program, also known as the American Recovery and Reinvestment Act (ARRA).*

Source: Waukesha Metro Transit.

- Operating expenses rose steadily from 2005 through 2008, and declined in 2009. The portion of the transit system's operating budget that is covered by the combination of Federal and State funds declined slightly over the five-year period. In 2005, Federal and State operating assistance amounted to $2.4 million, or 60.0 percent of expenses. In 2009, even though Federal and State operating funding had increased to about $2.7 million, it covered a smaller proportion (58.7 percent) of system operating expenses. City and County operating assistance made up part of the difference, growing from about $0.9 million in 2005 (22.2 percent of expenses) to $1.1 million in 2009 (23.1 percent of expenses). The City increased fares in 2008 which also made up some of the difference; in 2005, operating revenues amounted to $0.7 million (17.8 percent of expenses), which increased to $0.8 million (18.2 percent of expenses) by 2009.

- The average annual capital expenditures on the transit system between 2004 and 2008 amounted to about $915,000. Of this annual average, about $783,000, or about 85 percent, came from Federal transit capital assistance programs; the remaining $132,000, or about 15 percent, came from the City of Waukesha. Most of the capital project expenditures were for bus replacement or rehabilitation, or fare boxes, which were replaced in 2009 at a cost of $750,000 and contribute to the high value of the "Other" category in Table 7 for that year. In 2009, most capital expenditures were 100 percent Federally-funded under the Federal stimulus program, the American Recovery and Reinvestment Act (ARRA).

Travel Characteristics of Waukesha Metro Transit Users

At the request of the City, the Commission conducted an on-board bus survey of Waukesha Metro Transit passengers on April 30, 2008. The survey entailed distributing a prepaid, preaddressed, mail-back survey questionnaire to all passengers on each scheduled weekday bus trip operated by the transit system on the survey day. Hispanic bus passengers who did not want or could not use the standard form were provided with Spanish translation of the questionnaire. About 990 completed survey questionnaires were returned, representing about 34 percent of the estimated 2,900 average weekday passenger trips made on Waukesha Metro Transit in 2008. Table 8 summarizes the socio-economic characteristics of Waukesha Metro Transit passengers using the bus service on the survey day. The following observations may be made based upon examination of this information:

- Waukesha Metro Transit passengers are predominantly younger than age 54, without a valid driver's license, and from households with incomes below $25,000 per year.
- Most of the riders used the transit system for school or work, with smaller but significant proportions of trips also made for shopping and other purposes.
- About half of the riders have no vehicle in their household.

Table 8

SOCIOECONOMIC CHARACTERISTICS OF WEEKDAY TRANSIT RIDERS ON WAUKESHA METRO TRANSIT ROUTES: APRIL 2008

Category	Percent of Total Trips
Age	
17 and under	15.7
18 to 24	15.3
25 to 34	21.1
35 to 44	16.5
45 to 54	16.1
55 to 64	10.3
65 and over	5.0
Total	100.0
Sex	
Male	46.2
Female	53.8
Total	100.0
Licensed Driver	
Yes	36.1
No	63.9
Total	100.0
Household Income	
Under $10,000	23.5
$10,000-$14,999	19.2
$15,000-$24,999	16.0
$25,000-$34,999	12.2
$35,000-$44,999	11.3
$45,000-$54,999	3.8
$55,000-$64,999	4.6
$65,000-$74,999	3.3
$75,000 and Over	6.1
Total	100.0
Trip Purpose	
Home-Based Work	34.5
Home-Based Shopping	7.0
Home-Based Other	17.0
Nonhome Based	13.6
School	27.9
Total	100.0
Vehicles available per Household	
No vehicle	48.5
One vehicle	26.8
Two or more vehicles	24.7
Total	100.0
Frequency of Use	
Less than once a month	2.0
1-3 times a month	1.2
1-2 times a week	9.0
3-5 times a week	38.6
More than 5 times a week	49.2
Total	100.0

Source: SEWRPC.

- About 88 percent of the weekday riders use the transit system regularly, that is, three or more times a week.

The survey forms asked riders to record where they were coming from and going to on their trip. Maps 5 and 6 illustrate the distribution of weekday trip "productions" and "attractions" for the Waukesha Metro Transit routes. The production area for trips having one end at "home"—that is, either coming from or going to home—is the area containing the location of the "home". The attraction area is the area containing the "non-home" end of that trip. The production area for trips having neither end at "home" is the area where the trip started and the attraction area is the location of the trip destination. The following observations may be made based upon examination of the maps:

- The distribution of weekday trip productions in the study area reflect the concentrations of population within the City of Waukesha. The central part of the city, which has the highest residential density, shows the highest numbers of trip productions.

- The distribution of weekday trip attractions in the study area reflect the locations of schools, shopping centers, and employment concentrations in the City and in the Bluemound Road corridor.

OTHER MAJOR PUBLIC TRANSIT SERVICES

The City of Waukesha is the principal provider of public transit service in the greater Waukesha area. However, a number of other transit services are also available in 2010 for members of the general public needing to make connections from or to areas outside the study area. The alignments for the routes of the connecting public transit services are shown on Map 7 and listed by the operator.

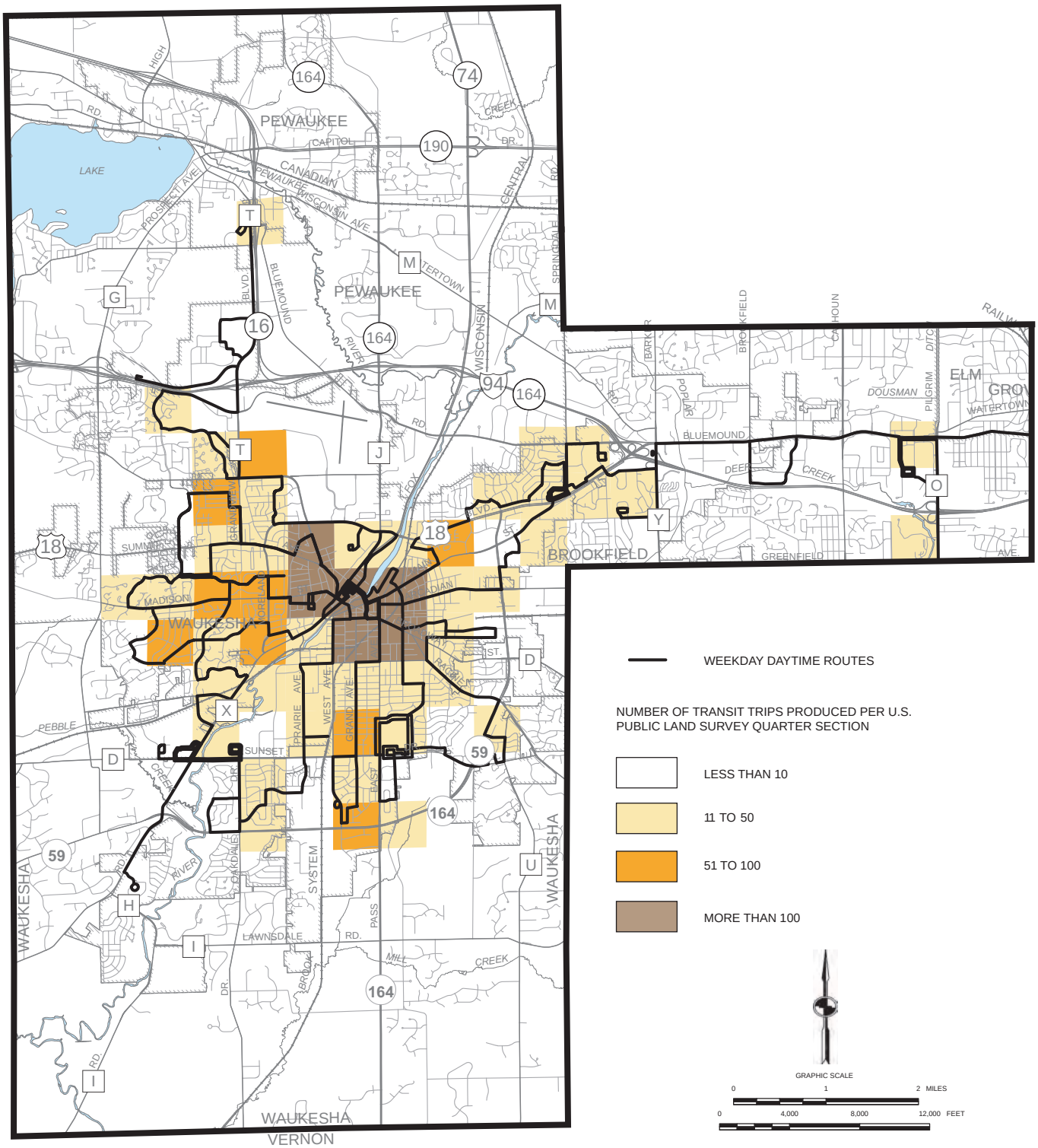
Waukesha County Transit Services
Waukesha County provided rapid "freeway flyer" and local bus services in 2010 over a system of eight routes operating in Waukesha and Milwaukee Counties. Six of the County routes operated in the study area or provided important connections to areas outside the study area. One of these County routes was the extension of Waukesha Metro Transit's Route No. 1 that provides service to Brookfield Square along Bluemound Road. Although this extension was funded by Waukesha County and is technically part of the Waukesha County transit system, this report will consider it as part of Waukesha Metro Transit and evaluate it as such. The remaining five County routes within the study area are shown on Map 7. The routes primarily provided transportation for work commuting between Waukesha and Milwaukee Counties.

- Rapid Freeway Flyer Routes – For the three Waukesha County routes in the study area that provided freeway flyer service (Route Nos. 901, 904, and 905), the County contracted with Wisconsin Coach Lines, Inc., a private for-profit transit company. Route No. 901 operated between the Waukesha downtown transit center, the Milwaukee CBD, and the UW-Milwaukee Campus, with several intermediate stops in the Cities of Waukesha and Brookfield, including the Goerkes Corners Park and Ride Lot at the IH 94/USH 18/Barker Road interchange. Route No. 901 serves travel in both directions and operated all day and evening on weekdays, with buses every 30 minutes at peak periods and every 60 minutes at off-peak periods in 2010; the adult cash fare was $3.25. Route Nos. 904 and 905 operated between the City of Oconomowoc and the Milwaukee CBD during weekday peak periods only, and service was designed for commuters traveling from the outlying communities into Milwaukee. In the study area, both routes stopped at the Goerkes Corners Park and Ride Lot. Route No. 905 also stopped at the Park and Ride lot at the IH 94/CTH G interchange. The fares for these two routes ranged from $3.25 to $4.00, depending on distance.

  In order to comply with the public transit requirements of the Americans with Disabilities Act (ADA) of 1990, Waukesha County also provided paratransit services to the area within one mile on either side of Waukesha County Route No. 901. Paratransit service over the corridor, operated by Transit Express, Inc., was provided during the same hours of operation as Route No. 901. The adult fare was $6.50, plus $1.00 to extend into the entire Waukesha Metro Transit Metrolift Service area.

Map 5

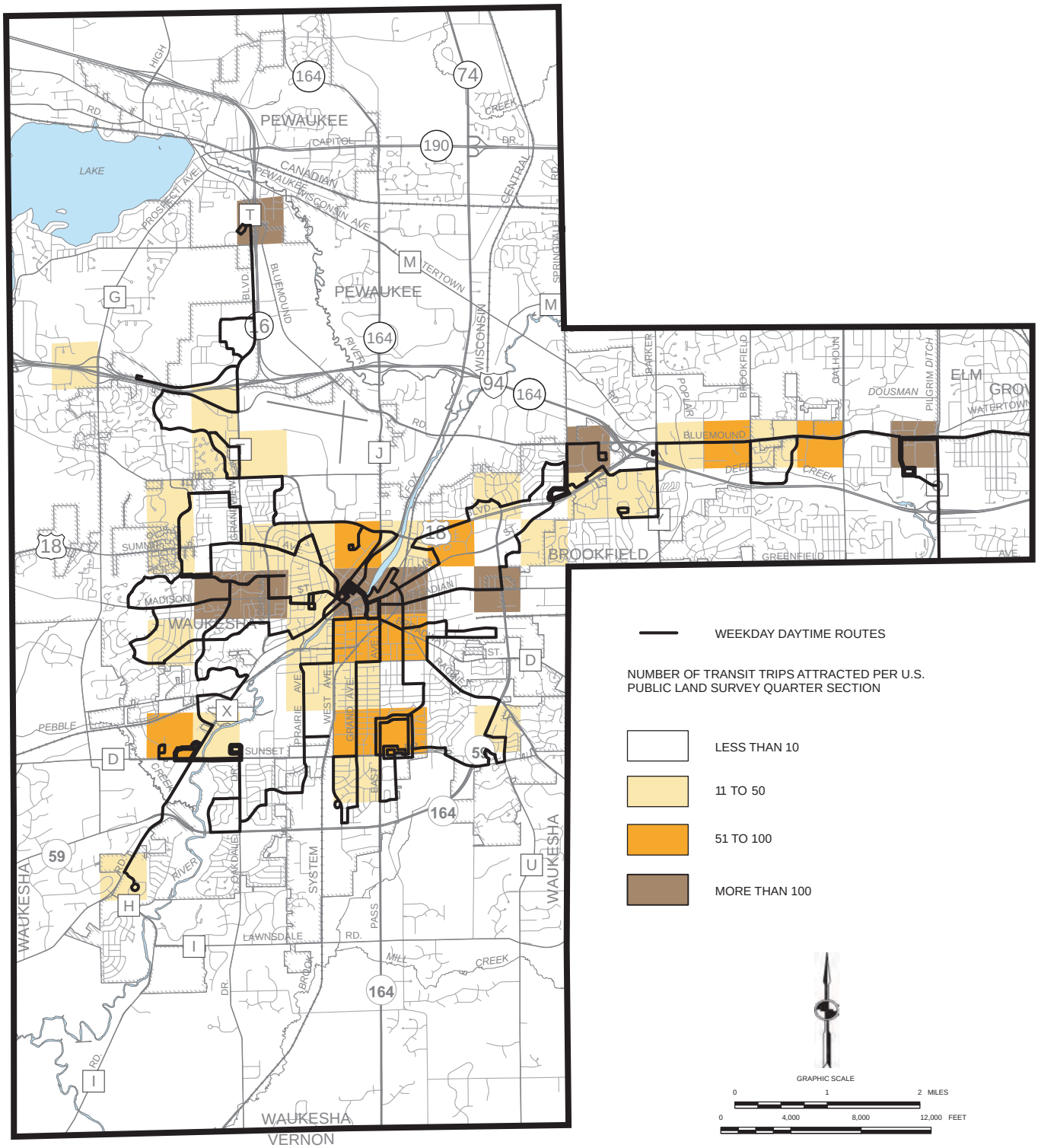
LOCATIONS OF TRIP PRODUCTIONS OF WEEKDAY REVENUE PASSENGERS ON WAUKESHA METRO TRANSIT ROUTES: APRIL 2008



Source: SEWRPC.

Map 6

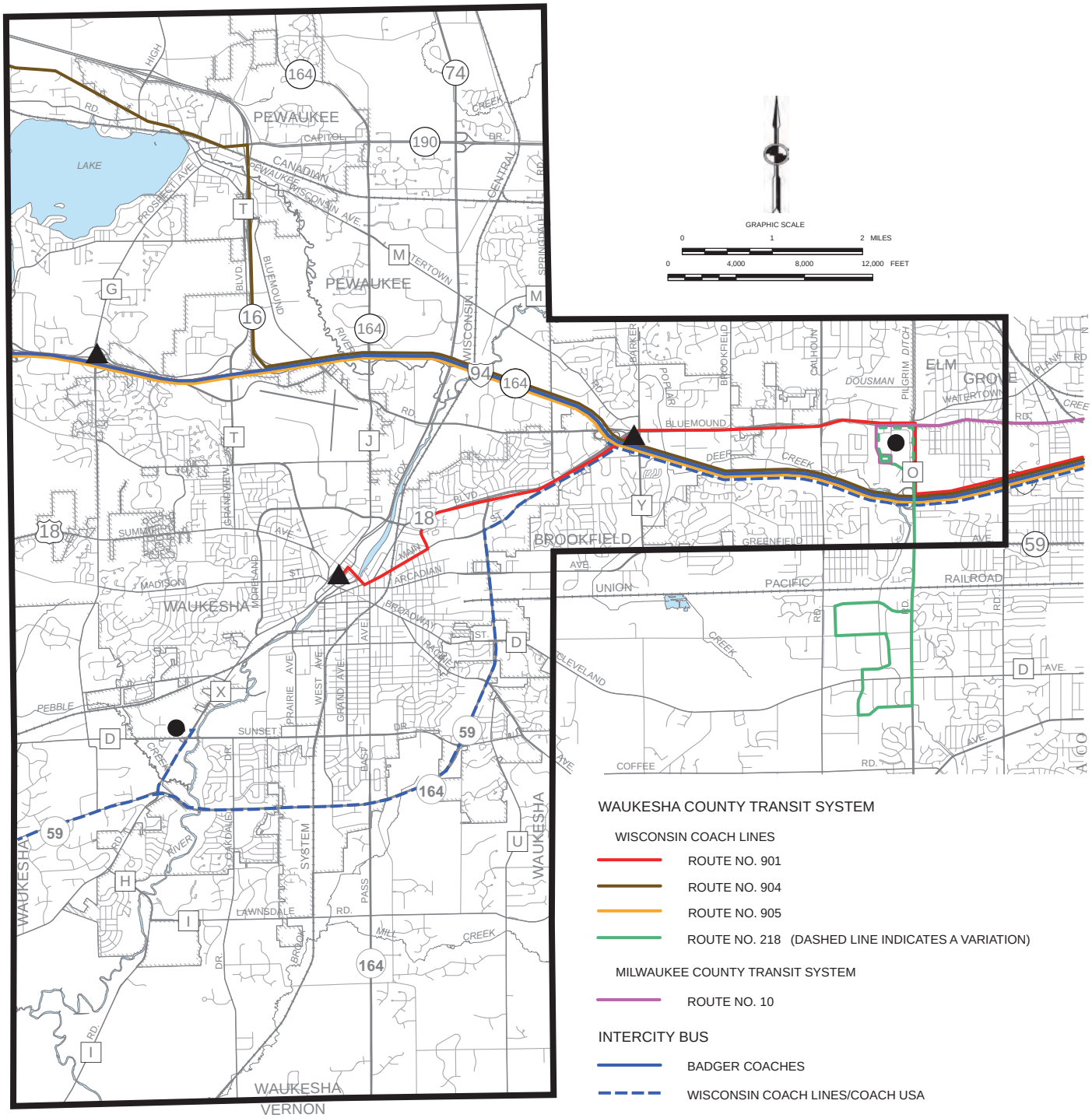
LOCATIONS OF TRIP ATTRACTIONS OF WEEKDAY REVENUE PASSENGERS ON WAUKESHA METRO TRANSIT ROUTES: APRIL 2008



Source: SEWRPC.

Map 7

ADDITIONAL BUS SERVICE IN THE STUDY AREA: 2010



Source: City of Waukesha and SEWRPC.

- Local Bus Routes – Waukesha County contracted with the Milwaukee County Transit System (MCTS) and Wisconsin Coach Lines, Inc., to provide the two local bus routes in the study area. The County subsidizes the extension of MCTS Route No. 10 that provides service along Bluemound Road between the Brookfield Square Shopping Center and the Milwaukee/Waukesha County line. Route No. 10 operated all day and evening on weekdays and weekends, with buses every 10-30 minutes at peak periods and every 20-35 minutes at off-peak periods. The adult cash fare for Route No. 10 was $2.25. Waukesha County also subsidized Route No. 218, which was operated by Wisconsin Coach Lines, Inc., and provided local bus service between the Brookfield Square area and the New Berlin industrial park. Route No. 218 operated during peak periods and late night from 10:00 p.m. to midnight, in order to serve the starting and ending times for all three work shifts in the industrial park. The adult cash fare for Route No. 218 was $2.00. With a valid transfer or pass, passengers could transfer between MCTS Route No. 10, Waukesha Metro Transit Route No. 1, and Waukesha County Transit Route No. 218 free of charge.

Intercity Bus Services

Two companies provided intercity bus service with stops in the study area, as shown on Map 7:

- Wisconsin Coach Lines/Coach USA – Wisconsin Coach Lines operated an Airport Express route service over IH 94 between the Goerkes Corners Park and Ride Lot and Chicago's O'Hare International Airport, including a stop at Milwaukee's General Mitchell International Airport. Service over the route consisted of 14 round trips daily. The company's service was directed principally toward serving airport-related trips and was not conducive to general-purpose travel between the Waukesha area and Chicago. A one-way trip from the Goerkes Corners park-ride lot to Mitchell airport costs $10; a trip to O'Hare costs $30.

  Wisconsin Coach Lines also provided service between Whitewater and the downtown Milwaukee Intermodal Station on Fridays and Sundays during the school year with two stops in the study area—Goerke's Corners park-ride lot and the Fox Run Shopping Center at St. Paul Avenue and Sunset Drive in the southwest corner of Waukesha. This service was partly funded by the University of Wisconsin-Whitewater.

- Badger Coaches, Inc. – Badger Coaches operated six round trips daily over IH 94 between Milwaukee and Madison, with a stop at the Goerkes Corners park-ride lot. A one-way trip from the Goerkes Corners park-ride lot to the Milwaukee Intermodal Station costs $10.00; a trip to Madison costs $19.

Taxicab Service

Taxicab service in the City of Waukesha area was provided by three companies: Best Cab Company, All Day Taxi, and Ann Marie Ryan's Transportation Services. Best Cab Company and All Day Taxi provided service 24 hours a day, seven days a week. Ann Marie Ryan's Transportation Service was available on weekdays from 8:00 a.m. to 4:00 p.m. All of these companies principally serve the Waukesha area, but also serve trips between the City and other communities in the County, use passenger sedans for service, and have fares based on zones and/or trip distance.

Human Services Transportation Programs

In addition to the transportation services for the general public that were summarized above, many agencies provided transportation services specifically for seniors or people with disabilities for trips that would be difficult to make on existing public transit services. The Regional Planning Commission in 2008 conducted a transportation coordination planning effort, which included a detailed inventory of all the human services transportation providers in Waukesha County, and identified some of the unmet needs for human services transportation and strategies to address those unmet needs.[1] The main human services transportation programs in the study area are listed on the next page:

[1]*See SEWRPC Memorandum Report No. 184,* Public Transit – Human Services Transportation Coordination Plan for Waukesha County: 2008*, December 2008.*

- Waukesha County Shared-Fare Taxi Program – The three taxicab companies operating in the City participated in Waukesha County's shared-fare taxi program for individuals with disabilities and non-driving seniors over 65 years of age. Under this arrangement, individuals enrolled in the shared-fare program pay a minimum of $3.50 toward the cost of each one-way trip. If the trip cost is more than $9.00, the individual pays the $3.50 plus any amount over $9.00. The County reimburses the taxi provider for the balance of the fare.

- Waukesha County RideLine – Waukesha County's Aging and Disability Resource Center operated the "RideLine" program, which provided transportation for trips within Waukesha County, or for out-of-county medical trips. RideLine was operated by Meda-Care Vans using a privately-owned fleet of lift-equipped vans. Non-driving Waukesha County residents age 65 and older and individuals with disabilities are eligible for this program. The fare in 2010 ranged from $3.50 for short trips, to $16.50 for out-of-county medical trips.

- Interfaith Caregiving Network – Interfaith provided transportation for ambulatory seniors over the age of 65 and adults with disabilities. Volunteer drivers use their own cars to provide the service for in-county trips that cannot be made on any other transportation service, or for out-of-county medical trips. There is no set fare for the service, although donations are accepted. In 2010, Interfaith hired a Mobility Manager (funded by a Federal New Freedom grant) to improve information about, and coordination between, existing transportation providers in Waukesha County.

SUMMARY

This chapter has presented information on the existing Waukesha Metro Transit system, as well as on other major transit services in the study area in 2010. A summary of the most important findings follows:

1. The major provider of local public transit service in the Waukesha area was the City of Waukesha, which has operated Waukesha Metro Transit since August 1981. The system is owned by the City of Waukesha and operated by a private contract management firm under the direct supervision of the Transit Director, a City of Waukesha employee. The Waukesha Transit Commission sets the policies of the transit system but the ultimate responsibility for review and approval of important matters, including the budget, has been placed with the Waukesha Common Council.

2. In 2010, Waukesha Metro Transit operated 10 bus routes in a radial route network. All the routes originated from the Downtown Transit Center, and provided service to the outlying portions of the City. The system used "pulse" scheduling to facilitate transfers between bus routes at the Downtown Transit Center. During weekday peak, midday and evening periods, and on Saturday, the schedules of all routes were not fully coordinated resulting in wait times of 30 minutes for some transferring passengers. The "core routes", those with the most frequent service and highest ridership, were Route Nos. 1, 2, 4, 8, and 9. These routes operated seven days a week and had the most frequent service and longest operating hours. They generally operated with 35-minute headways during the weekday peak periods and 60-minute headways during weekday off-peak periods and on weekends. The remaining routes operated five or six days a week and had more limited evening service hours. They generally operated with 70-minute headways during weekday peak periods and 60-minute headways during weekday off-peak periods and on weekends. The base adult cash fare for regular route service was $2.00 per trip.

3. The transit system also provided a paratransit service directed at the travel needs of people with disabilities who were unable to use the fixed-route bus service provided by Waukesha Metro Transit. The service provided curb-to-curb transportation for eligible trips; was available during the same hours as the Metro fixed-route bus service; and served the entire area within three-quarters of a mile of the Metro bus routes.

4. In 2010, the bus fleet operated by Waukesha Metro Transit consisted of 30 vehicles including 24 which were large 35-foot long urban transit buses used to provide fixed-route service. The remaining six buses were smaller urban transit buses used to provide the Metrolift paratransit service. The bus fleet had an average age of 8.6 years. The estimated year of replacement on the buses is staggered, so that the transit system does not estimate replacing more than four vehicles per year.

5. From 2005 through 2009, the annual revenue vehicle hours of service on the system decreased from about 68,100 to about 60,300 revenue vehicle hours, or by about 11 percent. Despite this service decrease, ridership remained steady; there were about 762,000 boarding passengers in 2005, and about 765,000 in 2009.

6. During the five years from 2005 through 2009, average annual expenditures for operating the transit system amounted to about $4.5 million. Of this total, about $0.8 million, or 16.8 percent, was covered by farebox and other miscellaneous revenues. The remaining $3.7 million, or 83.2 percent, was average annual public operating assistance for the system. Operating expenses increased steadily over the five years, owing largely to inflationary increases in costs. Federal and State operating funding did keep up with the rate of the inflation in costs; therefore, City and County operating assistance took on a greater proportion of funding in 2009 than in 2005. The City also increased fares in 2008, which increased farebox revenues.

7. Waukesha Metro Transit passengers are predominantly younger than age 54, without a valid driver's license, and from households with incomes below $25,000 per year. About half of riders have no vehicle in their household. Most riders use the transit system for school or work. The central part of the City of Waukesha, which has the highest residential density, produces the most transit trips. Schools, shopping centers, and employment concentrations in the City and in the Bluemound Road corridor attract the most transit trips.

8. Additional transit services for the general public which connect with the Waukesha Metro Transit include: MCTS Route No. 1; Waukesha County Transit Route No. 218; Waukesha County Transit Route Nos. 901, 904, and 905; and the Coach USA and Badger Coach intercity service. Taxicab service was provided by three companies: Best Cab Company, All Day Taxi, and Ann Marie Ryan's Transportation Service. The Waukesha County Aging and Disability Resource Center and Interfaith Caregiving Network also offer transportation services for certain eligible specialized population groups, which is available to all Waukesha County residents for in-county trips that cannot be made on any other transportation service, or out-of-county medical trips.

Chapter III

PUBLIC TRANSIT SERVICE OBJECTIVES AND STANDARDS

INTRODUCTION

One of the critical steps in the preparation of a transit system development plan is the articulation of the objectives to be served by public transit, together with the identification of supporting standards that can be used to measure the degree of attainment of the objectives. The objectives and standards provide the basis for assessing the performance of the existing transit system, identifying unmet transit service needs, designing and evaluating alternative transit system plans, and recommending service changes and improvements. The objectives and standards formulated under this study are intended to represent the level of transit performance desired in the City of Waukesha.

OBJECTIVES

The following objectives envision a transit system that will effectively serve transit travel by City of Waukesha residents in the City and its immediate environs:

1. Public transit should serve those areas of the City and its immediate environs which can be efficiently served, including those areas which are fully developed to medium or high densities and, in particular, the transit-dependent population in those areas;

2. The public transit system should promote utilization of its service by being safe, reliable, convenient, and comfortable;

3. The public transit system should be economical and efficient, meeting all other objectives at the lowest possible cost.

PRINCIPLES AND STANDARDS

Complementing each of the above transit service objectives is a planning principle and a set of service standards, as displayed in Table 9. The planning principle explains the concepts behind the objective. The set of service standards is directly related to the transit service objective and serves several purposes. The service design and operating standards are intended to primarily provide guidelines for the design of new and improved services, the operation of the transit system, and the acquisition of capital equipment and construction of facilities. The service performance standards primarily facilitate the evaluation of the performance of the existing transit system and of

alternative service improvements. For each performance standard, one or more criteria are identified which can be used to quantify the performance of the transit service for measurement against the standard.

The performance standards also include the transit system performance measures which the Wisconsin Department of Transportation utilizes to assess the performance of Wisconsin transit systems on a regular basis, and which the State requires be included in the multi-year service and performance goals identified in annual applications for State operating assistance. Such measures include operating ratio, or farebox recovery rate; operating expense per passenger; passengers per capita; passengers per revenue vehicle hour of service; operating expenses per revenue vehicle hour of service; and revenue vehicle hours of service per capita. The performance standards and evaluation findings of this study can, therefore, provide guidance to the City of Waukesha in establishing the required multi-year service and performance goals.

The Table 9 presents the full set of public transit service objectives, principles, and standards that the City may use to guide in the design, operation, and review of its transit services. Due to the limited nature of the current study, the performance evaluation of Waukesha Metro Transit will not include assessments of transit performance for every measure in the table. The performance measures that Commission staff intend to evaluate in the current planning effort are marked with an asterisk (*).

Table 9

PUBLIC TRANSIT SERVICE OBJECTIVES, PRINCIPLES, STANDARDS, AND PERFORMANCE MEASURES FOR THE WAUKESHA METRO TRANSIT SYSTEM

Objective	Principle	Standards	Performance Measure
1. Public transit should serve those areas of the City and its immediate environs which can be efficiently served, including those areas which are fully developed to medium or high densities and, in particular, the transit-dependent population in those areas	Public transit services can provide an important means of mobility for all segments of the population in urban areas and particularly for persons residing in low- to middle-income households, students, seniors, and people with disabilities. Transit services can also be important to businesses and the economy by providing transit access to job opportunities. Fixed-route public transit services generally are best suited for large and medium-size urban areas developed to medium or high densities such as the City of Waukesha and its immediate environs. Flexibly-routed and demand-responsive transit services can be a cost-effective alternative to conventional bus service in areas where, or during time periods when, demand for fixed-route service is low	<u>Design and Operating Standards</u> 1. Public transit service should serve the travel and mobility needs generated by contiguous areas of high- and medium-density urban development. The highest levels of service availability, frequency, coverage, and connectivity to major destinations should be provided in such areas	1. - -
		2. Public transit services should address the varied travel and mobility needs within the service area. The service types that should be considered include: a. Express bus service designed to reduce travel times for the longest trips in the transit service area and to connect areas of urban development to the largest major activity centers within the service area or in immediately adjacent areas b. Local fixed-route bus or demand-responsive services designed to provide transit within and between residential areas, to link residential areas with nearby major activity centers, and to provide for transfer connections with other transit services c. Local flexibly-routed transit services designed to serve areas where conventional bus service would not be cost-effective d. Local shuttle services designed to connect major activity centers with rapid, express, and other local transit services e. Paratransit service designed to meet the needs of people with disabilities who are unable to use fixed-route bus service	2. - -
		3. Public transit service should be provided, where possible, to major activity centers within the transit service area or in immediately adjacent areas including: a. Shopping centers b. Educational institutions c. Medical centers d. Major employers with 100 or more employees e. Governmental and public institutional centers f. Facilities serving elderly persons and people with disabilities g. Facilities serving low-income individuals	3. Number of major activity centers in each category within one-quarter mile of a bus route*
		4. Paratransit service should be available within the transit service area to meet the needs of people with disabilities who are unable to use fixed-route bus service	4. - -
		<u>Performance Standards</u> 1. The population served should be maximized, particularly the transit-dependent population	1a. Total population within one-quarter mile of a bus route* 1b. Transit-dependent population concentrations within one-quarter mile of a bus route*
		2. The number of jobs served should be maximized 3. The transit-supportive land area served should be maximized. To be considered transit-supportive, an area should have a density of at least 4 dwelling units per net residential acre, or at least 4 jobs per gross acre	2. Number of jobs within one-quarter mile of a bus route* 3. The proportion of the transit-supportive land area located within one-quarter mile of a local bus route*

Table 9 (continued)

Objective	Principle	Standards	Performance Measure
2. The public transit system should promote utilization of its service by being safe, reliable, convenient, and comfortable.	The benefits of a public transit system are greatly related to the degree to which it is used. Ridership is a function of the degree to which people have access to services that are reliable and provide for quick, convenient, comfortable, and safe travel. Riders view transit services with these attributes as an effective and attractive alternative to the private automobile.	Design and Operating Standards 1. Public transit routes should be direct in alignment, with a minimum of turns, and arranged to minimize duplication of service and unnecessary transfers, which would discourage transit use	1. - -
		2. Local routes should be spaced one-half mile apart in high-density and medium-density areas	2. - -
		3. Express fixed-route bus service should be provided as necessary to reduce travel times for the longest trips in the service area, or to connect to other major activity centers in immediately adjacent communities	3. - -
		4. Public transit stops should be located two to three blocks apart along the entire length of local routes; and at intersecting transit routes, signalized intersections, and major activity centers along express transit routes	4. - -
		5. All public transit stops should be clearly marked by easily recognized signs and should be paved whenever possible	5. - -
		6. Consideration should be given to providing passenger shelters of an attractive design at all bus stops where: a. The location serves major facilities designed specifically for the use of, or is frequently used by, elderly persons or people with disabilities b. The location has a boarding passenger volume of 50 or more passengers per day c. The location is a major passenger transfer point between bus routes d. The location is in a wide open space where waiting patrons are unprotected from harsh weather conditions	6. - -
		7. Public transit service should provide adequate service and vehicle capacity to meet existing and projected demand. The maximum load factor for each route, measured as the ratio of passengers to seats at that point where passenger loads are highest, should not exceed the following: **Average Maximum Load Factor** Service Type / Peak Periods / All Other Times Local / 1.25 / 1.00 Express / 1.00 / 1.00	7. Maximum load factor (adjusted to account for day-to-day variability in ridership)
		8. Operating headways should be capable of accommodating passenger demand at the specified load standards. Headways should not exceed the following maximum headways if service is offered during a period: Maximum Headway (minutes) Service Type / Weekday Peak Periods / Off-Peak Periods/ Weekends/Holidays Rapid / 30 / 60 Express / 30 / 60 Local/Shuttle / 30 / 60	8. - -
		9. Public transit service should be designed and operated so as to achieve the following minimum overall travel speeds by area based on average weekday conditions: **Travel Speed (miles per hour)** Service Type / CBD / Other Areas Local / 5-10 / 15-20 Express / 5-10 / 18-23	9. - -

Table 9 (continued)

<table>
<tr><th>Objective</th><th>Principle</th><th>Standards</th><th>Performance Measure</th></tr>
<tr><td>2. (continued)</td><td>The benefits of a public transit system are greatly related to the degree to which it is used. Ridership is a function of the degree to which people have access to services that are reliable and provide for quick, convenient, comfortable, and safe travel. Riders view transit services with these attributes as an effective and attractive alternative to the private automobile. (continued)</td><td>10. Consideration should be given to rehabilitating or replacing each public transit vehicle at the end of its normal service life as defined below for different types of transit vehicles:

<table>
<tr><th></th><th></th><th colspan="2">Normal Service Life</th></tr>
<tr><th>Vehicle Type</th><th>Length (feet)</th><th>Years</th><th>Mileage</th></tr>
<tr><td>Heavy-duty bus</td><td>35 or more</td><td>12</td><td>500,000</td></tr>
<tr><td>Heavy-duty bus</td><td>25-30</td><td>10</td><td>350,000</td></tr>
<tr><td>Medium-duty bus</td><td>25-30</td><td>7</td><td>200,000</td></tr>
<tr><td>Light-duty bus</td><td>25-30</td><td>5</td><td>150,000</td></tr>
<tr><td>Cars and Vans</td><td>- -</td><td>4</td><td>100,000</td></tr>
</table></td><td>10. - -</td></tr>
<tr><td></td><td></td><td><u>Performance Standards</u>

1. Ridership on the public transit system and the overall effectiveness of the service provided should be maximized</td><td>1a. Total passengers*
1b. Total passengers per capita*
1c. Revenue vehicle hours per capita*
1d. Total passengers per revenue vehicle hour*
1e. Total passengers per revenue vehicle mile*</td></tr>
<tr><td></td><td></td><td>2. Public transit routes with less than 10 passengers per revenue vehicle hour and less than one passenger per revenue vehicle mile should be reviewed for potential service changes unless special circumstances warrant otherwise[a]</td><td>2a. Total passengers*
2b. Total passengers per revenue vehicle hour*
2c. Total passengers per revenue vehicle-mile*
2d. Percent of weekday passengers riding on Saturday or Sunday*
2e. Percent of weekday passengers riding in evenings*</td></tr>
<tr><td></td><td></td><td>3. The service provided by the public transit system should closely adhere to published timetables. Service should be “on time” at least 90 percent of the time. On time is defined as departing from scheduled stops within the range of zero minutes early and three minutes late</td><td>3. Percent of scheduled bus trips on time</td></tr>
<tr><td></td><td></td><td>4. Travel times for public transit patrons should be kept reasonable in comparison to travel times by automobile for trips made in the service area</td><td>4a. Ratio of transit to highway distance
4b. Difference between transit and highway travel time</td></tr>
<tr><td>3. The public transit system should be economical and efficient, meeting all other objectives at the lowest possible cost</td><td>The total resources available to be expended on public transit services by the City are limited. Therefore, total transit system costs should be minimized for the desired level of transit service, and transit revenues should be maximized to maintain the financial stability of the system. The attainment of this objective may at times conflict with, and require the modification or elimination of other standards</td><td><u>Design and Operating Standards</u>

1. The total operating and capital investment for the public transit system should be minimized and reflect efficient utilization of resources</td><td>1. - -</td></tr>
<tr><td></td><td></td><td>2. The size of the vehicles operated by the transit system should be appropriate for the passenger loads carried on each route in weekday service. At least one-half of the seats in the vehicle should be occupied at some point on the route during weekday service.</td><td>2. - -</td></tr>
<tr><td></td><td></td><td>3. The fare policy for the public transit system should provide for premium fares for premium transit services, as well as special or discounted fares for priority population groups, including transit-dependent individuals and frequent riders</td><td>3. . - -</td></tr>
<tr><td></td><td></td><td>4. Periodic increases in passenger fares should be considered to maintain the financial stability of the public transit system when:

a. The farebox recovery rate for the public transit system goes below levels determined to be acceptable by local officials

b. Operating expenses for the public transit system have increased by 10 to 15 percent since fares were last raised</td><td>4. - -</td></tr>
</table>

Table 9 (continued)

Objective	Principle	Standards	Performance Measure
3. (continued)	The total resources available to be expended on public transit services by the City are limited. Therefore, total transit system costs should be minimized for the desired level of transit service, and transit revenues should be maximized to maintain the financial stability of the system. The attainment of this objective may at times conflict with, and require the modification or elimination of other standards. (continued)	c. Projected levels of Federal and State operating assistance funds would require an increase in projected local operating assistance levels above that determined to be acceptable by local officials	- -
		Performance Standards 1. The operating expense per unit of transit service, the operating expense per passenger, and the total operating assistance per passenger should be minimized for the system as a whole. Annual increases in such costs should not exceed the average percentage increase experienced by comparable urban bus systems	1a. Operating expense per total vehicle mile* 1b. Operating expense per revenue vehicle hour* 1c. Operating expense per passenger* 1d. Total operating assistance per passenger*
		2. Public transit system operating revenues generated from passenger fares and sources other than public operating assistance should be maximized	2. Percent of operating expenses recovered through passenger and other operating revenues, excluding public operating assistance*
		3. Public transit routes with financial performance levels which are less than 80 percent of the average for all routes of the public transit system should be reviewed for service changes, unless special circumstances warrant otherwise[a]	3a. Operating expense per boarding passenger* 3b. Total operating assistance per boarding passenger* 3c. Percent of operating expenses recovered through passenger and other operating revenues, excluding public operating assistance*

[a]*A reasonable period of time should be allowed for ridership to develop and stabilize before evaluating the performance of new public transit services to determine if the service is to be continued, modified, or eliminated. Performance goals should be for new public transit services to achieve 30 percent of average performance levels for existing service after six months of operation; 60 percent of average performance levels for existing service after one year of operation; and 100 percent of average performance levels for existing service after two years of operation.*

Source: SEWRPC.

Chapter IV

EVALUATION OF THE EXISTING TRANSIT SYSTEM

INTRODUCTION

This chapter documents the results of an evaluation of Waukesha Metro Transit based on the transit service objectives and supporting standards set forth in Chapter III of this report. This performance evaluation complements the State management performance audit of Waukesha Metro Transit completed in 2006[1]. The State audit addressed the management structure and operating and service characteristics of the transit system in greater detail. The audit considered transit service and ridership data through the year 2002 and identified the efficiency and effectiveness of the Waukesha Metro Transit in comparison to similar "peer" transit systems serving urban areas of comparable size in Wisconsin and in other parts of the country. In comparison to the Wisconsin and nation peer groups, the audit found that:

- The performance of Waukesha Metro Transit was favorable in terms of cost effectiveness levels, farebox recovery, and the amount of service provided per capita, and the system was improving compared with its peers in the number of passengers it carried per capita. The system's passenger productivity was below average and declining in comparison to the peers. However, even in the areas of below average performance, the results for Waukesha Metro Transit were not significantly different from the peer average;

- The policy and decision making process that currently exists between the transit system and the City of Waukesha works well and is supported by both City and transit system staff, and no changes were needed; and

- The reviews of the functional areas for the system were favorable, with only minor problems or areas identified as the focus for potential improvements.

The performance data used in this chapter is more recent than the data used in the 2006 State management performance audit and, therefore, updates the findings from portions of the State audit presenting the comparison with State and national peers.

The chapter begins with two assessments of the systemwide performance of the transit system: first, a measurement of how well the transit system serves existing population, employment, and activity centers; and

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[1] *See Wisconsin Department of Transportation, Transit System Management Performance Audit, Waukesha Metro Transit, Final Report, Abrams-Cherwony and Associates, February 2006.*

second, a comparison of the system's overall ridership and financial performance to a select group of similar transit systems. The chapter then assesses individual route performance based on ridership and cost-effectiveness, maximum passenger loads, and identification of productive and unproductive route segments. The final section of the chapter presents a summary of ridership comments and concerns from the passenger survey that Commission staff oversaw in 2008, and concludes with a discussion of the key concerns identified in the chapter. The findings of this evaluation will be used to develop recommendations for transit improvements in Chapter V of this report.

SYSTEMWIDE PERFORMANCE EVALUATION

Systemwide Performance Evaluation: Service to Existing Population, Employment, and Land Uses

Ideally, the transit system's service area should include all the areas within the city that have sufficiently dense concentrations of population and employment to support fixed transit routes, as well as major activity centers and transit-dependent population groups. To a lesser extent, the transit system's service area should include the transit-supportive land uses, activity centers, and transit-dependent populations that are located in the communities around the city. For this section, staff estimated the extent to which each of these land uses were served within a one-quarter mile walk access service area of Waukesha Metro Transit routes.

