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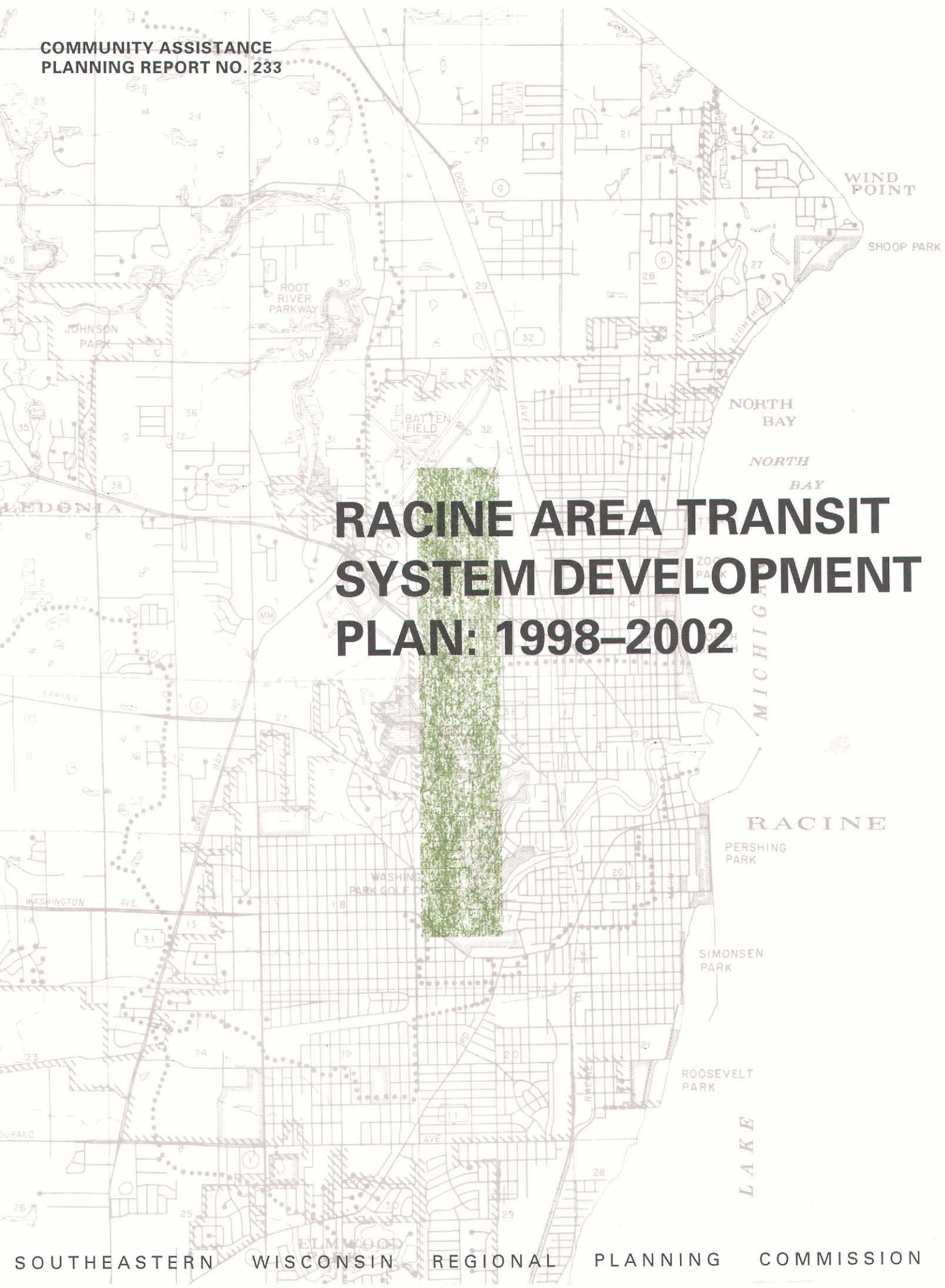
PLANNING REPORT NO. 233



RACINE AREA TRANSIT SYSTEM DEVELOPMENT PLAN: 1998–2002

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COMMUNITY ASSISTANCE PLANNING REPORT
NUMBER 233

RACINE AREA TRANSIT SYSTEM DEVELOPMENT PLAN: 1998-2002

CITY OF RACINE, WISCONSIN

Prepared by the

Southeastern Wisconsin Regional Planning Commission
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Chapter I

INTRODUCTION

On March 18, 1996, the City of Racine requested the assistance of the Regional Planning Commission in the preparation of a new transit system development plan for the City and its environs. The previous plan prepared by the Commission for the City covered the period from 1993 through 1997. The City's request indicated that the new plan was needed to address renewed interest expressed by local officials and the public for improved and expanded transit services in the greater Racine area. The new plan was also needed in order for the transit system to respond to recent changes in State and Federal funding programs, as well as to changes in residential, industrial, and commercial development occurring in the Racine area. The Commission agreed to assist the City in the preparation of the new plan, documented in this report.

The Racine transit planning study was carried out within the context of the continuing regional transportation planning program. It was begun following the completion and adoption by the Commission of a regional transportation system plan with a design year 2010.[1] That plan includes a public transit element recommending that certain transit services be provided within the Racine area. The long-range regional transportation plan recommends significant improvement and expansion of transit service in the Racine area over the next 15 years, with rapid-transit connections to Milwaukee and through Milwaukee to the other urban centers of Southeastern Wisconsin; improved rapid- and express-transit service between the Cities of Racine and Kenosha; and an improved and expanded local bus system for the greater Racine area, providing more frequent service and longer service hours, and extending service to developing areas. More specifically, the regional plan recommends:

- The provision of rapid-transit service between the City of Racine Central Business District (CBD) and the City of Milwaukee CBD. Connections in the Milwaukee CBD would be available via express and local service to locations within Milwaukee County and via other rapid services to all urban centers of Southeastern Wisconsin. Initially, the plan envisions that rapid-transit service would be provided by a bus route operating principally over STH 20 and IH 94, with stops at five public-transit stations within eastern Racine County and at General Mitchell International Airport in Milwaukee County, as well as in the City of Milwaukee CBD. Bidirectional service would be provided on weekdays with headways of 30 minutes during peak-travel periods and 60 minutes during offpeak periods. The regional plan recommends that the institution of commuter-rail service from Milwaukee through Racine to Kenosha, where connections with the existing Chicago-oriented Metra commuter-rail service would be available, should be considered as an alternative to the bus-on-freeway service in this travel corridor. A separate Commission study examining the feasibility of such service in the South Lakeshore Travel Corridor was underway at the initiation of the Racine area transit development study.

- The provision of express-bus service between the Cities of Racine and Kenosha. A proposed express route would operate weekdays and Saturdays between the CBDs of these Cities, principally over STH 158, STH 31, and STH 20 in eastern Racine and Kenosha Counties, with headways of 30 minutes during weekday peak-travel periods and 60 minutes during offpeak periods. The express route would include stops at rapid-transit stations in both the Cities of Racine and Kenosha and connections with local-transit routes to serve individuals traveling for work and other purposes to locations in eastern Racine and Kenosha Counties.

- The improvement and expansion of the existing Racine local bus system, The Belle Urban System. Headways on the principal routes of the transit system would be reduced from 20 and 30 minutes to 15 minutes during weekday peak-travel periods and service would be extended to 10 p.m on weekday and Saturday evenings. Service would also be extended to areas proposed to be developed by the year 2010, principally west of STH 31 in the City of Racine, the Town of Mt. Pleasant, north of Three Mile Road in the eastern portion of the Town of Caledonia, and to IH 94 in the Town of Yorkville between STH 20 and STH 11.

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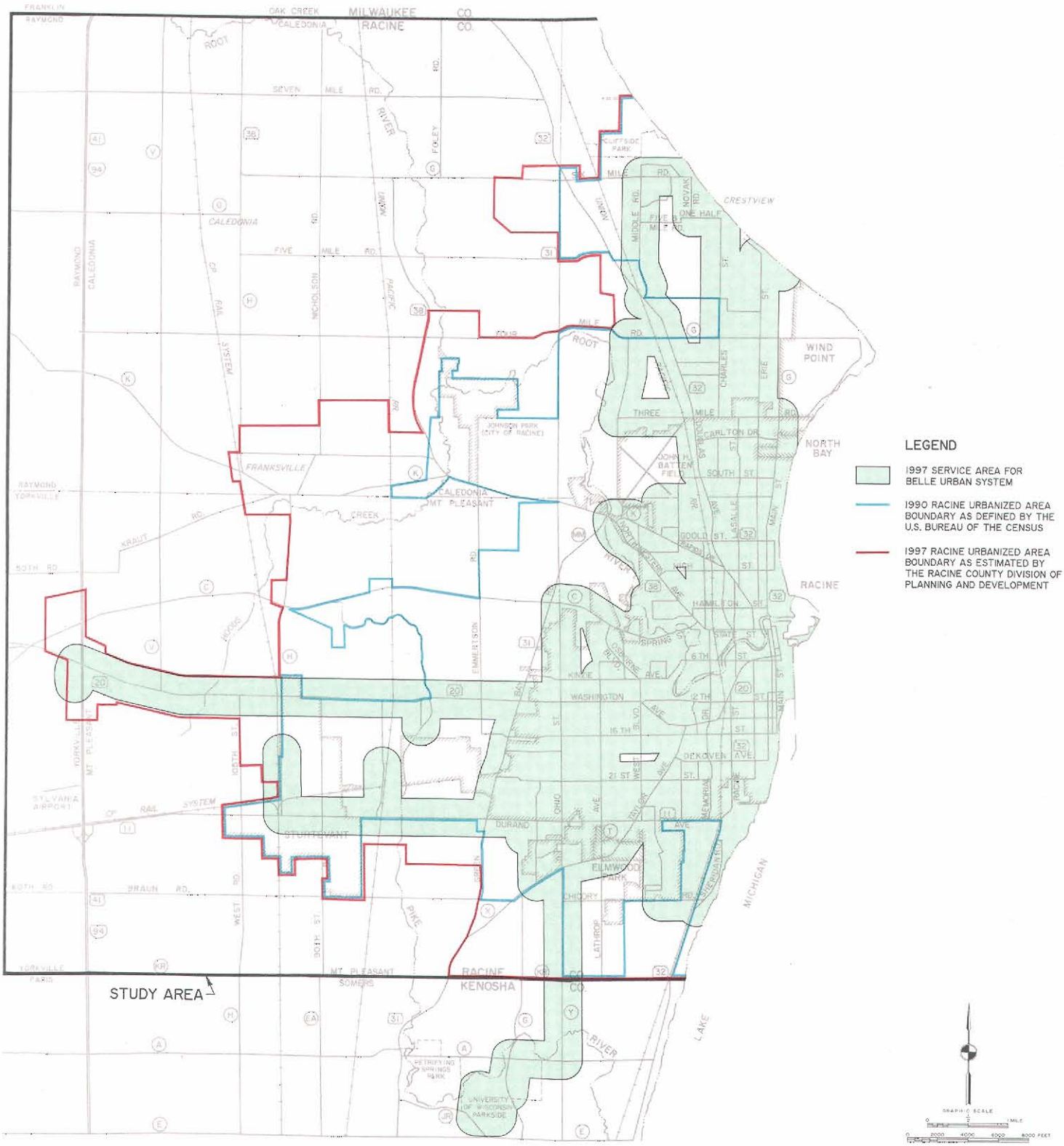
[1]*See SEWRPC Planning Report No. 41,* A Transportation System Plan for the Southeastern Wisconsin Region: 2010, *December 1994.*

Map 1

STUDY AREA FOR THE RACINE AREA TRANSIT SYSTEM DEVELOPMENT PLAN



Source: SEWRPC.

The City of Racine adopted the regional transportation system plan for the year 2010 on March 21, 1995, as a guide to transportation development in the City. The Racine transit planning study was designed to consider, refine, and detail an initial stage of implementation of the adopted regional plan.

This Racine area transit development plan is short-range in nature, covering the period from 1998 through 2002, and is based on a thorough evaluation of the performance of the existing transit system operated by the City of Racine; analyses of the travel habits, patterns, and needs of the residents of the City and environs; analysis of the transportation needs of existing land use patterns and major land use developments which have been proposed or are occurring within the area; and a careful evaluation of alternative courses of action for providing the needed transit services. The plan also identifies the financial commitment and actions necessary by the various levels and units of government concerned to implement the plan.

STUDY PURPOSE

This transit system development plan was intended to serve the following purposes:

1. To evaluate the effectiveness of the existing route structure and schedules, along with the financial performance of the current Racine transit system;

2. To identify, evaluate, and recommend potential transit service improvements which would:

    a) Address the recent changes in urban development which have occurred in the Racine area;

    b) Address the potential for expanded weekday and Saturday service hours and the enhancement of service schedules to serve major employment centers;

    c) Evaluate alternative locations for the central transfer point for the transit system both inside and outside the Racine CBD and review the potential for establishing one or more new transfer centers in outlying portions of the City;

    d) Consider services which would improve existing, or create new, connections with other regional transit services; and

    e) Represent the initial implementation stage of the transit recommendations for the Racine area contained in the Commission's adopted design year 2010 regional transportation system plan;

3. To develop appropriate responses to recent changes in State and Federal funding programs in order to assure adequate financing of existing and planned transit services; and

4. To provide a sound basis for monitoring the implementation status of the plan and the updating required to maintain a valid plan through the five-year planning period.

SCOPE OF WORK

A detailed scope of work for preparing the new transit system development plan was prepared by the Commission and approved by the City of Racine Transit and Parking Commission on May 9, 1996.[2] Eight specific steps were involved in the preparation of the plan as follows:

1. Study organization, including the appointment by the City of an advisory committee to guide the study effort;

2. The formulation of appropriate transit service development objectives and supporting performance standards;

3. The collation and collection of the socio-economic, land use, and travel-habit and travel-pattern data pertinent to the evaluation of the existing and proposed transit services;

4. The analysis of the operation of the existing transit system, including the identification of any potential deficiencies in that system;

5. The design of alternative transit service changes which could address the problems and deficiencies that were identified;

6. The evaluation of alternative transit service changes which could address the problems and deficiencies that were identified;

7. The selection and documentation of a recommended plan; and

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[2]*See SEWRPC Staff Memorandum,* Scope of Work for Preparing a New Racine Area Transit System Development Plan, *April 1996.*

8. The identification of the actions which must be taken by the City of Racine and by each of the other concerned levels and units of government to implement the recommended transit service in an orderly and timely manner.

STUDY AREA

The study area considered in this report comprised the eastern portion of Racine County and included all the City of Racine; the Villages of Elmwood Park, North Bay, Sturtevant, and Wind Point; the Towns of Caledonia and Mt. Pleasant; and the eastern one-sixth of the Towns of Raymond and Yorkville (see Map 1). The study area included the entire area served by the fixed-route bus system operated by the City of Racine in 1997 and the entire Racine urbanized area as defined by the U. S. Census in 1990. As deemed necessary, the inventory and analyses conducted under this study included certain major potential transit trip generators located outside the study area boundaries including, in particular, the University of Wisconsin-Parkside, in the Town of Somers, Kenosha County.

STUDY ORGANIZATION

The preparation of this transit system development plan was a joint effort by the staffs of the City of Racine and of the Southeastern Wisconsin Regional Planning Commission. Additional staff assistance was obtained from certain other agencies concerned with transit development in the Racine area, including the Wisconsin Department of Transportation.

To provide guidance to the technical staffs in the preparation of this plan, and to involve concerned and affected public officials and citizen leaders more directly and actively in the development of transit service policies and improvement proposals, the City of Racine acted in January 1997 to create a Racine Public Transit Planning Advisory Committee. The full membership of the Committee is listed on the inside front cover of this report.

SCHEME OF PRESENTATION

After this introductory chapter, seven chapters present the findings of the major inventories and analyses conducted under the planning effort, and describe the plan recommendations. More specifically, the remainder of this report consists of the following chapters:

- Chapter II, "Land Use and Travel Patterns," describes the land use, demographic, and economic characteristics of, and the travel habits and patterns in, the study area;

- Chapter III, "Existing Public Transit System," describes the public transit system serving the City of Racine and environs as that system existed in 1997, along with other major transit services now available within the study area;

- Chapter IV, "Public Transit Service Development Objectives and Standards," sets forth a set of transit service objectives and supporting performance standards and design criteria;

- Chapter V, "Evaluation of the Existing Transit Services," describes how well the existing 1997 transit services meet the objectives and standards, thereby identifying service-related problems and deficiencies;

- Chapter VI, "Existing Transit Legislation, Regulations, and Public Funding Programs," summarizes existing legislation at the Federal, State, and local levels which define the local governmental powers to oversee the operation of transit services and to provide for financial assistance to fund the operation of the transit services;

- Chapter VII, "Alternative and Recommended Transit Service Improvements," identifies, describes, and evaluates the alternative Racine area transit service improvements;

- Chapter VIII, "Recommended Transit System Development Plan," sets forth a detailed description of the transit service improvements recommended by the Advisory Committee; and

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

Chapter II

LAND USE AND TRAVEL PATTERNS

INTRODUCTION

In order to evaluate the existing transit services in the study area and to identify the potential need for improvements in transit service, it is necessary to consider those factors which affect, or are affected by, the provision of transit service. These factors include the extent of existing urban development in the study area, along with the size, distribution, and characteristics of the resident population and the employment. In addition, the travel habits and patterns associated with the population, employment, and land use distribution within the study area must also be considered. This chapter presents the results of an inventory of these important factors.

POPULATION AND EMPLOYMENT

General Population Characteristics

The resident population levels within study area from 1960 through 1995 are set forth in Table 1. Map 2 shows the distribution of the resident population of the study area in 1990. Map 3 shows the population change in the study area between 1970 and 1990. Table 2 indicates the historic changes in the number of households in the study area over the period from 1960 to 1995. The following observations may be made on the basis of an examination of this information:

- Between 1960 and 1995, the resident population of the study area increased by about 21 percent. Most of this growth occurred in the Towns of Caledonia and Mt. Pleasant, which experienced population increases of about 127 and 75 percent, respectively, over this period. Of the 23,500 new residents of the study area between 1960 and 1995, about 21,600, or about 79 percent, were residents of the Towns of Caledonia and Mt. Pleasant. These communities, together with the Village of Sturtevant, have seen most of the population growth in recent years. Of the 4,700 new residents of the study area between 1990 and 1995, about 3,700, or about 80 percent, reside in the Towns of Caledonia and Mt. Pleasant and the Village of Sturtevant.

- The population trend of the City of Racine between 1960 and 1995 was significantly different from the trends of the other civil divisions in the study area. Over this period, the population of the City of Racine decreased by about 4 percent, while the population of the other communities within the study area increased by about 109 percent.

- In 1995, about 85,200 persons resided within the City of Racine, representing almost 62 percent of the total study area population. The highest population concentrations in the study area were located east of STH 31, principally within the City of Racine. The population in the remainder of the study area was more widely dispersed, with population concentrations that generally do not approach the concentrations found in the central portions of the City of Racine.

- The number of households in the study area increased by about 53 percent from 1960 to 1995, more than twice as fast as the resident population increased. The average household size within the study area, consequently, decreased from about 3.4 persons per household in 1960 to about 2.6 persons per household in 1995. These trends mirrored trends for Racine County and the seven-county Southeastern Wisconsin Region as a whole.

Transit-Dependent Population Characteristics

Certain segments of the population may be expected to have a greater dependence on, and make more extensive use of, public transit than the population as a whole because they have historically had more limited access to the automobile as a mode of travel than the population in general. Five such "transit-dependent" population groups were identified for this study: 1) school-age children (ages 10 through 18),[1] elderly individuals (60 years

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[1] *For the purpose of this study, children in the 10-through 18-year age group were considered as potentially transit-dependent, principally for social and recreational trips. Those in the upper end of this age range could also be transit-dependent for work trips. Transit-dependence for trips between homes and schools was considered to be significant for this study only for trips made by students residing between one and two miles from school who are not eligible for the student transportation provided by the Racine School District.*

Table 1

TOTAL POPULATION IN THE STUDY AREA: 1960-1995

Civil Division	Total Population									
	1960		1970		1980		1990		1995[a]	
	Number	Percent of Study Area	Number	Percent of Study Area	Number	Percent of Study Area	Number	Percent of Study Area	Number	Percent of Study Area
City of Racine	89,144	78.2	95,162	70.7	85,725	64.0	84,298	63.3	85,240	61.9
Village of Elmwood Park[b]	--[b]	--	456	0.3	483	0.4	534	0.4	530	0.4
Village of North Bay	264	0.2	263	0.2	219	0.2	246	0.2	260	0.2
Village of Sturtevant	1,488	1.3	3,376	2.5	4,130	3.1	3,803	2.9	4,940	3.6
Village of Wind Point	463	0.4	1,251	0.9	1,695	1.3	1,941	1.5	1,910	1.4
Town of Caledonia	9,696	8.5	16,748	12.4	20,940	15.7	20,999	15.8	22,010	16.0
Town of Mt.Pleasant	12,358	10.8	16,368	12.1	19,340	14.5	20,084	15.1	21,670	15.7
Town of Raymond[c]	384	0.3	612	0.5	591	0.4	531	0.4	540	0.4
Town of Yorkville[c]	369	0.3	547	0.4	562	0.4	516	0.4	520	0.4
Study Area Total	114,166	100.0	134,783	100.0	133,685	100.0	132,952	100.0	137,620	100.0

Civil Division	Change in Population									
	1960-1970		1970-1980		1980-1990		1990-1995		1960-1995	
	Absolute	Percent	Absolute	Percent	Absolute	Percent	Absolute	Percent	Absolute	Percent
City of Racine	6,018	6.8	-9,437	-9.9	-1,427	-1.7	942	1.1	-3,904	-4.4
Village of Elmwood Park[b]	456	--[b]	27	5.9	51	10.6	-4	-0.7	530	--[a]
Village of North Bay	-1	-0.4	-44	-16.7	27	12.3	14	5.7	-4	-1.5
Village of Sturtevant	1,888	126.9	754	22.3	-327	-7.9	1,137	29.9	3,452	232.0
Village of Wind Point	788	170.2	444	35.5	246	14.5	-31	-1.6	1,447	312.5
Town of Caledonia	7,052	72.7	4,192	25.0	59	0.3	1,011	4.8	12,314	127.0
Town of Mt. Pleasant	4,010	32.4	2,972	18.2	744	3.8	1,586	7.9	9,312	75.4
Town of Raymond[c]	228	59.4	-21	-3.4	-60	-10.2	9	1.7	156	40.6
Town of Yorkville[c]	178	48.2	15	2.7	-46	-8.2	4	0.8	151	40.9
Study Area Total	20,617	18.1	-1,098	-0.8	-733	-0.5	4,668	3.5	23,454	20.5

[a] *Estimated.*

[b] *The Village of Elmwood Park was incorporated in 1960, after the 1960 U. S. Census was conducted.*

[c] *Figures are estimates for the portion of Town in the study area.*

Source: U. S. Bureau of the Census, Wisconsin Department of Administration, and SEWRPC.

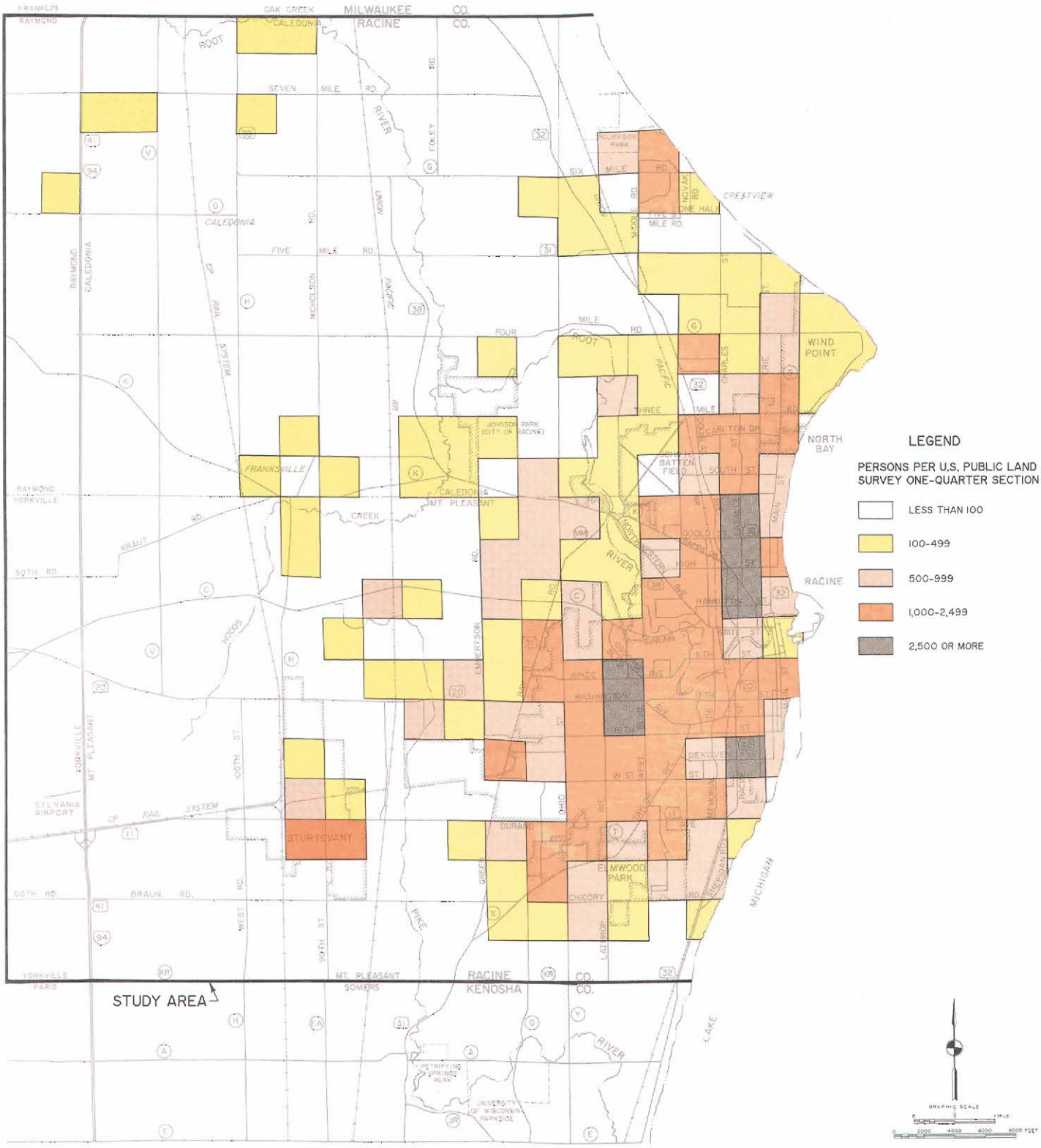
old and older), 3) persons in low-income households, 4) households with no vehicle available, and 5) disabled individuals.

Information about these transit-dependent groups in the primary study area was obtained from U. S. Census data. Table 3 sets forth the historic levels of these groups within the primary study area from 1960 to 1990. To facilitate identification of population concentrations by subarea, the 1990 Census data for these groups were examined by the Census block groups within the study area, as set forth in Table 4. The block groups within the study area displaying concentrations above the study area averages for at least three of the five transit-dependent groups were identified as potential priority areas for the provision of transit service and are shown on Map 3. The information in these tables and on this map lead to the following conclusions:

- Since 1960, both the elderly and the low-income populations have increased significantly, both in terms of absolute numbers and in terms of their share of the total study area population. Both the school-age population and the number of zero-auto households have remained stable in absolute numbers but have declined as a percentage of the total population. A similar trend analysis of the disabled population could not be developed because data for the disabled population comparable to that collected in the 1990 Census was not collected in any previous Census.

Map 2

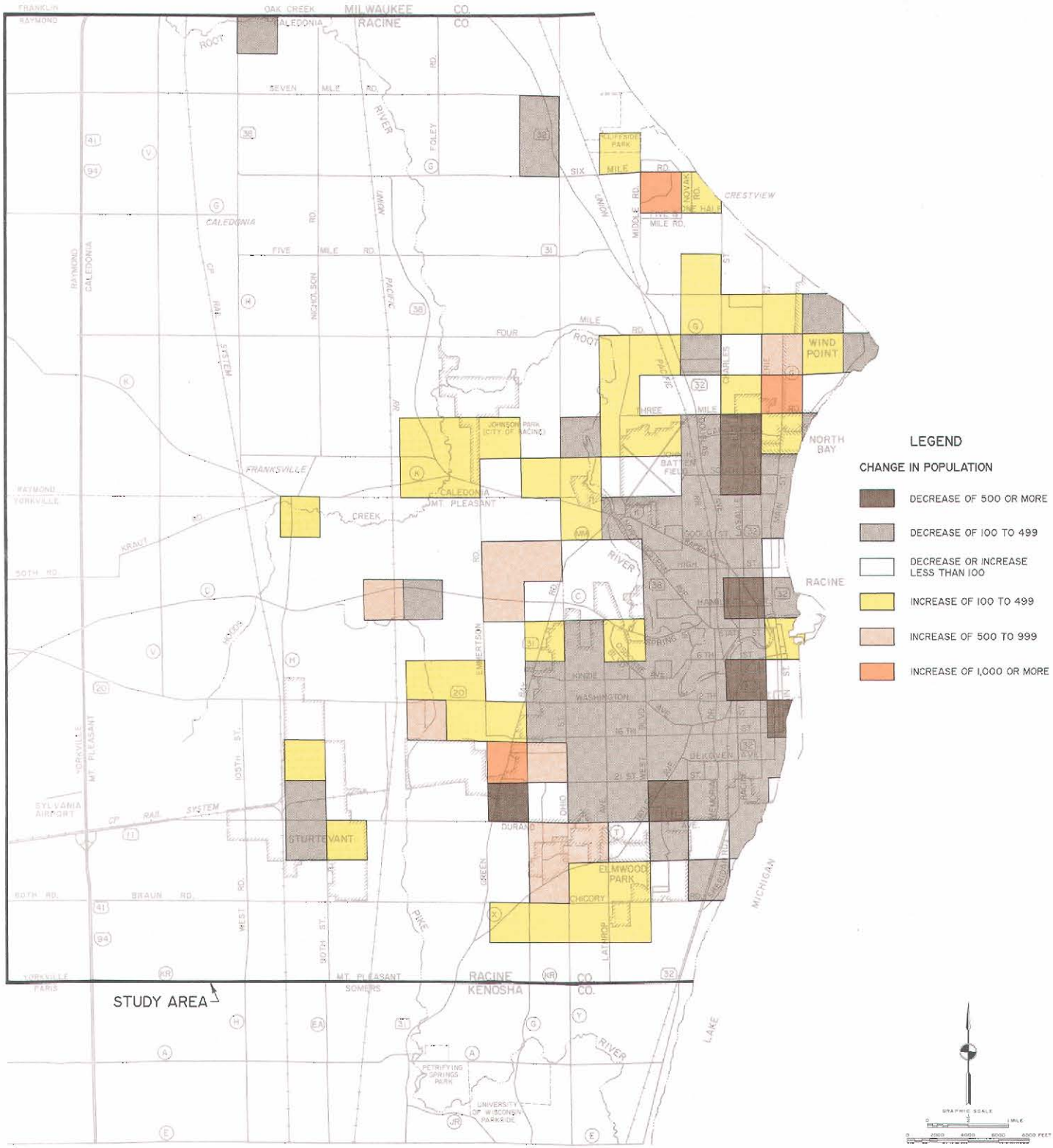
POPULATION DISTRIBUTION IN THE STUDY AREA: 1990



Source: SEWRPC.

Map 3

POPULATION CHANGE IN THE STUDY AREA BETWEEN 1970 AND 1990



Source: SEWRPC.

Table 2

TOTAL HOUSEHOLDS IN THE STUDY AREA: 1960-1995

Civil Division	Total Households									
	1960		1970		1980		1990		1995[a]	
	Number	Percent of Study Area	Number	Percent of Study Area	Number	Percent of Study Area	Number	Percent of Study Area	Number	Percent of Study Area
City of Racine	27,064	80.6	29,851	74.5	31,744	67.6	31,767	64.5	32,360	63.0
Village of Elmwood Park[b]	--[b]	--	137	0.3	164	0.3	186	0.4	190	0.4
Village of North Bay	79	0.2	88	0.2	88	0.2	91	0.2	100	0.2
Village of Sturtevant	391	1.2	848	2.1	1,262	2.7	1,308	2.7	1,710	3.3
Village of Wind Point	138	0.4	339	0.8	562	1.2	711	1.4	710	1.4
Town of Caledonia	2,476	7.4	4,203	10.5	6,328	13.5	7,058	14.4	7,450	14.5
Town of Mt. Pleasant	3,220	9.6	4,363	10.9	6,438	13.7	7,708	15.6	8,400	16.4
Town of Raymond[c]	97	0.3	153	0.4	172	0.4	176	0.4	180	0.4
Town of Yorkville[c]	96	0.3	134	0.3	169	0.4	174	0.4	180	0.4
Study Area Total	33,561	100.0	40,116	100.0	46,927	100.0	49,179	100.0	51,280	100.0

Civil Division	Change in Households									
	1960-1970		1970-1980		1980-1990		1990-1995		1960-1995	
	Absolute	Percent	Absolute	Percent	Absolute	Percent	Absolute	Percent	Absolute	Percent
City of Racine	2,787	10.3	1,893	6.3	23	0.1	593	1.9	5,296	19.6
Village of Elmwood Park[b]	137	--[b]	27	19.7	22	13.4	4	2.2	190	--[b]
Village of North Bay	9	11.4	--	--	3	3.4	9	9.9	21	26.6
Village of Sturtevant	457	116.9	414	48.8	46	3.6	402	30.7	1,319	337.3
Village of Wind Point	201	145.7	223	65.8	149	26.5	-1	-0.1	572	414.5
Town of Caledonia	1,727	69.7	2,125	50.6	730	11.5	392	5.6	4,974	200.9
Town of Mt. Pleasant	1,143	35.5	2,075	47.6	1,270	19.7	692	9.0	5,180	160.9
Town of Raymond[c]	56	57.7	19	12.4	4	2.3	4	2.3	83	85.6
Town of Yorkville[c]	38	39.6	35	26.1	5	3.0	6	3.4	84	87.5
Study Area Total	6,555	19.5	6,811	17.0	2,252	4.8	2,101	4.3	17,719	52.8

[a]Estimated.

[b]The Village of Elmwood Park was incorporated in 1960, after the U.S. Census was conducted.

[c]Figures are estimates for the portion of the Town in the study area.

Source: U. S. Bureau of the Census and SEWRPC.

- The largest transit-dependent population group in the study area in 1990 was elderly persons, who constituted about 17 percent of the total study area population. School-age children, persons in low-income households, and households with no vehicle available represented about 13, 11, and 10 percent, respectively, of the study area residents or households. A significantly smaller segment of the study area population had a disability limiting their mobility.[2]

- The highest residential concentrations of transit-dependent persons in 1990 were found within the City of Racine. The highest absolute numbers of transit-dependent persons were generally concentrated in the central portion of the City, in the area bounded by 16th Street on the south, West Boulevard and Osborn Street on the west, Spring Street and Hamilton Street on the north, and Lake Michigan on the east. This is reflected in the potential priority areas for transit service identified on Map 4.

Employment Characteristics

Employment trends in the study area are set forth in Table 5 for the period from 1970 through 1990. The distribution of jobs in the study area in 1990 is shown on Map 5. The employment change in the study area between 1970 and 1990 is shown on Map 6. To supplement the Commission's 1990 quarter-section employment data,

[2]*The Census data do not reflect ambulatory disabled persons whose physical or mental impairment does not prevent them from traveling independently without the assistance of others.*

Table 3

HISTORIC LEVELS OF TRANSIT-DEPENDENT POPULATIONS IN THE STUDY AREA: 1960-1990

Year	Population		Total Households	Transit-Dependent Population Groups[a]									
				School-Age Children (ages 10 through 18)		Elderly Persons (ages 60 and older)		Persons in Low-Income Households[b]		Disabled Persons[c]		Households with No Vehicle Available	
	Total	Ages 16 and Over		Number	Percent of Total Population	Number	Percent of Total Population	Number	Percent of Total Population	Number	Percent of Population Ages 16 and Over	Number	Percent of Total Households
1960	114,166	74,686	33,561	16,667	14.6	15,268	13.4	N/A	N/A	N/A	N/A	5,552	16.5
1970	134,783	88,802	40,116	25,607	19.0	17,559	13.0	10,237	7.6	N/A	N/A	5,640	14.1
1980	133,685	98,218	46,927	22,583	16.9	19,686	14.7	10,094	7.6	N/A	N/A	5,393	11.5
1990	132,952	99,779	49,179	17,164	12.9	22,521	16.9	15,023	11.3	3,858	3.9	5,130	10.4

Change in Total Population: 1960-1990		Change in Households: 1960-1990		Change in Transit-Dependent Population Groups: 1960-1990									
				School-Age Children (ages 10 through 18)		Elderly Persons (ages 60 and older)		Persons in Low-Income Households[d]		Disabled Persons		Households with No Vehicle Available	
Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
18,786	16.5	15,618	46.5	497	3.0	7,253	47.5	4,786	46.8	N/A	N/A	-422	-7.6

NOTE: N/A indicates comparable data not available for all years.

[a] *All figures are based on Census information derived from sample data.*

[b] *Represents persons residing in households with a total 1989 family income below Federal poverty thresholds.*

[c] *Includes persons age 16 and over with a health condition lasting six or more months which made it difficult to travel alone outside the home.*

[d] *Changes listed are for the period 1970 to 1990.*

Source: U. S. Bureau of the Census and SEWRPC.

individual employers with 20 or more employees at one worksite in 1996 were identified and their locations plotted on Map 7. The following can be seen from this table and these maps:

- The study area experienced an overall increase in employment between 1970 and 1990 of about 26 percent, although the employment increases varied significantly by decade and municipality. About 75 percent of the increase in employment occurred between 1970 and 1980. The growth of study area employment between 1980 and 1990 was slowed by the nationwide recession which severely affected the local economy between 1979 and 1984. Employment opportunities at new commercial, industrial, and office developments which have been completed since 1990, or are currently under way, have helped to spur further increases in job levels both within and without the City. In this respect, employment levels in Racine County have increased from about 88,800 jobs in 1990 to about 93,300 jobs in 1995, or by about 5 percent.

- Nearly two-thirds of the overall increase in employment in the study area between 1970 and 1990 occurred outside the City of Racine. During this period the number of jobs at employers in the Towns of Mt. Pleasant and Caledonia and the Village of Sturtevant increased by about 64 percent, from about 13,300 jobs in 1970 to about 21,800 jobs in 1990. A large part of this growth may be attributed to the new employment centers which have developed in these communities.

- At present, the highest employment concentrations in the study area are located in the City of Racine, particularly in the central business district (CBD), where several governmental employers and retail and service employers are located, and in the areas which contained concentrations of major employment centers, including the area immediately south of the CBD and in the southwest corner of the City. Other areas of significant employment concentrations are also found outside the City along both STH 20 and STH 11 between Green Bay Road and 105th Street in the Town of Mt. Pleasant, along Douglas Avenue between Three Mile Road and Middle Road in the Town of Caledonia, and in the Grandview Industrial Park in the Town of Yorkville.

Table 4

TRANSIT-DEPENDENT POPULATIONS IN THE STUDY AREA BY BLOCK GROUP: 1990

Census Tract	Block Group	Population		Total Households	Transit-Dependent Population Groups[a]									
					School-Age Children (ages 10 through 18)		Elderly Persons (ages 60 and older)		Persons in Low-Income Households[b]		Disabled Persons[c]		Households with No Vehicle Available	
		Total	Ages 16 and Older		Number	Percent of Block Group Population	Number	Percent of Block Group Population	Number	Percent of Block Group Population	Number	Percent of Block Group Population Ages 16 and Older	Number	Percent of Block Group Housholds
1	1	475	424	337	22	4.6	197	41.5	174	36.6	41	8.6	211	62.6
2	3	1,226	980	472	89	7.3	230	18.8	213	17.4	11	0.9	46	9.7
	4	1,003	645	318	222	22.1	110	11.0	312	31.1	9	0.9	21	6.6
	5	1,096	933	314	85	7.8	38	3.5	189	17.2	92	8.4	82	26.1
	6	839	588	358	177	21.1	43	5.1	182	21.7	15	1.8	74	20.7
	7	1,102	699	372	217	19.7	59	5.4	466	--	29	2.6	91	24.5
	8	776	642	426	65	8.4	102	13.1	276	35.6	55	7.1	47	11.0
3	1	537	372	168	43	8.0	32	6.0	188	35.0	14	2.6	57	33.9
	2	1,177	663	297	291	24.7	56	4.8	683	58.0	82	7.0	137	46.1
	3	447	293	165	105	23.5	70	15.7	177	39.6	9	2.0	75	45.5
	5	968	558	291	169	17.5	90	9.3	509	52.6	49	5.1	76	26.1
	6	845	640	287	120	14.2	142	16.8	218	25.8	40	4.7	68	23.7
4	1	863	610	317	74	8.6	83	9.6	225	26.1	40	4.6	65	20.5
	2	181	95	61	66	36.5	28	15.5	58	32.0	6	3.3	16	26.2
	4	984	674	360	93	9.5	109	11.1	192	19.5	57	5.8	76	21.1
	5	1,355	840	397	237	17.5	108	8.0	645	47.6	49	3.6	134	33.8
	6	897	580	254	159	17.7	115	12.8	350	39.0	58	6.5	105	41.3
	7	681	355	190	142	20.9	40	5.9	359	52.7	7	1.0	47	24.7
5	3	992	697	331	122	12.3	170	17.1	245	24.7	53	5.3	73	22.1
	5	961	540	268	209	21.7	37	3.9	372	38.7	19	2.0	86	32.1
	6	1,236	873	314	172	13.9	116	9.4	477	--	59	4.8	106	33.8
	7	1,113	566	304	277	24.9	46	4.1	612	55.0	68	6.1	168	55.3
	8	918	619	403	161	17.5	83	9.0	293	31.9	47	5.1	113	28.0
	9	1,156	816	396	111	9.6	139	12.0	228	19.7	24	2.1	92	23.2
6	4	914	806	363	52	5.7	243	26.6	104	11.4	51	5.6	14	3.9
	5	1,042	774	391	97	9.3	145	13.9	75	7.2	--	--	13	3.3
	6	873	526	320	109	12.5	44	5.0	24	2.7	23	2.6	36	11.3
	7	533	480	312	16	3.0	168	31.5	67	12.6	19	3.6	93	29.8
	8	1,155	814	389	177	15.3	124	10.7	41	3.6	4	0.3	22	5.7
	9	1,451	929	504	192	13.2	101	7.0	163	11.2	20	1.4	80	15.9
7	1	1,268	889	520	178	14.0	201	15.9	110	8.7	17	1.3	71	13.7
	2	536	436	219	77	14.4	188	35.1	44	8.2	13	2.4	21	9.6
	3	1,310	1,148	508	119	9.1	388	29.6	28	2.1	18	1.4	34	6.7
	6	1,053	815	458	74	7.0	121	11.5	97	9.2	10	1.0	--	--
	7	918	683	379	137	14.9	143	15.6	43	4.7	18	2.0	13	3.4
	8	725	564	317	99	13.7	179	24.7	45	6.2	27	3.7	30	9.5
8	4	765	503	266	105	13.7	61	8.0	308	40.3	12	1.6	32	12.0
	5	861	655	338	50	5.8	200	23.2	11	1.3	19	2.2	24	7.1
	6	710	551	269	118	16.6	112	15.8	54	7.6	17	2.4	34	12.6
	7	815	695	299	122	15.0	202	24.8	32	3.9	41	5.0	12	4.0
	8	710	538	300	56	7.9	193	27.2	35	4.9	30	4.2	50	16.7
	9	792	669	237	154	19.4	88	11.1	26	3.3	16	2.0	--	--
9.01	1	1,288	946	487	236	18.3	227	17.6	98	7.6	49	3.8	42	8.6
	2	1,177	923	494	133	11.3	234	19.9	20	1.7	43	3.7	30	6.1
	4	--	--	--	--	--	--	--	--	--	--	--	--	--
	5	1,559	1,156	552	175	11.2	235	15.1	74	4.7	50	3.2	18	3.3
9.03	1	1,210	945	444	172	14.2	222	18.3	49	4.1	19	1.6	16	3.6
	2	1,108	792	480	155	14.0	187	16.9	228	20.6	62	5.6	157	32.7
	3	828	673	281	110	13.3	160	19.3	--	--	13	1.6	6	2.1
	4	918	801	294	142	15.5	159	17.3	16	1.7	5	0.5	4	1.4
9.04	1	1,188	829	395	149	12.5	98	8.2	42	3.5	12	1.0	12	3.0
	2	638	476	295	82	12.9	92	14.4	102	16.0	24	3.8	30	10.2
	3	1,216	1,012	308	121	10.0	328	27.0	--	--	37	3.0	--	--
	4	1,133	863	379	143	12.6	155	13.7	12	1.1	24	2.1	--	--
10.01	1	811	633	368	119	14.7	200	24.7	82	10.1	41	5.1	80	21.7
	2	986	827	306	138	14.0	408	41.4	7	0.7	56	5.7	76	24.8
	3	1,078	795	449	75	7.0	151	14.0	351	32.6	87	8.1	126	28.1
10.02	1	732	574	304	65	8.9	162	22.1	56	7.7	24	3.3	26	8.6
	4	1,154	877	422	125	10.8	228	19.8	97	8.4	13	1.1	23	5.5
	5	1,065	805	407	114	10.7	228	21.4	99	9.3	26	2.4	23	5.7

Table 4 (continued)

Census Tract	Block Group	Population		Total Households	Transit-Dependent Population Groups[a]									
					School-Age Children (ages 10 through 18)		Elderly Persons (ages 60 and older)		Persons in Low-Income Households[b]		Disabled Persons[c]		Households with No Vehicle Available	
		Total	Ages 16 and Older		Number	Percent of Block Group Population	Number	Percent of Block Group Population	Number	Percent of Block Group Population	Number	Percent of Block Group Population Ages 16 and Older	Number	Percent of Block Group Housholds
10.03	2	1,751	1,318	687	161	9.2	332	19.0	54	3.1	23	1.3	37	5.4
	3	604	462	246	55	9.1	137	22.7	29	4.8	26	4.3	26	10.6
	4	743	568	301	84	11.3	122	16.4	23	3.1	20	2.7	20	6.6
	5	896	619	304	83	9.3	112	12.5	150	16.7	18	2.0	46	15.1
11	1	659	551	357	79	12.0	291	44.2	57	8.6	62	9.4	58	16.2
	3	1,142	936	466	153	13.4	311	27.2	18	1.6	28	2.5	26	5.6
	4	1,325	1,073	493	157	11.8	319	24.1	--	--	21	1.6	--	--
	6	998	730	357	121	12.1	185	18.5	8	0.8	30	3.0	--	--
	7	819	585	318	101	12.3	71	8.7	18	2.2	7	0.9	7	2.2
	8	842	709	292	111	13.2	152	18.1	32	3.8	11	1.3	--	--
	9	1,180	926	450	123	10.4	239	20.3	17	1.4	33	2.8	38	8.4
12.01	1	1,679	1,235	739	187	11.1	221	13.2	252	15.0	35	2.1	79	10.7
	2	777	648	354	81	10.4	135	17.4	149	19.2	31	4.0	72	20.3
	3	647	509	314	47	7.3	206	31.8	238	36.8	75	11.6	106	33.8
	4	728	514	286	91	12.5	88	12.1	12	1.6	49	6.7	19	6.6
12.02	1	798	605	294	140	17.5	136	17.0	21	2.6	20	2.5	9	3.1
	2	708	545	238	67	9.5	175	24.7	20	2.8	25	3.5	7	2.9
	3	1,140	737	401	150	13.2	93	8.2	376	33.0	52	4.6	84	20.9
	4	650	565	260	59	9.1	206	31.7	33	5.1	13	2.0	24	9.2
	5	326	254	129	49	15.0	65	19.9	11	3.4	--	--	--	--
	6	1,421	1,066	490	206	14.5	413	29.1	98	6.9	50	3.5	42	8.6
	7	1,279	985	514	186	14.5	319	24.9	14	1.1	31	2.4	8	1.6
13.01	1	1,055	851	441	119	11.3	268	25.4	30	2.8	35	3.3	24	5.4
	2	924	718	381	123	13.3	212	22.9	7	0.8	45	4.9	43	11.3
	3	732	518	290	91	12.4	97	13.3	91	12.4	13	1.8	10	3.4
	4	1,054	805	448	93	8.8	205	19.5	35	3.3	12	1.1	17	3.8
13.02	1	724	572	293	33	4.6	175	24.2	--	--	22	3.0	8	2.7
	2	846	609	318	70	8.3	93	11.0	89	10.5	6	0.7	47	14.8
	3	1,366	969	490	293	21.4	193	14.1	305	22.3	32	2.3	107	21.8
	4	733	585	291	73	10.0	196	26.7	168	22.9	35	4.8	60	20.6
	5	879	665	370	128	14.6	122	13.9	105	11.9	8	0.9	37	10.0
14	1	1,185	973	559	133	11.2	428	36.1	139	11.7	93	7.8	99	17.7
	2	634	459	235	52	8.2	158	24.9	8	1.3	15	2.4	8	3.4
	3	884	713	379	64	7.2	194	21.9	32	3.6	10	1.1	34	9.0
	5	1,078	756	367	195	18.1	189	17.5	130	12.1	--	--	33	9.0
	6	640	525	279	67	10.5	159	24.8	5	0.8	8	1.3	8	2.9
	7	767	682	366	49	6.4	270	35.2	--	--	16	2.1	29	7.9
	8	1,085	755	388	143	13.2	286	26.4	54	5.0	29	2.7	26	6.7
	9	933	764	408	59	6.3	253	27.1	35	3.8	54	5.8	--	--
15.01	1	1,376	962	382	236	17.2	85	6.2	6	0.4	17	1.2	5	1.3
	2	640	485	244	105	16.4	82	12.8	34	5.3	22	3.4	13	5.3
	3	1,815	1,279	463	340	18.7	37	2.0	18	1.0	29	1.6	--	--
15.02	1	816	652	270	104	12.7	172	21.1	15	1.8	26	3.2	4	1.5
	2	1,175	907	412	120	10.2	257	21.9	84	7.1	15	1.3	4	1.0
15.02	3	1,211	952	430	179	14.8	169	14.0	32	2.6	56	4.6	16	3.7
	9	2,082	1,528	681	305	14.6	180	8.6	119	5.7	60	2.9	17	2.5
15.03	1	1,517	1,133	482	278	18.3	171	11.3	8	0.5	11	0.7	--	--
	4	1,122	908	316	118	10.5	348	31.0	173	15.4	53	4.7	4	1.3
	5	1,695	1,304	579	251	14.8	206	12.2	23	1.4	17	1.0	--	--
	6	1,359	973	682	118	8.7	217	16.0	372	27.4	51	3.8	123	18.0
	7	1,272	938	418	133	10.5	225	17.7	147	11.6	41	3.2	25	6.0
16.01	1	526	406	191	102	19.4	101	19.2	40	7.6	7	1.3	--	--
	2	964	748	310	104	10.8	204	21.2	90	9.3	51	5.3	5	1.6
	3	504	440	184	46	9.1	106	21.0	9	1.8	20	4.0	--	--
	4	838	672	282	109	13.0	119	14.2	53	6.3	16	1.9	--	--
	5	1,242	953	423	143	11.5	118	9.5	8	0.6	5	0.4	7	1.7
	6	477	355	158	59	12.4	49	10.3	14	2.9	19	4.0	--	--
	7	553	431	194	98	17.7	96	17.4	--	--	10	1.8	--	--
16.02	1	1,375	1,006	456	209	15.2	144	10.5	--	--	30	2.2	10	2.2
	2	1,128	871	344	186	16.5	117	10.4	21	1.9	--	--	--	--

Table 4 (continued)

Census Tract	Block Group	Population		Total Households	Transit-Dependent Population Groups[a]									
					School-Age Children (ages 10 through 18)		Elderly Persons (ages 60 and older)		Persons in Low-Income Households[b]		Disabled Persons[c]		Households with No Vehicle Available	
		Total	Ages 16 and Older		Number	Percent of Block Group Population	Number	Percent of Block Group Population	Number	Percent of Block Group Population	Number	Percent of Block Group Population Ages 16 and Older	Number	Percent of Block Group Housholds
17.02	2	772	537	265	114	14.8	57	7.4	9	1.2	26	3.4	4	1.5
	4	1,128	905	348	153	13.6	138	12.2	83	7.4	26	2.3	14	4.0
	5	829	607	308	87	10.5	60	7.2	16	1.9	12	1.4	19	6.2
	9	1,257	893	445	184	14.6	144	11.5	76	6.0	31	2.5	17	3.8
17.03	3	427	359	150	68	15.9	117	27.4	17	4.0	29	6.8	--	--
	4	462	394	186	26	5.6	91	19.7	25	5.4	--	--	9	4.8
	5	826	552	288	155	18.8	33	4.0	30	3.6	7	0.8	9	3.1
	6	1,256	986	432	110	8.8	222	17.7	--	--	24	1.9	9	2.1
17.04	1	2,684	2,171	1,327	186	6.9	734	27.3	259	9.7	58	2.2	177	13.3
	2	1,258	930	504	163	13.0	159	12.6	51	4.1	28	2.2	20	4.0
	3	1,676	1,287	614	231	13.8	289	17.2	--	--	40	2.4	6	1.0
	4	1,713	1,492	688	163	9.5	502	29.3	--	--	30	1.8	--	--
	5	621	539	201	86	13.8	109	17.6	--	--	--	--	--	--
	8	331	256	125	55	16.6	80	24.2	--	--	--	--	--	--
18	1	205	157	61	28	13.7	32	15.7	3	1.5	2	1.0	--	--
	2	311	227	115	36	11.6	34	11.0	19	6.1	7	2.3	--	--
19	1	258	214	88	55	21.4	40	15.4	6	2.3	7	2.7	--	--
	3	201	149	62	21	10.6	23	11.4	12	5.9	5	2.5	--	--
	4	72	58	24	10	13.9	10	13.9	5	6.9	4	5.6	1	4.2
Total	--	132,953	99,779	49,179	17,164	12.9	22,521	16.9	15,023	11.3	3,858	3.9	5,130	10.4

[a] *All figures are based on Census information derived from sample data.*

[b] *Represents persons residing in households with a total family income below Federal poverty thresholds.*

[c] *Includes persons age 16 and older with a health condition lasting six or more months which made it difficult to travel alone outside the home.*

Source: U. S. Bureau of the Census and SEWRPC.

EXISTING LAND USE

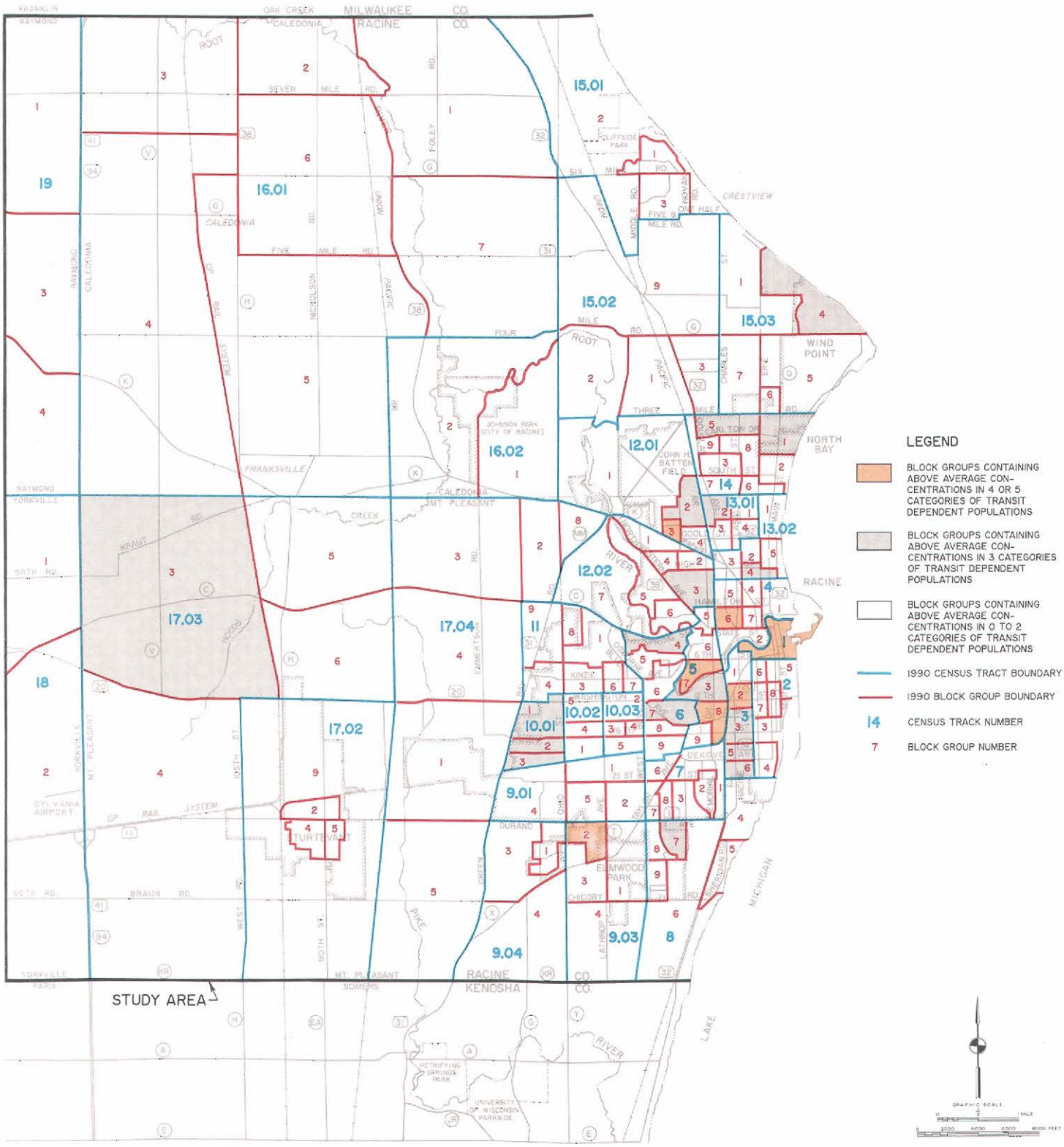
Using aerial photographs, the Regional Planning Commission has assembled information that documents the historic growth and the pattern of urban development of the Southeastern Wisconsin Region. The historic increase in the developed urban land area of the Racine study area is quantitatively summarized in Table 6.

In 1900, development within the study area outside the area immediately surrounding and including the City of Racine CBD was virtually nonexistent. Between 1900 and 1950, most of the development within the study area occurred in relatively tight, concentric rings, contiguous to, and outward from, existing urban development in the central portion of the City of Racine. The study area experienced a period of rapid urban development between 1950 and 1963, when urban land uses grew at an average annual average rate of about 0.8 square mile per year, after which the rate of growth slowed to about 0.5 square mile per year through 1990. While much of the rapid development between 1950 and 1963 occurred in proximity to the established urban areas, other development was scattered in outlying portions of the study area. Since 1963 urban development has occurred both through the infilling of partially developed areas, particularly in the urban-rural fringe, and in scattered urban enclaves. The extent of urban development in the study area in 1990 is shown on Map 8.