The Waukesha Metro Transit routes were designed to maximize coverage in the transit system service area. In general, the transit system provides good coverage of the population, employment, and major activity centers in the study area. However, the maximization of coverage sometimes results in circuitous and indirect route alignments, which makes transit travel less attractive. The productivity of the indirect segments will be discussed in greater detail in a later section of this chapter. A detailed breakdown of the performance of the Waukesha Metro Transit's service to population, employment, and land uses is displayed in Table 10 and on Maps 8 through 10, and summarized below:

Table 10

TRANSIT SERVICE PROVIDED TO LAND USES AND POPULATION GROUPS IN THE STUDY AREA FOR WAUKESHA METRO TRANSIT SYSTEM: 2010

Performance Measure	Systemwide Performance Characteristics
Population Served[a]	
Inside City of Waukesha	60,438
Outside City of Waukesha	4,152
Total	64,590
Percent of City of Waukesha Resident Population Served	88.7
Percent of Study Area Resident Population Served	53.3
Employment Served[b]	
Inside City of Waukesha	46,072
Outside City of Waukesha	26,626
Total	72,698
Percent of Total Employment Within City of Waukesha Served	89.0
Percent of Total Employment Within Study Area Served	61.5
Major Activity Centers Served	
Major Employers	67 of 144
Hospitals, Medical Centers, and Major Clinics	5 of 8
Major Commercial Areas	16 of 18
Educational Institutions	8 of 23
Governmental and Public Institutional Centers	13 of 16
Total	109 of 209
Areas with Substantial Transit Needs Served[c]	
Census block groups with high transit needs served	15 of 15
Census block groups with moderate transit needs served	32 of 53

[a] *All population figures are based on 2000 Census data allocated to U.S. Public Land Survey quarter sections by Commission staff.*

[b] *All employment figures are based on 2000 U.S. Bureau of Economic Analysis data allocated to U.S. Public Land Survey quarter sections by Commission staff.*

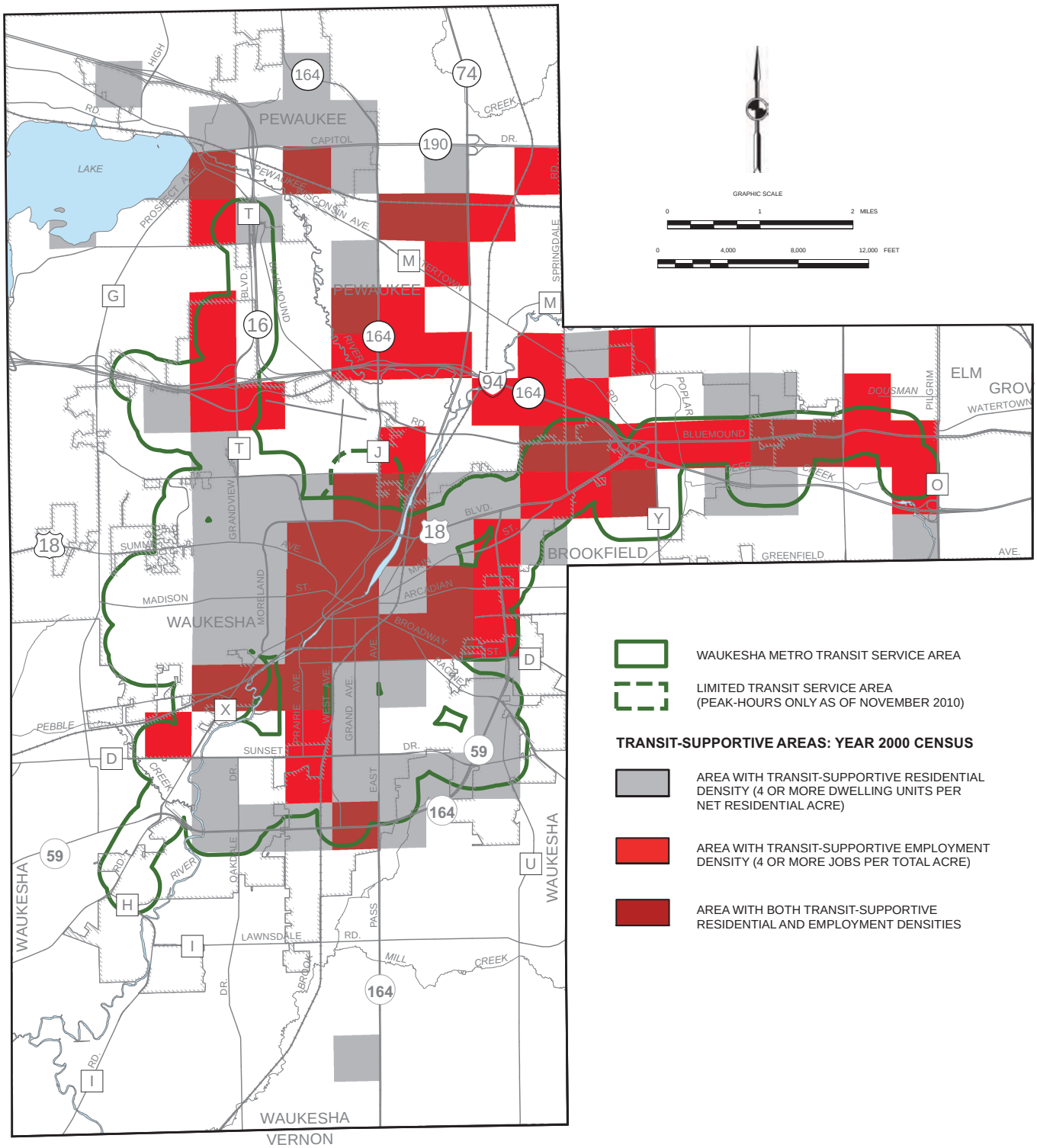
[c] *The transit need index is calculated by ranking Census block groups based on the percent of total population and households in five categories: school-age children (10 through 16), elderly persons (75 and older), persons in low-income households, disabled persons, and households with no vehicle available. Each ranked block group is assigned a score from 1 to 4, in each category, with a 1 for the lowest percentages and a 4 for the highest percentages. The transit need index is equal to the sum of all scores for all five categories.*

Source: SEWRPC.

- Population Served. The existing transit system provides excellent coverage of the population in the City of Waukesha, along with densely populated residential areas adjacent to the City in the Town of Brookfield. Transit service does not exist for populated residential areas in the City of Pewaukee and the

Map 8

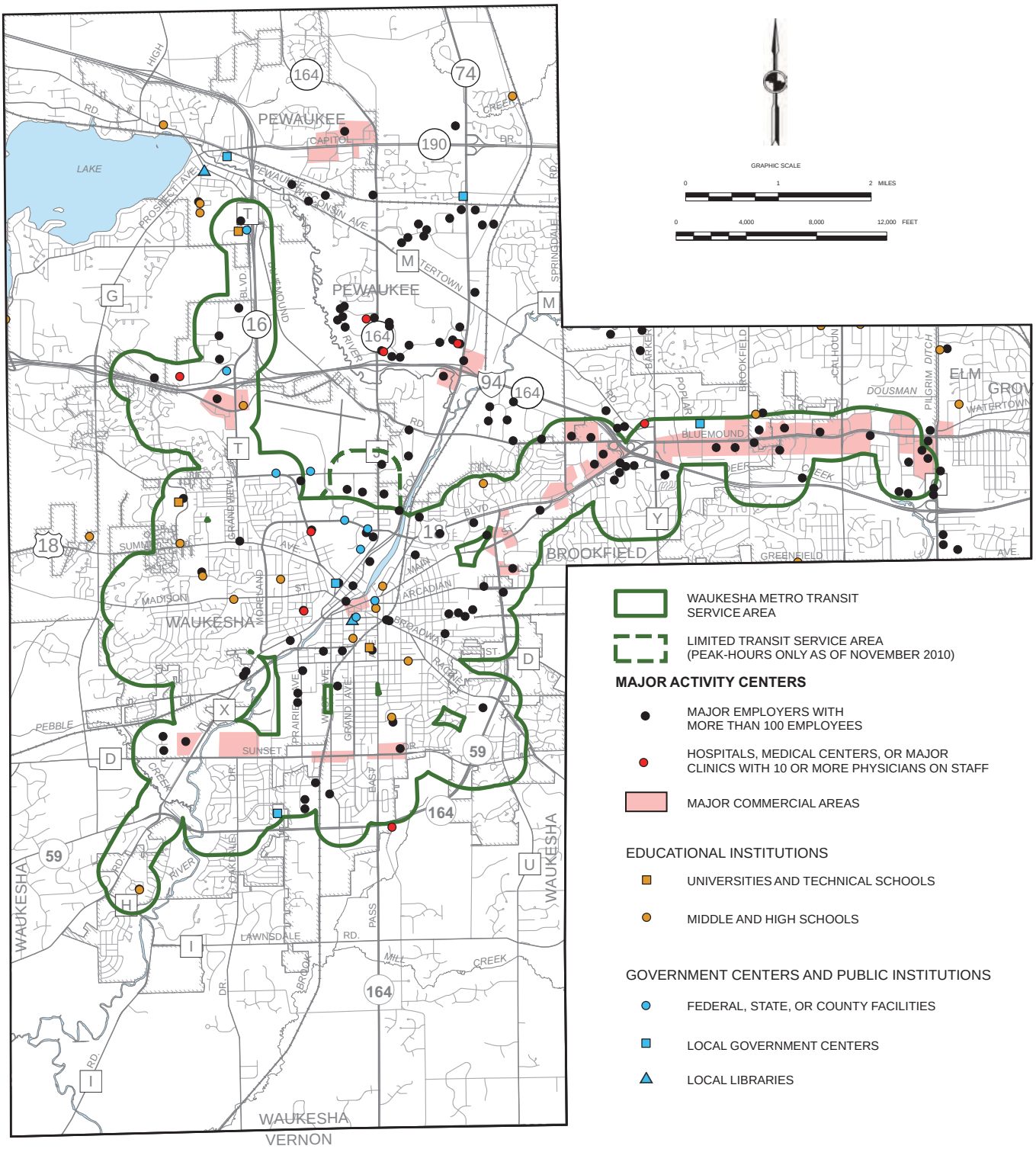
TRANSIT-SUPPORTIVE AREAS FOR CONVENTIONAL FIXED-ROUTE SERVICE WITHIN THE STUDY AREA FOR WAUKESHA METRO TRANSIT: 2000



Source: SEWRPC.

Map 9

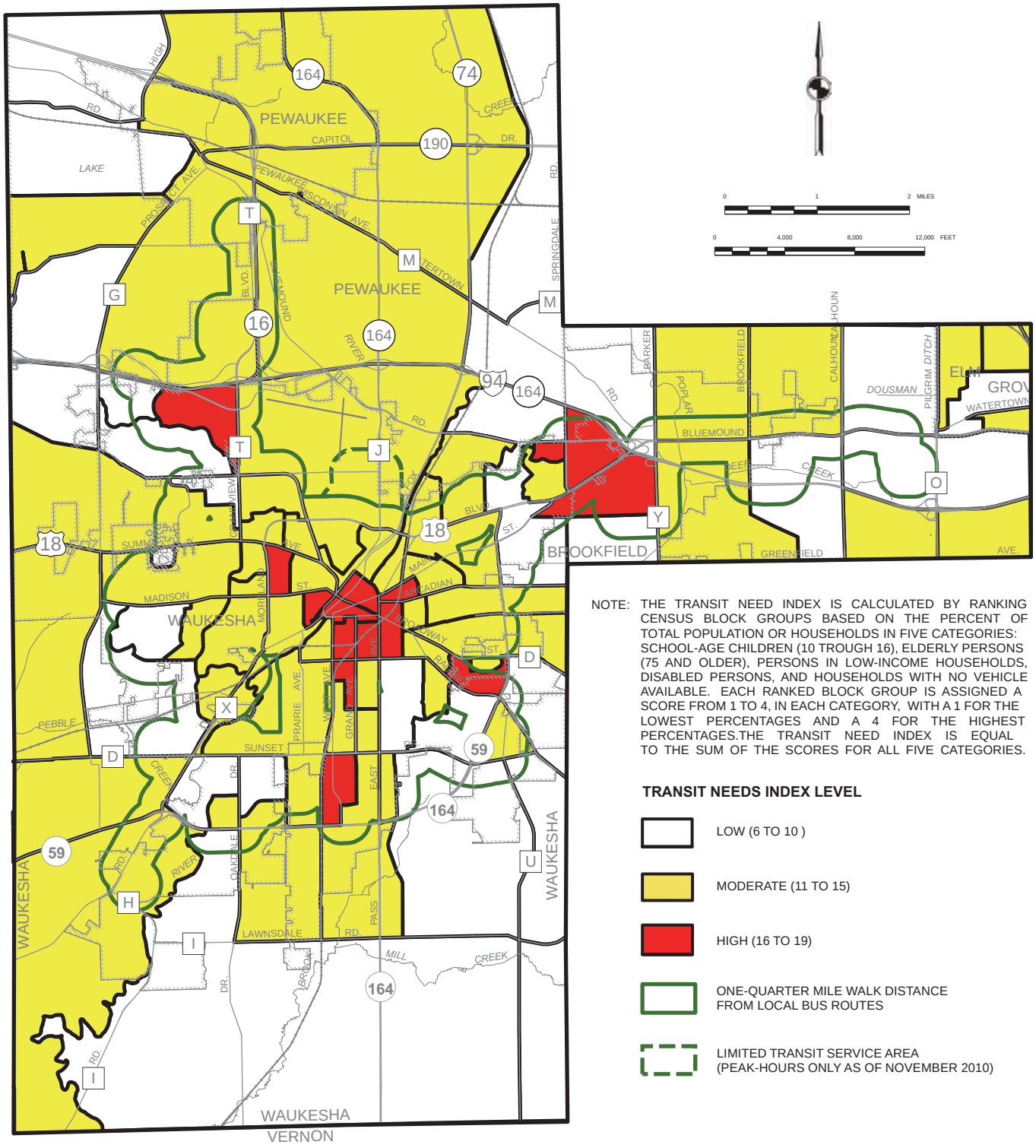
MAJOR ACTIVITY CENTERS WITHIN THE STUDY AREA FOR WAUKESHA METRO TRANSIT: 2010



Source: SEWRPC.

Map 10

TRANSIT NEED INDEX FOR WAUKESHA METRO TRANSIT STUDY AREA: 2000



Source: SEWRPC.

Village of Pewaukee (see Map 8). For the year 2000 resident population, about 89 percent of the City and about 53 percent of the study area resided within one-quarter mile of a bus route. The study area population outside the City that is not served by the transit system principally resides in areas where residential densities are generally too low to support conventional fixed-route transit service. However, areas in the City of Pewaukee and Village of Pewaukee contain transit-supportive residential density. Such areas within the City of Pewaukee are located next to STH 164, south of Capitol Drive (STH 190), and north of Watertown Road (CTH M). Transit-supportive residential density exists in the Village of Pewaukee south of STH 190. Transit service to these areas could be provided if Waukesha County, or the City or Village of Pewaukee agreed to pay for the local share of the operating costs.

- Employment Served. The existing transit system provides excellent coverage of the employment concentrations inside the City of Waukesha and coverage of a majority of the employment concentrations outside the City within the study area (see Map 8). For year 2000 employment, about 89 percent of the jobs within the City and 62 percent of the jobs within the study area were located within the service area. Unserved employment concentrations exist primarily within the northeastern portion of the study area in the City of Pewaukee, extending slightly into the Town of Brookfield. These concentrations include the business parks in the City of Pewaukee along CTH F and STH 164 north of IH 94 and between CTH JJ (Bluemound Road) and IH 94. A partially unserved office and industrial area exists north of IH 94 and west of Barker Road.

- Major Activity Centers Served. The transit system provides somewhat limited coverage of the major activity centers in the study area, serving 109 of the 209 activity centers identified (see Map 9). Of the 100 major activity centers not served, all but two are located outside the City of Waukesha, and therefore, outside of the primary service area of the transit system. As of November 1, 2010, Waukesha Metro Transit is providing peak-hour transit service to the Waukesha Airport Industrial Park. This will provide service to four previously-unserved major employers within the City of Waukesha. Most unserved activity centers outside the City of Waukesha are located within the City of Pewaukee. Until 2006, Waukesha County contracted with Waukesha Metro Transit to provide Flex Route 311, a peak-period route-deviation service, which predominately served the business parks along STH 164 and CTH F north of IH 94 in the City of Pewaukee. However, despite the high employment and activity centers in those locations, the County discontinued the service due to the low ridership levels.

- Areas with High Transit Needs Served. Commission staff developed a transit needs index using population data to identify areas of greatest potential transit needs in the Waukesha Metro Transit study area. Census block groups within the study area were ranked according to the percent of population falling into each of these "transit-dependent" categories: school-age children (ages 10 through 16), elderly individuals (ages 75 and older), persons in low-income households, disabled individuals, and households with no vehicle available. Each Census block group was then scored according to rank: Census block groups with the lowest percentage of a transit-dependent category were given a score of "1," while groups with the highest percentage were given a score of "4." The five resulting scores summed for each block group created an index ranging between 6 and 19. The transit needs were separated into three classes: low (6 through 10), moderate (11 through 15), and high (16 through 19). This approach does not quantify potential transit demand, but shows where in the study area transit needs may be greatest based on resident population characteristics.

  The transit system provides excellent coverage of areas with the greatest potential transit needs within the City of Waukesha, including all Census block groups designated as having high potential transit needs (see Map 10). Where block groups fall at least halfway within the City of Waukesha, they were analyzed with aerial photos to see if the residential development in those areas occurred close to, or far from, transit service. Only two block groups with moderate transit needs were unserved in this analysis. One contains the Waukesha County Airport/Crites Field and the Waukesha Airport Industrial Park. The other, which is south of STH 59 and bordered by Oakdale Drive to the west, Lawnsdale Road to the south, and the Canadian National Railroad to the east, contains primarily single-family homes with some multi-family buildings. Block groups outside of the City of Waukesha with moderate transit needs exist

throughout the remainder of the study area. Block groups along the USH 18 corridor were not considered to be served because the majority of residential development falls outside of the one-quarter-mile transit service area.

Systemwide Performance Evaluation: Peer Group Comparison

The transit system's systemwide ridership and financial performance can be evaluated by comparing Waukesha Metro Transit to similar transit systems for certain key performance measures. This performance evaluation compared the ridership, service, and financial indicators for the Waukesha Metro Transit to two peer groups: a Wisconsin peer group comprised of six other urban transit systems located within the State, and a national peer group comprised of seven other urban transit systems located in other states. The peer transit systems all serve communities with a total population similar to that of the Waukesha area, had similar annual levels of service, and had similar bus fleet size. Commission staff excluded transit systems outside of Wisconsin in communities where colleges or universities of over 10,000 student enrollment are located, because those communities typically have high transit ridership often as a result of special transit services. For the Wisconsin peer group, bus systems in the Cities of La Crosse, Eau Claire, and Oshkosh were retained since they share many other characteristics with the Waukesha system. Table 11 presents the characteristics of Waukesha Metro Transit and the other transit systems in both the national and Wisconsin peer groups. The key ridership, service, and financial performance measures for Waukesha Metro Transit and the peer systems are presented in Table 12 for the years 2004 and 2008. For the raw data used to calculate these performance measures, refer to Appendix A.

A review of the trends in the performance measures for the Waukesha Metro Transit and peer systems from 2004 to 2008 produced the following conclusions:

- Transit System and Service Area Characteristics. Waukesha Metro Transit owns the equipment and facilities used by the system and contracts with a private firm to handle day-to-day operations. Transit system employees are employed by the private firm, not the City of Waukesha. The local funds used by the system are obtained from property taxes. In the Wisconsin peer group, transit systems are owned and directly operated by local municipalities using public employees, or they are operated by private management firms under contract with the municipalities. All use local property taxes to fund the transit system. Three of the transit systems in the national peer group are owned and operated by local municipalities using public employees and rely on property taxes to fund transit service, and four are owned and directly operated by public transit authorities or districts that fund transit through a dedicated funding source.

  Waukesha Metro Transit's service area population is below average when compared to the national peer group, but it is above average when compared to the Wisconsin group. The peer transit systems differ from Waukesha Metro Transit in that none of the communities served by the peer systems was part of a large (over 1,000,000 population) urbanized area with a major urban center that was the focus of economic activity and travel for the area. The communities served by the peer systems were essentially the centers of urban development and travel in their areas and the public transit systems can serve much of the travel generated in the area. The total travel generated by the residents and activity centers in the Waukesha Metro Transit service area includes trips made to and from others parts of the Milwaukee urbanized area. The Waukesha transit system is not able to serve all of these trips which affects both the effectiveness and efficiency measures observed for the system as discussed below.

  Like Waukesha Metro Transit, many of the national and Wisconsin peer transit systems largely operate 35-foot buses. Some peer systems also use larger or smaller buses to provide service. The Waukesha system's base adult cash fare in 2010 was $2.00, the highest of all the peer systems.

- Ridership and Service. Waukesha Metro Transit provides long service hours when compared to both its national and Wisconsin peers. Based on its population alone, it is unusual in providing Sunday transit service; the only other peers offering Sunday service are the Cambria County (Johnstown, PA) and La Crosse systems. However, Sunday service is not uncommon for transit systems operating within large urbanized areas. The longer service hours result in values for Waukesha Metro Transit that are higher

Table 11

SELECTED SERVICE CHARACTERISTICS FOR WAUKESHA METRO TRANSIT AND TRANSIT SYSTEMS IN THE NATIONAL AND WISCONSIN PEER GROUPS: 2010

Transit System	Administrative Structure	Service Area Population[a]	Hours of Operation			Fixed-Route Vehicle Fleet [(Number) Size]		Adult Cash Fares	Major College or University[b]
			Weekdays	Saturdays	Sundays				
Waukesha Metro Transit	City-owned	68,030	5:30 AM – 9:30 PM	8:00 AM – 10:00 PM	9:15 AM – 7:30 PM	(24)	35-foot buses	$2.00	No
Transit Systems in National Peer Group									
Altoona Metro Transit (Altoona, Pennsylvania)	Transit Authority	69,608	6:00 AM – 9:00 PM	6:00 AM – 7:25 PM	- -	(4) (15) (16)	29-foot buses 30-foot buses 35-foot buses	1.45	No
Battle Creek Transit (Battle Creek, Michigan)	City-owned	83,000	5:15 AM – 6:45 PM	9:15 AM – 5:15 PM	- -	(5) (9)	30-foot buses 35-foot buses	1.25	No
Cambria County Transit Authority (Johnstown, Pennsylvania)	Transit Authority	80,508	5:25 AM – 10:10 PM	6:05 AM – 6:40 PM	9:25 AM – 5:40 PM	(2) (10) (3) (2) (16)	26-foot buses 29-foot buses 30-foot buses 31-foot buses 35-foot buses	1.50	No
Decatur Public Transit System (Decatur, Illinois)	City-owned	86,080	5:30 AM – 7:15 PM	6:15 AM – 7:15 PM	- -	(13) (9)	30-foot buses 35-foot buses	1.00	No
Dubuque – KeyLine (Dubuque, Iowa)	City-owned	58,000	6:00 AM – 6:20 PM	8:00 AM – 5:30 PM	- -	(2) (6) (6)	29-foot buses 30-foot buses 35-foot buses	1.00	No
Great Falls Transit District (Great Falls, Montana)	Transit District	63,000	6:30 AM – 6:30 PM	9:30 AM – 5:30 PM	- -	(3) (17)	25-foot buses 35-foot buses	1.00	No
Saginaw Transit Authority Regional Service (Saginaw, Michigan)	Transit Authority	127,000	6:00 AM – 8:00 PM	8:00 AM – 6:00 PM	- -	(16) (10) (15)	28-foot buses 35-foot buses 38-foot buses	1.25	No
Transit Systems in Wisconsin Peer Group									
Eau Claire Transit	City-owned	69,300	6:00 AM – 10:00 PM	8:00 AM – 6:45 PM	- -	(16) (6)	30-foot buses 40-foot buses	1.50	Yes
Janesville Transit System	City-owned	62,540	6:15 AM – 10:15 PM	8:45 AM – 6:15 PM	- -	(17) (4)	35-foot buses 40-foot buses	1.25	No
La Crosse Municipal Transit Utility	City-owned	78,000	5:10 AM – 10:40 PM	7:40 AM – 7:40 PM	7:40 AM – 6:40 PM	(1) (20)	28-foot bus 35-foot buses	1.25	Yes
Oshkosh Transit System	City-owned	65,810	6:15 AM – 6:10 PM	6:15 AM – 6:10 PM	- -	(8) (9)	35-foot buses 40-foot buses	1.00	Yes
Sheboygan Transit System	City-owned	59,490	5:45 AM – 10:00 PM	7:45 AM – 6:00 PM	- -	(7) (5) (11)	26-foot buses 29-foot buses 35-foot buses	1.75	No
Wausau Area Transit System	City-owned	45,513	6:00 AM – 6:30 PM	8:30 AM – 5:30 PM	- -	(1) (22) (9)	29-foot bus 35-foot buses 40-foot buses	1.25	No

[a] *Based on population data from the U.S. Bureau of the Census as reported by each transit operator..*

[b] *This analysis defined a "major college or university" as one that has student enrollment of over 10,000 students.*

Source: National Transit Database, U.S. Bureau of the Census, and SEWRPC.

Table 12

COMPARISON OF KEY INDICATORS OF RIDERSHIP AND FINANCIAL PERFORMANCE FOR WAUKESHA METRO TRANSIT AND OTHER BUS SYSTEMS IN WISCONSIN AND NATIONAL PEER GROUPS: 2004 AND 2008

	Operating Data[a]								
	Waukesha Metro Transit			Average[b] for Bus Systems in Wisconsin Peer Group[c]			Average[b] for Bus Systems in National Peer Group[d]		
Performance Measure	2004	2008	Average Annual Percent Change	2004	2008	Average Annual Percent Change	2004	2008	Average Annual Percent Change
Ridership									
Total Passengers[e]	730,247	819,046	2.9	787,836	859,947	2.2	702,962	713,474	0.4
Service Levels									
Revenue Vehicle Miles	784,376	682,177	-3.4	587,141	586,294	0.0	578,534	554,330	-1.1
Revenue Vehicle Hours	58,566	51,488	-3.2	41,984	41,111	-0.5	44,969	41,827	-1.8
Service Effectiveness									
Passenger per Capita	10.81	12.04	2.7	12.98	13.63	1.2	8.92	8.58	-1.0
Revenue Vehicle Hours per Capital	0.87	0.76	-3.3	0.70	0.66	-1.4	0.55	0.52	-1.2
Passengers per Revenue Vehicle Mile	0.93	1.20	6.6	1.35	1.47	2.2	1.31	1.23	-1.6
Passenger per Revenue Vehicle Hour	12.47	15.91	6.3	19.04	20.75	2.2	16.62	16.34	-0.4
Service Efficiency									
Operating Expense per Revenue Vehicle Mile	$4.55	$6.31	8.5	$4.50	$5.62	5.7	$5.56	$6.30	3.1
Operating Expense per Revenue Vehicle Hour	$60.92	$83.54	8.2	$63.34	$80.35	6.1	$70.99	$83.70	4.2
Cost Effectiveness									
Operating Expense per Passenger	$4.89	$5.25	1.8	$3.58	$4.12	3.5	$4.48	$5.22	3.9
Operating Revenue per Passenger	$0.94	$0.84	-2.7	$0.59	$0.75	6.0	$0.72	$0.84	4.1
Net Cost per Passenger	$3.95	$4.41	2.8	$2.99	$3.37	3.0	$3.76	$4.38	3.9
Farebox Recovery Rate	19.2	16.0	-4.4	16.8	16.5	-0.4	16.4	15.8	-0.9

[a]Based on ridership, service, and financial data obtained from the Federal Transit Administration National Transit Database and Waukesha Metro Transit for the years 2004 and 2008. Performance measures are for fixed-route bus operations only.

[b]Averages reflect the mean of the individual performance measure values calculated for each transit system in the peer group.

[c]Key performance indicators were developed based on information reported by six other urban bus systems in Wisconsin. The six systems are identified in Table 11.

[d]Key performance indicators were developed based on information reported by seven other urban bus systems in the United States. The seven systems are identified in Table 11.

[e]This measure of ridership counts all passengers each time they board a transit vehicle. Passengers who transfer one or more times to different routes of a transit system are counted as two or more passengers in completing a single trip between a specific origin and destination.

Source: SEWRPC.

than the peer averages for annual revenue vehicle miles and revenue vehicle hours as shown in Table 12. In addition, Waukesha Metro Transit's service experienced annual reductions of over 3 percent per year between 2004 and 2008, while the Wisconsin and national peers averaged smaller reductions.

Despite cutting more services than both peer systems, Waukesha Metro Transit's ridership increased over the period at a faster rate than either the national or Wisconsin peer averages.

- Service Effectiveness. The four service effectiveness measures capture information on how well the transit system is utilized. As noted previously, Waukesha Metro Transit provides a high level of service for a city of its size (0.76 vehicle hours per capita in 2008, higher than either peer average). In 2008, the Waukesha system carried fewer passengers per revenue vehicle hour or per revenue vehicle mile than either peer group average. For both these measures, Waukesha Metro improved at a much faster rate than either peer group over the time period.

- Service Efficiency. The two service efficiency measures capture information on the transit system's cost per unit of service provided. The operating expense per revenue vehicle hour of service is particularly important, since driver wages and benefits (which depend on hours of transit service) typically make up the largest share of a transit system's operating expenses. In 2008, Waukesha Metro Transit's costs per revenue vehicle mile were higher than the Wisconsin peer group average, but nearly the same as the national average. For operating expenses per revenue vehicle hour, the Waukesha system's 2008 level was about 4 percent higher than the Wisconsin peer group average and nearly the same as the national peer group average. Waukesha Metro Transit's operating costs per mile and per hour increased by over 8 percent per year, a much higher rate than the peer group averages between 2004 and 2008. The above average increases in the operating costs per mile and per hour for Waukesha Metro Transit in part reflect the above average service reductions implemented by the transit system between 2004 and 2008. With service reductions, some fixed operating costs remain with the system and are spread over a smaller amount of service resulting in higher costs per unit of transit service.

- Cost Effectiveness. Cost effectiveness indicators compare the cost of providing the service to the level of consumption as measured by ridership. In 2008, Waukesha Metro Transit's operating expense per passenger was about 27 percent higher than the Wisconsin peer average and about the same as the national peer average. The farebox recovery rate, an important indicator that measures the percent of operating expenses recovered through operating revenues, was about 3 percent lower than the Wisconsin peer average and about 1 percent higher than the national peer average. Waukesha Metro Transit's farebox recovery rate dropped between 2004 and 2008 at a faster rate than either peer group average. However, after the fare increase that took effect in September of 2008, the farebox recovery rate increased to 18 percent in 2009, as shown in Table 6 in Chapter II.

The peer comparison of performance measures indicates that Waukesha Metro Transit service is about average when compared to the national peer group. In six out of 12 indicators, the Waukesha transit system's performance level was within 1 percent of the national peer group average. When compared to the Wisconsin systems, the Waukesha system performed better than the Wisconsin average in four out of 12 indicators and below the Wisconsin average in eight out of 12 indicators. However, the presence of three university cities in the Wisconsin peer group may have affected the average in all of the indicators that utilized ridership measures, since university towns tend to have higher ridership and therefore higher utilization.

In general, Waukesha Metro Transit provides a high level of service for its service area population size, resulting in lower passengers per vehicle-mile and per vehicle-hour of service. The transit system's operating expenses are reasonable when compared to the peer systems, but increased rapidly between 2004 and 2008. This increase reflects above average service reductions which contributed to the above average increases in operating costs per unit of service observed for Waukesha Metro Transit.

Systemwide Performance Evaluation: Peer Group Expenses Comparison

Commission staff examined Waukesha transit system's operating costs by expense category and compared the percent of total operating expenses in each category to the percent of total operating costs found in each category for the peer systems. Table 13 displays this comparison, and leads to the following observations:

- Fringe benefits in 2008 accounted for over 36 percent of all operating costs for the Waukesha Metro Transit system, but only 29 percent of operating costs for the Wisconsin peer group and 24 percent for the national peer group. Unlike either the Wisconsin or the national peer group, Waukesha Metro Transit's

Table 13

COMPARISON OF OPERATING EXPENSE CATEGORIES FOR THE FIXED-ROUTE BUS SERVICE PROVIDED BY WAUKESHA METRO TRANSIT AND THE BUS SYSTEMS IN THE WISCONSIN AND NATIONAL PEER GROUPS: 2004 AND 2008

Operating Expense Category	Operating Cost[a]							
	Waukesha Metro Transit				Wisconsin Peer Group[b] Average Percentage share of Total Operating Expenses		National Peer Group[c] Average Percentage share of Total Operating Expenses	
	2004		2008					
	Operating Expense	Percent of Total Operating Expenses	Operating Expense	Percent of Total Operating Expenses	2004	2008	2004	2008
Wages and Salaries								
Vehicle Operators	$1,097,209	30.8	$1,134,279	26.0	31.9	29.0	29.7	27.4
Other Operations and Maintenance	519,878	14.6	541,580	12.4	11.0	9.7	10.4	9.3
General Administration	272,965	7.7	288,654	6.6	6.6	6.0	7.0	4.9
Fringe Benefits	971,481	27.2	1,298,504	29.7	30.3	28.8	26.7	23.5
Total Wages, Salaries, and Benefits	$2,861,533	80.2	$3,263,017	74.7	79.8	73.5	73.8	65.1
Fuel, Lubricant, and Supplies	$364,376	10.2	$632,188	14.5	11.3	17.5	12.2	17.9
Service Costs[d]	$99,859	2.8	$182,733	4.2	3.2	3.4	6.0	9.1
All Other Costs[e]	$241,878	6.8	$290,861	6.7	5.8	5.5	8.0	7.9
Total Operating Expenses	$3,567,646	100.0	$4,368,799	100.0	100.0	100.0	100.0	100.0

[a]Based on financial data obtained from the Federal Transit Administration National Transit Database and Waukesha Metro Transit for the years 2004 and 2008. Expenses are for fixed-route bus operations only.

[b]The six other urban bus systems in the Wisconsin peer group are identified in Table 11.

[c]The seven urban bus systems in the national peer group are identified in Table 11.

[d]Service costs include the amount paid by the transit system for contracted services. The amount paid for contracted services varies widely by transit system, and can include expenses paid for contracted transit services, vehicle maintenance services, non-vehicle maintenance and cleaning service, and general administration services.

[e]All other costs include utilities, taxes, insurance, and small miscellaneous expenses.

Source: National Transit Database, Waukesha Metro Transit, and SEWRPC.

fringe benefits rose considerably between 2004 and 2008 and represented a much larger share of expenses in 2008 than in 2004. In absolute numbers, the transit system spent over $300,000 more on fringe benefits for its employees in 2008 than it spent in 2004 with much of this increase attributed to increases in the costs of health insurance for transit system employees. This observation is consistent with reports that health care costs in southeastern Wisconsin are higher than the average for the rest of the State and Country[2].

- Even as the share of the operating budget spent on fringe benefits rose for the Waukesha Metro Transit between 2004 and 2008, the share of the operating budget spent on total wages and fringe benefits dropped, mostly due to increased fuel and supply costs, which rose by nearly $300,000. However, the high cost of fuel is not responsible for Waukesha's higher-than average increases in expenses, because high diesel prices in 2008 also affected most of the systems in both the Wisconsin and national peer groups and many systems within both peer groups had to substantially increase the share of their operating budgets going towards fuel.

[2]*See* "Why Milwaukee Health Care Costs Are High: What to Do About It*", by Linda Gorman.* Wisconsin Policy Research Institute Volume 21: 2008, *May 2008*.

Route Performance Evaluation

Route Ridership, Service Effectiveness, and Cost Effectiveness

The previous two sections assessed the systemwide performance of the transit system by measuring how well it serves population, employment, and activity centers, and by comparing its overall ridership and financial performance to similar transit systems. This section of the evaluation looks at the ridership and financial performance for the transit system's bus routes in order to identify the routes with the lowest overall performance levels based on route operating data, including total boarding passengers; passengers per revenue vehicle-hour and per revenue vehicle-mile; total operating cost and operating assistance per passenger; and farebox recovery rate.

Tables 14 through 17 and Figures 1 and 2 display the estimated service and cost effectiveness measures for the routes of the transit system. The performance measures presented in these tables and figures are based upon the following data:

- Daily operating characteristics of the routes of the transit system in 2009
- Systemwide cost per vehicle hour and passenger revenue per boarding passenger in 2009.
- Boarding passengers per route, collected by the transit system from March 1 through 7, 2010.

Waukesha Metro Transit has target service effectiveness levels for its bus routes specifying 10 passengers per revenue vehicle hour and 1.0 passenger per revenue vehicle mile. In addition, minimum (or maximum) performance targets for cost efficiency were identified by Commission staff under the transit service standards for this study as presented in Table 9 in Chapter III. For each of the performance measures used in the evaluation, routes that have service effectiveness or cost efficiency measures that do not meet the target levels specified in the service effectiveness goals for the transit system or in the Commission's service standards are identified as below average performers with red text. Tables 14 through 17 and Figures 1 and 2 display all the performance measures used. The following observations may be drawn from the information in the tables and figures:

- Weekday Route Performance. Route Nos. 2, 3, 4, 5, 8, and 9 have weekday performance levels that generally exceed both the target service effectiveness levels for the transit system and the minimum (or maximum) performance targets specified under the service standards. Of these eight routes, Route Nos. 4, 8, and 9 are clearly the best performers; they rank in the top three for nearly all the service effectiveness and cost effectiveness measures. Route Nos. 2, 3, and 5 have weekday performance measures that are generally within acceptable levels. Based solely upon these measures, these routes could continue to be operated without change.

  The remaining four routes, Route Nos. 1, 6, 7, and 15, have lower performance levels. These routes meet the target service effectiveness levels for the transit system but not the performance targets for the cost efficiency measures specified under the service standards as they are consistently below the systemwide average, and have at least one performance measure that does not meet the minimum (or maximum) target level. Of these four routes, the performance levels observed for Route No. 15 are the most problematic, and Route Nos. 6 and 7 have performance levels that are only slightly better. Route No. 1 has worse-than-average performance levels, but only one of the five performance measures does not meet target levels. These routes merit further study to determine if changes to improve their performance should be considered.

- Saturday Route Performance. On Saturdays, Route No. 4 continues to be the best performer. Route Nos. 2, 3, 7, and 8 also demonstrate performance levels that consistently exceed target performance levels. The combination of Route Nos. 5 and 6 results in mostly acceptable performance levels for Route No. 5/6. Route No. 1 has mixed performance, meeting the transit system targets for service effectiveness but having low cost-effectiveness levels. Route No. 1 carries the most passengers out of all the routes, but its performance levels are affected by the high level of service operated over it (revenue vehicle hours are

Table 14

AVERAGE WEEKDAY PERFORMANCE CHARACTERISTICS FOR WAUKESHA METRO TRANSIT ROUTES: MARCH 1 THROUGH 4, 2010

Bus Route	Revenue Vehicle Hours	Revenue Vehicle Miles	Boarding Passengers	Service Effectiveness Measures		Operating Cost [a]	Operating Assistance [a]	Cost Effectiveness Measures		
				Passengers per Revenue Vehicle Hour	Passengers per Revenue Vehicle Mile			Operating Cost per Passenger	Operating Assistance per Passenger	Farebox Recovery Rate (Percent)
1	46.5	585	663	14.3	1.1	$3,358	$2,845	$5.06	$4.29	15.3
2	18.0	190	275	15.3	1.5	1,385	1,172	5.04	4.26	15.4
3	7.7	102	149	19.5	1.5	557	442	3.74	2.97	20.7
4	11.4	139	393	34.5	2.8	827	523	2.11	1.33	36.8
5[b]	12.7	179	198	15.6	1.1	912	759	4.61	3.83	16.8
6[b]	12.9	202	177	13.7	0.9	923	786	5.21	4.44	14.8
7	8.6	111	122	14.3	1.1	638	543	5.23	4.45	14.8
8	11.9	148	322	27.1	2.2	891	641	2.77	1.99	28.0
9	20.4	343	434	21.3	1.3	1,501	1,165	3.46	2.68	22.4
15	12.6	156	133	10.5	0.9	922	819	6.93	6.16	11.2
Bus System Total/Average	162.6	2,155	2,866	18.6	1.4	$1,191	$970	$4.41	$3.64	19.6
Minimum/ Maximum Acceptable Level	- -	- -	- -	10.0[c]	1.0[c]	- -	- -	$5.30[d]	$4.37[d]	15.7[c]

[a]Operating cost per route was estimated by applying the year 2009 systemwide average cost per total vehicle hour to the average weekday total vehicle hours for each route. Operating assistance was estimated by applying the year 2009 average fare revenues per boarding passenger to the average weekday boarding passengers per route, and subtracting the estimated fare revenues per route from the estimated operating cost per route.

[b]The data presented for Route Nos. 5 and 6 are for weekdays only, as Route No. 5/6 combines portions of Route Nos. 5 and 6 and operates on weekday evenings and weekends. Weekday evening data for Route No. 5/6 is included in Table 17.

[c]Waukesha Metro Transit has target service effectiveness levels for its bus routes that specify 10 passengers per revenue vehicle hour and 1.0 passenger per revenue vehicle mile. The target performance level specified in the transit service standards presented in Table 9 in Chapter III for farebox recovery is 20 percent below the systemwide average for all routes. Red text for these measures indicates that a route does not meet the target level for that particular measure.

[d]The target performance level specified in the transit service standards presented in Table 9 in Chapter III for cost effectiveness measures is 20 percent above the systemwide average for all routes. Red text for these measures indicates that a route does not meet the target level for that particular measure.

Source: Waukesha Metro Transit and SEWRPC.

only five hours, or 15 percent, less on Saturdays than on weekdays). Route No. 15 continues to exhibit low performance levels, and is joined by Route No 9, which had acceptable performance levels on weekdays. Route No. 9's low performance can be attributed to the significant proportion of ridership that uses the route for school-related travel on weekdays but not on Saturdays.

- Sunday Route Performance. On Sundays, Route No. 4 remains the best performer. The combination of Route Nos. 7 and 8 results in good performance levels for Route No. 7/8. Route No. 2 shows acceptable performance on Sunday for all measures except farebox recovery. The performance levels on Route No. 1 and Route No. 5/6 are mixed with cost effectiveness measures that are below target levels; both routes have significantly higher vehicle miles and vehicle hours of service on Sunday than the two high-performing routes.

- Weekday Evening Route Performance. Route No. 4 remains the best-performing route during weekday evening service, and Route Nos. 2, 8, and 9 all demonstrate acceptable performance levels. The remaining routes, including the combined operation of Route Nos. 5 and 6 during weekday evenings as Route No. 5/6, did not meet any of the minimum or maximum performance levels. Overall, Waukesha Metro's bus routes had their lowest performance during weekday evenings (6:00 p.m.-10:00 p.m.), below Saturday and Sunday levels. Potential changes to these routes to improve their performance during the evenings should be considered.

Table 15

AVERAGE SATURDAY PERFORMANCE CHARACTERISTICS FOR WAUKESHA METRO TRANSIT ROUTES: MARCH 6, 2010

Bus Route	Revenue Vehicle Hours	Revenue Vehicle Miles	Boarding Passengers	Service Effectiveness Measures		Operating Cost [a]	Operating Assistance [a]	Cost Effectiveness Measures		
				Passengers per Revenue Vehicle Hour	Passengers per Revenue Vehicle Mile			Operating Cost per Passenger	Operating Assistance per Passenger	Farebox Recovery Rate (Percent)
1	39.6	492	493	12.4	1.0	$2,910	$2,529	$5.90	$5.13	13.1
2	13.0	130	233	17.9	1.8	951	770	4.08	3.31	19.0
3	7.1	98	105	14.9	1.1	516	435	4.91	4.14	15.8
4	7.1	95	227	32.1	2.4	519	344	2.29	1.51	33.8
5/6	14.2	242	212	15.0	0.9	1,022	858	4.82	4.05	16.1
7	5.3	76	107	20.3	1.4	387	304	3.62	2.84	21.4
8	5.5	73	101	18.4	1.4	394	316	3.90	3.13	19.8
9	10.7	177	119	11.2	0.7	793	701	6.66	5.89	11.6
15	10.8	132	89	8.2	0.7	792	723	8.90	8.12	8.7
Bus System Total/Average	113.2	1,514	1,686	17.8	1.3	$920	$775	$5.01	$4.24	17.7
Minimum/ Maximum Acceptable Level	- -	- -	- -	10.0[b]	1.0[b]	- -	- -	$6.01[c]	$5.08[c]	14.2[b]

[a]*Operating cost per route was estimated by applying the year 2009 systemwide average cost per total vehicle hour to the average Saturday vehicle hours for each route. Operating assistance was estimated by applying the year 2009 average fare revenues per boarding passenger to the average Saturday boarding passengers per route, and subtracting the estimated fare revenues per route from the estimated operating cost per route.*

[b]*Waukesha Metro Transit has target service effectiveness levels for its bus routes that specify 10 passengers per revenue vehicle hour and 1.0 passenger per revenue vehicle mile. The target performance level specified in the transit service standards presented in Table 9 in Chapter III for farebox recovery is 20 percent below the systemwide average for all routes. Red text for these measures indicates that a route does not meet the target level for that particular measure.*

[c]*The target performance level specified in the transit service standards presented in Table 9 in Chapter III for cost effectiveness measures is 20 percent above the systemwide average for all routes. Red text for these measures indicates that a route does not meet the target level for that particular measure.*

Source: Waukesha Metro Transit and SEWRPC.

Ridership by Route Segment

To supplement the route ridership, service, and cost performance measures, Commission staff examined the boarding and alighting passenger activity along each bus route to help identify route segments with the highest and lowest ridership. The March 2010 passenger counts collected by the transit system that were used for the performance measures above also included the number of boarding and alighting passengers by stop for each bus route. To facilitate the analysis of the passenger boarding and alighting data, Commission staff divided the bus routes into segments of about one mile in length based on land uses and major intersections along the route. Staff calculated the average weekday total passenger boardings and alightings at all the stops along each segment, then divided that figure by the total scheduled bus trips operated over the segment to calculate the average boardings and alightings per bus trip along each segment. Figure 3 displays the 83 route segments designated for the transit system, ordered by passenger activity per scheduled bus trip. The route segments which rank in the top one-third are considered the "most productive" segments in the transit system, and the route segments ranking in the bottom third are considered the "least productive" segments in the transit system. It is important to note that while the March 2010 passenger counts provide an indication of passenger activity over each route, the counts represent a sample of ridership for only one weekday or weekend. Additional counts should be undertaken by the transit system to verify the observed ridership patterns before service changes or route restructuring is implemented.

Table 16

AVERAGE SUNDAY PERFORMANCE CHARACTERISTICS FOR WAUKESHA METRO TRANSIT ROUTES: MARCH 7, 2010

Bus Route	Revenue Vehicle Hours	Revenue Vehicle Miles	Boarding Passengers	Service Effectiveness Measures		Operating Cost [a]	Operating Assistance [a]	Cost Effectiveness Measures		
				Passengers per Revenue Vehicle Hour	Passengers per Revenue Vehicle Mile			Operating Cost per Passenger	Operating Assistance per Passenger	Farebox Recovery Rate (Percent)
1	27.6	343	291	10.5	0.8	$2,050	$1,824	$7.04	$6.27	11.0
2	9.4	95	109	11.6	1.2	704	619	6.45	5.68	12.0
4	5.1	68	172	33.9	2.5	376	243	2.19	1.41	35.4
5/6	10.1	173	101	10.0	0.6	733	655	7.26	6.48	10.7
7/8	5.0	62	83	16.6	1.3	358	294	4.32	3.54	17.9
Bus System Total/Average	57.2	741	756	16.5	1.3	$844	$727	$5.45	$4.68	17.4
Minimum/ Maximum Acceptable Level	- -	- -	- -	10.0[b]	1.0[b]	- -	- -	$6.54[c]	$5.61[c]	13.9[b]

[a]*Operating cost per route was estimated by applying the year 2009 systemwide average cost per total vehicle hour to the average Sunday vehicle hours for each route. Operating assistance was estimated by applying the year 2009 average fare revenues per boarding passenger to the average Sunday boarding passengers per route, and subtracting the estimated fare revenues per route from the estimated operating cost per route.*

[b]*Waukesha Metro Transit has target service effectiveness levels for its bus routes that specify 10 passengers per revenue vehicle hour and 1.0 passenger per revenue vehicle mile. The target performance level specified in the transit service standards presented in Table 9 in Chapter III for farebox recovery is 20 percent below the systemwide average for all routes. Red text for these measures indicates that a route does not meet the target level for that particular measure.*

[c]*The target performance level for cost effectiveness measures specified in the transit service standards presented in Table 9 in Chapter III is 20 percent above the systemwide average for all routes. Red text for these measures indicates that a route does not meet the target level for that particular measure.*

Source: Waukesha Metro Transit and SEWRPC.

The most productive and least productive route segments are shown for each route on Map 11. The following observations may be drawn from the figure and map:

- Most of the segments with the highest passenger activity per bus trip are those that serve major commercial areas or multi-family housing complexes, or that pass through the Downtown Transit Center, reflecting the high number of passengers going to the Downtown area or transferring between routes.

- Route segments that served high schools and middle schools were not always highly productive. Usually such segments generate many passengers at peak times. For example, Waukesha North High School, which is located on segment 8-4, had over three boardings and alightings per scheduled bus trip, even though most of that passenger activity occurred at two times during the day. Waukesha South High School is located on segment 15-9, which also is a highly-productive segment because Route No. 15 only serves it once daily, at 7:00 a.m. However, several route segments that serve middle or high schools fared only average or poorly: West High School on CTH X (segment 6-10) had less than one boarding and alighting passenger per scheduled bus trip. Horning Middle School (segment 1-4) and Butler Middle School (segment 8-5) are located on route segments that had less than two boardings and alightings per trip. Fewer middle and high school students are using Waukesha Metro Transit than in the past. A significant number of students residing between one and two miles from school—a major market for the transit system—now take advantage of the "pay-to-ride program" offered by the Waukesha School District. This program allows students that are not eligible for the yellow school bus service (paid for by the District for students that live more than two miles from school) to use the school bus service if they pay a fee. The base fee is $120 per semester, which parents pay directly to the yellow school bus provider. As a result of the increased use of yellow school bus service under this policy, Waukesha Metro Transit has eliminated many special school-day-only bus trips it formerly targeted toward students living between one and two miles from school.

Table 17

PERFORMANCE CHARACTERISTICS FOR WAUKESHA METRO TRANSIT ROUTES: WEEKDAY EVENING SERVICE BETWEEN 6:00 P.M. AND 10:00 P.M., MARCH 1 THROUGH 4, 2010

Bus Route	Revenue Vehicle Hours	Revenue Vehicle Miles	Boarding Passengers	Service Effectiveness Measures		Operating Cost [a]	Operating Assistance [a]	Cost Effectiveness Measures		
				Passengers per Revenue Vehicle Hour	Passengers per Revenue Vehicle Mile			Operating Cost per Passenger	Operating Assistance per Passenger	Farebox Recovery Rate (Percent)
1	12.0	152	90	7.5	0.6	$953	$883	$10.59	$9.81	7.3
2	3.5	38	39	11.1	1.0	278	248	7.12	6.35	10.9
3	1.5	21	13	8.7	0.6	119	109	9.16	8.39	8.5
4	1.8	26	39	22.3	1.5	139	109	3.56	2.79	21.7
5/6	3.3	53	27	8.2	0.5	262	241	9.70	8.93	8.0
7	1.9	26	17	9.2	0.6	147	134	8.64	7.87	9.0
8	1.9	24	24	13.0	1.0	147	128	6.12	5.35	12.6
9	3.3	60	49	14.8	0.8	262	224	5.35	4.57	14.5
Bus System Total/Average	29.1	400	225	11.8	0.8	$288.29	$259	$7.53	$6.76	11.6
Minimum/ Maximum Acceptable Level	- -	- -	- -	10.0[b]	1.0[b]	- -	- -	$9.04[c]	$8.11[c]	9.2[b]

[a]*Operating cost per route was estimated by applying the year 2009 systemwide average cost per revenue vehicle hour to the weekday evening revenue vehicle hours for each route. Operating assistance was estimated by applying the year 2009 average fare revenues per boarding passenger to the average weekday evening boarding passengers per route, and subtracting the estimated fare revenues per route from the estimated operating cost per route.*

[b]*Waukesha Metro Transit has target service effectiveness levels for its bus routes that specify 10 passengers per revenue vehicle hour and 1.0 passenger per revenue vehicle mile. The target performance level for farebox recovery is 20 percent below the systemwide average for all routes. Red text for these measures indicates that a route does not meet the target level for that particular measure.*

[c]*The target performance level for cost effectiveness measures specified in the transit service standards presented in Table 9 in Chapter III is 20 percent above the systemwide average for all routes. Red text for these measures indicates that a route does not meet the target level for that particular measure.*

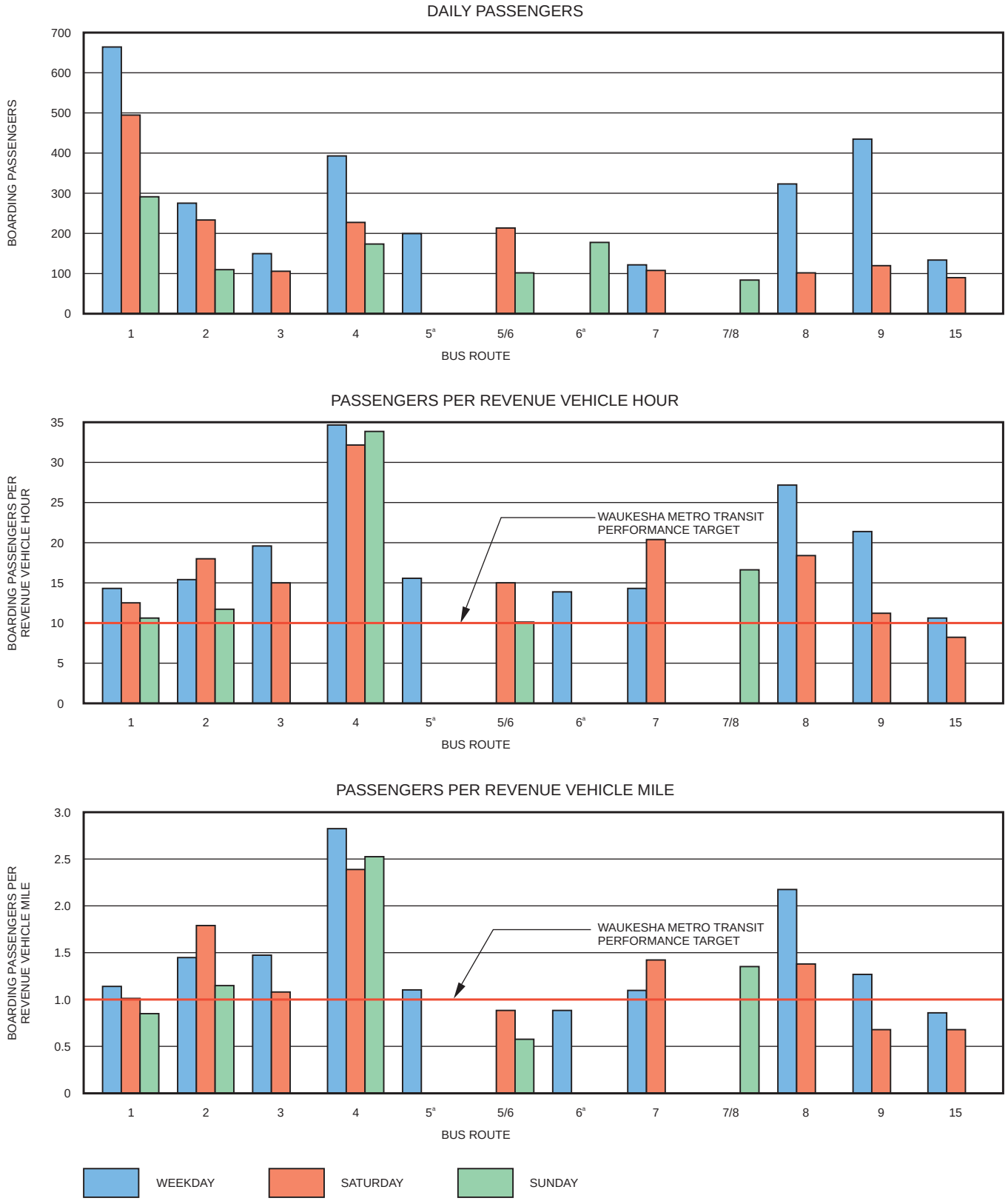
Source: Waukesha Metro Transit and SEWRPC.

- All routes of the system had at least two productive segments and at least one unproductive segment, except Route No. 4, which had no unproductive segments. Route No. 1, which carries the most passengers, has the most segments with low productivity for two reasons: First, many of the passengers use Route No. 1 to travel from the City of Waukesha to the Brookfield Square Shopping Center, meaning that few passengers board or alight along some route segments on Bluemound Road in the City of Brookfield. Second, it has the highest number of bus trips that operate over the route, which results in a lower value for the passenger activity per trip.

- Unproductive route segments can sometimes indicate where routing changes should be considered, especially if the unproductive segments reflect circuitous route alignments that increase travel time and make transit travel less attractive. Some circuitous route segments have high passenger activity; others do not generate much ridership. These unproductive route segments will be revisited under the transit service improvements proposed in the next chapter. However, some of the route segments with the lowest passenger activity occur where bus routes pass through areas with few activity centers and land uses unsupportive of transit, on their way towards activity centers or land uses that do generate significant ridership. Consequently, not all unproductive route segments can be totally eliminated if the transit system is to continue to provide extensive coverage of the Waukesha area. Alternative ways of continuing to serve the areas generating ridership could be considered, such as flex-routing and limited period bus service.

Figure 1

SERVICE EFFECTIVENESS MEASURES FOR WAUKESHA METRO TRANSIT ROUTES: MARCH 1 THROUGH 7, 2010

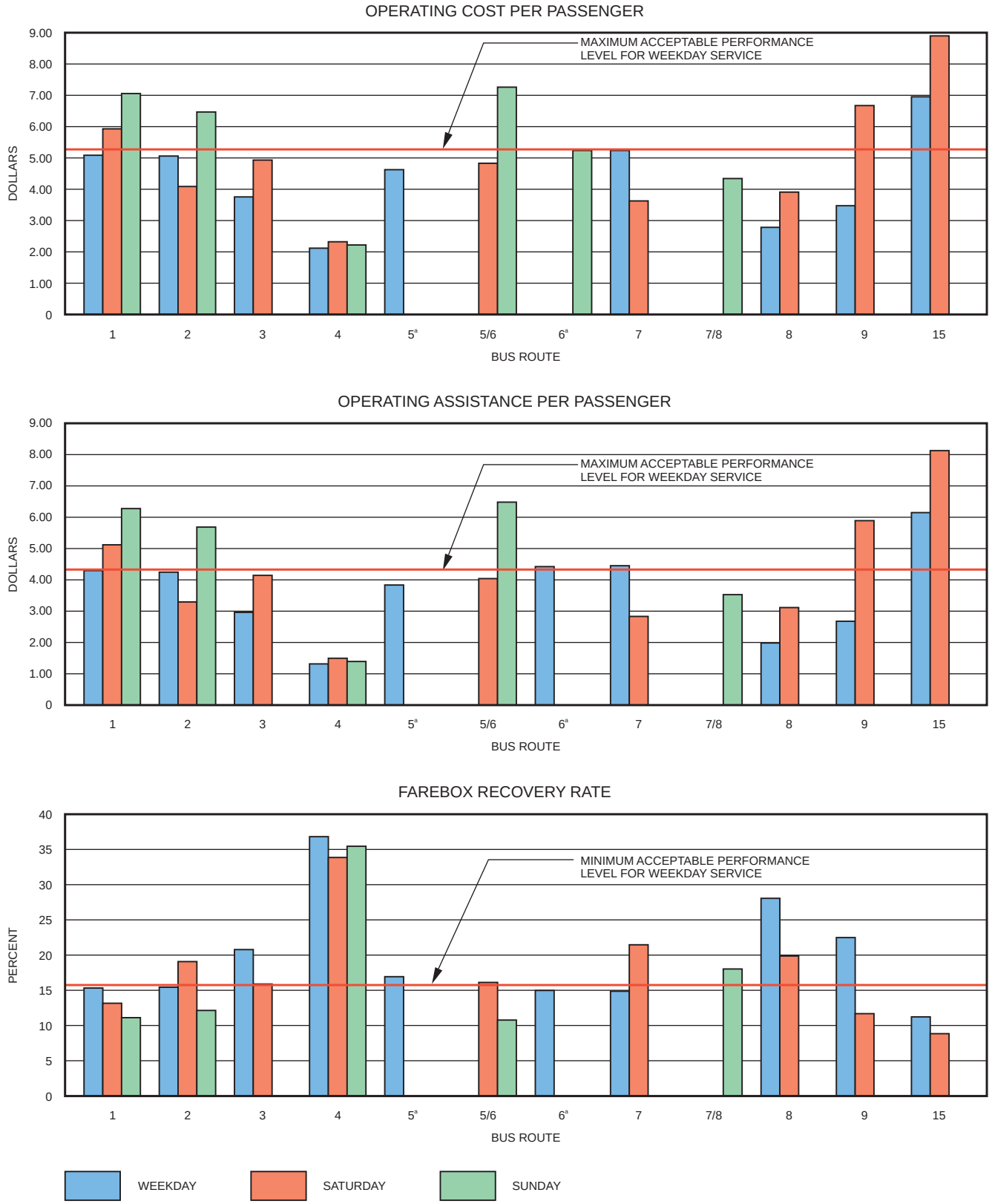


[a]THE DATA PRESENTED FOR ROUTES NOS 5 AND 6 ARE FOR WEEKDAYS DAYTIME ONLY, AS ROUTE NO. 5/6 COMBINES PORTIONS OF ROUTES 5 AND 6 AND OPERATES ON WEEKDAY EVENINGS, SATURDAY AND SUNDAY.

Source: Waukesha Metro Transit and SEWRPC.

Figure 2

COST EFFECTIVENESS MEASURES FOR WAUKESHA METRO TRANSIT ROUTES: MARCH 1 THROUGH 7, 2010

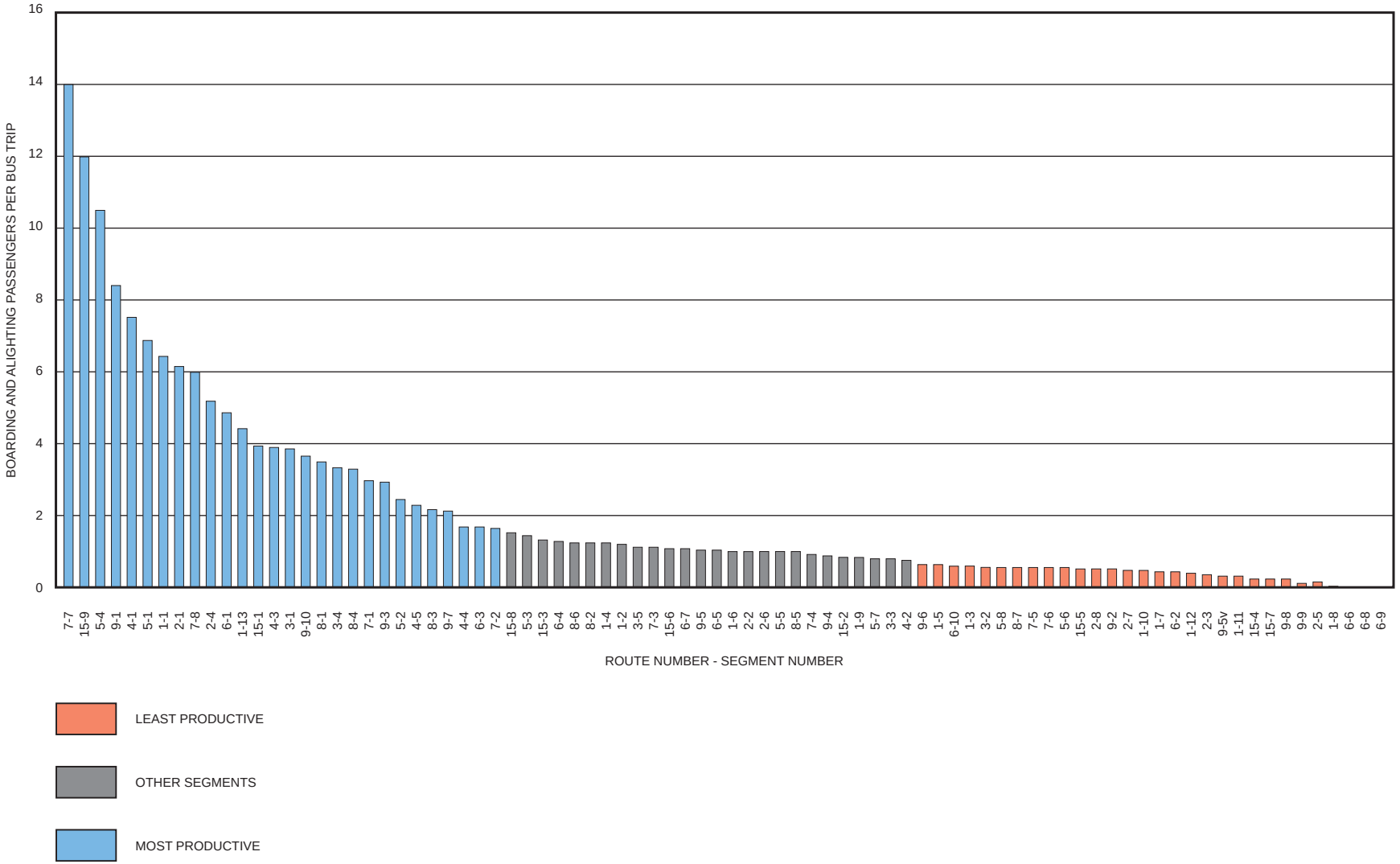


[a]THE DATA PRESENTED FOR ROUTE NOS 5 AND 6 ARE FOR WEEKDAYS DAYTIME ONLY, AS ROUTE NO. 5/6 COMBINES PORTIONS OF ROUTES 5 AND 6 AND OPERATES ON WEEKDAY EVENINGS, SATURDAY AND SUNDAY.

Source: Waukesha Metro Transit and SEWRPC.

Figure 3

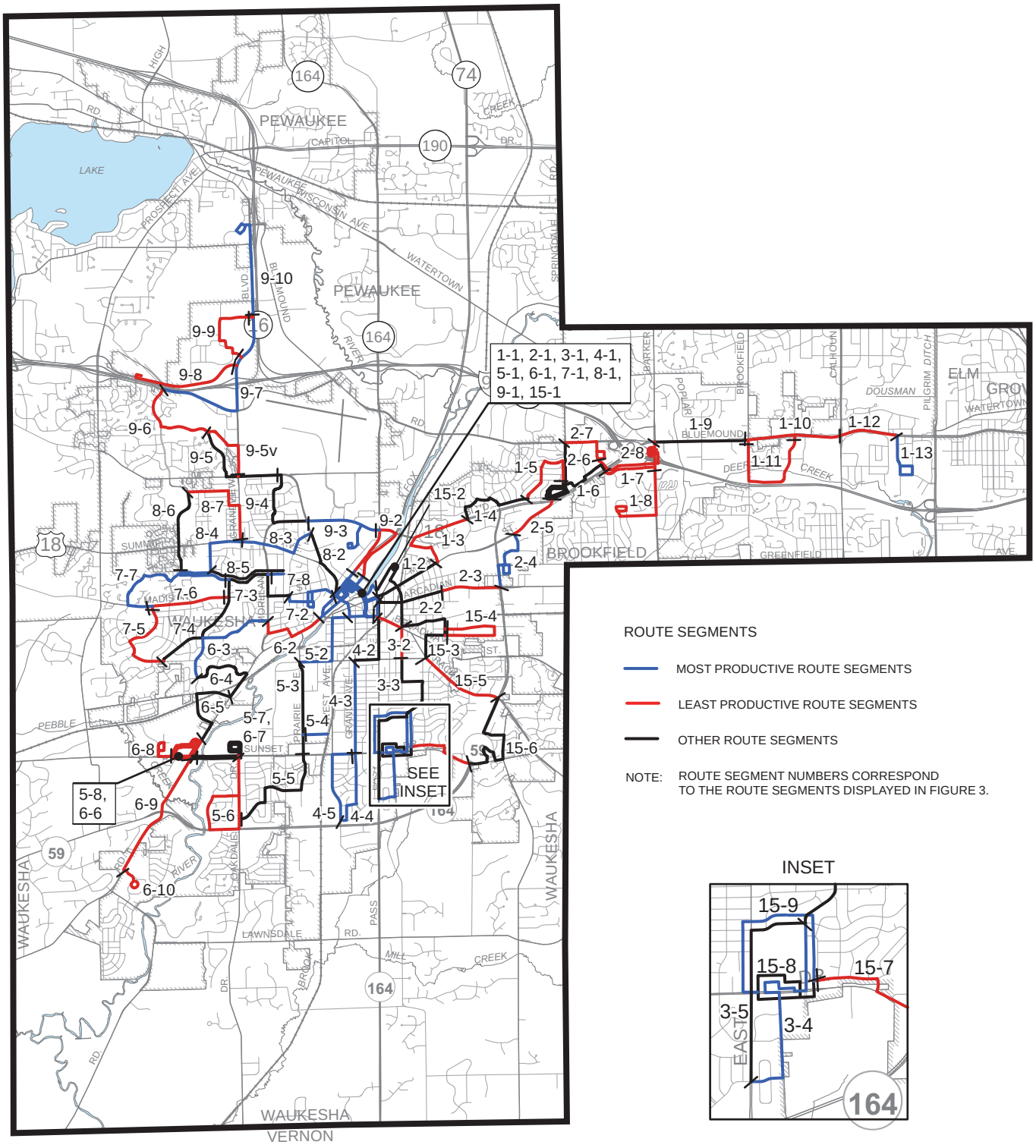
AVERAGE WEEKDAY BOARDINGS AND ALIGHTINGS PER SCHEDULED BUS TRIP OVER SEGMENTS OF WAUKESHA METRO TRANSIT ROUTES: MARCH 1 THROUGH 5, 2010



Source: Waukesha Metro Transit and SEWRPC.

Map 11

PRODUCTIVE AND UNPRODUCTIVE ROUTE SEGMENTS OF THE WAUKESHA METRO TRANSIT SYSTEM: WEEKDAYS, MARCH 1 THROUGH 5, 2010



Source: Waukesha Metro Transit and SEWRPC.

Compliance with Passenger Loading Standards

Public perception by some residents in the City of Waukesha is that Waukesha Metro Transit buses do not carry enough passengers to warrant using 35-foot buses to provide the service. If a resident sees a large bus that is empty or nearly empty at the end of the route or during an off-peak time period, they may think that operating a 35-foot bus is wasteful and inefficient. However, the size of the transit vehicle needed on a route is determined by the maximum passenger load on the route, which usually occurs only once or twice a day.

Transit professionals calculate the "load factor" to measure whether the capacity of fixed-route bus service provided (the number of seats on the bus and the existing headways for routes) is appropriate for the number of passengers using the service. In the case of Waukesha Metro Transit, the range of acceptable passenger loading standards is set forth in the Objectives, Principles, and Standards in Chapter III of this report. Objective No. 2, Standard No. 7 specifies that the maximum load factor (measured as the ratio of passengers to seats on the bus at that point where passenger loads are highest) should not exceed 1.25 during peak periods, and 1.00 at all other times. This standard ensures a high degree of comfort for passengers using the bus service by limiting the number of persons who have to stand. Objective No. 3, Standard No. 2 specifies that each fixed-route's maximum load factor should exceed 0.50 at least once during weekday service. At least half the seats in a vehicle should be occupied at some point along each route, in order for the fixed-route service to be considered as providing an appropriate capacity.

Commission staff used the March 2010 boarding and alighting passenger counts along each bus route to calculate the passenger loads carried over the length of each bus route by scheduled bus trip. The passenger loads were then reviewed to determine the highest passenger loads for each route during each time period: morning, midday, afternoon, and evening.

To calculate the maximum load factor for each of the highest passenger loads, Commission staff adjusted the maximum load factor in order to account for variability in ridership. Ridership on Waukesha Metro Transit was 10 percent lower in 2009 than it was in 2008, and will likely be even lower in 2010, due mostly to ridership declines resulting from high unemployment levels. Ridership and passenger loads also vary by day of the week and month, as well as by time of year. Any recommendations for service changes or bus sizes that are based on passenger loads should take into account this variability. Therefore, the maximum load factor for each route was adjusted upward by 20 percent more than observed in the sampled data. Table 18 displays the observed maximum passenger loads and the adjusted maximum load factors for each route during each weekday time period. Appendix B to this report includes figures for each route displaying the total boarding passengers and maximum passenger loads per bus trip observed with the March 2010 passenger counts. The information in the table supports the following observations:

- No routes had adjusted maximum load factors that exceeded the standard of 1.25 passengers per seat during weekday peak periods and 1.00 passengers per seat during off-peak periods. The highest adjusted load factor was 1.00, which occurred on Route No. 4 during the midday period and was due to a significant number of passengers boarding the bus on the 10:03 a.m. northbound trip toward the transit center.

- Three routes had adjusted maximum load factors that did not meet the standard calling for one-half of the seats on the bus to be occupied at some time during weekday service. The buses on Route Nos. 3, 7, and 15 were never more than half-full.

- Route Nos. 2 and 6 were more than half-full at certain times, but could be operated with smaller buses that have as few as 20 seats and would still have adjusted maximum load factors that would be within the range of acceptable levels.

- The passenger loads on most routes are much lower during the evening than the daytime. In fact, most of the bus routes operated after 6:00 p.m. carried an average of less than five passengers per trip.

It is important to note that the load factors are influenced by three factors: the ridership at peak times, the operating headways on the routes (less frequent service will result in higher load factors), and the number of seats on the bus. The 35-foot buses used by the transit system have 31 or 32 seats. When one wheelchair is in place,

Table 18

MAXIMUM PASSENGER LOADS AND MAXIMUM LOAD FACTORS FOR WAUKESHA METRO TRANSIT ROUTES: MARCH 1 THROUGH 5, 2010

Route Number	Morning (5:30 – 9:00 a.m.)			Midday (9:00 a.m. – 3:00 p.m.)			Afternoon (3:00 – 6:00 p.m.)			Evening (6:00 – 10:00 p.m.)		
	Passengers per BusTrip (Average)	Observed Maximum Passenger Load	Adjusted Maximum Load Factor[a]	Passengers per BusTrip (Average)	Observed Maximum Passenger Load	Adjusted Maximum Load Factor[a]	Passengers per BusTrip (Average)	Observed Maximum Passenger Load	Adjusted Maximum Load Factor[a]	Passengers per BusTrip (Average)	Observed Maximum Passenger Load	Adjusted Maximum Load Factor[a]
1	9.4	20	0.77	10.0	19	0.74	15.5	23	0.89	6.3	14	0.54
2	5.0	11	0.43	9.3	16	0.62	8.4	14	0.54	5.8	10	0.39
3	3.8	5	0.19	5.3	6	0.23	6.0	7	0.27	3.2	5	0.19
4	6.9	10	0.39	11.7	26	1.00	7.9	16	0.62	5.0	10	0.39
5	11.5	23	0.89	7.4	11	0.43	11.7	25	0.97	- -	- -	- -
5/6	- -	- -	- -	- -	- -	- -	- -	- -	- -	3.4	9	0.35
6	2.5	5	0.19	5.2	7	0.27	11.8	19	0.74	- -	- -	- -
7	5.8	8	0.31	4.1	9	0.35	6.8	9	0.35	2.0	6	0.23
8	4.6	13	0.50	7.4	25	0.97	5.0	13	0.50	3.0	6	0.23
9	7.2	24	0.93	15.4	21	0.81	11.7	17	0.66	5.8	14	0.54
15	7.0	12	0.46	5.9	7	0.27	5.5	12	0.46	- -	- -	- -
Performance Standards for Maximum Load Factor:[b]												
Not to Exceed:			1.25			1.00			1.25			1.00
At Least Once During Weekday Service, Should Exceed:							0.50					

[a]*The maximum load factor is the ratio of the number of passengers on the bus to the number of seats on the bus (assumed to be 31) at the point on the route where the passenger loads are highest. The adjusted maximum load factor was calculated assuming 20 percent more passengers on the bus at the peak times than observed in the March 1 through 5, 2010, sampled data. This adjustment accounts for variability in ridership.*

[b]*Under Objective No. 2 and service design and operating standard No. 7, the maximum load factor for local transit service should not exceed 1.25 during peak periods, and 1.00 during off-peak periods. Under Objective No. 3 and service design and operating standard No. 2, the maximum load factor should reach at least 0.50 at some point during weekday service. This means that at least half of the seats in the vehicle should be occupied at some point on the route at least once a day. Routes not meeting the standard are highlighted in red.*

Source: Waukesha Metro Transit and SEWRPC.

the seating capacity drops by two to three seats. When two wheelchairs are in place, seating capacity drops by five to six seats. Wheelchair use on Waukesha Metro Transit's fixed bus routes has increased significantly. In 2008 and 2009, the fixed routes carried about 1,800 wheelchair rides annually. In 2010, annual wheelchair rides increased to about 3,500 trips. Commission staff found that the maximum load factors on the routes would not change significantly if seating capacity was assumed to be 28 seats which reflects having one wheelchair in place. At peak loading times, if a wheelchair user is on the bus, some of the routes would be more likely to have standing passengers, but not above the acceptable maximum load factor of 1.25. Even with a lower seating capacity, the calculated maximum load factors for Route Nos. 3, 7, and 15 were only slightly higher.

Given the findings of this analysis, for those routes where passenger load factors do not exceed 0.50 during weekday service, consideration should be given to the following strategies:

- Restructure bus routes to possibly combine routes and eliminate unproductive areas;
- Reduce service hours or service frequency for low-ridership areas;
- Purchase smaller buses that have fewer seats; and,
- Replace fixed-route, fixed-schedule service with flexibly-routed demand-responsive service such as route-deviation, dial-a-ride bus, or shared-ride taxicab services.

Summary of Riders Comments and Concerns

The final section of the evaluation considers passenger comments and concerns from the survey of Waukesha Metro Transit riders that the Commission conducted in April, 2008, to assess the extent that transit system riders perceive the service to be safe, reliable, convenient, and comfortable. Many of the rider comments dealt with a very specific aspect of service, such as requests to increase service at certain times along certain routes. For the purposes of the evaluation, Commission staff summarized these comments into broad categories, which are shown in Table 19. An analysis of the table produces the following observations:

- About half of the 992 returned surveys included additional comments made by passengers. About 6 percent (60 comments) of the surveys stated that Waukesha Metro Transit service needed no improvements. Many comments read simply, "Keep up the good work."

- Many Waukesha Metro Transit riders would like more transit service. About 21 percent (205 comments) of the surveys had comments requesting additional service, either through more increased service frequency, longer hours of service, or more weekend service. About 11 percent of the surveys had suggestions for changing routes, extending service to unserved areas, or adding stops. A typical comment read, "Please extend hours to at least 9 p.m. and make buses come every half-hour instead of every hour." Some comments were specific requests for more service on a particular route or a particular time of day. In particular, many comments requested that the transit system add service on Route No. 9 by operating it until 10:00 p.m. on weekdays and adding service on Sundays.

Table 19

SUMMARY OF COMMENTS AND SUGGESTIONS PROVIDED: 2008 WAUKESHA METRO TRANSIT PASSENGER SURVEY

Comments and Suggestions	Number of Responses	Percent of Total Surveys[a]
Extend Service Hours or Increase Service Frequency		
Improve Frequency of Service	83	8.4
Add More Evening Service	78	7.9
Add More Sunday Service	75	7.6
Extend Saturday Service	26	2.6
Add Early Morning Service	12	1.2
Add Holiday Service	7	0.7
Add Express Bus Service	5	0.5
Subtotal	205[a]	20.7
Change Routes or Service Area		
General Comments on Routes	71	7.2
Increase Service Area	30	3.0
Add Stops	16	1.6
Subtotal	109[a]	10.9
Improvements to Vehicles and Facilities		
Improve Stops	16	1.6
Improve Condition of Buses	13	1.3
Need Larger Capacity Bus	10	1.0
Subtotal	39[a]	3.9
Other Service Improvements		
Improve Driver Friendliness	45	4.5
On-Time Performance	37	3.7
Reduce or Change Fares	29	2.9
Improve Coordination Between Routes	12	1.2
Subtotal	92[a]	9.3
No Improvements Needed		
Service is Good	59	5.9
Drivers Are Friendly	8	0.8
Subtotal	60[a]	6.1
Total Number of Surveys Without Comments	505	50.9
Total Number of Surveys With Comments[a]	487	49.1
Total Number of Survey Forms Returned	992	100.0

[a]Passengers making comments often made more than one comment. Therefore the subtotals and the total number of comments do not equal the sum of all the comments made in each category.

Source: SEWRPC.

- About 7 percent (71 comments) of the surveys had a variety of general comments regarding the routes of the transit system. Many of these comments included suggestions for playing music on the bus or installing television monitors with public service programming.

- About 4 percent (39 comments) of the surveys suggested improvements to the vehicles or fixed facilities of the transit system, such as cleaning the seats of the buses, or adding concrete pads or shelters at bus stops.

- Transit riders also had other suggestions for improving the transit service that were not related to service expansion or more frequent buses. About 9 percent of the surveys had comments expressing concerns about rude or unfriendly drivers, on-time performance, fare payment options, and coordination between routes.

Some of the comments pertaining to extending transit service hours, increasing service frequency, and making changes to bus routes will be addressed in the next chapter, which will propose service improvements. The specific comments and suggestions regarding transit system equipment and facilities, bus operators, and customer service are beyond the scope of this study. Waukesha Metro Transit staff was provided a complete set of all the comments made on the surveys so that they can decide how best to respond to these day-to-day operating concerns.

FINDINGS OF THE EVALUATION OF WAUKESHA METRO TRANSIT SERVICE

The findings of the systemwide performance evaluations, route-by-route assessments, and rider survey can be summarized into several key concerns regarding both deficiencies in the Waukesha Metro Transit System, and unmet transit service needs for City of Waukesha residents. The deficiencies and unmet needs are identified below.

Rapid Increase in Operating Expenses per Unit of Service Provided
In 2008, the transit system's operating expense per revenue vehicle hour was about 4 percent higher than the Wisconsin peer average, but about the same as the national peer average. Even though the operating expense per revenue vehicle mile and per hour are reasonable when compared to the national peer group, both of those indicators increased by over 8 percent per year between 2004 and 2008. An examination into the causes of this rapid increase revealed that a substantial share of that rapid increase is due to increases in the costs of fringe benefits for system personnel. Fringe benefits in 2008 accounted for over 36 percent of all operating costs for Waukesha Metro Transit, but only 29 percent of operating costs for the Wisconsin peer group and 24 percent for the national peer group.

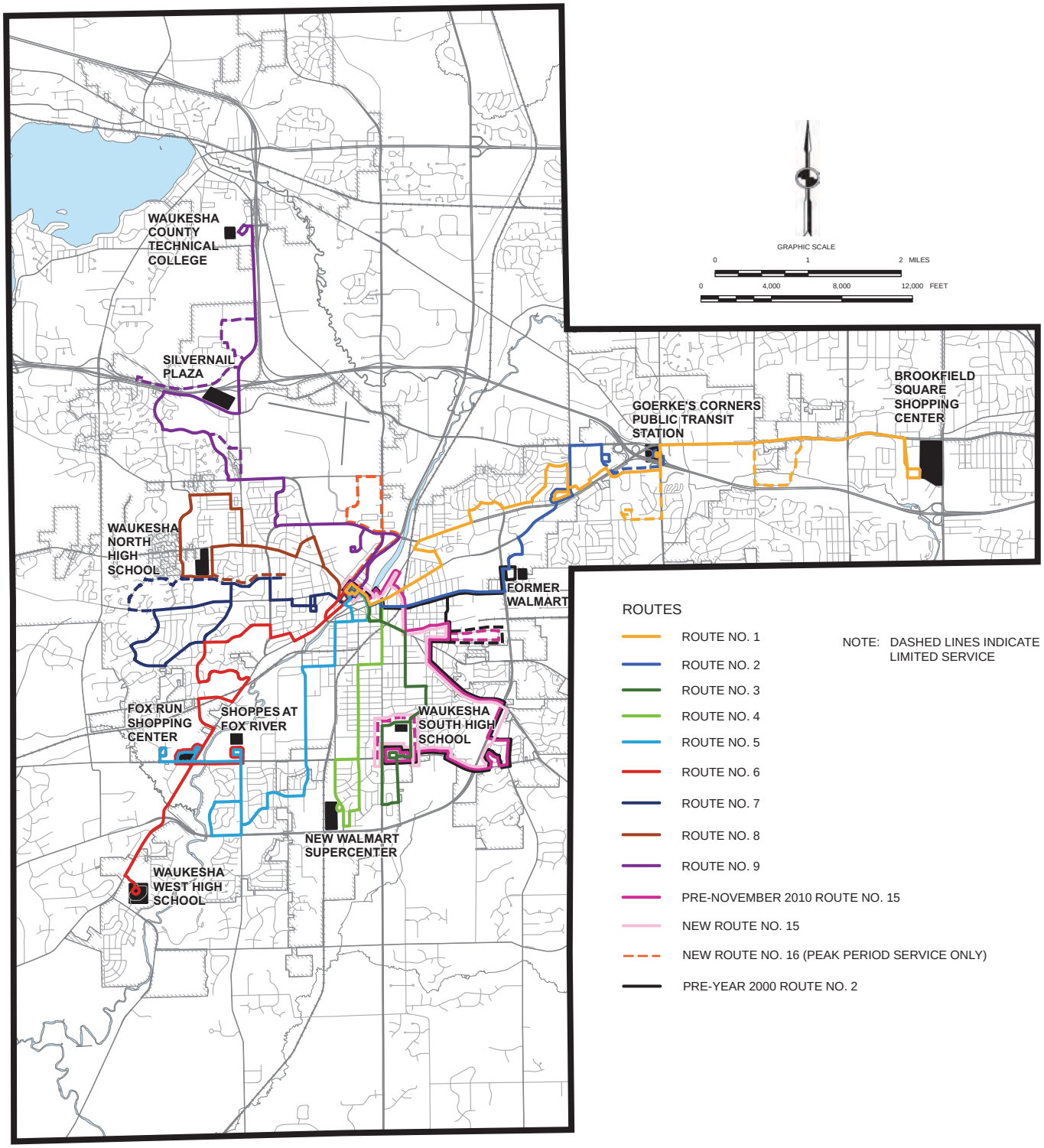
Service Effectiveness and Cost Effectiveness of Some Routes and Service Periods
Certain routes demonstrate low service effectiveness and cost effectiveness, especially during certain service periods. By reducing or combining service on these routes, Waukesha Metro Transit can improve efficiency and have more resources to dedicate to other routes and service periods that may need additional service:

- Route No. 1 has the highest service levels and ridership of all the transit system routes. However, it fared poorly in terms of its service effectiveness and cost effectiveness on weekday evenings, Saturdays, and Sundays. Additional analyses should be undertaken to identify if service changes should be considered such as reducing the frequency of service provided over the route during those time periods. The analyses should address the potential impacts of such changes on the convenience of passenger transfers resulting from some Route No. 1 buses not meeting the pulse schedule of buses from all the other routes at the Downtown Transit Center. Consequently, some passengers transferring to or from Route No. 1 would need to wait a half-hour to change routes.