Decreases in the population density within the urban portion of the study area have accompanied the diffused pattern of urban development. While the land devoted to urban uses in the study area increased by almost 64 percent, from 19.8 to 32.4 square miles, between 1963 and 1990, the population within the developed urban areas was estimated to have increased by only 14 percent, from about 116,100 persons in 1963, or 5,876 persons per square mile, to about 132,700 persons in 1990, or 4,103 persons per square mile. The population density trends in the study area are shown in Table 7.

Map 4

RESIDENTIAL CONCENTRATIONS OF TRANSIT-DEPENDENT POPULATIONS IN THE STUDY AREA: 1990



Source: SEWRPC.

Table 5

TOTAL EMPLOYMENT IN THE STUDY AREA: 1970-1990

Civil Division	Total Employment					
	1970		1980		1990	
	Number	Percent of Study Area	Number	Percent of Study Area	Number	Percent of Study Area
City of Racine	42,700	74.7	46,800	68.7	47,700	66.4
Village of Elmwood Park	900	1.6	600	0.9	200	0.3
Village of North Bay	--	--	--	--	--	--
Village of Sturtevant	600	1.1	800	1.2	1,500	2.1
Village of Wind Point	100	0.2	500	0.7	800	1.1
Town of Caledonia	3,900	6.8	4,800	7.0	4,900	6.8
Town of Mount Pleasant	8,800	15.4	14,000	20.6	15,400	21.4
Town of Raymond	--	--	200	0.3	800	1.1
Town of Yorkville	100	0.2	400	0.6	600	0.8
Study Area Total	57,100	100.0	68,100	100.0	71,900	100.0

Civil Division	Change in Employment					
	1970-1980		1980-1990		1970-1990	
	Absolute	Percent	Absolute	Percent	Absolute	Percent
City of Racine	4,100	9.6	900	1.9	5,000	11.7
Village of Elmwood Park	-300	-33.3	-400	-66.7	-700	-77.8
Village of North Bay	--	--	--	--	--	--
Village of Sturtevant	200	33.3	700	87.5	900	150.0
Village of Wind Point	400	400.0	300	60.0	700	700.0
Town of Caledonia	900	23.1	100	2.1	1,000	25.6
Town of Mount Pleasant	5,200	59.1	1,400	10.0	6,600	75.0
Town of Raymond	200	--	600	300.0	800	--
Town of Yorkville	300	300.0	200	50.0	500	500.0
Study Area Total	11,000	19.3	3,800	5.6	14,800	25.9

Source: U. S. Bureau of Economic Analysis and SEWRPC.

Residential development is the predominant type of land use within the developed urban portion of the study area. Conventional fixed-route local bus service is generally most effective and cost-efficient when serving areas with residential densities of five dwelling units per acre or higher. As shown on Map 9, areas with such densities were widespread throughout the City of Racine in 1990, but existed only in close proximity to the City of Racine and in the Village of Sturtevant outside the City of Racine. Areas which include multi-family residential land use commonly meet the threshold of five dwelling units per acre. The existing multi-family residential land use in the study area in 1990 is displayed on Map 10.

It was concluded that, on the basis of recent development trends and proposals, continued increases in residential and commercial development may be expected in the near future. Table 8 and Map 11 identify significant residential and commercial developments in the study area that occurred after 1995 and were under construction or had been proposed for construction as of April 1997.

Major Potential Transit Trip Generators

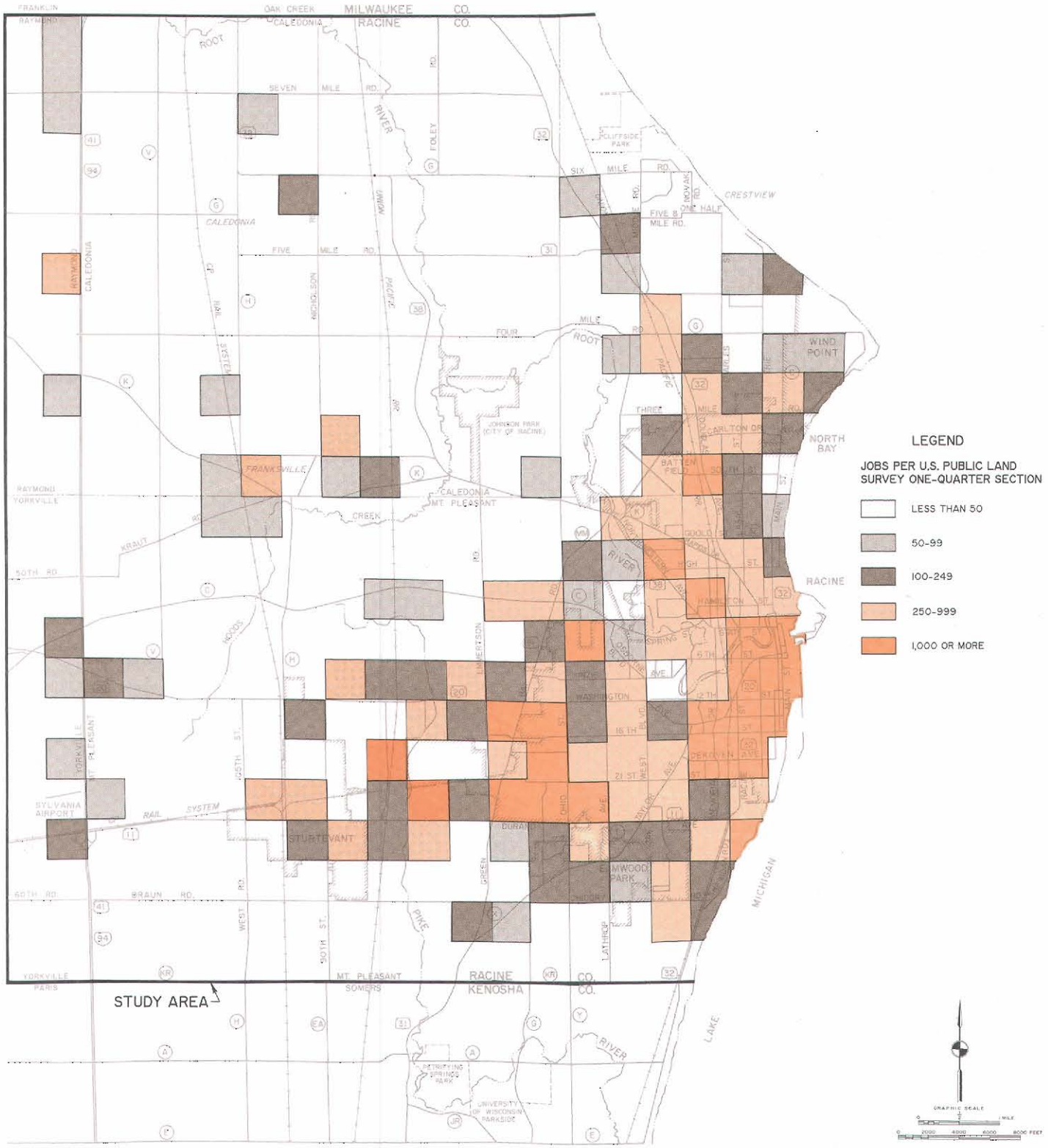
The need to serve the local travel demand generated by major potential transit trip generators must also be considered in any transit service planning effort. The following two basic categories of potential transit trip generators were identified for this study: transit-dependent population trip generators and major land use trip generators.

Transit-Dependent Population Trip Generators

Specific locations of facilities used by, or serving, the elderly, the disabled, and the low-income transit-dependent population groups were identified within the study area for the year 1997 and are listed in Tables 9, 10, and 11, respectively. The nature of the population using the types of facilities identified in this category could be expected to generate significant transit usage. The locations of these

Map 5

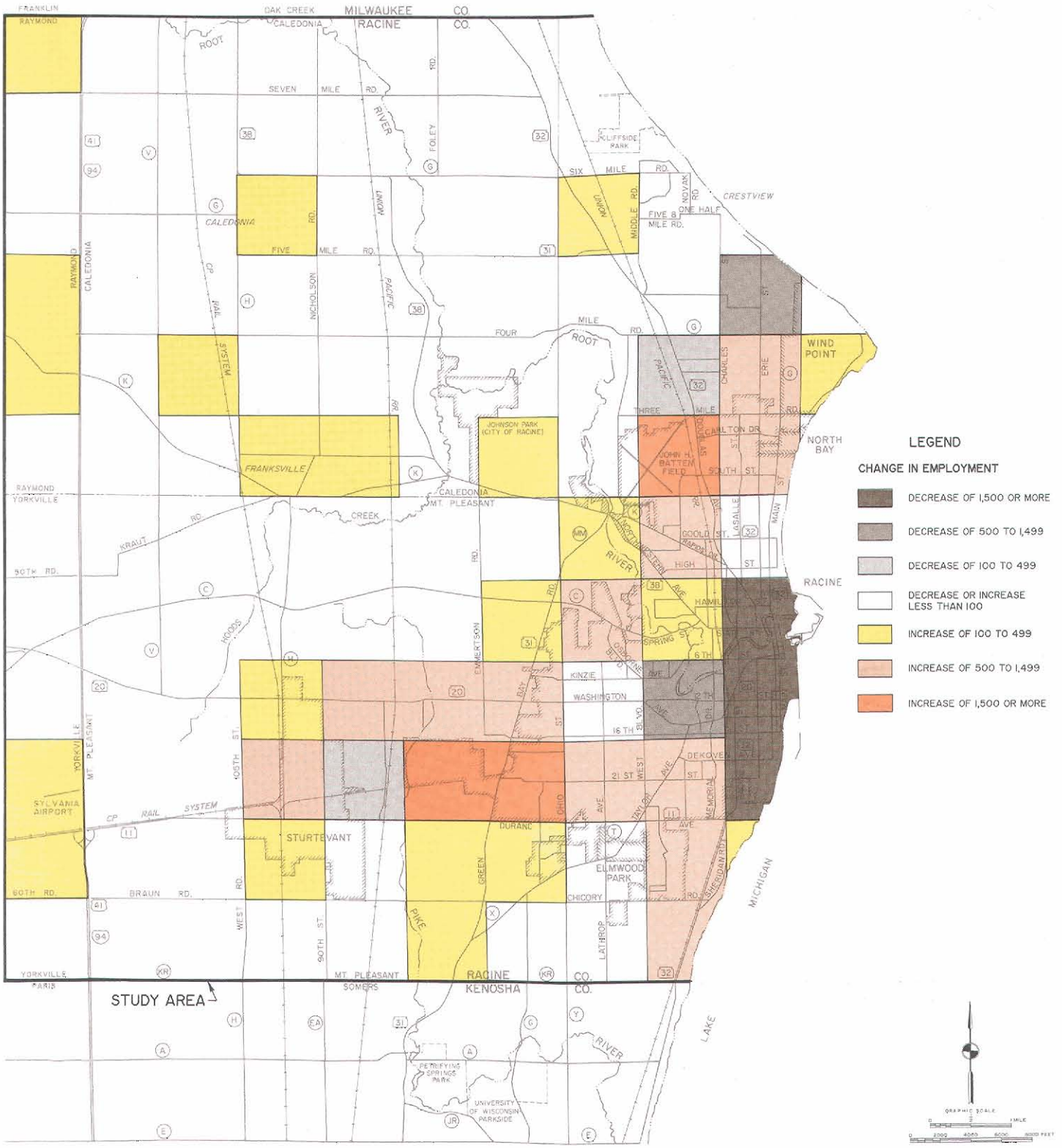
EMPLOYMENT DISTRIBUTION IN THE STUDY AREA: 1990



Source: SEWRPC.

Map 6

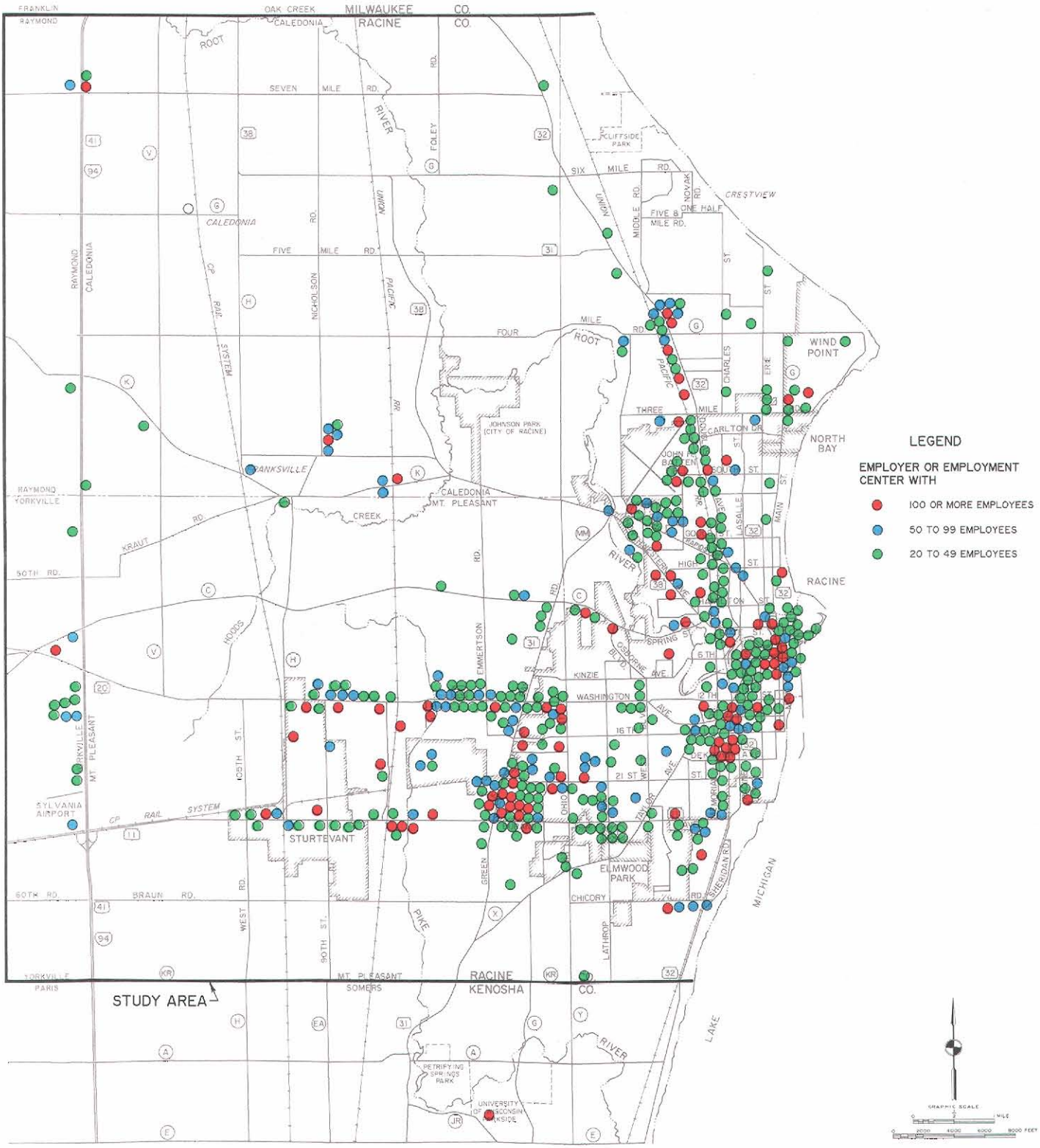
EMPLOYMENT CHANGE IN THE STUDY AREA BETWEEN 1970 AND 1990



Source: SEWRPC.

Map 7

LOCATIONS OF EMPLOYERS WITH TWENTY OR MORE EMPLOYEES IN THE PRIMARY STUDY AREA: 1996



Source: SEWRPC.

Table 6

HISTORIC URBAN GROWTH IN THE STUDY AREA: 1900-1990

Year	Study Area Urban Development[a]				
	Total Area in Square Miles	Change from Previous Time Date		Average Annual Change in Square Miles from Previous Date	Percent of Total Area[b]
		Square Miles	Percent		
1900	2.76	--	--	--	2.4
1950	9.43	6.67	241.6	0.13	8.3
1963	19.75	10.32	109.4	0.80	17.5
1970	24.90	5.15	26.1	0.74	22.0
1980	29.25	4.35	17.5	0.44	25.9
1990	32.35	3.10	10.6	0.31	28.6

[a] *Urban development as defined for the purposes of this analysis includes those areas of the Region where houses or other buildings have been constructed in relatively compact groups, thereby indicating a concentration of residential, commercial, industrial, governmental, or institutional land uses. The continuity of such development was considered interrupted if a quarter mile or more of nonurban type land uses, such as agriculture, woodlands, or wetlands, prevailed in which the above conditions were generally absent.*

[b] *The total land area of the study area is 112.97 square miles.*

Source: SEWRPC.

transit-dependent population trip generators in the study area are shown on Map 12.

Major Land Use Trip Generators

Specific land uses or concentrations of such land uses attracting a large number of person trips also have the potential to attract a relatively large number of transit trips. The types of land uses which were identified as major potential transit trip generators within the study area for public transit planning purposes included the following: 1) major commercial centers, 2) educational institutions, 3) medical centers, 4) governmental and public institutional centers, 5) major employment centers, and 6) major recreational areas. The specific trip generators identified within the study area in 1997 in each type of land use are presented in Tables 12 through 17 and their locations shown on Map 13.

TRAVEL HABITS AND PATTERNS

Information on the quantity and characteristics of travel in the study area was based on the findings of a household travel survey and a survey of Racine transit system users conducted by the Regional Planning Commission in the autumn of 1991. The sample for the Commission's household home interview survey consisted of about 17,500 households, or about 2.5 percent of the total number of households in the Region. The Commission's on-board bus survey of Belle Urban System users entailed distributing a prepaid, preaddressed, mail-back survey questionnaire. About 1,600, or about 24 percent, of the 6,700 average weekday revenue passengers returned the questionnaires. The surveys were part of a comprehensive inventory of travel which also included a truck and taxi survey, an external cordon survey, and a household personal opinion survey. Inventories of travel using similar surveys were also conducted by the Commission in 1963 and 1972.

Total Person Travel Characteristics

The distributions of person trips[3] in the study area in 1963, 1972, and 1991 are shown in Table 18 by trip purpose and by area, including internal trips, which had both trip ends within the study area; external intraregional trips, which had one trip end within the study area and the other trip end in a different area within the seven-county Southeastern Wisconsin Region; and external interregional trips, which had one trip end within the study area and the other trip end in a different area outside the Region.

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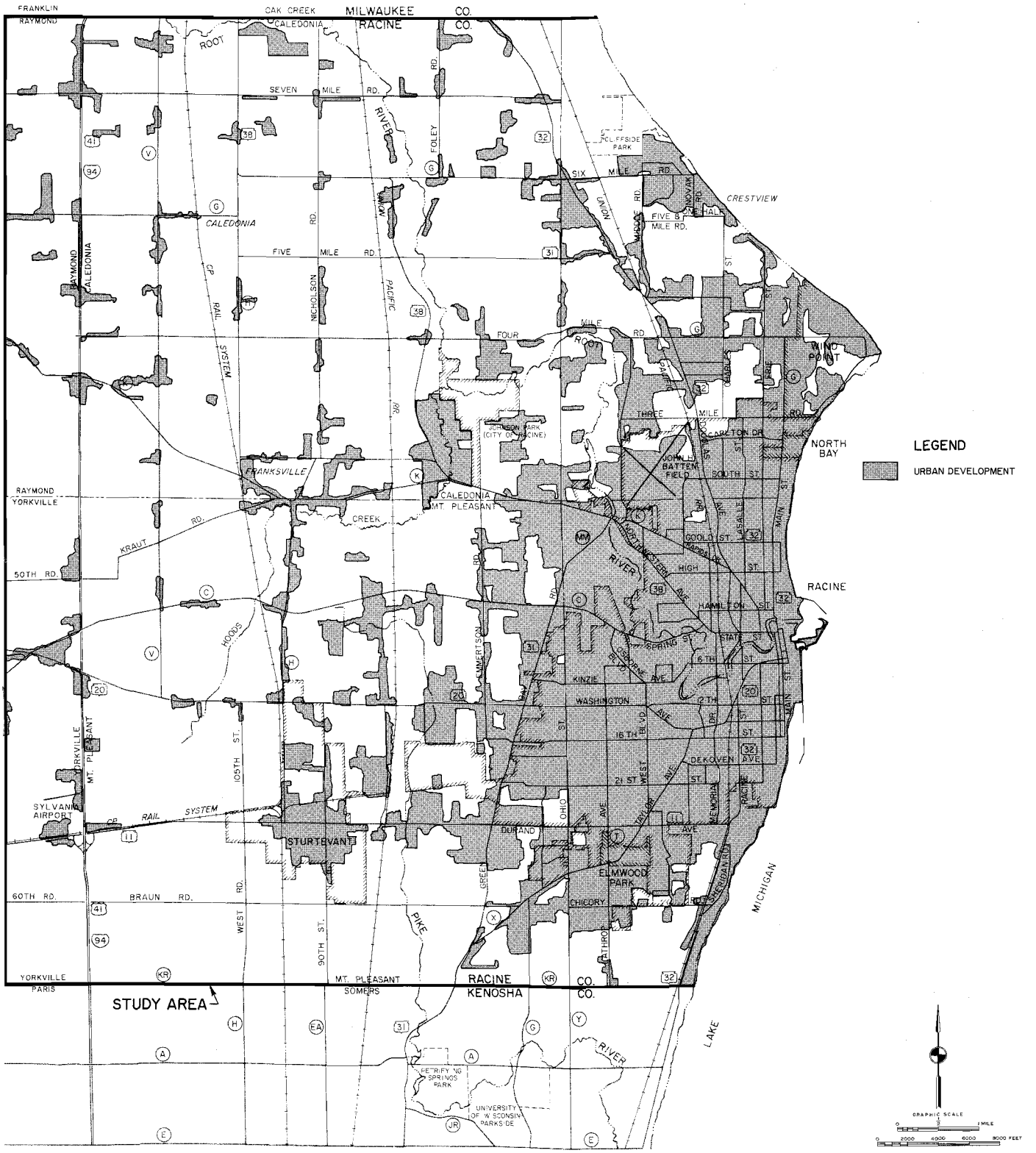
[3] *A person trip was defined as a one-way journey between a point of origin and a point of destination by a person five years of age or older traveling as an auto driver or as a passenger in an auto, taxi, truck, motorcycle, school bus, or other mass transit carrier. To be considered, the trip must have been at least the equivalent of one full city block in length.*

Map 8

EXTENT OF URBAN DEVELOPMENT IN THE STUDY AREA: 1990



Source: SEWRPC.

Table 7

POPULATION DENSITY TRENDS IN THE STUDY AREA: 1963-1990

Year	Urban Population[a]		Rural Population		Total Population	Area (square miles)		Persons per Square Mile	
	Number	Percent of Total	Number	Percent of Total		Urban Development[b]	Total Study Area	Urban Development[b]	Total Study Area
1963[c]	116,058	96.4	4,293	3.6	120,351	19.8	113.0	5,876	1,065
1970	130,580	96.9	4,203	3.1	134,783	24.9	113.0	5,244	1,193
1980	133,071	99.5	614	0.5	133,685	29.3	113.0	4,549	1,183
1990	132,722	99.8	230	0.2	132,952	32.4	113.0	4,103	1,177

[a]Includes urban and "rural nonfarm" population

bFor the purposes of this analysis, areas of urban development were defined to include those areas of the Region where houses or other buildings have been constructed in relatively compact groups, thereby indicating a concentration of residential, commercial, industrial, governmental, or institutional land uses. The continuity of such development was considered interrupted if a quarter mile or more of nonurban type land uses, such as agriculture, woodlands, or wetlands, prevailed in which the above conditions were generally absent.

[c]1963 population estimated.

Source: U. S. Bureau of the Census and SEWRPC.

To facilitate analysis of 1991 person-travel, the study area was divided into 19 internal analysis areas and the areas outside the study area were divided into 15 external analysis areas, including 12 areas within the Region and three areas outside the Region. The volume of trip productions and attractions[4] in 1991 for each internal analysis area is shown on Maps 14 and 15. The generalized pattern and volume of the person trips made in 1991 between the study area and the external analysis areas within and outside the Region is presented in Tables 19 and 20. Map 16 illustrates graphically the flow of trips between the eleven subareas of the study area. Map 17 graphically illustrates the flow of trips between the study area and the external analysis areas. Maps 16 and 17 principally show the volume of trips between place of residence and place of work, shopping, and other. These tables and maps lead to the following conclusions:

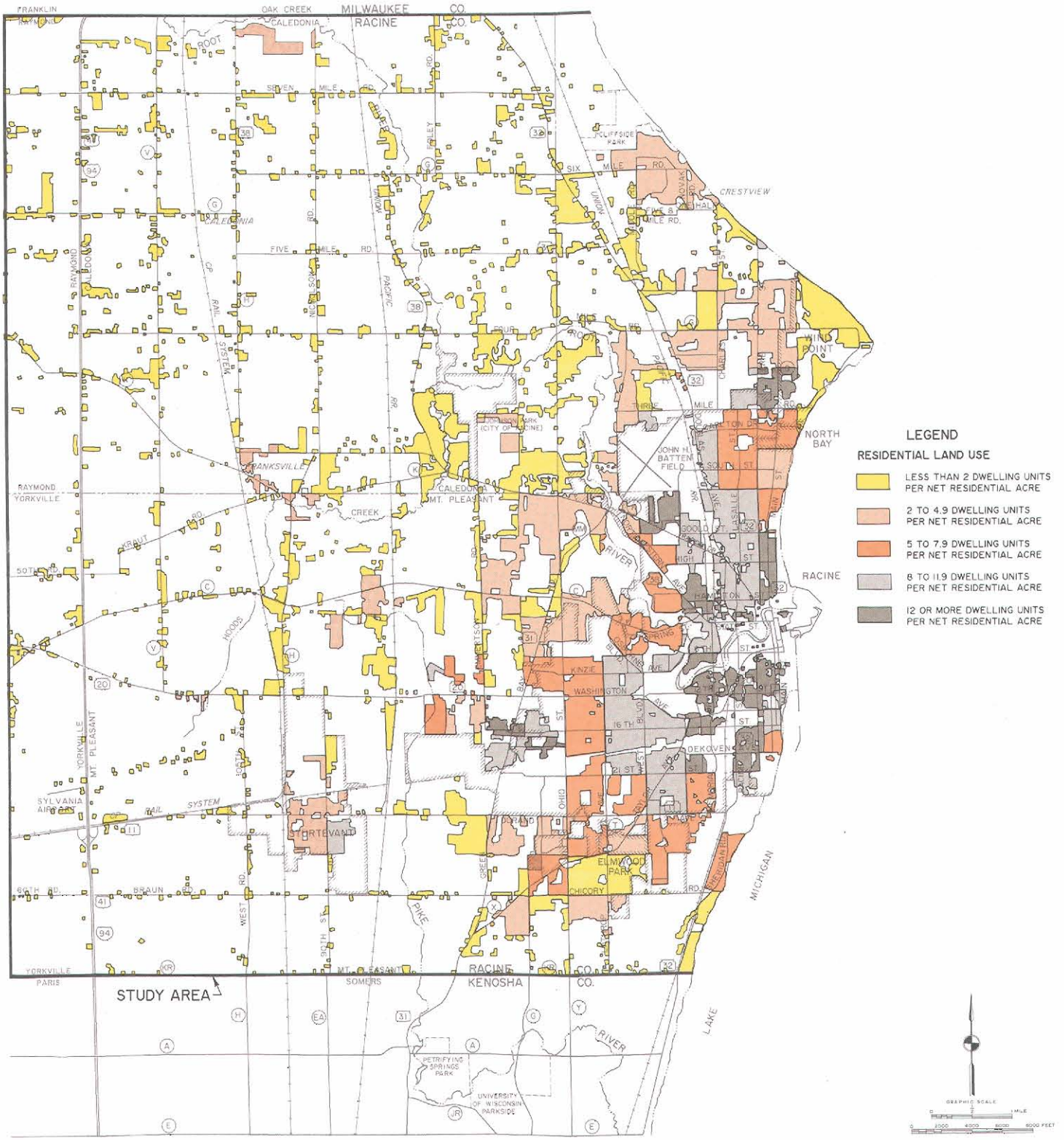
- About 526,900 person trips with origins or destinations within the study area, including both internal and external trips, were made on an average weekday in 1991. This represents an increase in person-travel of about 40 percent since 1963. The observed increase was almost evenly divided between internal person travel, which increased by about 75,900 person trips, or about 24 percent, from about 322,700 trips in 1963 to about 398,600 trips in 1991, and external person trips, which increased by about 75,500 trips, or about 143 percent, from about 52,800 trips in 1963 to about 128,300 trips in 1991.

- About 76 percent of these person trips were made internal to, or totally inside, the study area in 1991, with the largest proportion being home-based other trips, such as trips made for medical, personal business, or social or recreational purposes. As would be expected, the distribution of person-trip productions within the study area reflects the residential concentrations of the study area population. The heaviest concentrations of person-trip attrac-

[4]*To help identify the residential distribution of trip makers and also the concentrations of work, shopping, educational, or other trip generators, it is convenient to express travel in terms of trip ends, with one end of the trip being the "production end" and the other end being the "attraction end." For trips beginning or ending at home, or home-based trips, the production end is always considered the home end of the trip, while the attraction end is always considered the nonhome end, regardless of the actual direction of the trip. For example, the number of home-based work trips produced within a specified area would be the number of trips from homes in that area to places of employment in all other areas plus the number of trips from places of employment in all other areas to homes in the specified area. Conversely, the number of home-based work trips attracted to a specified area would be the number of trips from homes in all other areas to a place of employment within that specified area plus the number of trips from places of employment in that specified area to homes in all other areas. For trips having neither end at home or nonhome-based trips, the origin of the trip is defined as the production end, while the destination is defined as the attraction end.*

Map 9

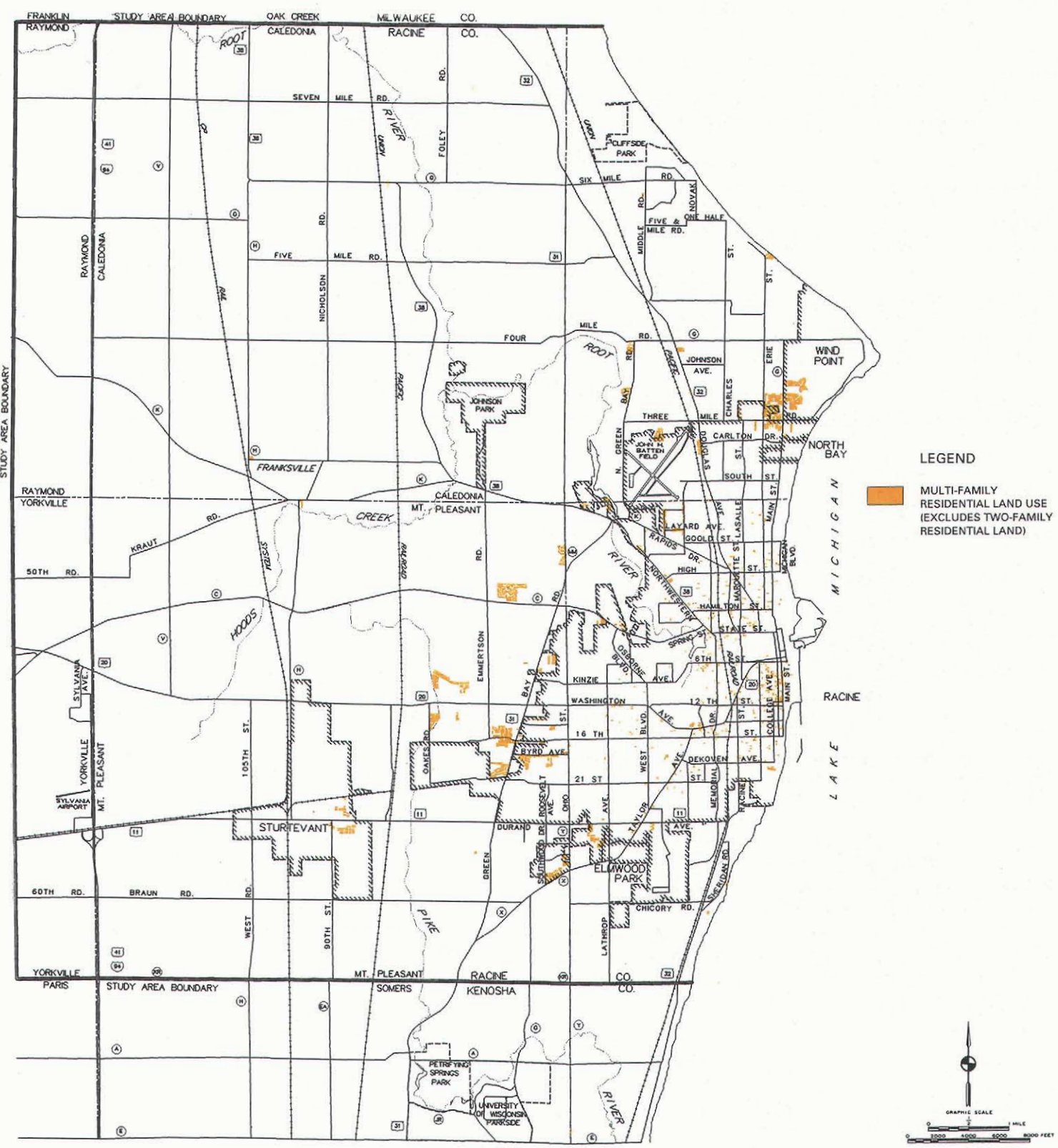
RESIDENTIAL LAND USE DENSITY IN THE STUDY AREA: 1990



Source: SEWRPC.

Map 10

MULTI-FAMILY RESIDENTIAL LAND USE IN THE STUDY AREA: 1990



Source: SEWRPC.

Table 8

NEW AND PROPOSED DEVELOPMENT IN THE STUDY AREA: 1995 TO THE PRESENT

Number on Map 11	Development[a] by Civil Division	Number of Housing Units	Type of Housing Units	Status
	Town of Caledonia			
	Residential			
1	Arlington Heights #5	35	Single-family	Existing platted subdivision
2	Arlington Meadows #2	28	Single-family	Existing platted subdivision
3	Autumn Shores	78	Single-family	Existing platted subdivision
4	Bay Wood Estates	71	Single-family	Existing platted subdivision
5	Baywood Estates West	18	Single-family	Existing platted subdivision
6	Collova Property Subdivision	N/A	Single-family	Proposed
7	Country View Estates #6	17	Single-family	Existing platted subdivision
8	Country View Estates #7	12	Single-family	Existing platted subdivision
9	Fairfield Estates	N/A	Single-family	Proposed
10	Lora/Wedgewood Development	N/A	Single-family	Proposed
11	Majestic North	15	Single-family	Existing platted subdivision
12	Newberry Glen	57	Single-family	Existing platted subdivision
13	Old Farm Meadows	69	Single-family	Existing platted subdivision
14	River Meadows	18	Single-family	Existing platted subdivision
15	Rustic Meadows	49	Single-family	Existing platted subdivision
16	St. Andrews Meadows	57	Single-family	Existing platted subdivision
17	Turtle Creek	51	Single-family	Existing platted subdivision
18	White Manor	32	Multi-family	Completed
	Commercial and Industrial			
19	Midland Container	N/A	N/A	Proposed
20	Needer Travel Services	N/A	N/A	Completed
	Town of Mt. Pleasant			
	Residential			
21	Condominiums	500	Single-family	Proposed
22	Green Meadows	216	Multi-family	Under Development
23	Jamestown II	34	Single-family	Existing platted subdivision
24	Jamestown III	46	Single-family	Completed
25	Pheasant Creek	24	Single-family	Completed
26	Regency Hills Addition No. 2	19	Single-family	Existing platted subdivision
27	Regency Hills Addition No. 3	34	Single-family	Completed
28	Regency Hills Addition No. 4	13	Single-family	Proposed
29	Wakefield Downs Addition No.1	10	Single-family	Existing platted subdivision
30	Woodland Hills	N/A	Single-family	Completed
	Commercial and Industrial and Institutional			
31	Budgetel Hotel	N/A	N/A	Proposed
32	Case High School Stadium	N/A	N/A	Proposed
33	Johnson Worldwide Associates	N/A	N/A	Completed
34	Major Shopping Center	N/A	N/A	Proposed
35	McDonald's	N/A	N/A	Completed
36	Menard's	N/A	N/A	Proposed
37	Office Depot	N/A	N/A	Completed
38	Ramada Express Hotel	N/A	N/A	Completed
39	S.C. Johnson Commercial Markets	N/A	N/A	Completed
	City of Racine			
	Residential			
40	Apartment Building	28	Multi-family	Proposed
41	Apartment Building	28	Multi-family	Proposed
42	Apartment Building	24	Multi-family	Proposed
43	Michigan Meadows	18	Single-family	Existing platted subdivision
	Commercial/Industrial/Institutional			
44	Premier Aluminum	N/A	N/A	Under development
45	Wisconsin Department of Corrections Juvenile Detention Facility[b]	N/A	N/A	Under development

Table 8 (continued)

Number on Map 11	Development[a] by Civil Division	Number of Housing Units	Type of Housing Units	Status
	Village of Sturtevant			
	Residential			
46	Majestic Hills II	84	Single-family	Existing platted subdivision
47	Majestic Hills III	110	Single-family	Proposed
	Commercial/Industrial			
48	Renaissance Project[c]	N/A	N/A	Under development
	Town of Yorkville			
	Commercial/Industrial			
49	Training Facility	N/A	N/A	Proposed

NOTE: N/A means "not applicable" or data "not available."

[a]*Residential development in this table includes only that with 10 or more lots or housing units.*

[b]*This facility is due to be operational in 1997.*

[c]*The following are businesses that area planned for the Renaissance Project and their proposed dates of operation: Andis Co., July 1997; Golden Books, Summer, 1998; Circle Investments, early 1998; Quadra Inc., early 1998.*

Source: City of Racine Department of Planning, Town of Caledonia, Town of Mount Pleasant, Village of Sturtevant, and SEWRPC.

tions within the study area were located in the analysis areas containing major office and commercial development.

- The remaining 24 percent of all person trips were made with one trip end outside the study area, with most trips made for work purposes. Trips made between the study area and Kenosha County accounted for about 49,700 trips, or about 39 percent, of all external trips. Other significant volumes of external person travel were also identified between the study area and Milwaukee County, with about 40,300 trips, or 31 percent of all external trips, and western Racine County, with about 17,100 trips, or about 13 percent of all external trips.

Transit Person Travel Characteristics of Racine Transit System Users

Survey data indicate that about 6,700 transit revenue passenger trips were made on an average weekday in 1991 on the Belle Urban System, representing about 1.7 percent of the estimated 398,600 average weekday total person trips made entirely within the study area. Table 21 summarizes the socio-economic characteristics of all Belle Urban System revenue passengers in 1991. The hourly distributional pattern of transit system revenue passengers is shown in Figure 1. Maps 18 and 19 illustrate graphically the distribution of transit person trip productions and attractions by the internal analysis areas developed for analysis of total person travel. Map 20 graphically illustrates the flow of transit trips between the eleven subareas of the study area. The following observations may be made based upon the examination of this information:

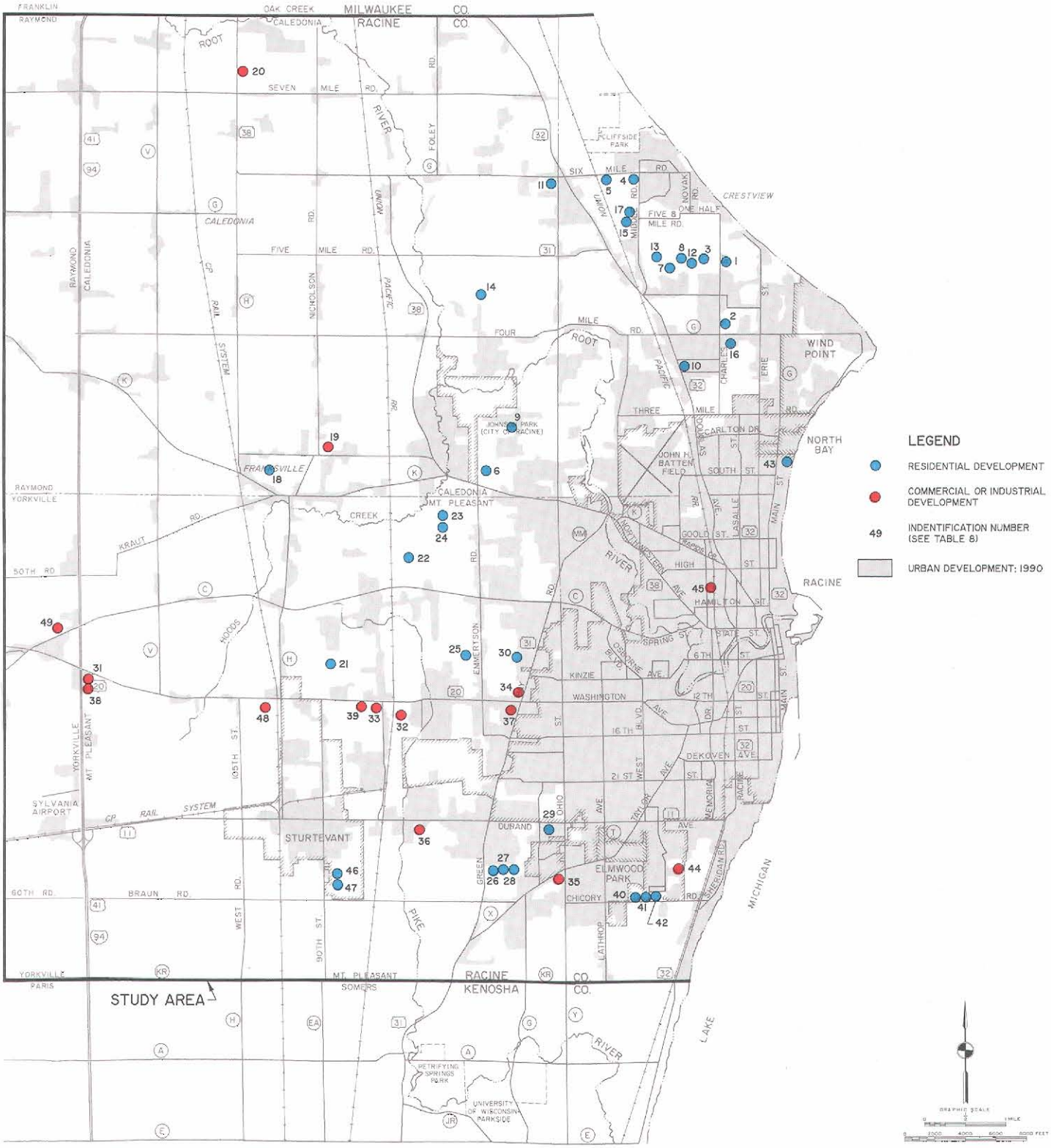
- Belle Urban System passengers were predominantly female, without a valid drivers license, ages 34 and under, and from household with incomes below $20,000 per year. Most of the trips made by system passengers were for school purposes, although trips made for work or other purposes, such as medical, personal business, and social or recreational reasons, were also significant.

- Approximately one-third of the total daily ridership occurred during two peak periods of transit ridership: from 6:30 a.m. until 8:00 a.m. and from 2:30 p.m. until 4:00 p.m. The morning ridership peak accounted for about 16 percent and the afternoon peak accounted for about 17 percent of the daily ridership. About 45 percent of the total daily ridership occurred during the midday period, between the two peak periods, from 8:00 a.m. until 2:30 p.m.

- The distribution of transit trip productions in the study area reflects the concentrations of population within, and in close proximity to, the City of Racine.

Map 11

NEW AND PROPOSED DEVELOPMENT IN THE STUDY AREA: 1995 TO THE PRESENT



Source: City of Racine Department of Planning, Town of Caledonia, Town of Mt. Pleasant, Village of Sturtevant, and SEWRPC.

Table 9

FACILITIES FOR THE ELDERLY IN THE STUDY AREA: 1997

Number on Map 12	Facility	Address[a]
	Residential Care and Day Care Facilities	
1	Becker-Shoop Center	6101 16th Street, Town of Mt. Pleasant
2	Halpin Manor 1 and 2	2048-2052 Douglas Avenue
3	Lincoln Lutheran Home	2015 Prospect Avenue
4	Lincoln Village Convalescent Center	1700 C.A. Becker Drive
5	Loving Care Home	329 S. Newman Road, Town of Mt. Pleasant
6	Loving Care Home	7404 Durand Avenue, Town of Mt. Pleasant
7	Loving Care Home	4606 W. Johnson Avenue
8	Loving Care Home	3143 Southwood Drive
9	Loving Care Home	4604 Spring Street
10	Loving Care Home	10910-12 Washington Avenue, Town of Mt. Pleasant
11	New Beginnings Group Home	5535 16th Street
12	New Beginnings Group Home II	3509 S. Green Bay Road, Town of Mt. Pleasant
13	New Beginnings Group Home III	3857 Lakeview Drive
14	Racine Community Care Center	1600 Ohio Street
15	Reschke House	1117 Reschke Avenue
16	Ridgewood Care Center of Racine County	5455 Durand Avenue, Town of Mt. Pleasant
17	Rupe Home-Courtney	7925-7927 Daniel Court, Town of Mt. Pleasant
18	St. Catherine's Infirmary	5635 Erie Street, Town of Caledonia
19	St. Luke's Hospital East Manor	1320 Wisconsin Avenue
20	St. Monica's Senior Citizens Home	3920 N. Green Bay Road, Town of Caledonia
21	Stafford Manor	4208 Marquette Drive
22	Villa St. Anna	5737 Erie Street, Town of Caledonia
	Retirement Homes and Housing Complexes[b]	
23	Albert House	4000 Maryland Avenue
24	Atrium of Racine	3900 N. Main Street
25	Chateau I and II Apartments	4901 and 5001 Byrd Avenue
26	Danish Home of Racine	5111 Wright Avenue
27	Durand Plaza Apartments	3003 Durand Avenue
28	Fountain Hills	1100 Fountain Hills Drive, Town of Mt. Pleasant
29	Imperial Apartments	5000 Graceland Boulevard, Town of Mt. Pleasant
30	Lake Oaks at DeKoven	1916 Wisconsin Avenue
31	Lincoln Center	3710 Douglas Avenue
32	Lincoln Manor	5801 16th Street, Town of Mt. Pleasant
33	Lincoln School Historic Apartments	1800 State Street
34	Lincoln Villas[c]	5810-5820 Lincoln Village Drive, Town of Mt. Pleasant
35	Lincoln Villas North[c]	3919 Ruby Avenue
36	Marian Housing	4105 Spring Street, Town of Mt. Pleasant
37	McMynn Tower	110 7th Street
38	Mt. Pleasant Manor	2250 Layard Avenue
39	Oakview Manor	4720 Byrd Avenue
40	Palmeter Home	1547 College Avenue
41	Regency Apartments	4111 Erie Street, Town of Caledonia
42	St. Paul Gardens	1120 Center Street
43	Trinity Terrace	2132 Center Street
44	Washington Apartments	2000 W. Washington Avenue
45	Washington Court	5101 Wright Street
46	Westridge Manor	3101-3133 86th Street, Village of Sturtevant
	Senior Centers[d]	
47	Dr. Martin Luther King Center[c]	1134 Dr. Martin Luther King Drive
48	George Bray Community Center	924 Center Street
49	Humble Park Center	2200 Blaine Avenue
50	Lakeview Community Center	201 Goold Street
51	Racine Memorial Hall[c,e]	727th Street
52	Salvation Army Senior Citizen Drop-In Center	1901 Washington Avenue

Table 9 (continued)

Number on Map 12	Facility	Address[a]
	Nutritional Meal Sites	
53	Atonement Lutheran Church	2915 Wright Avenue
54	Dr. J. Bryant Center	602 21st Street
55	Douglas Park Community Center	2221 Douglas Avenue
56	Washington Park Community Center	2301 12th Street

[a]*Except where noted, all addresses refer to the City of Racine.*

[b]*One low income housing facility listed in Table 11, Sunset Terrace Apartments, also has units dedicated to elderly individuals.*

[c]*This facility also serves as a congregate nutrition meal site.*

[d]*Activities for the elderly are also provided once a week at Dr. John Bryant Neighborhood Center, East Side Community Hall, Mt. Pleasant Club, Sturtevant Senior Citizen Center, and drop-in centers sponsored by Lincoln Lutheran Homes of Racine at various area churches.*

[e]*Includes the offices of the Racine Community Action Agency, which offers assistance to older adults with Social Security, Medicare, Medicaid, discrimination, home services, and other legal issues.*

Source: Interfaith, Inc. Older Adult Program, Racine County Human Services Department, Wisconsin Housing and Economic Development Authority, and SEWRPC.

The concentrations of transit trip attractions largely reflect the locations of schools and employment concentrations within the City of Racine, particularly the City of Racine CBD and the Racine West commercial area.

Personal Opinion Survey

As part of the 1991 home interview survey, a special survey was conducted to obtain the opinions, the preferences, and the attitudes, not the behavior, of heads of households or their spouses on certain travel-related issues, including the use of public transit. Preferences were expressed without regard to the practicality of satisfying those preferences in the face of economic and other realities. The 1991 survey, which reflected the attitudes of the more than 1,700 households responding to the survey, can be used to provide some insight into attitudes toward the use of public transit.

One part of the questionnaire asked the respondents to indicate agreement or disagreement with various actions that could be taken to reduce automobile travel, particularly work-related travel, to meet the requirements of the Federal Clean Air Act. A second part of the questionnaire asked respondents to indicate agreement or disagreement with factors that would need to change before they would carpool or use transit if they currently drive alone to and from work. The responses to the questions are summarized in Tables 22 and 23. The information presented in these tables indicates the following:

- The action to reduce work-related automobile travel approved most frequently, by 82 percent of the respondents, was to improve public transit and thereby to encourage and facilitate more transit use, including the provision of more available, faster, and more frequent bus transit. The action opposed most frequently, by 74 percent of the respondents, was the elimination of free employee parking to encourage more carpooling and transit use.

- Of the factors that would need to change before respondents would carpool or use transit, the following three were cited most frequently: 1) faster and more frequent public bus transit, cited by 60 percent, 2) faster and more frequent public transit, including light-rail transit and commuter-rail transit, cited by 50 percent, and 3) carpool incentives, such as exclusive carpool freeway lanes and priority parking, cited by 50 percent. Only a small percentage, 16 and 14 percent, respectively, of respondents indicated that elimination of free workplace parking or substantially increased automobile costs would encourage them to consider alternatives to driving

Table 10

FACILITIES FOR THE DISABLED IN THE STUDY AREA: 1997

Number on Map 12	Facility	Address[a]
	Housing and Residential Care Facilities[b]	
1	Biscayne Gardens	5110 Biscayne Avenue
2	Clare Meadows	6 Mile Road and Lamberton Road, Town of Caledonia
3	Cornerstone	2016 Washington Avenue
4	Cornerstone II	1747 Domanik Drive
	Goodwill Industries of Southeastern Wisconsin, Inc.	
5	Facility 1	3701 Durand Avenue
6	Facility 2	905 Wisconsin Avenue
	Racine County Housing Authority Facilities	
7	Facility 1	2900 Russet Street
8	Facility 2	1621 Franklin Street
9	Racine Residential Care[c]	1719 Washington Avenue
10	Ridgewood Care Center of Racine County	5455 Durand Avenue, Town of Mt. Pleasant
11	Satellite House	820 College
12	Shoreline Manor	1403 6th Street
13	South Willow Apartments	1840 Roosevelt Avenue
	Rehabilitation and Training and Employment Facilities	
14	All Saints Medical Group, Spring Street Campus	3807 Spring Street
15	Career Industries of Racine, Inc.	1225 14th Street
16	Curative Workshop of Racine	2335 Northwestern Avenue
17	Goodwill Industries of Southeastern Wisconsin, Inc.	5420 21st Street
18	Medical Support Services, Inc.	1100 Commerce Drive
19	Opportunities Industrialization Center of Racine County	1020 Washington Avenue
20	Racine County Opportunity Center, Inc.	4214 Sheridan Road, Town of Mt. Pleasant
21	St. Luke's Hospital	1320 Wisconsin Avenue
22	St. Mary's Medical Center	3801 Spring Street
	Referral Facilities	
23	Association for Retarded Citizens	818 6th Street
24	Developmental Disabilities Information Service	800 Center Street
25	Racine County Human Services Department	1717 Taylor Avenue
26	Society's Assets, Inc.	1511 Washington Avenue
27	Wisconsin Department of Health and Social Services, Division of Vocational Rehabilitation	7033 Washington Avenue

[a] *Except where noted, all addresses refer to the City of Racine.*

[b] *Several housing and apartment facilities listed in Table 9 have units designed for disabled individuals including the following: Albert House, Lincoln Manor, Lincoln Villas, McMynn Tower, and Washington Court.*

[c] *This facility also provides some rehabilitation services.*

Source: Racine County Human Services Department, Wisconsin Housing and Economic Development Authority, and SEWRPC.

alone to work. Respondents may have reacted to these last two proposed actions, not with respect to potential to change their travel behavior, but, rather, with respect to their disapproval of increases in the cost of operating an automobile.

Focus Groups for Regional Transit Marketing Program

Special focus-group discussions were conducted as part of a regional marketing program for the bus systems in Southeastern Wisconsin, including the Milwaukee County

Table 11

FEDERALLY SUBSIDIZED HOUSING IN THE STUDY AREA: 1997

Number on Map 12	Project Name[a]	Address[b]
1	Oakwood Terrace	1802-1812 Oakdale Avenue
2	Pleasant View Apartments	1120 Oakes Road, Town of Mt. Pleasant
3	Shorehaven Apartments	541 Shelbourne Court
4	Sunset Terrace Apartments	5501-5535, 5539-5655 Byrd Avenue
5	Woodside Village	Northwestern Avenue at Crossridge Drive

[a]*The facilities shown primarily have units for low-income families. The housing following facilities for the elderly shown in Table 9 include 14 low income facilities: Albert House, Chateau I and II Apartments, Durand Plaza Apartments, Lincoln Manor, Lincoln Villas, Lincoln Villas North, Marian Housing, McMynn Tower, Mt. Pleasant Manor, Oakview Manor, Regency Apartments, St. Paul Gardens, Trinity Terrace, Washington Apartments, Washington Court Westridge Manor. The two following housing facilities for disabled individuals listed in Table 10 are also low-income facilities: Clare Meadows and South Willow Apartments.*

[b]*Except where noted, all addresses refer to the City of Racine.*

Source: Wisconsin Housing and Economic Development Authority and SEWRPC.

Transit System, Kenosha Transit, the Racine Belle Urban System, and Waukesha Metro Transit. The program, begun in 1996, is funded in part through a Federal Congestion Mitigation and Air Quality Improvement program grant administered by the Wisconsin Department of Transportation. The efforts were undertaken during 1996 and 1997 by a private market-research firm, Northwest Research Group, Inc., to identify potential bus riders in each service area and reasons why they were not using transit.

The Research Group conducted four focus-group discussions in late January 1996, including two directed at the transit systems serving the Kenosha and Racine areas and two directed at the transit systems serving Milwaukee and Waukesha Counties. For each of the target areas, one group was comprised of transit "riders," which included individuals who had made at least one round trip by public transit within the past 30 days. The other group was comprised of "nonriders," which included individuals who did not use transit but had indicated they would be at least somewhat likely to consider using it if service was available. The Kenosha-Racine focus groups consisted of 20 individuals, including 11 riders of the Kenosha or Racine transit systems and nine nonriders, with participants representing a mix of different demographic characteristics. Participants of the focus groups were asked a number of questions designed to provide an understanding of the characteristics of riders and nonriders, attitudes toward using public transit including potential benefits and barriers to use, and possible marketing strategies to encourage ridership. The major findings of the Kenosha-Racine focus-group discussions may be summarized as follows:

- Participants in the rider focus group were primarily transit-dependent individuals. Most participants in the nonrider focus group used their own personal automobile for travel but had past experience with public transit for travel to downtown areas, to special events where parking cost or availability was an issue, when visiting other cities, or when their car was not available.

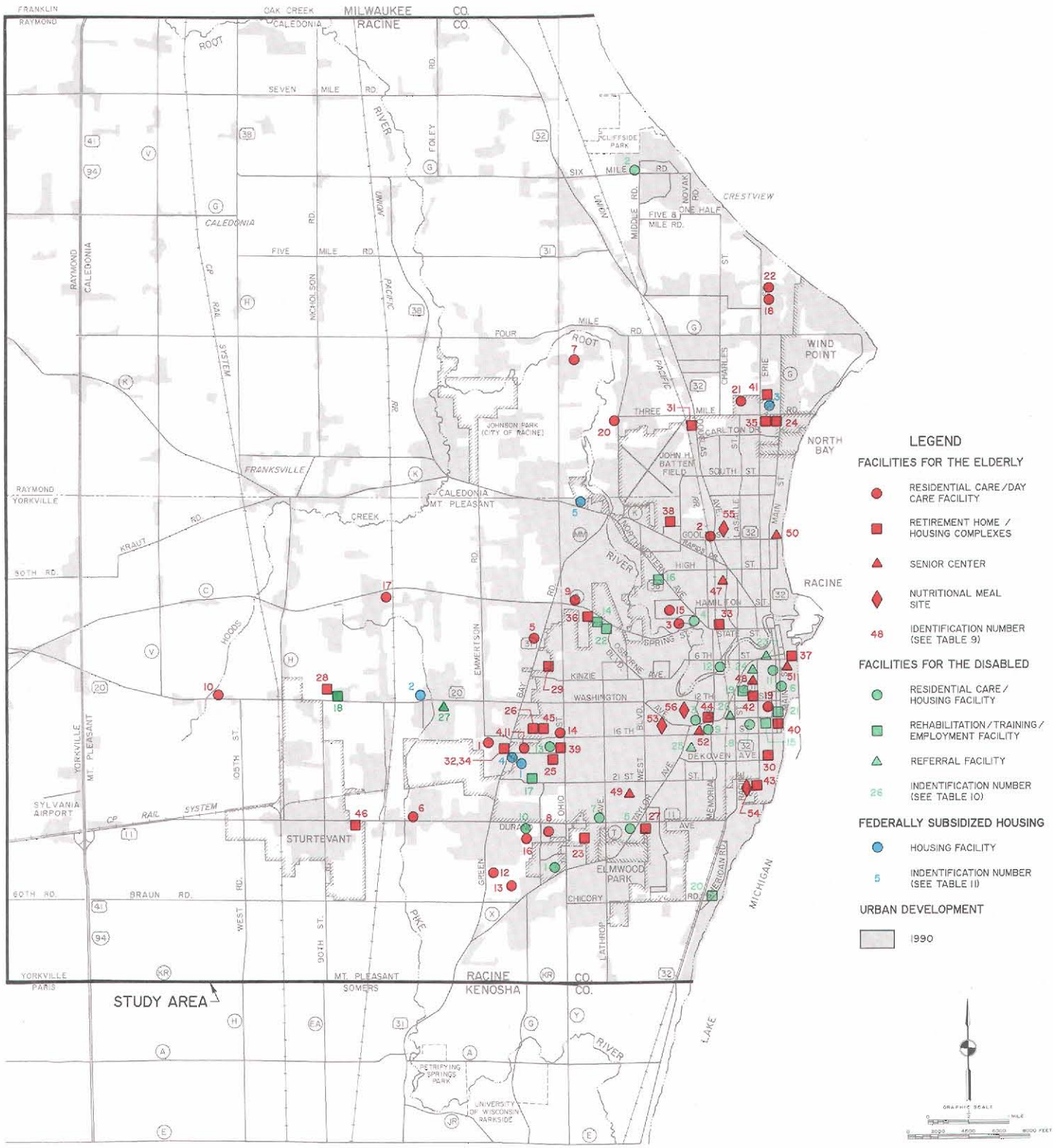
- The rider focus group used bus service for many trip purposes, with the few choice riders in this group often using the bus during inclement weather. In contrast, participants in the nonrider group indicated that the bus was not viewed as an option for regular travel. If their car was not available for a trip, they would ride with someone else or stay at home.