- Route No. 15 had the poorest performance measures of all routes for every indicator for both weekday and Saturday service. The City created Route No. 15 in August 2000 in conjunction with modifications to Route No. 2 that were funded under a Wisconsin Employment Transportation Assistance Program (WETAP) grant awarded to the City of Waukesha. Route No. 15 is composed largely of segments that were formerly part of Route No. 2 (see Map 12). Prior to the creation of Route No. 15, Route No. 2 served the Minooka Park subdivision and the K-Mart store on the southeast side of the City. Under the WETAP grant, Route No. 2 was extended to the northeast side of the City to serve the Wal-Mart store on STH 164 and Coral Drive, the employers in the commercial area along Moreland Boulevard and Bluemound Road, and the Goerkes Corners Park-Ride lot. Route No. 15 was created to replace service formerly provided by Route No. 2 on the southeast side of the City. The route performance evaluation in this chapter indicated that Route No. 2 had good performance measures. As shown on Map 11, much of the ridership on Route No. 2 is generated in the area around STH 164 and Coral Drive, including the former Wal-Mart store. That store closed in November of 2010 when the Wal-Mart Supercenter at STH 59 and West Avenue opened. The STH 164 and Coral Drive area will still need transit service because it is now the location of a Goodwill Industries store and the office of Community Care, which provides

Map 12

WAUKESHA METRO TRANSIT ROUTES AND ACTIVITY CENTERS DISCUSSED IN THE "KEY CONCERNS" SECTION



Source: Waukesha Metro Transit and SEWRPC.

services to elderly and disabled individuals. Waukesha Metro Transit made some minor adjustments to both Route No. 2 and Route No. 15 in November 2010. Route No. 2 no longer enters the parking lot at the former Wal-Mart location, and Route No. 15 now traverses Fleetfoot Drive between Racine Avenue and Sunset Drive (see Map 12). Additional studies of boarding and alighting passenger activity should be undertaken to identify whether changes should be considered for the routes such as discontinuing Route No. 15, but retaining service to both the STH 164 and Coral Drive area, and the Minooka Park subdivision.

- Route No. 6 had measures that were worse than the acceptable performance levels for nearly all the weekday performance indicators. The low measures are mostly caused by the unproductive segments at the end of the route. As shown on Map 11, south of Sunset Drive, Route No. 6 traverses a long section of CTY X to Waukesha West High School without any stops. On the March 2010 survey day, seven passengers alighted at West High School in the morning, and five boarded in the afternoon, but the route served the high school throughout the midday period. Further analysis of boarding and alighting passenger activity at the high school should be conducted to support analysis of whether the extension of bus service to West High School is warranted at all times or only during certain periods.

- Route No. 5/6 had performance measures that were worse than the acceptable level for weekday evening and Sunday service, although it performed acceptably on Saturdays. Further study is needed of changes that might improve the route's performance on weeknights and Sundays.

Needs for More Frequent Service or Longer Service Hours on Certain Routes

Certain routes demonstrate very high service effectiveness and cost effectiveness. By increasing service on those routes, Waukesha Metro Transit can better serve the people that are most dependent on the transit system:

- Route No. 4 had the highest passengers per revenue vehicle hour and the best performance measures in the route performance evaluation. This route serves several low-income neighborhoods. After the opening of the Wal-Mart Supercenter at STH 59 and West Avenue in November 2010, ridership on the route could increase substantially. To prevent overcrowding on the route during the midday period, consideration should be given to providing half-hour headways during the midday period. Consideration should also be given to providing later service hours at night on Route No. 4.

- Route No. 9 also had good performance measures on weekdays and weekday evenings, although it did not perform as well on Saturdays. The route serves the Silvernail Plaza commercial area, where employees in the retail and service sector have shifts that can end at 9:00 p.m. or later. Currently, the last weekday bus on Route No. 9 departs the Waukesha County Technical College (WCTC) at 8:50 p.m., passing by Silvernail Plaza at 8:55 p.m. Many of the rider survey comments requested that Sunday service on Route No. 9 be restored. Currently, most of the grocery stores that are directly served by a transit route on Sundays are located on Route No. 5/6, which serves the Sentry grocery store at the Fox Run Shopping Center and the Pick N' Save grocery store at the Shoppes at Fox River, both on the southwest side of the City. Consideration should be given to providing longer service hours on weeknights and to restoring Sunday service to serve Silvernail Plaza. Consideration should also be given to modifying service on this route so that not all bus trips serve WCTC on Saturdays and Sundays when student ridership is lightest.

Under-utilization of Transit Vehicle Capacity on Certain Routes

Public perception by some residents in the City of Waukesha is that Waukesha Metro Transit buses do not carry enough passengers to justify using 35-foot buses that have 30-31 seats. Ideally, the size of the transit vehicle used should be determined by the highest passenger loads carried. This typically occurs only once or twice a day. The evaluation in this chapter determined that for some routes, 35-foot buses did, in fact, provide more capacity than could be justified by the highest passenger loads observed on the routes, as specified by Objective No. 3, standard No. 2 in Chapter III of this report. The buses on Route Nos. 3, 7, and 15 were never more than half-full during the course of weekday service. Other routes, such as Route Nos. 2 and 6, were more than half-full at times but could be operated with smaller buses having as little as 20 seats, and would still have acceptable maximum load factors. For those routes, periods, and areas where passenger loads are lowest, consideration should be given to the following strategies: restructure bus routes to possibly combine routes and eliminate unproductive areas;

reduce service hours or service frequency; purchase smaller buses with fewer seats; and replace fixed-route/fixed-schedule service with demand-responsive service such as route-deviation, dial-a-ride bus, or shared-ride taxicab services.

Issues other than passenger loads should be examined when considering whether smaller vehicles should be added to the transit system's bus fleet. For a system the size of Waukesha Metro Transit, the addition of another vehicle type to the fleet may result in: the need to prepare multiple procurement documents for purchasing buses; additional training for bus operators and mechanics; expanding the on-site inventory of spare parts and the space needed for parts storage to accommodate the different manufacturers and bus models[3]; and the potential for reduced flexibility in assigning vehicles to system routes. These issues can reduce cost efficiencies that may be present under operation with a standardized vehicle fleet. At the same time, a number of transit systems consider it appropriate public policy to operate with a mix of vehicle sizes in response to varying ridership markets. These issues will be discussed further in the next chapter when possible changes to the transit system bus fleet are identified.

Reduced Student Ridership

Many of the routes of the Waukesha Metro Transit system were designed to serve middle and high school students. However, fewer middle and high school students are using Waukesha Metro Transit than in the past. A significant number of students who reside between one and two miles from school now use the yellow school bus service through the "pay-to-ride" program. This program allows students who are not eligible for the school district's yellow school bus service to use the service if they pay a fee of $120 per semester to the school bus operator. As a result of the decreased use of Waukesha Metro Transit by students under this policy, the transit system has eliminated special school-day-only bus trips that were targeted toward students living between one and two miles from school. Any service changes that are proposed in the next chapter will take into consideration the loss of student passengers on the Waukesha Metro Transit system.

SUMMARY

This chapter evaluated the performance of Waukesha Metro Transit based upon specific performance measures identified in the transit system objectives and standards in Chapter III. The evaluation included assessments of performance on a systemwide basis and on a route-by-route basis. Some of the most important findings of the transit system evaluation are listed below:

1. The existing transit system provides excellent coverage of the existing residential and employment concentrations inside the City of Waukesha. Outside the City, the transit system does serve some densely populated residential areas in the Town of Brookfield, and provides excellent service to employment concentrations in the City of Brookfield. However, areas in the City of Pewaukee and the Village of Pewaukee that contain transit-supportive residential and employment density, or that have major activity centers, are unserved. Transit service to those areas could be provided if Waukesha County or the City or Village of Pewaukee agreed to pay for the local share of the operating costs. Waukesha County did previously contract with Waukesha Metro Transit to provide peak-period route-deviation service to business parks along STH 164 and CTH F north of IH 94 in the City of Pewaukee, but decided to discontinue the service in 2006 due to low ridership levels.

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[3]*During its last bus procurement in 2007, Waukesha Metro Transit staff reviewed the costs of purchasing a 30 foot-long bus instead of a 35 foot-long bus. Staff determined that the smaller bus would cost about $13,000 less than a 35 foot-long bus but had different components which would increase the parts inventory and storage area needs and possibly impact operating costs. The specific components included a different rear axle and suspension, brake drums, wheel hubs, and smaller tires and fuel tank. The cost of the spare parts for these components was estimated to be at least equal to the price difference between the 30 and 35 foot-long buses.*

2. The transit system is about average when compared to similar transit systems from around the country and Wisconsin. Waukesha Metro Transit's performance level was within 1 percent of the national peer group average in six out of 12 measures, and performed better than the Wisconsin average in four of 12 performance measures and worse than the Wisconsin average in eight out of 12 measures. In general, Waukesha Metro Transit provides a high level of service for its service area population size, resulting in lower passengers per vehicle-mile and per vehicle-hour of service. The performance of Waukesha Metro Transit can be partially attributed to its service area being within a large (over 1,000,000 population) urbanized area. The total travel generated by the residents and activity centers in the Waukesha Metro Transit service area includes trips made to and from others parts of the Milwaukee urbanized area which the transit system is not able to serve. This limitation affects both the effectiveness and efficiency measures observed for the system.

3. The transit system's operating expense per revenue vehicle mile and operating expense per revenue vehicle hour increased by over 8 percent per year between 2004 and 2008. An examination into the causes of this rapid increase revealed that a substantial share of that rapid increase is due to the high costs of fringe benefits, which can be attributed to increases in the costs of health insurance for transit system employees. Fringe benefits in 2008 accounted for over 36 percent of all operating costs for Waukesha Metro Transit, but only 29 percent of operating costs for the Wisconsin peer group and 24 percent for the national peer group.

4. Route Nos. 2, 3, 4, 5, 8, and 9 have weekday performance measures that generally exceed the acceptable performance levels. Based solely upon these measures, these routes could continue to be operated without change. The remaining four routes, Route Nos. 1, 6, 7, and 15, have at least one performance measure that does not meet performance targets. These routes merit further study to determine if changes to improve performance should be considered.

5. On Saturdays, Route Nos. 2, 3, 4, 7, and 8 meet all performance targets, and Route No. 5/6 meets most performance targets. Route No. 1 has mixed performance, meeting the transit system targets for service effectiveness but having low cost-effectiveness levels. Route No. 15 continues to have performance levels that are problematic along with Route No. 9, which had acceptable performance levels on weekdays. On Sundays, Route Nos. 4 and 7/8 meet all performance targets and Route No. 2 meets all targets except farebox recovery. The performance of Route Nos. 1 and 5/6 is mixed with cost effectiveness measures below target performance levels.

6. On weekday evenings (6:00 p.m. – 10:00 p.m.), Route Nos. 2, 4, 8, and 9 continue to demonstrate acceptable performance levels. The remaining routes (Route Nos. 1, 3, 5/6, and 7) did not meet any of the performance levels. Potential changes to improve their performance during the evenings should be considered.

7. The highest passenger activity occurs on the portions of routes that pass through the Downtown Transit Center or that serve major commercial areas or multi-family housing complexes. The presence of a high school or middle school along a route does not guarantee that part of the route will be productive. Many of the routes were designed to serve middle and high schools, but fewer middle and high school students are using Waukesha Metro Transit than in the past. Several routes with below average performance levels in the route evaluation are comprised of long segments with low passenger productivity, such as Route No. 1, which carries the most passengers but has the most segments with low productivity. Route Nos. 6 and 15 also have long segments with low passenger productivity.

8. No routes had maximum load factors (adjusted upward by 20 percent more than the sampled data) that exceeded the standard of 1.25 passengers per seat during peak periods and 1.00 passengers per seat during off-peak periods. Three routes had adjusted maximum load factors that did not meet the standard calling for one-half of the seats on the bus to be occupied at some point during weekday service. The buses on Route Nos. 3, 7, and 15 were never more than half-full. Route Nos. 2 and 6 could also be operated with buses having as few as 20 seats and would still meet the acceptable levels. Issues other than passenger loads should be examined when considering whether smaller vehicles should be added to the transit system's bus fleet.

9. About 6 percent of the surveys returned from the April 2008 survey of Waukesha Metro Transit riders included comments stating that the transit service needed no improvements. About 21 percent of the surveys had comments requesting additional service, either through increased frequency of service, longer hours of service, or more weekend service. About 4 percent of the surveys included suggestions that related to the vehicles or fixed facilities of the transit system. Many specific comments and suggestions were submitted on the survey forms that are beyond the scope of the transit plan. However, the comments pertaining to extending transit service hours, increasing service frequency, and making changes to bus routes will be addressed in the service improvements proposed in the next chapter.

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Chapter V

ALTERNATIVE TRANSIT SERVICE CHANGES

INTRODUCTION

The transit system evaluation documented in Chapter IV concluded that for the most part, the existing transit system routes were operating with acceptable performance levels and the level of service provided by the system was appropriate for its service area population. This chapter describes the alternative transit service changes developed for the Waukesha Metro Transit system to address the need for improving system efficiency and effectiveness and for expanding service into presently unserved or underserved portions of the City.

The remainder of this chapter consists of sections documenting transit service alternatives and the final recommended plan for the period 2013-2017. The first section discusses the feasibility of changing the way public transit service is delivered in the City of Waukesha from fixed-route service using medium or large buses to demand-responsive service using smaller vehicles. The next section discusses routing and service changes to the City's bus routes proposed under three alternatives. The third section presents the final recommended plan for the period 2013-2017. The chapter concludes with a brief summary.

FEASIBILITY OF CHANGING TO A DEMAND-RESPONSIVE DIAL-A-RIDE SYSTEM

From time to time since the City of Waukesha established a public transit system, there have been discussions on whether fixed-route bus service is the most appropriate type of service for the City of Waukesha and environs. It has been suggested that consideration be given to providing transit service in Waukesha using taxis or a public demand-responsive, dial-a-ride transit (DART) service instead of bus service, or to at least incorporate some level of DART service into the existing transit system to replace bus service where ridership was lowest including during evenings, on weekends, or on selected routes serving outlying areas producing low ridership. In response, Commission staff reviewed the feasibility of providing DART service in the Waukesha Metro Transit service area.

DART service is typically provided by public transit systems using automobiles and accessible vans or small buses that transport passengers between their specific origins and destinations. This could include a shared-ride taxi type of operation. DART vehicles do not operate over fixed routes or on fixed schedules except to satisfy special demand. Typically, the vehicle would pick up several passengers at different locations before taking them to their respective destinations. The Waukesha Metro currently operates DART service in the form of its Metrolift service for disabled individuals which could be the basis for providing DART service to the general public.

Analysis of the population density within the service area for Waukesha Metro Transit suggests that it may not be appropriate to entirely replace the current fixed-route bus service with a DART service. Research has suggested that transit agencies should only consider small urban areas with densities of less than 2,000 persons per square mile as potential candidates for entirely demand-responsive public transportation services[1]. The total 2010 population within the existing Waukesha Metro Transit service area of about 22.5 square miles was about 65,500 persons, or about 2,900 persons per square mile for the entire service area. As shown on Map 13, population densities within the central or core portions of the Waukesha Metro Transit service area in 2010 generally exceeded 3,000 persons per square mile. DART service could still be appropriate as a replacement for bus service in areas or during periods with low transit ridership.

The costs of providing DART service also need to be considered. Generally, DART service is more cost effective (cost per passenger and total cost) than fixed-route bus service where demand for transit is low. Urban fixed-route bus service has a higher cost per vehicle mile than taxi service due, in part, to higher wages for drivers and other personnel, and higher capital and maintenance costs for buses. However, bus service can have a lower cost per passenger and lower total costs when there is high transit ridership as bus systems operate larger vehicles with more passenger carrying capacity than taxis, and bus service is designed to carry multiple trips. Serving a higher transit ridership with a taxi system will require more taxi vehicles (and drivers) to serve that demand than with a bus system. Taxi systems tend to have higher costs per passenger than bus systems because taxi systems generally provide an individual ride. Thus, taxi system total costs and costs per passenger will be lower than a bus system only if transit ridership is low. Table 20 shows the operating costs per passenger for the Waukesha Metro Transit System and shared-ride taxi systems in the Southeastern Wisconsin Region in 2010. The shared-ride taxi systems had total operating costs per passenger ranging from $6.68 to $22.78 per passenger in 2010 compared with $6.80 per passenger for Waukesha Metro Transit. Of the six taxi systems shown in the table, only the City of West Bend taxi has a service area size that is comparable to that of the Waukesha Metro Transit. The operating costs per passenger for the West Bend taxi system in 2010 was about 35 percent higher than for Waukesha Metro Transit. Replacing bus service with taxi service within the existing Waukesha Metro Transit service area may not lower the total costs of operation or improve the overall efficiency of the City transit system.

Analysis of DART Service for Preliminary 2012 Operating Budget

In light of the above discussion, Commission staff performed an analysis of replacing the fixed-route bus service provided on evenings and Sundays with dial-a-ride service for use by City staff in preparing the 2012 operating budget for the transit system. For this analysis it was assumed that evening and Sunday bus service provided by Waukesha Metro Transit over all routes except Route No. 1 (Waukesha/Brookfield) and Route No. 4 (Grand) would be replaced with demand-responsive DART service. The DART service would serve all trips made between locations within the three-quarters mile of Route Nos. 2, 3, 5/6, 7, 8, 7/8, 9, and 15. Route No. 1 would continue to operate with existing service levels and the service frequency on Route No. 4, currently every 60 minutes, would be increased to every 30 minutes. Passengers traveling between locations within three-quarters mile of Route Nos. 1 and 4 would use these two bus routes for those trips. Transit riders traveling between locations in the dial-a-ride service area and the areas served by Route Nos. 1 and 4 would transfer between the two services at the Downtown Transit Center or another bus stop on Route Nos. 1 and 4. Fixed-route bus service during weekday and Saturday daytime periods would not be changed from that provided in 2011.

DART service would be provided as curb-to-curb service through an expansion of the Metrolift paratransit service. Trip reservations would be accommodated on a next-day basis as done with current Metrolift service. Same day requests would be accommodated if demand and vehicle schedules allow for it. DART passengers traveling to locations served by Route Nos. 1 and 4 (including Wal-Mart and in the Bluemound Road corridor) would be required to transfer to/from Route Nos. 1 or 4 at the downtown transit center or another bus stop. The adult fares charged for DART service would be the same as those charged for Metrolift service with reduced fares charged for other population subgroups. The proposed DART fares per one-way ride would be as follows: $3.75 for adults, $2.50 for students (ages 5 through 18) and no charge for children age 4 and under with a paid fare.

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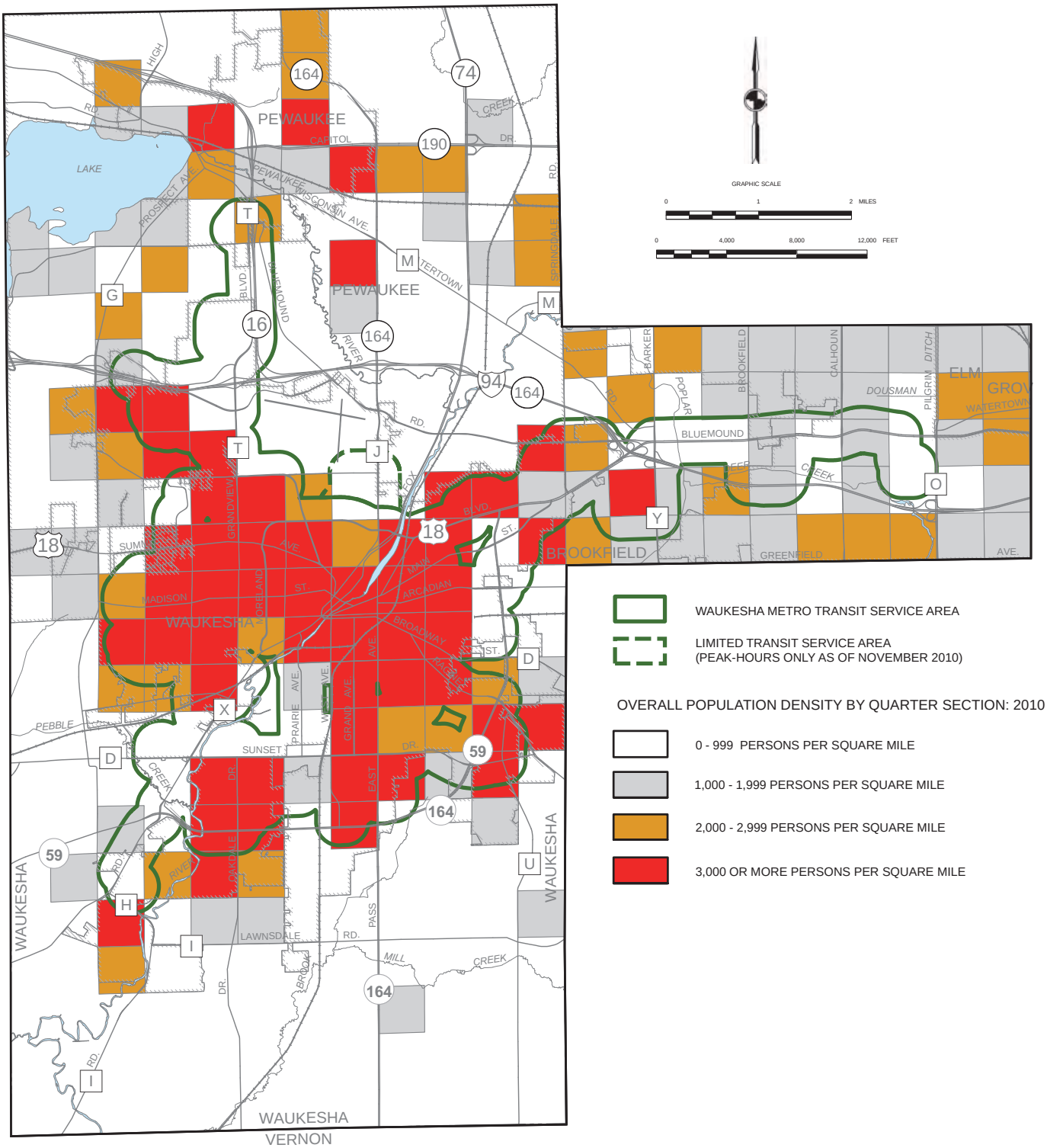
[1]*See TCRP Report No. 140, A Guide for Planning and Operating Flexible Public Transportation Services, pp. 27 and 30.*

Map 13

2010 POPULATION DENSITY WITHIN THE EXISTING WAUKESHA METRO TRANSIT SYSTEM SERVICE AREA



Source: SEWRPC.

Table 20

COMPARISON OF OPERATING COSTS PER PASSENGER FOR THE WAUKESHA METRO TRANSIT SYSTEM AND SHARED-RIDE TAXI SYSTEMS IN THE REGION: 2010 ESTIMATED

Transit System	2010 Estimated		
	Total Passengers[a]	Total Operating Expenses	Total Operating Expense Per Passenger
City of Waukesha Metro Transit	736,800	$5,007,300	$ 6.80
Shared-ride Taxi Systems in Region			
Hartford Taxi	20,600	$ 226,600	$ 11.00
Ozaukee County Taxi Service	74,600	1,348,000	18.07
Port Washington Transport Taxi	19,200	268,900	14.01
Washington County Taxi Service	84,000	1,913,200	22.78
West Bend Taxi	120,400	1,108,800	9.21
Whitewater Taxi System	29,700	198,500	6.68

[a]*Reflects the total number of passengers boarding the transit vehicles operated by each transit system during the year. For the fixed-route bus service provided by Waukesha Metro Transit, the figure includes passengers transfering between bus routes.*

Source: SEWRPC.

The DART service would be directly operated by Waukesha Metro Transit using City-owned vehicles and personnel employed by the current private management firm. Contracting out the dial-a-ride service was not considered to be feasible as contracting out services to any entity other than the City's current private management firm is not be permitted under the existing Federally-required, Section 5333(b), labor protection agreement with the union representing Waukesha Metro bus and paratransit operators. A total of nine vehicles would be needed to provide the expanded Metrolift service for the general public including the four existing buses used at present. Five additional vehicles would need to be acquired.

The impacts of replacing bus service with DART service as described above are shown in the forecasts for the 2012 budget presented in Tables 21 and 22. The forecasts assume no change in Federal transit funding from the 2011 level; a 10 percent reduction in State transit operating assistance as provided in the 2011-2013 State Budget; and no increase in the property tax levy for Waukesha Metro Transit over the 2011 levy. Under these assumptions, the existing transit system, if continued at 2011 service levels in 2012, would face a funding shortfall of about $333,700 in 2012. Replacing evening and Sunday bus service on all routes except Route Nos. 1 and 4 with dial-a-ride service would:

- Eliminate about 5,900 bus revenue vehicle miles of service from the transit system in 2012 while adding about 16,900 dial-a-ride vehicle miles for a net increase in service of about 11,000 revenue vehicle miles annually. (Dial-a-ride will require operation of up to nine vehicles compared to five to six buses for the existing fixed-route service. The dial-a-ride vehicle needs assume the proposed additional service would carry about three passengers per vehicle hour based on observed values for public shared ride taxi systems in southeastern Wisconsin.)

- Increase the total operating costs for the transit system in 2012 by about $906,800. (The savings of about $486,300 from reducing bus service would more than offset the cost of about $1,393,100 for providing dial-a-ride service. The dial-a-ride costs reflect the use of existing transit system personnel and the need to operate more dial-a-ride vehicles than buses.)

- Decrease total system ridership by about 17,000 revenue passengers annually. (Bus ridership would be reduced by about 64,500 revenue passengers while the additional dial-a-ride service would add about 47,500 revenue passengers.) However, passenger revenue would increase by about $6,100 per year due to the higher fares charged for dial-a-ride service.

Table 21

TRANSIT SERVICE AND RIDERSHIP FOR EXISTING WAUKESHA METRO SYSTEM: 2010, 2011, AND 2012

Characteristic	2010 Estimated	2011 Estimated	2012 Forecast[a]			
			Existing System	Increment for Eliminating Bus Services	Increment for Adding Dial-a-Ride Service	Total System with Dial-a-Ride Service
Fixed-Route Bus Service						
Service						
Revenue Vehicle Hours	51,200	52,600	52,600	-5,900	16,900	63,600
Revenue Vehicle Miles	675,400	697,900	697,900	-78,300	224,700	844,300
Ridership						
Revenue Passengers	587,500	592,200	592,200	-64,500	47,100	574,800
Boarding Passengers	716,60	725,500	725,500	-79,000	47,100	693,600
Paratransit Service						
Service						
Revenue Vehicle-Hours	9,300	9,900	9,900	- -	- -	9,900
Revenue Vehicle-Miles	91,800	100,400	100,400	- -	- -	100,400
Ridership						
Revenue Passengers	18,900	18,500	18,500	- -	- -	18,500
Boarding Passengers	20,200	19,600	19,600	- -	- -	19,600
Total System						
Service						
Revenue Vehicle-Hours	60,500	62,500	62,500	-5,900	16,900	73,500
Revenue Vehicle-Miles	757,200	798,300	798,300	-78,300	224,700	944,700
Ridership						
Revenue Passengers	606,400	610,600	610,600	-64,500	47,100	593,200
Boarding Passengers	736,800	745,100	745,100	-79,000	47,100	713,200

[a]*The forecasts of ridership and service levels for the existing transit system for the year 2012 assume no changes in service or fares from 2011.*

Source: SEWRPC.

- Increase the total annual public funding and the local funding shortfall for the transit system in 2012 by about $900,700 to about $1,234,400.

Commission staff concluded that service reductions and/or increases in the passenger fares would be needed in 2012 to address the funding shortfall resulting from replacing bus service with DART service on evenings and Sundays. One reason why replacing bus service with DART service would not result in any cost savings for the transit system is the clause in the existing Federally-required, Section 5333(b), labor protection agreement with the bus operators union which does not permit services to be contracted out to any entity other than the existing private management firm for the system. Consequently, the proposed DART service would have about the same operating cost per vehicle hour as the existing bus service. Other public transit systems have had success reducing system operating costs by using private transit or taxicab companies to provide service during evenings and other periods with low bus ridership. Such companies typically have lower wage rates and operating costs. The Aging and Disability Resource Center (ADRC) of Waukesha County currently uses the private taxicab companies serving the City of Waukesha to serve trips made by certain elderly and ambulatory disabled individuals under its Shared Fare Taxi Program. The cost to participating individuals under the County program is $3 per trip for trips with a total fare less than $12. Because the user also pays the portion of any fare that is above $12, transit system officials do not consider the program to offer low-cost transit service. If the City of Waukesha has an interest in using a private vendor to provide service during low ridership periods, it will first need to modify the existing Federal labor protection agreement with bus operators to remove any language that restricts contracting out of transit services.

Table 22

OPERATING COSTS, REVENUES AND PUBLIC INVESTMENT FOR EXISTING WAUKESHA METRO SYSTEM: 2010, 2011, AND 2012

Characteristic	2010 Estimated	2011 Estimated	2012 Forecast[a]			
			Existing System	Increment for Eliminating Bus Services	Increment for Adding Dial-a-Ride Service	Total System with Dial-a-Ride Service
Costs, Revenues, and Public Assistance						
Operating Expenses						
Total	$5,007,300	$5,050,800	$5,151,900	$-486,300	$1,393,100	$6,058,700
Per Revenue Vehicle Hour	$ 82.77	$ 80.81	$ 82.43	$ 82.43	$ 82.43	$ 82.43
Operating Revenues						
Total	$ 822,600	$ 864,200	$ 864,200	$ -91,300	$ 96,600	$ 869,500
Per Passenger	$ 1.36	$ 1.42	$ 1.42	$ 1.42	$ 2.05	$ 1.47
Percent of Expenses Recovered through Revenues	16.4	17.1	16.8	18.8	6.9	14.4
Required Public Assistance	$4,184,700	$4,186,600	$4,287,700	$-395,000	$1,296,500	$5,189,200
Sources of Public Assistance Funds						
Federal Funds	$ 591,200	$ 513,900	$ 513,900	- -	- -	$ 513,900
State Funds	$2,360,700	$2,325,900	$2,093,300	- -	- -	$2,093,300
Local Funds						
City of Waukesha	$1,142,900	$1,256,000	$1,256,000	- -	- -	$1,256,000
Waukesha County	$ 83,800	$ 85,000	$ 85,000	- -	- -	$ 85,000
Other Communities	$ 6,100	$ 5,800	$ 5,800	- -	- -	$ 5,800
Subtotal Local Funds	$1,232,800	$1,346,800	$1,346,800	- -	- -	$1,346,800
Total	$4,184,700	$4,186,600	$3,954,000	- -	- -	$3,954,000
Local Funding Shortfall	- -	- -	$ 333,700	- -	- -	$1,235,200

[a]*The forecasts of ridership, service levels, and financial data for the transit system for the year 2012 were prepared by Commission staff based on the following assumptions:*

1. *Systemwide average operating costs per vehicle hour for the bus system were assumed to increase by about 2 percent over 2011.*
2. *The base adult cash fare for the bus system would remain at the current level of $2.00 per trip, and the Metrolift fare at $3.75 per trip, throughout the period.*
3. *The Federal Section 5307/5340 funds available to the City of Waukesha for capital needs associated with transit system operations would remain at 2011 levels.*
4. *The State 85.20 program transit operating assistance funds used for the bus system will decrease by 10 percent.*
5. *Property taxes used for the bus and paratransit services provided by Waukesha Metro Transit will be limited to the amount levied for transit services in 2011.*

Source: SEWRPC.

SERVICE CHANGE ALTERNATIVES

The transit service changes and improvements developed by Commission staff were organized into three alternatives:

- Alternative 1, under which the existing 2012 transit system would be retained without any changes over the planning period;
- Alternative 2, which proposes modest expansion of the transit system to address unmet service needs while eliminating unproductive service to increase service efficiency. Alternative 2 represents a desirable service alternative; and

- Alternative 3, which proposes a "fiscally constrained alternative." The alternative reflects the likelihood that the transit system will face a combination of cuts in Federal and State operating funds and limits on the growth of local funding over the planning period which will result in the need for significant service reductions.

Operating and capital budgets are presented under each alternative. The routing and service changes proposed under Alternatives 2 and 3 are identified in Table 23.

Alternative 1 - Existing 2012 Transit Service
Making no changes to the existing 2012 transit system was identified as a reasonable option by transit system staff as the existing system received a favorable review in the management performance audit of the system conducted in 2011 by the Wisconsin Department of Transportation.[2] Map 14 displays the current 2012 transit system including a new limited service peak hour route, Route No. 16 that was initiated in November 2010 after work on the transit study had progressed through the performance evaluation. The total 2010 population served by the existing transit system was estimated to be about 65,100 persons.

Forecast Ridership and Operating Costs
Commission staff developed forecasts of ridership, operating costs, operating revenues, and transit assistance needs of the transit system under Alternative 1. Tables 24 through 26 summarize the operating and service characteristics and forecast ridership and costs for the existing system over the planning period. The assumptions used to prepare the forecasts are summarized in Figure 4. The existing transit system would be expected to have the following performance measures and costs:

- The system would be expected to operate about 524,200 revenue vehicle miles and about 41,200 revenue vehicle hours of fixed-route bus service annually over the planning period.
- By 2017, both the total operating costs and total public funding for the transit system would be expected to increase by about 10 percent over the amounts in the 2012 operating budget to about $5.64 million and $4.65 million, respectively.
- The City's share of the total public funding for the system would increase from about $1.27 million under the 2012 budget to $1.69 million in 2017, or by about 33 percent.

The capital costs of equipment needed under Alternative 1 to maintain the existing transit system are presented in a later section of the chapter.

Alternative 2 - Desirable Service
Alternative 2 identifies potential routing and service changes intended to largely maintain existing system routes and services, as well as provide for some service expansion. The alternative also proposes eliminating some unproductive services. A goal of the proposed changes is to improve both the quality and extent of the services provided along with the overall efficiency of the transit system. The savings achieved by eliminating unproductive and poorly performing services can be used to fund new and improved services. While eliminating poorly performing service, no limits on City funding for the transit system over the planning period were assumed under Alternative 2.

Routing Changes:
Map 15 displays the bus routes as they are proposed to be operated under Alternative 2 on weekdays. Table 27 summarizes the operating and service characteristics of the transit system routes under this alternative. The changes to route alignments proposed under this alternative include:

[2]*See Wisconsin Department of Transportation, Waukesha Metro Transit System Management Performance Review, Final Report; SRF Consulting Group with Bourne Transit Consulting and McCollom Management Consulting, Inc.; March 2012.*

Table 23

SUMMARY OF PROPOSED ROUTING AND SERVICE CHANGES UNDER ALTERNATIVES 2 AND 3

Bus Route	Alternative 2		Alternative 3	
	Alignment Changes	Impact on Service	Routing Changes	Service Changes
1	• Restructure route between downtown terminal and the Westbrook Shopping Center	• Changes would reduce travel times between downtown terminal and the Brookfield Square Shopping Center	• Restructure route between downtown terminal and the Westbrook Shopping Center	• Changes would reduce travel times between downtown terminal and the Brookfield Square Shopping Center
2	• Restructure route between East Ave. and Main St. and the Westbrook Shopping Center	• Changes would allow route to serve proposed new Woodman's Market, Les Paul Pkwy., and Main St. • Changes would replace service currently provided by Route No. 1 over Greenway Ter., Stardust Dr., Avalon Dr. and Ruben Dr.	• Restructure route between East Ave. and Main St. and the Westbrook Shopping Center	• Changes would allow route to serve proposed new Woodman's Market, Les Paul Pkwy., and Main St. • Changes would replace service currently provided by Route No. 1 over Greenway Ter., Stardust Dr., Avalon Dr. and Ruben Dr.
3	• Restructure route between downtown terminal and Hartwell Ave. and College Ave. • Extend route to Minooka Parkway Estates Subdivision over Larchmont Dr. and Sunset Dr.	• Changes allow route to replace service currently provided by Route No. 15 to east side industrial area and to the Minooka Park Estates Subdivision	• Restructure route between downtown terminal and Hartwell Ave. and College Ave. • Extend route to Minooka Parkway Estates Subdivision over Larchmont Dr. and Sunset Dr.	• Changes allow route to replace service currently provided by Route No. 15 to east side industrial area and to the Minooka Park Estates Subdivision
4	• No Changes	- -	• No Changes	- -
5	• Eliminate route segments along Sunset Dr. serving the Fox Run Shopping Center and Badger Dr.	• Segments identified as having low ridership in performance evaluation	• Combine with Route No. 6 and operate as Route No. 5/6	• Change would reduce service on weekdays to levels currently provided on evenings and weekends • Service to Waukesha West High School reduced and provided schooldays only
6	• Restructure route to follow Route No. 7 alignment between downtown terminal and Cambridge Ave. and Grandview Blvd. • Change route extension to Waukesha West High School to operate for only four round trips on schooldays	• Change would facilitate providing two-way service over route segments serving the Merrill Crest Subdivision	• Combine with Route No. 5 (see above)	• Change would reduce service on weekdays to levels currently provided on evenings and weekends • Service to Waukesha West High School eliminated
7	• Restructure route to follow Route No. 6 alignment between downtown terminal and Cambridge Ave. and Grandview Blvd. • Extend route to the Heritage Hills Subdivision and the Meadowbrook Marketplace Shopping Center	• Change would serve new residential area and shopping center and facilitate providing two-way service over segments of Route Nos. 6 and 7 serving the Merrill Crest Subdivision • Change would eliminate service over Comanche Ln. and Crestwood Dr., and over Madison St. between University Dr. and Grandview Blvd.	• Combine with Route No. 8 and operate as Route No. 7/8 does on Sundays.	• Change would reduce service on weekdays and Saturdays to the levels currently provided on Sundays
8	• Extend route to Silvernail Plaza and Grandview Plaza Shopping Centers	• Change would eliminate unproductive route segments and would replace service to Pebble Valley Subdivision provided by Route No. 9	• Combine with Route No. 7 (see above)	• Change would reduce service on weekdays and Saturdays to the levels currently provided on Sundays
9	• Eliminate route segments operated over Pebble Valley Rd., University Dr., and Silvernail Rd. (segments to be served by re-structured Route No. 8 as noted above)	• Change would provide for more direct routing to the Pewaukee campus of the Waukesha County Technical College	• Eliminate route segments operated over Pebble Valley Rd., University Dr., and Silvernail Rd. (segments to be served by re-structured Route No. 8 as noted above)	• Change would provide for more direct routing to the Pewaukee campus of the Waukesha County Technical College
15	• Eliminate route	• Segments with significant ridership incorporated into restructured Route No. 3 (see above)	Eliminate route.	• Segments with significant ridership incorporated into restructured Route No. 3 (see above)
16	• No Changes	- -	• No Changes	- -

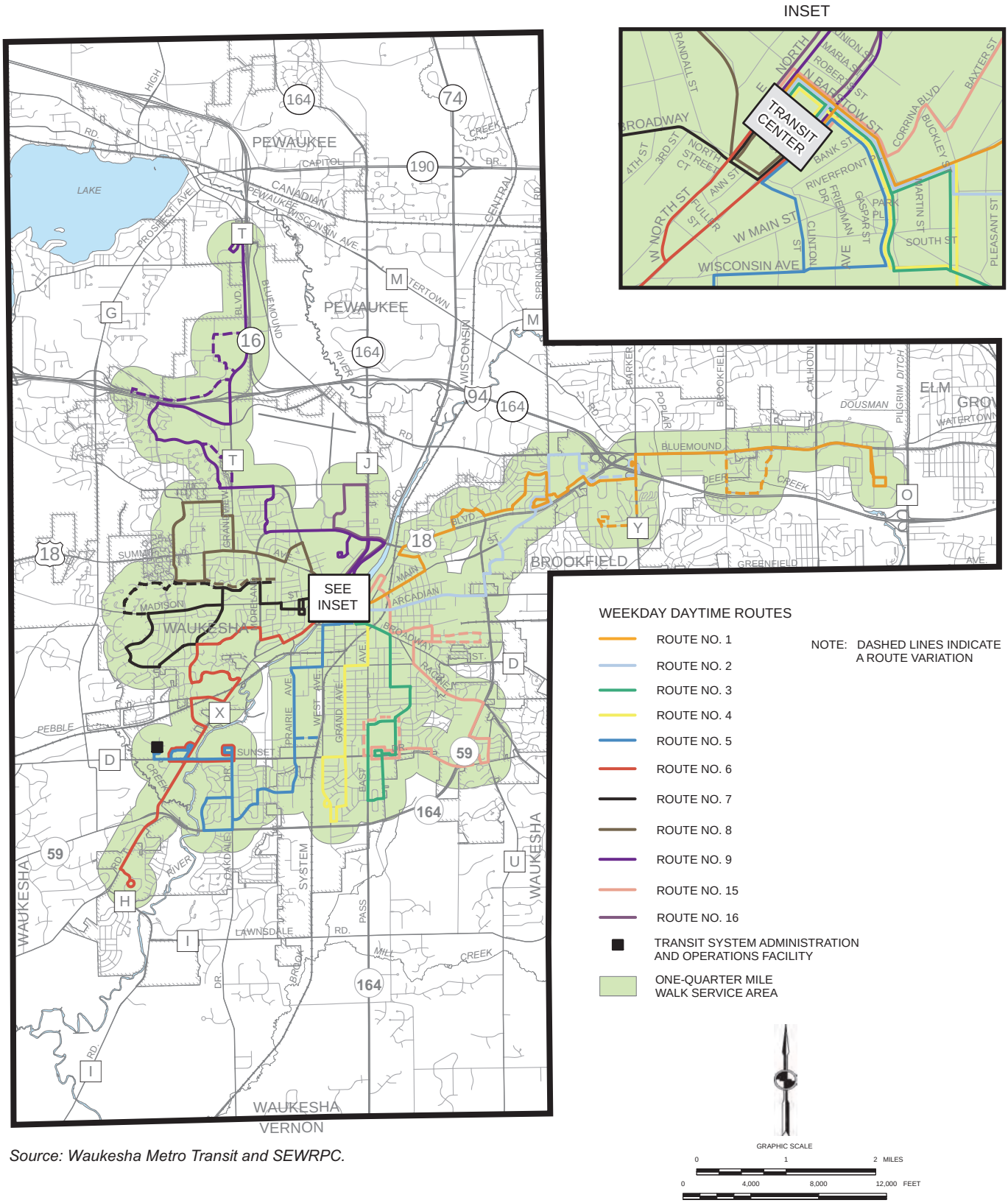
Source: SEWRPC.

- Modifying the alignment for Route No. 1 on the east side of the City. Changing the route to operate over St. Paul Avenue, North Street, and Moreland Boulevard should provide for faster travel into and out of downtown Waukesha than the current alignment which winds through busy downtown streets.

- Modifying Route No. 2 to serve the proposed new Woodman's Market at Les Paul Parkway and Main Street. The route would then operate over Manhattan Drive to the Greenway Terrace where it would replace Route No. 1 service over Stardust Drive, Avalon Drive, and Ruben Drive. Route No. 1 would be moved from Greenway Terrace to operate over Moreland Boulevard, Les Paul Parkway, and E. Main Street to the Westbrook Shopping Center.

Map 14

EXISTING 2012 WAUKESHA METRO TRANSIT WEEKDAY DAYTIME ROUTES UNDER ALTERNATIVE 1



Source: Waukesha Metro Transit and SEWRPC.

Table 24

TRANSIT SERVICE CHARACTERISTICS FOR THE EXISTING WAUKESHA METRO TRANSIT SYSTEM

Route	Weekdays							
	Route Length (miles)	Service Frequency (minutes)				Vehicles Required		
		AM Peak	Midday	PM Peak	Evening	Peak Periods	Midday	Evening
1 - Waukesha-Brookfield	24.7	35	30	35	30	3.0	3.0	3.0
2 - Arcadian	11.4	35	60	35	60	2.0	1.0	1.0
3 - Hartwell	6.7	70	60	60	60	0.5	0.5	0.5
4 - Grand Avenue	6.4	35	30	35	30	1.0	1.0	1.0
5 - Prairie	16.3	70	60	70	- -	1.0	1.0	- -
6 - St. Paul	14.4	70	60	30-70	- -	1.0	1.0	- -
5/6 - Prairie/St. Paul	15.7	- -	- -	- -	60	- -	- -	1.0
7 - Madison	8.7	70	60	70	60	0.5	0.5	1.0
8 - Summit	9.8	35	30	35	30	1.0	1.0	0.5
9 - Northview	23.2	35	60	35	60	2.0	1.0	1.0
15 - Racine	15.3	70	60	70	- -	1.0	1.0	0.0
16 - Airport Road	3.9	1 trip	- -	1 trip	- -	- -[a]	- -	- -
Total System	156.5	- -	- -	- -	- -	- -	11.0	9.0

Route	Saturdays			Sundays		
	Route Length (miles)	Service Frequency (minutes)	Vehicles Required	Route Length (miles)	Service Frequency (minutes)	Vehicles Required
1 - Waukesha-Brookfield	19.3	30	3.0	19.3	30	3.0
2 - Arcadian	9.2	60	1.0	9.2	60	1.0
3 - Hartwell	6.9	60	1.0			
4 - Grand Avenue	6.4	30	1.0	6.4	60	0.5
5/6 - Prairie/St. Paul	15.7	60	1.0	15.7	60	1.0
7 - Madison	7.1	60	1.0			
8 - Summit	9.3	60	1.0			
7/8 - Madison/Summit				6.2	60	0.5
9 - Northview	18.8	60	1.0			
15 - Racine	15.3	60	1.0			
Total System	107.9	- -	11.0	56.7	- -	6.0

Note: Shaded cell indicate the routes which do not operate during the period.