- Most participants in the nonrider group indicated they would ride the bus if the right circumstances were present, with use of public transit to special events or to destinations where parking was costly or unavailable showing the greatest potential for at least occasional use of transit. Most nonriders considered transit-dependent riders to be economically disadvantaged individuals, a viewpoint which limited their further consideration of using transit.

- The benefits of using transit cited by riders focused primarily on the convenience and ease of using transit where bus service was readily available and mentioned that transit was less stressful, cost less than driving a car, and provided individuals with

Map 12

MAJOR TRANSIT-DEPENDENT POPULATION TRIP GENERATORS IN THE STUDY AREA: 1997



Source: SEWRPC.

Table 12

MAJOR COMMERCIAL CENTERS IN THE STUDY AREA: 1997

Number on Map 13	Commercial Center	Location[a]
	Regional[b]	
1	Racine Central Business District Office Center	On Main Street, between State Street and 7th Street, and on 6th and 7th Streets, between Lake Street and Grand Avenue
2	Racine-West Retail Center	Includes retail office and service establishments located north and east of the intersection of Green Bay Road and Durand Avenue, including the Regency Mall Shopping Center, the High Ridge Mall, and the Regency Point Shopping Center
	Major Community[c]	
3	Westgate Mall Shopping Center	On Washington Avenue, between Green Bay Road and Ohio Street
4	Green Tree Centre	At the intersection of Douglas Avenue and Four Mile Road, Town of Caledonia
	Minor Community[d]	
5	Elmwood Plaza Shopping Center	On Durand Avenue, between Kentucky Street and Taylor Avenue
6	Flat Iron Village Mall	At the intersection of Douglas Avenue and High Street
7	Rapids Plaza Shopping Center	On Rapids Drive. between Mt. Pleasant Street and Loraine Avenue
8	Shorecrest Shopping Center	At the intersection of Three Mile Road and Erie Street
9	Uptown shopping area	On Washington Avenue, between Racine Street and Phillips Street
10	West Racine shopping area	On Washington Avenue, between West Boulevard and Blaine Avenue
	Strip Commercial Areas[e]	
11	Douglas Avenue Strip Development	On Douglas Avenue, between Three Mile Road and State Street
12	Lathrop Avenue Strip Development	On Lathrop Avenue, between the former Chicago, Milwaukee, St. Paul & Pacific (Milwaukee Road) Railroad tracks and Durand Avenue
13	Washington Avenue Strip Development	On Washington Avenue, between Green Bay Road and Oakes Road, Town of Mt. Pleasant

[a] *Except where noted, all addresses refer to the City of Racine.*

[b] *Major regional commercial centers include retail centers and office centers. Major office centers are defined as concentrations of employment having at least 3,500 jobs in the office and service sectors. Major retail centers were defined as concentrations of employment having at least 2,000 jobs in the retail trade sector.*

[c] *Major community shopping areas were defined as concentrations of retail and service establishments which typically include a junior department store, variety store, or discount store along with a supermarket and are generally located on sites of 15 to 60 acres with a gross leasable floor space of between 150,000 and 400,000 square feet. Such shopping areas are oriented to the community as a whole, rather than to the immediate neighborhood.*

[d] *Minor community shopping areas were defined as concentrations of retail and service establishments which typically include a grocery store or a supermarket and such other establishments as drugstores, hardware stores, dry cleaners, and other service-oriented businesses and which are generally located on sites of three to 15 acres with a gross leasable floor space of between 50,000 and 150,000 square feet. Such shopping areas are intended to serve the day-to-day shopping and service needs of nearby residents conveniently.*

[e] *Strip commercial areas are defined as a mixture of retail and service establishments located along a major arterial.*

Source: City of Racine Department of Transportation and SEWRPC.

a degree of independence and the opportunity to socialize with others. For nonriders, the benefits of transit most often cited were how transit could benefit others or the community at large rather than themselves, most often in terms of environmental or economic benefits.

- Major barriers to the use of transit cited by both riders and nonriders included inconveniences associated with transit use, such as limited access to service; lack of direct service and long travel times; concerns about personal safety and security while riding on, or waiting for, a bus; and simply not knowing how to use the transit system because of a lack of knowledge of routes and schedules. Other barriers cited by riders included the perceptions of social class associated with transit users and problems with snow at bus stops. Other barriers cited by nonriders included the lack of service in a particular area or at the right time and indirect service.

- Both riders and nonriders suggested more advertising and promotions to increase awareness and use of public transportation. Riders suggested encouraging transit use by promoting the reduced cost and stress of taking transit versus driving a car and the relative ease of using transit. Nonriders suggested themes focusing on the environment and the convenience of using transit; using incentives, such as free-ride tickets, to encourage first-time users to try transit; simplifying the transit information available to make it easier for first-time riders; using electronic methods of information delivery, such as faxing maps and schedules or putting them on the Internet; and emphasizing, in driver training, a willingness to assist and answer questions from first-time users.

Table 13

EDUCATIONAL INSTITUTIONS IN THE STUDY AREA: 1997

Number on Map 13	Educational Institutions	Address[a]	Approximate Enrollment
	Universities and Technical Schools		
1	Gateway Technical College	1001 S. Main Street	19,000[b]
2	University of Wisconsin-Parkside	Wood Road, Town of Somers	4,500[c]
	Public Middle and High Schools[d]		
3	Gilmore Middle School	2330 Northwestern Avenue	1,000
4	J. I. Case High School	7345 Washington Avenue, Town of Mt. Pleasant	2,000
5	Jerstad Agerholm Middle School	3601 LaSalle Street	800
6	Keith R. Mack Achievement Center	2015 Franklin Street	100
7	McKinley Middle School	2326 Mohr Avenue	1,000
8	Mitchell Middle School	2701 Drexel Avenue	1,000
9	Starbuck Middle School	1516 Ohio Street	1,000
10	Walden III Middle and High School	1012 Center Street	450
11	Washington Park High School	1901 12th Street	2,100
12	William Horlick High School	2119 Rapids Drive	2,000
	Additional Parochial and Private Schools[e]		
13	Concordia Lutheran School	3350 Lathrop Avenue, Village of Elmwood Park	150
14	Holy Name School	1510 Villa Street	250
15	Lutheran High School	251 Luedtke Avenue	200
16	The Prairie School	4050 Lighthouse Drive, Village of Wind Point	500
17	Racine Christian School	912 Virginia Street	180
18	Racine Montessori School	520 21st Street	150
19	Sacred Heart Catholic Church School	2023 Northwestern Avenue	250
20	St. Catherine's High School	1200 Park Avenue	600
21	St. Edward's Elementary School	1430 Grove Avenue	400
22	St. Louis Elementary School	CTH G, Town of Caledonia	100
23	St. Sebastian's Elementary School	3030 95th Street, Village of Sturtevant	200
24	St. John Nepomuk Elementary School	1923 Green Street	150
25	St. John's Lutheran School	510 Kewaunee Street	250
26	St. Joseph Elementary School	1525 Erie Street	250
27	St. Lucy's Elementary School	3035 Drexel Avenue	300
28	St. Rita's Elementary School	4433 Douglas Avenue, Town of Caledonia	450
29	Trinity Evangelical Lutheran School-Wisconsin Synod	7900 Nicholson Road, Town of Caledonia	100
30	Trinity Lutheran School-Missouri Synod	2065 Geneva Street	300

[a] *Except where noted, all addresses refer to the City of Racine.*

[b] *About 8,000 of the students enrolled at Gateway Technical College are from Racine County.*

[c] *The enrollment at the University of Wisconsin-Parkside includes about 2,200 students from Racine County.*

[d] *Public high schools and middle schools were identified as major potential transit trip generators because students at this level often are involved in extracurricular activities or have part-time jobs after school and may be in need of transportation beyond that provided by the local school district or their families. Public elementary schools were not considered as major potential transit trip generators because their students generally have fewer school-sponsored after-school activities, typically live in relatively close proximity to the school, which permits them to travel by walking or bicycling, or are likely to have transportation regularly provided by the local school district or by their families.*

[e] *Parochial and private schools were identified as major potential transit trip generators because students are drawn from an area larger than the surrounding neighborhoods.*

Source: Wisconsin Department of Public Instruction and SEWRPC.

SUMMARY

This chapter has presented pertinent information on past trends and existing conditions for selected characteristics of the study area which affect, or may be affected by, the provision and use of transit service, including population, employment, land use, and travel habits and patterns. Information on the changes in such key characteristic which were observed over approximately the last three decades are summarized in Figure 2. The most important findings concerning these characteristics may be summarized as follows:

Table 14

MEDICAL CENTERS IN THE STUDY AREA: 1997

Number on Map 13	Medical Centers	Address[a]
	Community Medical Centers[b]	
1	Ridgewood Care Center of Racine County	5455 Durand Avenue, Town of Mt. Pleasant
2	St. Luke's Hospital	1320 Wisconsin Avenue
3	St. Mary's Medical Center	3801 Spring Street
	Special Medical Centers[c]	
4	All Saints Medical Group	2405 Northwestern Avenue
5	All Saints Medical Group	3807 Spring Street
6	Aurora Health Center	8348 Washington Avenue, Town of Mt. Pleasant
7	St. Catherine's Family Practice Center, UW-Parkside	900 Wood Road, Town of Somers

[a]*Except where noted, all addresses refer to the City of Racine.*

[b]*Defined as a hospital serving persons of all ages having at least 100 beds and providing in-patient and out-patient facilities and laboratory and clinical services.*

[c]*Defined as all other major medical facilities and special clinics offering multispecialty medical services.*

Source: City of Racine Department of Transportation and SEWRPC.

Table 15

GOVERNMENTAL AND PUBLIC INSTITUTIONAL CENTERS IN THE STUDY AREA: 1997

Number of Map 13	Institutional Centers	Address[a]
	Regional and County	
1	Racine County Courthouse	730 Wisconsin Avenue
2	Racine County Highway and Office Building	14200 Washington Avenue, Town of Yorkville
3	Racine County Historical Society and Museum, Inc.	701 Main Street
4	Racine County Human Service Department/Workforce Development Center/Juvenile Detention Facility	1717 Taylor Avenue
5	Racine County Law Enforcement	717 Wisconsin Avenue
6	Racine Public Library	75 7th Street
7	Social Security Administration	4020 Durand Avenue
8	Wisconsin Department of Corrections, Racine Correctional Institution	2019 Wisconsin Street, Village of Sturtevant
9	Wisconsin Department of Workforce Development-Job Service Division	411 7th Street
10	Wisconsin Department of Workforce Development-Unemployment Compensation Division	618 6th Street
	Community	
	Local Government	
11	Caledonia Town Hall	6922 Nicholson Road, Town of Caledonia
12	Elmwood Park Village Hall	3554 Taylor Avenue, Village of Elmwood Park
13	Mt. Pleasant Town Hall	6126 Durand Avenue, Town of Mt. Pleasant
14	North Bay Village Hall	3615 Hennepin Place, Village of North Bay
15	Racine City Hall	730 Washington Avenue
16	Sturtevant Village Hall	2801 89th Street, Village of Sturtevant
17	Wind Point Village Hall	215 E. Four Mile Road, Village of Wind Point
	U. S. Post Offices	
18	Caledonia Office	11510 CTH G, Town of Caledonia
19	Franksville Office	3319 Roberts Street, Town of Caledonia
20	Racine Main Office	603 Main Street
21	Sturtevant Office	2849 Wisconsin Avenue, Village of Sturtevant
22	Western Racine Office	1300 Perry Avenue
	Other	
23	Racine Police Department	730 Center Street
24	Racine Unified School District	2220 Northwestern Avenue

[a]*Except where noted, all addresses refer to the City of Racine.*

Source: City of Racine Department of Transportation and SEWRPC.

Table 16

MAJOR EMPLOYMENT CENTERS IN THE STUDY AREA: 1997

Number on Map 13	Employment Centers[a]	Address[b]	Approximate Employment			
			100-249	250-499	500-999	1,000+
	Industrial/Manufacturing					
1	A&E Manufacturing Company	5501 21st Street	x	--	--	--
2	Acme Die Casting Corporation	5626 21st Street	x	--	--	--
3	AMETEK—Lamb Electric Division	2745 Chicory Road, Town of Mt. Pleasant	--	--	x	--
4	Andis Company	1718 Layard Avenue	x	--	--	--
5	API Getty's Corporation	2701 N. Green Bay Road	x	--	--	--
6	Circon Surgitek	3037 Mt. Pleasant Street	--	x	--	--
7	Color Arts, Inc.	1840 Oakdale Avenue	--	x	--	--
8	Danfoss Fluid Power	8635 Washington Avenue, Town of Mt. Pleasant	x	--	--	--
9	E.C. Styberg Engineering Company	1600 Goold Street	x	--	--	--
10	FAI, Inc.	1301 18th Street	x	--	--	--
11	Ganton Technologies, Inc.	2620 90th Street, Village of Sturtevant	--	x	--	--
12	Ganton Technologies, Inc.	8211 Durand Avenue, Village of Sturtevant	--	x	--	--
13	General Converters & Assemblers	1520 Clark Street	x	--	--	--
14	Golden Books Family Entertainment, Inc.[c]	1220 Mound Avenue	--	--	x	--
15	Golden Books Family Entertainment, Inc.[c]	1230 W. 6th Street	x	--	--	--
16	Great Northern Corporation	1800 South Street	x	--	--	--
17	Harris Metals	4210 Douglas Avenue, Town of Caledonia	x	--	--	--
18	In-Sink-Erator, Division of Emerson Electric Company	4700 21st Street	--	--	x	--
19	J.I. Case Company	700 State Street	--	x	--	--
20	J.I. Case Company	24th Street/Mead Street, Town of Mt. Pleasant	--	--	x	--
21	J.I. Case Company	7000 Durand Avenue, Town of Mt. Pleasant	--	--	x	--
22	J.I. Case Company	5724 Washington Avenue, Town of Mt. Pleasant	--	x	--	--
23	Jacobsen Manufacturing Company-A Division of Textron, Inc.	1721 Packard Avenue	--	--	x	--
24	Jensen Metal—Mastercraft	7800 Northwestern Avenue, Town of Caledonia	x	--	--	--
25	Johnson Worldwide Associates, Inc.	1326 Willow Road, Town of Mt. Pleasant	x	--	--	--
26	Michaels Machine Company	4442 Douglas Avenue, Town of Caledonia	x	--	--	--
27	Modine Manufacturing Company	1500 DeKoven Avenue	--	--	x	--
28	Pioneer Products, Inc.	1917 S. Memorial Drive	x	--	--	--
29	Professional Positioners, Inc.	2525 Three Mile Road, Town of Caledonia	x	--	--	--
30	R&B Grinding Company, Inc.	1900 Clark Street	x	--	--	--
31	Racine Industries, Inc.	1405 16th Street	x	--	--	--
32	Racine *Journal-Times*	212 4th Street	x	--	--	--
33	Racine Steel Castings Company, A Division of B R Holdings, Ltd.	1442 N. Memorial Drive	--	x	--	--
34	Rainfair, Inc.	3600 S. Memorial Drive, Town of Mt. Pleasant	x	--	--	--
35	Robert Bosch Power Corp., Inc., Division of Dana Corporation, Inc.	7505 Durand Avenue, Town of Mt. Pleasant	--	x	--	--
36	Ruud Lighting, Inc.	9201 Washington Avenue, Village of Sturtevant	--	x	--	--
37	S.C. Johnson and Son, Inc.	1525 Howe Street	--	--	--	x
38	S.C. Johnson and Son, Inc.	2512 Willow Road, Town of Mt. Pleasant	--	--	--	x
39	Thermal Transfer Products, Ltd.	5215 21st Street	x	--	--	--
40	Twin Disc, Inc.	1328 Racine Street	--	x	--	--
41	Twin Disc, Inc.	4600 21st Street	--	x	--	--
42	Unico, Inc.	3725 Nicholson Road, Town of Caledonia	x	--	--	--
43	Walker Manufacturing Company, Division of Tenneco,Inc.	1201 Michigan Boulevard	--	x	--	--
44	Warren Industries, Inc.	3130 Mt. Pleasant Street	--	x	--	--
	Retail and Service					
45	Boston Store	5500 Durand Avenue	x	--	--	--
46	Johnson International, Inc.	4041 N. Main Street	--	--	x	--
47	JC Penney Company, Inc.	5900 Durand Avenue	x	--	--	--
48	K Mart Corporation	5141 Douglas Avenue, Town of Caledonia	x	--	--	--
49	K Mart Corporation	2211 South Green Bay Road	x	--	--	--
50	Kohl's Food Store	5111 Douglas Avenue, Town of Caledonia	x	--	--	--
51	Metro Milwaukee Auto Auction	561 S. Highway 41, Town of Caledonia	--	x	--	--
52	Milaeger's, Inc.	4838 Douglas Avenue, Town of Caledonia	x	--	--	--
53	Olive Garden	6000 Durand Avenue	x	--	--	--
54	Pick 'n Save	2406 S. Green Bay Road	x	--	--	--
55	Promotions Unlimited Corporation	7601 Durand Avenue, Town of Mt. Pleasant	--	x	--	--

Table 16 (continued)

Number on Map 13	Employment Centers[a]	Address[b]	Approximate Employment			
			100-249	250-499	500-999	1,000+
56	Racine Marriot Hotel	7111 Washington Avenue,Town of Mt. Pleasant	x	--	--	--
57	Sam's Club	6200 Regency West Drive	x	--	--	--
58	School Services and Leasing	1622 Oakes Road, Town of Mt. Pleasant	x	--	--	--
59	Sears Roebuck & Company	5600 Durand Avenue	x	--	--	--
60	Shopko Department Stores	4801 W. Washington Avenue	x	--	--	--
61	Super Saver	5201 W. Washington Avenue	x	--	--	--
62	Target Stores	5300 Durand Avenue	x	--	--	--
63	United Parcel Service, Inc.	10240 Highway 11, Village of Sturtevant	x	--	--	--
64	Wisconsin Energy Company	201 1st Street	--	x	--	--
65	Younkers, Inc.	5700 Durand Avenue	x	--	--	--
	Governmental and Institutional					
66	All Saints Medical Group	3807 Spring Street	x	--	--	--
67	All Saints Medical Group	2405 Northwestern Avenue	x	--	--	--
68	Careers Industries, Inc.	1225 14th Street	x	--	--	--
69	The Curative Workshop of Racine	2335 Northwestern Avenue	x	--	--	--
70	Lincoln Lutheran Home	2015 Prospect Street	x	--	--	--
71	Lincoln Village Convalescent Center	1700 C.A. Becker Drive	x	--	--	--
72	Racine City Hall	730 Washington Avenue	x	--	--	--
73	Racine Community Care Center	1600 Ohio Street	x	--	--	--
74	Racine County Courthouse	730 Wisconsin Avenue	x	--	--	--
75	Racine County Highway and Office Building	14200 Washington Avenue, Town of Yorkville	x	--	--	--
76	Racine County Human Services Department	1717 Taylor Avenue	--	x	--	--
77	Racine County Law Enforcement Center (Sheriff Department)	717 Wisconsin Avenue	--	x	--	--
78	Racine Police Department	730 Center Street	--	x	--	--
79	Ridgewood Care Center of Racine County	5455 Durand Avenue, Town of Mt. Pleasant	x	--	--	--
80	St. Luke's Hospital	1320 Wisconsin Avenue	--	--	x	--
81	St. Mary's Medical Center	3801 Spring Street	--	--	--	x
82	U. S. Postal Service	603 Main Street	x	--	--	--
83	Wisconsin Department of Corrections, Racine Correctional Institution	2019 Wisconsin Street, Village of Sturtevant	--	x	--	--
	Educational					
84	Gateway Technical College	1001 S. Main Street	--	--	x	--
85	Gilmore Middle School	2330 Northwestern Avenue	x	--	--	--
86	William Horlick High School	2119 Rapids Drive	x	--	--	--
87	J.I. Case High School	7345 Washington Avenue, Town of Mt. Pleasant	x	--	--	--
88	Jerstad-Agerholm Middle School	3601 LaSalle Street	x	--	--	--
89	McKinley Middle School	2340 Mohr Avenue	x	--	--	--
90	Mitchell Middle School	2701 Drexel Avenue	x	--	--	--
91	The Prairie School	4050 Lighthouse Drive	x	--	--	--
92	Starbuck Middle School	1516 Ohio Street	x	--	--	--
93	University of Wisconsin-Parkside	Wood Road, Town of Somers	--	x	--	--
94	Washington Park High School	1901 12th Street	x	--	--	--

[a] *Includes employers with approximately 100 or more employees at one worksite.*

[b] *All addresses are in the City of Racine unless otherwise noted.*

[c] *All Golden Books Family Entertainment, Inc., facilities will be relocated to Renaissance Park in the Village of Sturtevant by the summer of 1998.*

Source: Racine Area Manufacturers and Commerce, Wisconsin Department of Natural Resources, Wisconsin Department of Workforce Development, and SEWRPC.

1. Since 1960, the study area population has increased by about 21 percent, from about 114,200 persons in 1960 to about 137,600 persons in 1995. Over this period, the population of the City of Racine, however, declined by about 4 percent, from about 89,100 persons in 1960 to about 85,200 persons in 1995. The growth in study area population, consequently, occurred outside of the City, primarily in the Towns of Caledonia and Mt. Pleasant, which experienced population increases of about 12,300

Table 17

MAJOR RECREATIONAL AREAS IN THE STUDY AREA: 1997

Number on Map 13	Recreational Area	Civil Division
	Regional Parks[a]	
1	Cliffside County Park	Town of Caledonia
2	Johnson Park	City of Racine
3	Petrifying Springs County Park	Town of Somers
	Major Community Parks[b]	
4	Caledonia and Mt. Pleasant Memorial Park[c]	Town of Caledonia
5	Colonial Park	City of Racine
6	Dr. Martin Luther King Center	City of Racine
7	Douglas Park and Community Center	City of Racine
8	Franklin Park	City of Racine
9	Greenridge Park	Town of Caledonia
10	Horlick Athletic Field	City of Racine
11	Horlick Island Park	City of Racine
12	Humble Park and Community Center	City of Racine
13	Lakeview Park and Community Center	City of Racine
14	Lincoln Park	City of Racine
15	Lockwood Park	City of Racine
16	95th Street Park	Village of Sturtevant
17	North Beach Park	City of Racine
18	Pershing Park	City of Racine
19	Pritchard County Park	City of Racine
20	Quarry Lake Park	Town of Mt. Pleasant
21	Roosevelt Park and Community Center	Town of Mt. Pleasant
22	Sanders County Park	Town of Mt. Pleasant
23	Shoop Park	Village of Wind Point
24	Stuart-McBridge Memorial Park	Town of Mt. Pleasant
25	Sturtevant Park	Village of Sturtevant
26	University of Wisconsin-Parkside	Town of Somers
27	Washington Park Bowl	City of Racine
	Special-Use Parks[d]	
28	Armstrong Park	Town of Caledonia
29	Racine Festival Park	City of Racine
30	Racine Memorial Hall	City of Racine
31	Wustum Park and Art Museum	City of Racine
32	Zoological Gardens	City of Racine

[a]*Defined as public recreational sites at least 250 acres in size offering multiple recreational opportunities.*

[b]*Defined as multiple-use public recreational sites which are community-oriented in service area and which contain such community recreation facilities such as baseball or softball diamonds, soccer or football fields, swimming pools or beaches, or tennis courts.*

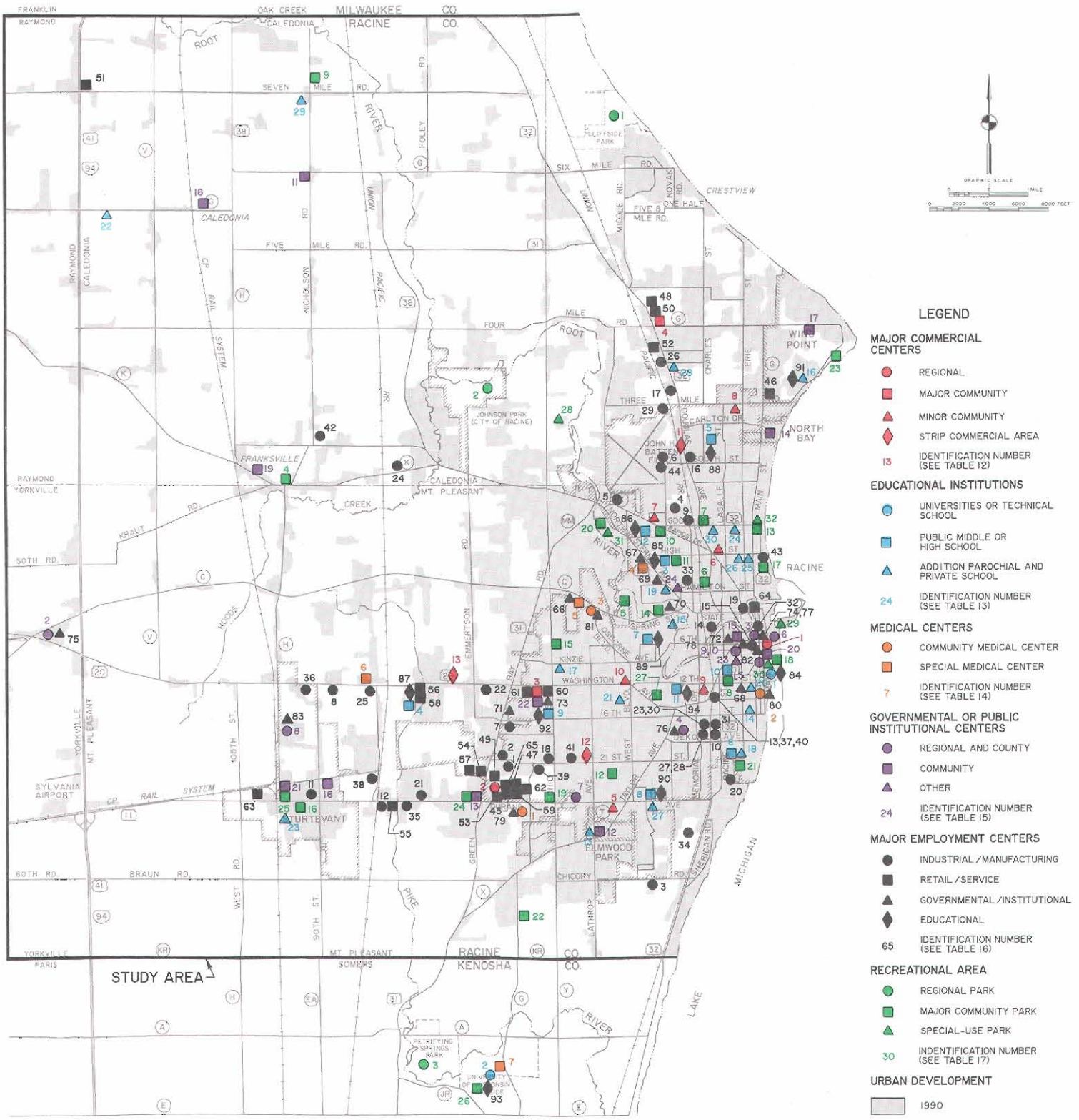
[c]*The Racine Area Soccer Association (RASA) maintains 11 soccer fields adjacent to this park.*

[d]*Comprises public and private recreational areas used primarily for special purposes.*

Source: SEWRPC.

Map 13

MAJOR LAND USE TRIP GENERATORS IN THE STUDY AREA: 1997



LEGEND

MAJOR COMMERCIAL CENTERS

- REGIONAL
- MAJOR COMMUNITY
- MINOR COMMUNITY
- STRIP COMMERCIAL AREA
- 13 — IDENTIFICATION NUMBER (SEE TABLE 12)

EDUCATIONAL INSTITUTIONS

- UNIVERSITIES OR TECHNICAL SCHOOL
- PUBLIC MIDDLE OR HIGH SCHOOL
- ADDITION PAROCHIAL AND PRIVATE SCHOOL
- 24 — IDENTIFICATION NUMBER (SEE TABLE 13)

MEDICAL CENTERS

- COMMUNITY MEDICAL CENTER
- SPECIAL MEDICAL CENTER
- 7 — IDENTIFICATION NUMBER (SEE TABLE 14)

GOVERNMENTAL OR PUBLIC INSTITUTIONAL CENTERS

- REGIONAL AND COUNTY
- COMMUNITY
- OTHER
- 24 — IDENTIFICATION NUMBER (SEE TABLE 15)

MAJOR EMPLOYMENT CENTERS

- INDUSTRIAL/MANUFACTURING
- RETAIL/SERVICE
- GOVERNMENTAL/INSTITUTIONAL
- EDUCATIONAL
- 65 — IDENTIFICATION NUMBER (SEE TABLE 16)

RECREATIONAL AREA

- REGIONAL PARK
- MAJOR COMMUNITY PARK
- SPECIAL-USE PARK
- 30 — INDENTIFICATION NUMBER (SEE TABLE 17)

URBAN DEVELOPMENT

- 1990

Source: SEWRPC.

Table 18

DISTRIBUTION OF AVERAGE WEEKDAY PERSON TRIPS FOR THE STUDY AREA BY TRIP PURPOSE: 1963, 1972, AND 1991

Area	Trip Purpose[a]	Person Trips						Change			
		1963		1972		1991		1963-1991		1972-1991	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Within Study Area	Home-based work	59,200	18.3	74,000	20.7	78,300	19.6	19,100	32.3	4,300	5.8
	Home-based shopping	52,300	16.2	61,300	17.1	59,500	14.9	7,200	13.8	-1,800	-2.9
	Home-based other	116,100	36.0	125,900	35.1	131,500	33.0	15,400	13.3	5,600	4.4
	Nonhome-based	78,100	24.2	69,700	19.5	87,100	21.9	9,000	11.5	17,400	25.0
	School	17,000	5.3	27,300	7.6	42,200	10.6	25,200	148.2	14,900	54.6
	Subtotal	322,700	100.0	358,200	100.0	398,600	100.0	75,900	23.5	40,400	11.3
Between Study Area and Other Areas in the Region	Home-based work	13,500	30.0	20,600	33.7	39,600	34.4	26,100	193.3	19,000	92.2
	Home-based shopping	6,100	13.6	7,400	12.1	14,800	12.9	8,700	142.6	7,400	100.0
	Home-based other	15,000	33.3	19,200	31.4	29,400	25.6	14,400	96.0	10,200	53.1
	Nonhome-based	8,500	18.9	10,200	16.7	22,700	19.7	14,200	167.1	12,500	122.5
	School	1,900	4.2	3,700	6.1	8,500	7.4	6,600	347.4	4,800	129.7
	Subtotal	45,000	100.0	61,100	100.0	115,000	100.0	70,000	155.6	53,900	88.2
Between Study Area and Areas Outside the Region Total	Home-based work	1,300	16.7	1,800	32.7	5,800	43.6	4,500	346.2	4,000	222.2
	Home-based shopping	300	3.8	400	7.3	1,000	7.5	700	233.3	600	150.0
	Home-based other	5,300	67.9	3,100	56.4	4,200	31.6	-1,100	-20.8	1,100	35.5
	Nonhome-based	800	10.3	100	1.8	2,100	15.8	1,300	162.5	2,000	2,000.0
	School	100	1.3	100	1.8	200	1.5	100	100.0	100	100.0
	Subtotal	7,800	100.0	5,500	100.0	13,300	100.0	5,500	70.5	7,800	141.8
Total	Home-based work	74,000	19.7	96,400	22.7	123,700	23.5	49,700	67.2	27,300	28.3
	Home-based shopping	58,700	15.6	69,100	16.3	75,300	14.3	16,600	28.3	6,200	9.0
	Home-based other	136,400	36.3	148,200	34.9	165,100	31.3	28,700	21.0	16,900	11.4
	Nonhome-based	87,400	23.3	80,000	18.8	111,900	21.2	24,500	28.0	31,900	39.9
	School	19,000	5.1	31,100	7.3	50,900	9.7	31,900	167.9	19,800	63.7
	Total	375,500	100.0	424,800	100.0	526,900	100.0	151,400	40.3	102,100	24.0

[a]The trip data were grouped into five categories of travel purpose: home-based work trips, home-based shopping trips, home-based other trips, nonhome- based trips, and school-based trips. Home-based work trips are defined as trips having one end at the place of residence of the tripmaker and the other end at the place of work. Home-based shopping trips are defined as trips having one end at the place of residence of the tripmaker and the other end at a shopping place of destination. Home-based other trips are defined as trips having one end at the place of residence of the tripmaker and the other end at a place of destination other than home, work, shopping, or school. Such trips would include trips made for social, recreational, medical, and personal business. Nonhome-based trips are defined as trips that neither originate or end at home. School-based trips are defined as having at least one end at school.

Source: SEWRPC.

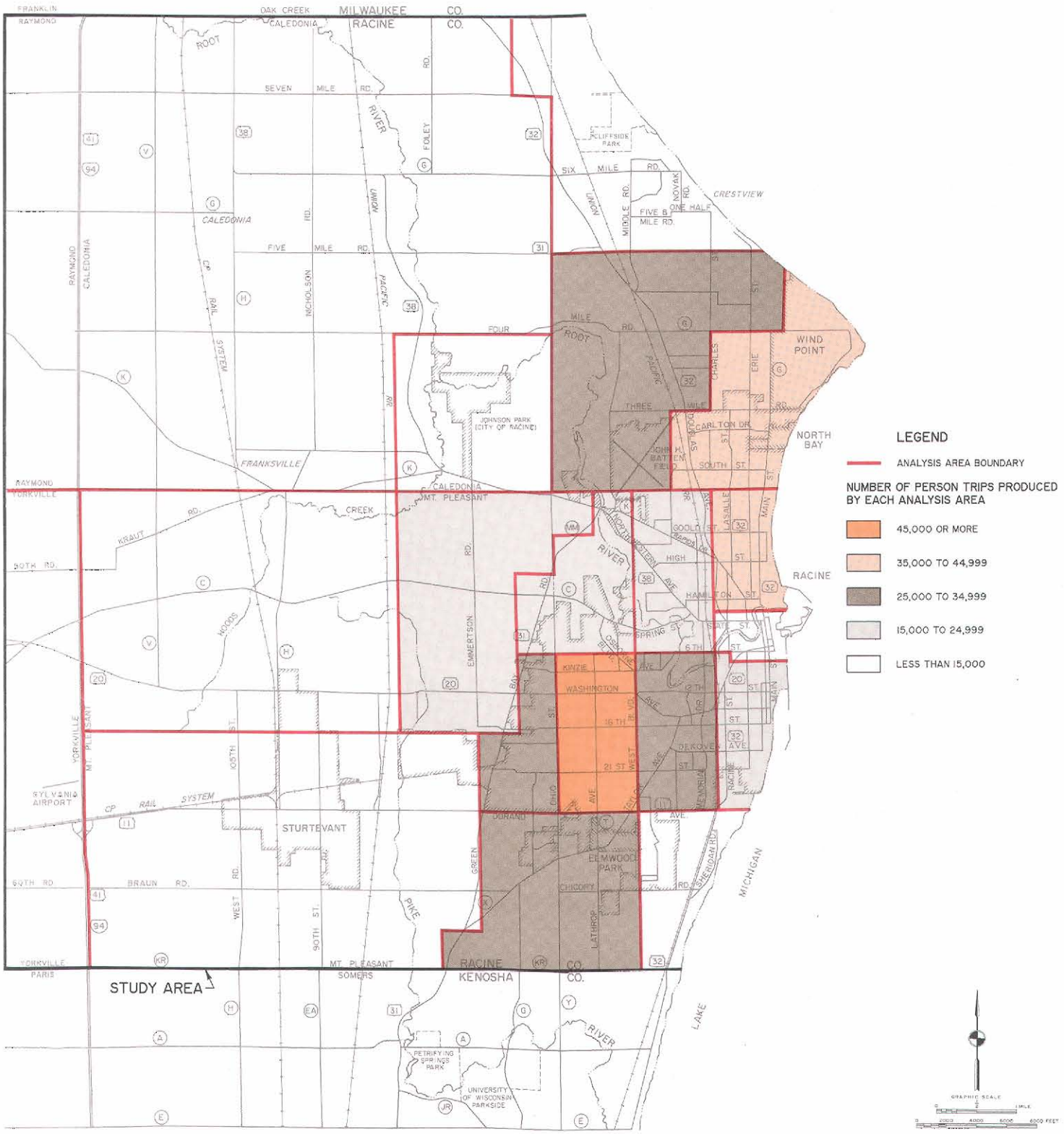
and 9,300 persons, respectively, between 1960 and 1995. The populations of these communities and of the Village of Sturtevant have continued to increase in recent times, with about 3,700, or about 80 percent, of the about 4,700 new residents of the study area between 1990 and 1995 residents of these three communities.

2. The number of households in the study area increased between 1960 and 1995, more than twice as fast as the resident study area population, while the number of households increased by about 53 percent, from 33,600 households in 1960 to 39,800 households in 1995. Consequently, the average household size decreased from about 3.4 persons in 1960 to about 2.6 persons in 1995. Trip making and, hence, the potential need to serve trips by transit, is strongly related to the number of households and their characteristics.

3. Population subgroups whose dependence on, and use of, public transit has historically been greater than that of the general population as a whole include school-age children (ages 10 through 18), the elderly (age 60 and older), the disabled, persons in low-income households, and households with no vehicles available. Since 1960, both the elderly and the low-income populations have increased significantly in terms of absolute numbers and in their shares of the total study area population, while the school-age population and zero-auto households have remained stable in absolute numbers and actually declined as a percent of the total population. Comparable data permitting a trend analysis for the disabled population since 1960 was not available. The transit-dependent population within the study area was concentrated primarily in the City of Racine in 1990.

Map 14

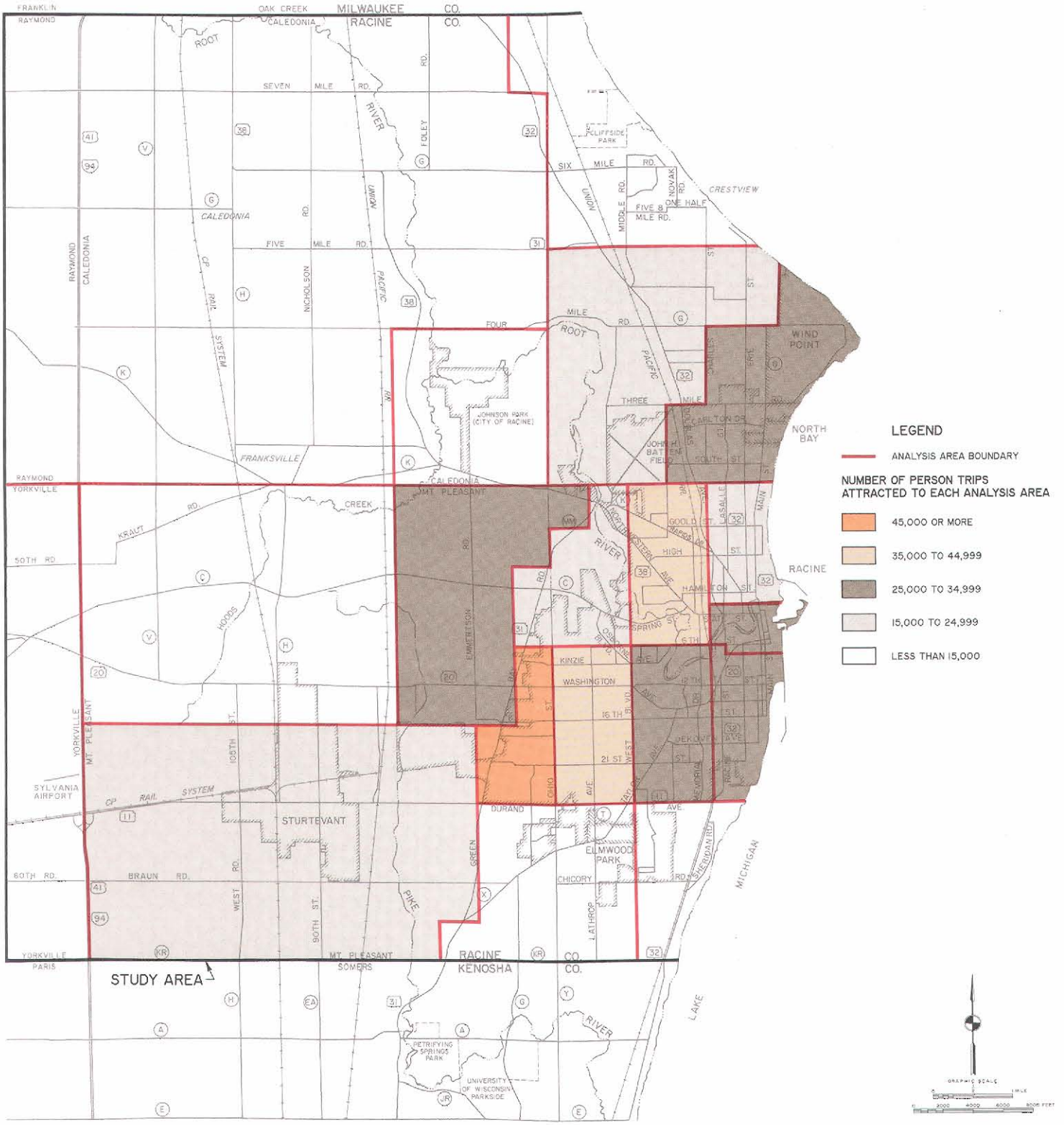
TOTAL PERSON TRIP PRODUCTIONS BY INTERNAL ANALYSIS AREA IN THE STUDY AREA: 1991



Source: SEWRPC.

Map 15

TOTAL PERSON TRIP ATTRACTIONS BY INTERNAL ANALYSIS AREA IN THE STUDY AREA: 1991



Source: SEWRPC.

Table 19

DISTRIBUTION OF AVERAGE WEEKDAY PERSON TRIPS PRODUCED WITHIN THE STUDY AREA: 1991

Area of Trip Production		Area of Trip Attraction									
		Inside Study Area					Outside Study Area, within the Region				
							Kenosha County				
		Caledonia	Mt. Pleasant	Racine	Wind Point	Subtotal	Kenosha	Pleasant Prairie	Somers	Western	Subtotal
Inside Study Area	Caledonia	4,400	3,410	8,950	2,920	19,680	550	100	330	--	980
	Mt. Pleasant	2,840	14,110	27,960	1,530	46,440	1,790	210	1,520	300	3,820
	Racine	3,320	29,280	200,050	20,300	252,950	7,750	1,620	5,160	610	15,140
	Wind Point	1,350	5,650	41,600	30,970	79,570	1,480	50	760	320	2,610
Total	--	11,910	52,450	278,560	55,720	398,640	11,570	1,980	7,770	1,230	22,550

Area of Trip Production		Area of Trip Attraction									
		Outside Study Area, within the Region									
		Milwaukee County									
		Central Business District[a]	Eastern	Northern	Western	Subtotal	Western Racine County	Ozaukee/ Washington	Walworth County	Waukesha County	Subtotal
Inside Study Area	Caledonia	280	4,640	230	210	5,360	560	10	50	300	920
	Mt. Pleasant	500	1,670	140	740	3,050	1,070	20	--	440	1,530
	Racine	1,950	5,560	1,120	2,080	10,710	3,400	510	550	970	5,430
	Wind Point	930	6,700	420	690	8,740	780	200	190	880	2,050
Total	--	3,660	18,570	1,910	3,720	27,860	5,810	740	790	2,590	9,930

Area of Trip Production		Area of Trip Attraction				
		Outside Study Area, outside the Region				
		Cook County	Lake County	All Others	Subtotal	Total
Inside Study Area	Caledonia	130	180	410	720	27,660
	Mt. Pleasant	160	670	390	1220	56,060
	Racine	640	2,430	940	4,010	288,240
	Wind Point	420	420	470	1,310	94,280
Total	--	1,350	3,700	2,210	7,260	466,240

[a]The City of Milwaukee central business district is the area bounded on the south by the Menominee River, Broadway, and St. Paul Avenue; on the west by N. 12th Street; on the north by E. Highland Avenue, 8th Street, and Juneau Avenue; and on the east by N. Lincoln Memorial Drive.

Source: SEWRPC.

4. The number of jobs in the study area has increased from about 57,100 jobs in 1970 to about 71,900 jobs in 1990, or by about 26 percent. About 75 percent of the increase in employment occurred between 1970 and 1980, because the growth of study area employment between 1980 and 1990 was slowed by the nationwide recession which severely affected the local economy between 1979 and 1984. Nearly two-thirds of the overall increase in employment in the study area between 1970 and 1990 occurred outside the City of Racine. Employment opportunities at new commercial, industrial, and office developments which have been completed since 1990, or are currently under way, have helped to spur further increases in job levels both inside and outside the City. At present, the principal concentrations of employment in the study area are in the City of Racine, particularly in the CBD; in the area immediately south of the CBD; and in the southwest corner of the City.

5. The amount of land in the study area devoted to urban land uses increased from about 19.8 square miles in 1963 to about 32.4 square miles in 1990, an increase of about 64 percent. Over the same period, the population density in the developed urban areas decreased from 5,876 to 4,103 persons per square mile, or by about 30 percent. Despite the steady increase of urban development observed since 1963, only about one-third of the land in the study area is currently in fully developed urban land uses.

6. Certain major land uses in the study area generate a large number of person trips on a daily basis,

Table 20

TRIPS PRODUCED OUTSIDE THE STUDY AREA AND ATTRACTED TO THE STUDY AREA: 1991

Area	Area of Trip Production		Area of Trip Attraction inside Study Area				
	Civil Division	Analysis Area Description	Caledonia	Mt. Pleasant	Racine	Wind Point	Total
Outside the Study Area, Inside the Region	Kenosha County	Kenosha	50	1,870	14,280	350	16,550
		Pleasant Prairie	--	470	1,590	--	2,060
		Somers	240	1,000	4,760	410	6,410
		Western	--	500	1,660	--	2,160
		Subtotal	290	3,840	22,290	760	27,180
	Milwaukee County	Central Business District[a]	90	140	80	300	610
		Eastern	1,590	1,260	3,700	1,470	8,020
		Northern	70	150	880	100	1,200
		Western	610	480	1,120	380	2,590
		Subtotal	2,360	2,030	5,780	2,250	12,420
	Racine County	Western	1,260	3,480	6,360	230	11,330
	Ozaukee and Washington	Both Counties	80	20	220	30	350
	Walworth County	Entire County	200	120	680	--	1,000
	Waukesha County	Entire County	260	600	1,070	510	2,440
		Subtotal	1,800	4,220	8,330	770	54,720
Outside the Study Area, Outside the Region	Cook County	Entire County	100	190	630	70	990
	Lake County	Entire County	30	570	1,870	120	2,590
	All Others	All Other Areas	620	420	1,220	350	2,610
		Subtotal	750	1,180	3,720	540	6,190
	--	Total	5,200	11,270	40,120	4,320	60,910

[a]The City of Milwaukee central business district is the area bounded on the south by the Menominee River, Broadway, and St. Paul Avenue; on the west by N. 12th Street; on the north by E. Highland Avenue, 8th Street, and Juneau Avenue; and on the east by N. Lincoln Memorial Drive.

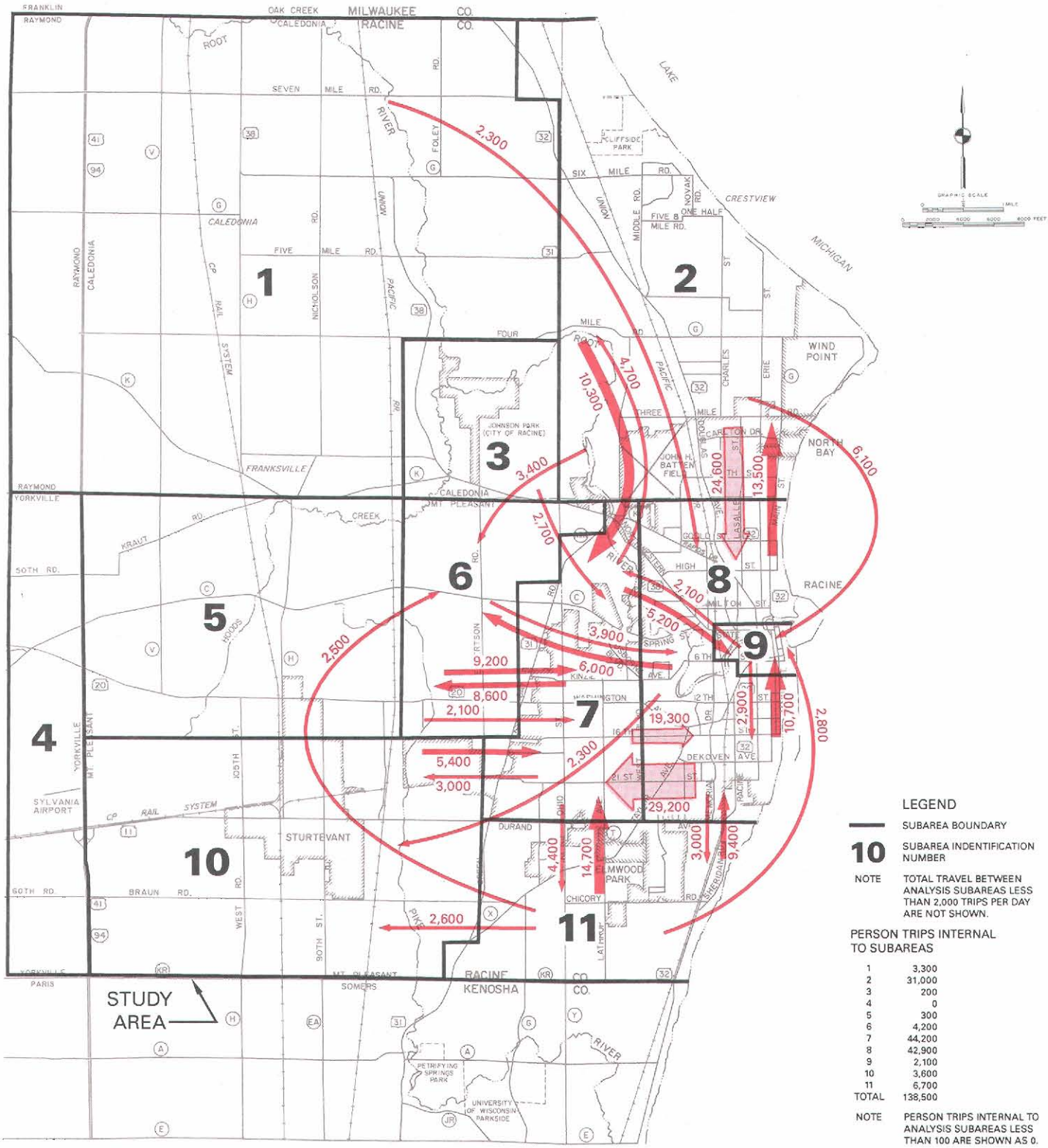
Source: SEWRPC.

including commercial centers, educational centers, medical centers, governmental and public institutional centers, employment centers, and recreational areas. In 1997, these land uses, along with housing and care facilities for elderly and disabled persons and low-income housing, were identified as major potential transit trip generators in the study area and were found to be scattered throughout the developed urban area.

7. On the basis of past travel surveys undertaken by the Regional Planning Commission, we conclude that average weekday total person travel entirely within the study area and between the study area and other external areas has increased by about 40 percent, from about 375,500 person trips in 1963 to about 526,900 trips in 1991. This increase in person travel was equally distributed between internal and external travel. About 76 percent of the person trips were made internal to the study area in 1991, with the largest proportion being home-based other trips, such as trips made for medical, personal business, or social or recreational purposes. The distribution of person-trip productions and attractions within the study area reflects the concentrations of population, employment, and major trips generators in the City of Racine. The remaining 24 percent of all person trips were made with one trip end external to the study area, with the most trips made for work purposes. Trips made between the study area and Kenosha County accounted for about the largest volume of external person travel, although other significant volumes were also identified between the study area and Milwaukee County and western Racine County.

Map 16

AVERAGE WEEKDAY PERSON TRIPS BETWEEN SUBAREAS WITHIN THE STUDY AREA: 1991



LEGEND

	SUBAREA BOUNDARY
10	SUBAREA INDENTIFICATION NUMBER
NOTE	TOTAL TRAVEL BETWEEN ANALYSIS SUBAREAS LESS THAN 2,000 TRIPS PER DAY ARE NOT SHOWN.

PERSON TRIPS INTERNAL TO SUBAREAS

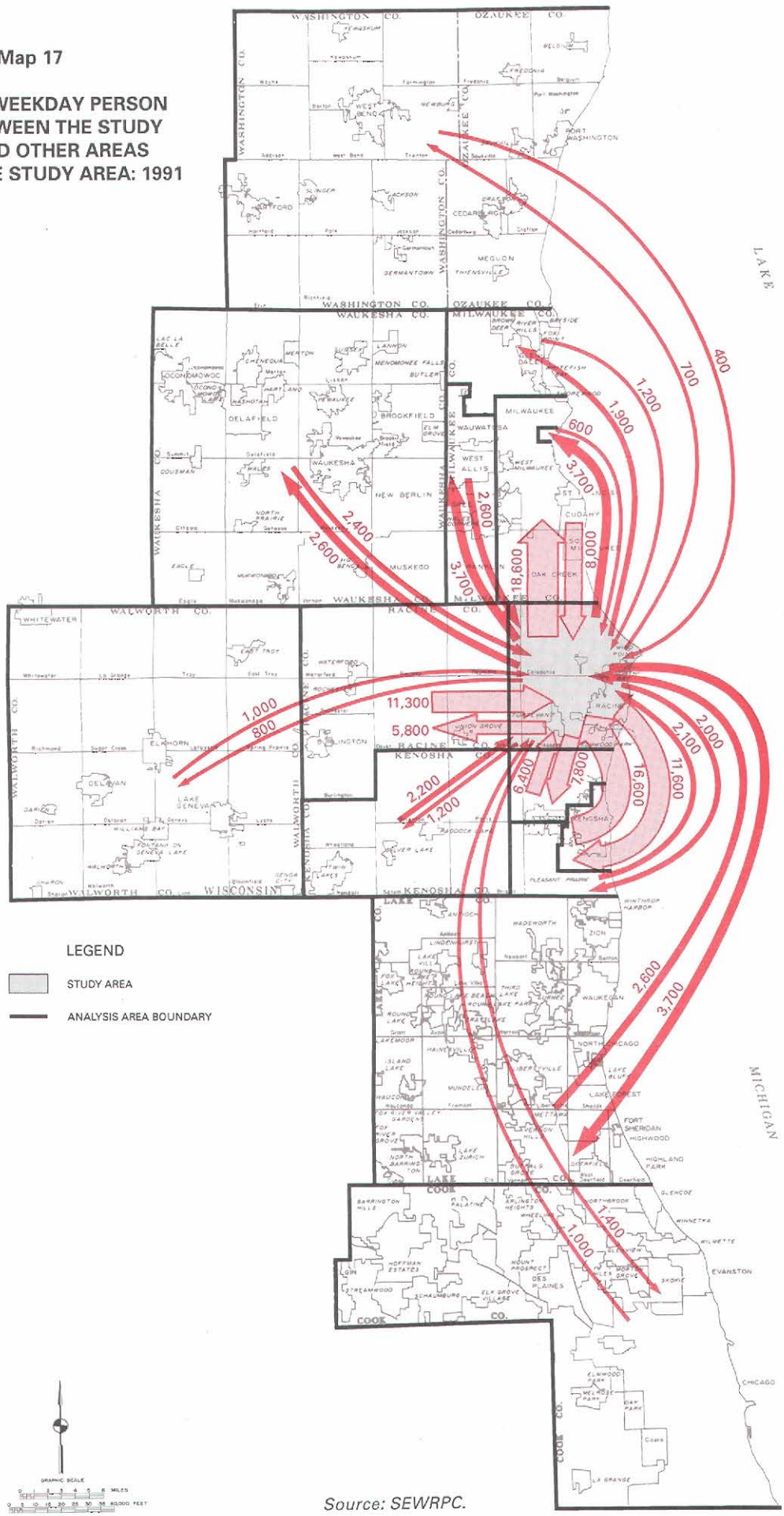
1	3,300
2	31,000
3	200
4	0
5	300
6	4,200
7	44,200
8	42,900
9	2,100
10	3,600
11	6,700
TOTAL	138,500

NOTE PERSON TRIPS INTERNAL TO ANALYSIS SUBAREAS LESS THAN 100 ARE SHOWN AS 0.

Source: SEWRPC.

Map 17

AVERAGE WEEKDAY PERSON TRIPS BETWEEN THE STUDY AREA AND OTHER AREAS OUTSIDE THE STUDY AREA: 1991



Source: SEWRPC.

Table 21

PERCENTAGE DISTRIBUTION OF RIDERSHIP ON THE BELLE URBAN SYSTEM FOR VARIOUS RIDERSHIP CHARACTERISTICS: APRIL 16-18, 1991

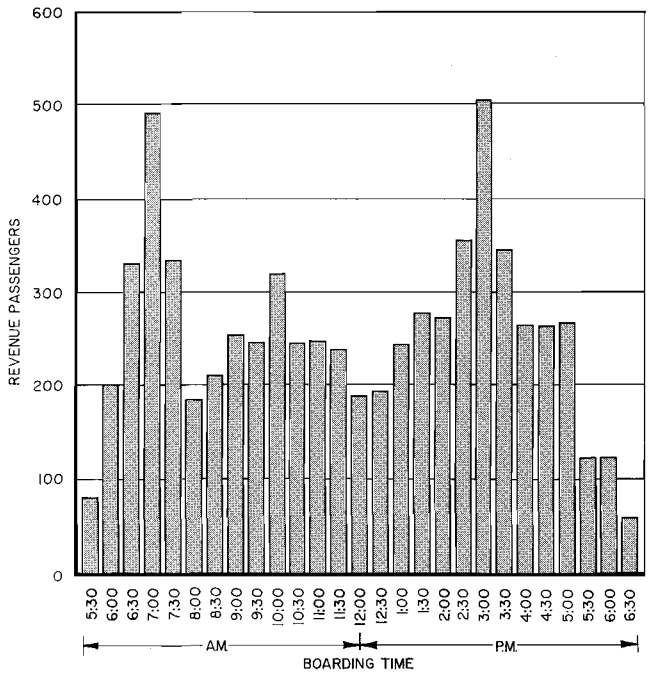
Ridership Characteristic	Percent of Revenue Passengers
Age	
12 and under	2.5
13-18	31.7
19-24	17.1
25-34	21.2
35-44	12.4
45-54	5.5
55-64	3.9
65 and older	5.7
Total	100.0
Sex	
Male	38.2
Female	61.8
Total	100.0
Licensed Driver	
Yes	33.7
No	66.3
Total	100.0
Household Income	
Under $10,000	40.7
$10,000-$19,999	22.0
$20,000-$29,999	15.2
$30,000-$39,999	11.0
$40,000 and over	11.1
Total	100.0
Trip Purpose	
Home-based work	25.0
Home-based shopping	8.6
Home-based other	23.3
Nonhome-based	10.6
School	32.5
Total	100.0
Vehicles Available per Household	
No vehicle	35.3
One vehicle	40.4
Two or more vehicles	24.3
Total	100.0

Source: SEWRPC.