[a]*The vehicle used for Route No. 16 is shared with other routes of the transit system.*

Source: SEWRPC.

- Route No. 2 would be extended on weekends to serve the Majestic Theater in the Town of Brookfield.
- Restructure Route No. 3 to incorporate service provided by Route No. 15 to the east side industrial area and to the Minooka Park Estates Subdivision. Route No. 15 would then be eliminated.
- Route No. 5 would have unproductive route segments along Sunset Drive and Badger Drive eliminated including service to the Fox Run Shopping Center. The shopping center would continue to be served by Route No. 6.

Table 25

TRANSIT SERVICE AND RIDERSHIP FOR THE EXISTING WAUKESHA METRO TRANSIT SYSTEM: 2010 TO 2013 AND 2017

Characteristic	Year[a]				
				Forecast	
	2010	2011 Estimated	2012 Budget	2013	2017
Fixed-Route Bus Service					
Service					
Revenue Vehicle Miles	675,400	705,100	705,100	705,100	705,100
Revenue Vehicle Hours	51,200	53,100	53,100	53,100	53,100
Ridership					
Revenue Passengers	587,500	601,900	630,000	630,000	598,500
Total Passengers	716,600	740,500	775,000	771,800	733,200
Revenue Passengers per Revenue Vehicle Hour	11.5	11.3	11.9	11.9	11.3
Paratransit "Metrolift" Service					
Service					
Revenue Vehicle Miles	91,800	99,400	97,900	96,300	93,500
Revenue Vehicle Hours	9,300	10,100	9,900	9,800	9,500
Ridership					
Revenue Passengers	18,900	18,400	18,100	17,800	17,300
Total Passengers	20,200	19,600	19,300	19,000	18,400
Revenue Passengers per Revenue Vehicle Hour	2.0	1.8	1.8	1.8	1.8
Total System					
Service					
Revenue Vehicle Miles	767,200	804,500	803,000	801,400	798,600
Revenue Vehicle Hours	60,500	63,200	63,000	62,900	62,600
Ridership					
Revenue Passengers	606,400	620,300	648,100	647,800	615,800
Total Passengers	736,800	760,100	794,300	790,800	751,600
Revenue Passengers per Revenue Vehicle Hour	10.0	9.8	10.3	10.3	9.8

Note: Total system ridership and service data exclude the contract transit services funded by Waukesha County and overseen by Waukesha Metro Transit.

[a]*The forecasts of ridership and service levels for the transit system for the years 2013 through 2017 assume that all proposed routing and service changes would be implemented and in effect by January 1, 2013.*

Source: SEWRPC.

- Swap the alignments operated by Route Nos. 6 and 7 between the downtown transit center and Cambridge Avenue and Grandview Boulevard. This change would facilitate eliminating the large one-way loop used by Route No. 7 by replacing it with two-way service provided by segments serving the Merrill Crest Subdivision on Route Nos. 6 and 7. The change would also enable Route No. 7 to be extended to serve a new residential area on the west side of the City and the Meadowbrook Marketplace Shopping Center at Madison Street and Meadowbrook Road (CTH T).

- Service to Waukesha West High School over Route No. 6 would be reduced to four round trips on schooldays compared to every bus trip at present. A review of passenger count data indicates that most of the ridership occurs around the start and dismissal times of the high school. The new schedule would retain service for those times.

Table 26

OPERATING COSTS, REVENUES, AND PUBLIC INVESTMENT FOR THE EXISTING WAUKESHA METRO TRANSIT SYSTEM: 2010 TO 2013 AND 2017

Characteristic	Year[a]				
				Forecast	
	2010	2011 Estimated	2012 Budget	2013	2017
Operating Costs, Revenues, and Total Public Assistance Funding					
Total Operating Expenses	$5,007,300	$5,196,900	$5,136,800	$5,231,000	$5,636,000
Total Operating Revenues	$ 822,600	$ 903,600	$ 915,000	$ 914,600	$ 988,300
Percent of Expenses Recovered through Revenues	16.4	17.4	17.8	17.5	17.5
Required Public Assistance	$4,184,700	$4,293,300	$4,221,800	$4,316,400	$4,647,700
Sources of Public Assistance Funds					
Federal and State Funds	$2,951,900	$3,002,800	$2,849,700	$2,746,300	$2,846,200
Local Funds					
City of Waukesha	$1,142,900	$1,181,400	$1,270,800	$1,466,800	$1,689,800
Waukesha County	$ 83,800	$ 102,900	$ 95,300	$ 97,200	$ 105,200
Other	$ 6,100	$ 6,300	$ 6,000	$ 6,100	$ 6,500
Subtotal Local Funds	$1,232,800	$1,290,600	$1,372,100	$1,570,100	$1,801,500
Total	$4,775,900	$4,801,300	$4,685,200	$4,779,800	$5,111,100

Note: Total system financial data exclude the contract transit services funded by Waukesha County and fees for contract administration charged by the City of Waukesha.

[a]*Bus system financial data for 2012 reflects the adopted operating budget for the transit system. The forecasts of ridership, service levels, and financial data for the transit system for the years 2013 through 2017 were prepared by Commission staff based on the following assumptions:*

1. All proposed routing and service changes would be implemented and in effect by January 1, 2013.

2. Systemwide average operating costs per total vehicle hour for the bus system would increase by about 2 percent annually.

3. The total property tax levy for the bus and paratransit services provided by Waukesha Metro Transit would not be restricted over the planning period.

4. The base adult cash fare for the bus system would increase in 2015 from $2.00 to $2.25 per trip (12.5 percent). Metrolift fares would increase in 2015 from $3.75 to $4.25 per trip (13.3 percent).

5. The annual allocation of Federal Section 5307/5340 funds to Waukesha County would remain at the 2011 level of about $974,600 from 2012 through 2017, and that allocation would continue to be divided equally between the City of Waukesha and Waukesha County resulting in a total of about $487,300 in Section 5307/5340 funds being available each year to the City. Of this amount, about $463,400 would be used for capital needs associated with system operations and the remainder used for capital and planning projects.

6. The combined Federal Section 5307/5340 program capital assistance funds and State 85.20 program operating assistance funds used by the transit system are expected to fund about 55.5 percent of total transit system operating expenses under the 2012 budget. This percentage would be expected to decrease to about 52.5 percent in 2013 and then by 0.5 percent per year over the planning period to about 50.5 percent in 2017.

Source: SEWRPC.

- Extend Route No. 8 north over Pebble Valley Road, University Drive, and Silvernail Road to serve the Silvernail Plaza and Grandview Plaza Shopping Centers. This change would eliminate unproductive route segments and replace the service currently provided over Route No. 9 to the Pebble Valley Subdivision.

- Change the alignment of Route No. 9 to provide more direct service to the Pewaukee campus of the Waukesha County Technical College. This would be done by eliminating segments operated over Pebble Valley Road, University Drive, and Silvernail Road.

- No change would be made to the alignments for Route Nos. 4 and 16.

Figure 4

ASSUMPTIONS USED IN DEVELOPING FORECASTS OF RIDERSHIP, EXPENSES, AND REVENUES FOR THE WAUKESHA METRO TRANSIT SYSTEM: 2013-2017

Commission staff developed forecasts of ridership, expenses, and revenues under the proposed transit system for the years 2013-2017 based on the following assumptions:

- The proposed routing alignments and service changes would be implemented in January 2013. The City of Waukesha may choose to implement some of the changes before then, but this assumption facilitates comparing service levels from year to year.

- For every 1 percent increase in fares, ridership would decrease by 0.43 percent. For every 1 percent change (increase/decrease) in revenue vehicle hours of service, ridership would change (increase/decrease) by 0.5 percent. These measures of elasticity of demand for transit service have been established through many studies and are widely accepted in the transit industry.

- Under Alternatives 1 and 2, the operating cost per revenue vehicle hour of fixed route service would be expected to increase by about 2 percent per year due to inflation between 2013 and 2017. Under Alternative 3, the operating cost per revenue vehicle hour would also be expected to follow this assumption except in 2013 when costs would be expected to increase by about 5 percent due to the system's contraction.

- Fares for fixed route bus service would be increased in January 2015 with the base cash fare increasing by $0.25 from $2.00 to $2.25 per ride. Increases in other fare categories will occur as the adult cash fare is raised. Fares for Metrolift paratransit service were increased in June 2012 when the cash fare was increased by $0.25 from $3.75 to $4.00 per ride. The Metrolift cash fare will be increased again January 2016 from $4.00 to $4.25 per ride. Agency rates for Metrolift service were established in June 2012 specifying rates to be charged to clients of public and private social service agencies using Metrolift to transport individuals participating in their programs.

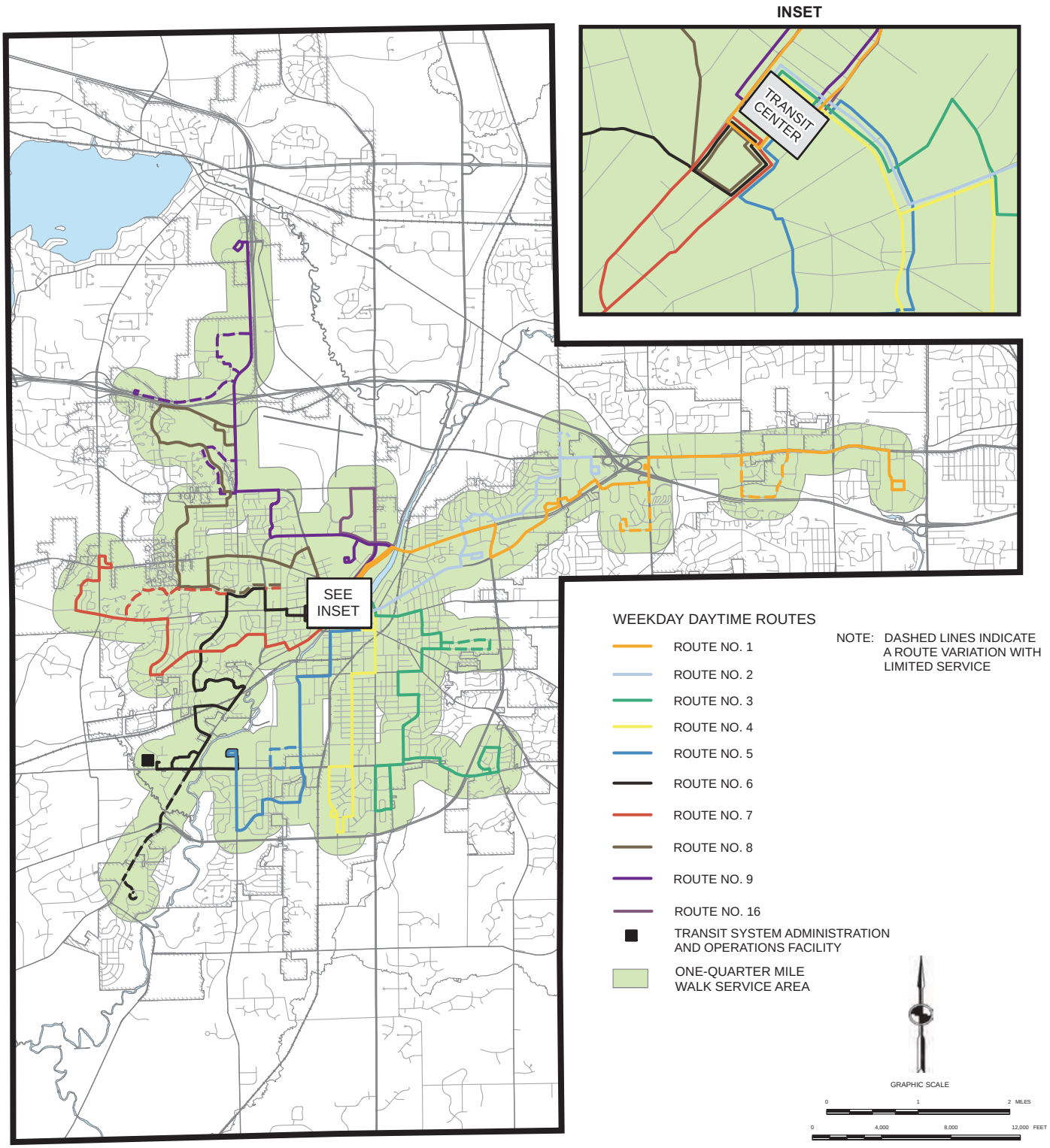
- The combined Federal Section 5307/5340 program capital assistance funds and State 85.20 program operating assistance funds used by the transit system are expected to fund about 55.5 percent of total transit system operating expenses under the 2012 budget. This percentage has been assumed to decrease to about 52.5 percent in 2013 and then by 0.5 percent per year over the planning period to about 50.5 percent in 2017. This is based on an assumption that the total amount of Federal and State transit assistance funds will remain flat over the next five years, while operating expenses for transit systems will continue to increase with inflation, which will lead to a smaller share of Federal and State transit assistance funding for all transit systems in the State.

Source: SEWRPC.

The proposed changes would leave some small gaps in the service area of the transit system, so that some of the areas currently served would no longer be within one-quarter mile of a local bus route. However, areas that would be unserved under this proposal are areas that exhibited low ridership in the route segment analysis in the transit system evaluation presented in Chapter 4. The total 2010 population served by the transit system under Alternative 2 was estimated to be about 65,100 persons or about 400 persons less than the 65,500 persons served by the existing transit system.

Map 15

WAUKESHA METRO TRANSIT WEEKDAY DAYTIME ROUTES UNDER ALTERNATIVE 2



Source: Waukesha Metro Transit and SEWRPC.

Table 27

PROPOSED TRANSIT SERVICE CHARACTERISTICS FOR WAUKESHA METRO TRANSIT UNDER ALTERNATIVE 2: 2013 TO 2017

Route	Weekdays									
	Route Length (miles)			Service Frequency (minutes)				Vehicles Required		
	Existing System	Proposed System	Change	AM Peak	Midday	PM Peak	Evening	Peak Periods	Midday	Evening
1 -Waukesha-Brookfield.....	24.7	23.9	-0.8	35	30	35	30	3.0	3.0	3.0
2 -Arcadian.....	11.4	10.1	-1.3	35	60	35	60	2.0	1.0	1.0
3 -Hartwell.....	6.7	13.2	6.5	70	60	60	60	1.0	1.0	1.0
4 -Grand Avenue.....	6.4	6.4	- -	35	30	35	30	1.0	1.0	1.0
5 -Prairie	16.3	13.8	-2.5	70	60	70	- -	1.0	1.0	- -
6 -St. Paul	14.4	15.5	1.1	70	60	30-70	- -	1.0	1.0	- -
5/6 -Prairie/St. Paul.....	15.7	15.7	- -	- -	- -	- -	60	- -	- -	1.0
7 -Madison	8.7	11.9	3.2	70	60	70	60	1.0	1.0	1.0
8 -Summit.....	9.8	19.6	9.8	35	60	35	60	2.0	1.0	1.0
9 -Northview.....	23.2	20.1	-3.1	35	60	35	60	2.0	1.0	1.0
15 -Racine	15.3	- -	-15.3							
16 -Airport Road.....	3.9	3.9	- -	1 trip	- -	1 trip	- -	- -[a]	- -	- -
Total System	156.5	154.1	-2.4	- -	- -	- -	- -	14.0	11.0	10.0

Route	Saturday					Sundays				
	Route Length (miles)			Service Frequency (minutes)	Vehicles Required	Route Length (miles)			Service Frequency (minutes)	Vehicles Required
	Existing System	Proposed System	Change			Existing System	Proposed System	Change		
1 -Waukesha-Brookfield.....	19.3	18.5	-0.8	30	3.0	19.3	18.5	-0.8	30	3.0
2 -Arcadian.....	9.2	8.0	-1.3	60	1.0	9.2	8.0	-1.3	60	1.0
3 -Hartwell.....	6.9	13.4	6.5	60	1.0					
4 -Grand Avenue.....	6.4	6.4	- -	30	1.0	6.4	6.4	- -	60	0.5
5/6 -Prairie/St. Paul.....	15.7	15.7	- -	60	1.0	15.7	15.7	- -	60	1.0
7 -Madison	7.1	10.3	3.2	60	1.0					
8 -Summit.....	9.3	19.1	9.8	60	1.0					
7/8 -Madison/Summit						6.2	6.2	- -	60	0.5
9 -Northview.....	18.8	15.6	-3.1	60	1.0					
15 -Racine	15.3	- -	-15.3							
Total System	107.9	106.9	-1.0	- -	10.0	56.7	54.6	-2.1	- -	6.0

Note: Shaded cells indicate routes which do not operate during the period.

[a]*The vehicle used for Route 16 is shared with other routes of the transit system.*

Source: SEWRPC.

Forecast Ridership and Operating Costs

Table 28 shows the service and ridership levels for the transit system and Table 29 shows the performance measures and costs for the transit system as proposed under Alternative 2. The forecasts were developed by Commission staff using the assumptions presented in Figure 4. The transit system would be expected to have the following performance measures and costs:

- The transit system's annual revenue vehicle miles (752,100) and revenue vehicle hours (56,700) of fixed-route service will be about 7 percent above the service levels in the 2012 budget (705,100 revenue miles and 53,100 revenue hours). The extensions of Route Nos. 3, 7, and 8 account for most of the service increase.

Table 28

TRANSIT SERVICE AND RIDERSHIP FOR WAUKESHA METRO TRANSIT UNDER ALTERNATIVE 2: 2010 TO 2013 AND 2017

Characteristic	Year[a]				
				Forecast	
	2010	2011 Estimated	2012 Budget	2013	2017
Fixed-Route Bus Service					
Service					
Revenue Vehicle Miles	668,200	705,100	705,100	751,300	751,300
Revenue Vehicle Hours	51,200	53,100	53,100	56,700	56,700
Ridership					
Revenue Passengers	587,500	601,900	630,000	651,400	656,700
Boarding Passengers	716,600	740,500	775,000	798,000	804,500
Revenue Passengers per Revenue Vehicle Hour	11.5	11.3	11.9	11.5	11.6
Paratransit "Metrolift" Service					
Service					
Revenue Vehicle Miles	89,000	99,400	97,900	101,100	101,100
Revenue Vehicle Hours	9,300	10,100	9,900	10,200	10,200
Ridership					
Revenue Passengers	18,900	18,400	18,100	18,700	18,700
Total Passengers	20,200	19,600	19,300	19,900	19,900
Revenue Passengers per Revenue Vehicle Hour	2.0	1.8	1.8	1.8	1.8
Total System					
Service					
Revenue Vehicle Miles	757,200	804,500	803,000	852,400	852,400
Revenue Vehicle Hours	60,500	63,200	63,000	66,900	66,900
Ridership					
Revenue Passengers	606,400	620,300	648,100	670,100	675,400
Total Passengers	736,800	760,100	794,300	817,900	824,400
Revenue Passengers per Revenue Vehicle Hour	10.0	9.8	10.3	10.0	10.1

Note: Total system ridership and service data exclude the contract transit services funded by Waukesha County and overseen by Waukesha Metro Transit.

[a]*The forecasts of ridership and service levels for the transit system for the years 2013 through 2017 assume that all proposed routing and service changes would be implemented and in effect by January 1, 2013.*

Source: SEWRPC.

- Ridership on the system is estimated to increase by about 4 percent, from 648,100 revenue passengers in the 2012 budget to about 675,400 revenue passengers in 2017. With the proposed service changes, the bus system would be expected to carry about 12 passengers per revenue vehicle hour in 2017, about the same as the existing system.

- The total cost of operating the transit system with the proposed service changes is estimated to increase by about 17 percent by 2017, from $5.14 million in the 2012 budget to $6.02 million in 2017. About $1.07 million, or about 18 percent, would be recovered by passenger fares and other revenues in 2017 including advertising or about the same farebox recovery as under the 2012 operating budget. About $4.95 million will be needed in public assistance in 2017 which will be about 16 percent higher than the $4.22 million needed under the 2012 operating budget.

Table 29

OPERATING COSTS, REVENUES, AND PUBLIC INVESTMENT FOR WAUKESHA METRO TRANSIT UNDER ALTERNATIVE 2: 2010 TO 2013 AND 2017

Characteristic	Year[a]				
				Forecast	
	2010	2011 Estimated	2012 Budget	2013	2017
Operating Costs, Revenues, and Total Public Assistance Funding					
Total Operating Expenses	$5,007,300	$5,196,900	$5,136,800	$5,564,000	$6,023,000
Total Operating Revenues	$ 822,600	$ 903,600	$ 915,000	$ 946,100	$1,073,500
Percent of Expenses Recovered through Revenues	16.4	17.4	17.8	17.0	17.8
Required Public Assistance	$4,184,700	$4,293,300	$4,221,800	$4,617,900	$4,949,500
Sources of Public Assistance Funds					
Federal and State Funds	$2,952,000	$3,002,800	$2,849,700	$2,921,100	$3,041,600
Local Funds					
City of Waukesha	$1,142,900	$1,181,400	$1,270,800	$1,593,500	$1,796,200
Waukesha County	$ 83,800	$ 102,900	$ 95,300	$ 97,200	$ 105,200
Other	$ 6,100	$ 6,300	$ 6,000	$ 6,100	$ 6,500
Subtotal Local Funds	$1,232,800	$1,290,600	$1,372,100	$1,696,800	$1,907,900
Total	$4,776,100	$4,801,300	$4,685,200	$5,081,300	$5,412,900

Note: Total system financial data exclude the contract transit services funded by Waukesha County and fees for contract administration charged by the City of Waukesha.

[a]*Bus system financial data for 2012 reflects the adopted operating budget for the transit system. The forecasts of ridership, service levels, and financial data for the transit system for the years 2013 through 2017 were prepared by Commission staff based on the following assumptions:*

1. All proposed routing and service changes would be implemented and in effect by January 1, 2013.

2. Systemwide average operating costs per total vehicle hour for the bus system would increase by about 2 percent annually.

3. The base adult cash fare for the bus system would increase in 2015 from $2.00 to $2.25 per trip (12.5 percent). Metrolift fares would increase in 2012 from $3.75 to $4.00 per trip (6.7 percent).and again in 2015 from $4.00 to $4.25 per trip (6.3 percent).

4. The annual allocation of Federal Section 5307/5340 funds to Waukesha County would remain at the 2011 level of about $974,600 from 2012 through 2017, and that allocation would continue to be divided equally between the City of Waukesha and Waukesha County resulting in a total of about $487,300 in Section 5307/5340 funds being available each year to the City. Of this amount, about $463,400 would be used for capital needs associated with system operations and the remainder used for capital and planning projects.

5. The combined Federal Section 5307/5340 program capital assistance funds and State 85.20 program operating assistance funds used by the transit system are expected to fund about 55.5 percent of total transit system operating expenses under the 2012 budget. This percentage would be expected to decrease to about 52.5 percent in 2013 and then by 0.5 percent per year over the planning period to about 50.5 percent in 2017.

Source: SEWRPC.

- Under the 2012 operating budget, Federal and State funds are expected to provide about 55.5 percent ($2.85 million) of the total operating expenses, with the remaining public funds ($1.37 million, or 27 percent) to be provided by local sources including the City, Waukesha County, and the Town of Brookfield. By the end of the five-year planning period in 2017, Federal and State funds may be expected to provide about 50.5 percent ($3.04 million) of the total operating expenses. The remaining local share of the required public funds (about $1.91 million) represents an increase of about $535,600, or about 39 percent over 2012 budget levels for the City, Waukesha County, and the Town of Brookfield. These three local sources will need to increase their contributions in order to fill the gap in public assistance needed. Most of the needed increase will fall upon the City of Waukesha whose share is estimated to increase from about $1.27 million under the 2012 budget to $1.80 million under Alternative 2, or by about 42 percent.

The capital costs of the equipment needed under Alternative 2 are presented in a later section of this chapter.

Alternative 3 - Fiscally Constrained Service

Alternative 3 identifies potential routing and service changes that would be needed if public funding levels for the transit system were significantly reduced. The alternative envisions that service levels and coverage would need to be dramatically curtailed from existing levels in response to stable or lower Federal and State transit funding levels and possible limits on local funding increases over the planning period. For this alternative, Commission staff attempted to maintain the level of required local funding at the level of funds provided under the transit system's 2012 operating budget. This level was used as the local funding goal for the proposed service changes. The "financially-constrained alternative", therefore, proposes a substantially reduced system of routes that focuses service on the central core areas of the City of Waukesha with high residential and employment density and good ridership. Service to outlying, lower-density areas would be significantly reduced or eliminated.

Routing Changes:

Map 16 displays the bus routes as they are proposed to be operated under Alternative 3 on weekdays. Table 30 summarizes the operating and service characteristics of the transit system routes under this alternative. The changes to route alignments and service levels proposed under this alternative include:

- Modifying the alignments for Route Nos. 1, 2, 3, and 9 as proposed under Alternative 2.
- Combining Route Nos. 5 and 6 to operate as a large loop as currently operated on weekday evenings and weekends.
- Combining Route Nos. 7 and 8 to operate as a large loop as currently operated on Sundays.
- Reducing service to Waukesha high and middle schools including the extension of service to Waukesha West High School and other special trips operated on schooldays

Several areas currently served by the transit system would no longer be served under Alternative 3 including large portions of the Pebble Valley and Merrill Crest Subdivisions on the City's north and west sides. However, these are areas that have failed to generate significant ridership in the past and were identified as low ridership generating areas in the transit system evaluation presented in Chapter 4. The total 2010 population served by the transit system under Alternative 3 was estimated to be about 55,900 persons, or about 9,600 (15 percent) less than the 64,600 persons served by the existing transit system.

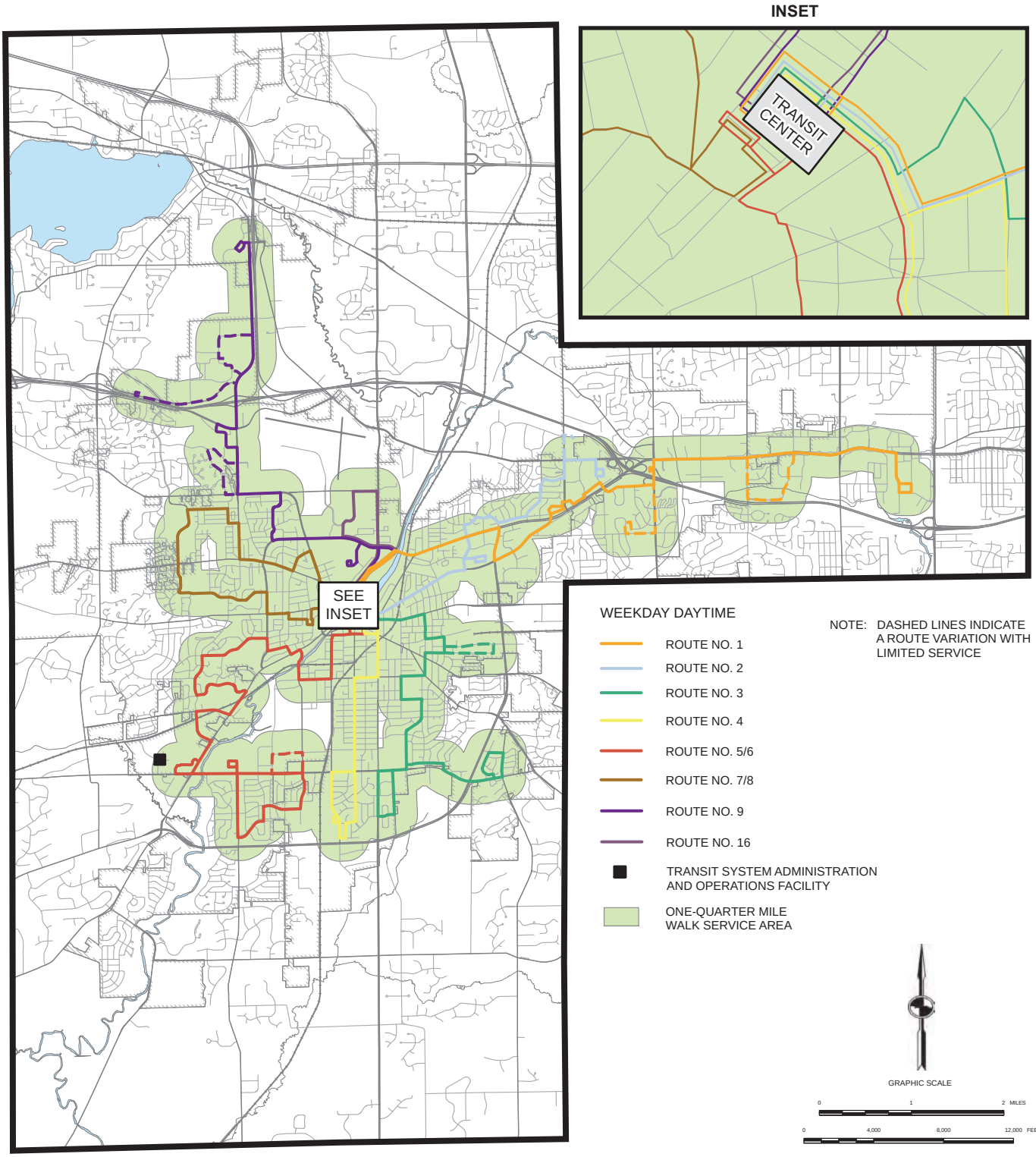
Forecast Ridership and Operating Costs

Table 31 shows the service and ridership levels forecast for the transit system under Alternative 3. Table 32 presents the forecasts of ridership, operating costs, operating revenues, and transit assistance needs under the alternative. The forecasts were developed by Commission staff using the assumptions previously presented in Figure 4. The transit system would be expected to have the following performance measures and costs:

- The transit system's annual revenue vehicle miles (565,100) and revenue vehicle hours (44,500) of fixed-route service in 2017 under Alternative 3 represent reductions of about 16 to 20 percent from service levels in the 2012 budget (705,100 revenue miles and 53,100 revenue hours). Most of the reduction in service would be attributable to the service changes on Route Nos. 5, 6, 7, and 8.
- With the proposed service reductions, ridership on the system would be expected to decrease by about 10 percent, from 648,100 revenue passengers in the 2012 budget to about 582,600 revenue passengers in 2017. Fare increases proposed for the bus and paratransit services over the planning period would account for ridership losses between 2013 and 2017. The proposed service changes would be expected to improve the effectiveness of the system. The fixed-route service would carry about 13 passengers per revenue vehicle hour over the planning period compared to between 11 and 12 passengers per revenue vehicle hour estimated for 2011 and under the 2012 budget.
- With the proposed service reductions, the total cost of operating the transit system is estimated to decrease by about 4 percent by 2017, from $5.14 million in the 2012 budget to $4.92 million in 2017. About $925,700, or about 19 percent, would be recovered by passenger fares and other revenues in 2011 including advertising, leaving about $4.0 million in needed public assistance. The public assistance needed in 2017 under Alternative 3 would be about 5 percent less than the $4.22 million needed in the 2012 budget.

Map 16

WAUKESHA METRO TRANSIT WEEKDAY DAYTIME ROUTES UNDER ALTERNATIVE 3



Source: Waukesha Metro Transit and SEWRPC.

Table 30

TRANSIT SERVICE CHARACTERISTICS FOR WAUKESHA METRO TRANSIT UNDER ALTERNATIVE 3: 2013 to 2017

Route	Weekdays									
	Route Length (miles)			Service Frequency (minutes)				Vehicles Required		
	Existing System	Proposed System	Change	AM Peak	Midday	PM Peak	Evening	Peak Periods	Midday	Evening
1 -Waukesha-Brookfield.....	24.7	23.9	-0.8	35	30	35	30	3.0	3.0	3.0
2 -Arcadian.....	11.4	10.1	-1.3	35	60	35	60	2.0	1.0	1.0
3 -Hartwell.....	6.7	13.2	6.5	70	60	60	60	1.0	1.0	1.0
4 -Grand Avenue.....	6.4	6.4	- -	35	60	35	60	1.0	0.5	0.5
5 -Prairie	16.3	- -	-16.3							
6 -St. Paul	14.4	- -	-14.4							
5/6 -Prairie/St. Paul.....	15.7	19.2	3.5	60	60	60	60	1.0	1.0	1.0
7 -Madison	8.7	- -	-8.7							
8 -Summit.....	9.8	- -	-9.8							
7/8 -Madison/Summit	- -	6.2	6.2	35	60	35	60	1.0	0.5	0.5
9 -Northview.....	23.2	20.1	-3.1	35	60	35	60	2.0	1.0	1.0
15 -Racine	15.3	- -	-15.3							
16 -Airport Road.....	3.9	3.9	- -	1 trip	- -	1 trip	- -	- -[a]	- -	- -
Total System	156.5	103.0	-53.5	- -	- -	- -	- -	11.0	8.0	8.0

Route	Saturday					Sundays				
	Route Length (miles)			Service Frequency (minutes)	Vehicles Required	Route Length (miles)			Service Frequency (minutes)	Vehicles Required
	Existing System	Proposed System	Change			Existing System	Proposed System	Change		
1 -Waukesha-Brookfield.....	19.3	18.5	-0.8	30	3.0	19.27	18.45	-0.82	30	3.0
2 -Arcadian.....	9.2	8.0	-1.3	60	1.0	9.22	- -	-9.22	60	1.0
3 -Hartwell.....	6.9	13.4	6.5	60	1.0					
4 -Grand Avenue.....	6.4	6.4	- -	60	1.0	6.36	6.36	- -	30	0.5
5/6 -Prairie/St. Paul.....	15.7	15.7	- -	60	1.0	15.70	15.70	- -	60	1.0
7 -Madison	7.1	- -	-8.7							
8 -Summit.....	9.3	- -	-9.8							
7/8 -Madison/Summit	- -	6.2	6.2	60	1.0	6.17	6.17	- -	60	0.5
9 -Northview.....	18.8	15.6	-3.1	60	1.0					
15 -Racine	15.3	- -	-15.3							
Total System	107.9	83.7	26.3	- -	10.0	56.72	46.68	-10.04	- -	6.0

Note: Shaded cells indicate routes which do not operate during the period.

[a]*The vehicle used for Route 16 is shared with other routes of the transit system.*

Source: SEWRPC.

- Under 2012 operating budget, Federal and State funds are expected to provide about 55.5 percent ($2.49 million) of the total operating expenses, with the remaining public funds ($1.37 million, or 27 percent) to be provided by local sources, including the City, Waukesha County, and the Town of Brookfield. By the end of the five-year planning period in 2017, Federal and State funds may be expected to provide only about 50.5 percent ($2.33 million) of the total operating expenses. Local sources will need to increase their contributions slightly to about $1.51 million (31 percent of expenses) in order to fill the gap in public assistance needed. The share of the local public assistance to be funded by the City of Waukesha would increase from about $1.27 million under the 2012 budget to $1.4 million under Alternative 3, or by about 10 percent.

The capital costs of equipment needed to maintain the transit system under Alternative 3 are presented in the next section.

Table 31

TRANSIT SERVICE AND RIDERSHIP FOR WAUKESHA METRO TRANSIT UNDER ALTERNATIVE 3: 2010 TO 2013 AND 2017

Characteristic	Year[a]				
				Forecast	
	2010	2011 Estimated	2012 Budget	2013	2017
Fixed-Route Bus Service					
Service					
Revenue Vehicle Miles	668,198	705,089	705,100	565,100	565,100
Revenue Vehicle Hours	51,220	53,097	53,100	44,500	44,500
Ridership					
Revenue Passengers	587,504	601,895	630,000	579,000	566,800
Boarding Passengers	716,600	740,464	775,000	712,300	697,300
Revenue Passengers per Revenue Vehicle Hour	11.5	11.3	11.9	13.0	12.7
Paratransit "Metrolift" Service					
Service					
Revenue Vehicle Miles	89,042	99,377	97,800	88,000	85,400
Revenue Vehicle Hours	9,305	10,094	9,900	8,900	8,600
Ridership					
Revenue Passengers	18,938	18,395	18,100	16,300	15,800
Total Passengers	20,232	19,600	19,300	17,400	19,900
Revenue Passengers per Revenue Vehicle Hour	2.0	1.8	1.8	1.8	1.8
Total System[b]					
Service					
Revenue Vehicle Miles	757,240	804,466	802,900	653,100	650,500
Revenue Vehicle Hours	60,525	63,191	63,000	53,400	53,100
Ridership					
Revenue Passengers	606,442	620,290	648,100	595,300	582,600
Total Passengers	736,832	760,064	794,300	729,700	714,200
Revenue Passengers per Revenue Vehicle Hour	10.0	9.8	10.3	11.1	11.0

[a]*The forecasts of ridership and service levels for the transit system for the years 2013 through 2017 assume that all proposed routing and service changes would be implemented and in effect by January 1, 2013.*

[b]*Total system ridership and service data exclude the contract transit services funded by Waukesha County and overseen by Waukesha Metro Transit.*

Source: SEWRPC.

Capital Needs for Waukesha Metro Transit

Capital investments must occur over the next five years to maintain and update transit system equipment and facilities. Currently, Waukesha Metro Transit has 23, 35-foot long buses that it uses for providing fixed-route bus service and seven 25- to 29-foot long paratransit vehicles that it uses for providing Metrolift service to disabled individuals. For the existing transit system under Alternative 1, the City's capital improvement program (CIP) proposes replacing or rehabilitating between 2012 and 2017, 10 of the 13, 35-foot long buses purchased in 1998 and 2004 and retiring the other three buses. None of the seven large buses purchased in 2007, or the seven paratransit buses purchased in 2007 and 2011 are due for replacement during the planning period. Other capital expenditures will be needed under Alternative 1 to maintain the transit system facilities and other operating and service equipment. The capital projects needed by the transit system over the planning period and the estimated costs under all three alternatives are identified in Table 33.

Table 32

OPERATING COSTS, REVENUES, AND PUBLIC INVESTMENT FOR WAUKESHA METRO TRANSIT UNDER ALTERNATIVE 3: 2010 TO 2013 AND 2017

Characteristic	Year[a]				
				Forecast	
	2010	2011 Estimated	2012 Budget	2013	2017
Operating Costs, Revenues, and Total Public Assistance Funding					
Total Operating Expenses	$5,007,300	$5,196,900	$5,136,800	$4,572,000	$4,921,000
Total Operating Revenues	$ 822,600	$ 903,600	$ 915,000	$ 840,500	$ 934,800
Percent of Expenses Recovered through Revenues	16.4	17.4	17.8	18.4	19.0
Required Public Assistance	$4,184,700	$4,293,300	$4,221,800	$3,731,500	$3,986,200
Sources of Public Assistance Funds					
Federal and State Funds	$2,952,000	$3,002,800	$2,849,700	$2,400,300	$2,485,100
Local Funds					
City of Waukesha	$1,142,900	$1,181,400	$1,270,800	$1,227,900	$1,389,400
Waukesha County	$ 83,800	$ 102,900	$ 95,300	$ 97,200	$ 105,200
Other	$ 6,100	$ 6,300	$ 6,000	$ 6,100	$ 6,500
Subtotal Local Funds	$1,232,800	$1,290,600	$1,372,100	$1,331,200	$1,501,100
Total	$4,776,100	$4,801,300	$4,685,200	$4,194,900	$4,449,600

Note: Total system financial data exclude the contract transit services funded by Waukesha County and fees for contract administration charged by the City of Waukesha.

[a]*Bus system financial data for 2012 reflects the adopted operating budget for the transit system. The forecasts of ridership, service levels, and financial data for the transit system for the years 2013 through 2017 were prepared by Commission staff based on the following assumptions:*

1. All proposed routing and service changes would be implemented and in effect by January 1, 2013

2. Systemwide average operating costs per total vehicle hour for the bus system would increase by about 5 percent in 2013 due to system contraction, then increase by 2 percent annually.

3. The base adult cash fare for the bus system would increase in 2015 from $2.00 to $2.25 per trip (12.5 percent). Metrolift fares would increase in 2012 from $3.75 to $4.00 per trip (6.7 percent).and again in 2015 from $4.00 to $4.25 per trip (6.3 percent).

4. The annual allocation of Federal Section 5307/5340 funds to Waukesha County would remain at the 2011 level of about $974,600 from 2012 through 2017, and that allocation would continue to be divided equally between the City of Waukesha and Waukesha County resulting in a total of about $487,300 in Section 5307/5340 funds being available each year to the City. Of this amount, about $463,400 would be used for capital needs associated with system operations and the remainder used for capital and planning projects.

5. The combined Federal Section 5307/5340 program capital assistance funds and State 85.20 program operating assistance funds used by the transit system are expected to fund about 55.5 percent of total transit system operating expenses under the 2012 budget. This percentage would be expected to decrease to about 52.5 percent in 2013 and then by 0.5 percent per year over the planning period to about 50.5 percent in 2017.

Source: SEWRPC.

Alternative Vehicle Types

From time to time since the City of Waukesha established its public transit system, there have been discussions on what is the appropriate vehicle type and size for providing the City's fixed-route transit service. Concerns with continuing to use the existing 35-foot diesel buses which have been cited include:

- Negative public perception that the large buses frequently operate with excess seating capacity;
- Fuel efficiency would be substantially better with smaller buses than with the existing large buses; and
- The existing diesel buses generate significant noise and air pollution.

Table 33

PROPOSED CAPITAL EQUIPMENT EXPENDITURES FOR WAUKESHA METRO TRANSIT: 2013-2017

Year	Equipment or Project Description	Unit Cost[a]	Alternative 1 - Existing 2012 System[a]		Alternative 2 - Desirable Service[b]		Alternative 3 - Fiscally Constrained Service[c]	
			Quantity	Total Cost[d]	Quantity	Total Cost[d]	Quantity	Total Cost[d]
2013	Replacement of 1998 Gillig Low-floor Buses[a]	$410,000	6	$2,460,000	7	$2,870,000	5	$2,050,000
	Replace Make-up Air Units	- -	2	40,000	2	40,000	2	40,000
	Skidsteer	85,000	1	85,000	1	85,000	1	85,000
	Upgrade Furnishings at Metro Offices	- -	- -	40,000	- -	40,000	- -	40,000
	Replace ID Badge machine	8,500	1	8,500	1	8,500	1	8,500
	Replace Floor Scrubber	12,000	1	12,000	1	12,000	1	12,000
	Replace Transit Van	25,000	1	25,000	1	25,000	1	25,000
	Subtotal	- -	- -	$2,670,500	- -	$3,080,500	- -	$2,260,500
2014	Rehab/Rebuild 2007 Bluebird Paratransit Buses	$ 50,000	4	$ 200,000	4	$ 200,000	4	$ 200,000
	Replace Maintenance Software	40,000	- -	40,000	- -	40,000	- -	40,000
	Replace AC Reclaimer/Recycler	10,000	- -	10,000	- -	10,000	- -	10,000
	Generator for Downtown Transit Center	40,000	- -	40,000	- -	40,000	- -	40,000
	Outdoor Security Cameras at Downtown Transit Center	75,000	- -	75,000	- -	75,000	- -	75,000
	Subtotal	- -	- -	$ 365,000	- -	$ 365,000	- -	$ 365,000
2015	Rehab/Rebuild 2008 Gillig Buses	$ 50,000	3	$ 150,000	3	$ 150,000	3	$ 150,000
	Replace Back-up Generator	30,000	- -	30,000	1	30,000	- -	30,000
	Subtotal	- -	- -	$ 180,000	- -	$ 180,000	- -	$ 180,000
2016	Replace 2004 Gillig Buses	$448,000	7	$3,136,000	7	$3,136,000	7	$3,136,000
2017	Replace AVL computer Equipment	- -	- -	$60,000	- -	$60,000	- -	$60,000
Total Costs		- -	- -	$6,411,500	- -	$6,821,500	- -	$6,001,500
Federal Capital Assistance Funds				$5,297,100	- -	$5,637,400	- -	$4,956,800
Local Share of Costs				1,114,400	- -	1,184,100	- -	1,044,700
Average Annual Costs over Planning Period								
Total Costs				$1,282,300		$1,364,300		$1,200,300
Federal Share[e]				1,059,400		1,127,500		991,400
Local Share				222,900		236,800		208,900

[a]The existing 2012 transit system has 13, 1998 Gillig buses in the bus fleet. Four of the 1998 buses are being replaced in 2012 with Federal funds applied for in 2011 and the remaining City share included in the approved City Budget. The other three Gillig buses will be retired.

[b]Under Alternative 2, one additional 1998 Gillig buses would need to be replaced and only two of the 1998 Gillig buses would be retired. The remainder of the capital projects would not change.

[c]Under Alternative 3, two fewer 1998 Gillig buses would need to be replaced and two more of the 1998 Gillig buses could be retired. The remainder of the capital projects would not change.

[d]Costs are expressed in estimated year of expenditure dollars.

[e]Assumes 83 percent FTA funding for bus purchases to account for a 90 percent Federal share for ADA-related bus accessibility features and an 80 percent Federal share for the vehicle. An 80 percent Federal share was assumed for all other capital projects.

Source: Waukesha Metro Transit and SEWRPC.

In response to the first point above, the "empty buses" during off-peak times—weekday middays, non-school days, evenings, weekends—and on selected routes can be compared to streets and highways or airports which are sized and constructed according to the peak traffic they may need to carry. Most of the time these facilities operate at less than their total potential capacity but carry more traffic when high travel volumes during peak times demand it. The Waukesha Metro Transit System is very similar in this regard.

Commission staff identified and compared several alternative bus types, sizes, and fuel types for potential use by Waukesha Metro Transit under the service alternatives. Table 34 presents this comparison for the standard 35-foot long diesel bus used by Waukesha Metro Transit and five other buses: small (25- to 27-foot) diesel, large (35-foot) diesel-electric hybrid, large (35-foot) compressed natural gas (CNG), small (22-foot) electric, and large (35-foot) electric.

With respect to vehicle size, the following conclusions may be reached.

- In comparing large diesel buses to small diesel buses, recent EPA rules require significantly reduced emissions from all new diesel buses so they no longer emit large volumes of pollutants. Waukesha Metro Transit currently operates such "clean" diesel buses and will only consider such for replacement vehicles. Smaller diesel buses do not emit significantly less air pollutants. Emissions are largely related to the engine/drivetrain and fuel type used by the transit vehicle.

- Smaller diesel buses (19 to 22 seats) may have enough seating capacity for peak times on some, but not all, of the existing Waukesha Metro Transit routes and could be a viable option to some of the larger buses currently in the fleet. This is because student ridership generated by Waukesha high and middle schools during weekday peak times has gone down since the Waukesha School District changed its student transportation policy. The policy now allows students that are not eligible for the yellow school bus service (paid for by the District for students that live more than two miles from school) to use the school bus service if they agree to pay a fee for using the service. Use of smaller buses would, however, result in a mixed vehicle fleet for Waukesha Metro Transit which would raise several issues including:

    - Spare parts inventories. Having different vehicle types in the bus fleet would increase the spare parts inventory and the space needed for parts storage;

    - Vehicle assignment. Smaller vehicles could not be assigned to routes at times when passenger demand would exceed vehicle capacity;

    - Spare vehicles. A sufficient number of buses of each size would be needed as spares which could result in a larger overall fleet size; and

    - Driver training. Drivers would need to be skilled at operating more than one vehicle type.

- There would be little to no cost advantage to using small diesel buses versus large diesel buses. The capital cost of a small diesel bus is about one-half that of a large bus but the lifespan would be less for a small bus. There are few bus manufacturers producing small buses with the 12-year, 500,000 mile useful life of larger heavy-duty buses. Thus, the initial savings in the capital cost for purchasing a small bus versus a large bus tends to be offset by the shorter lifespan for a small bus which need to be replaced more often (every seven years). The maintenance cost for the small bus would also be higher than a large bus.

With respect to fuel type, alternative fuel buses (hybrid, CNG, electric) are not yet widely used and have several issues that the transit system would need to consider before committing to such vehicles. These include:

- Fuel cost savings for such vehicles tend to be offset by the higher capital investment needed, even when considering 80 percent of capital costs would be paid for with Federal funding. CNG fuel price is generally more stable than diesel fuel and costs are eligible for Federal fuel rebates. However, use of CNG vehicles will require that a new fueling system and infrastructure be put in place at the City bus garage or other location. The costs for the fueling system and infrastructure are estimated at about $2 million.

- Maintenance costs vary widely for hybrid and CNG buses and substantial savings generally would not be expected. In addition, there would likely be a need for additional training for maintenance staff. Insufficient data was available to make firm conclusions for electric vehicles.

Table 34

COMPARISON OF ALTERNATIVE BUS TYPES AND SIZES FOR CITY OF WAUKESHA METRO TRANSIT

	Diesel (Existing Fleet)		Diesel-Electric Hybrid	Compressed Natural Gas (CNG)	Electric	
Vehicle Category						
Typical Vehicle Size[a]	35 or 40 feet	25 to 27 feet	35 or 40 feet	35 or 40 feet	35 feet	22 feet
Number of Seats	30 to 40 seats	19 to 22 seats	30 to 40 seats	30 to 40 seats	30 to 40 seats	22 seats
Minimum Useful Life	12 years (heavy-duty)	7 years (medium-duty)	12 years (heavy-duty)	12 years (heavy-duty)	12 years (heavy-duty)	7 years (medium-duty)
Total Capital Cost[b]	$315,000 – $400,000	$150,000 – $190,000	$500,000 – $600,000	$400,000 – $460,000	$560,000 – $1,200,000	$300,000
Local Share of Capital Cost[c]	$63,000 – $80,000	$30,000 – $38,000	$100,000 – $120,000	$80,000 – $92,000	$112,000 – $240,000	$60,000
Fuel/Energy Efficiency[d]	4.0 – 4.5 mpg	5.5 – 6.5 mpg	30% better than heavy-duty diesel	20% worse than heavy-duty diesel	1 – 2 kilowatt-hours/mile	0.7 – 1.4 kilowatt-hours/mile
Fuel Cost[e]	$4.00/diesel gallon	$4.00/diesel gallon	$4.00/diesel gallon	$1.30/diesel-gallon equivalent (DGE)	$0.10/kilowatt-hour	$0.10/kilowatt-hour
Fuel/Energy Cost Per Mile	$0.90 – $1.00/mile	$0.60 – $0.70/mile	$0.70 – $0.80/mile	$0.35 – $0.40/mile	$0.10 – $0.20/mile	$0.07 – $0.14/mile
Maintenance Cost Per Mile[f]	$0.75/mile	$0.85/mile	$0.60 – $1.20/mile	$0.70 – $1.30/mile	N/A	N/A
Infrastructure Cost/ Special Considerations	• Environmental Protection Agency rules that took effect in 2007 require all heavy-duty diesel-engine vehicles to comply with strict standards that reduce emissions by 90 percent. • Large buses tend to damage pavement slightly more than small buses. • There is a negative public perception that excessive capacity exists on 35-foot buses used by Waukesha Metro Transit. • Buses with as few as 20 seats may be adequate for some of the existing Waukesha Metro Transit routes.		• Batteries typically must be replaced at least once during the 12-year life of a hybrid bus. This cost is included in the estimated maintenance cost per mile. • Hybrid buses tend to have lower noise levels than diesel buses. • Hybrid buses may also be available in sizes as small as 22 feet with 22 seats. • Additional training for drivers and maintenance staff will likely be required for hybrid buses.	• CNG fueling infrastructure may cost as much as $2 million[g]. • Federal rebates for CNG fuel may reduce the cost by $0.57/DGE. • CNG fuel price is generally more stable than diesel fuel price. • Indoor air quality and cleanliness in garages tend to be better with CNG than with diesel. • Additional training for drivers and maintenance staff will likely be required for CNG buses.	• Electric buses have limited range (100-120 miles per charge for a 35-foot bus and 45 miles per charge for a 22-foot bus). A Waukesha Metro Transit bus typically travels between 150 and 250 miles on an average weekday. • Electric buses require overnight or on-route charging. Overnight chargers range from about $20,000 for a slow charger (serves 1 bus overnight) to about $60,000 for a fast charger (serves 5-6 buses). On-route chargers allow electric buses to stay in service longer, but are more costly. • Electric buses tend to have lower noise levels than diesel buses. • Indoor air quality and cleanliness in garages tend to be better with electricity than with diesel. • Additional training for drivers and maintenance staff will likely be required for electric buses.	
Availability of Vehicles	Very High Availability		High Availability	High Availability	Limited Availability	

[a]*The 25- to 27-foot diesel buses could be similar to the medium-duty small buses currently used to provide Waukesha Metro Transit Metrolift paratransit service or could be similar to "cutaway" style vehicles typically used to provide paratransit (pictured). Waukesha Metro Transit acquired three new cutaway vehicles in 2011 for use in paratransit service. Ebus is the only current manufacturer of a 22-foot electric bus.*

[b]*Capital cost estimates for diesel, diesel-electric hybrid, compressed natural gas (CNG) and 35-foot electric buses were based on actual bus purchases in the "2010 Public Transportation Vehicle Database" published by the American Public Transportation Association (APTA) in June 2010. The capital cost estimate for a 22-foot electric bus was provided by Ebus. For all bus types, much of the variation in bus purchase price can be attributed to equipment included in the bus build (e.g. fareboxes, passenger counters, message signs, and radios), with the size of the bus generally having a minimal effect on bus purchase price.*

[c]*Per Federal Transit Administration (FTA) Circular 9030.1D, 83 percent Federal funding is assumed for the capital cost of each bus, with the remaining 17 percent local funding share required to be provided by the City of Waukesha.*

[d]*The fuel efficiency of the 35- and 40-foot heavy-duty diesel bus was calculated from vehicle mileage and fuel usage data for 2008 and 2009 prepared by Waukesha Metro Transit staff. The 25- to 27-foot medium-duty diesel bus fuel efficiency was estimated from interviews with staff of King County Metro Transit Authority in Seattle, Washington, and from "Transit Cooperative Research Program Synthesis 41: The Use of Small Buses in Transit Service" published by the Transportation Research Board in 2002. The diesel-electric hybrid bus fuel efficiency was estimated in "Transit Bus Life Cycle Cost and Year 2007 Emissions Estimation" published by the FTA in July 2007. CNG bus fuel efficiency was estimated in "Compressed Natural Gas (CNG) Transit Bus Experience Survey: April 2009 - April 2010" published by the FTA in September 2010. For the electric buses, two electric bus manufacturers provided energy efficiency estimates: DesignLine USA for the 35-foot bus and Ebus for the 22-foot bus.*

[e]*Diesel fuel cost estimates were derived from the State Urban Mass Transit Operating Assistance application for 2012 prepared by Waukesha Metro Transit. CNG fuel costs were estimated in "Compressed Natural Gas (CNG) Transit Bus Experience Survey: April 2009 - April 2010" published in September 2010. Electricity costs were estimated based on actual electricity rates charged to Waukesha Metro Transit by We Energies in August 2010.*

[f]*Maintenance costs include parts (including engine rebuilds and battery replacement) and labor. Maintenance cost estimates were based on information provided by Waukesha Metro Transit staff and "Transit Bus Life Cycle Cost and Year 2007 Emissions Estimation" published by the FTA in July 2007. Limited maintenance cost data is available for electric buses—likely due to the limited availability of electric buses—although DesignLine USA asserts that maintenance costs could be up to 25 percent lower for electric buses than for heavy-duty diesel buses.*

[g]*Waukesha Metro Transit's existing bus garage would have to be retrofitted to install CNG fueling infrastructure, such as pressurized tanks and ventilation for natural gas dispersion. A cost estimate of about $2 million for this infrastructure was provided by Waukesha Metro Transit based on a study conducted by the University of Wisconsin-Milwaukee in the 1990's.*

Source: SEWRPC.

- Hybrid and electric buses require battery replacement which will add to operating costs. These vehicles provide for quieter operation than diesel buses.

- Electric buses have a limited operating range under a single charge and will likely require overnight and/or on-route charging.

- Use of CNG and electric buses tend to result in cleaner garages with better indoor air quality.

Based on the above findings, Commission staff would recommend continuing to provide fixed-route bus service with 35-foot diesel buses in the immediate future. Beyond the immediate future, continuation of using 35-foot diesel buses should be evaluated relative to cost of diesel fuel. The analysis above assumed a price for diesel fuel of $4.00/gallon of diesel. If fuel costs rise significantly above that level, 35-foot diesel-electric hybrid buses may be the best of the five alternative bus types considered. Waukesha Metro Transit should monitor the experience of other transit operators in Wisconsin including Madison Metro Transit and the Oshkosh Transit System, that now operate some hybrid buses as they may provide valuable information to assist future decisions on whether the City should consider switching to hybrid buses.

Capital Expenditures

As shown in Table 32, the total capital project expenditures needed to maintain the existing transit system under Alternative 1 are estimated to be about $6.41 million ($1.28 million annually). The total transit capital expenditures are estimated at about $6.82 million ($1.36 million annually) under Alternative 2 and about $6.0 million ($1.2 million annually) under Alternative 3. Assuming use of Federal funding available through the Federal Transit Administration Section 5307/5340 (Urbanized Area Formula) program and the Section 5309 (Discretionary Capital) program, the local share of capital costs would be about $1.11 million ($222,900 annually) under Alternative 1; about $1.18 million ($236,800 annually) under Alternative 2; and about $1.04 million ($208,900 annually) under Alternative 3.

Comparison of Alternatives

Table 35 presents key service, ridership, cost, and funding information for the year 2017 for the transit system under each of the alternatives. From this information, the following observations can be made:

- Of the three options considered, Alternative 2 (Desirable Service) would provide for both an expansion of transit service and for the elimination of unproductive portions of the existing transit system. Alternative 2 would retain the service area coverage of the existing 2012 system serving about 65,100 persons, or virtually all (99 percent) of the population served by the existing system. The costs of the proposed route extensions and restructuring would be paid for largely by savings achieved by eliminating unproductive services. The productivity and the cost recovery rate of the system under Alternative 2 in 2017 is about the same as would be expected under Alternative 1 with the existing system (11.3 passengers per vehicle hour and 17.8 percent of operating costs versus 11.6 passengers per vehicle hour and 17.5 percent of operating costs) despite providing for an increase in service of about 7 percent. The total and local public assistance per revenue passenger under Alternative 2 ($7.33 and $2.66, respectively) would improve slightly over Alternative 1 ($7.56 and $2.75, respectively) despite the additional service. However, if the assumed reductions in Federal and State transit assistance occur, the service expansion proposed under Alternative 2 would result in a 41 percent increase in the City's public funding for the transit system from about $1,270,800 in the 2012 operating budget to about $1,796,200 in 2017.

- Alternative 3 (fiscally constrained service) represents an attempt to keep the local funds required for operation of the transit system at their current level. The transit system provided would be more compact retaining the highest performing service, with service provided primarily in the portions of the City with the most dense urban development and with the highest concentrations of transit-dependent persons. Alternative 3 eliminates routes and service in the outlying lower density portions of the City but would still serve about 55,900 persons, or about 85 percent of that for the existing system. The productivity and

Table 35

COMPARISON OF KEY CHARACTERISTICS FOR WAUKESHA METRO TRANSIT UNDER THE ALTERNATIVE SERVICE PLANS

Characteristic	2012 Budget	Forecast 2017[a]								
		Alternative 1 - Existing 2012 Service			Alternative 2 - Desirable Service			Alternative 3 - Fiscally Constrained Service		
			Difference from			Difference from			Difference from	
		Number	Alternative 1	Alternative 2	Number	Status Quo	Alternative 2	Number	Status Quo	Alternative 1
Fixed-Route Bus Service										
Revenue Vehicle Hours	53,100	53,100	-3,600	8,600	56,700	3,600	12,200	44,500	-8,600	-12,200
Ridership										
Revenue Passengers	630,000	598,500	-58,200	31,700	656,700	58,200	89,900	566,800	-31,700	-89,900
Total Passengers[b]	775,000	733,200	-71,300	35,900	804,500	71,300	107,200	697,300	-35,900	-107,200
Total Passengers per Revenue Vehicle Hour	14.6	13.8	-0.4	-1.9	14.2	0.4	-1.5	15.7	1.9	1.5
Total System										
Total Passengers[b]	794,300	751,600	-72,800	37,400	824,400	72,800	110,200	714,200	-37,400	-110,200
Total Operating Expenses[a]	$5,136,800	$5,636,000	$-387,000	$715,000	$6,023,000	$387,000	$1,102,000	$4,921,000	$-715,000	$-1,102,000
Total Operating Revenues	$915,000	$988,300	$-85,200	$62,600	$1,073,500	$85,200	$147,800	$925,700	$ -62,600	$-147,800
Total Public Assistance[a]	$4,221,800	$4,647,700	$-301,800	$652,400	$4,949,500	$301,800	$954,200	$3,995,300	$-652,400	$-954,200
Cost Recovery Rate (percent)	17.8	17.5	-0.3	-1.3	17.8	0.3	-1.0	18.8	1.3	1.0
Required Public Assistance										
Total	$4,221,800	$4,647,700	$-301,800	$2,162,600	$4,949,500	$301,800	$2,464,400	$2,485,100	$-2,162,600	$-2,464,400
City of Waukesha	$1,270,800	$1,689,800	$-106,400	$291,300	$1,796,200	$106,400	$397,700	$1,398,500	$-291,300	$-397,700
Total Operating Expense per Total Passenger	$6.47	$7.50	$0.19	$0.61	$7.31	$-0.19	$0.42	$6.89	$-0.61	$-0.42
Public Assistance per Total Passenger										
Total	$5.32	$6.18	$0.18	$0.59	$6.00	$-0.18	$0.41	$5.59	$-0.59	$-0.41
City of Waukesha Share	$1.60	$2.25	$0.07	$0.29	$2.18	$-0.07	$0.22	$1.96	$-0.29	$-0.22

[a]The forecasts of ridership, service levels, and financial data for the transit system for the years 2013 through 2017 were prepared by Commission staff based on the following assumptions:

1. All proposed routing and service changes would be implemented and in effect by January 1, 2013.

2. Systemwide average operating costs per total vehicle hour for the bus system would increase by about 5 percent in 2013 due to system contraction, then increase by 2 percent annually.

3. Increases in the total property tax levy for the bus and paratransit services provided by Waukesha Metro Transit would be limited to no more than 1 percent per year over the planning period.

4. The base adult cash fare for the bus system would increase in 2015 from $2.00 to $2.25 per trip (12.5 percent). Metrolift fares would increase in 2012 from $3.75 to $4.00 per trip (6.7 percent) and again in 2015 from $4.00 to $4.25 per trip (6.3 percent).

5. The annual allocation of Federal Section 5307/5340 funds to Waukesha County would remain at the 2011 level of about $974,600 from 2012 through 2017, and that allocation would continue to be divided equally between the City of Waukesha and Waukesha County resulting in a total of about $487,300 in Section 5307/5340 funds being available each year to the City. Of this amount, about $463,400 would be used for capital needs associated with system operations and the remainder used for capital and planning projects.

6. The combined Federal Section 5307/5340 program capital assistance funds and State 85.20 program operating assistance funds used by the transit system are expected to fund about 55.5 percent of total transit system operating expenses under the 2012 budget. This percentage would be expected to decrease to about 52.5 percent in 2013 and then by 0.5 percent per year over the planning period to about 50.5 percent in 2017.

[b]Total passengers represent counts of all passengers boarding transit vehicles including transfer and free passengers.

Source: SEWRPC.

the cost recovery rates of the system in 2017 under Alternative 3 show greater improvement than under Alternative 2 (12.7 passengers per vehicle hour and 18.8 percent of operating costs versus 11.6 passengers per vehicle hour and 17.8 percent of operating costs). The total and City public assistance would be significantly lower under Alternative 3 ($4.0 million and $1.4 million) than under either Alternative 2 ($4.95 million and $1.80 million) or the existing system ($4.65 million and $1.68 million). The total and local public assistance per revenue passenger also show significant reductions under Alternative 3. The reasons for and ridership impacts of these reductions should be recognized: 1) reductions in service levels of about 16 percent from the existing system and about 22 percent from Alternative 2; and 2) significantly lower ridership than both the existing system (5 percent less) or Alternative 1 (14 percent less).

The local funds needed under Alternative 3 do exceed the local funds provided under the transit system's 2012 operating budget (for the City of Waukesha, $1,270,800 in 2012 compared to $1,227,900 in 2013 and $1,398,500 in 2017 under Alternative 3). Staff estimates that to attain no increase in local funds would require additional service reductions such as the elimination of all service on Sundays or reducing the length of the evening service period.

- The third option would be to maintain the existing system without change as proposed under Alternative 1. The Alternative 1 transit system would continue to serve about 65,900 persons as there would be no routing changes that eliminate service to any areas. This option has productivity and cost values which are close (within 3 to 5 percent) to those for the desirable services and expansion identified under Alternative 2. In comparison to the fiscally constrained system under Alternative 3, however, maintaining the existing system would require significant increases (25 to 32 percent more) in total and local public funds.

PUBLIC REACTION TO THE ALTERNATIVE SERVICE CHANGES

Public comments on the transit service improvement Alternatives proposed for the Waukesha Metro Transit Development Plan was solicited at a public informational meeting held on August 27, 2012, at the Waukesha Downtown Transit Center. The meeting served to provide for the distribution of information on and for the collection of comments on the transit system improvement alternatives. A total of 30 people attended the public meeting which is documented in a separate report.[3] Commission and transit system staff were also present at the meeting to answer questions from the public on all aspects of the study. The Commission also solicited public comment on the plan through advertising and outreach including publication of a display advertisement regarding the public informational meetings in the Waukesha Freeman and by preparing and distributing a newsletter summarizing work completed on the plan to date and a description of the three alternative transit service improvement plans.

From August 20, 2012 through September 7, 2012, a total of 19 comments were received regarding the Waukesha Metro Transit System, the transit system development plan, or the alternative service improvements. The comments were provided in several ways including: on comment forms available at the August 27, 2012, public informational meeting; to the court reporter present at the meeting; via letter, e-mail, or through the Commission website; or orally to transit system and Commission staff present at the public informational meeting. The specific comments are provided in the record of public comments and included: 16 comments provided to staff or the court reporter at the August 27, 2012, public informational meeting; eight written comments on the comment forms or in personal letters at the public informational meeting; and three comments submitted through the website maintained by the Commission for the City transit development plan. Most of the comments received called for retaining the existing transit system and for not making significant service reductions. A few comments were received for extending service to unserved areas of the City or to major traffic generators like the Majestic

[3] *See* Record of Public Comments, Waukesha Metro Transit Development Plan: Alternative Service Changes, Comments Received August 20, 2012 through September 7, 2012*; September 2012.*

Cinema on Springdale Road in the Town Of Brookfield. One comment from the office of a south-side Waukesha Dentist specifically asked that Metro not eliminate service over Route No. 15, noting that it had many patients with physical and cognitive disabilities that relied on Route No. 15 to get to appointments at their office on Racine Avenue.

WAUKESHA TRANSIT COMMISSION RESPONSE TO ALTERNATIVE TRANSIT IMPROVEMENT PLANS AND THE PUBLIC COMMENTS RECEIVED

The Waukesha Transit Commission formally reviewed the three service improvement alternatives and the public comments received on the alternatives at its meeting on October 4, 2012. The Transit Commission indicated that the public comments were very informative on how transit riders viewed the Waukesha Metro Transit system as essential for their various travel needs, on their opposition to reductions in transit service, and on what riders viewed as desirable service improvements. The Transit Commission also expressed concern over the potential 41 percent increase by 2017 in the annual City funds needed for the improved and expanded service proposed under Alternative 2 and, consequently, that it could not support all of the potential service changes proposed under that alternative. The Transit Commission indicated it did not support the extensive service reductions included under Alternative 3. Transit system staff noted that the existing system had received a favorable review in a management performance audit of the system conducted in 2011 by the Wisconsin Department of Transportation and suggested that the Transit Commission select the 2012 transit system proposed under Alternative 1, noting that it would review the performance of the lowest performing routes to identify potential service changes that would be less extensive than those proposed under Alternatives 2 and 3 and would improve transit system performance without significant increases in City funds.

The Waukesha Transit Commission ultimately recommended Alternative 1, the existing 2012 transit service, as its preferred alternative for the period 2013 through 2017. The Transit Commission further recommended that transit system staff report back to the Commission by the middle of 2013 on their analysis of the potential changes to the 2012 transit system.

SUMMARY

This chapter has described the alternative transit service changes for the City of Waukesha Metro Transit System for the period 2013 through 2017 for consideration by the Waukesha Transit Commission. The alternative changes address the need for improving both the efficiency and effectiveness of the transit system and also for expanding service into presently unserved or underserved portions of the City.

Analysis of Dial-a-Ride Transit (DART) Service

The chapter also included an analysis by Commission staff of the feasibility of providing dial-a-ride transit (DART) service in the Waukesha Metro Transit service area instead of fixed-route bus service. DART service, which includes shared-ride taxi operations, is typically provided by public transit systems using automobiles and accessible vans or small buses that transport passengers between their specific origins and destinations on demand without fixed routes or on fixed schedules except to satisfy special demand. Waukesha Metro Transit currently operates DART service in its Metrolift service for disabled individuals. Commission staff reviewed the feasibility of modifying the Metrolift service to provide DART service for the general public in the Waukesha area and came to the following conclusions:

1. Analysis of the population density within the service area for Waukesha Metro Transit suggests that the overall population density within the Waukesha Metro Transit service area of almost 2,900 persons per square mile was too high for bus service to be entirely replaced by DART. Research has suggested that transit agencies should only consider small urban areas with densities of less than 2,000 persons per square mile as potential candidates for entirely demand-responsive public transportation services. Population densities within the central or core portions of the Waukesha Metro Transit service area generally exceed 3,000 persons per square mile.

2. Generally, DART service is more cost effective than fixed-route bus service if the demand for transit is low. In general, urban fixed-route bus service has a higher cost per vehicle mile than taxi service due, in part, to higher wage and higher capital and maintenance costs for buses. Urban fixed-route bus service has a higher cost per vehicle mile than taxi service due, in part, to higher wages for drivers and other personnel, and higher capital and maintenance costs for buses. However, bus service can have a lower cost per passenger and lower total costs when there is high transit ridership as bus systems operate larger vehicles with more passenger carrying capacity than taxis, and bus service is designed to carry multiple trips. Serving a higher transit ridership with a taxi system will require more taxi vehicles (and drivers) to serve that demand than with a bus system. Taxi systems tend to have higher costs per passenger than bus systems because taxi systems generally provide an individual ride. Commission staff compared the operating costs per passenger for the Waukesha Metro Transit System and shared-ride taxi systems in the Region in 2010. The operating costs per passenger ranged from $6.68 to $22.78 per passenger in 2010 for taxi service compared with $6.80 per passenger for Waukesha Metro. Replacing bus service with taxi service within the existing Waukesha Metro Transit service area may not lower the total costs of operation or improve the overall efficiency of the City transit system.

3. Commission staff conducted an analysis of replacing the City's fixed-route bus service provided on evenings and Sundays with DART service for use in preparing the 2012 transit system operating budget. Staff concluded there would likely be no cost savings for the transit system if DART service replaced bus service. This was primarily due to a clause in the Federal labor protection agreement with bus operators which does not permit services to be contracted out to any entity other than the City's existing private transit management firm. Consequently, the proposed DART service would have about the same operating cost per vehicle hour as the existing bus service.

4. DART service could still be appropriate as a replacement for bus service in areas or during periods with low transit ridership. However, if the City has an interest pursuing DART service, it will first need to modify the existing labor protection agreement with bus operators to remove the limitation on contracting out transit services.

Service Change Alternatives

Three transit improvement alternatives were developed by Commission staff:

1. Alternative 1, which proposed continuing to operate the existing 2012 transit system without any changes to routes or service levels throughout the planning period. Alternative 1 was considered to be a feasible option in light of the favorable review the transit system received in a management performance audit conducted on the transit system in 2011 by the Wisconsin Department of Transportation. Map 16 displays the current 2012 transit system.

2. Alternative 2, which represented the "desirable service" alternative and proposed modest expansion of the transit system to address unmet service needs while eliminating unproductive service to increase service efficiency. The routing and service changes identified under Alternative 2 are presented in Table 23 and were intended to largely maintain existing system routes and services, as well as provide for some service expansion and the elimination of unproductive services. A goal of the proposed changes was to improve both the quality and extent of the services provided along with the overall efficiency of the transit system. One route of the system (Route No. 15) would be eliminated under this alternative while four routes (Route Nos. 3, 6, 7, and 8) would be significantly modified or extended (see Map 14). Service levels (revenue vehicle miles and hours) in 2017 would be about 6 to 7 percent higher under Alternative 2 than the under the 2012 budget. The savings achieved by eliminating unproductive and poorly performing services would be used to fund new and improved services. While eliminating poorly performing service, City funding for the transit system were not limited over the planning period.

3. Alternative 3, which represented a "fiscally constrained" alternative which assumed the transit system would face a combination of cuts in Federal and State operating funds and limits increases in local funding over the planning period. The routing and service changes identified under Alternative 3 are also

presented in Table 23 and represent changes needed to respond to lower public funding levels. The alternative also had a desirable goal of keeping local funding at or below the level provided under the 2012 operating budget. Consequently, the "financially-constrained alternative" proposes a substantially reduced system of routes (see Map 15), focusing service on the central core areas of the City of Waukesha with high residential and employment density and good ridership. Service to outlying, lower-density areas would be significantly reduced or eliminated. One route of the system (Route No. 15) would be eliminated and the total population served would decrease by about 10 percent. Service levels (revenue vehicle miles and hours) in 2017 would be about 16 to 20 percent less than the service levels in the 2012 budget.

4. A comparative evaluation was performed on the three alternatives with respect to key service, ridership, cost, and funding information for the year 2017 (see Table 35). This evaluation found that:

   a. Alternative 1 (existing system) would result in productivity and cost values for the transit system which are close to those for the desirable services and expansion identified under Alternative 2. In comparison to the fiscally constrained system under Alternative 3, however, maintaining the existing system would require much higher total and local public funding requirements.

   b. Alternative 2 (desirable service) would provide for both an expansion of transit service and for the elimination of unproductive portions of existing system operations, largely retaining the service area coverage and the population served by the existing system. The costs of route extensions and restructuring under Alternative 2 would be paid for largely by savings achieved by eliminating unproductive services. However, if the assumed reductions in Federal and State transit assistance occur, the service expansion proposed under Alternative 2 would result in a 41 percent increase in the City's public funding for the transit system from about $1,270,800 in the 2012 operating budget to about $1,796,200 in 2017.

   c. Alternative 3 (fiscally constrained service) eliminates routes and service in the outlying lower density portions of the City and would limit service to primarily the portions of the City with the most dense urban development and with the highest concentrations of transit-dependent persons. Consequently, the productivity and the cost recovery rates of the transit system would show improvement over Alternative 2, and the total and City public assistance would be significantly lower than under either Alternative 2 or the existing system. Consideration of these impacts should recognize that Alternative 3 would reduce service levels by about 16 percent from the existing system and by about 22 percent from Alternative 2. This in turn would result in significantly lower ridership levels than for both the existing system or Alternative 2.

5. Commission staff reviewed alternative vehicle types and sizes for the transit system. While this analysis found that smaller diesel buses (19 to 22 seats) may have enough seating capacity for some of the existing Waukesha Metro Transit routes and could be a viable option to the larger buses currently in the fleet, it was found that the use of smaller diesel buses would not significantly reduce air pollutants emitted from buses and that there would be no cost advantage for moving to such smaller vehicles. Also, alternative fuel buses (hybrid, CNG, electric) are not yet widely used and have several issues that the transit system would need to consider before committing to such vehicles as they could increase system costs. Staff consequently recommended continuing to provide fixed-route bus service with 35-foot diesel buses in the immediate future. Beyond the immediate future, the continued use of 35-foot diesel buses should be reevaluated relative to cost of diesel fuel. If fuel costs rise significantly in the future, 35-foot diesel-electric hybrid buses may be the best of the five alternative bus types considered. Waukesha Metro Transit should monitor the experience of other transit operators in Wisconsin including Madison Metro Transit and the Oshkosh Transit System, that now operate some hybrid buses as they may provide valuable information to assist future decisions on whether the City should consider switching to hybrid buses.

6. The total capital project expenditures needed to maintain the existing transit system under Alternative 1 are estimated to be about $6.41 million ($1.28 million annually). The total transit capital expenditures are estimated at about $6.82 million ($1.36 million annually) under Alternative 2 and about $6.0 million ($1.2 million annually) under Alternative 3. Assuming use of Federal funding available through the Federal Transit Administration Section 5307/5340 (Urbanized Area Formula) program and the Section 5309 (Discretionary Capital) program, the local share of capital costs would be about $1.11 million ($222,900 annually) under Alternative 1; about $1.18 million ($236,800 annually) under Alternative 2; and about $1.04 million ($208,900 annually) under Alternative 3.

7. Following its review of the three service improvement alternatives, the Waukesha Transit Commission expressed concern over the potential 41 percent increase by 2017 in the annual City funds needed for the improved and expanded service proposed under Alternative 2. The Transit Commission also indicated that it did not support the extensive service reductions included under Alternative 3. As a reason for its lack of support for Alternative 3, the Transit Commission pointed to the public comments received at a public informational meeting held on August 27, 2012, which asked that the City not reduce the existing transit service. The Transit Commission consequently recommended that Alternative 1, the existing 2012 transit service, be the basis for the recommended plan for the Waukesha Metro Transit System for the period 2013 through 2017. The Transit Commission further recommended that transit system staff report back to the Commission by the middle of 2013 on an analysis of potential changes to the existing 2012 transit system.

Chapter VI

RECOMMENDED TRANSIT SYSTEM DEVELOPMENT PLAN

INTRODUCTION

This chapter describes the final recommended transit development plan for the City of Waukesha Metro Transit System. The Waukesha Transit Commission reviewed three alternative transit improvement plans for the Waukesha Metro Transit System and ultimately selected Alternative 1—the existing 2012 transit system—to be the basis for the recommended transit development plan for the five-year period from 2013 to 2017. In selecting Alternative 1, the Transit Commission rejected two other contrasting service options. Alternative 2 proposed a modest (6 to 7 percent) expansion of the transit system to address unmet service needs while eliminating unproductive services to increase service efficiency. This alternative was rejected as it was projected to increase the City funding for the transit system by about 41 percent by 2017, an increase which the Transit Commission deemed too costly for City taxpayers under current economic conditions given the uncertainties regarding future Federal and state transit funding levels. Alternative 3 would keep City funding levels for the system close to the budgeted 2012 level and represented a "fiscally constrained" alternative. However, the alternative proposed significant reductions (16 to 20 percent) in service levels by 2017 to keep funding levels low and the Transit Commission favored less drastic cuts to the existing transit system than outlined under Alternative 3. The Waukesha Transit Commission, at the recommendation of transit system staff, chose Alternative 1, the existing 2012 transit system, and directed transit system staff to make minor adjustments to the system as needed to meet annual transit system budgets for 2013 and subsequent years of the planning period. Significant service expansion, such as that proposed under Alternative 2, would be delayed until a future time when economic conditions improve and increases in local funding for service expansion are supported. The final plan may be considered an initial stage in the implementation of the transit element of the regional transportation plan which proposes a doubling of transit service in southeastern Wisconsin over the next 25 years.

This chapter includes a description of the routes and service levels recommended under the final plan and the anticipated performance of the recommended transit system, including information on projected ridership, revenues, and operating and capital costs. The actions required to achieve plan implementation are also identified. The chapter concludes with a brief summary.

RECOMMENDED TRANSIT SYSTEM

Bus Routes, Service Levels, and Fares

The recommended transit development plan for the Waukesha Metro Transit System calls for the City of Waukesha to continue to operate the existing 2012 Waukesha Metro Transit bus routes. The recommended transit

Table 36

TRANSIT SERVICE CHARACTERISTICS FOR THE WAUKESHA METRO TRANSIT SYSTEM UNDER THE RECOMMENDED PLAN

Route	Weekdays							
	Route Length (miles)	Service Frequency (minutes)				Vehicles Required		
		AM Peak	Midday	PM Peak	Evening	Peak Periods	Midday	Evening
1 - Waukesha-Brookfield	24.7	35	30	35	30	3.0	3.0	3.0
2 - Arcadian	11.4	35	60	35	60	2.0	1.0	1.0
3 - Hartwell	6.7	70	60	60	60	0.5	0.5	0.5
4 - Grand Avenue	6.4	35	30	35	30	1.0	1.0	1.0
5 - Prairie	16.3	70	60	70	- -	1.0	1.0	- -
6 - St. Paul	14.4	70	60	30-70	- -	1.0	1.0	- -
5/6 - Prairie/St. Paul	15.7	- -	- -	- -	60	- -	- -	1.0
7 - Madison	8.7	70	60	70	60	0.5	0.5	1.0
8 - Summit	9.8	35	30	35	30	1.0	1.0	0.5
9 - Northview	23.2	35	60	35	60	2.0	1.0	1.0
15 - Racine	15.3	70	60	70	- -	1.0	1.0	0.0
16 - Airport Road	3.9	1 trip	- -	1 trip	- -	- -[a]	- -	- -
Total System	156.5	- -	- -	- -	- -	13.0	11.0	9.0

Route	Saturdays			Sundays		
	Route Length (miles)	Service Frequency (minutes)	Vehicles Required	Route Length (miles)	Service Frequency (minutes)	Vehicles Required
1 - Waukesha-Brookfield	19.3	30	3.0	19.3	30	3.0
2 - Arcadian	9.2	60	1.0	9.2	60	1.0
3 - Hartwell	6.9	60	0.5			
4 - Grand Avenue	6.4	60	0.5	6.4	60	0.5
5/6 - Prairie/St. Paul	15.7	60	1.0	15.7	60	1.0
7 - Madison	7.1	60	0.5			
8 - Summit	9.3	60	0.5			
7/8 - Madison/Summit				6.2	60	0.5
9 - Northview	18.8	60	1.0			
15 - Racine	15.3	60	1.0			
Total System	107.9	- -	9.0	56.7	- -	6.0

Note: Shaded cell indicate the routes which do not operate during the period.

[a]*The vehicle used for Route No. 16 is shared with other routes of the transit system.*

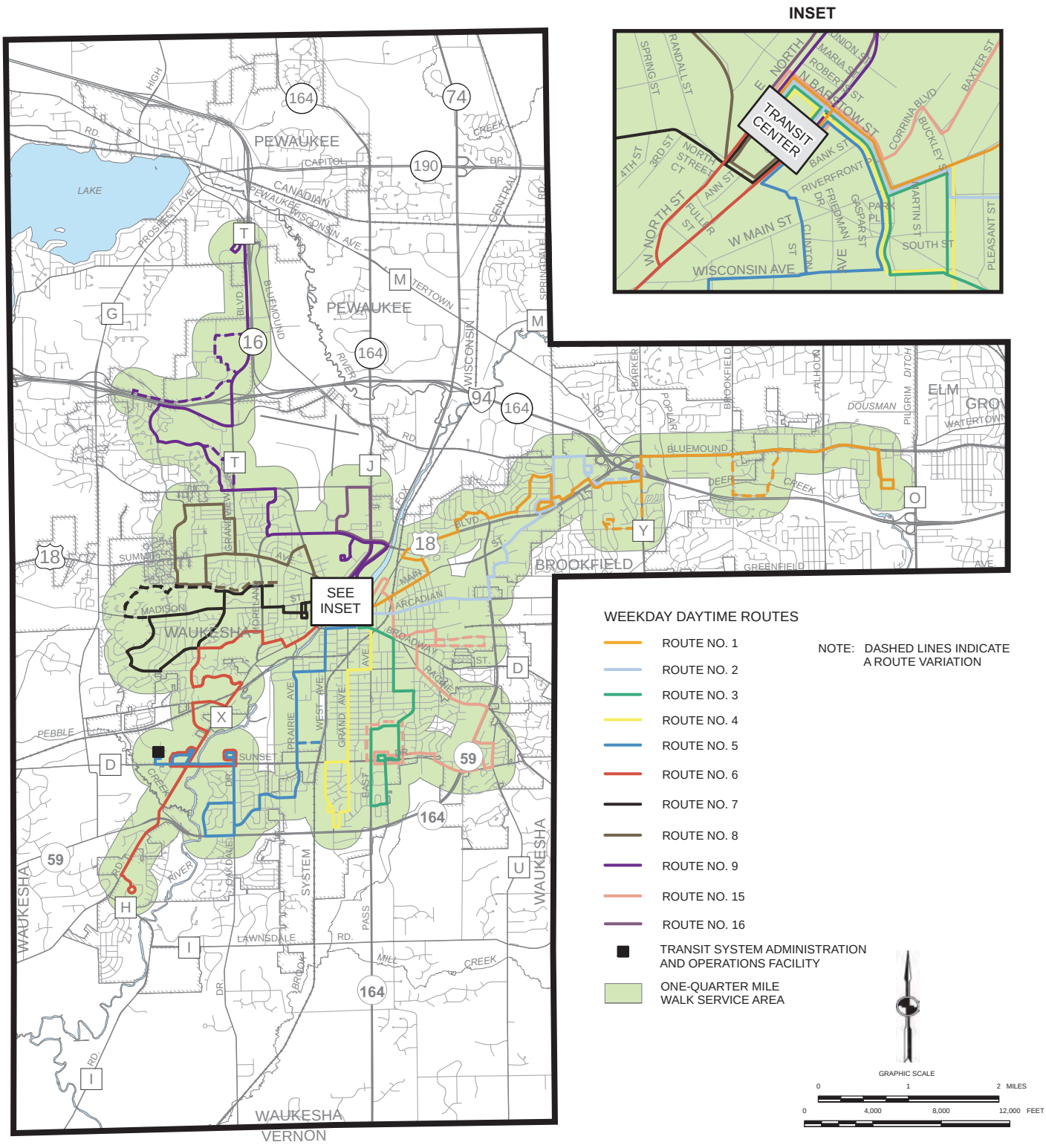
Source: SEWRPC.

system will, therefore, include 11 bus routes operated in a radial route network with all routes originating from the Downtown Transit Center, located at 212 E. St. Paul Avenue, and providing service to the outlying portions of the City. The 11 routes of the recommended system are shown on Map 17. Table 36 summarizes the daily operating and service characteristics of each route in the recommended transit system.

The Waukesha Transit Commission directed the staff of Waukesha Metro Transit to continue to monitor the ridership, costs, and performance of each route in the system and to use this information to identify where minor

Map 17

WAUKESHA METRO TRANSIT WEEKDAY DAYTIME ROUTES UNDER THE RECOMMENDED PLAN



Source: Waukesha Metro Transit and SEWRPC.

changes in routing or service levels should be considered. Any such changes would be implemented through the annual system operating budget or through mid-year service adjustments. Transit system staff is to review the findings of the route performance evaluation presented in Chapter V and, using updated data on route ridership and service levels, report to the Waukesha Transit Commission on potential service changes by no later than June 2013 with that information to be used in preparing the 2014 operating budget for the system. The recommended plan calls for the City to continue to operate the Waukesha Metro Transit System with the existing service characteristics until transit system staff identifies any modifications to the 2012 routes and service levels.

It is recommend that the existing 2012 bus fares remain unchanged until increases in operating costs warrant a fare increase in order to maintain a farebox recovery rate of about 17.5 percent. The plan envisions that increases in the 2012 bus fares will need to occur in 2015 to maintain this recovery rate. At that time, the base adult cash fare for the bus system should be considered for an increase from $2.00 to $2.25 per trip, or by about 12.5 percent. Increases in the other fare categories for bus service will need to occur with changes in the adult cash fare.