8. Commission survey data indicate that about 6,700 transit revenue passenger trips were made on an average weekday in 1991 on the fixed-route bus service provided by the Belle Urban System. The typical passenger was female, without a valid drivers license, 34 years old or younger, and from a

Figure 1

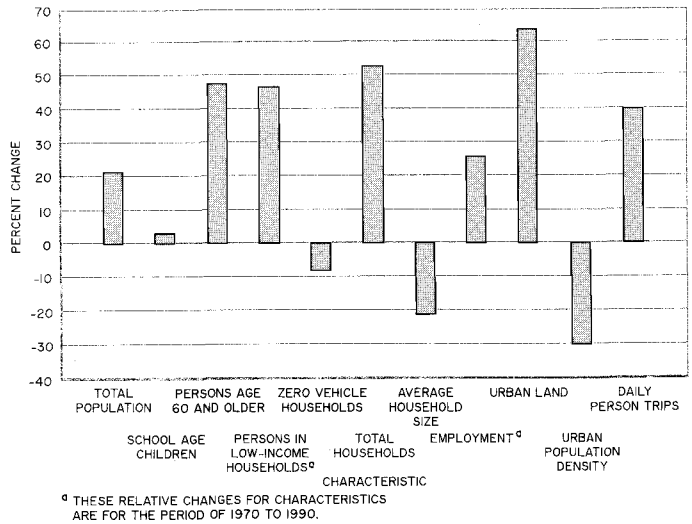
HOURLY DISTRIBUTION OF TRIPS MADE BY REVENUE PASSENGERS ON THE BELLE URBAN SYSTEM: APRIL 16-18, 1991



Source: SEWRPC.

Figure 2

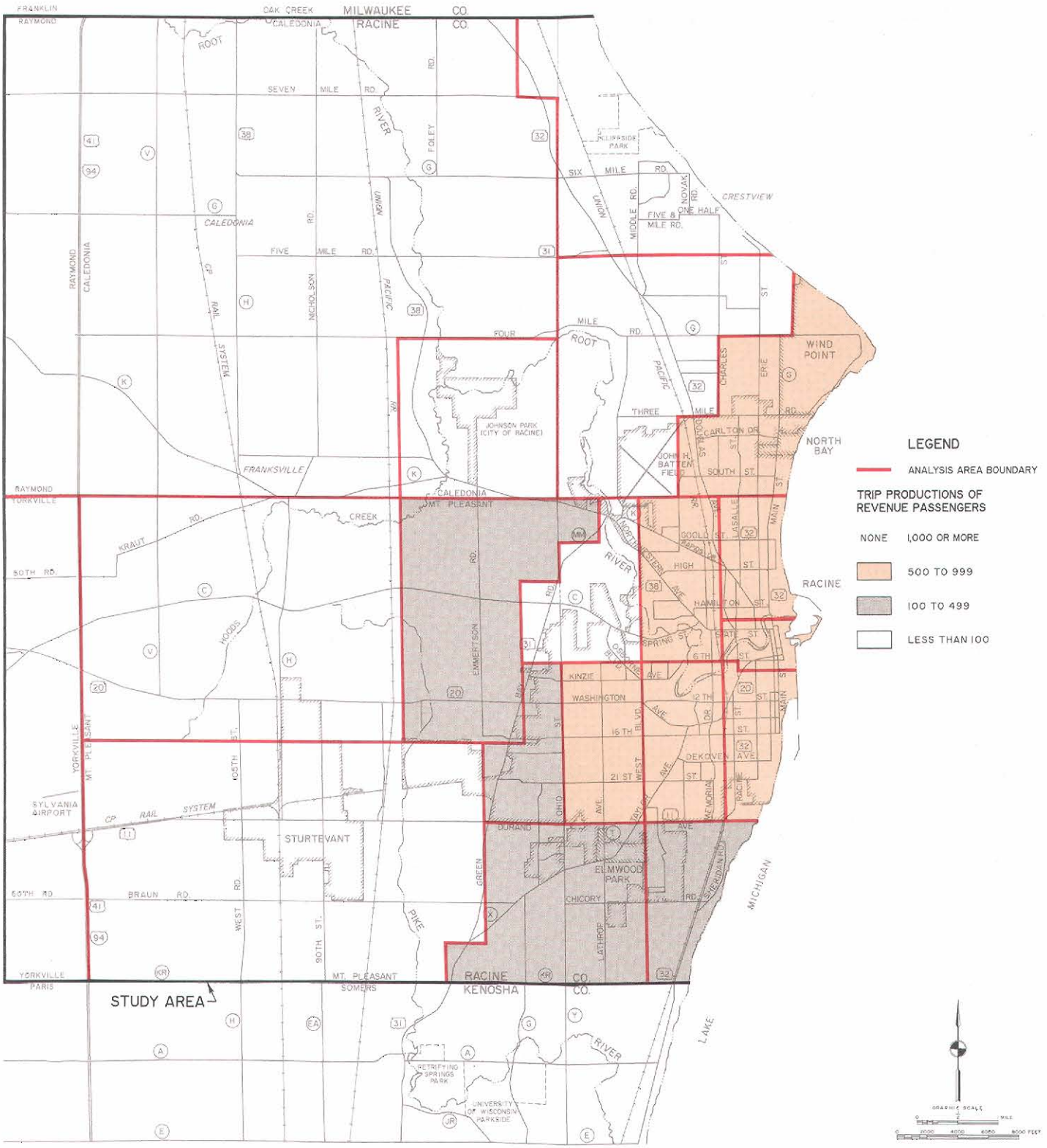
RELATIVE CHANGES IN SELECTED CHARACTERISTICS OF THE STUDY AREA OVER APPROXIMATELY THE LAST THREE DECADES



Source: SEWRPC.

Map 18

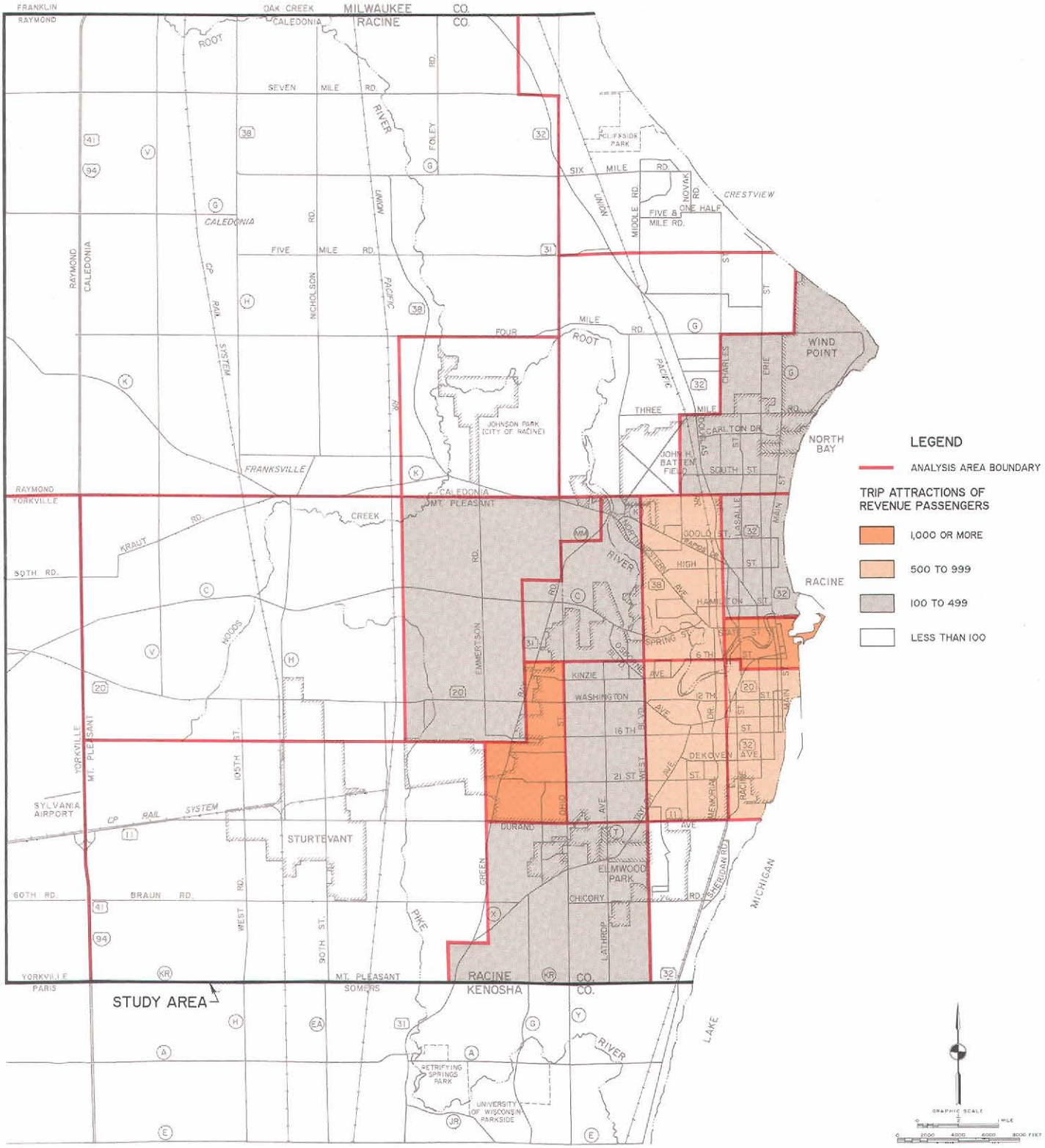
TRIP PRODUCTIONS OF REVENUE PASSENGERS ON THE BELLE URBAN SYSTEM: APRIL 16-18, 1991



Source: SEWRPC.

Map 19

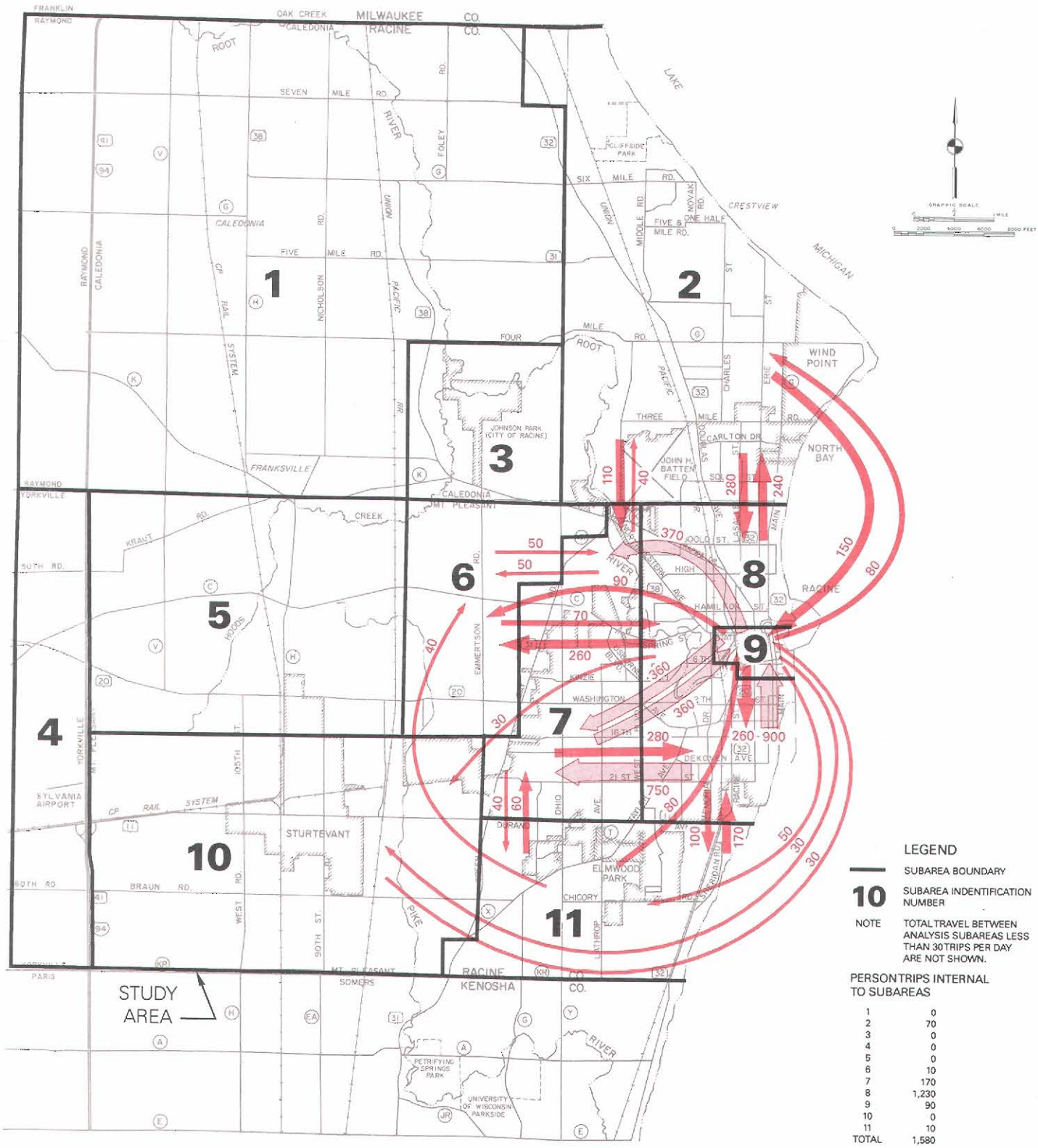
TRIP ATTRACTIONS OF REVENUE PASSENGERS ON THE BELLE URBAN SYSTEM: APRIL 16-18, 1991



Source: SEWRPC.

Map 20

AVERAGE WEEKDAY TRANSIT PERSON TRIPS BETWEEN SUBAREAS WITHIN THE STUDY AREA: 1991



Source: SEWRPC.

Table 22

THE 1991 PERSONAL OPINION SURVEY: PERCENTAGE DISTRIBUTION OF SUPPORT FOR POSSIBLE ACTIONS TO REDUCE AUTOMOBILE TRAVEL TO AND FROM WORK

Possible Actions	Yes	No	No Response	Total
Improve Public Transit to Encourage More Transit Use, including Provision of More Available, Faster, and More Frequent Bus Transit	81.8	12.8	5.4	100.0
Provide Incentives to Carpool and Transit Users, Such as Exclusive Carpool and Transit Lanes on Streets and Freeways	62.4	29.7	7.9	100.0
Encourage Employers to Provide Transit Subsidies to Promote More Transit Use	61.6	29.6	8.8	100.0
Improve Public Transit with Light Rail and Commuter Rail	57.6	34.9	7.5	100.0
Encourage Employers to Offer Four-Day or Three-Day Work Weeks	56.9	35.3	7.8	100.0
Provide Convenient Bike Lanes and Paths	56.5	34.6	8.9	100.0
Encourage Employers to Arrange Programs to Permit Employees to Work at Home	54.9	36.4	8.7	100.0
Eliminate Free Employee Parking to Encourage More Carpooling and Transit Use	18.1	74.2	7.7	100.0
Other	3.8	1.1	95.1	100.0

Source: SEWRPC.

Table 23

THE 1991 PERSONAL OPINION SURVEY: PERCENTAGE DISTRIBUTION OF FACTORS CONSIDERED NECESSARY BEFORE CHOOSING TO CARPOOL OR USE TRANSIT RATHER THAN DRIVING ALONE

Factors	Yes	No	No Response	Total
Faster and More Frequent Public Bus Transit	60.1	25.0	14.9	100.0
Faster and More Frequent Public Transit, Including Light Rail and Commuter Rail	50.2	34.7	15.1	100.0
Carpool Incentives, Such as Exclusive Carpool Freeway Lanes and Priority Parking	50.1	33.1	16.8	100.0
Convenient Bike Lanes and Paths	40.0	41.6	18.4	100.0
Elimination of Free Parking at Your Workplace with Possible Charges of $20 to $30 per Month	16.0	67.4	16.6	100.0
Substantial Increases in the Cost of Operating an Auto, Such as Increased Gasoline Prices	14.4	70.5	15.1	100.0

Source: SEWRPC.

household with an income below $20,000 per year. Most of the trips made by system passengers were for school purposes, although trips made for work or other purposes, such as medical, personal business, and social or recreation, were also significant. About one-third of the system ridership occurred during two peak-usage periods, which coincided with the starting and ending times of classes at local schools and first shift jobs at employers. About 45 percent of the total daily ridership occurred during the midday period, between the two peak periods. As would be expected, the distribution of transit trip productions and attractions reflects the service area for the transit system. which is principally within the City of Racine.

9. The findings of a special survey of personal opinion conducted in 1991 provided insight on the preferences and the attitudes, not the behavior, of heads of households or their spouses on certain travel-related issues, including the use of public transit. Of several suggested actions to reduce work-related automobile travel, improving public transit to encourage more transit use was approved most frequently; the elimination of free employee parking to encourage more carpooling and transit use was opposed most frequently. Of several suggested factors that would need to change before respondents would carpool or use transit, faster and more frequent public bus transit service; faster and more frequent public light- and commuter-rail transit service; and carpool incentives, such as exclusive carpool freeway lanes and priority parking, were cited most frequently. The elimination of free workplace parking or substantially increased automobile costs were cited least frequently.

Chapter III

EXISTING PUBLIC TRANSIT SYSTEM

INTRODUCTION

An understanding of the existing public transit system in the Racine area is basic to the preparation of any sound transit system development plan. This understanding should be based on pertinent information describing the operating characteristics and ridership levels for the current City transit system and for the other major transit services within the study area.

This chapter documents the findings of an inventory of the principal public transit programs and services available within the Racine study area. Presented first is a description of the City of Racine's public transit system, the Belle Urban System, including service operations, equipment and facilities, ridership, and costs. This is followed by descriptions of the operations of other major public transit service providers serving the study area, including local and intercity bus service, railroad passenger service, specialized transportation services for elderly and disabled persons, and student transportation services provided by school districts.

THE BELLE URBAN SYSTEM

Urban public transit service has been available in the City of Racine since 1883, when street railway operations were initiated. Public transit service in the Racine area was provided exclusively by streetcars until 1928, when the first feeder-bus route was instituted. An extensive street paving program was undertaken by the City during the Depression of the 1930s, and a decision was made then to convert to buses rather than to replace track where the repaving program affected the streetcar routes. Continuous declines in ridership and profits during the period after World War II resulted in several changes of private ownership. In July 1975, the City of Racine acquired the transit system from the last private transit operator and began public operation of the Racine transit system, renaming it the "Belle Urban System."

Administrative Structure

The Belle Urban System, owned by the City of Racine, is operated by a private contract management firm, ATE Management and Service Company, Inc. with private employees but under the direct supervision of the City of Racine Department of Transportation. The policy-making body of the transit system is the Racine Transit and Parking Commission, consisting of five members appointed by the Mayor and confirmed by the Common Council. The powers of the Transit and Parking Commission are substantial and include essentially all the powers necessary to acquire, operate, and manage the transit system. However, the Racine Common Council has the ultimate responsibility for review and approval of certain matters, including the public transit system's annual budget.

Fixed-Route Bus Service

During 1997 fixed-route bus service was provided by the Belle Urban System over the routes shown on Map 21. The system includes 11 regular bus routes and one special downtown circulator route. The current operating characteristics, service levels, and fares for the system are summarized below.

Regular Routes

The regular routes operated by the transit system consist of:

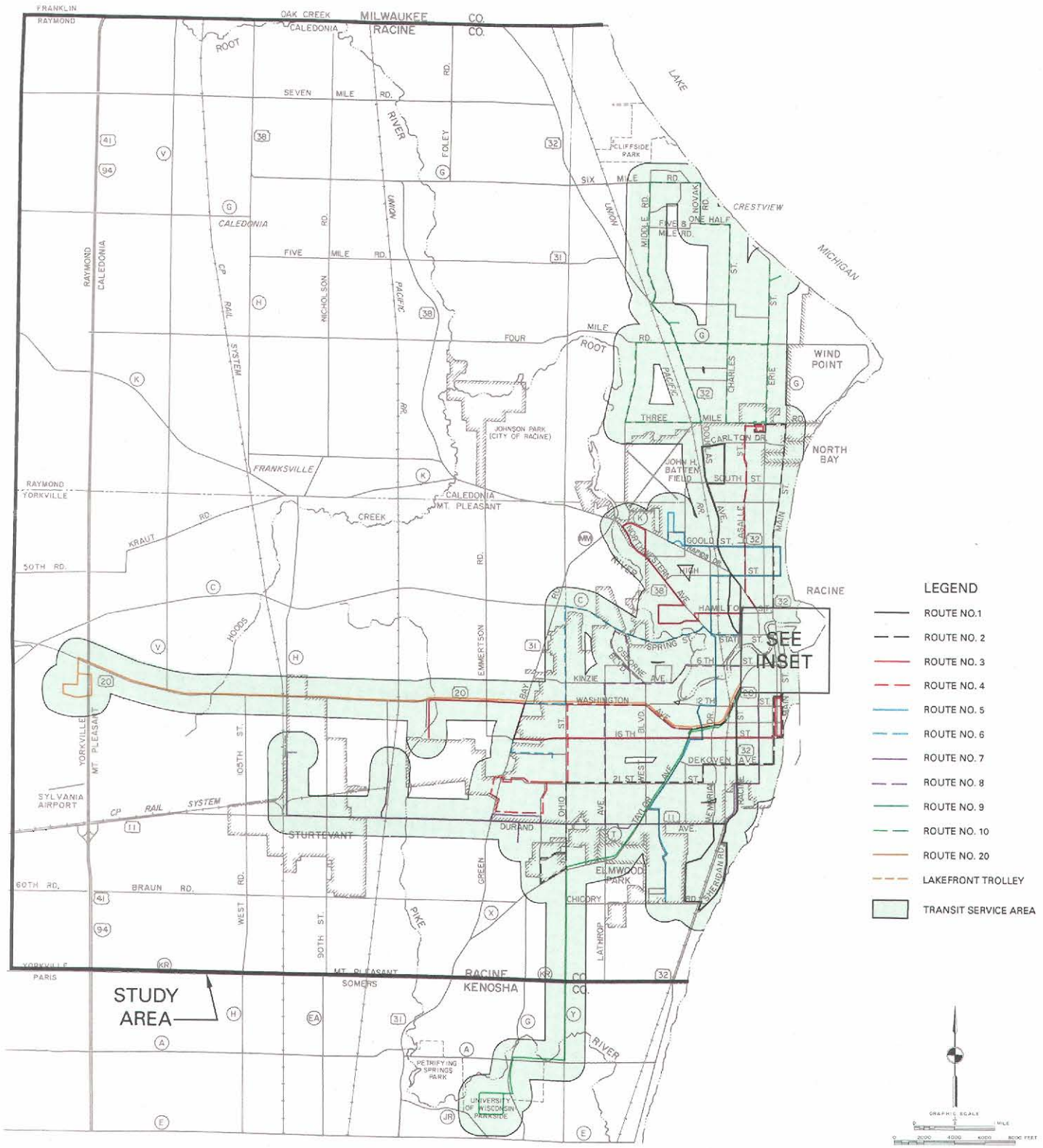
- Five crosstown local routes, Routes No. 1 through 5, operating between outlying portions of the City or the adjacent communities through the central portion of the City of Racine. Route No. 3 extends a significant distance outside the Racine corporate limits to serve J. I. Case High School, in the Town of Mt. Pleasant.

- Four downtown-oriented local routes, Routes No. 6 through 9, operating between outlying portions of the City or adjacent communities and the Racine central business district (CBD). Routes No. 7 and 9 extend a significant distance outside the Racine corporate limits to serve the Racine Correctional Institution, in the Village of Sturtevant, and the University of Wisconsin-Parkside, in the Town of Somers, Kenosha County, respectively.

- One local route, Route No. 10, operating as a one-way loop serving the eastern portion of the Town of Caledonia; and

Map 21

FIXED-ROUTE TRANSIT SERVICE PROVIDED BY THE BELLE URBAN SYSTEM: 1997



Source: SEWRPC.

Inset to Map 21

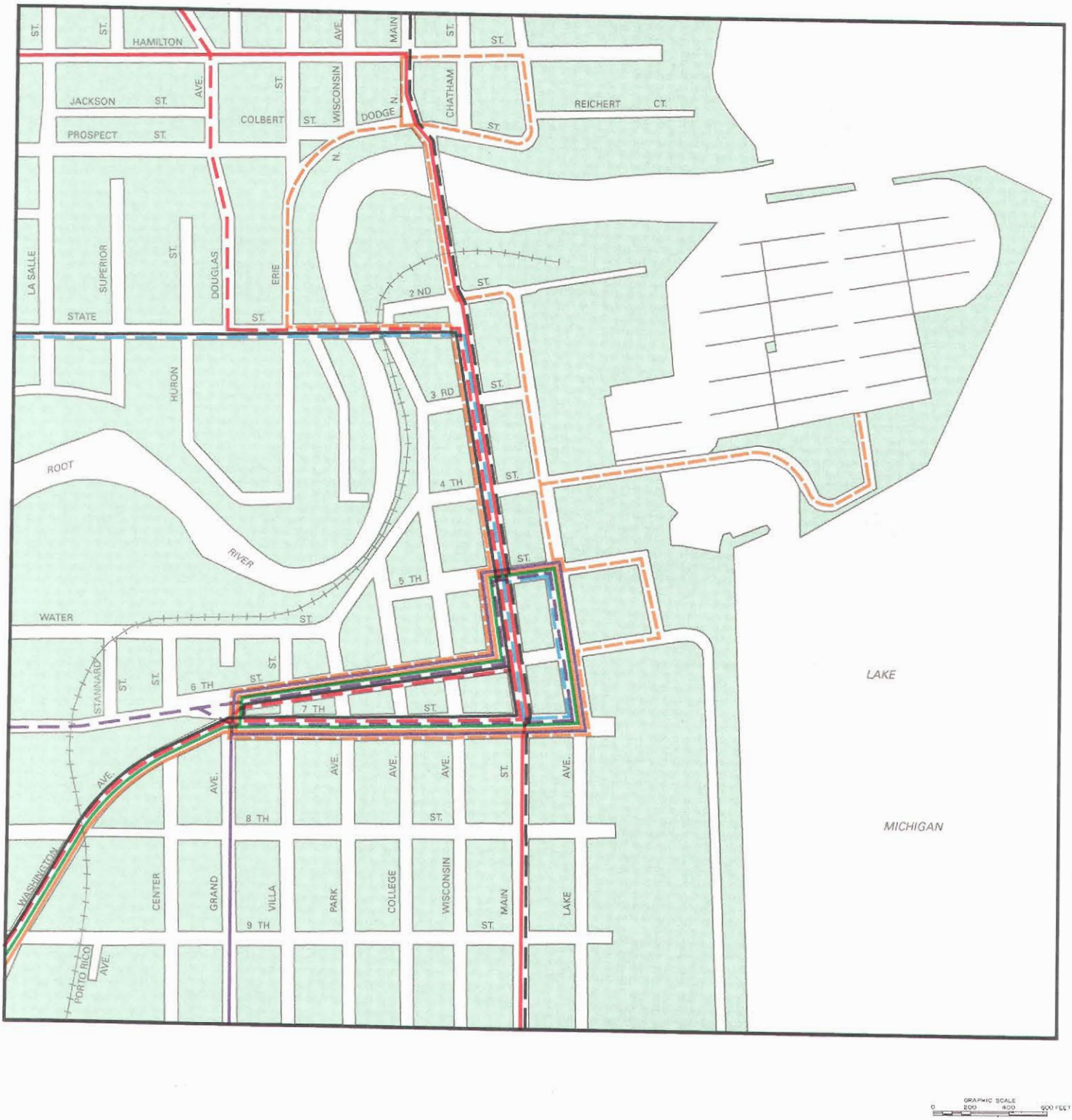


Table 24

OPERATING AND SERVICE CHARACTERISTICS BY ROUTE FOR THE BELLE URBAN SYSTEM: 1997 LABOR DAY TO MEMORIAL DAY

Bus Route	Round Trip Route Length (miles)	Service Availability			
		Weekdays		Saturdays	
		Start Time First Trip (a.m.)	Start Time Last Trip (p.m.)	Start Time First Trip (a.m.)	Start Time Last Trip (p.m.)
1	14.9	5:30	6:30	7:00	5:30
2	17.9	5:33	6:33	7:03	5:33
3	20.3	5:30	6:35	7:00	5:30
4	17.9	5:33	6:30	7:03	5:33
5	16.0	5:29	6:29	6:59	5:29
6	13.3	5:17	6:17	6:47	5:17
7	17.2	5:31	6:31	7:01	5:31
8	13.0	5:29	6:29	6:59	5:29
9	16.7	7:30	6:00	--	--
10	15.9	5:45	6:30	7:15	5:00
20	22.5	6:20	5:05	--	--
System Total	185.6	--	--	--	--

Bus Route	Service Frequency (Minutes)				Buses Required			
	Weekdays			Saturdays	Weekdays			Saturdays
	A.M. Peak	Off-Peak	P.M. Peak	All Day	A.M. Peak	Off-Peak	P.M. Peak	All Day
1	30	30	30	30	3	3	3	3
2	30	30	30	30	3	3	3	3
3	20	30	20	30	5	3	5	3
4	20	30	20	30	5	3	5	3
5	30	30	30	30	3	3	3	3
6	30	30	30	30	2	2	2	2
7	20	30	20	30	4	3	4	3
8	30	30	30	30	2	2	2	2
9	60	60	60	--	1	1	1	--
10	45	45	45	45	1	1	1	1
20	2 trips	--	2 trips	--	1	--	1	--
System Total	--	--	--	--	30	24	30	23

- One express route, Route No. 20, operating along Washington Avenue and STH 20 between the Racine central business district and businesses in the Town of Mt. Pleasant and in the Grandview Industrial Park in the Town of Yorkville, just west of IH 94.

All routes, except Routes No. 5 and 10, serve a common stop at Monument Square in the City of Racine CBD. For the most part, the schedules of the routes serving this stop provide for convenient transfers between routes, as buses from the various routes typically meet within 15 minutes of one another. Route No. 5 passes about one mile west of the CBD along Memorial Drive and intersects with nine of the 11 routes in the system, thereby providing additional opportunities for transfers. Route No. 10 connects with Routes No. 2 and 4 at a transfer point located at the Shorecrest Shopping Center in the northern part of the City of Racine.

Downtown Circulator Route

A special shuttle-bus service is also operated by the Belle Urban System to provide a unique form of transportation within the marina area and the CBD. This service is provided with two diesel buses which resemble streetcars and is collectively known as the Lakefront Trolley. Lakefront Trolley buses stop at all regularly marked bus stops in the downtown area along the route (see Map 21). The City contracts for the operation of the service with a private company, Recreation Leisure Times.

Table 24 (continued)

OPERATING AND SERVICE CHARACTERISTICS BY ROUTE FOR THE BELLE URBAN SYSTEM: 1997 MEMORIAL DAY TO LABOR DAY

Bus Route	Round Trip Route Length (miles)	Service Availability			
		Weekdays		Saturdays	
		Start Time First Trip (a.m.)	Start Time Last Trip (p.m.)	Start Time First Trip (a.m.)	Start Time Last Trip (p.m.)
1	14.9	5:30	6:30	7:00	5:30
2	17.9	5:33	6:33	7:03	5:33
3	20.3	5:30	6:30	7:00	5:30
4	17.9	5:33	6:33	7:03	5:33
5	16.0	5:29	6:29	6:59	5:29
6	13.3	5:17	6:17	6:47	5:17
7	19.8	5:31	6:31	7:01	5:31
8	13.0	5:29	6:29	6:59	5:29
9	16.7	7:20	5:25	--	--
10	15.9	5:45	6:30	7:15	5:00
20	22.5	6:20	5:05	--	--
System Total	188.2	--	--	--	--

Bus Route	Service Frequency (Minutes)				Buses Required			
	Weekdays			Saturdays	Weekdays			Saturdays
	A.M. Peak	Off-Peak	P.M. Peak	All Day	A.M. Peak	Off-Peak	P.M. Peak	All Day
1	30	30	30	30	3	3	3	3
2	30	30	30	30	3	3	3	3
3	30	30	30	30	3	3	3	3
4	30	30	30	30	3	3	3	3
5	30	30	30	30	3	3	3	3
6	30	30	30	30	2	2	2	2
7	30	30	30	30	3	3	3	3
8	30	30	30	30	2	2	2	2
9	60	60	60	--	1	1	1	--
10	45	45	45	45	1	1	1	1
20	2 trips	--	2 trips	--	1	--	1	--
System Total	--	--	--	--	25	24	25	23

Source: City of Racine Department of Transportation and SEWRPC.

Service Levels

The current operating characteristics and service levels for the regular routes of the transit system are presented in Table 24. Local service over Routes No. 1 through 8 and Route No. 10 is provided six days a week, excluding Sundays and holidays. Service over Route No. 9 is provided only on those weekdays when classes are in session at the University of Wisconsin-Parkside, with service periods two to three hours shorter than on the other regular routes. Service over Route No. 20 is limited to weekday peak periods. Operating headways of 20 to 60 minutes during weekday peak periods, 30 to 60 minutes during weekday middays, and 30 to 45 minutes all day Saturday, are operated on the regular routes.

The Lakefront Trolley service operates seven days a week between Memorial Day and Labor Day from 9:00 a.m. (weekdays) or 10:00 a.m. (weekends) to 5:30 p.m. with 10 to 20 minute headways. In addition, the service also provides special evening service between downtown area restaurants on Thursday, Friday and Saturday nights from 5:30 p.m. to midnight.

Fares

As shown in Table 25, the current cash fares charged for fixed-route bus service are $1.00 per trip for adults age five through 64 and $0.50 per trip for persons 65 and older or disabled individuals over age 6. Children under five years of age ride free if accompanied by an adult. The

Table 25

FARES CHARGED BY THE BELLE URBAN SYSTEM FOR FIXED-ROUTE BUS SERVICE: 1997

Fare Category	Adults (ages 18 through 64)	Students (ages 5 through 17)	Elderly (ages 65 and older) and Disabled (ages 5 and older)
Regular Route Service			
Cash	$1.00 per trip	$1.00 per trip	$0.50 per trip[a]
Tokens[b]	$1.00 per trip	$1.00[c] per trip	--
Transfers	Free	Free	Free
Monthly Passes	$30.00	$30.00	$20.00[d]
School Bus Passes[e]	--	$0.95-$1.10[f] per school day	--
Downtown Circulator Service			
Cash	$1.00 per service period	$0.50[g]-$1.00 per service period	$0.50 per service period

[a] *To qualify, a person must be at least 65 years of age, have a doctor's certification of disability, or obtain a certification of disability from a local agency for disabled persons. A reduced-fare photo identification card is issued to persons qualifying for the program and must be shown to the bus driver upon request at the time the reduced fare is paid.*

[b] *Tokens are sold only in bulk quantity to agencies and organizations and are not available to the general public.*

[c] *The Racine Unified School District purchases bus tokens at a rate of $0.60 per trip and provides them at no charge to students attending schools different from those to which they would normally be assigned.*

[d] *Only disabled persons are eligible for the monthly pass issued at this rate.*

[e] *The Racine Unified School District contracts with the Belle Urban System to transport a limited number of students if they live within certain boundaries jointly agreed upon by the City of Racine and the District and if the school they attend is farther than two miles from their home. Such students are issued a school bus pass allowing them to ride the transit system free of charge on regular school days. The District provides the school bus pass at no charge to eligible students and reimburses the transit system at the rate shown for each bus pass issued.*

[f] *About 500 school bus passes have been issued by the Unified School District in 1997. The contract between the transit system and the District calls for a reimbursement rate of $1.10 per pass per school day for the first 399 passes issued and $0.95 per pass per school day for all additional passes issued. If the District issues less than 400 passes in total, the contract provides for a reimbursement rate of $1.25 per pass per school day.*

[g] *Children under 12 years of age are charged a fare of $0.50.*

Source: City of Racine Department of Transportation and SEWRPC.

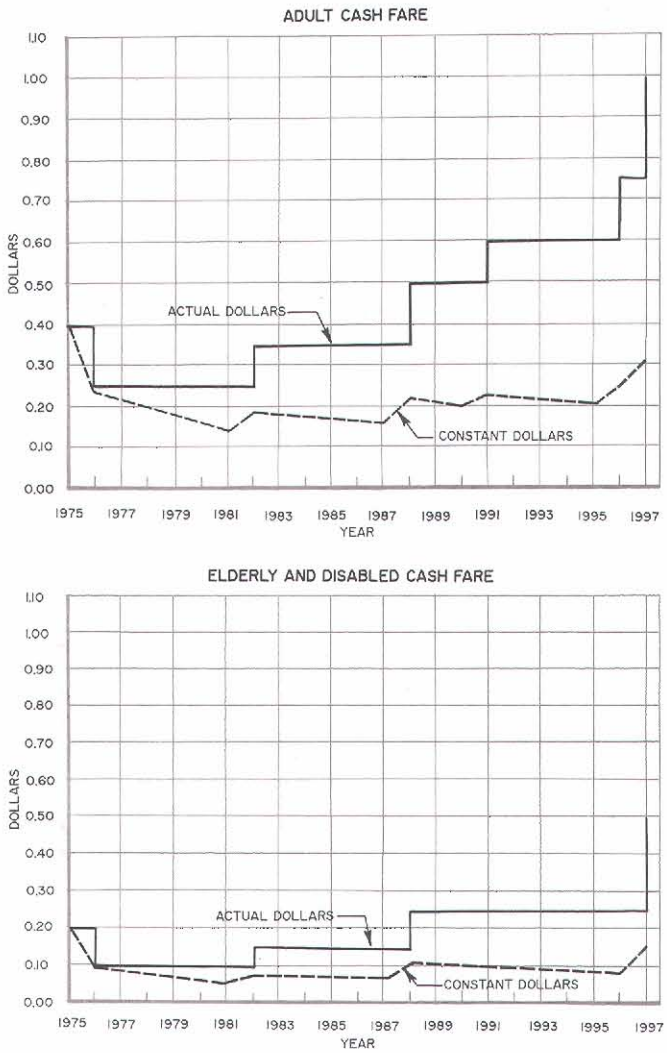
Racine Unified School District subsidizes the fares of a limited number of students residing two or more miles from the school they are entitled to attend. They are provided with bus passes which allow them to use the transit system on regular school days at no direct cost to the student. Passengers may also purchase a monthly pass which is good for unlimited riding during all hours of system operation during one month. Free one-hour transfers are issued upon request at the time the fare is paid and may be used to transfer to a route different from the route originally boarded for continuation of travel in the same general direction.

The historic transit fares for the Belle Urban System since it began public operation in 1975 are shown in Figure 3 in both actual dollars and constant 1975 dollars. After being reduced in May 1976 to promote transit ridership, passenger fares remained stable through October 1982, but have increased several times since then in response to increasing costs of operation and declining Federal operating subsidies. Most recently, the City implemented two fare increases between January 1996 and January 1997, raising the adult cash fare by about 67 percent, from $0.60 to $1.00 per trip; the elderly and disabled cash fare by 100 percent, from $0.25 to $0.50 per trip; and the price of a monthly pass by about 50 percent, from $20 to $30 for adults and from $13.50 to $20 for elderly and disabled individuals. Even with the recent fare increases, the current adult cash fare in constant 1975 dollars is less than the fare of $0.40 per trip that was in effect when the City began its operation of the system in 1975.

The fare structure for the trolley service is $1.00 for adults and $0.50 for elderly and disabled individuals and children

Figure 3

HISTORIC FARES CHARGED BY THE BELLE URBAN SYSTEM FOR FIXED-ROUTE BUS SERVICE: 1976-1997



Source: City of Racine Department of Transportation and SEWRPC.

under 12 years of age. Separate fares are charged for the daytime and evening service periods. The fare qualifies the individual for unlimited rides during the particular service period.

Paratransit Service for Disabled Individuals

In addition to fixed-route bus service, the City of Racine also provides paratransit service to serve the travel needs of disabled individuals. This service is provided to comply with Federal regulations implementing the public-transit requirements of the Americans with Disabilities Act (ADA) of 1990. These regulations require each public entity operating fixed-route transit system to provide paratransit service to disabled individuals as a complement to its fixed-route bus service.

The current eligibility requirements for, and service characteristics of, the City's paratransit service is summarized in Table 26. The paratransit service is designed to provide door-to-door transportation to disabled individuals who are unable to use the fixed-route bus service provided by the Belle Urban System. To provide the service, the City of Racine annually participates in, and contributes funds to, the paratransit program administered by the Racine County Human Services Department. The funds annually contributed to the program by the City of Racine, however, are specifically used to support the provision of paratransit service for disabled individuals who are certified as transportation handicapped and who use the service to travel only within the eastern portion of Racine County and to the University of Wisconsin-Parkside in Kenosha County, an area which is significantly larger than the required paratransit service area for the Belle Urban System. Because the paratransit service is actually part of the Countywide paratransit program of the Racine County Human Services Department, disabled individuals who live in the study area can also utilize the service to travel anywhere within Racine County. Trips made between the study area and other parts of the County, however, are not counted toward meeting the City's ADA paratransit service requirement. The service is provided on a contract basis by Laidlaw Transit, Inc.

Equipment and Facilities

The current bus fleet of the Belle Urban System is listed in Table 27. The total fleet consists of 47 buses including the following:

- A total of 45 standard design diesel-powered buses, which are used on the 11 regular routes of the Belle Urban System. All are equipped with air conditioning, and 36, or about 80 percent, are equipped with wheelchair lifts or ramps to be accessible to disabled individuals using wheelchairs. The City has begun replacing the oldest buses in the fleet with new equipment as 23 new standard design buses were placed into service in mid-1997. Up to 30 of the buses are needed to provide service during weekday peak service periods.

- Two diesel-powered shuttle buses used on the downtown circulator route. These are designed to resemble the historic streetcars which once served the City.

Table 26

OPERATING AND SERVICE CHARACTERISTICS FOR THE CITY OF RACINE'S COMPLEMENTARY PARATRANSIT SERVICE FOR DISABLED INDIVIDUALS: 1997

Characteristics	Complementary Paratransit Service Provided by the Racine County Human Services Department
Eligibility	• Any disabled persons whose physical or mental disability prevents them from using other modes of transportation, including public transportation or private automobile. Eligibility criteria include disabilities which would prohibit an individual from using a transit vehicle or from traveling to or from a bus stop.
Response Time	• Service generally provided on a next-day reservation basis. Service also provided on a shorter notice whenever capacity permits. • Reservation service for trip requests available Monday through Friday from 5:30 a.m. until 6:00 p.m.
Restrictions or Priorities Placed on Trips	• None
Fares	• $2.00 per one-way trip • Donated-fee-only basis to adult day care and approved nutritional sites.
Hours and Days of Operation	• Monday-Friday: 5:30 a.m. - 7:00 p.m. • Saturdays: 7:00 a.m. - 6:00 p.m. • Sundays and Holidays: No Service
Service Area	• Service provided to portion of Racine County east of IH 94 including the entire City of Racine and Belle Urban System service area, which includes the University of Wisconsin-Parkside in Kenosha County.

Source: City of Racine Department of Transportation, Racine County Human Services Department, and SEWRPC.

Table 27

BUS FLEET OF THE BELLE URBAN SYSTEM: 1997

Type of Bus		Number of Buses	Seats and Wheelchair Positions per Bus	Years of Manufacture and Rehabilitation	Special Equipment			Original Age and Rehabilitation Age (years)
Make	Model				Air Conditioning	Wheelchair Lift or Ramp	Kneeling Feature	
GMC	4523A	8	36 and 2	1976 and 1993	Yes	Yes	No	21 and 4
Flexible	870	5	47 and --	1981 and --	Yes	Yes	Yes	16 and --
TMC	T70-606	9	39 and --	1988 and --	Yes	No	Yes	9 and --
Chance	VS-24 Trolley	2	24 and --	1991 and --	No	No	No	6 and --
Nova	T70-606	23	35 and 2	1997 and --	Yes	Yes	Yes	-- and --
Total		47	--	--	--	--	--	Average Age 7.3 and 4.4

Source: City of Racine Department of Transportation and SEWRPC.

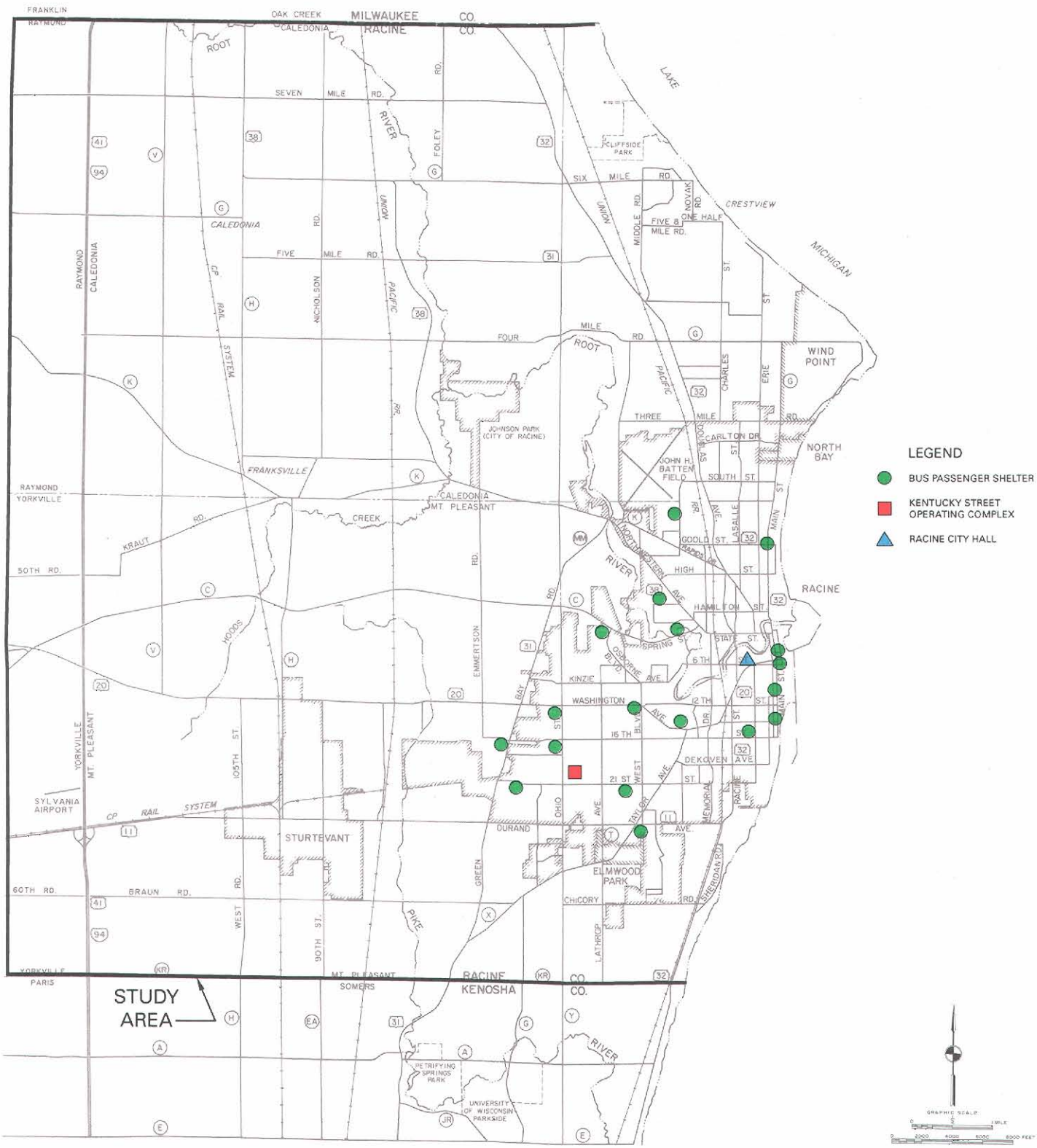
The fixed facilities used by the transit system are shown on Map 22, consisting of the following:

- A total of 20 bus passenger waiting shelters sited at various locations throughout the transit service area. Most of the shelters are of a modular design, with the size of the shelter determined by the number of back and side wall panels used. All shelters include a bench for waiting transit patrons.

- The Kentucky Street storage, maintenance, and office complex located on the southwest side of the City. It consists of two buildings, used exclusively for transit program functions. One was constructed by the City in 1977 and is used exclusively for the storage, cleaning, and servicing of vehicles. The other was acquired by the City along with other assets of the former private transit operator and houses the bus maintenance and parts-storage facilities, lockers and a meeting rooms for employees, and the general offices of the public transit system. Services for the general public provided through the offices include the sale of monthly bus

Map 22

LOCATION OF FIXED FACILITIES FOR THE BELLE URBAN SYSTEM: 1997



Source: SEWRPC.

passes, the distribution of schedules and maps, and telephone information services.

- The Racine City Hall, located on the western edge of the Racine CBD, houses the offices of the City of Racine Department of Transportation and public meeting rooms used by the Department of Transportation, the Racine Transit and Parking Commission, and the Racine Common Council. Services for the general public provided at City Hall include the sale of monthly bus passes; the distribution of transit system information, including route maps and schedules; and the issuing of photo-identification cards to elderly and disabled individuals who qualify for reduced fares.

Marketing

Marketing efforts for the Belle Urban System are carried out cooperatively by the City of Racine Department of Transportation and the private management firm. The current program is directed principally toward disseminating system information to existing and potential riders and developing strategies to attract new riders. The City has used private public relations firms to assist in developing marketing strategies, advertisements, and informational materials for the public.

Local marketing efforts for the transit system during 1997 involved three separate activities, as follows:

- Activities associated with the introduction of new buses, including the following: media announcements, speaking engagements at various service organizations and clubs, a "bus parade" and placement of new buses at various locations to allow the public to preview them, and a special no-fare day on the first day a new bus was introduced on each route.

- Improvement of existing route and schedule materials including: updating and revising the existing schedule book to make it easier to read and understand; the development of a new "ride guide" to complement the schedule booklet; and the development of a specialized packet of information designed for direct distribution or mailing, tailored to address different existing and such potential rider groups as workers, students, and senior citizens.

- Development of ideas for future marketing programs.

The City also participated in a regional marketing program with three other bus systems in Southeastern Wisconsin, the Milwaukee County Transit System, Kenosha Transit, and Waukesha Metro Transit. The program, which began in 1996, was funded in part through a Federal Congestion Mitigation and Air Quality Improvement (CMAQ) program grant administered by the Wisconsin Department of Transportation. The effort included special telephone surveys and focus-group discussions to identify potential bus riders in each service area and reasons for not using transit. The first marketing campaign was conducted with newspaper and radio advertisements in the fall of 1996 and was directed at improving the image of public transit. After its completion, a follow-up evaluation was undertaken to gauge its success and to refine strategies for a second campaign. A second marketing campaign was being conducted in the spring of 1997, during the conduct of this study, with television advertisements scheduled in April and May using local celebrities, along with promotions designed to improve transit ridership, including a two-day super-pass promotion in mid-May that allowing unlimited riding all day for $1.50. After its completion, a follow-up evaluation was scheduled to be undertaken to gauge the success of the entire regional marketing program.

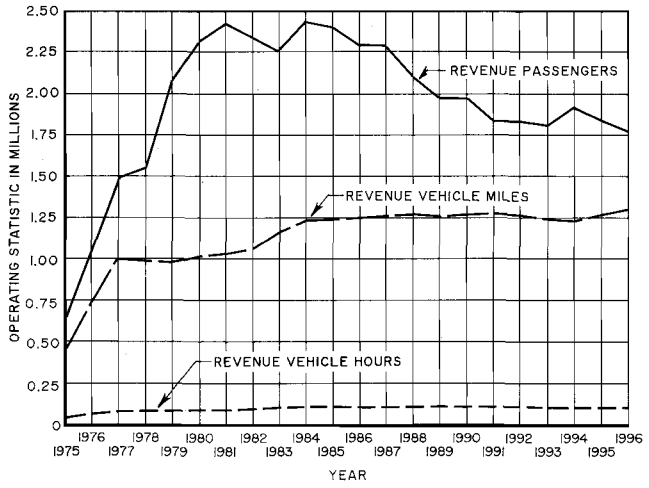
Ridership and Service Levels

The historic trends in transit ridership and service levels for the Belle Urban System since public operation began in 1975 are shown in Figures 4 and 5. The transit system experienced steadily increasing transit ridership each year from 1975 through 1981. Over this period ridership increased nearly fourfold, from about 613,000 revenue passengers in 1975 to about 2.42 million revenue passengers in 1981. The period was one of major transit service improvement and expansion occurring immediately after the City began public operation of the transit system in July 1975, during which the City implemented an entirely new system of routes and schedules, reduced transit fares and then kept them stable, and introduced a fleet of new buses. Transit ridership increases occurring between 1979 and 1981 may also be attributed to the substantial increases in gasoline prices in each of these years.

Since 1982, the predominant trend on the Belle Urban System has been one of declining transit ridership, broken only by modest ridership increases in 1984 and 1994. From 1982 through 1996, systemwide ridership declined to about 1.75 million revenue passengers in 1996, or about 28 percent below the 1981 level. As shown in Table 28, the overall market for transit service over this period remained stable, with no significant changes in the total population, households, or jobs in the City, the principal service area for the transit system. Modest increases in systemwide service levels occurred from 1982 through 1984 as a result of peak-period headway reductions and

Figure 4

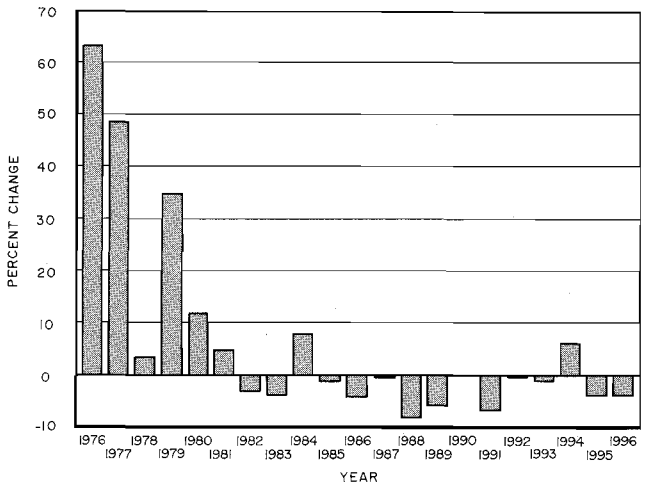
HISTORIC RIDERSHIP AND SERVICE LEVELS ON THE BELLE URBAN SYSTEM: 1975-1996



Source: City of Racine Department of Transportation and SEWRPC.

Figure 5

PERCENTAGE CHANGE IN ANNUAL RIDERSHIP ON THE BELLE URBAN SYSTEM: 1975-1996



Source: City of Racine Department of Transportation and SEWRPC.

route extensions implemented in 1982 and 1983. After that, service levels remained almost constant through 1996 (see Figure 4). The decline in ridership over this period, therefore, can be attributed to other factors including the following:

- Fare increases implemented by the system in 1982, 1988, 1991, and 1996, which tripled the base adult fare from $0.25 per trip in 1981 to $0.75 per trip in 1996. In constant dollars, fares were increased by about 75 percent over this period. Based on the general fare elasticity of -0.33 used widely in the transit industry,[1] such an increase could result in a ridership loss of approximately 25 percent. No other bus system in the Southeastern Wisconsin Region has raised fares this much over a similar period of time.

- Decreased use of the system by the Racine Unified School District to provide student transportation services. Throughout the transit system's highest ridership years and as late as the 1985-1986 school-year, the School District issued over 1,000 special student passes, enabling students to use the City transit system for travel to and from school. By the 1991-1992 schoolyear, the number of student passes issued had decreased to less than 100, reflecting the School District's decision to use more yellow-school-bus service, as well as the decline in the number of school-age children residing within the City. The School District began issuing more student passes during the 1993-1994 school year after a new contract with the transit system was negotiated. This allowed the daily reimbursement rate paid by the School District to the transit system for student passes to decrease when the number of student passes increased. (See Table 25.) The ridership increase experienced in 1994 can be partly attributed to increased student ridership during the first full calendar year of the new contract arrangement.

- Other external factors including the following: the severe economic recession which resulted in major losses of jobs and high unemployment rates in the City of Racine, particularly in 1982 and 1983; declining gasoline prices, which made travel by automobile more attractive; and modest increases in vehicle availability and declines in zero-automobile households.

[1] *The fare elasticity shown is based on Simpson-Curtin elasticity formula used for the past 30 years. It indicates the percentage decrease in transit ridership which can be expected to result from a one percent increase in transit fares.*

Table 28

SELECTED SOCIO-ECONOMIC CHARACTERISTICS OF THE CITY OF RACINE: 1980-1995

Characteristic	1980	1990	1995	Change 1980-1990 Number	Change 1980-1990 Percent	Change 1990-1995 Number	Change 1990-1995 Percent	Change 1980-1995 Number	Change 1980-1995 Percent
Total Population	85,700	84,300	85,200	-1,400	-1.6	900	1.1	-500	-0.6
Transit Dependant Population									
School-Age Children	13,300	10,900	N/A	-2,400	-18.0	N/A	N/A	N/A	N/A
Elderly Persons	14,200	14,500	N/A	300	2.1	N/A	N/A	N/A	N/A
Persons in Low-Income Households	8,005	13,100	N/A	5,095	63.6	N/A	N/A	N/A	N/A
Households									
Total	31,700	31,800	32,400	100	0.3	600	1.9	700	2.2
With No Vehicle Available	4,900	4,500	N/A	-400	-8.2	N/A	N/A	N/A	N/A
Vehicles Available									
Total	44,000	46,300	N/A	2,300	5.2	N/A	N/A	N/A	N/A
Per Person	0.51	0.55	N/A	0.04	7.8	N/A	N/A	N/A	N/A
Per Household	1.39	1.46	N/A	0.07	5.0	N/A	N/A	N/A	N/A
Employment	46,800	47,700	N/A	900	1.9	N/A	N/A	N/A	N/A

NOTE: N/A indicates data not available.

Source: U. S. Bureau of the Census; Wisconsin Department of Administration; Wisconsin Department of Workforce Development; and SEWRPC.

Information on systemwide ridership and service levels on the transit system for the most recent five-year period, 1992 through 1996, are shown in Table 29. Annual ridership on the regular bus routes of the system has ranged from approximately 1,035,000 to 1,885,800 revenue passengers over the past five years, with an annual average of about 1,803,000 revenue passengers. A disaggregation of the total weekday and Saturday ridership on the regular bus routes, based on passenger counts conducted by the Belle Urban System during the week of October 7 through 12, 1996, is presented in Table 30. As indicated in this table, Routes No. 3, 4, and 7 accounted for about 50 percent of the total weekday ridership and about 57 percent of the Saturday ridership on the Belle Urban System during this period.

Annual ridership on the Lakefront Trolley over the past five years has fluctuated between approximately 10,000 and 20,000 trips, with an annual average of about 13,400 revenue passengers. Average daily ridership on the service, which operates only during the summer months, was about 100 trips in 1996.

Table 31 presents the ridership on the transportation service for transportation handicapped individuals provided by the Racine County Human Services Department within eastern Racine County, the City's Federally required complementary paratransit service, over the period 1992 through 1996. Over the past five years, an average of about 16,400 trips per year, or about 50 trips per day, on this service have been subsidized with City funds, representing about 1 percent of the total annual systemwide ridership reported by the Belle Urban System.

Operating and Capital Costs

The operating expenses of the Belle Urban System 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. The historic trend of the operating expenses, revenues, and deficits of the Belle Urban System since it began public operation in 1975 are shown in Figure 6 in both actual dollars and constant 1975 dollars. A summary of the recent trends in operating expenses, revenues, deficits, and local subsidies on the transit system is shown in Tables 32 and 33 for the period 1992-1996, while information on transit system capital expenditures over this same period is shown in Table 34. The following observations may be made on the basis of an examination of this information:

- Operating expenses and deficits for the transit system rose steadily in both actual and constant dollar terms between 1975 and 1984 as a result of the major transit service improvements implemented by the City, as well as significant increases in costs of diesel fuel and employee wages in the late 70s and early 80s. Since 1984, system operating expenses and deficits have increased steadily in actual year-of-expenditure dollars. In terms of constant dollars, operating expenses since 1984

Table 29

ANNUAL RIDERSHIP AND SERVICE LEVELS ON THE BELLE URBAN SYSTEM: 1992-1996

Characteristic	Year					Five-Year Average
	1992	1993	1994	1995	1996	
Primary Service Area Population[a]	84,900	85,000	85,200	85,200	85,400	85,100
Service Provided						
Revenue Vehicle-Miles	1,257,300	1,226,900	1,215,400	1,252,600	1,287,600	1,248,000
Revenue Vehicle-Hours	103,900	100,500	98,600	100,226	102,000	101,000
Revenue Passengers						
Regular Bus Routes	1,804,000	1,781,700	1,885,800	1,808,800	1,735,900	1,803,200
Downtown Circulator Route	13,300	20,300	11,600	11,800	10,200	13,400
Paratransit Service	16,600	16,400	16,600	16,200	16,000	16,400
Total	1,833,900	1,818,400	1,914,000	1,836,800	1,762,100	1,833,000
Service Effectiveness						
Revenue Passengers per Capita	21.6	21.4	22.5	21.6	20.6	21.5
Revenue Passengers per Vehicle-Mile	1.5	1.5	1.6	1.5	1.4	1.5
Revenue Passengers per Vehicle-Hour	17.7	18.1	19.4	18.3	17.3	18.1

[a] *Based upon the estimated resident population of the City of Racine.*

Source: Wisconsin Department of Administration; Wisconsin Department of Transportation; City of Racine Department of Tranportation; and SEWRPC.

Table 30

AVERAGE WEEKDAY AND SATURDAY RIDERSHIP ON THE BUS ROUTES OPERATED BY THE BELLE URBAN SYSTEM: OCTOBER 7-12, 1996

Route Number	Weekday				Saturday			
	Revenue Passengers		Total Passengers[a]		Revenue Passengers		Total Passengers[a]	
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
1	680	11.9	920	12.1	300	10.3	450	11.1
2	590	10.3	810	10.7	310	10.8	420	10.4
3	1,070	18.6	1,330	17.5	360	12.4	520	12.9
4	1,020	17.8	1,350	17.8	810	27.9	1,090	27.0
5	640	11.1	800	10.6	250	8.6	360	8.9
6	300	5.2	430	5.7	180	6.2	250	6.2
7	800	13.9	1,050	13.9	510	17.6	690	17.1
8	320	5.6	450	5.9	150	5.2	220	5.4
9	180	3.1	250	3.3	--	--	--	--
10	80	1.4	120	1.6	30	1.0	40	1.0
20	60	1.1	70	0.9	--	--	--	--
Total	5,740	100.0	7,580	100.0	2,900	100.0	4,040	100.0

[a] *Includes transfers and free passengers.*

Source: City of Racine Department of Transportation and SEWRPC.

have remained relatively stable, reflecting the relatively stable service levels maintained by the transit system, while operating deficits have increased modestly, reflecting declining ridership and passenger revenues.

- From 1992 through 1996, the City expended about $4,084,000 on an average annual basis on operating and maintaining the transit system. Of this total, about $926,000, or 23 percent, came from farebox and other miscellaneous revenue. The remaining

Table 31

RIDERSHIP ON THE TRANSPORTATION SERVICE FOR TRANSPORTATION-HANDICAPPED INDIVIDUALS PROVIDED BY THE RACINE COUNTY HUMAN SERVICES DEPARTMENT

Year	Annual Ridership (one-way trips)	
	Total Trips	Estimated Trips Subsidized by the City of Racine[a]
1992	34,000	16,600
1993	32,300	16,400
1994	33,500	16,600
1995	31,200	16,200
1996	31,400	16,000
Average Annual	32,500	16,400

[a]*Represents estimates of the number of trips made on the service which were subsidized by the City of Racine. The estimates were prepared by the City by factoring the total ridership by the percent of service costs covered by City funds.*

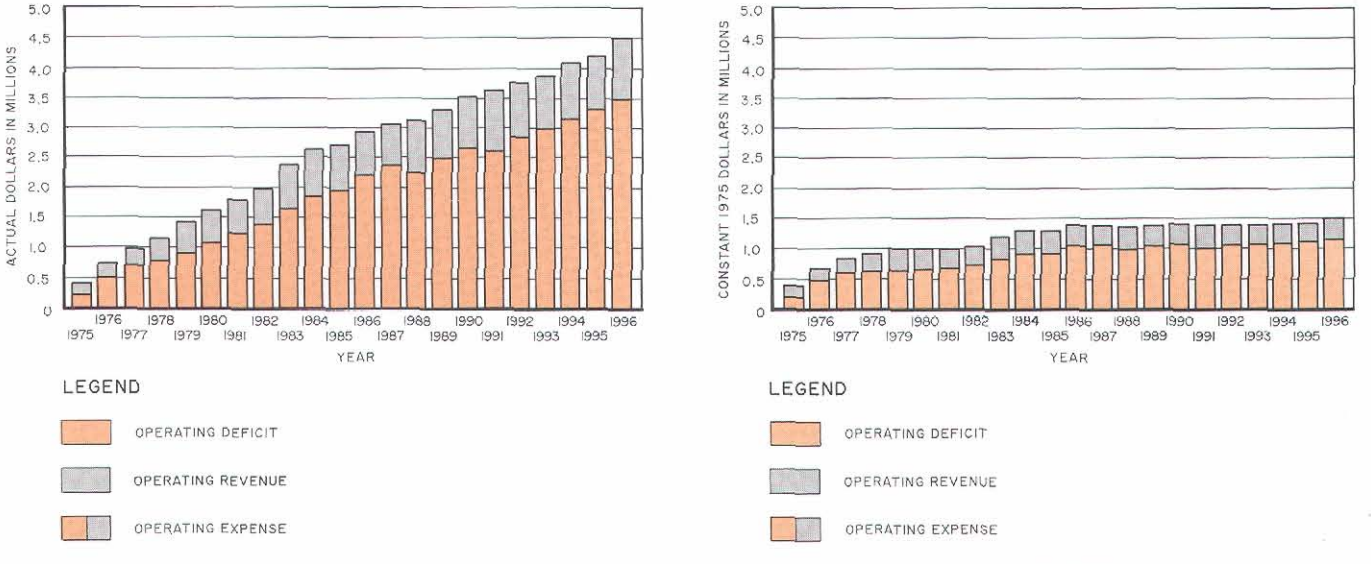
Source: City of Racine Department of Transportation, Racine County Human Services Department, and SEWRPC.

$3,158,000, or 77 percent, constituted the average annual public operating subsidy which had to be funded through Federal and State transit-operating-assistance programs and local property taxes. The average annual operating subsidy from the City of Racine has been about $437,000, or about 11 percent of total system operating expenses.

- The amount of the total operating expenses funded by Federal operating assistance and local property taxes has changed significantly between 1992 and 1996, as illustrated in Figure 7. In 1992, Federal operating assistance amounted to about $907,200, or about 24 percent of the system's operating expenses; the total local funding amounted to about $403,400, or about 11 percent of operating expenses; funds from the City of Racine amounted to about $271,300, or about 7 percent of operating expenses; and funds from other local units of government and other sources amounted to about $132,100, or about 4 percent of operating expenses. By 1996, however, Federal funding was reduced by 35 percent, to about $586,500, covering only about 13 percent of the system's operating

Figure 6

TOTAL ANNUAL OPERATING EXPENSES, REVENUES, AND DEFICITS FOR THE BELLE URBAN SYSTEM: 1975-1996



Source: Wisconsin Department of Transportation, City of Racine Department of Transportation, and SEWRPC.

Table 32

ANNUAL OPERATING EXPENSES, REVENUES, AND DEFICITS FOR THE BELLE URBAN SYSTEM: 1992-1996

Characteristic	Year[a]					Five-year Average
	1992	1993	1994	1995	1996[b]	
Revenue Passengers						
Regular Bus Routes	1,804,000	1,781,700	1,885,800	1,808,800	1,735,900	1,803,200
Downtown Circulator Route	13,300	20,300	11,600	11,800	10,200	13,400
Paratransit Service	16,600	16,400	16,600	16,200	16,000	16,400
Total	1,833,900	1,818,400	1,914,000	1,836,800	1,762,100	1,833,000
Costs and Revenues						
Operating Expenses						
Regular Bus Routes	$3,572,800	$3,665,700	$3,861,400	$4,002,300	$4,314,500	$3,883,300
Downtown Circulator Route	42,400	57,700	70,800	56,000	58,700	57,100
Paratransit Service	143,000	143,000	143,000	143,000	143,000	143,000
Subtotal	$3,758,200	$3,866,400	$4,075,200	$4,201,300	$4,516,200	$4,083,500
Revenues						
Regular Passenger Fares	$ 793,400	$ 792,200	$ 803,000	$ 744,000	$ 895,000	$ 805,500
Student Transportation Service Revenue[c]	75,800	104,800	147,200	137,300	137,100	120,400
Subtotal	$ 869,200	$ 897,000	$ 950,200	$ 881,300	$1,032,100	$ 926,000
Required Public Subsidy	$2,889,000	$2,969,400	$3,125,000	$3,320,000	$3,484,100	$3,157,500
Percent of Expenses Recovered through Revenues	23.1	23.2	23.3	21.0	22.9	22.7
Source of Public Subsidy						
Federal[d]	$ 907,200	$ 830,800	$ 843,500	$ 778,300	$ 586,500	$ 789,300
State[e]	1,578,400	1,623,900	1,689,900	1,778,500	1,965,300	1,727,200
Local						
City of Racine	271,300	332,900	397,500	540,900	642,800	437,000
Other[f]	132,100	181,800	194,100	222,300	289,500	204,000
Subtotal	$ 403,400	$ 514,700	$ 591,600	$ 763,200	$ 932,300	$ 641,000
Total	$2,889,000	$2,969,400	$3,125,000	$3,320,000	$3,484,100	$3,157,500
Per Trip Data						
Operating Cost	$2.05	$2.13	$2.13	$2.29	$2.56	$2.23
Revenue	0.47	0.50	0.50	0.48	0.58	0.51
Total Public Subsidy	1.58	1.63	1.63	1.81	1.98	1.72
Local Public Subsidy	0.22	0.28	0.31	0.42	0.53	0.35

[a] *Financial data for 1992 through 1995 taken from Schedule E and Note 1 of the Belle Urban System annual audits.*

[b] *Estimated.*

[c] *Represents contract revenue from the Racine Unified School District.*

[d] *Represents funds obtained principally through the Federal Transit Administration (FTA) Section 5307 Urbanized Area Formula Program. For 1995, the amount shown includesapproximately $27,400 obtained through the Federal Congestion Mitigation and Air Quality (CMAQ) Improvement Program. The amount of funds from the CMAQ Program used 1996 cannot be determined at this time.*

[e] *Represents funds obtained principally through the Wisconsin Department of Transportation (WisDOT) Section 85.20 Urban Public Transit Operating Assistance Program. For 1995 and 1996, the amount shown includes approximately $13,900 and $19,500, respectively, obtained through the WisDOT Section 85.24 Transportation Demand Management Program.*

[f] *Represents funds provided by other governmental units contracting for service with the Belle Urban System and private sector funding for the Washington Avenue express bus route as shown in Table 33.*

Source: Wisconsin Department of Transportation, City of Racine Department of Tranportation, and SEWRPC.

Table 33

DISTRIBUTION OF ANNUAL LOCAL OPERATING SUBSIDIES FOR THE BELLE URBAN SYSTEM: 1992-1996

Characteristic	Year					Five-Year Average
	1992	1993	1994	1995	1996[a]	
Source of Local Operating Subsidy						
City of Racine	$271,300	$332,900	$397,500	$540,900	$642,800	$437,000
Town of Caledonia	21,600	31,400	34,500	46,300	61,000	38,900
Town of Mt. Pleasant	47,700	55,300	52,200	62,500	71,400	57,800
Village of Sturtevant	13,700	20,300	22,700	28,500	33,100	23,700
University of Wisconsin-Parkside	29,500	43,300	48,900	58,000	71,700	50,300
Private Sector	--	--	--	3,900	15,000	3,800
Other[b]	19,600	31,500	35,800	23,100	37,300	29,500
Total	$403,400	$514,700	$591,600	$763,200	$932,300	$641,000

[a]*Estimated.*

[b]*Represents funds generated by the Lakefront Trolley, garnishment of wages, and other grants for which sources have not been identified in City audits of the Transit System.*

Source: Wisconsin Department of Transportation, City of Racine Department of Tranportation, and SEWRPC.

Table 34

ANNUAL CAPITAL-PROJECT EXPENDITURES BY FUNDING SOURCE FOR THE BELLE URBAN SYSTEM: 1992-1996

Characteristic	Capital Expenditures by Year[a]					Five-Year Average
	1992	1993	1994	1995	1996[b]	
Capital Project Type						
Bus Fleet Replacement or Rehabilitation	--	$1,059,000	--	--	--	$211,800
Facility Renovation or Replacement	$92,000	14,600	$80,800	--	--	37,500
Facility Expansion or Additions	--	--	--	--	$431,600	86,300
Other	500	800	15,400	$633,600	95,900	149,200
Total	$92,500	$1,074,400	$96,200	$633,600	$527,500	$484,800
Source of Funds						
Federal[c]	$51,300	$839,000	$75,500	$431,300	$422,000	$363,800
City	41,200	235,400	20,700	202,300	105,500	121,000
Total	$92,500	$1,074,400	$96,200	$633,600	$527,500	$484,800

[a]*Financial data for 1992 through 1995 taken from Note 2 of the Belle Urban System annual audits.*

[b]*Estimated.*

[c]*Represents funds obtained through the Federal Transit Administration (FTA) Section 5307 Urbanized Area Formula Program, the FTA Section 5309 Capital Program, and the Federal Congestion Mitigation/Air Quality (CMAQ) Improvement Program.*

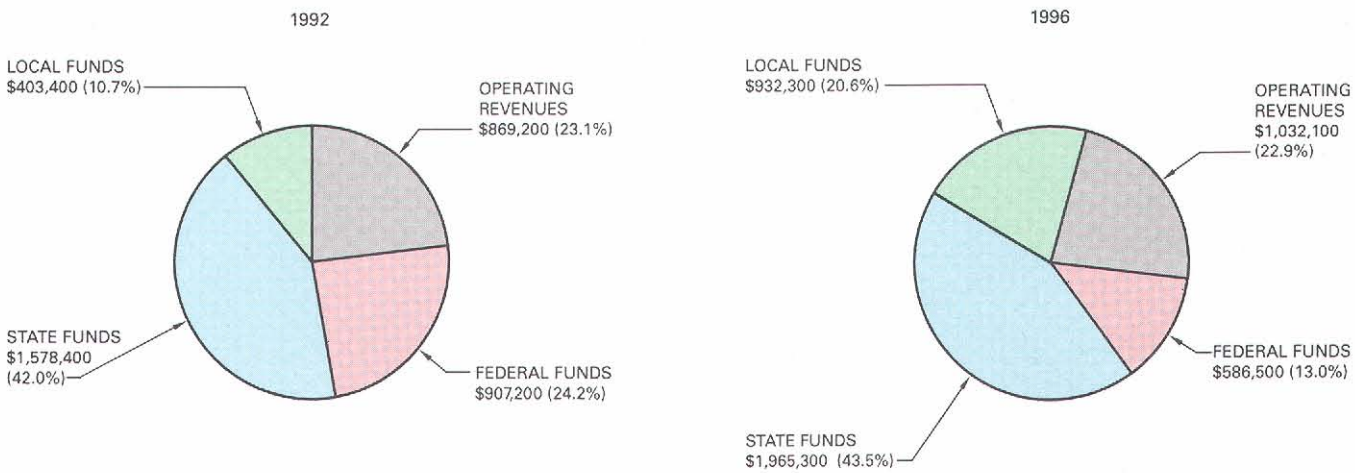
Source: City of Racine Department of Tranportation; and SEWRPC.

expenses; the total local funding increased by 131 percent, to about $932,300, covering about 21 percent of operating expenses; funds from the City of Racine increased by 137 percent, to about $642,700, covering about 14 percent of operating expenses; and funds from other local units of government, the private sector, and other sources increased by 119 percent, to about $289,500, covering about 6 percent of operating expenses.

- The average annual capital expenditures on the transit system over the five-year period 1992

Figure 7

DISTRIBUTION OF TOTAL OPERATING EXPENSES FOR THE BELLE URBAN SYSTEM BY FUNDING SOURCE: 1992 AND 1996



Source: Wisconsin Department of Transportation, City of Racine Department of Transportation, and SEWRPC.

through 1996 totaled about $485,000, principally for bus fleet replacement and improvements or equipment at the Kentucky Street storage, maintenance, and office complex. Of this total, about $364,000, or 75 percent, came from Federal programs providing transit capital assistance; the remaining $121,000, or about 25 percent, came from the City of Racine.

- The total average annual expenditures for-transit system operations and capital projects from 1992 through 1996 amounted to about $4,568,000, or about $2.49 per trip. The total average annual public subsidy funded through Federal and State transit-assistance programs and local property taxes amounted to about $3,642,000, or about $1.98 per trip. The total average annual funds provided by the City of Racine amounted to about $558,000, or about $0.30 per trip; funds from other local units of government, the private sector, and other sources amounted to about $204,000, or about $0.11 per trip.

OTHER PUBLIC TRANSIT SERVICES

The City of Racine is the principal provider of public-transit service within the greater Racine area. However, a number of other public transit services are also provided to residents of the study area, including local and intercity-transit services for the general public, specialized transportation services for the elderly and disabled population, and transportation services for students at local schools.

Additional Local and Intercity Services

Additional transit services for the general public which were provided within the study area or which connected with the Belle Urban System included the following: local bus service provided by the City of Kenosha transit system; express bus service provided by Wisconsin Coach Lines, Inc.; intercity bus services provided by Greyhound Lines, Inc., and United Limo, Inc.; and intercity passenger service provided by the National Railway Passenger Corporation, commonly called Amtrak. The general characteristics of these services are summarized in Table 35. The alignments of the routes for each operator are shown on Map 23. Each of the services may be briefly described as follows:

- Kenosha Transit System
  Route No. 1 of the City of Kenosha transit system operates between the Kenosha CBD and the University of Wisconsin-Parkside. This route is one of eight local bus routes operated by the City of Kenosha's publicly subsided transit system to serve the greater Kenosha area. Like most of the routes of the system, Route No. 1 operates Monday through Saturday, including when classes are not in session at the University. Transit patrons who desire to travel between points served by the Racine and Kenosha transit systems can do so by transferring between the Racine and Kenosha bus routes at the University of Wisconsin-Parkside, but are required to pay the appropriate full fare for the bus service to which they are transferring. Based on the 1991

Table 35

ADDITIONAL LOCAL AND INTERCITY TRANSIT SERVICES FOR THE GENERAL PUBLIC IN THE STUDY AREA: 1997

Name of Service Provider	Type of Provider	Type of Service	Days and Hours of Operation	Fares[a]	Service Area	Vehicles Used	Average Weekday Ridership (one-way trips)
Kenosha Transit System	Public	Local bus	Weekdays: 6:00 a.m. to 6:00 p.m. Saturdays: 6:00 a.m. to 6:00 p.m. Sundays/ Holidays: No Service	Adults (age 18-64): $0.75 Students (age 5 through high school): $0.55 Elderly (age 65 and over) and Disabled: $0.35	City of Kenosha and environs; Route No. 1 serves the University of Wisconsin-Parkside	Urban transit buses	4,600[b]
Wisconsin Coach Lines, Inc.	Public[c]	Express bus	Weekdays: 5:45 a.m. to 10:45 p.m. Weekends/Holidays: 8:45 a.m. to 10:45 p.m.	Distance-based ranging from $1.70 to $4.20 for adults	Stops made within study areain the Town of Caledonia, the City of Racine andt the Town of Mt. Pleasant	Long distance over-the-road motor coaches	250
Greyhound Lines, Inc.	Private	Intercity bus	Daily service consisting of: 2 southbound bus trips and 3 northbound bus trips	Distance-based	One stop at IH 94 and STH 11	Long-distance over-the-road motor coaches	N/A
United Limo, Inc.	Private	Intercity bus	Daily: 1:00 a.m. to 11:00 p.m.	Distance-based	One stop at IH 94 and STH 20	Long-distance over-the-road motor coaches	N/A
Amtrak	Public	Intercity passenger train	Weekdays: 7:30 a.m.to 9:00 p.m. Saturdays: 7:30 a.m. to 9:00 p.m. Sundays/Holidays: 7:30 a.m. to 9:00 p.m.	Distance-based	One stop in the Village of Sturtevant	Standard intercity single-level passenger train coaches	900 to 1,000[d]

[a] *Fares shown are cash fares per trip.*

[b] *Ridership shown is systemwide. Average weekday ridership on Route No. 1 was estimated at about 500 passengers.*

[c] *The City of Racine acts as the public sponsor for the service. Wisconsin Coach Lines, Inc., is a private for-profit company under contract for the bus service with the City of Racine.*

[d] *Ridership shown is over the entire route between Milwaukee and Chicago. Average weekday ridership using the Sturteveant stop was estimated at about 60 to 70 passengers.*

Source: SEWRPC.

Commission surveys of passengers on both the Racine and Kenosha bus systems, it is estimated that only about 20 passengers per day, or less than 1 percent of the ridership on the systems, make such transfers to travel between Racine and Kenosha.

- Wisconsin Coach Lines, Inc.

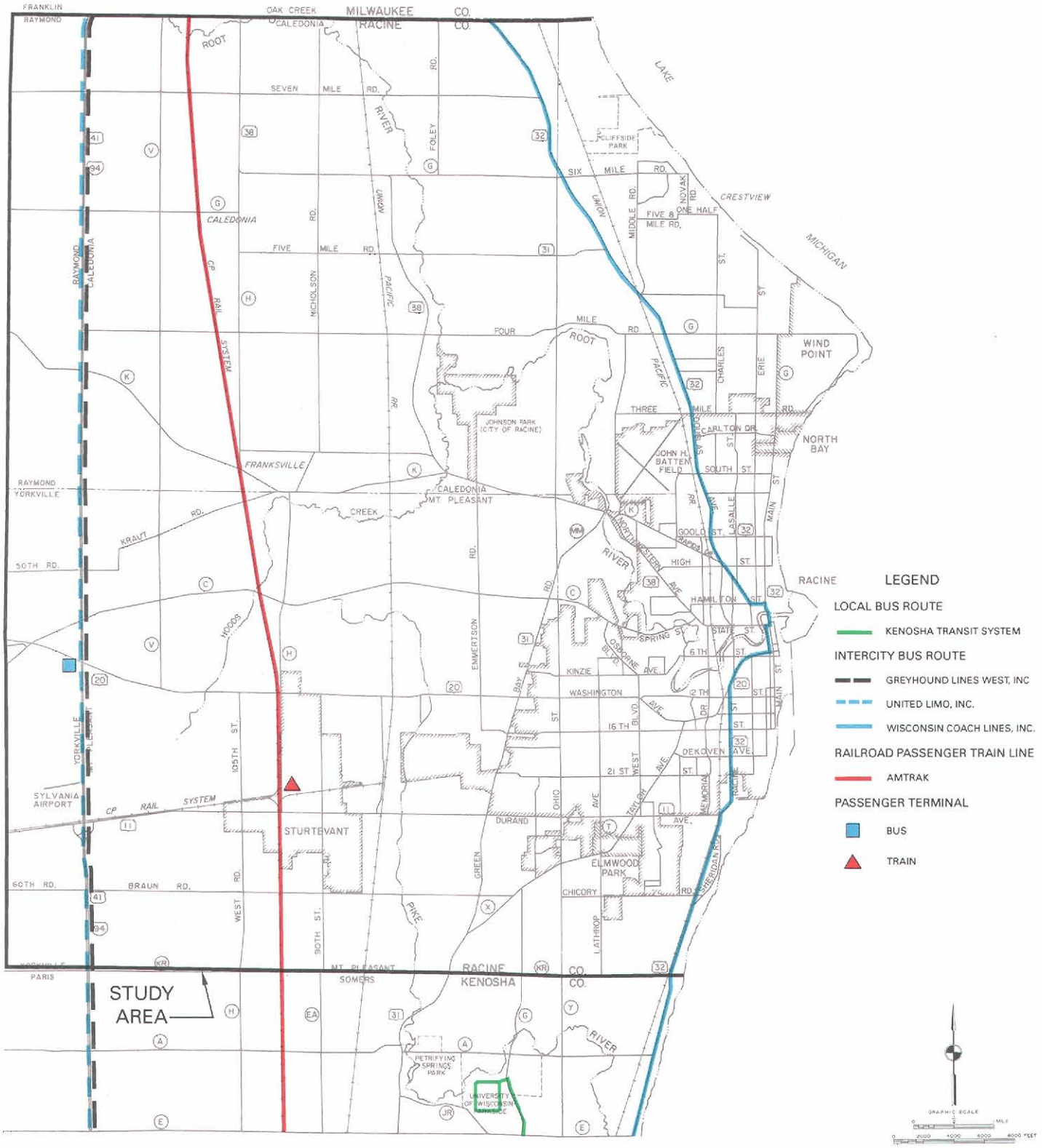
  Wisconsin Coach Lines, Inc., operates one route which provides commuter-oriented express-bus service between the Milwaukee CBD and the Cities of Racine and Kenosha. The route passes through, and has several intermediate stops within, the study area. Service over the route consists of eight runs in each direction each weekday and four runs in each direction on weekends and holidays. The company's service is oriented principally towards serving Racine and Kenosha passengers commuting to and from the Milwaukee area, but it can also be used to travel between Racine and Kenosha. Based on the 1991 Commission survey of passengers using this service, it is estimated that about 150 trips per day, or about 60 percent of the average weekday trips, either originate or end in the study area. Since 1985 the City of Racine has acted as the public sponsor and applicant or grantee for the State urban-transit operating assistance funds used to subsidize the operation of the service. Prior to 1985 the route was operated without public subsidy.

- Greyhound Lines, Inc.

  Greyhound Lines, Inc. operates one intercity bus route through the western portion of the study area, providing service over IH 94 between Milwaukee and Chicago. Service over the route consists of 16 southbound runs and 14 northbound runs daily. Only two of the southbound runs and three of the northbound runs stop within the study area, at IH 94 and STH 20, to serve Racine area passengers. The company's Milwaukee-Chicago service is strongly oriented towards providing connections for Milwaukee area passengers to other long-distance buses at its Chicago hub and also accommodating Milwaukee-Chicago trips. Greyhound Lines, Inc., currently does not receive public financial assistance for the services they provide through the study area.

Map 23

ADDITIONAL BUS AND RAIL PASSENGER SERVICE IN THE RACINE TRANSIT DEVELOPMENT PLAN STUDY AREA: 1997



Source: SEWRPC.

- United Limo, Inc.
  United Limo, Inc., operates one intercity bus route through the western portion study area which provides service over IH 94 between the Milwaukee CBD and Chicago's O'Hare International and Midway Airport, including a stop at Milwaukee's General Mitchell International Airport. Service over the route consists of 12 southbound runs and 12 northbound runs daily, with the only stop within the study area, to serve Racine area passengers, at IH 94 and STH 20. The company's service is directed principally toward serving airport-related trips and is not really conducive to general-purpose travel between Milwaukee and Chicago. United Limo, Inc., currently does not receive public financial assistance for the services they provide through the study area.

- Amtrak
  Amtrak provides publicly subsidized intercity passenger-train service between the Milwaukee CBD and Chicago over the CP Rail System's Chicago-Milwaukee-St. Paul main line. Amtrak's Chicago-Milwaukee *Hiawatha* Service features six trains in each direction Monday through Saturday, and five trains in each direction on Sundays, all of which stop in the Village of Sturtevant, in the center of the study area. One additional train, the *Empire Builder*, providing long-distance service through Milwaukee to St. Paul, Minnesota, and Seattle, Washington, also passes through the study area each day without stopping. While Amtrak service in the Chicago-Milwaukee corridor is oriented toward providing connections to other long-distance trains at the system's hub in Chicago, selected weekday trains have always been well patronized by individuals traveling to Chicago on business trips, commuting to Chicago workplaces, or making daytime trips to Chicago for personal or recreational purposes. The 1991 Commission survey of Amtrak passengers indicated that about 7 percent of the daily passengers on the Chicago-Milwaukee service, or about 60 to 70 passengers of the total 900 to 1,000 passengers daily, used the Sturtevant stop. Amtrak's Chicago-Milwaukee *Hiawatha* Service is funded in part by the Wisconsin and the Illinois Departments of Transportation. Bus service operated by the Belle Urban System was extended to the Amtrak station in the Village of Sturtevant in June 1983.

Specialized Transportation Services

Specialized transportation services within the study area were also provided in 1997 by a number of public and private nonprofit agencies and organizations, as well as by private for-profit transportation companies. In general, most of the available specialized transportation services were provided on demand, rather than on a fixed schedule, with eligibility for service usually limited to clientele of the sponsoring agency or organization, principally elderly or disabled individuals. The general characteristics of the major specialized transportation services provided within the study area in 1997 are presented in Table 36. The services identified may be characterized as follows:

- Racine County Human Services Department
  Two major programs providing specialized transportation services within the study area are administered by the Racine County Human Services Department. The first program provides door-to-door transportation services to transportation-handicapped persons throughout Racine County for general travel. Users are generally required to make trip reservations no later than the day prior to the trip, although allowances are made for scheduling trips on a space-available basis up to one hour prior to the desired travel time. The service provided by this program in eastern Racine County is used by the City to provide its Federally required complementary paratransit service for disabled individuals who are unable to use the City's fixed-route bus service. The second program provides fixed-route, fixed-schedule transportation services to developmentally disabled individuals in Racine County participating in the training and employment programs offered by Careers Industries of Racine, Inc., and the Racine County Opportunity Center, whose facilities are located within the study area. Racine County contracts with a private bus company, Laidlaw Transit, Inc., to provide the service under both programs.

- The American Red Cross
  The Lakeshore Counties Chapter of the American Red Cross provides specialized transportation in the eastern Racine County. The door-to-door service is provided on an advance-reservation basis for medical- purpose trips to destinations inside and outside the County, using volunteer drivers driving vehicles owned by the Society. While the service is primarily available on weekdays, it is scheduled at other times as needed and if a driver is available.

- Racine County Ridgewood Care Center and Lincoln Lutheran of Racine
  The Racine County Ridgewood Care Center and Lincoln Lutheran of Racine provide specialized transportation services for their respective residents.

Table 36

MAJOR SPECIALIZED TRANSPORTATION SERVICES FOR ELDERLY AND DISABLED PERSONS PROVIDED WITHIN THE STUDY AREA: 1997

Name of Service Provider	Type of Provider	Type of Service	Eligible Users	Days and Hours of Operation	Service Area	Fare Per Trip	Vehicles Used	Average Weekday Ridership (one-way trips)
Racine County Human Services Department Transportation Handicapped	Public[a]	Advance reservation, door-to-door	Persons certified as transportation handicapped	Monday-Friday: 5:30 a.m.- 7:00 p.m. Saturday: 7:00 a.m.- 6:00 p.m.	Racine County and University of Wisconsin-Parkside in Kenosha County	$2.00 per one-way trip for regular trips and donated fee basis for service to and from adult day care and nutrition sites	Mini-buses	160[b]
Developmentally Disabled	Public[a]	Deviated fixed route, door-to-door	Developmentally disabled clients of Racine County Opportunity Center and Careers Industries, Inc.	Weekdays: 9:00 a.m.- 2:30 p.m.	Racine County	$2.00, monthly pass available	Mini-buses and standard buses	130[b]
American Red Cross	Private, non-profit	Advance reservation, door-to-door	Ambulatory persons unable to arrange or afford other transportation	Weekdays: 9:00 a.m.- 3:00 p.m.	Eastern Racine County	No charge	Vans	10
Racine County Ridgewood Care Center	Public	Door-to-door	Residents	As required	Racine County	No charge	Van and bus	7
Lincoln Lutheran Specialized Transportation	Private, non-profit[c]	Door-to-door scheduled service for residents	Residents	As required	Eastern Racine County	No charge	Wheelchair accessible and non-accessible vans and buses	14
Bella Mobile Care, Inc.	Private, for-profit	Advance reservation, door-to-door	General public	As required	Racine and Kenosha Counties	Base fare within City of Racine, additional mileage charges for trips outside the City of Racine	Wheelchair accessible vans	30
Medix Ambulance Services, Inc.	Private, for-profit	Advance reservation, door-to-door	General public for medical purposes	Seven days a week, 24 hours a day	Southeastern Wisconsin	Base fare plus mileage charges	Wheelchair accessible vans, cars, and, ambulances	60
Nichols Medical Transport, Inc.	Private, for-profit	Advance reservation, door-to-door	General public for medical purposes	Seven days a week, 24 hours a day	Southeastern Wisconsin	Base fare plus mileage charges	Wheelchair accessible vans	20
Recovery Medical Transport	Private, for-profit	Advance reservation, door-to-door	General public	Weekdays: 7:00 a.m.- 5:00 p.m. Additonal hours as required	Racine County and trips between Racine and Kenosha or Milwaukee Counties	Base fare plus mileage charges	Wheelchair accessible vans	6

[a] *Service provided by Laidlaw Transit, Inc.*

[b] *Countywide.*

[c] *Service provided by Bella Mobile Care, Inc.*

Source: SEWRPC

Both organizations provide service on a door-to-door basis as dictated by the needs of their residents. For such services, Ridgewood Care Center, a County-operated facility, directly operates the service, using its own vehicles; Lincoln Lutheran, a private nonprofit agency, contracts for service from a private company, Bella Ambulance Services, Inc.

- Private For-Profit Transportation Services

Four private for-profit specialized transportation providers also served a significant number of passengers within the study area in 1997: Bella Mobile Care, Inc.; Medix Ambulance Services, Inc.; Nichols Medical Transport, Inc.; and Recovery Medical Transport. The transportation services provided were primarily to elderly and disabled

individuals for nonemergency trips made within the study area, as well as between the study area and the surrounding counties. Most trips were to and from hospitals, nursing homes, and physicians for medical or health-related purposes. Service was provided on a both a door-to-door basis and door-through-door basis as dictated by the special assistance needs of the passenger. There were no strict service area boundaries followed by these operators.

School District Student Transportation Service

The Racine Unified School District provides transportation to and from public, private, and parochial schools for pupils who reside in the School District two or more miles from the nearest public, private, or parochial school they are entitled to attend; live less than two miles from school but would face hazardous walking conditions on their journey to and from school; or participate in the District's exceptional education program. The District currently contracts with a private school bus company, School Services and Leasing, Inc., for transportation service on school days for about 13,800 such students. In addition, some students eligible for transportation service on school days residing within the service area of the Belle Urban System are provided with special student passes or tokens so they can ride to and from school on the City transit system. The District reimburses the Belle Urban System on a daily basis for each student pass issued. About 550 students within the School District were eligible for student passes issued by the School District during the 1996-1997 school year. All of the District's school day transportation service is provided at no direct cost to the student.

SUMMARY

This chapter has presented pertinent information on the existing City of Racine public-transit system, as well as on other major transit services provided in the study area during 1997. A summary of the most important findings concerning the transportation services identified follows.

1. The major supplier of local public-transit service in the Racine area is the City of Racine, which has operated the Belle Urban System since July 1975. The City of Racine owns the facilities and equipment for its fixed-route transit system and contracts with a private firm, ATE Management and Service Company, to oversee the day-to-day operation of the system, with the management firm under the direct supervision of the City Department of Transportation. While the policy-making body of the transit system is the Racine Transit and Parking Commission, the ultimate responsibility for review and approval of certain important matters, including the annual program budget, lies with the City of Racine Common Council.

2. During 1997, fixed-route bus service was provided by the Belle Urban System over a system of 11 regular bus routes. Ten of these routes provided local bus service, with frequent stops. Nine of these local service routes provided direct service to the Racine CBD where the City has established a common stop to facilitate transfers between routes. Four extended outside the City to serve residential areas or major trip generators in the Town of Mt. Pleasant, the Village of Sturtevant, the Town of Caledonia, and the Town of Somers in Kenosha County. The eleventh regular route provided express service, with limited stops, between the Racine CBD and businesses located along STH 20 in the Town of Mt. Pleasant and in the Grandview Industrial Park in the Town of Yorkville. Service over the regular routes was provided between 5:30 a.m. and 7:00 p.m. on weekdays and between 7:00 a.m. and 6:00 p.m. on Saturdays, with operating headways of 20 to 60 minutes during weekday peak periods, 30 to 60 minutes during weekday middays, and 30 to 45 minutes all day Saturday. The base adult cash fare for the regular route service was $1.00 per trip, with a reduced fare $0.50 per trip for elderly and disabled individuals. Special reduced fares for students were provided through the Racine Unified School District. The transit system maintained a fleet of 45 buses to provide service over the regular routes.

3. The City also contracts with a private company for the operation of a special downtown circulator route, the Lakefront Trolley, to serve the CBD and marina area. This service was operated only between Labor Day and Memorial Day between 9:00 a.m. (weekdays) or 10:00 a.m. (weekends) and 5:30 p.m. with 10 to 20 minute headways, as well as on Thursday, Friday and Saturday nights from 5:30 p.m. to 12:00 Midnight. Cash fares of $1.00 for adults, and $0.50 for senior citizens and children under 12 years were charged for the service. The transit system maintained two buses which resembled streetcars to provide the service.

4. To comply with Federal regulations, the transit system also provided a paratransit service directed at serving the travel needs of disabled individuals

unable to use the fixed-route bus service provided by the Belle Urban System. The door-to-door service was operated during the same hours as the fixed-route service and was available throughout the entire-transit system service area. The service was provided through the Racine County Human Services Department specialized transportation program.

5. Ridership on the Belle Urban System increased steadily in each year from 1976 through 1981, during which time ridership nearly quadrupled, from about 613,000 revenue passengers in 1975 to about 2.42 million revenue passengers in 1981. These increases may be attributed to new and expanded transit services, new operating equipment, stable passenger fares, and substantial increases in gasoline prices which occurred during this period. Since 1982, the predominant trend on the Belle Urban System has been one of declining transit ridership, broken only by modest ridership increases in 1984 and 1994. These declines may be attributed to a tripling of the base adult fare from 1982 through 1996 and decreased use of the system by the Racine Unified School District to provide student transportation services. Other contributing factors included a severe economic recession which resulted in high unemployment levels within the Racine area, decreases in gasoline prices which made travel by automobile more attractive, and increases in automobile availability. By 1996, the transit system carried about 1,762,000 revenue passengers, about 656,000 passengers, or 27 percent, less than the approximately 2,418,000 revenue passengers carried in 1981. Currently, Routes No. 3, 4, and 7 are the most heavily used of the 11 regular routes in the transit system.

6. From 1992 through 1996, the City expended on an average annual basis a total of about $4,568,000, or about $2.49 per trip, for-transit system operations and for capital projects. Of this total, about $926,000, or about $0.51 per trip, was recovered through farebox and other miscellaneous revenue. The remaining $3,642,000, or about $1.98 per trip, constituted the total average annual public subsidy funded through Federal and State transit-assistance programs and local property taxes. The total average annual subsidy from the City of Racine amounted to about $558,000, or about $0.30 per trip; funds from other local units of government, the private sector, and other sources amounted to about $204,000, or about $0.11 per trip. The total local share of the public operating subsidy for the transit system increased by 131 percent between 1992 and 1996 because of a 35 percent decrease in Federal transit-operating assistance.

7. Other transit services for the general public which either operated within the study area or connected with the Belle Urban System outside the study area were also identified. The City of Kenosha transit system operated one local bus route between the Kenosha CBD and the University of Wisconsin-Parkside, where connections could be made with Route No. 9 of the Belle Urban System. A commuter-oriented express-bus route was operated by Wisconsin Coach Lines, Inc., between the Milwaukee CBD and the Cities of Racine and Kenosha, with several intermediate stops in the City of Racine and the Towns of Caledonia and Mt. Pleasant. Two private carriers, Greyhound Lines, Inc., and United Limo, Inc., operated intercity bus routes between Milwaukee and Chicago, with a stop along IH 94. Intercity passenger train service was operated between Milwaukee and Chicago by the National Railway Passenger Corporation, Amtrak, with a stop in the Village of Sturtevant.

8. Specialized transportation services for elderly and disabled individuals were also provided within the study area in 1997. The most significant service was offered by the Racine County Human Services Department, which administered two countywide programs: one providing a door-to-door transportation services to transportation handicapped individuals for general travel purposes and one providing a fixed-route, fixed-schedule transportation services to developmentally disabled individuals participating in the training and employment programs offered by Careers Industries of Racine, Inc., and the Racine County Opportunity Center within the study area. Other private nonprofit agencies and organizations providing service included: the American Red Cross, which provided transportation in the eastern Racine County for medical purpose trips; and the Racine County Ridgewood Care Center and Lincoln Lutheran of Racine, which provided transportation for the residents of their respective care facilities as dictated by their needs. Finally, four private for-profit companies also provided service to a significant number of passengers within the study area: Bella Mobile Care, Inc.; Medix Ambulance Services, Inc.;

Nichols Medical Transport, Inc.; and Recovery Medical Transport.

9. The Racine Unified School District provides schoolday transportation to students residing within the School District. The District currently contracts for yellow-bus service for about 13,800 students from a private company, School Services and Leasing, Inc., and also provides about 500 students who reside within the service area of the Belle Urban System with special school day bus passes and other students with tokens that can be used to travel for and from school on the City transit system.

Chapter IV

PUBLIC TRANSIT SERVICE OBJECTIVES, PRINCIPLES, 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 the transit system, together with the identification of supporting standards which can be used to measure the degree of attainment of the objectives. The objectives and standards provide the basis upon which the performance of existing transit services may be assessed, alternative service plans designed and evaluated, and recommendations for the institution or improvement of service made. The objectives formulated under this study are, accordingly, intended to represent the level of transit performance desired by the residents of the greater Racine area. Only if the objectives and standards clearly reflect the transit-related goals of the community will the recommended plan provide the desired level of service within the limits of available financial resources.

This chapter presents the public transit service objectives, principles, and standards formulated under this study to guide the preparation of a new transit system development plan for the greater Racine area. The objectives and supporting standards were used in evaluating the existing transit system, and in the design and evaluation of alternative improvement plans.

OBJECTIVES

The transit service objectives, principles, and standards set forth herein are intended to reflect the underlying values of the residents and the elected officials of the Racine community. The task of formulating objectives, principles, and standards must, therefore, involve interested and knowledgeable public officials and private citizens representing a broad cross-section of interests in the community, as well as individuals familiar with the technical aspects of providing transit service. Accordingly, one of the important functions of the Racine Area Public Transit Planning Advisory Committee was to articulate transit service objectives, principles, and supporting standards for the planning effort. By drawing upon the collective knowledge, experience, views, and values of the members of the Committee, it is believed that a meaningful expression of the performance desired for Racine transit system was obtained, and a relevant set of transit service objectives and supporting principles and standards was defined.

The specific objectives adopted basically envision a transit system which will effectively serve the City of Racine and adjacent communities while minimizing costs. More specifically, the following objectives were adopted by the Advisory Committee:

1. Public transit should be provided to 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 populations within those areas.

2. The public transit system should promote effective utilization of public transit services and provide for passenger convenience, comfort, and safety.

3. The public transit system should promote efficiency in the total transportation system.

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

PRINCIPLES AND STANDARDS

Complementing each of the foregoing transit service objectives is a planning principle and a set of service and design standards, as set forth in Table 37. The planning principle supports each objective by asserting its validity. Each set of standards is directly related to the transit service objective and serves several purposes, including the following: to facilitate quantitative application of the objectives in the evaluation of the existing transit system, to provide guidelines for the consideration of new or improved services, and to provide warrants for capital investment projects. The standards are intended to provide a relevant and important means of measuring the degree to which existing or proposed public transit services contribute to the attainment of each objective.

Table 37

PUBLIC TRANSIT SERVICE OBJECTIVES, PRINCIPLES, AND STANDARDS FOR THE CITY OF RACINE BELLE URBAN SYSTEM

Objective	Principle	Standards
1. Public transit should serve those areas of the City and its immediate environs which can be efficiently served. This includes those areas which are fully developed to medium or high densities and, in particular, areas with transit-dependent populations.	Public transit can provide an important means of access for all segments of the population, but particularly for low- to middle-income households, the youth and elderly, and the transportation-disabled	1. Local fixed-route transit service should be provided to serve existing and potential travel demand generated within areas of contiguous high- and medium-density urban development 2. Public transit service to residential neighborhoods[a] and major potential transit trip generators should be maximized. The major potential transit trip generators served should include the following: a. Major regional, community, and neighborhood retail and service centers[b] b. Educational institutions, including universities, colleges, vocational schools, secondary schools, and parochial schools[c] c. Major community and special medical centers[b] d. Major employment centers[d] e. Major governmental and public institutional centers[c] f. Major recreational areas[e] g. Facilities serving elderly or disabled individuals[b] h. Publicly or privately subsidized rental housing[e] 3. The population served and, particularly that portion which is transit-dependent, should be maximized 4. The number of jobs served should be maximized 5. Paratransit service should be available within the transit service area to meet the needs of disabled[f] individuals who are unable to use fixed-route bus service
2. The public transit system should promote effective utilization of public transit services and provide for user convenience, comfort, and safety	The benefits of a public transit system are, to a large extent, greatly related to the degree to which it is used. The extent of such use, as measured by public transit ridership, is a function of the degree to which the transit facilities and services provide for user convenience, comfort, and safety	1. Ridership on the transit system should be maximized. The following minimum systemwide effectiveness levels,[g] however, should be maintained: a. 12 annual rides per capita b. 1.3 revenue passengers per revenue vehicle-mile c. 16 revenue passengers per revenue vehicle-hour 2. Existing transit routes with ridership and effectiveness levels less than 80 percent of the average for all routes of the Belle Urban System should be reviewed for potential service changes unless special circumstances warrant otherwise.[h] The measures used to evaluate individual route ridership and effectiveness levels should include: a. Total boarding passengers per route b. Boarding passengers per route-mile c. Boarding passengers per revenue vehicle-mile d. Boarding passengers per revenue vehicle-hour e. Percent of weekday ridership carried on Saturday 3. Public transit service should be designed to provide adequate capacity to meet existing and projected demands. The average maximum load factor[i] during peak periods should not exceed 1.25 for local-transit service and 1.00 for express-transit service. During off-peak periods and at the 10-minute point,[j] the maximum load factor should not exceed 1.0 4. Operating headways for fixed-route transit services should be capable of accommodating passenger demand at the recommended load standards, but headways for local service shall not exceed 30 minutes during weekday peak period and 60 minutes during weekday offpeak and weekend periods unless special circumstances warrant otherwise 5. The transit system should be designed and operated to maximize schedule adherence and be "on time" at least 90 percent of the time[k] 6. Public transit routes should be direct in alignment, with a minimum of turns, and arranged to minimize transfers and duplication of service, which would discourage transit use

Table 37 (continued)

Objective	Principle	Standards
2. (continued)		7. Local transit service should have route spacings of one-half mile in high-density and medium-density areas 8. Express transit service should be provided as necessary to reduce travel times for the longest trips made between component parts of the study area 9. 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 traffic generators along express-transit routes. 10. Minimum travel speeds for fixed-route transit service should be provided as follows: a. For local-transit service: five miles per hour within the central business district and 10 miles per hour in all other areas b. For express-transit service: 10 miles per hour within the central business district and 20 miles per hour in all other areas 11. To provide protection from the weather, bus passenger shelters of an attractive design should be constructed at all major loading points 12. Paved passenger loading areas should be provided at all fixed-route transit loading and unloading points; all such points should be clearly marked by easily recognized signage 13. Consideration should be given to rehabilitating or replacing each public transit vehicle at the end of its normal service life, which shall be defined as follows: a. For standard-size, heavy-duty (approximately 35 to 40 feet) transit buses, normal service life is considered to be at least 12 years or at least 500,000 miles; b. For medium-size, heavy-duty (approximately 30 feet) transit buses, normal service life should be considered to be at least 10 years or 350,000 miles; c. For medium-size, medium-duty (approximately 30 feet) transit buses, normal service life should be considered to be at least seven years or at least 200,000 vehicle miles; d. For medium-size, light-duty (approximately 25-35 feet) transit buses, normal service life should be considered to be at least five years or at least 150,000 vehicle miles; and e. For other vehicles, such as automobiles and regular or accessible vans, normal service life should be considered to be at least four years or at least 100,000 vehicle miles
3. The public transit system should promote efficiency in the total transportation system	Public transit facilities and services can promote economy and efficiency in the total transportation system. The public transportation system has the potential to supply additional passenger transportation capacity, which can alleviate peak loadings on arterial street facilities and assist in reducing the demand for land necessary for parking facilities at major centers of land use activity. Efficient public transit service also has the potential to reduce energy consumption and air pollutant emissions	1. The total amount of energy and the total amount of energy per passenger-mile consumed in operating the total transportation system of which the transit system is an integral part, particularly petroleum-based fuels, should be minimized 2. The amount of highway system capacity which must be provided to serve travel demand should be minimized
4. The transit system should be economical and efficient, meeting all other objectives at the lowest possible cost	The total resources of the City are limited, hence any investment in transportation facilities and services provided outside the city limits of Racine would not occur at the expense of the City; 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	1. The total operating and capital investment for the transit system should be minimized and reflect efficient utilization of resources

Table 37 (continued)

Objective	Principle	Standards
4. (continued)		2. The operating expense per total vehicle mile, per total vehicle-hour, and per revenue passenger; and the operating deficit per revenue passenger should be minimized.[m] Annual increases in such costs should not exceed the average percentage increase experienced by medium-size urban bus systems Statewide 3. The fare policy for the 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 persons and frequent transit riders 4. Transit system operating revenues generated from passenger fares and sources other than general public operating subsidies should be maximized. The transit system should recover at least 23 percent of operating expenses from such revenues[n] 5. Periodic increases in passenger fares should be considered to maintain the financial stability of the transit system[o] 6. Existing bus routes with financial performance levels which are less than 80 percent of the average for all routes of the Belle Urban System, should be reviewed for service changes unless special circumstances warrant otherwise. The measures used to evaluate individual route financial performance should include: a. Operating expense per boarding passenger b. Operating deficit per boarding passenger c. Percent of operating expenses recovered from operating revenues, excluding general public operating subsidies

[a]Residential neighborhoods shall be considered as served by fixed-route transit service when located within one-quarter mile of a local route and one-half mile of an express route.

[b]Shall be considered as served if located within one block of a route.

[c]Shall be considered as served if located within one-eighth mile of a route.

[d]A major employment center shall be defined as an existing or planned concentration of industrial, commercial, or institutional establishments providing employment for more than 100 persons. Employment centers shall be considered as served if located within one-eighth mile of a local route and one-quarter mile of an express route

[e]Shall be considered as served if located within one-quarter mile of a local route and one-half mile of an express route.

[f]The disabled shall be defined as individuals who, by reason of illness, injury, congenital malfunction, or other permanent or temporary incapacity or disability, are unable without special facilities or special planning or design to utilize public transit services.

[g]The minimum systemwide effectiveness levels specified within this standard are based upon the average annual ridership per capita, per revenue vehicle-mile, and per revenue vehicle-hour for medium-size, urban bus systems within Wisconsin. During 1996, the Racine transit system carried 20.6 revenue passengers per capita, 1.4 revenue passengers per revenue vehicle-mile, and 17.3 revenue passengers per revenue vehicle-hour.

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

[i]The average maximum load factor is calculated by dividing the number of passengers at the maximum loading point of a route by the number of seats a that point during the operating period.

[j]The 10-minute point is a point located 10 minutes travel time from the maximum loading point on a route. This means that passengers generally should not have to stand on board the public transit vehicle for longer than 10 minutes.

[k]"On-time" is defined as schedule adherence within the range of one minute early and three minutes late.

[l]Construction of shelters for passengers at transit loading points should generally be considered where one or more of the following conditions exist: 1) the location serves major facilities designed specifically for the use of, or is frequently used by, elderly or disabled persons; 2) the location has a boarding passenger volume of 50 or more passengers per day; 3) the location is a major passenger transfer point between bus routes; or 4) the location is in a wide open space where waiting patrons would be unprotected from harsh weather conditions.

[m]During 1996, the systemwide average operating expense per total vehicle-mile on the Belle Urban transit system was $3.29, the total operating expense per total vehicle-hour was $40.44, the total operating expense per revenue passenger was $2.56, and the total operating deficit per revenue passenger was $1.98.

[n]Over the five-year period from 1992 through 1996, the Belle Urban System recovered an average of about 22.7 percent of its operating expenses from operating revenues. During 1996, the transit system recovered about 22.9 percent of its operating expenses from passenger and other revenues, excluding Federal, State, and local operating assistance funds.

[o]Increases in passenger fares should generally be considered when: 1) the actual cost recovery rate for the transit system goes below the rate prescribed in Standard 3 under Objectives 2, 2) operating expenses for the transit system have increased by 10 to 15 percent since fares were last raised, or 3) 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.

Source: SEWRPC.

Table 38

TRANSIT SERVICE OBJECTIVES AND STANDARDS WHICH CAN BE USED TO DEVELOP STATE-REQUIRED PERFORMANCE GOALS

Objectives and Standards		Performance Measures
Objective No. 2:	Promote Transit Utilization and Provide for User Comfort, Convenience, and Safety	
Standard No. 1:	Maximum Transit System Ridership	• 12 rides per capita. 1.3 revenue passengers per revenue vehicle-mile; 16 revenue passengers per revenue vehicle-hour[a]
Objective No. 4:	Provide Economical and Efficient Service	
Standard No. 2:	Minimize Operating Expenses and Operating Deficit per Unit of Transit Service and per Transit Ride	• Increases in operating expenses per total vehicle-mile, per total vehicle-hour, and per revenue passenger and increases in operating deficit per revenue passenger should not exceed the average Statewide percentage increase for medium-size urban bus systems Statewide
Standard No. 4:	Maximize Percent of Operating Expenses Recovered through Operating Revenues	• Recover at least 23 percent of operating expenses from operating revenues, excluding general public subsidies[b]

[a]*The specified performance levels are based upon average annual performance levels for medium-size urban bus systems within Wisconsin. During 1996, the Belle Urban System carried 20.6 passengers per capita, 1.4 revenue passengers per revenue vehicle-mile, and 17.3 revenue passengers per revenue vehicle-hour.*

[b]*Over the five-year period from 1992 through 1996, the Belle Urban System has recovered an average of 22.7 percent of its operating expenses from operating revenues. During 1991, the transit system recovered 22.9 percent of its operating expenses from operating revenues, excluding Federal, State, and local operating assistance funds. The highest recovery rate for the Belle Urban System since the City acquired it in 1975 was 51 percent of expenses from operating revenues, which occurred that same year.*

Source: SEWRPC.

The evaluation of the performance of existing transit system used in the current study included assessments of transit performance on the basis of both the system and individual routes. The service standards set forth in this chapter represent a comprehensive list from which specific performance standards and measures, as deemed appropriate, were drawn in conducting the systemwide and route performance evaluations. A more complete description of the evaluation process is presented in Chapter V.

A number of the service standards set forth in Table 37 can provide guidance toward meeting certain requirements which the Wisconsin Department of Transportation has attached to the provision of State urban transit operating assistance funds. As a condition of eligibility for receiving State operating assistance for urban transit, applicants must annually establish multi-year service and performance goals and assess the effectiveness of the transit system in relation to those goals on a quarterly basis. At a minimum, systemwide goals must be established for the following performance indicators: operating expense per total vehicle-mile, operating expense per platform-hour, operating expense per revenue passenger, the proportion of operating expenses recovered from operating revenues, revenue passengers per revenue vehicle-mile, and revenue passengers per service area population. The service standards formulated under this study which can be drawn upon to establish the State-required performance goals are listed in Table 38.

OVERRIDING CONSIDERATIONS

The objectives, principles, and standards set forth in Table 37 were intended to be used to guide the evaluation of the performance of existing transit system and the design and evaluation of alternative service improvements. In the application of the objectives, principles, and standards, several overriding considerations must be recognized.

First, it must be recognized that an overall evaluation of the existing public transit services and the alternative service plans must be made on the basis of cost. Such an analysis may prove the attainment of one or more standards to be beyond the economic capability of the community and, therefore, the standards cannot be met practically and must be either modified or eliminated.

Second, it must be recognized that a transit system is unlikely to all meet the standards fully. That the extent to which each standard is met, exceeded, or violated must serve as the final measure of the ability of the system to achieve the objective which a given standard supports.

Third, it must be recognized that certain intangible factors, including the perceived value of the transit service to the community and its potential acceptance by the concerned elected officials, may influence the preparation and selection of a recommended plan. Inasmuch as transit service may be perceived as a valuable service within the community, the community may decide to initiate or retain such services regardless of performance or cost. Only if a considerable degree of such acceptance exists will service recommendations be implemented and their anticipated benefits realized.

Chapter V

EVALUATION OF THE EXISTING TRANSIT SYSTEM

INTRODUCTION

This chapter documents the results of an evaluation of the performance of the City of Racine Belle Urban System based on the four transit service objectives and supporting standards set forth in Chapter IV of this report. Table 39 lists these objectives and the standards which were used in the evaluation to determine whether the objectives were being met by the existing system. Table 40 identifies the performance measure used to quantify the achievement of each standard and also identifies whether the standard was used in the systemwide or route performance evaluation of the transit system.

Not all the standards listed under each objective were used in the performance evaluation process since not all were deemed appropriate for such use. Some standards not used were primarily intended to serve as guidelines in the design of new and improved service. These standards were met in the design and operation of the current routes. Other standards not used were intended to serve as warrants for providing equipment and facilities for the transit system. These standards will be used to the extent necessary in the development of a program of recommended capital projects developed for the recommended transit system development plan. Still other standards not used were intended to be used in comparing the costs of alternative plans and will be used in evaluating the alternative plans and transit service improvements considered in Chapter VII.