Paratransit Service and Fares

The recommended plan also calls for the City to continue to operate the Waukesha Metrolift paratransit service with the existing 2012 service characteristics until such time that the transit system identifies a need to modify the service characteristics. Waukesha Metro Transit staff identified one such change during 2012 which proposed adding an agency fare to the charges for using the Metrolift service. The agency fare was implemented in July 2012.

The plan envisions that increases in the 2012 fares for Metrolift paratransit service will need to be considered in 2015 in order to maintain a reasonable cost recovery rate for the paratransit service. At that time, raising the Metrolift adult fare from $4.00 to $4.50 per ride should be considered. Increases in the other fare categories for Metrolift service will need to occur as the adult fare is raised.

PLAN PERFORMANCE AND COSTS

Commission staff developed forecasts of ridership, operating costs, operating revenues, and transit assistance needs of the transit system under the Recommended Plan. Tables 37 and 38 present the annual operating and service characteristics, the forecast ridership, and the operating costs for the recommended system over the planning period. The assumptions used to prepare the forecasts are shown in Figure 5. The recommended transit system would be expected to have the following performance measures and costs:

- The system would be expected to operate about 524,200 revenue vehicle miles and about 41,200 revenue vehicle hours of fixed-route bus service annually over the planning period.

- By 2017, both the total operating costs and total public funding for the transit system would be expected to increase by about 10 percent over the amounts in the 2012 operating budget to about $5.64 million and $4.65 million, respectively.

- The City's share of the total public funding for the system would increase from about $1.27 million under the 2012 budget to $1.69 million in 2017, or by about 33 percent.

The plan forecasts assume no significant changes to the routes and service levels of the transit system over the planning period. In making its recommendation to have the existing 2012 transit system serve as the recommended plan, the Waukesha Transit Commission directed the transit system staff to continue to monitor the performance of transit system routes so as to be able to identify where minor changes to the system that would maintain performance levels and eliminate unproductive services with a concerted effort in reducing the City funding wherever possible. Changes identified by staff should not be as extensive as those proposed under Alternatives 2 or 3 as discussed in the previous chapter. Rather, the changes would likely be very minor changes in the existing routes and schedules which would not be expected to impact the forecasts shown in Tables 37 and 38.

Table 37

TRANSIT SERVICE AND RIDERSHIP FOR THE WAUKESHA METRO TRANSIT SYSTEM UNDER THE RECOMMENDED PLAN: 2011 TO 2013 AND 2017

Characteristic	Year[a]			
			Forecast	
	2011 Estimated	2012 Budget	2013	2017
Fixed-Route Bus Service				
Service				
Revenue Vehicle Miles	705,100	705,100	705,100	705,100
Revenue Vehicle Hours	53,100	53,100	53,100	53,100
Ridership				
Revenue Passengers	601,900	630,000	630,000	598,500
Total Passengers	740,500	775,000	771,800	733,200
Revenue Passengers per Revenue Vehicle Hour	13.9	14.6	14.5	13.8
Paratransit "Metrolift" Service				
Service				
Revenue Vehicle Miles	99,400	97,900	96,300	93,500
Revenue Vehicle Hours	10,100	9,900	9,800	9,500
Ridership				
Revenue Passengers	18,400	18,100	17,800	17,300
Total Passengers	19,600	19,300	19,000	18,400
Revenue Passengers per Revenue Vehicle Hour	1.9	1.9	1.9	1.9
Total System				
Service				
Revenue Vehicle Miles	804,500	803,000	801,400	798,600
Revenue Vehicle Hours	63,200	63,000	62,900	62,600
Ridership				
Revenue Passengers	620,300	648,100	647,800	615,800
Total Passengers	760,100	794,300	790,800	751,600
Revenue Passengers per Revenue Vehicle Hour	12.0	12.6	12.6	12.0

[a]*Total system ridership and service data exclude the contract transit services funded by Waukesha County and overseen by Waukesha Metro Transit.*

Source: SEWRPC.

Options for Service Improvements if Additional Funding Becomes Available

The recommended transit system presented above was developed assuming the total transit operating costs would increase by an average of about 2 percent per year, and Federal and State funds that could be used to offset part of total transit system operating costs would decrease from 55.5 percent of operating costs in 2012 to 50.5 percent of costs in 2017. Potential desirable service improvements which could be considered should additional funding become available through lower annual increases in operating costs or the availability of higher levels of Federal and State transit assistance were identified under Alternative 2 in Chapter V. In addition, the transit system could also consider using additional funding to increase the frequency of service on selected routes such as those with the highest ridership or providing service to major trip generators.

CAPITAL EQUIPMENT NEEDS

Waukesha Metro Transit has a bus fleet composed of 23, 35-foot long buses that is used for providing fixed-route bus service, and a fleet of seven 25- to 29-foot long paratransit vehicles that it uses for providing Metrolift paratransit service to disabled individuals. The City's current capital improvement program (CIP) proposes replacing or rehabilitating between 2012 and 2017, 10 of the 13, 35-foot long fixed-route transit buses purchased

Table 38

FORECAST OPERATING COSTS, REVENUES, AND PUBLIC INVESTMENT FOR THE WAUKESHA METRO TRANSIT SYSTEM UNDER THE RECOMMENDED PLAN: 2011 TO 2013 AND 2017

Characteristic	Year[a]			
	2011 Estimated	2012 Budget	Forecast 2013	Forecast 2017
Operating Costs, Revenues, and Public Assistance Funding				
Total Operating Expenses	$5,196,900	$5,136,800	$5,231,000	$5,636,000
Total Operating Revenues	$ 903,600	$ 915,000	$ 914,600	$ 988,300
Percent of Expenses Recovered through Revenues	17.4	17.8	17.5	17.5
Required Public Assistance	$4,293,300	$4,221,800	$4,316,400	$4,647,700
Sources of Public Assistance Funds				
Federal and State Funds	$3,002,800	$2,849,700	$2,746,300	$2,846,200
Local Funds				
City of Waukesha	$1,181,400	$1,270,800	$1,466,800	$1,689,800
Waukesha County	$ 102,900	$ 95,300	$ 97,200	$ 105,200
Other	$ 6,300	$ 6,000	$ 6,100	$ 6,500
Subtotal Local Funds	$1,290,600	$1,372,100	$1,570,100	$1,801,500
Total	$4,801,300	$4,685,200	$4,779,800	$5,111,100

Note: Total system financial data exclude the contract transit services funded by Waukesha County and fees for contract administration charged by the City of Waukesha.

[a]*Bus system financial data for 2012 reflects the adopted operating budget for the transit system. The forecasts of ridership, service levels, and financial data for the transit system for the years 2013 through 2017 were prepared by Commission staff based on the following assumptions:*

1. All proposed routing and service changes would be implemented and in effect by January 1, 2013.

2. Systemwide average operating costs per total vehicle hour for the bus system would increase by about 2 percent annually.

3. The total property tax levy for the bus and paratransit services provided by Waukesha Metro Transit would not be restricted over the planning period.

4. The base adult cash fare for the bus system would increase in 2015 from $2.00 to $2.25 per trip (12.5 percent). Metrolift fares would increase in 2015 from $4.00 to $4.50 per trip (12.5 percent).

5. The annual allocation of Federal Section 5307/5340 funds to Waukesha County would remain at the 2011 level of about $974,600 from 2012 through 2017, and that allocation would continue to be divided equally between the City of Waukesha and Waukesha County resulting in a total of about $487,300 in Section 5307/5340 funds being available each year to the City. Of this amount, about $463,400 would be used for capital needs associated with system operations and the remainder used for capital and planning projects.

6. The combined Federal Section 5307/5340 program capital assistance funds and State 85.20 program operating assistance funds used by the transit system are expected to fund about 55.5 percent of total transit system operating expenses under the 2012 budget. This percentage would be expected to decrease to about 52.5 percent in 2013 and then by 0.5 percent per year over the planning period to about 50.5 percent in 2017.

Source: SEWRPC.

in 1998 and 2004 and retiring the other three buses. None of the seven large buses purchased in 2007, or the seven paratransit buses purchased in 2007 and 2011 are due for replacement by 2017. Other capital expenditures will be needed to maintain the transit system facilities and other operating and service equipment over the planning period.

As shown in Table 39, the total capital project expenditures needed to maintain the existing transit system under the recommended plan are estimated to be about $6.41 million ($1.28 million annually). Assuming use of Federal funding available through various Federal transit assistance programs, the local share of capital costs would be about about $1.06 million ($222,900 annually) for the recommended plan.

The analysis of alternative vehicle types and sizes for the transit system presented in Chapter V recommended that Waukesha Metro Transit should continue to provide fixed-route bus service with 35-foot diesel buses in the

Figure 5

ASSUMPTIONS USED IN DEVELOPING FORECASTS OF RIDERSHIP, EXPENSES, AND REVENUES FOR THE WAUKESHA METRO TRANSIT SYSTEM UNDER THE RECOMMENDED TRANSIT DEVELOPMENT PLAN: 2013-2017

Commission staff developed forecasts of ridership, expenses, and revenues for the recommended transit system over the years 2013-2017 based on the following assumptions:

- The recommended routing alignments and service levels are those which existed in 2012. The City of Waukesha may choose to implement some changes to the existing routes based on analyses conducted by transit system staff.

- For every 1 percent increase in fares, ridership would decrease by 0.43 percent. For every 1 percent change (increase/decrease) in revenue vehicle hours of service, ridership would change (increase/decrease) by 0.5 percent. These measures of elasticity of demand for transit service have been established through many studies and are widely accepted in the transit industry.

- The operating cost per revenue vehicle hour of fixed route service would be expected to increase by about 2 percent per year due to inflation between 2013 and 2017.

- Fares for fixed route bus service would be increased in January 2015 with the base cash fare increasing by $0.25 from $2.00 to $2.25 per ride. Increases in other fare categories will occur as the adult cash fare is raised. Fares for Metrolift paratransit service would be increased in June 2012 when the cash fare will be increased by $0.25 from $3.75 to $4.00 per ride. The Metrolift cash fare will be increased again January 2016 from $4.00 to $4.50 per ride. The agency rates for Metrolift service established in mid-2012 specifying rates to be charged to clients of public and private social service agencies using Metrolift to transport individuals participating in their programs would be adjusted as Metrolift cash fares are increased.

- The combined Federal Section 5307/5340 program capital assistance funds and State 85.20 program operating assistance funds used by the transit system are expected to fund about 55.5 percent of total transit system operating expenses under the 2012 budget. This percentage has been assumed to decrease to about 52.5 percent in 2013 and then by 0.5 percent per year over the planning period to about 50.5 percent in 2017. This is based on an assumption that the total amount of Federal and State transit assistance funds will remain flat over the next five years, while operating expenses for transit systems will continue to increase with inflation, which will lead to a smaller share of Federal and State transit assistance funding for all transit systems in the State.

Source: SEWRPC.

immediate future. While the analysis found that smaller diesel buses (19 to 22 seats) may have enough seating capacity for some of the existing Waukesha Metro Transit routes and could be a viable option to the larger buses currently in the fleet, it was found that the use of smaller diesel buses would not significantly reduce air pollutants emitted from the buses and that there would be no cost advantage for changing to such smaller vehicles. Also, alternative fuel buses (hybrid, CNG, electric) are not yet widely used and have several issues that the transit system would need to consider before committing to such vehicles as they could increase system costs. Staff consequently recommended continuing to provide fixed-route bus service with 35-foot diesel buses in the immediate future. Beyond the immediate future, the continued use of 35-foot diesel buses should be reevaluated relative to cost of diesel fuel. If fuel costs rise significantly in the future, 35-foot diesel-electric hybrid buses may be the best of the five alternative bus types considered. Waukesha Metro Transit should monitor the experience of other transit operators in Wisconsin including Madison Metro Transit and the Oshkosh Transit System, that now operate some hybrid buses as they may provide valuable information to assist future decisions on whether the City should consider changing to hybrid buses.

Table 39

CAPITAL EQUIPMENT EXPENDITURES FOR WAUKESHA METRO TRANSIT UNDER THE RECOMMENDED PLAN: 2013-2017

Year	Equipment or Project Description	Unit Cost[a]	Quantity	Total Cost[b]
2013	Replacement of 1998 Gillig Low-floor Buses[a]	$410,000	6	$2,460,000
	Replace Make-up Air Units	- -	2	40,000
	Skidsteer	85,000	1	85,000
	Upgrade Furnishings at Metro Offices	- -	- -	40,000
	Replace ID Badge machine	8,500	1	8,500
	Replace Floor Scrubber	12,000	1	12,000
	Replace Transit Van	25,000	1	25,000
	Subtotal	- -	- -	$2,670,500
2014	Rehab/Rebuild 2007 Bluebird Paratransit Buses	$ 50,000	4	$ 200,000
	Replace Maintenance Software	40,000	- -	40,000
	Replace AC Reclaimer/Recycler	10,000	- -	10,000
	Generator for Downtown Transit Center	40,000	- -	40,000
	Outdoor Security Cameras at Downtown Transit Center	75,000	- -	75,000
	Subtotal	- -	- -	$ 365,000
2015	Rehab/Rebuild 2008 Gillig Buses	$ 50,000	3	$ 150,000
	Replace Back-up Generator	30,000	- -	30,000
	Subtotal	- -	- -	$ 180,000
2016	Replace 2004 Gillig Buses	$448,000	7	$3,136,000
2017	Replace AVL computer Equipment	- -	- -	$60,000
Total Costs		- -	- -	$6,411,500
Federal Capital Assistance Funds				$5,297,100
Local Share of Costs				1,114,400
Average Annual Costs over Planning Period				
Total Costs				$1,282,300
Federal Share[c]				1,059,400
Local Share				222,900

[a]*The existing 2012 transit system has 13, 1998 Gillig buses in the bus fleet. Four of the 1998 buses are being replaced in 2012 with Federal funds applied for in 2011 and the remaining City share included in the approved City Budget. The other three Gillig buses will be retired.*

[b]*Costs are expressed in estimated year of expenditure dollars*

[c]*Assumes 83 percent FTA funding for bus purchases to account for a 90 percent Federal share for ADA-related bus accessibility features and an 80 percent Federal share for the vehicle. An 80 percent Federal share was assumed for all other capital projects.*

Source: Waukesha Metro Transit and SEWRPC.

PLAN ADOPTION AND IMPLEMENTATION

Plan Adoption

Adoption or endorsement of the recommended Waukesha Metro Transit Development Plan is important to ensuring a common understanding among the concerned units and agencies of government and to enable the staffs of those governments to work cooperatively toward plan implementation. Accordingly, the following plan adoption actions are recommended:

- ***City of Waukesha***
  The City of Waukesha Common Council should act to formally adopt the plan as a guide to the provision of transit services in the City and environs. Importantly, this action would not commit the City to implement any of the recommended service changes, but would indicate that the City agrees the plan would serve as a valuable reference document. The adoption action should be certified to the Southeastern Wisconsin Regional Planning Commission with a request that the plan be incorporated into the regional transportation system plan.

- ***Southeastern Wisconsin Regional Planning Commission***
  Upon receipt of notification of adoption of the plan from the City of Waukesha, the Southeastern Wisconsin Regional Planning Commission should adopt the plan as an amendment and extension of the regional transportation system plan and formally certify such adoption to all of the local units of government in the study area, to the Wisconsin Department of Transportation, and to the Federal Transit Administration.

- ***Wisconsin Department of Transportation***
  Upon receipt of the certification by the Regional Planning Commission, the Wisconsin Department of Transportation should act to endorse the plan as a guide for the programming, administration, and granting of State transit assistance funds for the City of Waukesha transit system.

- ***Federal Transit Administration***
  Upon endorsement of the plan by the Wisconsin Department of Transportation, the Federal Transit Administration should endorse the plan as a guide for the programming, administration, and granting of Federal transit funds for the City of Waukesha transit system.

- ***Local Units of Government***
  Upon receipt of the certified plan, Waukesha County and other the concerned city, village, and town boards in the study area should act to adopt the plan, thereby indicating support to the City in the implementation of that plan. Such actions on the part of the communities concerned would indicate general agreement with services proposed under the plan.

Plan Implementation

As the owner and operator of the transit system, the City of Waukesha will have the primary responsibility for implementing the recommended transit development plan for Waukesha Metro Transit. It is recommended that the City's actions include the following steps:

- ***Refinement of Proposed Transit Service***
  The Waukesha Transit Commission directed the transit system staff to continue to monitor the performance of the existing 2012 transit system and develop potential modest changes to the system as may be needed to maintain or improve service and eliminate unproductive route segments with an effort toward reducing City funding. Transit system staff will need to prepare annual operating budgets for the transit system that reflect refinements in the existing services that will address these areas. Numerous factors including changes in residential and commercial development in the study area, the performance of the transit system routes, and the available levels of Federal and State funding should be considered prior to the implementation of any refinement in system routes and service levels. Transit system staff will need to complete operating plans prior to the implementation of all service changes.

- ***Public Hearings***
  Federal regulations require transit systems using Federal funds to provide the opportunity for comment through public hearings prior to the implementation of significant service and fare changes. The Waukesha Transit Commission Board may need to conduct one or more public hearings for the fare changes identified under the recommended plan and any significant service changes that may be identified by transit system staff.

- ***Federal and State Grant Applications***
  The City of Waukesha should prepare annual operating budgets to support applications for the Federal and State funds needed over the planning period to implement the recommended plan. Such applications would need to be prepared annually on a schedule that meets the requirements of the agencies concerned.

SUMMARY

This chapter has set forth the recommended transit system development plan for the Waukesha Metro Transit System as approved by the Waukesha Transit Commission. The plan is based upon the existing 2012 transit system which was selected by the Transit Commission to serve as the recommended plan. Major elements of the recommended plan include the following:

1. The plan proposes no changes to the existing 2012 routes and service levels for the Waukesha Metro Transit System. The Waukesha Transit Commission directed the transit system staff to monitor the performance of the transit system and to develop potential changes to the system that may be needed to improve service and eliminate unproductive route segments with an effort toward improving system efficiency and reducing City funding. Transit system staff is to report on any potential changes in time for consideration for the 2014 budget.

2. It is proposed that the transit system increase bus fares in 2015 by raising the adult cash fare from $2.00 per ride to $2.25 per ride, and increase fares on the Metrolift paratransit service fares in 2016 by raising the adult cash fare from $4.00 per ride to $4.50 per ride. Bus and paratransit fares in other categories, along with charges for tickets and monthly passes, would also be increased by similar proportions.

3. The recommended transit system would be expected to operate about 524,200 revenue vehicle miles and about 41,200 revenue vehicle hours of fixed-route bus service annually over the planning period. By 2017, both the total operating costs and total public funding for the transit system would be expected to increase by about 10 percent over the amounts in the 2012 operating budget to about $5.64 million and $4.65 million, respectively. The City's share of the total public funding for the system would increase from about $1.27 million under the 2012 budget to $1.69 million in 2017, or by about 33 percent.

4. The recommended plan proposes replacing or rehabilitating between 2012 and 2017, 10 of the 13, 35-foot long fixed-route transit buses purchased in 1998 and 2004 and retiring the other three buses. None of the seven large buses purchased in 2007, or the seven paratransit buses purchased in 2007 and 2011 are due for replacement by 2017. The analysis of alternative vehicle types and sizes for the transit system presented in Chapter V recommended that Waukesha Metro Transit should continue to provide fixed-route bus service with 35-foot diesel buses in the immediate future. Other capital expenditures will be needed to maintain the transit system facilities and other operating and service equipment over the planning period. The total capital project expenditures needed to maintain the existing transit system under the plan are estimated at about $6.41 million ($1.28 million annually) of which about $1.11 million ($222,900 annually) could be funded through various Federal transit capital assistance programs.

5. Following adoption of the transit system development plan, the City of Waukesha will have the primary responsibility for the necessary plan implementation actions. The implementation steps include preparing annual operating budgets and service plans for the transit system that reflect refinements in the existing services to address the concerns of the Transit Commission Board. Also, the Waukesha Transit Commission Board will need to conduct public hearings for the specific fare changes proposed under the plan and for any major service changes identified by transit system staff over the planning period.

Chapter VII

SUMMARY AND CONCLUSIONS

INTRODUCTION

This report sets forth a short-range transit system development plan for the City of Waukesha Metro Transit System that updates the previous plan prepared by the Commission in 2003 and was prepared at the request of the City of Waukesha. The plan is short-range in nature, addressing transit service needs in the greater Waukesha area for the period 2013-2017. The new plan addresses changes in residential, commercial, and industrial development in the Waukesha area as they affect the need for transit service. The plan is based on a full performance evaluation of the existing City transit system; an analysis of the travel habits, patterns, and needs of the residents of the City and environs, as well as those commuting to jobs in the Waukesha area; an analysis of the transportation needs of existing land use patterns and major land use developments that have been proposed or that are occurring within the greater Waukesha area; and a careful evaluation of improved and new bus services proposed under several transit improvement alternatives. The plan also identifies the financial commitments and actions that must be undertaken by the City of Waukesha to implement the plan.

The plan is being prepared within the context of the Commission's ongoing regional transportation planning program and should be considered as an initial stage of implementation of the adopted regional plan. The plan recommendations identify forecasts of ridership, service levels, and operating and capital expenses for the period from 2013 through 2017. Some of the recommendations in this report will also be reconsidered and refined as part of a more comprehensive Waukesha County transit development plan to be completed by 2014.

STUDY ORGANIZATION

The preparation of this transit development plan was a joint effort by the staffs of the City of Waukesha and of the Southeastern Wisconsin Regional Planning Commission. Additional staff assistance was obtained from other agencies concerned with transit development in the Waukesha area. The City of Waukesha Transit Commission provided guidance to the technical staffs in the preparation of this plan, particularly in the development of transit service policies and improvement proposals, and the development of a final recommended plan. The full membership of the Waukesha Transit Commission is listed on the inside front cover of this report.

EXISTING WAUKESHA METRO TRANSIT SYSTEM AND OTHER TRANSIT SERVICES IN THE WAUKESHA AREA

The planning effort collected pertinent information on the existing Waukesha Metro Transit system and on other major transit services provided in the study area in 2010. The most important findings on the existing transit services serving the City of Waukesha are presented below.

Waukesha Metro Transit

The major provider of local public transit service in the Waukesha area in 2010 was the City of Waukesha, which has operated Waukesha Metro Transit since August 1981. The system is owned by the City of Waukesha and operated by a private contract management firm (Professional Transit Management, Ltd.) under the direct supervision of the Transit Director, a City of Waukesha employee. The Waukesha Transit Commission sets the policies of the transit system but the ultimate responsibility for review and approval of important matters, including the budget, has been placed with the Waukesha Common Council.

Waukesha Metro Transit operated 10 bus routes in a radial route network in 2010 (see Maps 2 through 4 in Chapter II). All the routes originated from the Downtown Transit Center, and provided service to the outlying portions of the City. The system used "pulse" scheduling to facilitate transfers between bus routes at the Downtown Transit Center. During weekday peak, midday and evening periods, and on Saturday, the schedules of all routes were not fully coordinated resulting in wait times of 30 minutes for some transferring passengers. The "core routes", those with the most frequent service and highest ridership, were Route Nos. 1, 2, 4, 8, and 9. These routes operated seven days a week and had the most frequent service and longest operating hours. They generally operated with 35-minute headways during the weekday peak periods and 60-minute headways during weekday off-peak periods and on weekends. The remaining routes operated five or six days a week and had more limited or no evening service hours. These routes generally operated with 70-minute headways during weekday peak periods and 60-minute headways during weekday off-peak periods and on weekends. The base adult cash fare for Metro bus service was $2.00 per trip.

The transit system also provided a paratransit service through its Metrolift Program that was directed at the travel needs of people with disabilities who were unable to use the Metro fixed-route bus service. The service provided curb-to-curb transportation for eligible trips; was available during the same hours as the Metro fixed-route bus service; and served the area within three-quarters of a mile of the Metro bus routes.

The bus fleet operated by Waukesha Metro Transit in 2010 consisted of 30 vehicles including 24 which were large 35-foot long urban transit buses used to provide the Metro fixed-route service. The remaining six buses were smaller urban transit buses used to provide the Metrolift paratransit service. The bus fleet had an average age of 8.6 years. The estimated year of replacement on the buses is staggered, so that the transit system does not estimate replacing more than four vehicles per year.

Table 5 in Chapter II shows historic ridership and service levels for Waukesha Metro Transit for 2005 through 2009. During that period, the annual revenue vehicle hours of service on the system decreased from about 68,100 to about 60,300 revenue vehicle hours, or by about 11 percent. Despite this service decrease, ridership remained steady. There were about 762,000 boarding passengers in 2005 and about 765,000 in 2009.

During the five years from 2005 through 2009, average annual expenditures for operating the transit system amounted to about $4.5 million (see Table 6 in Chapter II). Of this total, about $0.8 million, or about 17 percent, was covered by farebox and other miscellaneous revenues. The remaining $3.7 million, or about 83 percent, was average annual public operating assistance for the system. Operating expenses rose steadily over the five years, owing largely to inflationary increases in costs. Local funds from the City and Waukesha County took on a greater proportion of funding in 2009 than in 2005. The City also increased fares in 2008, which increased farebox revenues and the farebox recovery rate.

At the request of the City, the Commission conducted an on-board bus survey of Waukesha Metro Transit passengers on April 30, 2008. A prepaid, preaddressed, mail-back survey questionnaire was distributed to all passengers on each scheduled weekday bus trip. Hispanic bus passengers who did not want or could not use the standard form were provided with a Spanish translation of the questionnaire. About 990 completed survey questionnaires were returned, representing about 34 percent of the estimated 2,900 passenger trips made on Waukesha Metro Transit on average weekday in 2008. Analysis of the surveys that were returned (see Table 8 in Chapter II) determined that Waukesha Metro Transit passengers were predominantly younger than age 54,

without a valid driver's license, and from households with incomes below $25,000 per year. About half of riders had no vehicle in their household. Most riders used the transit system for traveling to or from work or school. The central part of the City of Waukesha, which has the highest residential density, produces the most transit trips. Schools, shopping centers, and employment concentrations in the City and in the Bluemound Road corridor attract the most transit trips.

Other Transit Services

Additional transit services for the general public which connect with the Waukesha Metro Transit include: MCTS Route No. 10; Waukesha County Transit Route No. 218; Waukesha County Transit Route Nos. 901, 904, and 905; and the Coach USA and Badger Coach intercity bus services. Taxicab service was provided by three companies: Best Cab Company, All Day Taxi, and Ann Marie Ryan's Transportation Service. The Waukesha County Aging and Disability Resource Center and Interfaith Caregiving Network also offer transportation services for certain eligible population groups, which is available to all Waukesha County residents for in-county trips that cannot be made on any other transportation service, or out-of-county medical trips.

PUBLIC TRANSIT SERVICE OBJECTIVES AND STANDARDS

Objectives and standards were formulated under the planning effort to provide the basis for the analyses conducted for the plan including assessing the performance of the existing transit system, identifying unmet transit service needs, and designing alternative transit system plans. The objectives with supporting standards formulated under this study are intended to represent the level of transit performance desired in the City of Waukesha. Specifically, the following objectives were approved by the Waukesha Transit Commission:

1. Public transit should serve those areas of the City and its immediate environs which can be efficiently served, including those areas which are fully developed to medium or high densities and, in particular, the transit-dependent population in those areas;

2. The public transit system should promote utilization of its service by being safe, reliable, convenient, and comfortable;

3. The public transit system should be economical and efficient, meeting all other objectives at the lowest possible cost.

Each objective was linked to a supporting principal and two sets of standards: one set to guide service design and operation, and one set to help evaluate service performance.

PERFORMANCE EVALUATION OF THE EXISTING WAUKESHA METRO TRANSIT SYSTEM

A performance evaluation of the City of Waukesha Metro Transit system was conducted on both a systemwide basis and on a route-by-route basis using specific performance measures related to the attainment of key transit system objectives and standards. Data used in the evaluation included historical ridership, service, and financial information for the period 2004-2008, and similar data for operations in March 2010. The conclusions reached from the performance evaluation included:

1. The existing Metro transit system provided excellent coverage of the existing residential and employment concentrations inside the City of Waukesha (see Maps 8 through 10 in Chapter IV). Outside the City, the transit system served some densely populated residential areas in the Town of Brookfield, and provided excellent service to employment concentrations in the City of Brookfield. However, areas in the City of Pewaukee and the Village of Pewaukee that contain transit-supportive residential and employment density, or that have major activity centers, were unserved. Transit service to those areas could be provided if Waukesha County or the City or Village of Pewaukee agreed to pay the local share of the

operating costs for service extensions. Waukesha County did previously contract with Waukesha Metro Transit to provide peak-period route-deviation service to business parks along STH 164 and CTH F north of IH 94 in the City of Pewaukee, but determined service over those routes should be discontinued in 2006 due to low ridership levels.

2. The Waukesha Metro Transit System was about average when compared to similar transit systems from around the country and Wisconsin (see Table 12 in Chapter IV). Waukesha Metro Transit's performance level was within 1 percent of the national peer group average in six out of 12 measures: it performed better than the Wisconsin average in four of 12 performance measures and worse than the Wisconsin average in eight out of 12 measures. In general, Waukesha Metro Transit provided a high level of service for the population it served, resulting in lower passengers per vehicle-mile and per vehicle-hour of service. The performance of Waukesha Metro Transit can be partially attributed to its service area being within a large (over 1,000,000 population) urbanized area. The total travel generated by the residents and activity centers in the Waukesha Metro Transit service area included trips made to and from other parts of the Milwaukee urbanized area which the transit system was not able to serve. This limitation affected both the effectiveness and efficiency measures observed for the system.

3. The transit system's operating expense per revenue vehicle mile and operating expense per revenue vehicle hour increased by over 8 percent per year between 2004 and 2008. An examination into the causes of this rapid increase revealed that a substantial share of that rapid increase was due to the high costs of fringe benefits, which was attributed to increases in the costs of health insurance for transit system employees. Fringe benefits in 2008 accounted for over 36 percent of all operating costs for Waukesha Metro Transit, but only 29 percent of operating costs for the Wisconsin peer group and 24 percent for the national peer group.

4. Route Nos. 2, 3, 4, 5, 8, and 9 had weekday performance measures that generally exceeded the acceptable performance levels (see Table 14 in Chapter IV). Based solely upon these measures, these routes could continue to be operated without change. The remaining four routes, Route Nos. 1, 6, 7, and 15, had at least one performance measure that did not meet performance targets. These routes merit further study to determine if changes to improve performance should be considered.

5. On Saturdays, Route Nos. 2, 3, 4, 7, and 8 met all performance targets, and Route No. 5/6 met most performance targets (see Table 15 in Chapter IV). Route No. 1 had mixed performance, meeting the transit system targets for service effectiveness but having low cost-effectiveness levels. Route No. 15 had performance levels that were problematic along with Route No. 9, which had acceptable performance levels on weekdays. On Sundays, Route Nos. 4 and 7/8 met all performance targets and Route No. 2 met all targets except farebox recovery (see Table 16 in Chapter IV). The performance of Route Nos. 1 and 5/6 was mixed with cost effectiveness measures below target performance levels.

6. On weekday evenings (6:00 p.m. – 10:00 p.m.), Route Nos. 2, 4, 8, and 9 demonstrated acceptable performance levels (see Table 17 in Chapter IV). The remaining routes (Route Nos. 1, 3, 5/6, and 7) did not meet any of the target performance levels. Potential changes to improve their performance during the evenings should be considered.

7. The highest passenger activity occurred on the portions of routes that pass through the Downtown Transit Center or that served major commercial areas or multi-family housing complexes (see Map 11 in Chapter IV). The presence of a high school or middle school along a route did not guarantee that part of the route was productive. Many of the routes were designed to serve middle and high schools, but fewer middle and high school students are using Waukesha Metro Transit than in the past. Several routes with below average performance levels in the route evaluation were comprised of long segments with low passenger productivity, such as Route No. 1, which carried the most passengers but has the most segments with low productivity. Route Nos. 6 and 15 also have long segments with low passenger productivity.

8. No routes had maximum load factors (adjusted upward by 20 percent more than the sampled data) that exceeded the standard of 1.25 passengers per seat during peak periods and 1.00 passengers per seat during off-peak periods (see Table 18 in Chapter IV). Three routes had adjusted maximum load factors that did not meet the standard calling for one-half of the seats on the bus to be occupied at some point during weekday service. The buses on Route Nos. 3, 7, and 15 were never more than half-full. Route Nos. 2 and 6 could also be operated with buses having as few as 20 seats and would still meet the acceptable levels. Issues other than passenger loads should be examined when considering whether smaller vehicles should be added to the transit system's bus fleet.

9. About 6 percent of the surveys returned from the April 2008 survey of Waukesha Metro Transit riders included comments stating that the transit service needed no improvements. About 21 percent of the surveys had comments requested additional service, either through increased frequency of service, longer hours of service, or more weekend service. About 4 percent of the surveys included suggestions that related to the vehicles or fixed facilities of the transit system. Many specific comments and suggestions were submitted on the survey forms that were beyond the scope of the transit plan.

ALTERNATIVE TRANSIT SERVICE CHANGES

Alternative transit service changes for the City of Waukesha Metro Transit System were developed by Commission staff for the period 2013 through 2017. Prior to considering potential changes to the City's existing bus service, the feasibility of changing the way public transit service is delivered in the City of Waukesha from a fixed-route service using medium or large buses to a demand-responsive service using smaller vehicles was considered. Alternative routing and service changes were then identified for the bus system to address the need for improving both the efficiency and effectiveness of the system and also for expanding service into presently unserved or underserved portions of the City.

Analysis of Dial-a-Ride Transit (DART) Service

Commission staff reviewed the feasibility of modifying the Metrolift service for disabled individuals unable to use the Metro fixed-route service to provide DART service for the general public in the Waukesha area. DART service, which includes shared-ride taxi operations, is typically provided by public transit systems using automobiles, accessible vans, or small buses that transport passengers between their specific origins and destinations on demand without fixed routes or on fixed schedules except to satisfy special demand. The analysis made the following conclusions:

1. Analysis of the population density within the service area for Waukesha Metro Transit (see Map 13 in Chapter V) determined that the overall population density within the Waukesha Metro Transit service area of almost 2,900 persons per square mile was too high for bus service to be entirely replaced by DART. Research has suggested that transit agencies should only consider small urban areas with densities of less than 2,000 persons per square mile as potential candidates for entirely demand-responsive public transportation services. Population densities within the central or core portions of the Waukesha Metro Transit service area generally exceed 3,000 persons per square mile.

2. Generally, DART service is more cost effective than fixed-route bus service if the demand for transit is low. In general, urban fixed-route bus service has a higher cost per vehicle mile than taxi service due, in part, to higher wages for drivers and other personnel, and higher capital and maintenance costs for buses. However, bus service can have a lower cost per passenger and lower total costs when there is high transit ridership as bus systems operate larger vehicles with more passenger carrying capacity than taxis, and bus service is designed to carry multiple trips. Serving a higher transit ridership with a taxi system will require more taxi vehicles (and drivers) to serve that demand than with a bus system. Taxi systems tend to have higher costs per passenger than bus systems because taxi systems generally provide an individual ride. Commission staff compared the operating costs per passenger for the Waukesha Metro Transit System and the public shared-ride taxi systems in the Region in 2010 (see Table 20 in Chapter V). The operating costs per passenger ranged from $6.68 to $22.78 per passenger in 2010 for taxi service compared with $6.80 per passenger for Waukesha Metro. Replacing bus service with taxi service within the existing Waukesha Metro Transit service area may not be expected to lower the total costs of operation, or improve the overall efficiency of, the City transit system.

3. Commission staff conducted an analysis of replacing the City's fixed-route bus service provided on evenings and Sundays with DART service for use in preparing the 2012 transit system operating budget (see Table 21 in Chapter 5). Staff concluded there would likely be no cost savings for the transit system if DART service replaced bus service. This was primarily due to a clause in the Federal labor protection agreement with Metro bus operators which does not permit services to be contracted out to any entity other than the City's existing private transit management firm. Consequently, the proposed DART service would have about the same operating cost per vehicle hour as the existing bus service.

4. DART service could still be appropriate as a replacement for bus service in areas or during periods with low transit ridership such as during evening periods or on Sundays. However, if the City has an interest in providing DART service, it will first need to modify the existing labor protection agreement with Metro bus operators to remove the limitation on contracting out transit services.

Service Change Alternatives

Three transit improvement alternatives were developed by Commission staff:

- Alternative 1, which proposed continuing to operate the existing 2012 transit system without any changes to routes or service levels throughout the planning period. Alternative 1 was considered to be a feasible option in light of the favorable review the transit system received in a management performance audit conducted on the transit system in 2011 by the Wisconsin Department of Transportation. The transit system under Alternative 1 would continue to serve about 65,500 persons. The 2012 transit system is displayed on Map 14 in Chapter V.

- Alternative 2, which represented the "desirable service" alternative developed by Commission staff and proposed a modest expansion of the 2012 transit system to address unmet service needs while eliminating unproductive service to increase service efficiency. The routing and service changes identified under Alternative 2 (see Table 23 in Chapter V) were intended to largely maintain the routes and service levels of the existing 2012 system, and to provide for some service expansion and the elimination of unproductive services. The total population served by the transit system under Alternative 2 was estimated to be about 65,100 persons or about 400 persons less than served by the existing 2012 transit system. A goal of the proposed Alternative 2 changes was to improve both the quality and extent of the services provided along with the overall efficiency of the transit system. One route of the system (Route No. 15) would be eliminated under this alternative while four routes (Route Nos. 3, 6, 7, and 8) would be significantly modified or extended (see Map 15 in Chapter V). Service levels (revenue vehicle miles and hours) in 2017 would be about 6 to 7 percent higher under Alternative 2 than for the existing system under Alternative 1. The savings achieved by eliminating unproductive and poorly performing services would be used to fund new and improved services.

- Alternative 3, which represented a "fiscally constrained" alternative developed by Commission staff, assumed the transit system would face a combination of cuts in Federal and State operating funds along with limits on local funding over the planning period. The routing and service changes identified under Alternative 3 (see Table 23 in Chapter V) represented changes needed to respond to significantly lower public funding levels. The alternative also had a desirable goal of keeping local funding at or below the level provided under the 2012 transit system operating budget. Consequently, Alternative 3 proposed a substantially reduced system of routes (see Map 16 in Chapter V) that focused service in the central core areas of the City of Waukesha, areas with high residential and employment density and good ridership. Service to outlying, lower-density areas would be significantly reduced or eliminated. One route of the system (Route No. 15) would be eliminated. Service levels (revenue vehicle miles and hours) in 2017 would be about 16 to 20 percent less than the service levels in the 2012 budget. Several areas currently served by the transit system would no longer be served including large portions of the Pebble Valley and Merrill Crest Subdivisions on the City's north and west sides. The total 2010 population served by the transit system under Alternative 3 was estimated to be about 55,900 persons, or about 9,600 persons (15 percent) less than the 65,500 persons served by the existing transit system.

Comparison of Alternatives
A comparative evaluation was performed on the three alternatives with respect to key service, ridership, cost, and funding information for the year 2017 (see Table 35 in Chapter V). This evaluation concluded that:

- Alternative 1, the existing 2012 transit system, would result in productivity and estimated cost and funding needs for the transit system which would be similar to those for the desirable services and expansion identified under Alternative 2. In comparison to the fiscally constrained system proposed under Alternative 3, however, maintaining the existing system would require higher total and local public funding.

- Alternative 2 would provide for both an expansion of transit service and for the elimination of unproductive portions of existing system operations, largely retaining the service area coverage and the population served by the existing system. The costs of route extensions and restructuring under Alternative 2 could be paid for largely by savings achieved by eliminating unproductive services. However, if the assumed reductions in Federal and State transit assistance occur, the service expansion proposed under Alternative 2 would result in a 41 percent increase in the City's public funding requirement for the transit system, increasing the local funds needed from about $1,270,800 in the 2012 operating budget to about $1,796,200 in 2017. While representing a significant total increase over the local funds in the 2012 budget, the City funds required for the transit system in 2017 would be a modest increase of about $106,000 over the funds required to maintain the existing 2012 system as proposed under Alternative 1.

- Alternative 3 (fiscally constrained service) would eliminate routes and service in the outlying lower density portions of the City with service limited to primarily the densely developed portions of the City with the highest concentrations of transit-dependent persons. Consequently, the productivity and the cost recovery rates of the transit system would show improvement over Alternative 2, and the total and City public funding needed would be significantly lower than under either Alternatives 1 or 2. Consideration of these impacts should recognize that Alternative 3 would also reduce service levels by about 16 percent from the existing system under Alternative 1 and by about 22 percent from Alternative 2. This in turn would result in significantly lower ridership levels than under either Alternative 1 or Alternative 2.

Vehicle Fleet Analysis
Commission staff reviewed alternative vehicle types and sizes for the transit system. This analysis concluded that smaller diesel buses (19 to 22 seats) may have enough seating capacity for some of the existing Waukesha Metro Transit routes and could be a viable option to the larger buses currently in the fleet. It was further determined, however, that the use of smaller diesel buses would not significantly reduce air pollutants emitted from buses and that there would be no real cost advantage for moving to such smaller vehicles. With respect to the use of alternative fuels, it was concluded that alternative fuel buses (hybrid, CNG, electric) are not yet widely used and have several issues that the transit system would need to consider before committing to such vehicles as they could increase system costs. Staff consequently recommended continuing to provide fixed-route bus service with 35-foot diesel buses in the immediate future. Beyond the immediate future, the continued use of 35-foot diesel buses should be reevaluated relative to cost of diesel fuel. If fuel costs rise significantly in the future, 35-foot diesel-electric hybrid buses may be the best of the five alternative bus types considered. Waukesha Metro Transit should monitor the experience of other transit operators in Wisconsin, including Madison Metro Transit and the Oshkosh Transit System, that now operate some hybrid buses as they may provide valuable information to assist in future decisions on whether the City should consider changing to hybrid buses.

Capital Expenditures
The total capital project expenditures needed to maintain the existing transit system over the years 2013 through 2017 under Alternative 1 were estimated to be about $6.41 million ($1.28 million annually). The total transit capital expenditures were estimated at about $6.82 million ($1.36 million annually) under Alternative 2 and about $6.0 million ($1.2 million annually) under Alternative 3. Assuming use of Federal funding available through the Federal Transit Administration Section 5307/5340 (Urbanized Area Formula) program and the Section 5309

(Discretionary Capital) program, the local share of capital costs would be about $1.11 million ($222,900 annually) under Alternative 1; about $1.18 million ($236,800 annually) under Alternative 2; and about $1.04 million ($208,900 annually) under Alternative 3.

Public Comment on the Alternative Transit Improvement Plans

Public comments on the transit service improvement alternatives proposed for the Waukesha Metro Transit Development Plan were solicited at a public informational meeting held on August 27, 2012, at the Waukesha Downtown Transit Center. The formal public comment period for the meeting extended from August 20, 2012 through September 7, 2012. During this time, a total of 19 comments were made regarding the Waukesha Metro Transit System, the transit system development plan, or the alternative service improvements. The specific comments included: 16 comments provided to staff or the court reporter at the August 27, 2012, public informational meeting; eight written comments on the comment forms or in personal letters at the public informational meeting; and three comments submitted through the website maintained by the Commission for the City transit development plan. Most of the comments received called for retaining the existing transit system and for not making significant service reductions. A few comments were received for extending service to unserved areas of the City or to major traffic generators like the Majestic Cinema on Springdale Road in the Town of Brookfield. One comment from a south-side office of a Waukesha Dentist specifically asked that Metro not eliminate service over Route No. 15, noting that it had many patients with physical and cognitive disabilities that relied on Route No. 15 to get to appointments at their office on Racine Avenue. All comments received are documented in the record of public comments for the meeting.

Waukesha Transit Commission Response to Alternative Transit Improvement Plans and the Public Comments Received

Following its review of the three service improvement alternatives, the Waukesha Transit Commission expressed concern over the potential 41 percent increase by 2017 in the annual City funds needed for the improved and expanded services proposed under Alternative 2 given the current poor economic conditions and the uncertainty regarding future levels of Federal and State transit funding. The Transit Commission also indicated that it did not support the extensive service reductions included under Alternative 3. As a reason for its lack of support for Alternative 3, the Transit Commission pointed to the public comments received at a public informational meeting held on August 27, 2012, which asked that the City not reduce the existing transit service. The Transit Commission consequently recommended that Alternative 1, the existing 2012 transit service, be the basis for the recommended plan for the Waukesha Metro Transit System for the period 2013 through 2017. The Transit Commission further recommended that transit system staff report back to the Commission by the middle of 2013 with an analysis of potential minor changes to 2012 transit system.