The following sections of this chapter present the findings of the performance evaluation. Presented first is an assessment of transit performance on a systemwide basis to ascertain the extent to which the transit system currently serves the existing land use pattern, employment, and resident population of the study area; to assess the overall ridership and financial performance of the transit system; to determine the transit system's contribution to the efficiency of the total transportation system; and to determine the availability of transit services for disabled persons. This is followed by an evaluation of the performance of each route of the transit system with respect to ridership and effectiveness levels, operating headways and peak passenger loading characteristics, on-time performance, and directness of route alignment. The findings of the evaluation were used to develop the alternative service improvements and transit system plans described in Chapter VII of this report.

SYSTEMWIDE PERFORMANCE EVALUATION

Service to Existing Land Uses and Population Groups

Performance measures used to evaluate the existing transit service provided to study area land uses and population groups included measures of the total resident population served, the major nonresidential land use trip generators served, the transit-dependent population trip generators served, and the residential concentrations of transit-dependent population groups served, all as specified under Standards 1 through 4 of Objective No. 1. The evaluation was based upon the locations of the existing bus routes and the areal extent of service coverage provided by these routes, as shown on Map 21 in Chapter III. Ideally, the areal coverage should include the residential concentrations of the general and transit-dependent population, employment concentrations, and the potential major transit trip generators within the study area and, in particular, the City of Racine. Such residential areas, employment concentrations, and potential transit trip generators were identified in Chapter II.

The performance of the existing transit system with respect to these measures is summarized in Tables 41 through 44 and on Maps 24 through 26. On the basis of this information, the following conclusions were reached:

1. The existing transit system provides excellent areal coverage of the existing residential areas within the City of Racine, as well as within the Villages of Elmwood Park and North Bay, along the most densely populated residential areas adjacent to the City in the Towns of Caledonia and Mt. Pleasant and the Village of Sturtevant. Virtually 100 percent of the resident population of the City and about 85 percent of the resident population of the study area resided inside the Belle Urban System service area, that is, within one-quarter mile of a bus route. The resident population of the study area not served by the transit system resides principally within

Table 39

STANDARDS USED IN THE PERFORMANCE EVALUATION OF THE EXISTING TRANSIT SYSTEM

Objectives and Standards	Standard Used in Transit System Performance Evaluation
Objective No. 1: Provide Service to Portions of City Which Can be Efficiently Served	
Standard 1: Provide local fixed-route transit service within areas of contiguous high- and medium-density development	X
Standard 2: Maximize the residential and nonresidential land use areas served	X
Standard 3: Maximize the population served	X
Standard 4: Maximize the jobs served	X
Standard 5: Provide transportation services to serve disabled persons	X
Objective No. 2: Promote Transit Utilization and Provide for User Comfort, Convenience, and Safety	
Standard 1: Maximize transit system ridership	X
Standard 2: Review routes with substandard ridership and effectiveness levels	X
Standard 3: Provide adequate capacity so as not to exceed load factors	X
Standard 4: Provide service at headways capable of accommodating demand	X
Standard 5: Achieve minimum acceptable schedule adherence	X
Standard 6: Minimize indirect routing, duplication of service, and transfers which discourage transit use	X
Standard 7: Provide local routes at intervals of no more than one-half mile in high-density and medium-density residential areas	--
Standard 8: Provide express routes for longest trips in area served	--
Standard 9: Provide stops meeting minimum stop spacing	--
Standard 10: Provide service which meets or exceeds minimum vehicle speeds	--
Standard 11: Construct bus passenger shelters at major passenger loading areas	X
Standard 12: Provide signs and paved passenger loading areas at bus stops	X
Standard 13: Replace public transit vehicles at end of maximum service life for vehicles	--
Objective No. 3: Promote Efficiency in the Total Transportation System	
Standard 1: Minimize the energy consumed in operating the total transportation system	X
Standard 2: Minimize the amount of highway system capacity needed to serve travel demand	X
Objective No. 4: Provide Economical and Efficient Service	
Standard 1: Minimize total transit system operating and capital costs	--
Standard 2: Minimize operating expenses and public subsidy per unit of transit service and per transit ride	X
Standard 3: Provide premium fares for premium service and special or discounted fares for transit-dependent persons and frequent riders	X
Standard 4: Maximize percent of operating expenses recovered through operating revenues	X
Standard 5: Consider periodic increases in passenger fares	--
Standard 6: Review routes with substandard financial performance	X

Source: SEWRPC.

partially developed or undeveloped portions of the study area and other areas where residential densities are generally too low to support conventional fixed-route transit service. Only small unserved residential areas with densities capable of supporting local fixed-route bus service were found. These areas lie northeast of the intersection of Three Mile Road and Erie Street, north of Washington Avenue (STH 20) between Oakes Road and Emmertson Road, and southeast of the intersection of Durand Avenue (STH 11) and 90th Street.

2. The transit system provides excellent areal coverage of the employment concentrations inside the City of Racine and very good coverage of the employment concentrations outside of the City but in the study area. Approximately 98 percent of the jobs within the City and about 90 percent of the jobs

Table 40

APPLICATION OF SPECIFIC PERFORMANCE MEASURES IN THE PERFORMANCE EVALUATION PROCESS

Performance Measure by Objective	Systemwide Performance Evaluation	Route Performance Evaluation
Objective No. 1: Provide Service to Portions of City Which Can be Efficiently Served		
1. Population served	X	--
2. Total employment served	X	--
3. Major land use trip generators served	X	--
4. Areas of proposed new or expanding development served	X	--
5. Major transit-dependent-population trip generators served	X	--
6. Residential concentrations of transit-dependent populations served	X	--
7. Accessibility of fixed-route transit vehicles for disabled persons	X	--
8. Provision of specialized transportation services for disabled persons	X	--
Objective No. 2: Promote Transit Utilization and Provide for User Comfort, Convenience, and Safety		
1. Ridership per capita	X	--
2. Revenue passengers per revenue vehicle-mile	X	--
3. Revenue passengers per revenue vehicle-hour	X	--
4. Total boarding passengers	--	X
5. Boarding passengers per revenue vehicle-hour	--	X
6. Boarding passengers by scheduled bus run	--	X
7. Saturday ridership as a percent of weekday ridership	--	X
8. Percent on-time adherence	--	X
9. Travel distance and time by transit versus travel distance and time by automobile	--	X
10. Additional bus stop locations for passenger shelters	--	X
11. Bus stops with signs and paved loading areas	--	X
Objective No. 3: Promote Efficiency in the Total Transportation System		
1. Passenger-miles per gallon of petroleum-based fuel	X	--
2. Impacts on highway capacity due to transit system operation	X	--
Objective No. 4: Provide Economical and Efficient Service		
1. Operating expense per total vehicle-mile	X	--
2. Operating expense per platform-hour	X	--
3. Operating expense per revenue passenger	X	--
4. Operating deficit per revenue passenger	X	--
5. Operating expense per boarding passenger	--	X
6. Operating deficit per boarding passenger	--	X
7. Percent of operating expenses recovered by operating revenues	X	X
8. Special fares in existing fare structure	X	--

Source: SEWRPC.

within the study area were at employers located within the transit system service area.

Not all jobs in the transit service area should be considered as completely served because of the current hours of operation of the Belle Urban System, which are from 5:30 a.m. until 7:00 p.m. on weekdays and from 7:00 a.m. until 6:00 p.m. on Saturdays. With these operating hours, transit service would be convenient for most weekday first-shift starting and ending times. The service's weekday hours, however, would not serve the ending times of most second-shift jobs and the starting times of most third-shift jobs. More limited Saturday service hours and no Sunday service also restricts the ability of individuals working on weekends to use the transit system even though their jobs may be within the service area.

3. The transit system would only serve about one-half of the new and proposed development projects identified in the study area, serving only 26 of 49 projects identified. The high proportion of unserved new and proposed development projects is due to the fact that much of the new and proposed development is outside the City of Racine, which histori-

Table 41

TRANSIT SERVICE PROVIDED BY THE BELLE URBAN SYSTEM TO RACINE AREA LAND USES AND POPULATION GROUPS: 1997

Performance Measure	Systemwide Performance Characteristics
Population Served[a]	
Inside City	84,000
Outside City	29,100
Total	113,100
Percent of City of Racine Resident Population Served	99.6
Percent of Study Area Resident Population Served	85.1
Employment Served[b]	
Inside City	46,700
Outside City	17,900
Total	64,600
Percent of Total Employment within City of Racine Served	98.0
Percent of Total Employment within Study Area Served	90.0
New and Proposed Development Served[c]	
Residential	14 of 34
Commercial and Industrial	12 of 15
Total	26 of 49
Major Land Use Trip Generators Served[d]	
Retail, Service, and Office Centers	13 of 13
Educational Institutions	27 of 30
Community and Special Medical Centers	7 of 7
Governmental and Public Institutional Centers	19 of 24
Employment Centers	89 of 94
Recreational Areas	24 of 32
Total	158 of 177[e]
Transit-Dependent Population Trip Generators Served[f]	
Elderly Facilities	47 of 56
Disabled Facilities	27 of 27
Federally Subsidized Rental Housing	4 of 5
Total	77 of 87[e]
Residential Concentrations of Transit Dependent Population Groups	Served[g]

[a]*Residential areas were considered served by the transit system if they were located within one-quarter mile of a bus route. Population figures are based on the 1990 U. S. Federal Census.*

[b]*Employment figures shown represent the number of jobs located within one-quarter mile of a bus route, a maximum walking distance for transit users based on industry standards. Employment figures are based on 1990 estimates.*

[c]*The new and proposed developments within the study area not served by the Belle Urban System are presented in Table 42 and displayed in Map 24.*

[d]*The major land use trip generators within the study area not served by the Belle Urban System are presented in Table 43 and shown on Map 25.*

[e]*The total number of trip generators served does not equal the sum of the trip generators for all categories because some trip generators have been assigned to more than one category. The total reflects a correction for such trip generators so they are counted only once for this analysis.*

[f]*The transit-dependent population trip generators within the study area not served by the Belle Urban System are presented in Table 44 and shown on Map 26.*

[g]*The major residential concentrations of transit-dependent persons identified within the study area based upon 1990 U.S. Census data are shown on Map 3 in Chapter II by Census block group. Virtually all concentrations were served by the Belle Urban System with the exception of one area in the Town of Mt. Pleasant and one area the Village of Wind Point and the Town of Caledonia.*

Source: SEWRPC.

Table 42

NEW AND PROPOSED DEVELOPMENT IN THE STUDY AREA NOT SERVED[a] BY THE BELLE URBAN SYSTEM: 1997

Number on Map 24	Name	Residential	Commercial, Industrial, and Institutional
1	Baywood Estates West	X	--
2	Collova Property Subdivision	X	--
3	Condominiums	X	--
4	Country View Estates #6	X	--
5	Country View Estates #7	X	--
6	Fairfield Estates	X	--
7	Green Meadows	X	--
8	Jamestown II	X	--
9	Jamestown III	X	--
10	Majestic Hills II	X	--
11	Majestic Hills III	X	--
12	Majestic North	X	--
13	Midland Container	--	X
14	Needer Travel Services	--	X
15	Newberry Glen	X	--
16	Pheasant Creek	X	--
17	Regency Hills Addition No. 2	X	--
18	Regency Hills Addition No. 3	X	--
19	Regency Hills Addition No. 4	X	--
20	River Meadows	X	--
21	Training Facility	--	X
22	White Manor	X	--
23	Woodland Hills	X	--

[a]*New and proposed development are considered as served by the transit system based upon the following criteria as specified under the transit service objectives and standards:*

1. *Commercial, industrial, and institutional development must be located within one-eighth mile of a bus route.*
2. *Residential development must be located within one-quarter mile of a bus route.*

Source: SEWRPC.

Table 43

MAJOR LAND USE TRIP GENERATORS IN THE STUDY AREA NOT SERVED[a] BY THE BELLE URBAN SYSTEM: 1997

Number on Map 25	Name	Type of Major Land Use Trip Generator					
		Major Commercial and Office Center[b]	Educational Institution	Hospital and Medical Center[b]	Governmental and Public Institutional Center	Major Employment Center	Major Recreational Area
1	Armstrong Park	--	--	--	--	--	x
2	Caledonia/Mt. Pleasant Memorial Park	--	--	--	--	--	x
3	Caledonia Post Office	--	--	--	x	--	--
4	Caledonia Town Hall	--	--	--	x	--	--
5	Cliffside County Park	--	--	--	--	--	x
6	Franksville Post Office	--	--	--	x	--	--
7	Greenridge Park	--	--	--	--	--	x
8	Jensen Metal-Mastercraft	--	--	--	--	x	--
9	Johnson Park	--	--	--	--	--	x
10	Metro Milwaukee Auto Aucton	--	--	--	--	x	--
11	Racine County Highway and Office Building	--	--	--	x	x	--
12	Petrifying Springs County Park	--	--	--	--	--	x
13	The Prairie School	--	x	--	--	x	--
14	Sanders County Park	--	--	--	--	--	x
15	Shoop Park	--	--	--	--	--	x
16	St. Louis Elementary School	--	x	--	--	x	--
17	Trinity Lutheran School-Wisconsin Synod	--	x	--	--	--	--
18	Unico, Inc.	--	--	--	--	x	--
19	Wind Point Village Hall	--	--	--	x	--	--

[a]*Major land use centers are considered as served by the transit sytem if they met the following criteria as specified under the transit service objectives and standards:*

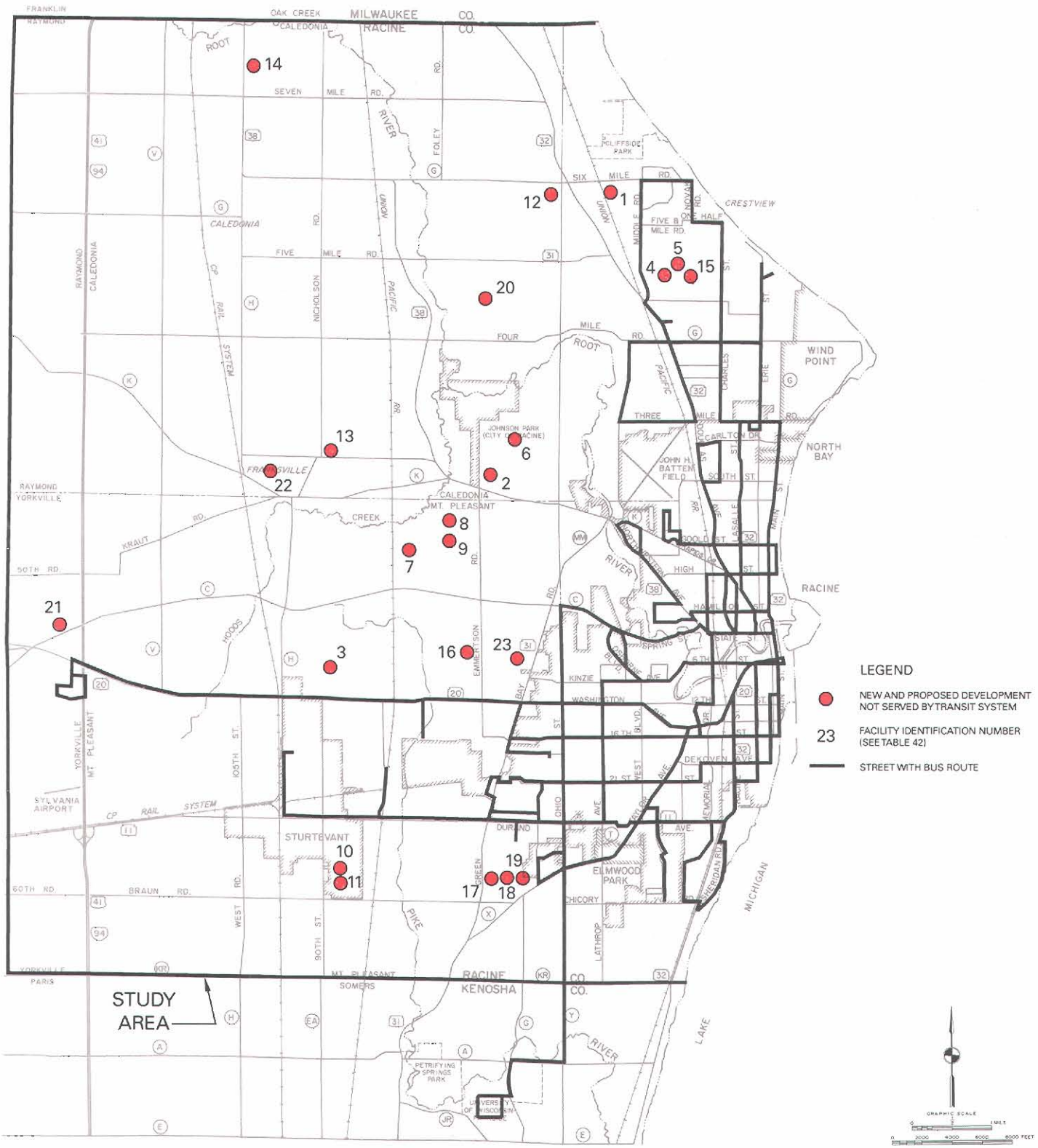
1. *Commercial and office centers must be located within one block of a bus route.*
2. *Educational institutions must be located within one-eighth mile of a bus route.*
3. *Hospitals and medical centers must be located within one block of a bus route.*
4. *Governmental and public institutional facilities must be located within one-eighth mile of a bus route.*
5. *Employment centers must be located within one-eighth mile of a bus route.*
6. *Recreational areas must be located within one-quarter mile of a bus route.*

[b]*All centers were served by the transit system.*

Source: SEWRPC.

Map 24

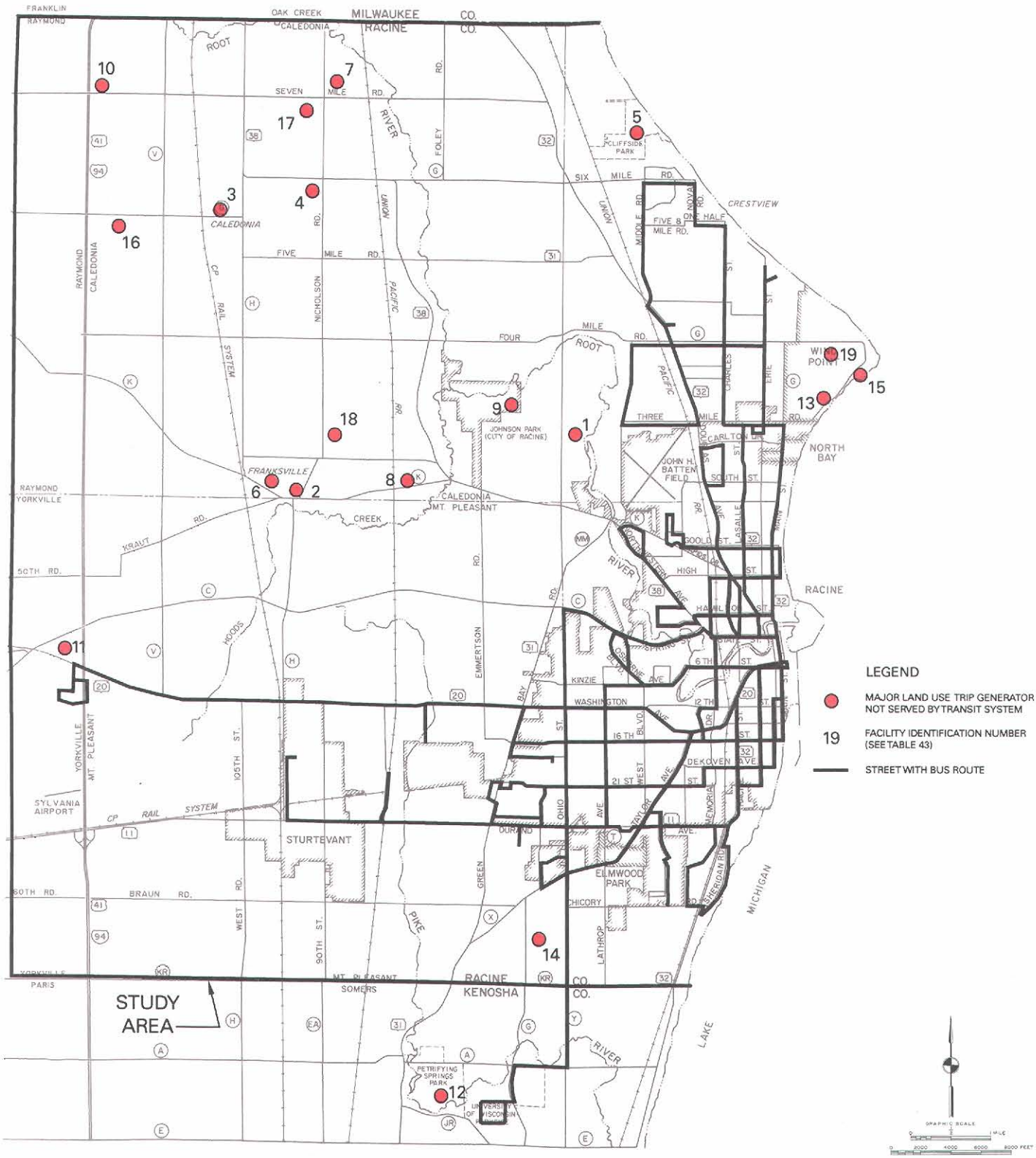
NEW AND PROPOSED DEVELOPMENT IN THE STUDY AREA NOT SERVED BY THE BELLE URBAN SYSTEM: 1997



Source: SEWRPC.

Map 25

MAJOR LAND USE TRIP GENERATORS IN THE STUDY AREA NOT SERVED BY THE BELLE URBAN SYSTEM: 1997



Source: SEWRPC.

Table 44

MAJOR TRANSIT-DEPENDENT POPULATION TRIP GENERATORS IN THE STUDY AREA NOT SERVED[a] BY THE BELLE URBAN SYSTEM: 1997

Number on Map 26	Name	Type of Transit-Dependent Population Trip Generator		
		Facility for the Elderly	Facility for the Disabled[b]	Federally Subsidized Rental Housing
1	Albert House	x	--	--
2	Becker-Shoop Center	x	--	--
3	Fountain Hills	x	--	--
4	Imperial Apartments	x	--	--
5	Loving Care Home	x	--	--
6	Loving Care Home	x	--	--
7	New Beginnings Group Home II	x	--	--
8	New Beginnings Group Home III	x	--	--
9	Rupe Home-Courtney	x	--	--
10	Woodside Village	--	--	x

[a] *Transit-dependent population trip generators are considered as served by the transit system if they met the following criteria as specified under the transit service objectives and standards:*

1. *Facilities for elderly and disabled persons must be located within one block of a bus system.*
2. *Subsidized housing for low-income persons must be located within one-quarter mile of a bus route.*

[b] *All centers were served by the transit system.*

Source: SEWRPC.

cally has been the primary service area for transit system. Most of the new and proposed residential developments identified in the study area in Table 9 in Chapter II, however, had estimated densities below 5.0 dwelling units per net residential acre seen as needed to provide efficient and cost-effective local bus service. Only four residential developments, all multi-family developments, had estimated densities over 5.0 dwelling units per net residential acre: only one of these was outside the existing transit system service area, in the Town of Mt. Pleasant. Extensions of bus service considered in the future should focus on serving the nonresidential developments identified in the study area.

4. The transit system provides good coverage of the existing major land use trip generators in the study area, serving 158 of the 177 of those identified. Of the 19 generators not considered as served, 18 are located outside the City of Racine and, therefore, outside the primary service area of the transit system. The remaining unserved center, Johnson Park, is inside the City, but is located west of Green Bay Road (STH 31) and is an island of the City in the Town of Caledonia and, therefore, outside the primary service area of the transit system.

5. The transit system provides good areal coverage of both the residential concentrations of transit-dependent population groups and the facilities used by these groups. A total of 77 of the 87 facilities identified were served by the transit system, including four of the five housing facilities identified for low-income persons, all 27 of the facilities identified for the disabled, and 47 of the 56 facilities identified for the elderly.

Ridership and Financial Performance

The systemwide ridership and financial performance of the Belle Urban System was evaluated by using the key measures of ridership performance specified under Objective No. 2, Standard No. 1, and the key measures of financial performance specified under Objective No. 4, Standards No. 2, 4, and 6. The performance measures used to evaluate existing transit system ridership included annual ridership per capita, annual revenue passengers per revenue vehicle-mile, and annual revenue passengers per revenue vehicle-hour. The measures used to evaluate the financial performance of the transit system included operating expense per total vehicle-mile and per total vehicle-hour, operating expense and operating deficit per revenue passenger, and percent of operating expenses recovered from operating revenues, often referred to as the farebox-recovery rate. The observed performance levels of the Belle Urban System for these measures were compared with minimum performance levels specified under the transit service standards and also with the average performance levels for a group of twelve urban bus systems Statewide.[1] The ridership data and financial data used covered the five-year period from 1992 through 1996, representing the most recent period for which such information was available for the group of Wisconsin urban bus systems. All data were obtained from reports prepared by each transit system and submitted to the Federal Transit Administration and the Wisconsin Department of Transportation.

The performance of the existing transit system with respect to these measures is summarized in Table 45. Based upon this information, the following conclusions were reached:

1. In terms of ridership, the Belle Urban System has about the same, or a slightly higher, effectiveness

[1] *Averages for key performance indicators were developed on the basis of information reported by a group of 12 Wisconsin small and medium-size urban bus systems in Appleton, Beloit, Eau Claire, Green Bay, Janesville, Kenosha, LaCrosse, Oshkosh, Racine, Sheboygan, Wausau, and the City of Waukesha.*

Map 26

MAJOR TRANSIT-DEPENDENT POPULATION TRIP GENERATORS IN THE STUDY AREA NOT SERVED BY THE BELLE URBAN SYSTEM: 1997

Source: SEWRPC.

Table 45

KEY INDICATORS OF RIDERSHIP AND FINANCIAL PERFORMANCE FOR THE BELLE URBAN SYSTEM IN COMPARISON TO THE AVERAGE FOR SIMILAR WISCONSIN BUS SYSTEMS: 1992-1996

Performance Measure	Operating Data[a]	
	City of Racine Belle Urban System	Average for Wisconsin Small and Medium-Size Bus Systems[b]
Ridership: 1996		
Ridership per Capita	13.00	10.50
Revenue Passengers per Revenue Vehicle-Mile	1.36	1.21
Revenue Passengers per Revenue Vehicle-Hour	17.20	16.80
Ridership Change: 1992-1996		
Annual Revenue Passengers		
1992	1,820,600	883,900
1996	1,751,900	859,700
Average Annual Percentage Change 1992-1996	-1.0	-0.7
Financial Performance Change: 1992-1996		
Operating Expense per Total Vehicle-Mile		
1992	$ 2.85	$ 2.91
1996	$ 3.39	$ 3.51
Average Annual Percentage Change 1992-1996	4.4[c]	4.8[c]
Operating Expense per Total Vehicle-Hour		
1992	$33.64	$36.75
1996	$41.67	$46.76
Average Annual Percentage Change 1992-1996	5.5[c]	6.2[c]
Operating Expense per Revenue Passenger		
1992	$ 2.11	$ 2.41
1996	$ 2.66	$ 3.04
Average Annual Percentage Change 1992-1996	6.0	6.0
Operating Deficit per Revenue Passenger		
1992	$ 1.61	$ 1.96
1996	$ 2.04	$ 2.43
Average Annual Percentage Change 1992-1996	6.1	5.5
Percent of Operating Expenses Recovered from Operating Revenues		
1992	23.4	18.8
1996	23.4	19.9
Average Annual Percentage Change 1992-1996	--	1.4

[a] *Ridership and service data were obtained from reports submitted by each transit operator to the Wisconsin Department of Transportation. Financial data were obtained from reports prepared by each transit operator and submitted to the Federal Transit Administration to comply with National Transit Database reporting requirements.*

[b] *Averages for key performance indicators were developed based on information reported by the following group of 12 Wisconsin small and medium-size urban bus systems: Appleton, Beloit, Eau Claire, Green Bay, Janesville, Kenosha, La Crosse, Oshkosh, Racine, Sheboygan, Wausau and the City of Waukesha.*

[c] *The average annual percentage change in the Consumer Price Index within the Region for the period 1992-1996 was about 3.1 percent.*

Source: Wisconsin Department of Transportation and SEWRPC.

level as the average Statewide average. Ridership on the Belle Urban System in 1996 exceeded the average for the 12 urban bus systems in Wisconsin in terms of annual rides per capita and was about the same as the average of the other systems in terms of passengers per revenue vehicle-mile and per revenue vehicle-hour. The effectiveness levels of the Belle Urban System also exceeded the mini-

Table 46

COMPARISON OF THE WEEKDAY ENERGY-EFFICIENCY OF PUBLIC TRANSIT SYSTEMS IN SOUTHEASTERN WISCONSIN: 1996

Characteristic	Transit System Operating Data[a]				
	Waukesha County Transit System	Milwaukee County Transit System	City of Racine Transit System	City of Kenosha Transit System	City of Waukesha Transit System
Estimated Energy Efficiency of Travel By Transit					
Unlinked Transit Passenger Trips[b]	1,425	192,959	8,447	5,606	2,356
Transit Passenger-Miles of Travel	20,130	543,930	20,994	18,220	7,728
Passenger-Miles per Transit Trip	14.1	2.8	2.5	3.3	3.3
Total Bus Miles	2,835	58,283	4,697	3,192	2,571
Bus-Miles per Gallon of Diesel Fuel	5.3	4.2	3.9	4.1	4.4
Gallons of Petroleum-Based Fuel Used	535	13,920	1,194	780	587
Transit Passenger-Miles per Gallon of Diesel Fuel	37.6	39.1	17.6	23.4	13.2
Estimated Energy Efficiency If Transit Trips Were Made by Automobile					
Automobile Passenger-Miles of Travel	20,130	543,940	20,994	18,220	7,728
Vehicle-Miles (at 1.0-1.2 passengers per automobile)	16,775-20,130	453,283-543,940	17,495-20,994	15,183-18,220	4,440-7,728
Vehicle-Miles per Gallon of Gasoline[c]	21.2	14.6	14.0	14.0	14.0
Automobile Passenger-Miles per Gallon of Gasoline	21.2-25.4	14.6-17.5	14.0-16.8	14.0-16.8	14.0-16.8

[a] *Transit system data are based upon information reported by each transit operator in its 1996 National Transit Database report submitted to the Federal Transit Administration.*

[b] *Represents all boarding passengers including transfer and free passengers.*

[c] *Estimated based on an average auto fuel efficiency of about 21 miles per gallon, with average efficiency of about 14 miles per gallon for central city standard arterial travel and 26 miles per gallon for freeway and expressway travel.*

Source: SEWRPC.

mum effectiveness levels of 12 rides per capita, 1.3 revenue passengers per vehicle-hour, and 16 revenue passengers per revenue vehicle-hour specified under the transit service standards. From 1992 to 1996, the Belle Urban System saw an average annual loss of ridership similar to the average annual loss experienced by the other Wisconsin urban bus systems.

2. In terms of financial performance, the trends for the Belle Urban System also compare favorably with the trends for the Statewide group of urban bus systems from 1992 through 1996 with respect to changes in costs per unit of service and changes in operating costs and deficits per passenger. Operating expenses per vehicle-mile and per vehicle-hour for the Belle Urban System and the operating costs and deficits for the system increased at about the same rate as those experienced by the comparable group of Statewide urban bus systems over this period.

3. For the same period, the farebox recovery rate for the Belle Urban System remained stable at about 23 percent of operating expenses, which is the rate specified under the transit service standards. Over the same period, the farebox recovery rate for the Statewide group of urban bus systems increased by about 1 percent, from 19 percent to 20 percent of operating expenses. Notably, the farebox recovery rate for the Belle Urban System has been about 18 to 24 percent higher than the average for the Statewide group of urban bus systems for the five-year period.

Contributions to the Efficiency of the Total Transportation System

Objective No. 3 concerns the operation of public transit services and facilities to promote both economy and efficiency in the total transportation system. This objective is supported by two standards, one relating to utilization of energy and the other to provision of adequate highway system capacity.

The first standard under this objective requires that the amount of energy, particularly petroleum-based motor fuels, utilized in operating the transportation system be minimized. This standard is intended to measure the potential energy savings of public transit services provided by the Belle Urban System. To measure compliance with this standard, a comparison of relative energy efficiency of the current Racine transit system with that of automobile travel was undertaken and is presented in Table 46, along with similar comparisons for the other urban public transit systems in Southeastern Wisconsin.

Table 47

TOTAL VEHICLE AND TRANSIT PASSENGER VOLUMES ON SELECTED SURFACE ARTERIALS IN THE CITY OF RACINE: 1996

Location	Average Weekday			Peak Hour		
	Vehicle Count	Transit Passenger Count	Potential Percent Increase in Vehicle Traffic if Transit Trips Use Automobile[a]	Vehicle Count	Transit Passenger Count	Potential Percent Increase in Vehicle Traffic if Transit Trips Use Automobile[a]
Washington Avenue (between Taylor Avenue and Phillips Avenue)	17,500	600	3	1,750	90	4
Main Street (between 7th Street and 6th Street)	9,700	1,970	16	970	220	16
State Street (between Marquette Avenue and Douglas Avenue)	8,900	460	4	890	100	9
Racine Street (between 24th Street and Durand Avenue)	15,800	550	3	1,580	110	6
Main Street (between High Street and Hamilton Street)	12,100	280	2	1,210	40	3

[a]*Assumes an average automobile occupancy of 1.06 persons per auto for work trips and 1.33 persons per auto for all other trips. About 25 percent of weekday trips on the transit system are home-based work trips.*

Source: SEWRPC.

The second standard under Objective No. 3 states that the amount of highway system capacity provided to serve total travel demand should be minimized. The intent of this standard is to measure the impact of the additional passenger transportation capacity provided by the public transportation system on peak-traffic loadings on arterial street and highway facilities and on the need for improvements to existing arterial streets and highways. Table 47 compares the current total vehicle traffic volume and the transit passenger volume on selected arterial street segments in the City of Racine. The street segments selected include arterial streets carrying a major route of the transit system and streets within the central business district (CBD) where, generally, more than one route uses the same street. In reviewing the data, it should be noted that information presented on an average weekday basis understates somewhat the transportation system benefits of public transit. This understatement occurs because a higher percentage of average weekday transit passenger volumes, about 15 percent for the Belle Urban System, is typically carried during the morning or evening peak-traffic hour, than vehicle traffic volumes. The latter peak at 8 to 10 percent of the average weekday total. For this reason, data are also provided for peak-hour traffic and transit passenger volumes.

Based on the above information, the following conclusions were reached:

1. The overall energy efficiency of the Belle Urban System in serving travel on an average weekday within the Racine area is somewhat higher than that of the private automobile. According to 1996 operating information for the Belle Urban System, the transit system provided about 18 passenger-miles of travel for every gallon of fuel consumed. This compares with an estimated 14 to 17 passenger-miles of travel provided per gallon of fuel if the transit trips had, instead, been made by automobile.[2] Consequently, the transit service provided by the system does reduce the daily use of petroleum-based motor fuels by Racine residents.

   The information presented in Table 46 would indicate that the transit systems within the Region are generally more energy-efficient than the automobile. The transit system serving Milwaukee County and the Waukesha County transit system, which serves primarily commuter travel between Waukesha County and the City of Milwaukee CBD, are substantially more energy-efficient than the private automobile. The higher efficiency of the Milwaukee County Transit System may be attributed to its service area, which includes central Milwaukee County, with high-density land uses and attendant travel and transit demand, particularly to and from

[2]*This estimated range of automobile efficiency assumes an average 14 mile-per-gallon fuel efficiency for an automobile operated in city travel. The upper end of the range assumes that the comparable automobile travel is made at the average automobile occupancy in the Racine area, about 1.2 persons per vehicle. The lower end of the range for automobile travel is based on an average auto occupancy of 1.0 person, assuming that present transit passengers do not now have the opportunity to travel by carpool and, therefore, would not have such opportunity if they were assumed to have an automobile available for their travel.*

the City of Milwaukee CBD. The higher energy efficiency of the Waukesha County transit system may be attributed to the focus of its service on travel between Waukesha County and the City of Milwaukee CBD and to the limitation of a sizable portion of its service to the morning and afternoon peak-traffic periods.

Each transit system generally operates at levels substantially higher than their average energy efficiency during the weekday peak-traffic periods and generally substantially lower than average levels during off-peak periods. In addition, each transit system generally operates at substantially higher than average energy efficiency on routes which carry more than average passenger loadings. Conversely, each generally operates at substantially lower than average energy efficiency on routes which carry less than average passenger loadings.

In general, it can be stated that the public transit systems in the City of Racine and the other urban areas in Southeastern Wisconsin do, on a daily systemwide basis, provide energy savings as compared to the automobile. Furthermore, public transit is more energy-efficient than the automobile on its more heavily traveled routes and during peak-traffic periods, but only marginally more energy-efficient, or, in some cases, less energy-efficient, than the automobile on its more lightly traveled routes and during off-peak periods.

2. It would appear that the Belle Urban System may contribute to efficiency in the utilization of the total capacity of the transportation system. If the people traveling by public transit were, instead, traveling by automobile, there would be an increase in automobile traffic on arterial streets of from 4 to 16 percent during the peak-traffic hour. The effect would be most pronounced on the streets in the City of Racine CBD, where the potential for traffic congestion exists during peak-traffic hours.

Provision of Transportation Services for Disabled Individuals

The provision of transportation services for disabled individuals is stipulated under Objective No. 1, Standard 6. The applicable specific performance measures reflect the need for both specialized transportation services and fixed-route service to be accessible. The Belle Urban System provides transit service for disabled persons in two ways.

First, the system contracts for paratransit service for those disabled individuals who are unable to use the fixed-route system, with eligibility requirements and service criteria of the service conforming to the requirements of the Americans with Disability Act of 1990 (ADA). The paratransit service, which is provided through Countywide specialized transit programs of the Racine County Human Services Department, has been in compliance with the Federal ADA requirements since 1992. Notably, this paratransit service, with its extensive service levels, is provided throughout the study area, not limited to the Federally required area within three-quarters of a mile of a regular bus route.

Second, the Belle Urban System also provides service to disabled individuals by utilizing accessible vehicles on its regular bus routes. With the delivery of 23 new accessible buses in May 1997, accessible buses currently make up 31, or 78 percent, of the 40[3] buses available for use on a regular basis on the regular routes of the system. This accessible bus fleet will allow 100 percent of the buses operated by the transit system during offpeak service periods and approximately 85 to 90 percent of the buses operated during peak-service periods, to be accessible to disabled persons using wheelchairs.

Provision of Special Fares

Objective 4, Standard 3, states that the transit system should provide premium fares for premium services and discounted fares for transit-dependent persons and frequent riders. The only service currently provided by the transit system that may be considered a premium service is the express service provided by Route No. 20 between central Racine and employers in the western portion of the study area. The transit system currently does not charge a premium fare for this express service. The transit system provides reduced cash fares to elderly and disabled individuals and also provides reduced fares to frequent riders in the form of monthly passes for adults, the elderly, and disabled individuals.

A review of the fares charged by other Wisconsin urban bus systems was conducted to determine if other types of special fares were being used. Such fares used by other transit systems include student fares for school-age children, priced between adult fares and elderly and disabled fares, and a Saturday "superpass," which permits users of the transit system to make unlimited rides on Saturday for

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[3]*Transit system officials have indicated that with the delivery of 23 new buses, five of the buses listed in Table 27 in Chapter III, 1981 Flxible 870 models with wheelchair lifts, will no longer be used on a regular basis.*

one fare priced between 25 and 50 percent over the adult cash fare. The Belle Urban System currently does not use either the reduced student fare or the Saturday "superpass."

ROUTE PERFORMANCE EVALUATION

Route Ridership and Financial Performance

The evaluation of route ridership and financial performance was based on the standards under Objectives No. 2 and 4. The ridership and financial performance characteristics of the regular bus routes of the City of Racine transit system are shown in Table 48 and in Figures 8 through 15. The data presented in this table and in the figures are based upon the operating characteristics and the total daily ridership, revenue passengers and transfer passengers, for each route of the Belle Urban System from passenger counts taken from October 7 through 12, 1996, and on an average systemwide cost per vehicle-mile and revenue per boarding passenger for the transit system during 1996.

The performance measures included in Table 48 provide an indication of the ridership, productivity, and financial performance of each bus route. For each performance measure, a minimum performance level of 80 percent of the systemwide average was set under the transit service objectives and standards. Use of the systemwide average as the performance standard directs the transit system toward improving the performance of routes that are significantly below average so that, over time, the overall performance of the entire transit system will improve.

To supplement this route ridership and financial information, the boarding and alighting passenger activity along each bus route was also examined to help identify productive and nonproductive route segments. Information concerning the number of boarding and alighting passengers by location for each bus route was obtained from passenger counts conducted during the period October 8-10, 1996. To facilitate the analysis of the passenger boarding and alighting information, the bus routes were divided into segments based upon distance and land uses served. Information on the total passenger activity, boarding passengers and alighting passengers for each route segment, is provided in Figure 16, while the route segments are identified on Map 27. Approximately 15,000 boarding and alighting passengers were recorded over the 81 route segments identified on the system. The route segments were divided into three groups, based upon passenger activity. About 10,100 passengers, or about 67 percent of the total recorded, boarded or alighted on the 27 most productive route segments. In contrast, only about 1,000 passengers, or about 7 percent of the total recorded, boarded or alighted on the 27 route segments having the lowest passenger boarding and alighting activity. The 27 most productive and the 27 least productive route segments are shown on Map 27.

On the basis of the above information, the following conclusions were reached:

1. Certain bus routes have weekday performance levels consistently above the specified performance standard of 80 percent of the systemwide average effectiveness levels. They are Route Nos. 1, 2, 3, 4, 5, and 7. Of these, Route Nos. 3, 4, and 7 are clearly the best performers, showing weekday effectiveness levels which exceed 100 percent of the systemwide average for all measures of performance. The remaining three, Route Nos. 1, 2, and 5, have acceptable weekday effectiveness levels within 80 to 100 percent of the systemwide average for all performance measures. Based solely upon ridership and financial performance, these routes could continue to be operated without change.

2. The other five routes of the system, Route Nos. 6, 8, 9, 10, and 20, show weekday performance levels consistently below the specified performance standard. Of the 27 least productive route segments on the system, 23 are accounted for by these five routes, including all 12 of the segments on Route No. 10. Potential changes to these routes to improve performance should be considered. It should be noted, however, that Route No. 20 operates only during the morning and afternoon peak periods on weekdays and, consequently, provides significantly less service than the other routes of the transit system. This directly affects the level of ridership the route is able to generate.

3. While Route No. 10 had the most unproductive route segments, at least one unproductive route segment was also found on all other routes of the system except Route No. 3, which included no unproductive segments. This information should be viewed as an indicator of where routing changes should be considered. This is particularly true of Route No. 10, which, as noted above, is comprised entirely of segments with very low ridership levels. It should be noted, however, that some of the route segments with the lowest riderships occur where bus routes pass through areas with little residential development or few major trip generators as they travel towards residential areas or trip generators within the greater Racine area which do generate significant ridership. Consequently, if the transit system is to continue to provide extensive areal

Table 48

AVERAGE WEEKDAY AND SATURDAY PERFORMANCE CHARACTERISTICS OF THE BELLE URBAN SYSTEM: OCTOBER 7-12, 1996

	Performance Characteristics																	
	Length (round-trip route miles)		Revenue Vehicle-Hours		Revenue Vehicle-Miles		Total Boarding Passengers				Boarding Passengers per Route Mile				Boarding Passengers per Revenue Vehicle-Hour			
							Weekdays		Saturdays		Weekdays		Saturdays		Weekdays		Saturdays	
Bus Route	Weekdays	Saturday	Weekdays	Saturday	Weekdays	Saturday	Number	Route Rank[a]	Number	Route Rank[a]	Number	Route Rank[a]	Number	Route Rank[a]	Number	Route Rank[a]	Number	Route Rank[a]
1	14.9	14.9	39.8	32.3	396.0	321.0	920	4	450	4	61.7	3	30.2	3	23.1	3	13.9	4
2	17.9	17.9	39.8	32.3	473.0	383.0	810	5	420	5	45.4	6	23.5	5	20.4	5	13.0	5
3	20.3	20.3	50.5	32.3	650.0	437.0	1,330	2	520	3	65.5	2	25.6	4	26.3	2	16.1	3
4	17.9	17.9	50.5	32.3	574.0	386.0	1,350	1	1,090	1	75.4	1	60.9	1	26.7	1	33.7	1
5	16.0	16.0	39.8	32.3	425.0	344.0	800	6	360	6	50.0	5	22.5	6	20.1	6	11.1	7*
6	13.3	13.3	27.0	22.0	359.0	293.0	430	7*	250	7*	32.3	8*	18.8	7*	15.9	9*	11.4	6*
7	17.2	19.8	46.3	31.8	576.0	419.0	1,050	3	690	2	61.0	4	34.8	2	22.7	4	21.7	2
8	13.0	13.0	27.0	22.0	351.0	283.0	450	8*	220	8*	34.6	7	16.9	8*	16.7	8*	10.0	8*
9	16.7	--	22.5	--	384.0	--	250	9*	--	--	15.0	9*	--	--	11.1	10*	--	--
10	15.9	15.9	13.5	10.3	286.0	223.0	120	10*	40	9*	7.5	10*	2.5	9*	8.9	11*	3.9	9*
20	22.5	--	4.0	--	90.0	--	70	11*	--	--	3.1	11*	--	--	17.5	7	--	--
Systemwide Total/Average	185.6	149.0	360.7	247.6	4,564.0	3,089.0	7,580	--	4,040	--	40.9	--	27.1	--	21.0	--	16.3	--

	Performance Characteristics																	
	Boarding Passengers per Revenue Vehicle-Mile				Operating Cost per Boarding Passenger[b]				Operating Deficit per Boarding Passenger[b]				Percent of Operating Costs Recovered through Operating Revenues				Saturday Ridership as a Percent of Weekday Ridership	
	Weekdays		Saturdays		Weekdays		Saturdays		Weekdays		Saturdays		Weekdays		Saturdays			
Bus Route	Number	Route Rank[a]	Number	Route Rank[a]	Cost($)	Route Rank[a]	Cost($)	Route Rank[a]	Cost($)	Route Rank[a]	Cost($)	Route Rank[a]	Number	Route Rank[a]	Number	Route Rank[a]	Number	Route Rank[a]
1	2.3	2	1.4	3	1.45	1	2.44	3	1.01	1	2.00	3	30.3	1	18.0	3	48.9	6
2	1.7	6	1.1	5	1.94	6	3.08	5*	1.50	6	2.64	5*	22.7	6	14.3	5	51.9	4
3	2.0	3	1.2	4	1.68	3	2.80	4	1.24	3	2.36	4	26.2	3	15.7	4	39.1	8*
4	2.4	1	2.8	1	1.51	2	1.20	1	1.07	2	0.76	1	29.1	2	36.7	1	80.7	1
5	1.9	4	1.0	6*	1.76	4	3.20	6*	1.32	4	2.76	6*	25.0	4	13.7	6*	45.0	7
6	1.2	8*	0.9	7*	2.68	8*	3.79	7*	2.24	8*	3.35	7*	16.4	8*	11.6	7*	58.1	3
7	1.8	5	1.6	2	1.82	5	2.02	2	1.38	5	1.58	2	24.2	5	21.8	2	65.7	2
8	1.3	7*	0.8	8*	2.51	7*	4.17	8*	2.07	7*	3.73	8*	17.5	7	10.6	8*	48.9	5
9	0.7	10*	--	--	5.00	10*	--	--	4.56	10*	--	--	8.8	10*	--	--	--	--
10	0.4	11*	0.2	9*	7.90	11*	18.76	9*	7.46	11*	18.32	9*	5.6	11*	2.3	9*	33.3	9*
20	0.8	9*	--	--	4.67	9*	--	--	4.23	9*	--	--	9.4	9*	--	--	--	--
Systemwide Total/Average	1.7	--	1.3	--	2.02	--	2.55	--	1.58	--	2.11	--	21.8	--	17.3	--	53.3	--

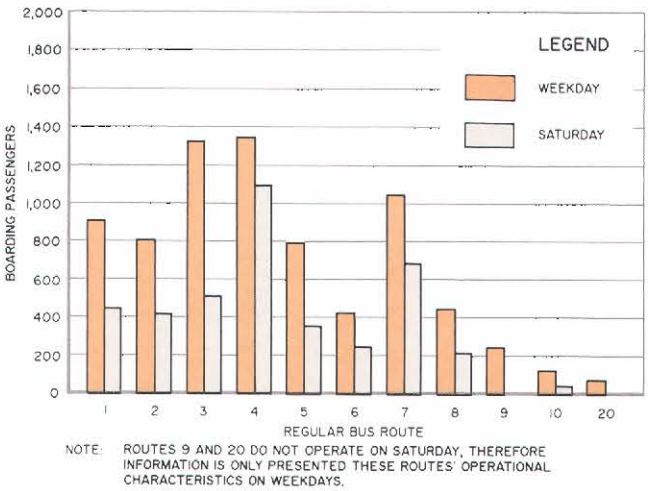
*[a]An * indicates that the route performs below 80% of the systemwide average for a particular performance measure.*

[b]Figures represent estimates and are based upon systemwide average operating expenses and average passenger revenues. Estimates of average daily operating expenses per route were based upon the systemwide average operating cost for calendar year 1996 of $3.14 per vehicle mile and total daily vehicle-miles for each route for the Belle Urban System regular bus service. Estimates of average daily revenues for each route were based upon average daily passengers for the week of October 7-12, 1996 and the average revenue per boarding passenger for calendar year 1996 of about $0.44 per passenger. Calculating the cost-efficiency of each bus route on a cost-per-vehicle-mile basis is most appropriate for Routes No. 1 through 10. These routes all provide local service with frequent stops and operate at an average speed of about 12.5 miles per hour. In contrast, Route No. 20 provides express service with infrequent stops and operates at an average speed of 22.5 miles per hour, thereby making more efficient use of vehicle operators. Wages and fringe benefits for vehicle operators accounted for about one-half of the total operating costs of the regular routes of the Belle Urban System in 1996. Calculating the cost-efficiency of Route No. 20 on a cost-per-vehicle-hour basis may, therefore, be more appropriate. Based on the 1996 systemwide average operating cost per total vehicle-hour of $38.63 for the regular routes of the Belle Urban System, Route No. 20 would have a total operating cost per passenger of $2.92, a total operating deficit per passenger of $2.48, and a farebox recovery rate of just over 15 percent. These performance measures would be at about 50 to 60 percent of system averages. However, Route No. 20 would still rank ninth in comparison with the other regular routes of the system with respect to these performance measures.

Source: City of Racine Department of Transportation and SEWRPC.

Figure 8

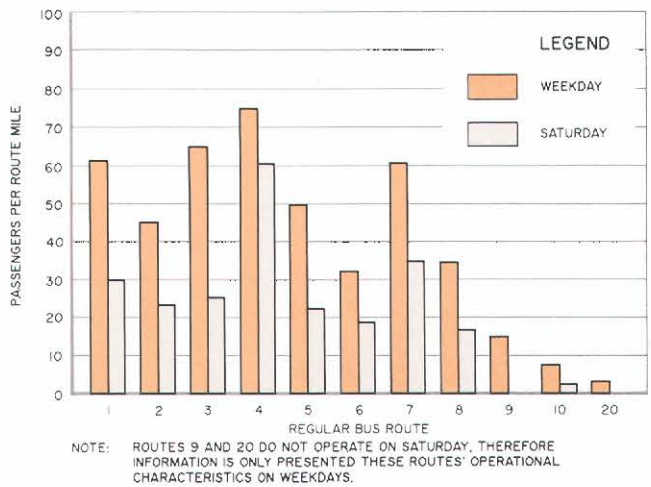
TOTAL PASSENGERS FOR THE ROUTES OF THE RACINE TRANSIT SYSTEM: OCTOBER 7-12, 1996



Source: City of Racine Department of Transportation and SEWRPC.

Figure 9

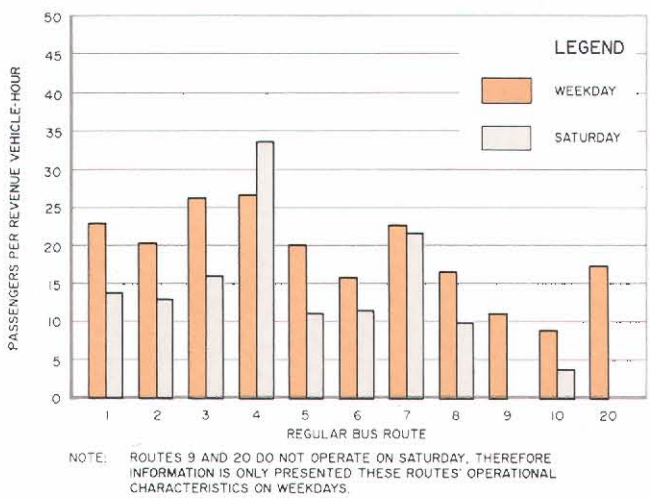
TOTAL PASSENGERS PER ROUTE-MILE ON THE REGULAR ROUTES OF THE RACINE TRANSIT SYSTEM: OCTOBER 7-12, 1996



Source: City of Racine Department of Transportation and SEWRPC.

Figure 10

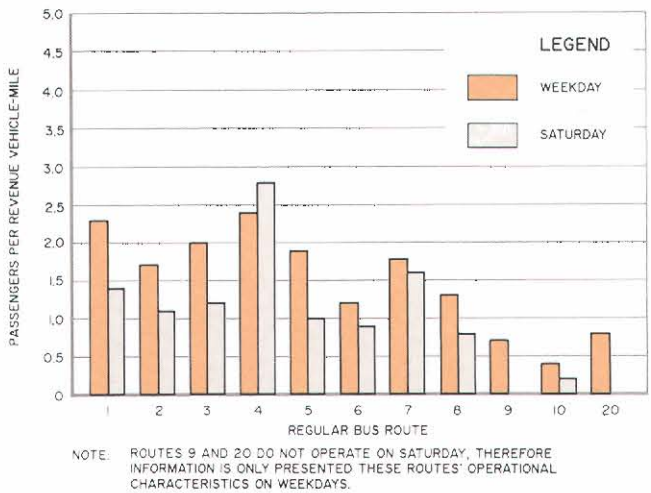
TOTAL PASSENGERS PER REVENUE VEHICLE-HOUR ON THE REGULAR ROUTES OF THE RACINE TRANSIT SYSTEM: OCTOBER 7-12, 1996



Source: City of Racine Department of Transportation and SEWRPC.

Figure 11

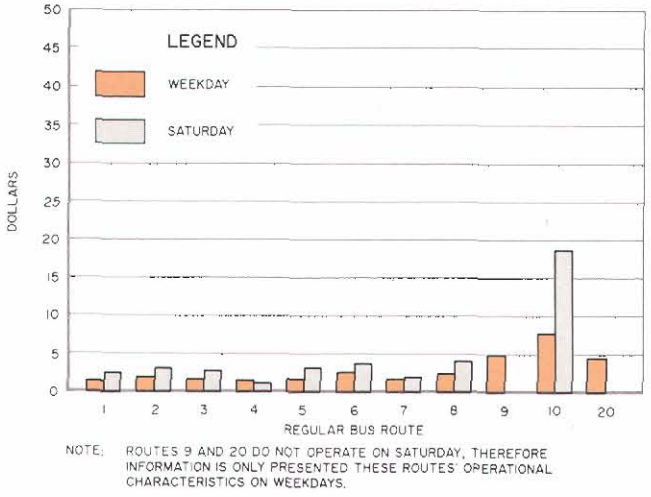
TOTAL PASSENGERS PER REVENUE VEHICLE-MILE ON THE REGULAR ROUTES OF THE RACINE TRANSIT SYSTEM: OCTOBER 7-12, 1996



Source: City of Racine Department of Transportation and SEWRPC.

Figure 12

TOTAL OPERATING EXPENSE PER PASSENGER ON THE ROUTES OF THE RACINE TRANSIT SYSTEM: OCTOBER 7-12, 1996

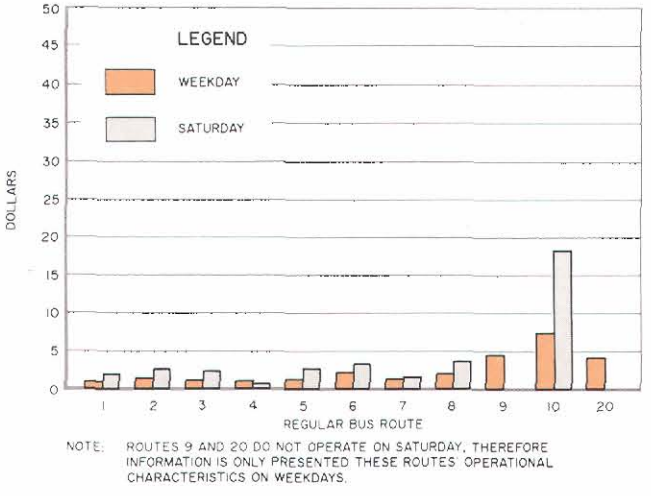


NOTE: ROUTES 9 AND 20 DO NOT OPERATE ON SATURDAY, THEREFORE INFORMATION IS ONLY PRESENTED THESE ROUTES' OPERATIONAL CHARACTERISTICS ON WEEKDAYS.

Source: City of Racine Department of Transportation and SEWRPC.

Figure 13

TOTAL OPERATING DEFICIT PER PASSENGER ON THE ROUTES OF THE RACINE TRANSIT SYSTEM: OCTOBER 7-12, 1996

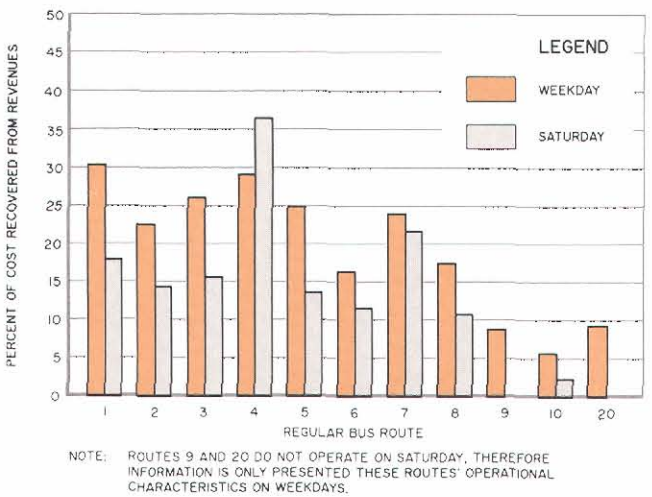


NOTE: ROUTES 9 AND 20 DO NOT OPERATE ON SATURDAY, THEREFORE INFORMATION IS ONLY PRESENTED THESE ROUTES' OPERATIONAL CHARACTERISTICS ON WEEKDAYS.

Source: City of Racine Department of Transportation and SEWRPC.

Figure 14

PERCENT OF OPERATING EXPENSES RECOVERED FROM OPERATING REVENUES ON THE ROUTES OF THE RACINE TRANSIT SYSTEM: OCTOBER 7-12, 1996

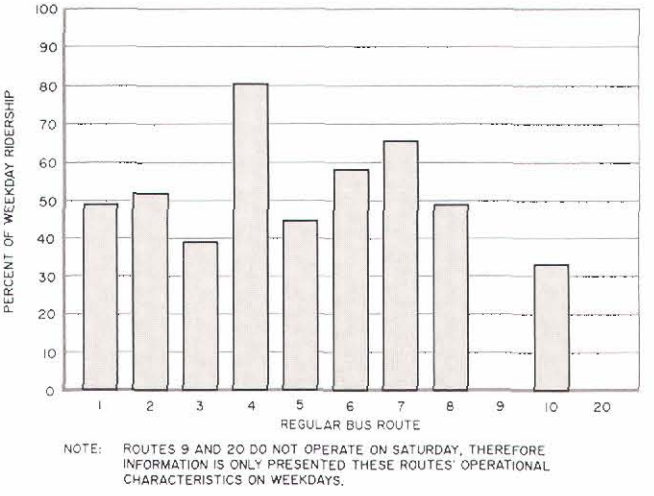


NOTE: ROUTES 9 AND 20 DO NOT OPERATE ON SATURDAY, THEREFORE INFORMATION IS ONLY PRESENTED THESE ROUTES' OPERATIONAL CHARACTERISTICS ON WEEKDAYS.

Source: City of Racine Department of Transportation and SEWRPC.

Figure 15

PERCENT OF WEEKDAY RIDERS RIDING ON SATURDAYS ON THE ROUTES OF THE RACINE TRANSIT SYSTEM: OCTOBER 7-12, 1996

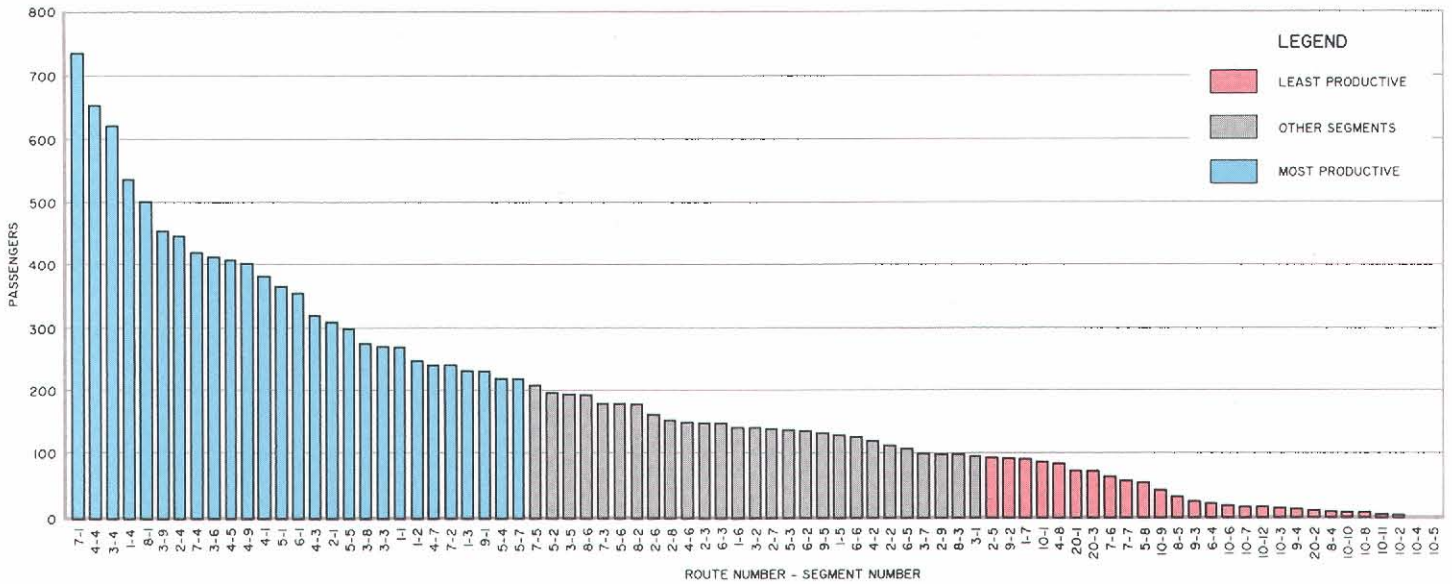


NOTE: ROUTES 9 AND 20 DO NOT OPERATE ON SATURDAY, THEREFORE INFORMATION IS ONLY PRESENTED THESE ROUTES' OPERATIONAL CHARACTERISTICS ON WEEKDAYS.

Source: City of Racine Department of Transportation and SEWRPC.

Figure 16

PASSENGER ACTIVITY BY ROUTE SEGMENT OF THE CITY OF RACINE TRANSIT SYSTEM: WEEKDAYS, OCTOBER 8-10, 1996



Source: SEWRPC.

coverage of the Racine area, some bus routes must be expected to perform at relatively lower levels of efficiency than other routes because of the specific and constrained operating and service area characteristics of each route.

4. In general, the same regular routes perform above or below the specified minimum performance levels on Saturdays as on weekdays. An exception to this pattern is Route No. 5, which has acceptable weekday performance levels of at least 80 percent of the systemwide average for all performance measures, but has Saturday performance levels of less than 80 percent of the systemwide average in five of the eight performance measures. The somewhat poorer Saturday performance of Route No. 5 may be attributed to the significant proportion of route ridership which uses Route No. 5 for school-related travel on weekdays but not on Saturdays, as well as to fewer trips being generated on Saturdays by the land uses served by the route.

Compliance with Operating Headway and Passenger Loading Standards

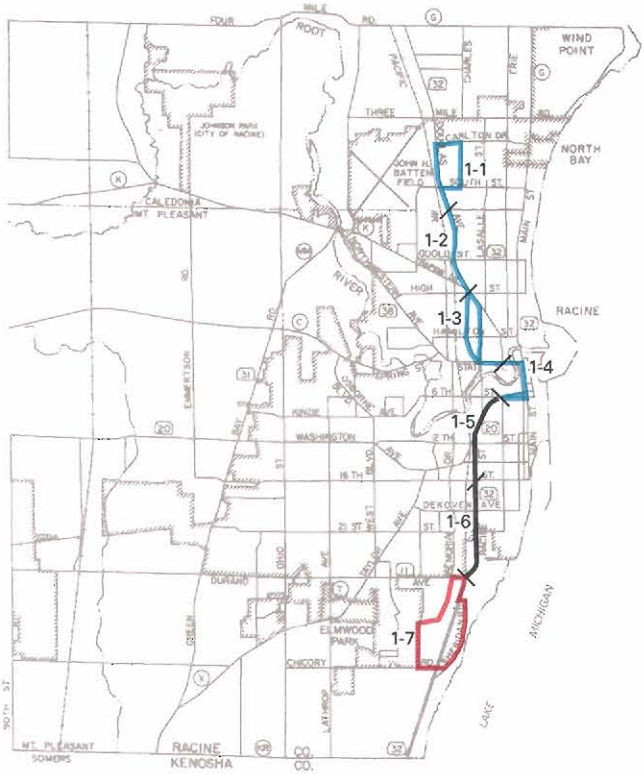
Standard No. 6 of Objective No. 3 states that operating headways for fixed bus routes should be capable of accommodating passenger demand at the recommended load standards. The recommended load standards, as specified under Standard No. 4 of Objective No. 3, call for maximum load factors for local bus service which do not exceed 1.25 during peak periods and 1.00 at all other times; maximum load factors for express-bus service do not exceed 1.00 during all times of operation. The maximum load factor is defined as the ratio of passengers to bus seats as measured at the point on the route where passenger loads are highest. The maximum load factor provides a measure of the quality of bus service by indicating the number of passengers who must stand on a given route.

The performance of Racine bus routes against these two standards was determined from the weekday boarding and alighting passenger count data collected from October 8-10, 1996. Information on the total weekday boarding passengers by bus run by direction of travel for each bus route was used to identify individual bus trips with total passenger boardings in excess of the seated capacity of the buses used. The pattern of boarding and alighting passengers on these individual bus runs was then reviewed to determine the highest passenger loads for the particular bus trip from which the maximum load factor was computed. Information on the total weekday boarding passengers by bus run for each of the regular bus routes is

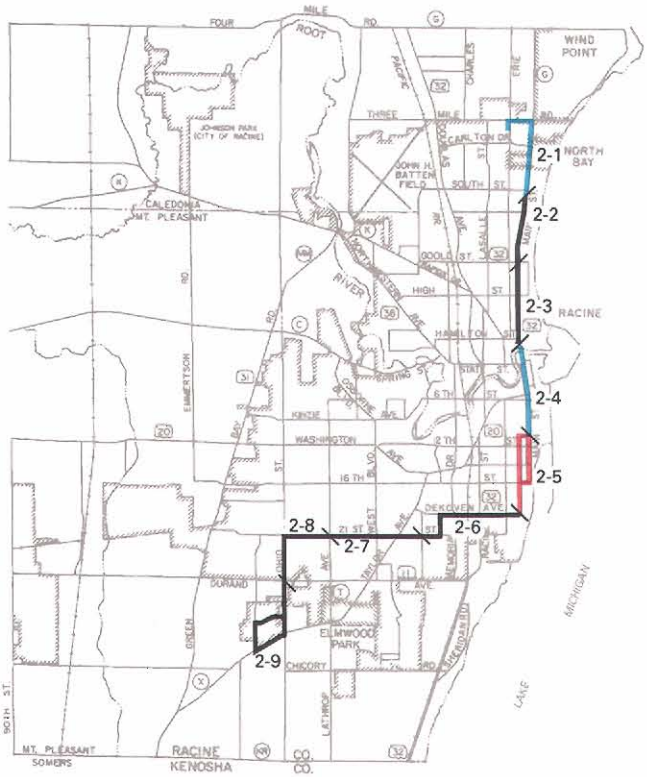
Map 27

PRODUCTIVE AND NONPRODUCTIVE ROUTE SEGMENTS OF THE BELLE URBAN SYSTEM: OCTOBER 8-10, 1996

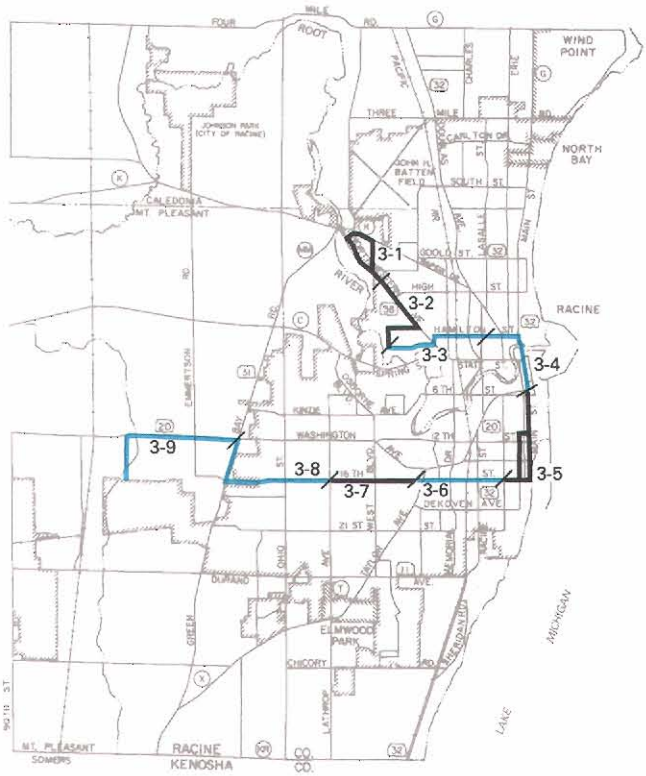
ROUTE NO. 1



ROUTE NO. 2



ROUTE NO. 3

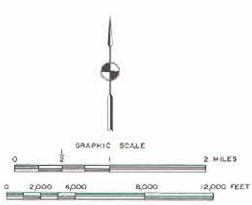


LEGEND

ROUTE SEGMENTS

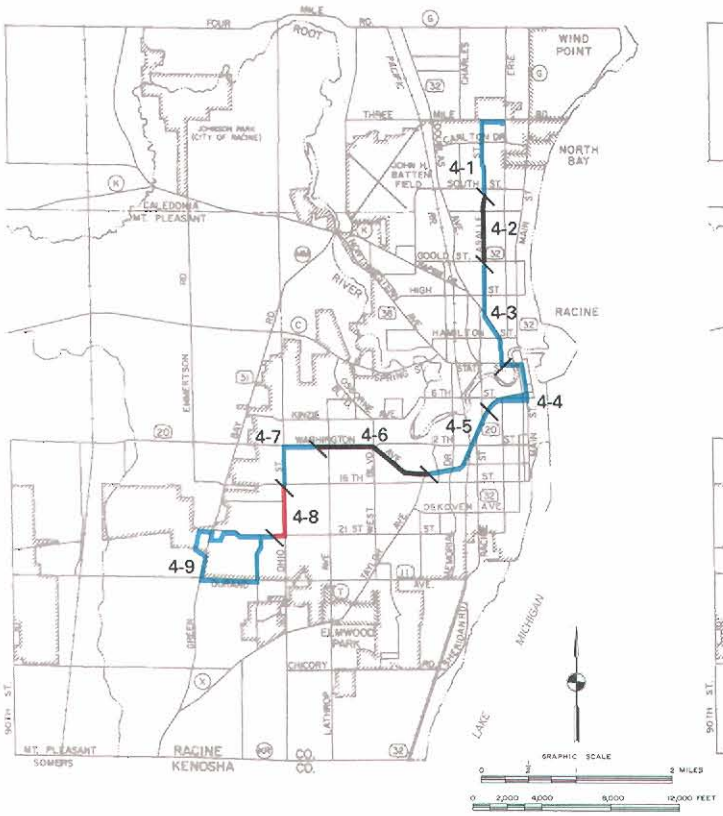
- MOST PRODUCTIVE ROUTE SEGMENTS
- LEAST PRODUCTIVE ROUTE SEGMENTS
- OTHER ROUTE SEGMENTS

3-6 ROUTE NO. - SEGMENT NO.

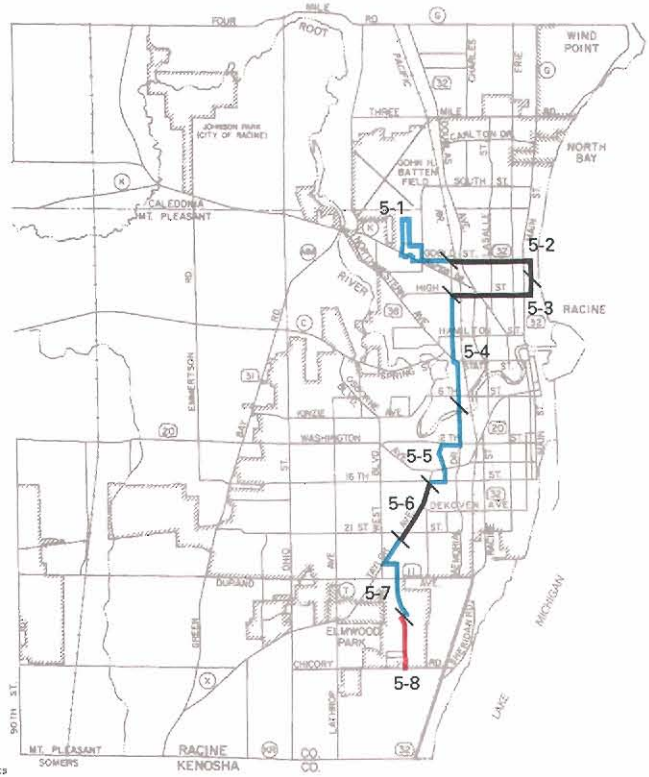


Map 27 (continued)

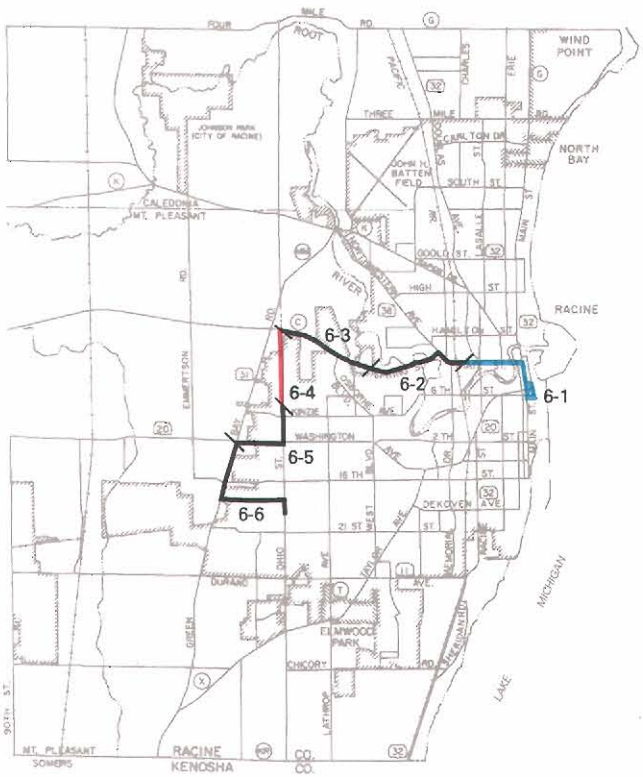
ROUTE NO. 4



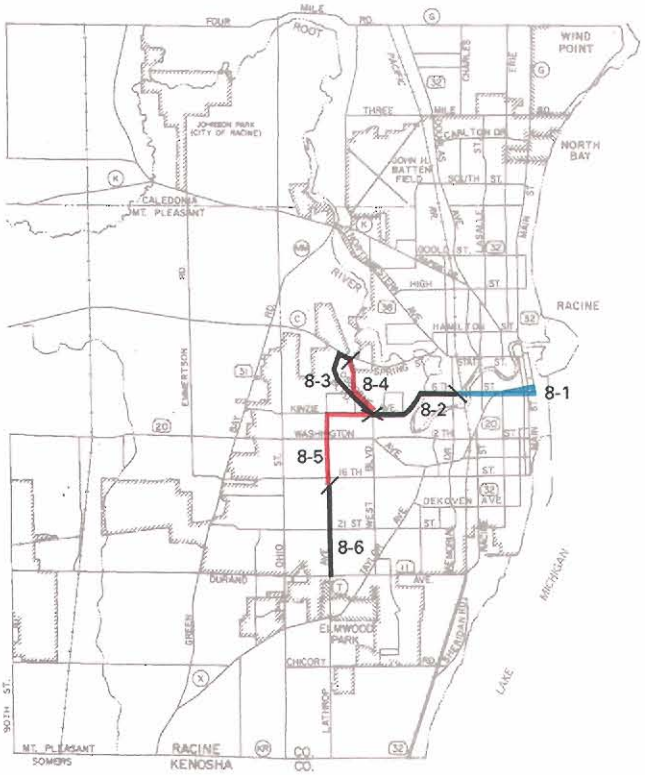
ROUTE NO. 5



ROUTE NO. 6

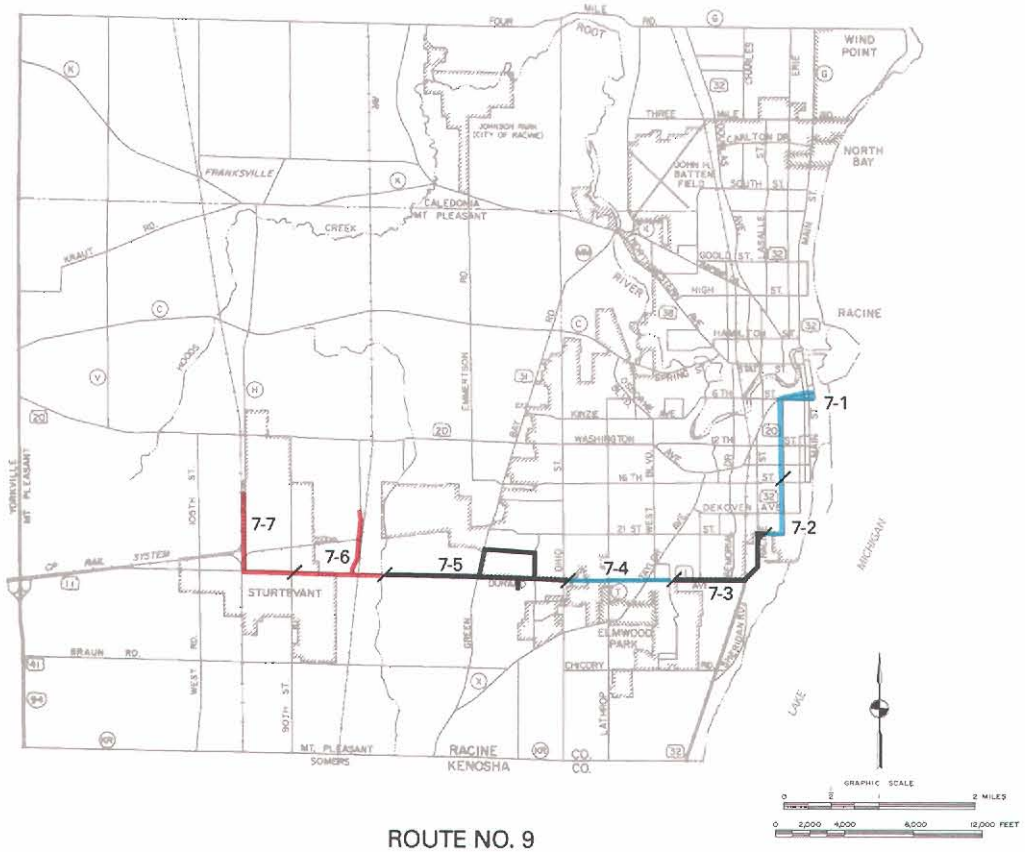


ROUTE NO. 8

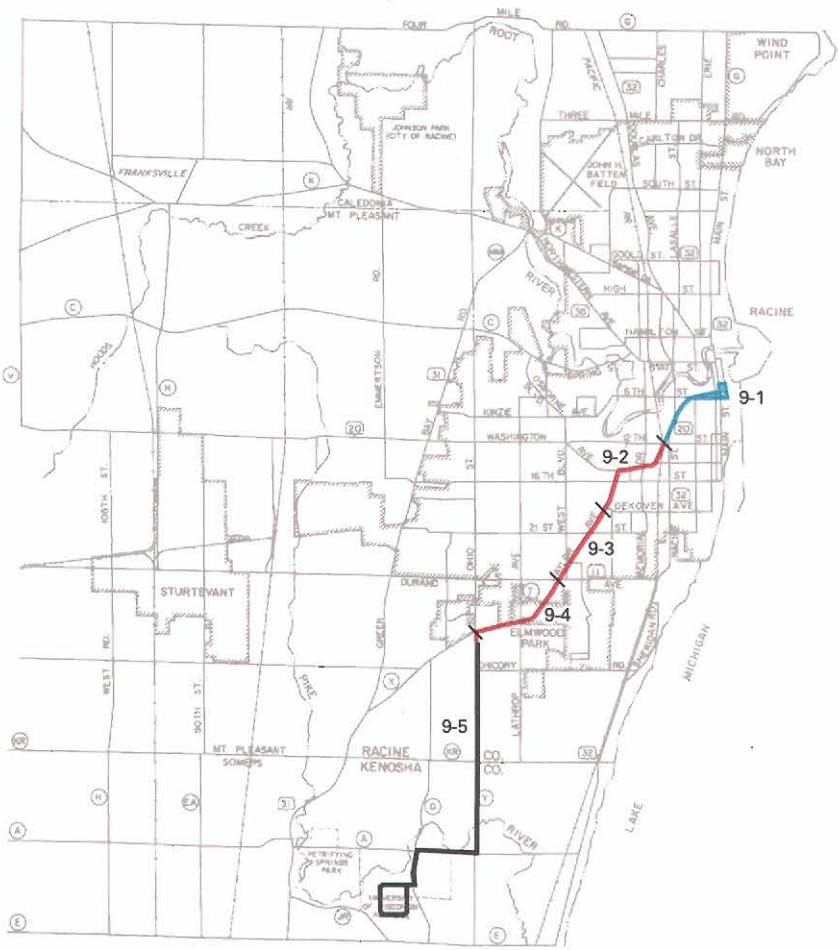


Map 27 (continued)

ROUTE NO. 7

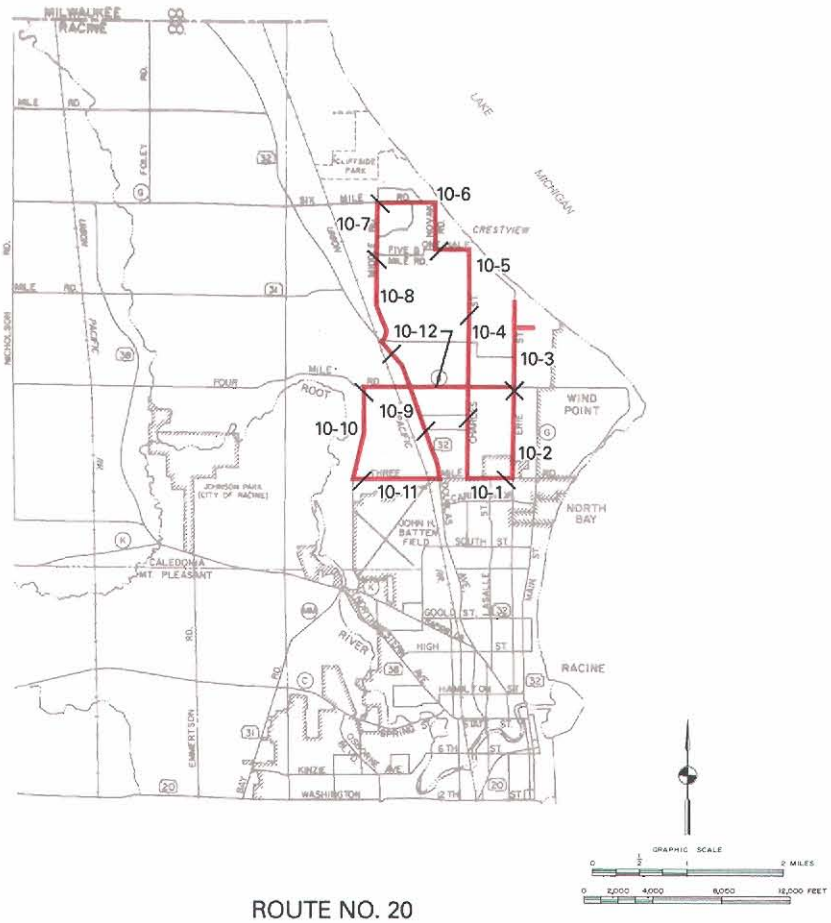


ROUTE NO. 9

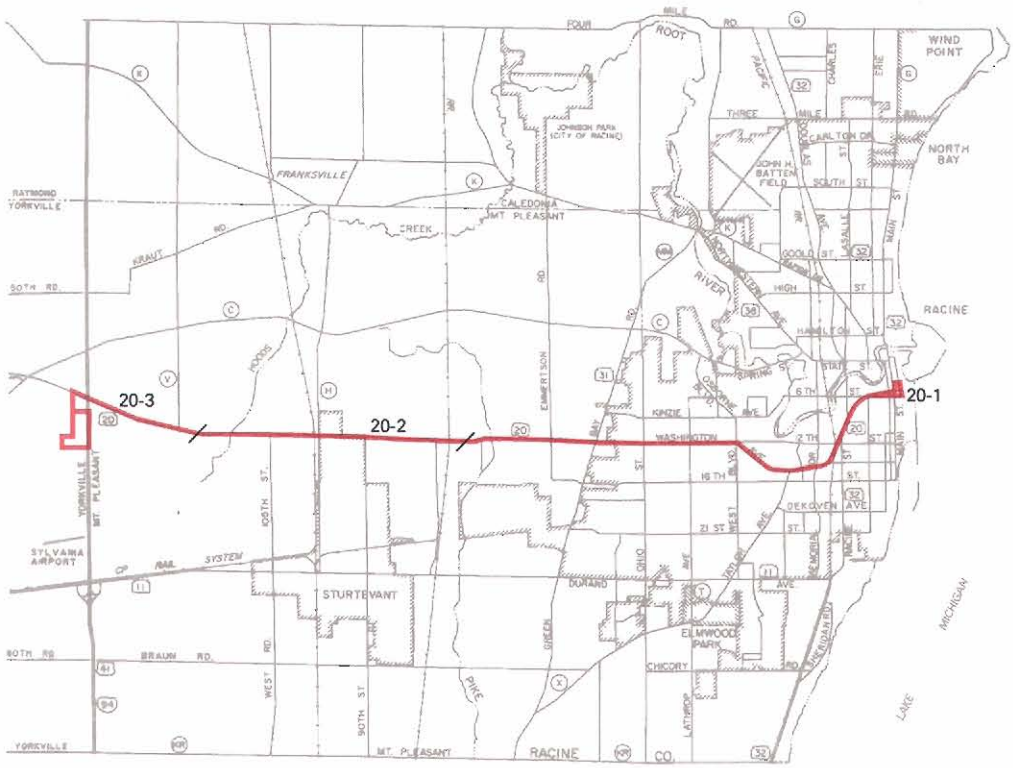


Map 27 (continued)

ROUTE NO. 10



ROUTE NO. 20



Source: SEWRPC.

Table 49

MAXIMUM LOAD FACTOR BY ROUTE FOR THE BELLE URBAN SYSTEM: OCTOBER 8-10, 1996

Route	Direction	Morning Peak Period[a]		Midday OfF-Peak Period[b]		Afternoon Peak Period[c]	
		Maximum Passenger Volume	Maximum Load Factor[d]	Maximum Passenger Volume	Maximum Load Factor[d]	Maximum Passenger Volume	Maximum Load Factor[d]
1	Southbound	12	.30	12	.30	15	.38
	Northbound	33	.83	11	.28	13	.33
2	Southbound	23	.58	11	.38	13	.33
	Northbound	22	.55	12	.30	15	.38
3	Southbound	45	1.13	34	.85	20	.50
	Northbound	16	.40	11	.28	36	.90
4	Southbound	24	.60	27	.68	36	.90
	Northbound	22	.55	24	.60	24	.60
5	Northbound	29	.73	11	.28	20	.50
	Southbound	26	.65	10	.25	28	.70
6	Eastbound	10	.25	11	.28	10	.25
	Westbound	7	.18	18	.45	19	.48
7	Eastbound	14	.35	14	.35	39	.98
	Westbound	33	.83	16	.40	14	.35
8	Eastbound	14	.35	12	.30	12	.30
	Westbound	5	.13	7	.18	15	.38
9	Southbound	8	.20	8	.20	7	.18
	Northbound	1	.03	6	.15	4	.10
10	Counterclockwise	12	.30	7	.18	3	.08
20	Westbound	22	.55	--	--	16	.40
	Eastbound	--	--	--	--	20	.50

[a]6:00 a.m. to 8:29 a.m.

[b]8:30 a.m. to 2:29 p.m.

[c]2:30 p.m. to 6:00 p.m.

[d]Assumes 40 seats per bus. The maximum load factors specified under Objective No. 2, Standard No. 3, are 1.25 during weekday peak periods and 1.00 at all other times.

Source: SEWRPC.

presented in Appendix A. The maximum load factors observed on each regular bus route, presented in Table 49, and were used to help determine the need for increases in existing weekday service levels or headways to relieve overloaded conditions on City bus routes.

In September 1992, headways on Route No. 2 during the morning and afternoon peak periods were increased from 20 to 30 minutes, to be the same as base service levels operated on Route Nos. 1, 5, 6, 7, 8, and 9. Since the elimination of peak-period service on Route No. 2, questions have been raised over the need for peak hour service on Route Nos. 3, 4 and 7, which continue to be operated with 20-minute headways during the morning and afternoon peak periods. An analysis of the possible impacts on the load factors on Route Nos. 3, 4 and 7, which could result from the elimination of the additional bus trips which are operated over these routes to provide 20-minute headways during peak periods was, therefore, conducted using the same passenger count data collected for the maximum load factor analysis. For this second analysis, it was assumed that there would be no ridership loss associated with the increase in headways on these routes, and that passengers using the bus trips eliminated would, instead, shift their time of travel to use a different bus trip on the same route. For passengers traveling during the

Table 50

COMPARISON OF ESTIMATED LOAD FACTORS ON ROUTES NO. 3, 4, AND 7 OF THE BELLE URBAN SYSTEM WITH, AND WITHOUT, ADDITIONAL PEAK-PERIOD SERVICE

Route Number	Direction	Range of Load Factors[a]			
		A.M. Peak Period		P.M. Peak Period	
		With Additional Peak-Hour Service	Without Additional Peak-Hour Service[b]	With Additional Peak-Hour Service	Without Additional Peak-Hour Service[b]
3	Southbound	0.13-1.13	0.30-1.35	0.03-0.50	0.10-0.63
	Northbound	0.15-0.40	0.03-0.58	0.08-0.90	0.08-1.28
4	Southbound	0.10-0.60	0.18-0.70	0.03-0.90	0.13-1.08
	Northbound	0.03-0.55	0.03-0.68	0.03-0.60	0.08-0.75
7	Eastbound	0.05-0.35	0.20-0.48	0.05-0.98	0.10-1.23
	Westbound	0.03-0.83	0.03-0.85	0.03-0.35	0.05-0.63

[a]Based on passenger counts taken October 8 - 10, 1996, by Commission staff.

[b]Assumes no loss in ridership due to increase in peak period headways from 20 to 30 minutes. During the morning peak period, it was assumed that two-thirds of the passengers on bus trips eliminated would board the immediately preceding bus trip, and one-third of the passengers would board the immediately succeeding bus trip. During the afternoon peak period, the reverse of the morning proportions were assumed. The range of factors reflects passenger loads at the maximum load points on each route.

Source: SEWRPC.

morning peak period, it was assumed that two-thirds of the passengers using the bus trip eliminated would use the immediately preceding bus trip, and one-third would take the immediately succeeding bus trip. For the afternoon peak period, the reverse of these proportions was assumed, with one-third of the passengers on the eliminated bus trip assumed to take the immediately preceding trip, and two-thirds of the passengers assumed to take the immediately succeeding bus trip. These assumptions reflect that a large proportion of the passengers using the transit system during the peak periods are making trips for work or school purposes, and have jobs or classes with fixed starting and ending times. This would dictate that they either leave earlier in the morning or later in the afternoon to continue to use transit service. Table 50 presents a comparison of the maximum load factors observed during the morning and afternoon peak periods on Route Nos. 3, 4, and 7, with the current 20-minute peak period headways, with the estimated maximum load factors which may occur on these routes if peak hour bus trips were eliminated and headways increased from 20 to 30 minutes.

On the basis of the above information, the following conclusions were reached:

1. As would be expected, the regular routes of the transit system carrying the most weekday ridership, Route Nos. 1, 2, 3, 4, 5, and 7, also had the highest passenger loads during the period examined. In no case, however, did the observed passenger loads result in load factors which exceeded the service standard maximums. The highest load factor, 1.13, was found on Route No. 3 during the morning peak in the southbound direction. All other load factors observed during the peak and off-peak periods were 1.00 or below. It may, therefore, be concluded that the existing headways operated on the regular routes of the transit system are capable of accommodating existing levels of passenger demand and that reductions in operating headways are not needed.

2. Increasing peak-period headways on Route Nos. 3, 4, and 7 from 20 to 30 minutes would result in increases in peak-period passenger loads on these routes. Peak-period passenger loads and load factors could increase by an average of about 15 to 20 percent if the bus trips needed to provide 20 minutes peak period headways on these routes were eliminated. In only two cases, however, both for Route No. 3, would the estimated load factors increase to exceed the service standard maximum of 1.25 during peak periods. This would indicate that the elimination of some peak period bus trips on Route Nos. 3, 4, and 7 could be considered as a cost-saving measure for the transit system without concerns over creating overcrowded conditions on these three routes.

3. The actual change in ridership on Route No. 2 after the elimination of the additional peak-period bus trips in September 1992 should be considered when considering similar service changes on Route Nos. 3, 4, or 7. After comparing ridership counts taken on Route No. 2 from May 13-17, 1991, with ridership counts taken from October 5-9, 1992, it was found that peak-period ridership on the route had decreased from about 650 passengers in 1991 to 470 passengers in 1992, a decrease of about 180 trips, or 28 percent. The ridership reduction corresponds to a reduction in peak-period revenue vehicle-hours of service on the route of about 40 percent because of the increase in peak-period headways. Similar reductions in ridership could possibly result from similar increases in peak-period headways on Route Nos. 3, 4, and 7.

Schedule Adherence

The provision of reliable and on-time transit service is important in attracting and retaining transit riders. For

Table 51

ON-TIME PERFORMANCE OF REGULAR-ROUTE TRANSIT SERVICE PROVIDED BY THE BELLE URBAN SYSTEM: NOVEMBER 13 AND 14, 1996

Route Number	Weekday One-Way Bus Trips			Schedule Adherence Checks Made at Downtown Transfer Location							
				Total		Early Departures		On-Time[a]		Late Departures	
	Total	Number of Bus Trips Checked	Percent of Bus Trips Checked	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	53	21	40	10	100	--	--	9	90	1	10
2	53	25	47	9	100	--	--	8	89	1	11
3	64	31	48	16	100	--	--	15	94	1	6
4	64	34	53	15	100	--	--	14	93	1	7
5	53	18	34	--	100	--	--	--	--	--	--
6	54	18	33	5	100	--	--	3	60	2	40
7	67	21	31	8	100	--	--	6	75	2	25
8	54	18	33	5	100	--	--	5	100		
9	26	18	69	4	100	--	--	3	75	1	25
10	18	4	22	--	100	--	--	--	--	--	--
20	4	4	100	2	100	1	50	1	50	--	--
Total	510	212	42	74	100	1	1	64	86	9	12

Route Number	Schedule Adherence Checks Made at Stops Outside Downtown								Schedule Adherence Checks Made Over Entire System							
	Total		Early Departures		On-Time[a]		Late Departures		Total		Early Departures		On-Time[a]		Late Departures	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	11	100	4	36	7	64	--	--	21	100	4	19	16	76	1	5
2	16	100	1	6	15	94	--	--	25	100	1	4	23	92	1	4
3	15	100	4	27	8	53	3	20	31	100	4	13	23	74	4	13
4	19	100	1	5	16	84	2	11	34	100	1	3	30	88	3	9
5	18	100	5	28	13	72	--	--	18	100	5	28	13	72	--	--
6	13	100	6	46	6	46	1	8	18	100	6	33	9	50	3	17
7	13	100	--	--	11	85	2	15	21	100	--	--	17	81	4	19
8	13	100	--	--	12	92	1	8	18	100	--	--	17	94	1	6
9	14	100	2	14	10	71	2	14	18	100	2	11	13	72	3	17
10	4	100	--	--	3	75	1	25	4	100	0	0	3	75	1	25
20	2	100	1	50	1	50	--	--	4	100	2	50	2	50	--	--
Total	138	100	24	17	102	74	12	9	212	100	25	12	166	78	21	10

[a]*Defined as adherence to published schedules within the range of one minute early and three minutes late.*

Source: SEWRPC.

the purpose of this study, "on time" has been defined as adherence to published schedules within the range of one minute early and three minutes late. The headways operated on the bus routes of the Belle Urban System range from 20 to 45 minutes. As a result, excessive waiting times can occur for passengers who miss service connections because of bus departures ahead of schedule. Performance within these guidelines, therefore, becomes important means of minimizing passenger inconvenience.

To obtain a measure of schedule adherence on the Belle Urban System, spot checks were made of departure times at bus stop locations along each regular route by the Commission staff on November 13 and 14, 1996. The random checks were made on selected inbound and outbound bus trips during the morning peak, midday off-peak, and afternoon peak periods of transit system operation at the primary transfer point located downtown at Fifth Street and Main Street, and also at bus stops located along each route outside the downtown area. These checks of schedule adherence were made on 212, or 42 percent, of the 510 one-way bus trips operated on the regular routes on weekdays. Actual departure times were recorded at each bus stop and compared with the scheduled departure times at the stop to determine if any problems in schedule adherence existed. The schedule adherence data collected are summarized in Table 51.

On the basis of this information, the following conclusions may be drawn:

1. For the 212 stops for which observed bus departure times were checked for adherence to published schedules, 166 departures, or 78 percent, were considered to be on time, in accordance with the foregoing definition. This falls below the recommended performance level of 90 percent on time set forth under the transit service objectives and standards. Route Nos. 2, 4, and 8 were found to have the best on-time performance which either met, or was within 2 percent of, the specified performance level of 90 percent on-time.

2. Problems with schedule adherence were found to be almost equally divided between early and late departures at bus stops. Such problems most commonly are related to differences between the actual running time and scheduled time for a round trip on each route resulting from different passenger loading patterns or traffic conditions. Unless drivers constantly compensate for running time and scheduled time differences, schedule adherence problems will occur. To correct the problems with schedule adherence observed, the scheduled running times between checkpoints along each route should be reviewed and, possibly, modified to reflect different passenger loading and traffic conditions occurring throughout the day, affecting actual running times between stops. In this respect, transit system staff have confirmed that problems exist with the scheduled running times on some routes, including Route No. 4, resulting in problems with schedule adherence or with insufficient driver relief time.

Directness of Public Transit Route Alignments

The directness of route alignments can affect the ability of the transit system to compete with private automobiles because indirect and circuitous routing alignments can affect travel time and can discourage transit use. In order to measure the directness of the alignments of the existing regular bus routes, the over-the-road distance and travel time for travel between selected locations within the transit service area by transit and by automobile were compared. As noted in Chapter II, the Racine CBD both produces and attracts a significant number of both total person and transit person trips made on an average weekday within the study area. In addition, a common transfer point for nine of the 11 routes in the system is located within the Racine CBD. Accordingly, distances and travel times were measured for travel between the outlying termini of the nine routes serving the Racine CBD and the common transfer point for these routes at 5th Street and Main Street. In addition, distances and travel times were also measured between the outlying termini of those routes which provide crosstown service through the CBD.

Table 52 presents the comparison of automobile and transit travel distances and times used to measure the directness of the current transit route alignments. From the information presented in this table the following conclusions were reached:

1. As shown on Map 28, most of the existing transit system routes have at least a small segment of their alignment which is less direct to some degree than the more direct path which would be followed by automobile travel. Only the alignments of Route Numbers 7 and 9 were found not to contain any indirect routing segments. The indirectness of the current route alignments results largely from efforts made to maximize ridership by maximizing service to the residential areas and major travel generators on each route while, at the same time, minimizing both the number of routes needed and the attendant total expenditures for transit system operation. In addition, the alignments of some routes have been designed to provide direct transit service between the residential areas and major traffic generators, including schools, along each route. The existing route alignments, consequently, do provide for relatively direct travel, with only a minor amount of inconvenience for short trips and some longer crosstown trips.

2. The ratios of transit travel times to automobile travel times are particularly unfavorable on Route No. 3 for crosstown travel between the route termini. A ratios in excess of 4.0 and a maximum travel time difference of 31 minutes was found here. Alternatives which would improve the convenience of crosstown travel on Route No. 3 should be explored.

3. Several of the routes incorporate one-way loops at the outer end of the routes, as shown on Map 28, to maximize the areas served by each route. While the one-way service along the loop portions of these routes can inconvenience passengers traveling between points along the loop, the loops on most routes are small and result in only a minor amount of indirection in travel for such passengers and for passengers traveling between the outlying route termini and the Racine CBD or traveling crosstown. The principal exception would be Route No. 10, which operates entirely as a single one-way

Table 52

TRANSIT-TO-AUTOMOBILE DISTANCES AT SELECTED LOCATIONS SERVED BY THE BELLE URBAN SYSTEM: 1997

Route	Termini for Travel Distance and Time Measurements	One-Way Travel Distance (miles)[a]				One-Way Travel Time (minutes)[b]			
		Transit	Automobile	Difference (transit to automobile)	Ratio (transit to automobile)	Transit	Automobile	Difference (transit to automobile)	Ratio (transit to automobile)
1	Douglas Avenue and Carlton Drive to STH 32 and Sheridan Road	7.4	6.2	1.2	1.19	37	13	24	2.85
	Douglas Avenue and Carlton Drive to Downtown	3.4	3.1	0.3	1.10	16	8	8	2.00
	STH 32 and Sheridan Road to Downtown	4.0	3.6	0.4	1.11	21	8	13	2.63
2	Shorecrest Shopping Center to Meachem Road and Taylor Avenue	8.9	7.5	1.4	1.19	37	24	13	1.54
	Shorecrest Shopping Center to Downtown	3.3	3.3	0.0	1.00	14	12	2	1.16
	Meachem Road and Taylor Avenue to Downtown	5.6	4.2	1.4	1.33	23	12	11	1.91
3	Golf Avenue and Rapids Drive to Case High School	10.2	4.8	5.4	2.13	41	10	31	4.10
	Golf Avenue and Rapids Drive to Downtown	3.9	2.9	1.0	1.34	16	9	7	1.77
	Case High School to Downtown	6.3	5.3	1.0	1.19	25	13	12	1.92
4	Shorecrest Shopping Center to Regency Mall	9.0	7.7	1.3	1.17	41	17	24	2.41
	Shorecrest Shopping Center to Downtown	3.4	3.3	0.1	1.03	15	12	3	1.25
	Regency Mall to Downtown	5.6	4.6	1.0	1.22	26	13	13	2.00
5	Rapids Plaza to Concord Drive and Spruce Street	7.7	5.6	2.1	1.38	39	16	23	2.44
6	Byrd Avenue and Ohio Street to Downtown	6.6	3.7	2.9	1.78	28	11	17	2.55
7	Racine Correctional Institute to Downtown	9.1	8.1	1.0	1.12	36	19	17	1.89
8	Elmwood Plaza to Downtown	6.5	3.4	3.1	1.91	27	10	17	2.70
9	University of Wisconsin-Parkside to Downtown	8.3	8.2	0.1	1.01	23	19	4	1.21
10	Shorecrest Shopping Center to Six Mile Road and Lone Elm Drive	6.2	4.2	2.0	1.48	19	7	12	2.71
	Six Mile Road and Lone Elm Drive to Shorecrest Shopping Center	7.4	4.2	3.2	1.76	21	7	14	3.00
20	Grandview Industrial Park to Downtown	12.2	10.3	1.9	1.18	31	19	12	1.63
Systemwide Average	Terminal-to-Terminus (Crosstown Routes 1-5 and Route 10)	8.1	5.7	2.4	1.47	34	13	21	2.72
	Terminus-to-Downtown (Routes 1-4, 6-9, and Route 20)	6.3	5.1	1.2	1.27	23	13	10	1.80

[a]Based on average over-the-road distances between points identified.

[b]Based on average off-peak travel times between points identified.

Source: City of Racine Department of Transportation and SEWRPC.

loop. While loop routing allows maximum coverage of the areas within the Town of Caledonia where transit service is desired by local officials, the large size of the loop results in a high degree of inconvenient travel for passengers along the route. Alternatives to the existing service provided by Route No. 10 to alleviate or eliminate the current inconvenience experienced by current passengers should be explored. Such alternatives could include realignment of the existing route to provide for more lineal service over its most productive segments or the operation of a demand-responsive service with similar areal coverage.

Provision of Bus Passenger Shelters

Objective 2, Standard 11, states the transit system should construct bus passenger shelters at major passenger loading areas. There are currently a total of 20 bus passenger shelters at 18 locations throughout the transit service area (see Map 22 in Chapter III). Table 53 and Map 29 identify 20 bus stops currently without passenger shelters which are either major loading points with at least 50 daily passenger boardings, based on Commission survey data, or are locations that serve facilities for transit-dependent populations, including the elderly, the disabled, and persons in low-income households, with at least 30 daily boarding passengers. The locations listed in Table 53 represent a list which can be drawn upon by the transit system management when considering locations for installation of additional bus passenger shelters.

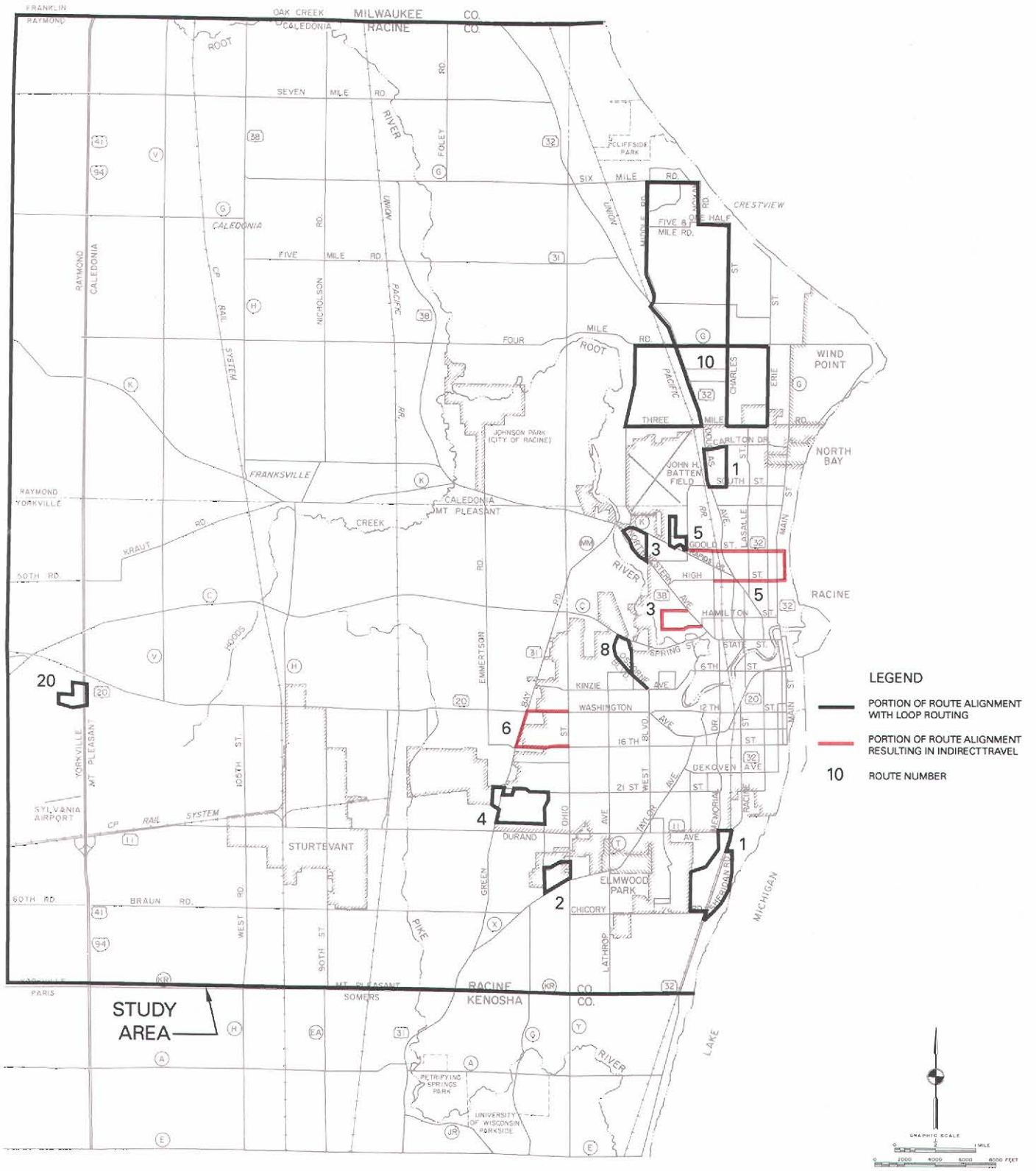
Provision of Bus Stop Signs and Paved Passenger Loading Areas

Objective 2, Standard 12, states that the transit system should provide signs and paved loading areas at bus stops. The Commission conducted an inventory of all bus stops on the system in June, 1997, to ascertain the status of the signage and paved loading areas at each stop. As may be seen in Table 54, about 908 stops, or about 96 percent, of the 941 total stops had bus stop signs, and about 293, or about 31 percent, of the total stops had paved loading areas.

The numerous stops on Route No. 20 that were found not to be marked with bus stop signs may be attributed to the flexible nature of the service, which has attempted

Map 28

ROUTE SEGMENTS ON THE BELLE URBAN SYSTEM NOT DIRECT IN ALIGNMENT: 1997



Source: SEWRPC.

Table 53

POTENTIAL ADDITIONAL LOCATIONS FOR PASSENGER SHELTERS ON THE BELLE URBAN SYSTEM: 1997

Number on Map 29	Bus Stop Location	Bus Route(s)	*Direction* of Travel	Number of Boardings[a]	Criteria		
					Major Boarding Point	*Transfer* Point	Serves Facility for Elderly or Disabled or Low-Income Housing
1	Shorecrest Shopping Center	2, 4, 10	Southbound, Northbound	212	X	X	X
2	St. Mary's Medical Center	6, 8	Eastbound, Westbound	99	X	X	X
3	Regency Mall Southeast Entrance	4, 7	Southbound, Eastbound, Westbound	93	X	X	--
4	Oakes Road at South End of J. I. Case High School	3	Northbound	87	X	--	X
5	Regency Mall Southwest Entrance	4, 7	Northbound, Eastbound, Westbound	64	X	X	--
6	Rapids Plaza Shopping Center	5	Southbound	61	X	--	--
7	Washington Avenue and 10th Street	1, 4, 9	Northbound	51	X	X	X
8	Douglas Avenue and Goold Street	1	Southbound	50	X	X	X
9	Drexel Avenue and Durand Avenue	5	Northbound	50	X	X	X
10	Valley Drive and 12th Street	5	Southbound	48	--	--	X
11	Oakes Road across from J. I. Case High School	3	Northbound	41	--	--	X
12	Washington Avenue and Valley Drive	4	Southbound	41	--	--	X
13	6th Street and N. Memorial Drive	8	Eastbound	38	--	--	X
14	Washington Avenue and Ann Street	4, 9	Northbound	36	--	X	X
15	Washington Avenue and Phillips Avenue	4, 9	Northbound	36	--	X	X
16	Jacato Drive and Romayne Avenue	5	Northbound	34	--	--	X
17	St. Luke's Hospital	2, 3	Southbound	34	--	X	X
18	Elmwood Plaza	8	Eastbound	32	--	--	X
19	N. Main Street and 10th Street	2, 3	Southbound	31	--	X	X
20	N. Main Street and Goold Street	2	Southbound	30	--	X	X

[a]*Based on passenger counts taken by Commission staff October 8-10, 1996.*

Source: SEWRPC.

to directly serve all businesses in the corridor when employees needed the service. Permanent signs should be considered now that experience with route ridership has been gained.

The number of stops with paved loading areas is significantly less than the number with signs. However, the capital cost for installing paved loading areas may not be justified for some stops under certain conditions. Examples of such conditions include stops located outside the City on the shoulders of highways on Route Nos. 3, 7, 10, and 20, for which paved loading areas would be impractical, as well as stops that are infrequently used by transit system patrons. Stops that do not have paved loading areas should be evaluated on an ongoing basis and paved loading areas installed when practical and when passenger usage warrants the capital expense.

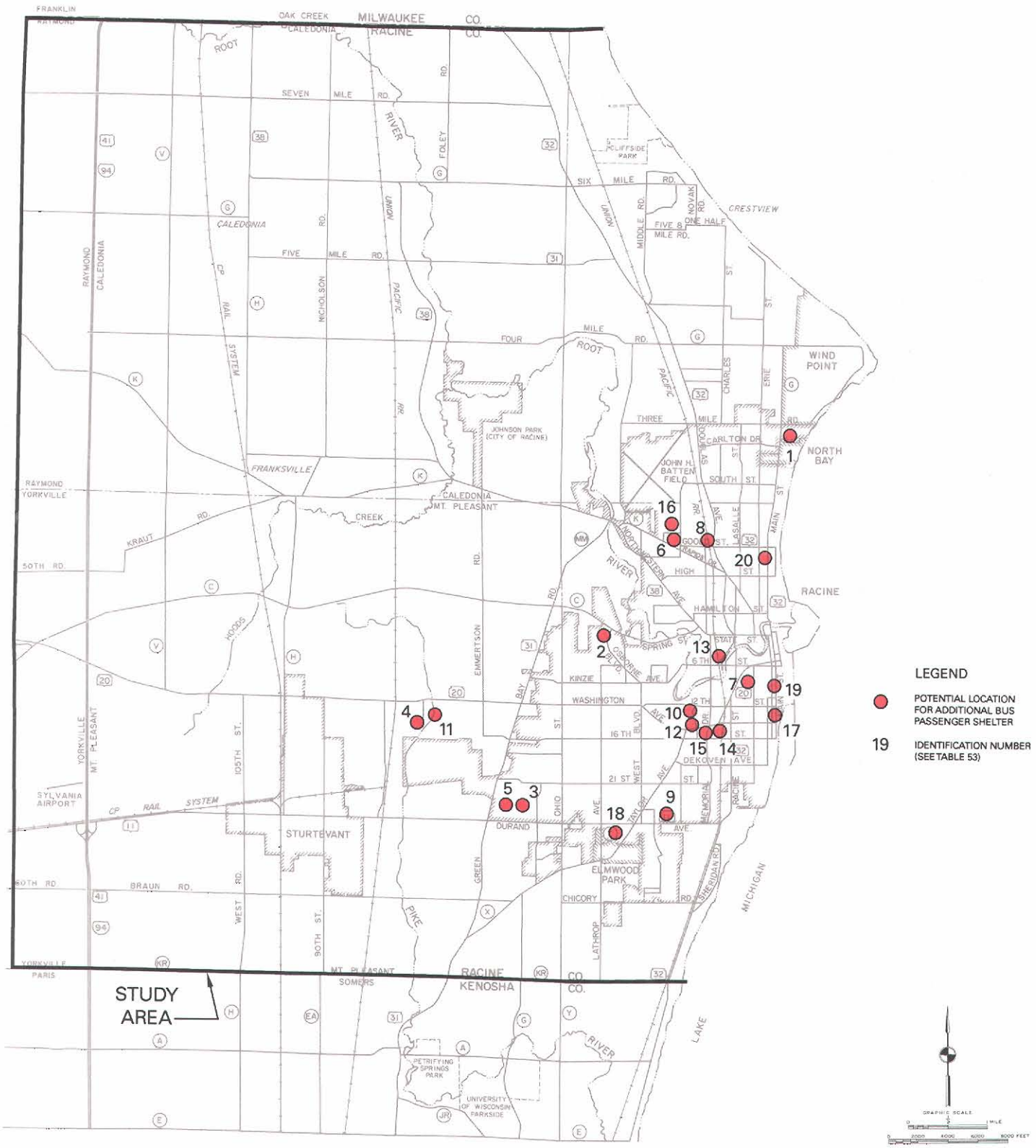
SUMMARY

This chapter has evaluated the performance of the City of Racine Belle Urban System based upon specific performance measures related to the attainment of key transit system objectives and standards. The evaluation included separate assessments of performance on a systemwide basis and on a route-by-route basis. The most important findings of this evaluation include:

1. The existing transit system provides excellent areal coverage of the existing residential areas inside the

Map 29

POTENTIAL ADDITIONAL LOCATIONS FOR PASSENGER SHELTERS ON THE BELLE URBAN SYSTEM: 1997



Source: SEWRPC.