THE RECOMMENDED PLAN

The recommended transit system development plan for the Waukesha Metro Transit System as approved by the Waukesha Transit Commission consists of Alternative 1, the existing 2012 transit system. The Transit Commission endorsed retaining the existing system because it did not support extensive service reductions like those proposed under Alternative 3, and believed it should limit any increases in City funding for the transit system given current economic conditions and uncertainties regarding future levels of Federal and State transit funding. The Commission's actions recognized the favorable review of the existing transit system set forth in the 2011 management performance audit conducted by the Wisconsin Department of Transportation. The Commission believed that minor adjustments could be made to the existing system as needed to meet future transit system budgets. Significant service expansion, such as that proposed under Alternative 2, could be delayed until a future time when economic conditions had improved enough that support could be generated for service expansion and increased local funding.

Major elements of the recommended plan include the following:

1. The plan proposes no changes to the existing 2012 routes and service levels for the Waukesha Metro Transit System. The Waukesha Transit Commission directed the transit system staff to monitor the

performance of the transit system and to develop minor changes to the system that may be needed to improve service with an effort toward improving system efficiency and reducing City funding. Transit system staff is to report on any potential changes in time for consideration for the 2014 budget.

2. It is proposed that the transit system increase bus fares in 2015 by raising the adult cash fare from $2.00 per ride to $2.25 per ride, and increase fares on the Metrolift paratransit service fares in 2016 by raising the adult cash fare from $4.00 per ride to $4.50 per ride. Bus and paratransit fares in other categories, along with charges for tickets and monthly passes, would also be increased by similar proportions.

3. The recommended transit system would be expected to operate about 524,200 revenue vehicle miles and about 41,200 revenue vehicle hours of fixed-route bus service annually over the planning period. By 2017, both the total operating costs and total public funding for the transit system would be expected to increase to about $5.64 million and $4.65 million, respectively, or by about 10 percent over the amounts in the 2012 operating budget. The City's share of the total public funding for the system would increase from about 1.27 million under the 2012 budget to $1.69 million in 2017, or by about 33 percent.

4. Between 2012 and 2017, the recommended plan proposes replacing or rehabilitating 10 of the 35-foot long fixed-route transit buses purchased in 1998 and 2004 and retiring the other three 35-foot long buses. None of the seven large buses purchased in 2007, or the seven paratransit buses purchased in 2007 and 2011 are due for replacement by 2017. The analysis of alternative vehicle types and sizes for the transit system presented in Chapter V recommended that Waukesha Metro Transit should continue to provide fixed-route bus service with 35-foot diesel buses in the immediate future. Other capital expenditures will be needed to maintain the transit system facilities and other operating and service equipment over the planning period. The total capital project expenditures needed to maintain the existing transit system under the plan are estimated at about $6.41 million ($1.28 million annually) of which about $5.3 million ($1.06 million annually) could be funded through various Federal transit capital assistance programs and about $1.11 million ($222,900 annually) would need to be funded by the City.

5. Following adoption of the transit system development plan, the City of Waukesha will have the primary responsibility for the necessary plan implementation actions. The implementation steps include preparing annual operating budgets and service plans for the transit system that reflect refinements in the existing services to address the concerns of the Transit Commission Board. Also, the Waukesha Transit Commission Board will need to conduct public hearings for the specific fare changes proposed under the plan and for any major service changes identified by transit system staff over the planning period.

CONCLUSION

The preparation of the transit system development plan for the Waukesha Metro Transit System included analyses of the current population and land uses served by the transit system to identify potential service changes which may improve the performance of the system. Service changes were considered that would have eliminated existing unproductive services and redirected funds toward service changes that would have expanded service to areas of new development and improved the efficiency of the system. The cost of the service expansion and projected increases in City funding for the system was determined to be more than what the Waukesha Transit Commission was willing to support considering the current economy. Delaying service expansion and retaining the existing transit system was considered to be a more prudent action at this time.

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APPENDICES

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Appendix A

RIDERSHIP, SERVICE, AND FINANCIAL DATA[a] FOR WAUKESHA METRO TRANSIT FIXED-ROUTE AND TRANSIT SYSTEMS IN THE WISCONSIN AND NATIONAL PEER GROUPS: 2004 AND 2008

Transit System	2004						2008					
	Service Area Population	Revenue Vehicle Miles	Revenue Vehicle Hours	Total Passengers[b]	Operating Expenses	Operating Revenues[c]	Service Area Population	Revenue Vehicle Miles	Revenue Vehicle Hours	Total Passengers[b]	Operating Expenses	Operating Revenues[c]
Waukesha Metro Transit	67,580	784,376	58,566	730,247	$3,567,646	$683,873	68,030	682,177	51,488	819,046	$4,301,363	$688,764
National Peer Group												
Altoona Metro Transit (Altoona, Pennsylvania)	69,608	533,791	41,244	665,545	$3,164,738	$627,626	69,608	445,692	34,947	540,094	$3,702,296	$715,209
Battle Creek Transit (Battle Creek, Michigan)	83,000	488,236	29,951	522,800	2,453,019	355,695	83,000	377,440	27,068	484,829	2,592,673	336,139
Cambria County Transit Authority (Johnstown, Pennsylvania)	80,508	676,022	61,738	1,095,227	4,621,420	816,621	80,508	677,186	62,926	1,116,725	5,040,209	1,010,688
Decatur Public Transit System (Decatur, Illinois)	86,080	1,013,886	71,969	962,587	3,266,177	428,185	86,080	932,091	66,505	1,207,608	4,347,358	551,904
Dubuque – KeyLine (Dubuque, Iowa)	58,000	278,580	23,136	540,345	1,502,998	319,323	58,000	301,395	23,646	247,968	1,472,562	266,806
Great Falls Transit District (Great Falls, Montana)	59,380	292,379	23,977	397,021	1,495,236	219,735	63,000	440,808	33,729	408,048	2,164,402	363,550
Saginaw Transit Authority Regional Service (Saginaw, Michigan)	127,000	766,844	62,769	737,208	5,694,092	784,850	127,000	705,698	43,968	989,049	4,936,969	539,839
National Peer Group Average	80,511	578,534	44,969	702,962	$3,171,097	$507,434	81,028	554,330	41,827	713,474	$3,465,210	$540,591
Wisconsin Peer Group												
Eau Claire Transit	69,300	684,636	45,964	1,068,142	$2,682,199	$497,222	69,300	678,151	45,491	1,036,520	$3,468,569	$683,316
Janesville Transit System	61,110	453,941	29,345	508,858	2,102,459	364,332	62,540	458,006	29,222	498,490	2,669,758	453,309
La Crosse Municipal Transit Utility	65,000	755,303	55,624	1,015,105	3,451,685	404,432	78,000	750,397	54,950	1,202,018	4,299,741	592,604
Oshkosh Transit System	65,095	468,330	34,865	876,416	2,179,579	294,612	65,810	472,228	36,410	1,039,046	2,816,613	419,871
Sheboygan Transit System	59,490	604,832	47,792	499,910	2,781,882	560,576	59,490	589,276	39,670	531,714	3,094,309	757,768
Wausau Area Transit System	45,513	555,801	38,315	758,583	2,578,239	385,557	45,513	569,706	40,925	851,895	3,310,877	505,667
Wisconsin Peer Group Average	60,918	587,141	41,984	787,836	$2,629,341	$417,789	63,442	586,294	41,111	859,947	$3,276,645	$568,756

[a]Based on ridership, service, and financial data obtained from the Federal Transit Administration National Transit Database for the years 2004 and 2008. Performance measures are for directly-operated fixed-route bus operations only.

[b]This measure of ridership counts all passengers each time they board a transit vehicle. Passengers who transfer one or more times to different routes of a transit system are counted as two or more passengers in completing a single trip between a specific origin and destination.

[c]Operating revenues are equal to fare revenues for fixed-route service plus non-fare revenues for the entire transit system.

Source: National Transit Database and SEWRPC.

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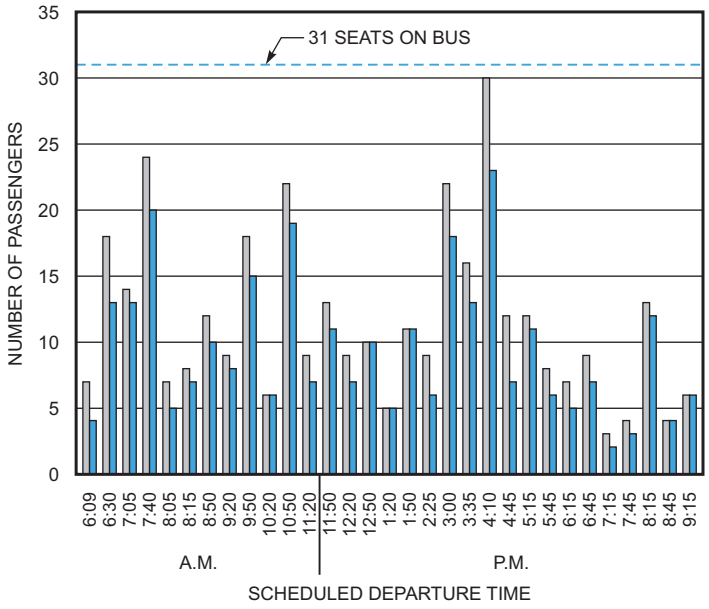
Appendix B

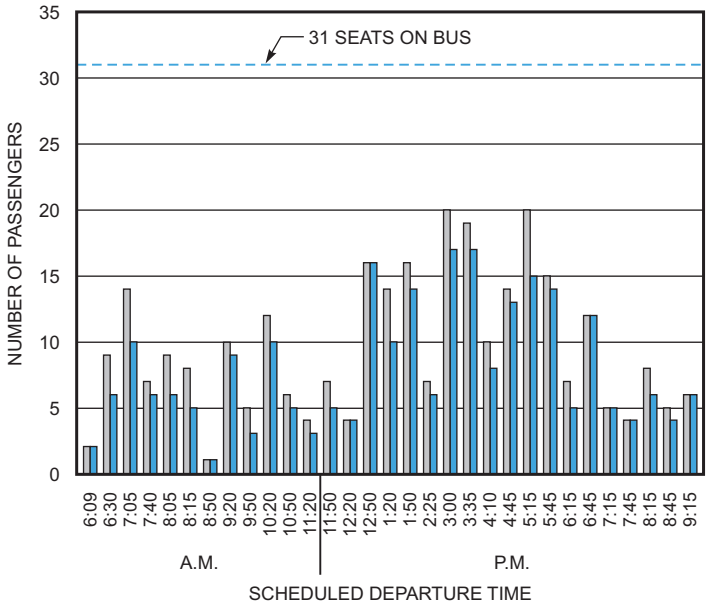
WEEKDAY BOARDING PASSENGERS AND PASSENGER LOADS BY BUS RUN ON THE ROUTES OF THE WAUKESHA METRO TRANSIT SYSTEM: MARCH 1 THROUGH 5, 2010

WEEKDAY BOARDING PASSENGER LOADS ON ROUTE NO. 1

OUTBOUND FROM DOWNTOWN TRANSIT CENTER

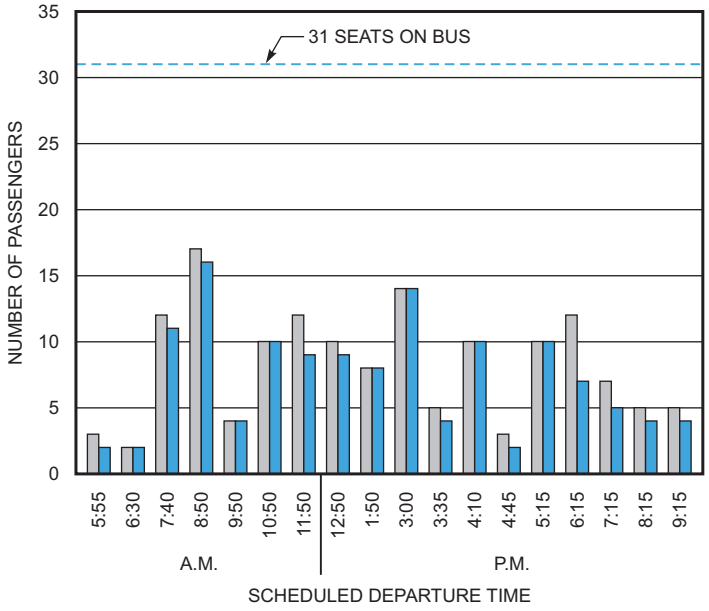


INBOUND FROM BROOKFIELD SQUARE SHOPPING CENTER

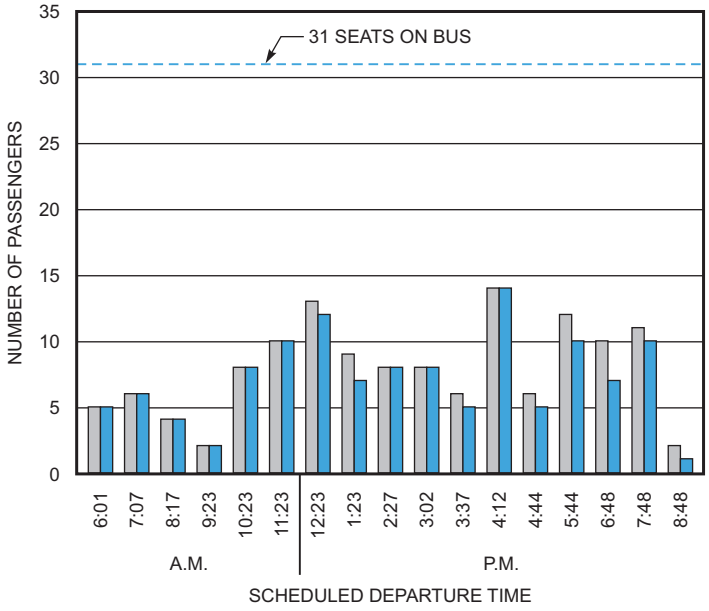


WEEKDAY BOARDING PASSENGER LOADS ON ROUTE NO. 2

OUTBOUND FROM DOWNTOWN TRANSIT CENTER



INBOUND FROM TARGET STORE/GOERKE'S CORNERS PARK AND RIDE LOT



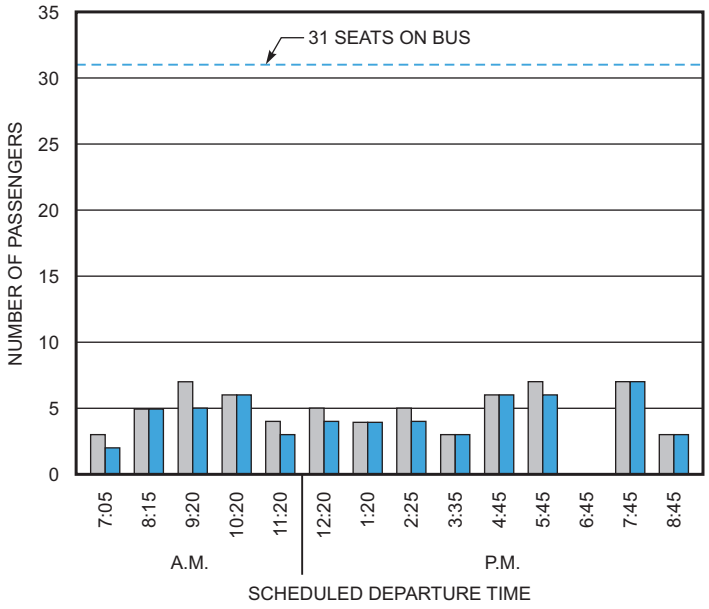
TOTAL BOARDING PASSENGERS

MAXIMUM PASSENGER LOAD

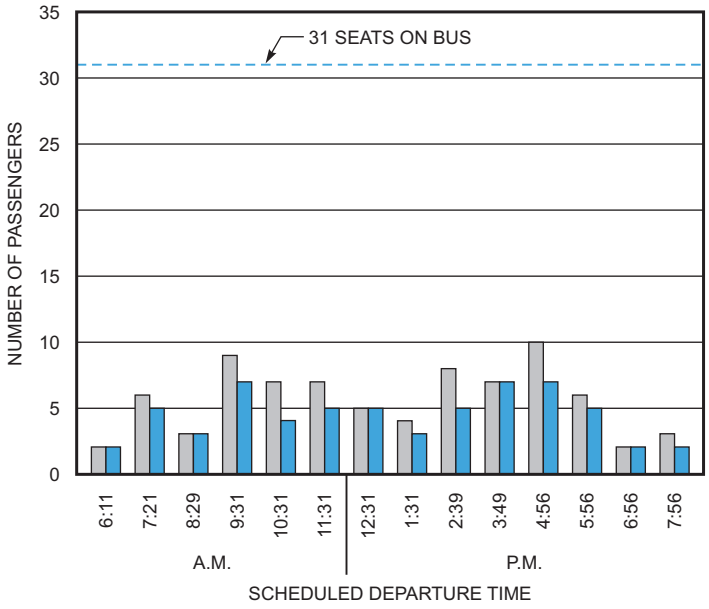
Note: The 35 foot buses used by the transit system have 31 or 32 seats. When one wheelchair is in place, the seating capacity drops by two to three seats. When two wheelchairs are in place, seating capacity drops by five to six seats.

WEEKDAY BOARDING PASSENGER LOADS ON ROUTE NO. 3

OUTBOUND FROM DOWNTOWN TRANSIT CENTER

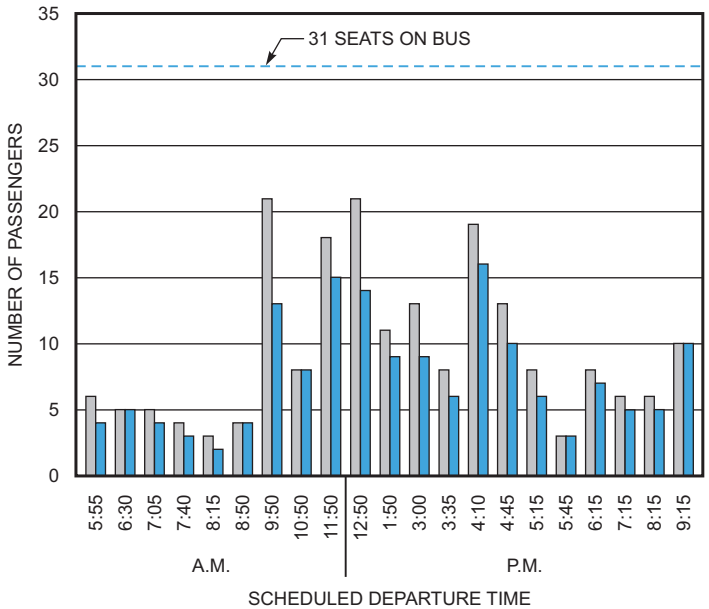


INBOUND FROM K-MART

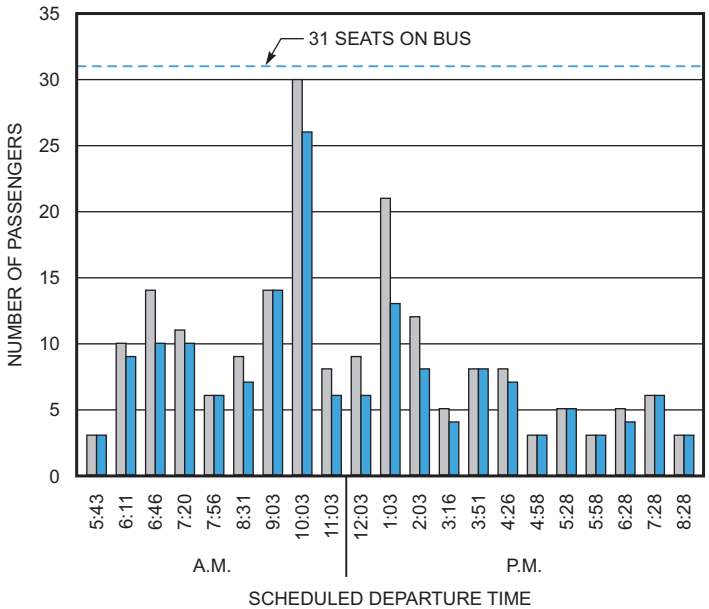


WEEKDAY BOARDING PASSENGER LOADS ON ROUTE NO. 4

OUTBOUND FROM DOWNTOWN TRANSIT CENTER



INBOUND FROM S. WEST AVENUE AND SENTINEL DRIVE



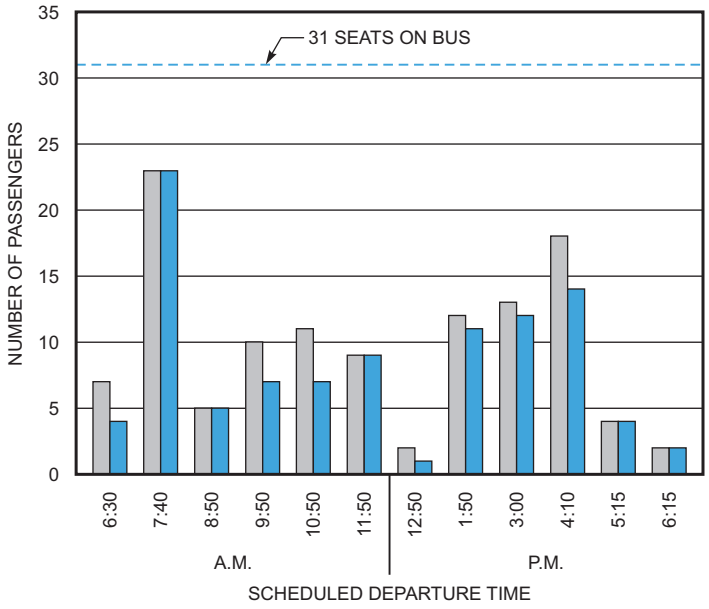
TOTAL BOARDING PASSENGERS

MAXIMUM PASSENGER LOAD

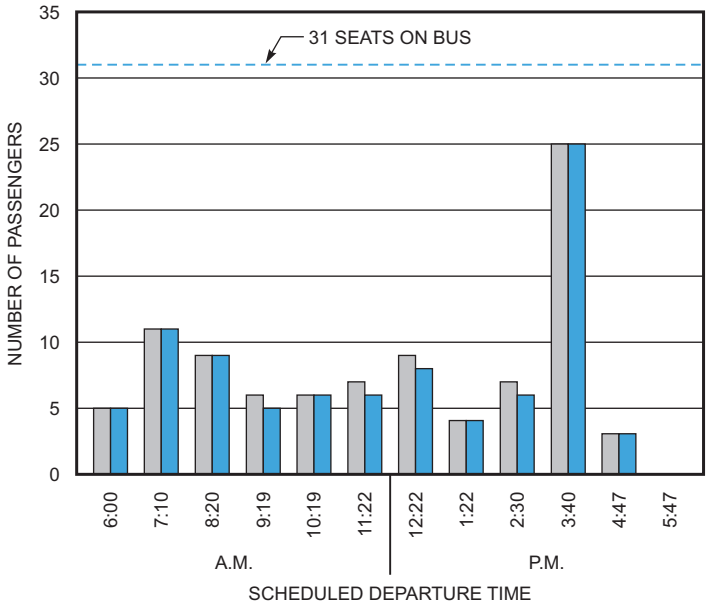
Note: The 35 foot buses used by the transit system have 31 or 32 seats. When one wheelchair is in place, the seating capacity drops by two to three seats. When two wheelchairs are in place, seating capacity drops by five to six seats.

WEEKDAY BOARDING PASSENGER LOADS ON ROUTE NO. 5

OUTBOUND FROM DOWNTOWN TRANSIT CENTER

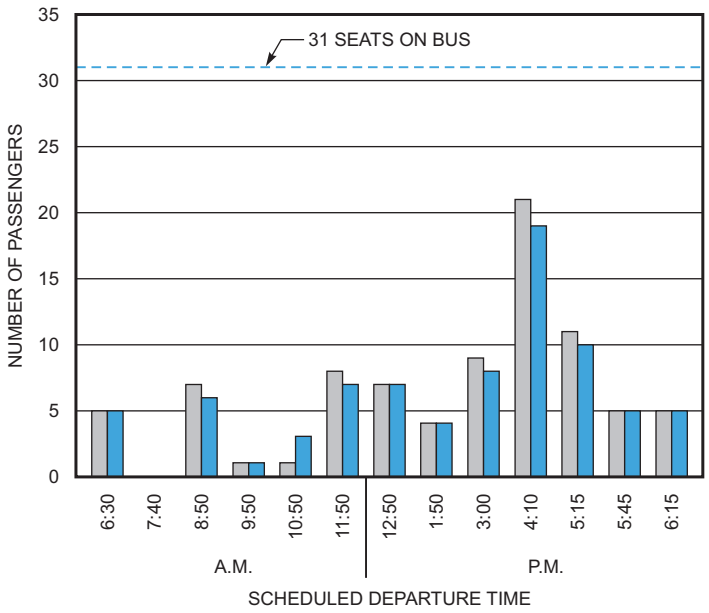


INBOUND FROM BADGER DRIVE

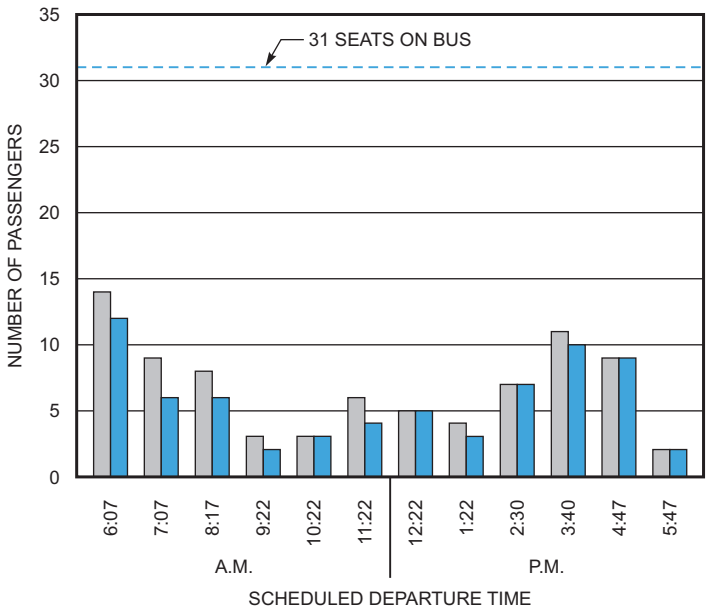


WEEKDAY BOARDING PASSENGER LOADS ON ROUTE NO. 6

OUTBOUND FROM DOWNTOWN TRANSIT CENTER



INBOUND FROM WEST HIGH SCHOOL



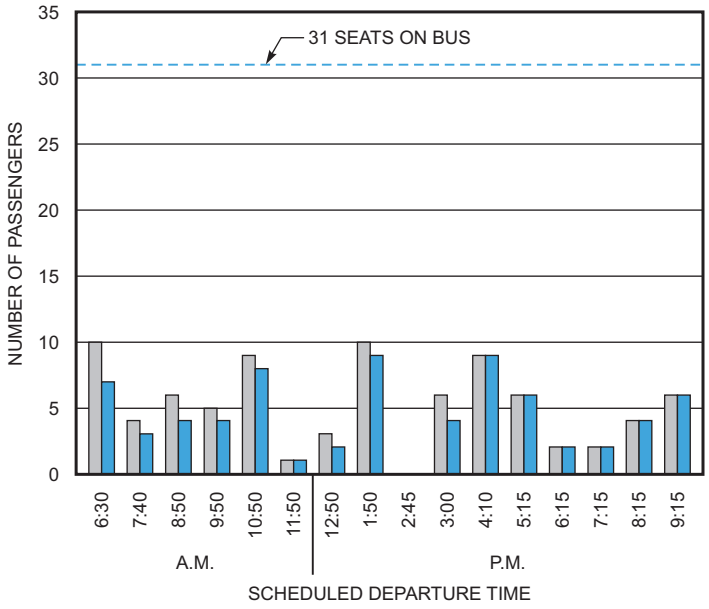
TOTAL BOARDING PASSENGERS

MAXIMUM PASSENGER LOAD

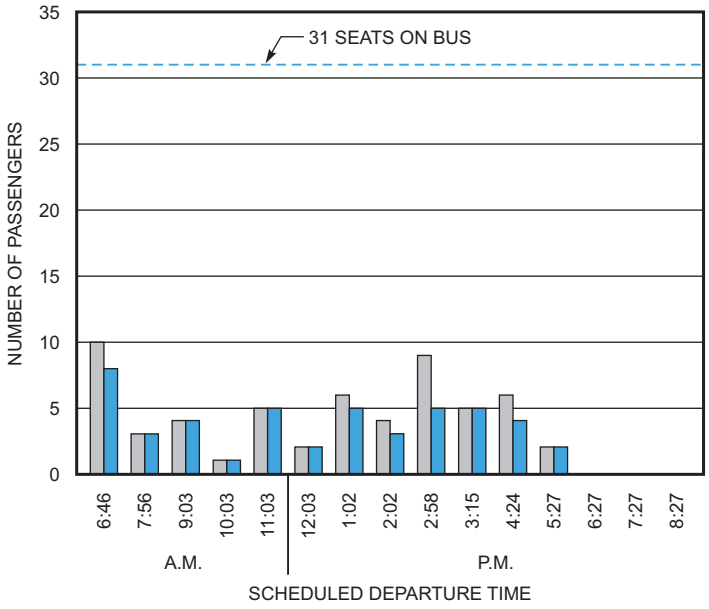
Note: The 35 foot buses used by the transit system have 31 or 32 seats. When one wheelchair is in place, the seating capacity drops by two to three seats. When two wheelchairs are in place, seating capacity drops by five to six seats.

WEEKDAY BOARDING PASSENGER LOADS ON ROUTE NO. 7

OUTBOUND FROM DOWNTOWN TRANSIT CENTER

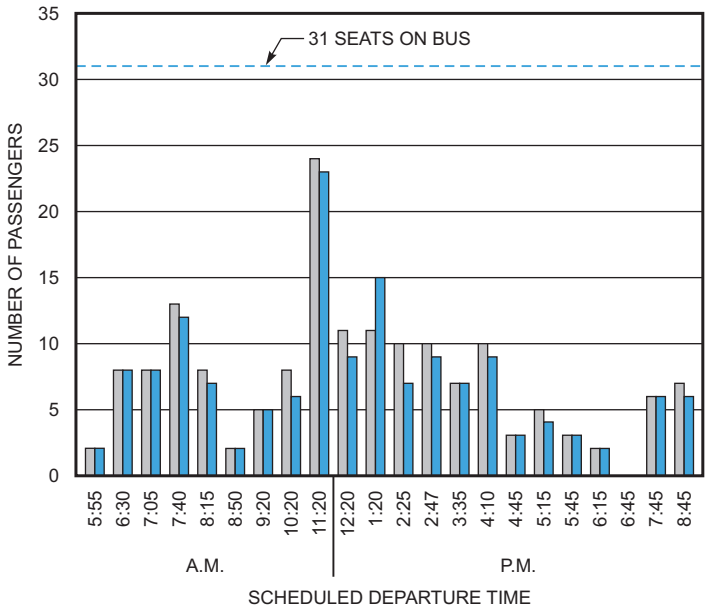


INBOUND FROM COMANCHE LANE AND PENDLETON PLACE

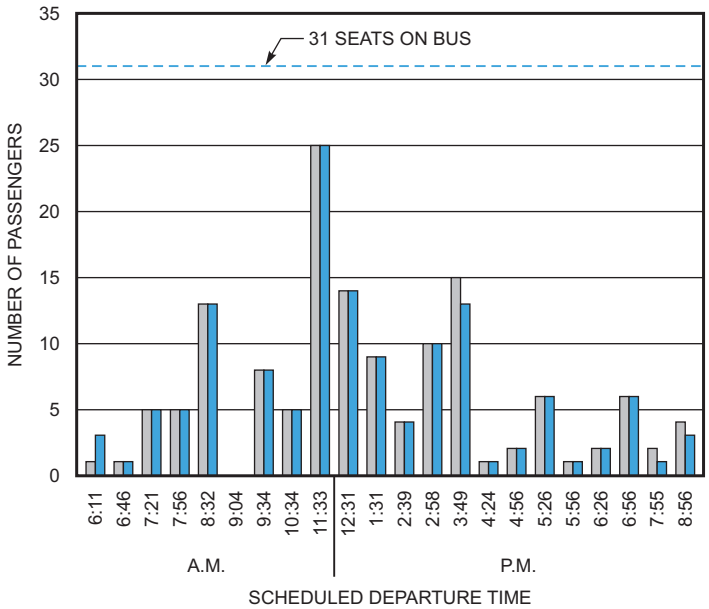


WEEKDAY BOARDING PASSENGER LOADS ON ROUTE NO. 8

OUTBOUND FROM DOWNTOWN TRANSIT CENTER



INBOUND FROM UNIVERSITY OF WISCONSIN-WAUKESHA



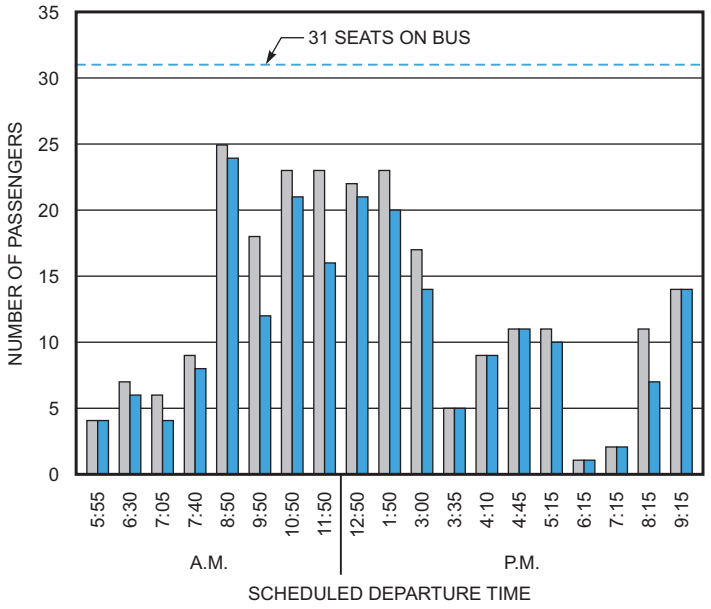
TOTAL BOARDING PASSENGERS

MAXIMUM PASSENGER LOAD

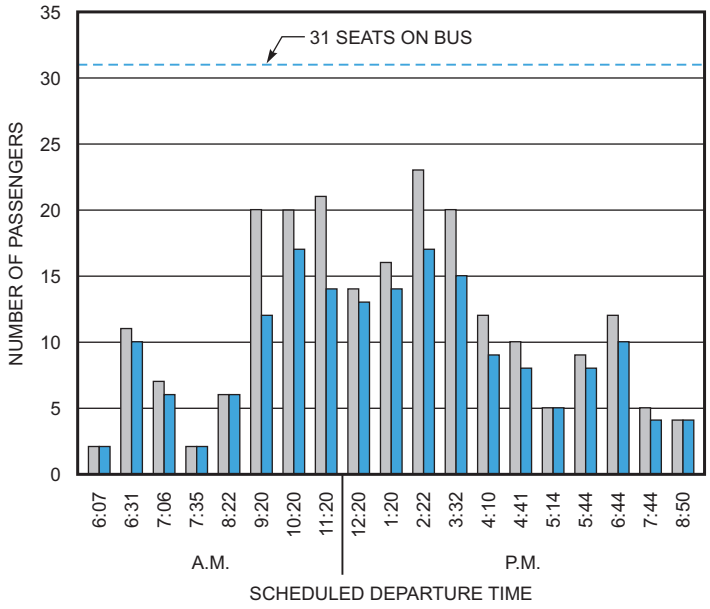
Note: The 35 foot buses used by the transit system have 31 or 32 seats. When one wheelchair is in place, the seating capacity drops by two to three seats. When two wheelchairs are in place, seating capacity drops by five to six seats.

WEEKDAY BOARDING PASSENGER LOADS ON ROUTE NO. 9

OUTBOUND FROM DOWNTOWN TRANSIT CENTER

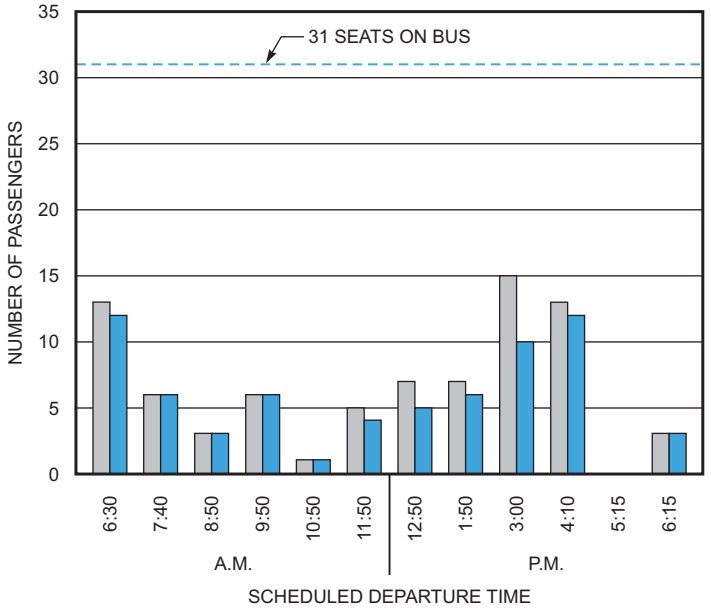


INBOUND FROM WAUKESHA COUNTY TECHNICAL COLLEGE

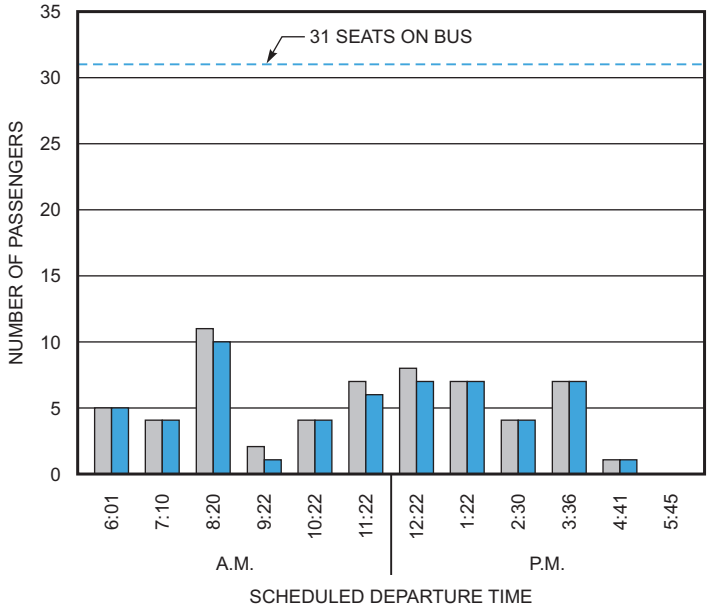


WEEKDAY BOARDING PASSENGER LOADS ON ROUTE NO. 15

OUTBOUND FROM DOWNTOWN TRANSIT CENTER



INBOUND FROM K-MART



TOTAL BOARDING PASSENGERS

MAXIMUM PASSENGER LOAD

Note: The 35 foot buses used by the transit system have 31 or 32 seats. When one wheelchair is in place, the seating capacity drops by two to three seats. When two wheelchairs are in place, seating capacity drops by five to six seats.

Source: SEWRPC and Waukesha Metro Transit System.

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Appendix C

WAUKESHA METRO TRANSIT USER SURVEY FORM

PLEASE COMPLETE THIS SURVEY EVEN IF YOU HAVE ALREADY FILLED ONE OUT TODAY

Please complete and deposit in any U.S. mailbox, or return on bus.

If you have any difficulty completing this form please call (262) 547-6721.

PUBLIC TRANSPORTATION SURVEY

Please tell us about this bus trip.

1. ON THIS BUS TRIP, I AM COMING FROM:

☐ *(Enter number)*
1. Home
2. Work
3. School
4. Shopping
5. Social / Recreational activity
6. Personal business / medical / dental
7. Other (specify) _____

2. WHICH IS LOCATED AT:

☐☐☐☐☐☐☐☐

(Nearest street intersection or street address) *(Name of community)*

3. ON THIS BUS TRIP, I AM GOING TO:

☐ *(Enter number)*
1. Home
2. Work
3. School
4. Shopping
5. Social / Recreational activity
6. Personal business / medical / dental
7. Other (specify) _____

4. WHICH IS LOCATED AT:

☐☐☐☐☐☐☐☐

(Nearest street intersection or street address) *(Name of community)*

5. WILL YOU NEED TO TRANSFER TO ANOTHER BUS TO COMPLETE THIS TRIP? *(Check one)*

☐ No
I will not transfer

☐ Yes
I will transfer to: *(Check one)*

- ☐ Waukesha Metro — Route(s) No. _____ and _____
- ☐ Milwaukee County Transit System (MCTS) — Route(s) No. _____ and _____
- ☐ Wisconsin Coach Lines (WCL) — Route(s) No. _____ and _____

6. HOW DID YOU GET TO THE BUS STOP WHERE YOU GOT ON THIS BUS?

☐ *(Enter number)*
1. I transferred from: *(Check one)*
2. I walked
3. By private auto / truck
4. Other *(Specify)* _____

- ☐ Waukesha Metro — Route(s) No. _____ and _____
- ☐ Milwaukee County Transit System (MCTS) — Route(s) No. _____ and _____
- ☐ Wisconsin Coach Lines (WCL) — Route(s) No. _____ and _____

7. HOW DID YOU PAY FOR THIS BUS TRIP? *(Check one)*

☐ 1. Cash *(Give amount)* $_____.____
☐ 2. Ticket
☐ 3. Monthly Pass
☐ 4. Transfer
☐ 5. Free

8. WHAT TIME OF DAY WAS IT WHEN YOU GOT ON THIS BUS?

(Enter time) ☐☐ : ☐☐ AM / PM *(Circle one)*

9. IS THIS PART OF A ROUND TRIP BY BUS TODAY? *(Check one)*

☐ Yes ☐ No

10. HOW OFTEN DO YOU TRAVEL USING WAUKESHA METRO TRANSIT?

☐ *(Enter number)*
1. Less than once a month
2. One to three times a month
3. Once or twice a week
4. Three to five times a week
5. More than five times a week

11. MY HOME IS LOCATED AT:

☐☐☐☐☐☐☐☐

(Nearest street intersection or street address) *(Name of community)*

12. OUR HOUSEHOLD HAS _____ VEHICLES AVAILABLE FOR PERSONAL USE.

13. THE NUMBER OF PERSONS LIVING IN OUR HOUSEHOLD IS _____.

14. I AM A LICENSED DRIVER: *(Check one)* ☐ Yes ☐ No

15. MY AGE IS:

☐ *(Enter number)*
1. 17 or under
2. 18 - 24
3. 25 - 34
4. 35 - 44
5. 45-54
6. 55-64
7. 65 or older

16. I AM: *(Check one)* ☐ Male ☐ Female

17. I AM HISPANIC / LATINO: *(Check one)* ☐ Yes ☐ No

18. MY RACE IS: *(Circle all that apply)*

1. African American / Black
2. White
3. American Indian or Alaska Native
4. Asian or Pacific Islander
5. Other *(Specify)* _____

19. OUR TOTAL HOUSEHOLD INCOME IS:

☐ *(Enter number)*
1. Under $10,000
2. $10,000 - $14,999
3. $15,000 - $24,999
4. $25,000 - $34,999
5. $35,000 - $44,999
6. $45,000 - $54,999
7. $55,000 - $64,999
8. $65,000 - $74,999
9. $75,000 or more

20. WHAT SUGGESTIONS DO YOU HAVE FOR IMPROVING BUS SERVICE? _____

Thank you for your participation. Your cooperation is greatly appreciated.

This survey is being conducted by Waukesha Metro Transit and the Southeastern Wisconsin Regional Planning Commission.