Table 54

BUS STOP SIGNS AND PAVED LOADING AREAS ON THE ROUTES OF THE BELLE URBAN SYSTEM: 1997

Route	Direction	Bus Stops				
		Total	With Signs		With Paved Loading Areas	
			Number	Percent	Number	Percent
1	Northbound	45	45	100	31	69
	Southbound	48	48	100	27	56
2	Northbound	70	70	100	23	33
	Southbound	63	62	98	16	25
3	Northbound	69	68	99	26	38
	Southbound	72	71	99	15	21
4	Northbound	64	63	98	36	56
	Southbound	56	56	100	33	59
5	Northbound	56	56	100	16	29
	Southbound	63	63	100	22	35
6	Eastbound	51	51	100	14	27
	Westbound	52	52	100	12	23
7	Eastbound	66	66	100	24	36
	Westbound	58	58	100	24	41
8	Eastbound	47	46	98	19	40
	Westbound	48	47	98	19	40
9	Northbound	25	25	100	14	56
	Southbound	23	23	100	10	43
10	Counterclockwise	59	55	93	5	8
20	Eastbound	16	4[a]	25	4	25
	Westbound	16	5[a]	25	2	13
--	Total[b]	941	908	96	293	31

[a]*Signs do not designate Route No. 20.*

[b]*The data reported in the total section does not equal the sum of stops of the individual routes because numerous bus stops are shared by multiple routes. The data reported in the total section reflect corrections for such stops so they are counted only once for the analysis.*

Source: SEWRPC.

City of Racine, together with good coverage of the most densely populated residential areas outside the City. Virtually 100 percent of the resident population within the City and about 85 percent of the total resident population within the study area lay within the transit system service area. The transit system also provides good areal coverage of the residential concentrations of transit-dependent population groups in the study area as identified through 1990 U. S. Census data.

2. The transit system also provides excellent areal coverage of the employment concentrations in the City of Racine, with about 98 percent of the City jobs lying inside the transit system service area. About 90 percent of the jobs within the study area were situated inside the transit system service area.

3. The transit system also provides good coverage of the existing potential transit trip generators identified in the study area. The system serves 158 of the 177 major land use trip generators and 77 of the 87 major transit-dependent population trip generators identified in the study area. Of the 29 centers not served, 27 are outside the City of Racine, which has historically been the primary service area for the

transit system. For a similar reason, the existing transit system is capable of serving only about one-half, 26 of 49, of the new and proposed developments identified in the study area because most of the new development has been occurring outside the City.

4. The existing service to disabled individuals unable to use fixed route bus service provided by the transit system meets all of the paratransit service requirements of the Americans with Disabilities Act of 1990. This service, with its extensive service levels, is provided throughout the study area rather than being limited to the Federally required area within three-quarters of a mile of a regular route. The Belle Urban System also provides service to disabled individuals by utilizing accessible vehicles on its regular bus routes. With the delivery of 23 new accessible buses in May 1997, the system has enough accessible buses to allow 100 percent of the buses operated during offpeak service periods, and approximately 85 to 90 percent of the buses operated during peak service periods, to be accessible to disabled persons using wheelchairs.

5. In terms of ridership and financial performance, the Belle Urban System compares favorably with other urban bus systems within Wisconsin. Ridership and effectiveness levels for the Belle Urban System were found about the same, or slightly higher, when compared to that for a group of urban bus systems within Wisconsin during the period 1992 through 1996. The trends observed for the Belle Urban System with respect to operating expenses per vehicle-mile and per vehicle-hour, as well as operating costs and deficits per passenger, were found to compare favorably with the records of the statewide group of urban bus systems during this period. With respect to farebox recovery rates, the rate for the Belle Urban System has been about 18 to 24 percent higher than the average for the Statewide group of urban bus systems over the period, although the rate for the other systems has increased by about 1 percent, from 19 percent to 20 percent of operating expenses, over the period.

6. The overall energy efficiency of the Racine transit system in serving travel on an average weekday is higher than that of the private automobile. Consequently, the transit service does reduce the use of petroleum-based motor fuel by Racine area residents on a daily basis. The transit system also contributes to efficiency of the transportation system by reducing peak-hour automobile traffic and the potential for congestion on streets in the Racine CBD.

7. The Belle Urban system provided discounted fares for transit-dependent persons and frequent riders, but did not provide premium fares for premium services or some fares for frequent riders provided by other urban bus systems in Wisconsin in 1997. The transit system provided reduced cash fares to elderly and disabled individuals and reduced fares to frequent riders in the form of monthly passes for both adults and the elderly and disabled individuals. The transit system did not charge a premium fare for Route No. 20, which may be considered a premium service, or provide reduced student fares or a Saturday "superpass" in 1997.

8. Some regular bus routes have weekday performance levels consistently above the specified minimum performance standard of at least 80 percent of system-wide average effectiveness levels. These included Route Nos. 1, 2, 3, 4, 5, and 7. Route Nos. 3, 4, and 7 clearly had the best performance, with weekday effectiveness levels exceeding 100 percent of the systemwide average for all measures of performance. Based solely on their ridership and financial performance, these routes could continue to be operated without change.

9. The remaining five routes, including Route Numbers 6, 8, 9, 10, and 20, have weekday performance levels below 80 percent for most or all of the specified performance standards. Of the 27 least productive route segments identified on the system, 23 are accounted for by these three routes, including all 12 of the segments on Route No. 10. While Route No. 10 had the most unproductive route segments, at least one unproductive route segment was also found on each of the other routes of the system, with the exception of Route No. 3, which had no unproductive route segments. This should be viewed as an indicator of where routing changes in the current route structure should be considered.

10. Because some bus routes must pass through areas of little residential development or few major trip generators in order to reach other residential areas

or trip generators, such routes must be expected to perform at somewhat lower levels of efficiency than other routes if the transit system is to continue to provide extensive areal coverage of the City of Racine and environs.

11. In general, the same regular routes perform above or below the specified minimum performance levels on Saturdays as on weekdays, with the exception of Route No. 5, which has acceptable weekday performance levels of at least 80 percent of the systemwide average for all performance measures, but has Saturday performance levels which are less than 80 percent of the systemwide average in three of the eight performance measures. The failure of Route No. 5 to achieve the specified minimum performance levels on Saturdays, was attributed to the absence of student ridership on Saturdays, and fewer trips generated on Saturdays by the various land uses and trip generators along the route.

12. The existing headways on the regular routes of the transit system can accommodate existing levels of passenger demand at the recommended load standards. Headway reductions are not needed on any routes. In no cases did the observed passenger loads result in load factors exceeding the maximums specified in the transit service standards. The highest load factor, 1.13, was found on Route No. 3 during the morning peak period. All other observed load factors were 1.00 or below.

13. An analysis of the potential impacts of eliminating the additional peak-hour bus service on Routes No. 3, 4, and 7, thereby increasing headways on these routes from 20 to 30 minutes during peak periods, indicated that peak-period loads and load factors would probably increase by about 15 to 20 percent if headways were increased. Load factors on most peak-period trips would not, however, exceed the standards. This would indicate that the City may consider eliminating some or all of the additional peak-period trips on these routes as a cost-saving measure.

14. On the basis of random checks of schedule adherence, the on-time performance of the existing transit system was found to be somewhat below the recommended performance level of 90 percent, set forth under the transit service objectives and standards. Problems with schedule adherence were found to be almost equally divided between early and late departures at bus stops. To correct such problems, the scheduled running time between points along each route should be reviewed and, possibly, modified to reflect different passenger loading and traffic conditions which occur throughout the day and which affect actual running time between stops.

15. The existing alignments of the bus routes of the transit system are relatively direct and result in only a minor amount of inconvenient travel for short trips as well as most longer crosstown trips. However, a ratio of transit travel time to automobile travel time in excess of 4.0, and a maximum travel time difference between the transit and automobile travel paths of 31 minutes, was found on Route No. 3. In addition, the large one-way loop routing used on Route No. 10 results in inconvenience for passengers traveling between points along the loop. Alternatives to improve the convenience of crosstown travel on Route No. 3 should be explored. Consideration should also be given to restructuring Route No. 10 to provide for more lineal two-way routing over the most productive route segments, or to the operation of a demand-responsive service with similar areal coverage, in order to reduce the inconvenience to users of the current service.

16. The Belle Urban System provided many bus passenger shelters, bus stop signs, and paved loading areas for use by patrons. There were 20 bus passenger shelters at 18 locations throughout the transit service area in 1997. A list of 20 potential additional locations for bus passenger shelters was developed for consideration of Belle Urban System management. About 96 percent of all bus stops of the transit system were provided with bus stop signs, and about 31 percent of all bus stops of the transit system were provided with paved loading areas in 1997.

The analyses documented in this chapter indicated that changes in some bus routes should be considered to improve their performance as well as the overall performance of the transit system. Alternative and recommended changes to the transit system are described in Chapter VII of this report.

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Chapter VI

EXISTING TRANSIT LEGISLATION, REGULATIONS, AND PUBLIC FUNDING PROGRAMS

INTRODUCTION

This chapter summarizes the legislative and regulatory framework governing the provision of public transit service in the Racine transit system development plan study area. Federal legislation and rules govern the availability and distribution of Federal financial aid for capital improvement projects and operating subsidies. State legislation and rules govern the local institutional structure for the provision of public transit services and provide for operating subsidies. Local ordinances can further govern the provision of transit service. Table 55 summarizes the principal Federal and State transit assistance programs which are sources of financial aid for public transit services in the Racine study area.

FEDERAL FUNDING PROGRAMS AND AUTHORIZING LEGISLATION

Federal Transit Administration (FTA) Programs[1]

The Urban Mass Transportation Act (UMT) of 1964 established a comprehensive program of grants in partial support of the preservation, improvement, and expansion of public transit service in the urbanized areas of the United States.[2] The 1964 Act has been amended several times, most recently by the Federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). The Federal transit laws were codified into Chapter 53 of Title 49 of the United States Code in 1994 with the enactment of Public Law 103-272, which changed the citations for the various Federal transit assistance programs but made no substantive changes to the laws. Responsibility for administering the Federal transit programs lies with the Federal Transit Administration of the U. S. Department of Transportation. The authorized programs offer Federal funds to eligible local recipients to assist in carrying out transit projects.[3]

Section 5309 Capital Program

Discretionary capital grants are authorized under the Section 5309 Capital Program, formerly the Section 3 Program. These grants can fund up to 80 percent of the cost of eligible projects, which include rail transit system modernization, construction and extension of new fixed-guideway systems, and bus and bus-related equipment and construction projects. The purchase of specific bus-related equipment needed to implement the requirements of the Americans with Disabilities Act (ADA) of 1990 or the Clean Air Act Amendments of 1990 are eligible for up to 90 percent Federal funding.

The Capital Program is the primary source of Federal funding in support of major capital investments in transit infrastructure, in particular rail rapid-transit facilities. Only a small portion of the total Capital Program funds authorized and appropriated Nationally are typically available for use in funding bus and bus-related facilities. While the Program originally provided funding for eligible projects at the discretion of the Secretary of the U. S. Department of Transportation, about 90 percent of the available funds have been distributed in the recent past on the basis of Congressional earmarks set forth in Federal appropriations legislation. Accordingly, demand is high for the limited

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[1] *The description of Federal Transit Administration programs presented in this chapter excludes funds available for technical studies under the Section 5303 Metropolitan Planning Program, formerly the Section 8 Program. These funds are allocated to metropolitan areas and States for use by metropolitan planning organizations, like the Regional Planning Commission, in conducting such planning studies as this study for the Racine area.*

[2] *An urbanized area is defined by the U. S. Bureau of the Census as having a concentrated population of at least 50,000 persons and meeting specific population-density criteria. Urbanized areas generally consist of a central city and the surrounding, closely settled, contiguous suburbs. The Racine urbanized area as defined by the 1990 Census is shown on Map 1 in Chapter I and includes all of the City of Racine and the Villages of Elmwood Park, North Bay, Sturtevant and Wind Point and portions of the Towns of Caledonia and Mt. Pleasant.*

[3] *Authorization of the Federal transit assistance programs described in this chapter extends through September 30, 1997, when the Federal Intermodal Transportation Efficiency Act of 1991 expires. The number and specific characteristics of each transit program may change under Federal authorizing legislation developed to replace ISTEA.*

Table 55

SUMMARY OF MAJOR FEDERAL AND STATE TRANSIT ASSISTANCE PROGRAMS APPLICABLE TO TRANSIT SERVICES IN THE RACINE AREA

Sponsoring Agency	Program Name	Type of Transit Assistance	Eligible Applicants	Description of Major Program Elements
U. S. Department of Transportation, Federal Transit Administration	Section 5309 Capital Program (formerly Section 3 Program)	Capital	State or local public agencies within urbanized[a] or nonurbanized areas	Federal funds made available through Congressional earmarks and at the discretion of the Secretary of the U. S. Department of Transportation to cover up to 80 percent[b] of total costs of eligible projects, including those for the following: construction or extension of new fixed-guideway systems, rail system modernization, and bus and bus-related equipment and construction projects
	Section 5307 Urbanized Area Formula Program (formerly Section 9 Program)	Operating and capital and planning	State or local public agencies within urbanized[a] areas designated as eligible recipients	Operating: Federal funds made available to cover up to 12 percent[c] of the total operating expenses of eligible transit services Capital: Federal funds made available to cover up to 80 percent of capital project costs[b] Planning: Federal funds made available to cover up to 80 percent of planning and engineering studies
	Section 5310 Elderly and Persons with Disabilities Program (formerly Section 16 Program)	Capital	Private, nonprofit corporations and certain local public agencies	Federal funds made available to cover 80 percent of the costs of capital equipment used in providing specialized transportation service to elderly or disabled persons
	Section 5311 Nonurbanized Area Formula Program (formerly Section 18 Program)	Operating and capital	State agencies, local public bodies, private transportation providers, and Indian reservations within nonurbanized areas	Operating: Federal funds made available to cover up to 29 percent[d] of the total operating expenses of eligible transit services Capital: Federal funds made available to cover up to 80 percent[b] of capital project costs
Federal Highway Administration	Surface Transportation Program (STP)	Capital	State or local public agencies within urbanized or nonurbanized areas	Federal funds made available to cover up to 80 percent of total costs of eligible capital projects including those for the following: purchase of buses and transit equipment, programs for improved public transit and other traffic-control measures identified under Clean Air Act Amendments of 1990, transit safety improvements and programs, car pool and vanpool projects.
	Congestion Mitigation and Air Quality (CMAQ) Improvement Program	Capital and marketing	State or local public agencies within urbanized and nonurbanized areas in nonattainment areas for Federal air quality standards	Federal funds made availableto cover up to 80 percent of total eligible costs of projects which will have a positive impact on improving air quality. Potential projects can include those for public transit, ridesharing, or vanpooling.
Wisconsin Department of Transportation, Bureau of Transit and Local Transportation Aids	Section 85.20 Urban Mass Transit Operating Assistance Program	Operating	Counties, municipalities or towns, or agencies thereof; and transit or transportation commissions or authorities	State funds made available to eligible applicants within State in urban areas having a population of 2,500 or more to cover a portion an eligible transit system's total operating expenses. The amount of State aid provided to an applicant is dependant upon the location of, the population of the urban area served by, and the amount of Federal transit operating assistance available to, each transit system, and the total State funds appropriated for the program[e]

Table 55 (continued)

Sponsoring Agency	Program Name	Type of Transit Assistance	Eligible Applicants	Description of Major Program Elements
Wisconsin Department of Transportation, Bureau of Transit and Local Transportation Aids (continued)	Section 85.21 Specialized Transportation Assistance Program for Counties	Operating and capital	Counties	State funds made available to counties within State on a formula basis for use for either operating or capital assistance projects to provide direct transportation for elderly or disabled persons, to aid other agencies or organizations which provide such services, or to create a user-side subsidy program for elderly or disabled persons to purchase transportation from other providers
	Section 85.22 Specialized Transportation Assistance Program for Private Nonprofit Corporations	Capital	Private, nonprofit corporations and certain local public agencies	State funds made available to cover 80 percent of the costs of capital equipment used in providing specialized transportation services to elderly or disabled persons
	Section 85.24 Transportation Demand Management Program	Operating and capital and planning	Local governments and public or private organizations	State funds made available for projects involving transportation demand management strategies in areas experiencing significant air quality or traffic congestion problems. Eligible projects can include public transit services and ridesharing or vanpooling services for more than one employer. Funds available to cover up to 80 percent of project costs.

[a] *Urban areas having a central city of 50,000 or more population, as designated by the U. S. Bureau of the Census.*

[b] *The purchase of specific bus-related equipment needed to meet the requirements of the Americans with Disabilities Act of 1990 or the Clean Air Act Amendments of 1990 are eligible for up to 90 percent Federal funding.*

[c] *The amounts of Section 5307 operating assistance funds allocated annually to small urbanized areas in Wisconsin, like the Racine urbanized area, are not sufficient to fund the full 50 percent of operating deficits allowed under the program. Operating assistance is limited to the proportion of the sum of the statewide operating expenses of participating transit systems in small urbanized areas in Wisconsin that can be covered by the total amount of operating assistance available statewide to such areas. During 1997, the available Section 5307 operating assistance funds were sufficient to cover about 12 percent of the operating expenses of such transit systems.*

[d] *The amount of Section 5311 funds allocated annually to Wisconsin are not sufficient to cover the full 50 percent of operating deficits allowed under the Program. Operating assistance is limited to the proportion of the sum of the statewide operating expenses of participating transit systems that can be covered by the total amount of operating assistance available statewide under the program. During 1997, the available program funds were sufficient to cover about 29 percent of the operating expenses of participating transit systems.*

[e] *All transit systems participating in the Program are grouped into five separate categories, or tiers, based upon the location of the transit system and the population of the urban areas served. State aids are distributed among the transit systems in each tier so that each transit system has an equal percentage of operating expenses funded by the combination of Federal and State transit operating assistance. The percent of operating expenses covered by State aid varies among tiers, and in some cases among transit systems within each tier, based upon the amount of Federal transit operating assistance available to the transit systems in each tier, and the appropriations of State funds to each tier specified under the State budget. During 1997, the available program funds were sufficient to cover about 42.5 percent of operating expenses in the tier which included the City of Racine Transit System.*

Source: SEWRPC.

funding still distributed on a discretionary basis. Applicants who propose a local matching share significantly greater than the 20 percent required under the Program may improve their probability of receiving a Capital Program discretionary grant.

Capital Program grants are available to public agencies operating transit systems in both urbanized and non-urbanized areas. Applicants for Capital Program funds may also include States applying on behalf of local public agencies. The Wisconsin Department of Transportation has obtained Capital Program grants on behalf of transit operators in the State, including the City of Racine.

Section 5307 Urbanized Area Formula Program

Section 5307 of the United States Code, formerly Section 9 of the UMT Act, is for a formula block grant program making Federal assistance available to designated transit agencies in urbanized areas. These funds can be used for planning and engineering studies, capital improvements, and operations. The funds are distributed among the Nation's urbanized areas on the basis of a statutory formula. For urbanized areas with a population of 200,000 persons or less, such as the Racine urbanized area, the funds are apportioned on the basis of both population and population density. For urbanized areas with a population of over 200,000 persons, such as the Milwaukee and Madi-

son urbanized areas, formula funds are apportioned on the basis of both population and population density for fixed-guideway, busway or rail, route-miles on the basis of bus and guideway revenue vehicle-miles and transit system efficiency as measured by passenger miles of travel and operating expenses.

The annual allocation of Formula Program funds made to each urbanized area specifies the maximum amount of funds which may be used for transit operating subsidies, with the remaining funds available for planning and capital assistance projects. These funds are allocated to each urbanized area and remain available for up to three years past the year for which the allocation was made, a total of four years. Any funds remaining unobligated after four years are reapportioned Nationwide by the Federal Transit Administration.

The Urbanized Area Formula Program is the primary source of Federal funds for routine bus- and rail-transit facility replacements, equipment purchases, new facility construction, and system rehabilitation. The Federal share for planning and capital projects may not exceed 80 percent of the eligible project costs, again except for specific bus-related equipment needed to implement the requirements of the Americans with Disabilities Act of 1990 or the Clean Air Act Amendments of 1990, which are eligible for up to 90 percent Federal funding. The Formula Program is also the principal source of Federal funds for transit operating assistance for urbanized area transit systems, with the maximum Federal share for operating assistance equal to 50 percent of transit system operating deficits.

A recent change to the Program of 1996 allows the purchase of certain spare parts, which previously were considered as operating expenses, to be considered as associated capital maintenance items and, consequently, eligible for Federal capital assistance. Such items are limited to any equipment, tires, tubes, and materials for transit vehicles which cost at least 0.5 percent of the current value of the vehicle on which the item is to be used. The Federal Transit Administration also permits grant recipients the option of using Urbanized Formula Program capital assistance, rather than operating assistance, to fund the costs of privately owned capital components of transit services obtained by competitive procurement. Eligible capital components are limited to items used in the operation of the contracted transit services. Under this policy, which has been in effect since 1987, the total eligible capital costs are limited to the actual depreciation of the capital items or to a fixed percentage of the total contract costs, whichever is less. The Federal Transit Administration has prescribed fixed percentage caps for four different categories of service.[4] In the Southeastern Wisconsin Region, Waukesha County currently uses Urbanized Formula Program capital assistance in this way to augment the limited amount of operating assistance it is allocated annually.

Section 5307 Program funds for urbanized areas of 200,000 population or larger are allocated directly to the urbanized area, while funds for small urbanized areas of less than 200,000 population are allocated to the governor of each state on behalf of each urbanized area. In Wisconsin, the Governor has delegated his responsibility for designating the eligible recipients of Section 5307 funds to the Secretary of the Wisconsin Department of Transportation, who, in turn, has delegated this recipient status annually to the individual communities operating publicly-owned transit systems in the small urbanized areas of Wisconsin, including the City of Racine.

Capital assistance for transit systems participating in the Section 5307 Program in the State's small urbanized areas is distributed by the Wisconsin Department of Transportation on the basis of need. Because the limited amounts of capital assistance available to participating Wisconsin systems has not been sufficient to meet all the potential needs, the State has applied for and received funds under the Section 5309 Capital Program for capital projects which could not be funded through the urbanized area formula program.

The Wisconsin Department of Transportation currently distributes the operating assistance funds available under the Section 5307 Program among the Statewide applicants in small urbanized areas to cover part of transit system operating expenses. The percent of operating expenses funded annually is determined on the basis of the percentage which available Program funds for small urbanized areas constitutes of the Statewide sum of the operating expenses of the participating transit systems. For 1997, it is estimated that the total operating assistance funds available to the State under the Program for transit systems

[4]*The fixed percentage caps are as follows: 1) 20 percent of total contract costs for elderly and disabled paratransit services and noncommuter paratransit services, 2) 25 percent of total contract costs for regular bus service, 3) 35 percent of total contract costs for commuter services, such as express bus services, and 4) 25 percent of total contract costs for vehicle maintenance.*

in small urbanized areas will be sufficient to cover about 12 percent of operating expenses.[5]

The State's total 1997 allocation of Section 5307 funds for small urbanized areas was approximately $7.2 million. The City of Racine received a total allocation of approximately $674,400 in these Urbanized Formula Program funds, including about $571,400 for use as transit operating assistance and about $103,000 for transit capital assistance.

Section 5310 Elderly and Persons with Disabilities Program

Capital grants are available under the Section 5310 Elderly and Persons with Disabilities Program, formerly the Section 16 Program, to purchase vans, buses, and related equipment needed to meet the specialized transportation needs of the elderly and disabled. These funds are distributed to states in proportion to the elderly and disabled population of each state. Grants are available on an 80 percent Federal-20 percent local matching basis for capital expenditures to support the provision of coordinated specialized transportation services for elderly and disabled persons. This program was established to fill service gaps in areas where transit services for the general public do not operate or do not provide adequate transportation services for the elderly and disabled.

Applicants eligible for these funds generally are private, nonprofit organizations which provide transportation services specifically designed to meet the needs of elderly and disabled persons. A local public body may apply for these funds under the following conditions: 1) if it has been approved by the State as a coordinator of human services activities in a particular area, such as an agency on aging or a transit service provider which the State has identified as the lead agency to coordinate transportation service funded by multiple Federal or State human services programs and 2) if the public body certifies to the Governor that no nonprofit agencies or organizations are readily available to provide service in an area. Public bodies may also contract for services from agencies that have received funds under the Program. Private for-profit organizations are also not eligible to receive funds under the Program, but may lease equipment purchased with Program funds from nonprofit organizations.

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[5]*The Section 5307 Program allows for a maximum of 50 percent of operating deficits to be funded. However, the funds currently allocated under the program to small urbanized areas in Wisconsin are insufficient to fund transit systems at this level.*

The Wisconsin Department of Transportation administers the Elderly and Persons with Disabilities Program in Wisconsin. Grants are awarded on a Statewide competitive basis. The total allocation of such funds to Wisconsin amounted to about $1.1 million in 1997. The last grant awarded to a recipient in Racine County was to Lincoln Lutheran of Racine, Inc. in 1975.

Section 5311 Nonurbanized Area Formula Program

Section 5311 of the United States Code, formerly Section 18 of the UMT Act, authorizes a formula block grant program which makes available Federal assistance for transit services serving the nonurbanized areas of each State. Funds are apportioned to each State on the basis of nonurbanized area population. The Wisconsin Department of Transportation administers the Nonurbanized Area Formula Program and uses its annual Statewide apportionment to support operating and capital improvement projects for transit systems serving local communities, for the provision of intercity transit services, and to support Departmental costs for program administration and technical assistance for rural transit projects.

Applicants eligible for Nonurbanized Formula funds include counties, cities, villages, towns, and Federally recognized Indian tribal governing bodies. Public transit projects eligible for Nonurbanized Formula funds must be available to the general public and provide service in a nonurbanized area. Coordinated human service transportation which primarily serves elderly and disabled individuals, but which is not restricted from carrying other members of the general public, is considered available to the general public if it is marketed as public transit service. Eligible services could include those intended to transport residents from rural areas to an urban community with a population of less than 50,000 persons or to an urbanized area as defined by the U. S. Bureau of the Census, services intended to transport passengers in a rural area or in an urban community with a population of less than 50,000 persons, and services intended to transport passengers between urbanized areas not in close proximity which serve at least one stop outside an urbanized area. The program could fund transit services provided entirely within the rural portions of the study area or to transport rural residents of the study area to and from the Racine urbanized area. Services intended principally to transport urbanized area residents to locations outside the urbanized area, such as from the City of Racine to employment centers outside the Racine urbanized area in the Towns of Caledonia, Mt. Pleasant, or Yorkville, are not eligible for these funds.

The Federal share of eligible capital projects[6] under the program may not exceed 80 percent of total eligible costs, except for specific bus-related equipment needed to implement the requirements of the Federal Americans with Disabilities Act of 1990 or the Federal Clean Air Act Amendments of 1990, which are eligible for up to 90 percent Federal funding. The maximum Federal share for operating assistance under the program is 50 percent of a transit system's operating deficit. Because the funds allocated to the State under the program in the recent past have been insufficient to fund participating systems fully at this level, the State has distributed the available operating assistance funds among applicants at a lower percentage of the operating expenses. The percent of operating expenses funded annually is determined on the basis of the percentage which the available program funds constitutes of the Statewide sum of the operating expenses of the participating transit systems. For 1997, it is estimated that the total operating assistance funds available to the State under the program will be sufficient to cover up to about 29 percent of operating expenses.

The State's total 1997 allocation of funds under the Nonurbanized Area Formula Program amounted to approximately $3.1 million. While these funds are not currently being used in the study area or Racine County, they are used by several communities in the nonurbanized portions of the Region to support the operating and capital expenses of publicly subsidized shared-ride taxicab systems.

Funding Opportunities for Transit under Other Federal Transportation Programs

The Intermodal Surface Transportation Efficiency Act of 1991 created other opportunities for Federal funding of transit services. The new programs authorized under ISTEA which should be viewed as potential sources of Federal funds for transit projects within the study area include the Surface Transportation Program (STP) and the Congestion Mitigation and Air Quality Improvement (CMAQ) program. Both of these programs are administered by the Federal Highway Administration through the Wisconsin Department of Transportation.

The Statewide Multimodal Improvement Program (SMIP) provides funding to both urbanized areas, including the Racine urbanized area, and nonurbanized areas for a broad range of highway and transit capital projects. The funds distributed by the State under the Program include those authorized under the Surface Transportation Program, Discretionary, created under ISTEA. All capital projects which might otherwise be eligible for funding under current Federal Transit Administration grant programs are potentially eligible for STP funds. Transit and transit-related projects possibly eligible for funding would include the following: purchases of rolling stock and other transit equipment; construction, rehabilitation, and/or improvement of fixed-rail systems and other transit facilities; programs for improved public transit and other transportation control measures defined under the Clean Air Act Amendments of 1990; transit and transit-related planning, research, and development activities; transit safety improvements and programs; and carpool and vanpool projects. Projects are selected on a competitive basis by the Department of Transportation with no predetermined funding level for any particular geographic area. The City of Racine was awarded a grant for approximately $1.1 million from this program in 1995 for the purchase of five new buses. Because of budgetary constraints, no funding is available for new SMIP projects until at least the 1998-1999 State budget cycle.

The Congestion Mitigation and Air Quality Improvement Program provides Federal funding for projects aimed at reducing congestion and improving air quality in areas identified as not meeting the ozone and carbon monoxide emission standards set forth in the Federal Clean Air Act Amendments of 1990. Because Racine County has been identified as part of the six-county Milwaukee severe air quality nonattainment area for ozone, transit projects proposed within the Racine study area may qualify for CMAQ funds. Eligible projects would include transit or transit-related projects or programs directed at reducing single-occupant automobile travel, thereby assisting in improving air quality, and the development of new traffic demand management programs, such as carpool and vanpool matching and marketing services, along with transit marketing services. Since 1992, the City of Racine has been awarded several grants totaling about $3.2 million from this program for capital projects which have included the purchase of new buses, the expansion of bus service in the Town of Caledonia, and transit marketing activities as part of a regional transit marketing program.

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[6]*Capital projects are considered for funding by the Wisconsin Department of Transportation in the following order of priority: 1) Projects to replace vehicles operated by existing systems, 2) projects to initiate a transit service, 3) projects to replace maintenance and storage facilities of existing systems, 4) projects to expand the number of vehicles operated by existing systems, 5) projects to expand and rehabilitate maintenance and storage facilities of existing systems, and 6) projects to purchase and install such passenger amenities as shelters and bus stop signs for existing systems.*

Federal funds made available for transit projects under both of the above Programs are transferred for administrative purposes from the Federal Highway Administration to the Federal Transit Administration Section 5307 Urbanized Area Formula Program or Section 5311 Nonurbanized Area Formula Program, as appropriate for the area being served by the project. The funds, therefore, become subject to the application requirements and administrative regulations applicable to all Federal Transit Administration programs. Federal funds made available under these programs can cover up to 80 percent of the eligible transit project costs.

Federal Administrative Regulations

The availability of Federal funds is restricted by administrative regulations. Below are key regulations relevant to the use of Federal urban transit assistance funds in Racine County:

1. Requirement of Public Hearing
   All applicants for Federal Transit Administration capital assistance funds available under the Section 5307, 5309, and 5311 Programs and applicants for Federal Transit Administration operating assistance funds who are first-time applicants or who are proposing significant changes in transit service levels must hold a public hearing on the proposed project. This hearing is to be held to give parties with significant social, economic, or environmental interests an adequate opportunity to present their views on the project publicly.

2. Local Share Requirements
   When Federal funds provide a portion of the cost of a project, the remaining portion must come from sources other than Federal funds, with the exception of funds from Federal programs other than Federal Transit Administration programs certified to be eligible as local-share funds. Thus, funds received by transit operators pursuant to service agreements with State or local social service agencies or a private social service organization may be used, even though the original source of such funds may have been another Federal program.

3. Civil Rights Requirements
   All applicants for Federal funds must certify that they will not discriminate on the grounds of race, color, or national origin in the provision of the public transit services for which Federal funding will be used, pursuant to the provisions of Title VI of the Civil Rights Act of 1964.

4. ADA Requirements
   All transit operators must comply with current Federal Transit Administration regulations issued to implement the requirements of the Americans with Disabilities Act of 1990. These requirements are briefly summarized as follows:

   a. For operators of fixed-route bus services, the regulations require that all new vehicles purchased or leased for the transit system on or after August 25, 1990, must be accessible to disabled individuals using wheelchairs. Transit operators acquiring used vehicles on or after the above date must make demonstrable efforts to acquire accessible used equipment. Vehicles which will be rehabilitated or reconstructed after the above date must, to the maximum extent practical, be made accessible to disabled individuals using wheelchairs. In addition, the regulations require the provision of complementary paratransit services for disabled individuals unable to use the accessible vehicles operated in regular, noncommuter, fixed-route transit service.

   b. For transit systems providing demand-responsive service, vehicles purchased or leased for use on the system on or after August 25, 1990, must be accessible to wheelchair-bound individuals unless the system, when viewed in its entirety, provides a level of service to individuals with disabilities which is equivalent to the service which it provides to individuals without disabilities. A demand-responsive system would be deemed to provide equivalent service if the service available to individuals with disabilities is provided in the most integrated setting feasible and is equivalent to the service provided to other individuals with respect to the following service characteristics: 1) response time, 2) fares, 3) geographic area of service, 4) hours and days of service, 5) restrictions based on trip purpose, 6) availability of information and reservations, and 7) any constraints on capacity or service availability.

   Waivers from the above requirements may be considered by the Federal Transit Administration. Any waiver granted, however, would be temporary and pertain to a particular transit vehicle procurement, lease, or service contract. The regulations

also indicate that private transit operators contracting with a public body to provide a specific transit service would be required to meet the same requirements imposed on the public body under the regulation.

5. Drug and Alcohol Testing Requirements
All transit operators must comply with current Federal Transit Administration regulations concerning drug and alcohol testing of personnel involved in the provision of public transit services. The regulations require employees in what are considered safety-sensitive positions to undergo tests for various drugs and for alcohol use. Safety-sensitive employees would include those who operate the revenue- and nonrevenue-service equipment involved in the provision of public transit service, those who control the dispatch or movement of revenue-service vehicles, those who are responsible for maintaining revenue-service vehicles and equipment, and those who are armed security personnel. Transit systems are required to establish a program of tests for covered employees which would include testing before employment, random tests, tests administered when there is reasonable suspicion that the employee has used prohibited drugs or misused alcohol, post-accident tests performed after an accident involving the employee, return-to-duty tests performed before a covered employee who has tested positive or has refused to be tested can return to his or her job, and follow-up tests administered after an employee who has previously tested positive has been allowed to return to duty. Employees who are either directly employed by the transit operator or by a contractor are subject to the drug and alcohol testing requirements, except for contract maintenance personnel in transit systems funded with Section 5311 assistance.

6. "Buy America" Requirements
Public transit programs and activities receiving Federal financial assistance must comply with Part 661 of Title 49 of the Code of Federal Regulations, which mandates a preference for the purchase of domestic articles, materials, and supplies, whether manufactured or unmanufactured. These requirements, known as "Buy America," establish that no Federal funds may be obligated for public transit projects unless the steel and other manufactured products are produced in the United States, applying to purchases or projects of $100,000 or more. Rolling stock is required to have 60 percent domestic content and be assembled in the United States to qualify as being made in America. Components of products other than rolling stock must be 100 percent American made. Waivers are available allowing the purchase of foreign-made items under certain circumstances, such as when the purchase of items is in the public interest, when items are not produced in the United States in sufficient quantity or of satisfactory quality, or when the purchase of domestic manufactured items other than rolling stock will increase the cost of the purchase by more than 25 percent.

7. General Procurement Requirements
All contracts executed with Federal funds are subject to the requirements of fundamental procurement principles and applicable laws and regulations. Grant recipients are responsible for ensuring full and open competition and equitable treatment of all potential sources when purchasing operating equipment or contracting for transit services. All grantees are required to follow procedures that comply with Federal procurement guidelines when procuring goods and services. Notably, this policy has important implications for recipients of Federal Transit Administration funds who contract with a transit operator for the provision of eligible public transit service rather than providing the service directly. With few exceptions, such applicants are required to follow a competitive bidding process in selecting the contract service provider. Such a competitive bidding process was used by the City of Racine in procuring a private transit management company to oversee the operation of the City's bus system.

8. Charter Service Requirements
Applicants must certify that they will comply with current Federal Transit Administration regulations pertaining to the provision of charter service by Federally funded public transit operators. If an applicant desires to provide charter service using Federally funded equipment or facilities, the applicant must first determine if there are private charter operators willing and able to provide the charter service the applicant desires to provide. To the extent that there is at least one such private operator, the applicant is prohibited from providing charter service using Federal Transit Administration-funded equipment or facilities. Certain exceptions to the general prohibition on providing charter service exist, including one for recipients in nonurbanized areas. The Federal Transit Administration allows recipients in nonurbanized areas to petition for an exception if the charter service to be provided by willing and able private charter operators would

result in a hardship on the customer. Any charter service that an applicant provides under any of the above conditions must be incidental to regular transit service.

9. School Busing Requirements
No Federal assistance may be provided for the purchase or operation of buses unless the applicant agrees not to engage in school bussing for the exclusive transportation of students and school personnel in competition with private operators. This rule does not apply, however, to "tripper" service provided for the transportation of school children along with other passengers by regularly scheduled buses at either full or reduced rates.

10. Employee Protection Requirements
No Federal financial assistance may be provided until fair and equitable arrangements have been made, as determined by the U. S. Secretary of Labor, to protect the interests of employees affected by such assistance, pursuant to Section 5333(b) of the United States Code, formerly Section 13(c) of the Urban Mass Transportation Act of 1964, as amended. Such arrangements must include provisions protecting individual employees against a worsening of their positions with respect to their employment; collective bargaining rights; and other existing employee rights, privileges, and benefits. Recipients of Federal transit assistance are required to execute special agreements specifying such provisions either with the affected unions in the transit service area or, in the case of recipients of funds under the Section 5311 Nonurbanized Area Formula Program, with the Wisconsin Department of Transportation.

11. Disadvantaged Business Enterprise Requirements
No Federal assistance may be provided until all eligible disadvantaged business enterprises (DBEs) have been afforded the opportunity to participate fairly and equitably in any proposed public transit project. The applicant must provide assurance of its adherence to meeting specified goals concerning what proportion of work available to outside contractors has been awarded to DBE contractors.

12. Equipment Ownership Requirements
Recipients of Federal capital assistance must assure that the capital equipment and facilities acquired with Federal funds will be owned by a public body and used in a manner consistent with the public transit service for which it was acquired during the useful life of the capital equipment or facilities. In the event that such equipment or a facility is sold or otherwise devoted to another use during its useful life, the recipient may be required to refund a proportionate share of the Federal funds based on the value of the equipment or facilities at the time of sale.

13. Employment Nondiscrimination Requirements
Recipients of Federal funds must agree that, as a condition of receiving Federal financial assistance, they will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, or disability, and that they shall take affirmative action to ensure that applicants are employed and that employees are treated without regard to their race, color, religion, sex, national origin, or disability during the time of employment.

STATE FUNDING PROGRAMS AND AUTHORIZING LEGISLATION

Financial assistance provided by the State for urban transit includes indirect aid, principally in the form of tax relief, and direct aid in the form of operating subsidies and planning grants, principally through several programs administered by the Wisconsin Department of Transportation. The State of Wisconsin currently has no legislation authorizing a program to provide capital assistance to public transit systems.

Indirect Aid, Tax Relief

Indirect aid to urban public transit systems in Wisconsin began in 1955, when ridership on, and the profitability of, privately operated transit service was declining, and tax incentives to encourage private transit companies to reinvest profits in new capital facilities and stock were first enacted. The Wisconsin Statutes currently in effect which give urban transit systems tax relief are as follows:

1. Section 71.39 provides a special method that can be used by privately owned urban transit organizations to calculate State income-tax liability in such a way as to encourage reinvestment of profits in new capital facilities and stock.

2. Section 76.54 prohibits cities, villages, and towns from imposing a license tax on vehicles owned by private urban transit companies.

3. Section 77.54(5) excludes buses, spare parts and accessories, and other supplies and materials sold to common carriers for use in providing urban tran-

sit services from the general sales tax imposed on goods and services.

4. Section 78.01(2)(d) excludes vehicles engaged in urban public transit service from the tax imposed upon motor fuel, such as diesel fuel, specifically used in transit operations.

5. Section 78.40(2)(c) excludes vehicles engaged in urban public transit service from the fuel tax imposed upon special fuel, such as propane gas, specifically used in transit operations.

6. Section 78.75(1)(a) allows taxi companies to obtain rebates of the tax paid on motor fuel or special fuel over 100 gallons per year.

7. Section 341.26(2)(h) requires that each vehicle engaged in urban public transit service be charged an annual registration fee of $1.00 unless a municipal license has been obtained for the vehicle.

Section 85.20 Urban Mass Transit Operating Assistance Program

Financial aid in the form of transit operating assistance is currently available under the Wisconsin Urban Mass Transit Operating Assistance Program. The Program was established in 1973 when $5.0 million in general-purpose revenue funds for transit operating assistance was appropriated during the 1973-1975 biennium. The Program has been funded at increasing levels in every subsequent budget biennium, most recently totaling $147.13 million for the 1995-1997 biennium. The Program is authorized under Section 85.20 of the Wisconsin Statutes and is currently funded by the Wisconsin Transportation Fund, a multipurpose special revenue fund created to provide funding for transportation-related facilities and modes, with revenues derived from transportation users, primarily through taxes on motor fuels and vehicle registration fees.

Under the Program, local public bodies in an urban area that directly operate, or contract for the operation of, a public transit system are eligible for State aid from the Wisconsin Department of Transportation as partial reimbursement for the total annual operating expenses of the transit system. "Local public bodies" are defined as counties, cities, villages, or towns, or agencies thereof; transit or transportation commissions or authorities and public corporations established by law or by interstate compact to provide public transit services and facilities; or two or more such bodies acting jointly. An "urban area" is defined as any area that includes a city, village, or town having a population of 2,500 or more that is appropriate, in the judgment of the Department of Transportation, for service by a public transit system. Eligible transit systems under the program include those serving the general public with fixed-route bus or rail transit service, with shared-ride taxicab service, or some other public transit or paratransit service. Transit systems may directly operate, or contract for the operation of, a subsystem to provide paratransit services to elderly and disabled persons.

Between 1982 and 1995, State aids were distributed under the Program to cover a fixed percentage of an eligible transit system's total operating expenses, not to exceed the audited nonFederal share of the operating deficit, with the percentage specified in the authorizing State Statute. State aids covered 42 percent of operating expenses during 1995. As a consequence of provisions of the 1995 State Budget Act, the fixed percentage of operating expenses was eliminated from the authorizing Statute and the method for distributing State aids under the program was revised. Beginning in 1996, all transit systems participating in the program are grouped into five separate categories, or tiers, based upon the location of the transit system and the population of the urban area served. State aids are distributed among the transit systems in each tier so that each transit system has an equal percentage of operating expenses funded by the combination of Federal and State transit operating assistance. The percent of operating expenses covered by State aid varies among tiers, and in some cases among transit systems within each tier, on the basis of the amount of Federal transit operating assistance available to each transit system in each tier and the appropriations of State funds to each tier specified under the State budget. The funding tiers and the estimated proportions of operating expenses funded with Federal and State transit operating assistance under each tier during 1997 are identified in Table 56. Eligible public transit services provided within the Racine urbanized area would qualify for State aids under Tier IV.

Eligible transit operating expenses can include the costs of user-side subsidies[7] provided by eligible transit systems to disabled persons and to the general public in urban areas served exclusively by shared-ride taxi systems. Eligible expenses can also include profit and return on investment charged by private operators, provided the service contract was awarded by a competitive procurement process approved by the Department of Transportation. Applicants providing fixed-route transit service are

[7] *User-side subsidy is defined as financial assistance which is provided directly to a transit user, usually in the form of a voucher from a local public body or sponsoring agency, for use in payment of a fare for a trip taken on a public transit system or a specialized transit service.*

Table 56

ESTIMATED PERCENT OF TRANSIT OPERATING EXPENSES FUNDED BY STATE AIDS UNDER THE SECTION 85.20 URBAN MASS TRANSPORTATION OPERATING ASSISTANCE PROGRAM: 1997

Funding Tier	Transit Systems[b] Included under Funding Tier	Average Percent[a] of Operating Expenses Covered by:	
		State Transit Operating Assistance	Total Federal and State Operating Assistance
I	Milwaukee County Transit System	45.7	48.1
II	Madison METRO Transit System	44.1	45.9
III	Transit systems in urbanized areas of the State over 200,000 in population which are not included in Tiers I and II	43.1	46.9
IV	Transit systems in urbanized areas of State between 50,000 and 200,000 in population[c]	42.5	54.5
V	Transit systems in nonurbanized areas of State under 50,000 in population	37.2	66.2

[a]The figures shown represent averages for all the transit systems included under each tier. Figures for the individual transit systems or subsystems within each tier may be higher or lower. Operating expenses exclude capitalized maintenance costs.

[b]Includes paratransit services for disabled persons provided by each transit system to meet Federal ADA requirements.

[c]The City of Racine Belle Urban System falls into this funding tier.

Source: Wisconsin Department of Transportation and SEWRPC.

required to provide a local match equal to 20 percent of the State aid received as a condition for receiving State funds under the Program. No local matching funds are required for applicants providing shared-ride taxicab services. Funds from Federal and State sources, farebox revenues, and in-kind services cannot be used as local matching funds. In 1997 the City of Racine received about $2.0 million in State transit operating assistance to support the operation of the Belle Urban System.

Like the Federal funds described previously in this chapter, the availability of State urban mass transit operating assistance funds is restricted by administrative regulations. The most important of these restrictions are as follows:

1. Referendum Requirement
   No applicant will be eligible for State aid under the program to support the operation of a fixed-route transit system unless operation or subsidizing the system is approved by action of the governing body and by referendum vote of its electorate. Such approval is not required, however, for shared-ride taxicab service systems.

2. Passenger Service Focus Requirement
   The operating assistance project must be for passenger transportation service, with at least two-thirds of the service, measured in terms of vehicle-miles, provided within the boundaries of an appropriate urban area as defined by the Department of Transportation. Package delivery service is also allowed, provided it is incidental to the provision of passenger transportation service.

3. General Public Service Requirement
   The public transit service must be provided on a regular and continuing basis and must be open to the general public. Service provided exclusively for a particular subgroup of the general public, such as the elderly, disabled, or school children, is not eligible.

4. Fare Requirements
Fares must be collected for the transportation service in accordance with established tariffs. Fixed-route transit systems are also required to provide a reduced-fare program for elderly and disabled persons during nonpeak hours of operation, with such reduced fares not to exceed one-half of the adult cash fare. Shared-ride taxicab systems are not required to provide such reduced fares.

5. Private Contracting Limitations
Contracts for transit service awarded to a private transit operator following a competitive bidding process may not exceed a five-year term. Negotiated contracts with private transit operators are limited to one year.

6. Duration of State Funding Commitment
Commitments of State funds for operating assistance contracts are based on projections of operating revenues and operating expenses for a calendar-year contract period. Contracts between the Wisconsin Department of Transportation and recipients of State aids may not exceed one year's duration.

7. Management Planning Requirement
Transit systems are required to prepare a "transit management plan" describing how the transit system will be operated for the contract year, the amount of service which will be provided, the fares to be charged, steps to be taken to make the system operate more efficiently and effectively, and the procedures to be used for counting passenger trips on the transit system. Projections of operating revenues and expenses must be based upon the approved one-year management plan governing the operation of the participating transit system during the contract period.

8. Financial Auditing Requirements
Each participating transit system, except privately owned systems with which a local public body contracts for services on the basis of competitive bids, must allow the Department of Transportation to audit their financial records to determine the actual operating expenses and revenues and the amount of State aid to which the transit system is entitled during the contract period. For privately owned systems, the Department will conduct audits to determine compliance with service contracts, but not financial audits of the private provider's business records.

9. Program of Projects Requirement
Recipients must annually submit to the Department of Transportation a four-year program of transit projects directed toward maintaining or improving the transit service provided by the system. The four-year program must include descriptions of any proposed changes in service levels or fares, capital project needs, projections of ridership, the amount of service provided, operating expenses and revenues, and the public funding requirement.

10. System Performance Goals Requirement
Each recipient must annually establish service performance goals for a four-year period and assess the effectiveness of its transit system in relation to those goals. At a minimum, systemwide goals must be established for the following: operating expenses per total vehicle-mile, operating expenses per revenue passenger, operating expenses per platform vehicle-hour, the proportion of operating expenses recovered through operating revenues, revenue passengers per revenue vehicle-mile, and revenue passengers per service area population.

11. Management Audit Requirement
All transit systems participating in the Program must submit to a management performance audit conducted by the Department of Transportation at least once every five years.

Section 85.24 Transportation Demand Management Program

The State Transportation Demand Management Program was created in 1991. Authorized under Section 85.24 of the Statutes, the program is intended to encourage public and private organizations to develop and implement transportation demand management programs and approaches. Such programs and approaches would be aimed at reducing traffic congestion, promoting the conservation of energy, improving air quality, and enhancing the efficient use of existing transportation systems. The primary purpose of such actions would be to enhance the movement of people and goods, not vehicles. A total of $600,000 was appropriated from the State Transportation Fund for the Program during the 1995-1997 budget biennium.

Applicants eligible for funds under the Program include local governments and public and private organizations. Eligible projects include those involving transportation demand management strategies or approaches which

will be undertaken in areas of Wisconsin experiencing significant air quality or traffic congestion problems. Projects which promote alternatives to automobile travel and encourage the use of high-efficiency modes of travel, such as public transit, vanpooling, and ridesharing programs serving more than one employer, are projects which could be considered for funding under the Program. Notably, an important eligibility criterion is that the proposed project would be unlikely to occur without grant funding. State funds are available under the program to cover up to 80 percent of the project costs. The minimum 20 percent applicant matching share may include any combination of Federal, local, or private funding. To be considered for funding, a written endorsement of the project is required from all organizations or governing bodies which will be participating in the project. In addition, evidence must be provided that the transportation demand management strategy or initiative would be scheduled to begin within six months of the date of grant approval. Reasonable assurance is also required that the project, if it is a demonstration, is likely to be continued after the grant ends.

Funds from the Wisconsin Transportation Demand Management Program were used by the City of Racine in 1995 and 1996 to subsidize the operation of the express bus route, Route 20, operated by the City transit system to serve employers along Washington Avenue and STH 20, in the Town of Mt. Pleasant, and in the Grandview Industrial Park, in the Town of Yorkville.

Section 85.21 Specialized Transportation Program for Counties

Section 85.21 of the Wisconsin Statutes authorizes financial assistance to counties for a Specialized Transportation Program serving elderly and disabled persons who would not otherwise have an available or accessible method of transport. Funds for the Program come from the State Transportation Fund. A proportionate share of funds under the State Program is allocated to each county in Wisconsin on the basis of the estimated percent of the total Statewide elderly and disabled population residing in the county. In general, counties may use these funds either for operating assistance or capital projects to provide transportation services directly for the elderly and disabled, to aid other agencies or organizations which provide such services, or to create a user-side subsidy program through which the elderly and the disabled may purchase transportation services from existing providers at reduced rates. Counties must provide a local match equal to 20 percent of their allocation. In addition, a county may hold its allocated aid in trust for the future acquisition or maintenance of transportation equipment.

Transportation services supported by funds available under this Program may, at the discretion of each county, carry members of the general public on a space-available basis, provided that priority is given to serving elderly and disabled patrons. In addition, Section 85.21 requires that a copayment, which can be a voluntary donation, be collected from users of the specialized transportation service and that a means for giving priority to medical, nutritional, and work-related trips be adopted if the transportation service is unable to satisfy all of the demands placed on it.

Funding for this program during the 1995-1997 biennium was established at $11.5 million by the 1995 State Budget Act. Racine County currently participates in this program to help support the paratransit service programs administered by the Racine County Human Services Department, which provides door-to-door, specialized transportation service to transportation-handicapped and developmentally disabled residents of Racine County, including those within the service area of the City of Racine's fixed-route bus system. The 1997 budget for the County's paratransit programs included approximately $184,200 received by Racine County under this State program.

Section 85.22 Specialized Transportation Assistance Program for Private Nonprofit Corporations

Section 85.22 of the Wisconsin Statutes authorizes the provision of financial assistance for the purchase of capital equipment to private, nonprofit organizations which provide paratransit services to the elderly and disabled. This is the State counterpart of the previously referenced Federal Section 5310 program for elderly and disabled persons. The State aids available under the Program are distributed to applicants in the State on an 80 percent combined State-Federal and 20 percent local matching basis. It is administered jointly with the Federal Section 5310 Program by the Wisconsin Department of Transportation. In all cases, the applicant is responsible for providing the 20 percent local share of capital project costs. A total of $1.42 million from the State Transportation Fund was appropriated for the Program during the 1995-1997 biennium by the 1995 State Budget Act.

STATE ENABLING LEGISLATION

In addition to providing financial assistance to public transit systems in the State, the Wisconsin Statutes enable counties and municipalities to operate public transit systems. The more important State legislation which defines local governmental powers which can be used to oversee the operation of a public transit system is outlined in the following sections.

County Contracts with Private Transit System Operators

Sections 59.968(1)-(3) of the Wisconsin Statutes permit a county to financially assist private urban public transit companies operating principally within the county by: 1) direct subsidies, 2) purchasing of buses and leasing them back to the private company, and 3) acting as the agent for the private operator in filing applications for Federal aid.

County Ownership and Operation of Transit Systems

Sections 59.968(4)-(8), 59.969, and 63.03(2)(x) of the Wisconsin Statutes permit a county to acquire a transportation system by purchase, condemnation, or otherwise, and to provide funds for the operation and maintenance of such systems. The term "transportation system" is defined as all land, shops, structures, equipment, property, franchises, and rights of whatever nature for the transportation of passengers. The acquisition of the system must be approved by a two-thirds vote of a county board. The county has the right to operate into contiguous or "cornering" counties. However, where operation into other counties would be competitive with the urban or suburban operations of other existing common carriers of passengers, the county must coordinate the operations with such other carriers to eliminate adverse financial impact on those carriers. Such coordination may include, but is not limited to, route overlapping, transfers, transfer points, schedule coordinations, joint use of facilities, lease of route service, and acquisition of route and corollary equipment. The law permits a county to use any street for transit operations without obtaining a license or permit from the local municipality concerned. The law requires the county to assume all the employer obligations under any contract between the employees and management of the system and to negotiate an agreement protecting the interest of employees affected by the acquisition, construction, control, or operation of the transit system. This labor protection provision is similar to Section 13(c) of the Federal Urban Mass Transportation Act of 1964, as amended.

County Transit Commissions

Section 59.967 of the Wisconsin Statutes provides for the creation of county transit commissions, authorized to operate a transportation system to be used for the transportation of persons or freight. A commission is to be composed of not fewer than seven members appointed by the county board. A county transit commission is permitted to extend its transit system into adjacent territory within 30 miles of the county boundary. Counties may also establish, by contract, a joint municipal transit commission in cooperation with any city, village, or town. County ownership and operation of the transit system is subject to the requirements for municipal operation of transit systems discussed in a following section.

Municipal Contracts with Private Transit System Operators

Section 66.064 of the Wisconsin Statutes permits a city, village, or town served by a privately owned urban public transit system to contract with the private owners for the leasing, public operation, joint operation, subsidizing, or extension of service of the system.

Municipal Operation of Transit System

Section 66.065(5) of the Wisconsin Statutes provides that any city, village, or town may, by action of its governing body and upon a favorable referendum vote, own, operate, or engage in an urban public transit system. This Statute permits a city or village to establish a separate department to undertake transit operation under municipal ownership or to expand an existing city department to accommodate the responsibility of municipal transit operation.

City, Village, or Town Transit Commissions

Section 66.943 of the Wisconsin Statutes provides for the formation of a city, village, or town transit commission composed of not fewer than three members appointed by the mayor, village board, or town board chairperson and approved by the city council, village board, or town board. No member of the commission may hold any other public office. The Commission is empowered to "establish, maintain, and operate a bus system, the major portion of which is located in, or the major portion of the service is supplied to, such a city, village, or town." Ownership and operation of the transit system is subject to the requirements for municipal operation of a transit system discussed in a preceding section. The transit commission is permitted to extend the urban transit system into adjacent territory beyond the city, village, or town, but not more than 30 miles outside the corporate limits of the municipality. In lieu of directly providing transportation services, the transit commission may contract with a private organization for such services.

City, Village, or Town Transit-Parking Commissions

Sections 66.068, 66.079, and 66.943 of the Wisconsin Statutes provide for the formation of city, village, or town transit and parking commissions. A combined transit-parking commission may be organized as a single body under this enabling legislation; not only may it have all the powers of a city transit commission, but it may also be empowered to regulate on-street parking facilities and own and operate off-street facilities.

Municipal Transit Utility

Sections 66.066 and 66.068 of the Wisconsin Statutes provide for the creation of a municipal transit utility. The Statutes provide for the formation of a management board of three, five, or seven commissioners elected by the city council or village or town board to supervise the general operation of the utility. Ownership and operation of the transit system is subject to the requirements for municipal operation of a transit system discussed in a preceding section. In cities with populations of less than 150,000, the city council may provide for the operation of the utility by the board of public works or by another municipal officer in lieu of the above commission.

Cooperative Contract Commissions

Section 66.30 of the Wisconsin Statutes provides that municipalities[8] may contract with each other to provide jointly any services or exercise jointly any powers that such municipalities may be authorized to provide or exercise separately. While no transportation-related cooperative contract commissions currently exist within the Region, there is potential to achieve significant economies through providing transportation services and facilities on a cooperative, areawide basis. Moreover, the nature of certain transportation problems often requires that solutions be approached on an areawide basis.

Metropolitan Transit Authority

Such an authority, if created pursuant to Section 66.94 of the Wisconsin Statutes, would have the power to acquire, construct, and operate a public transportation system and would exercise the power of eminent domain within a district which must include a city with a population of 125,000 or more persons. Significantly, such an authority would not have any powers of taxation. It could, however, issue revenue bonds.

Regional Transportation Authority

The Regional Planning Commission studied the feasibility of creating a regional transportation authority (RTA) within Southeastern Wisconsin. Following that study, State legislation was enacted to create an RTA encompassing all seven counties in the Region and directing that the RTA conduct its own study and recommend whether or not it should continue in existence after September 30, 1993.[9] Over an approximately 15-month period during 1992 and 1993, the RTA Board carried out its own study. The results of that study were set forth in a report to the Governor and the Legislature.[10] In that report, the RTA Board developed a proposal for a permanent authority, the essence of which consisted of the following:

1. Geographic Scope
   The study proposed a seven-county RTA providing, however, that during the first six months of existence, a county could exercise a withdrawal option. Absent such a withdrawal, the county would be a permanent member of the RTA. Any county which withdrew in the initial six months could petition later to rejoin. The RTA Board would be permitted to impose conditions for rejoining.

2. Board Structure
   The study proposed that the RTA be governed by an 11-member board, assuming all seven counties participated, including, on an ex-officio basis, the State Secretary of Transportation. Each participating county would have one resident representative. There would be three at-large members residing in the Region, with one of those appointed residing within the City of Milwaukee. All members would be appointed by the Governor and confirmed by State Senate. The Governor would designate the Board chair.

3. Functions and Responsibilities
   The study proposed that the RTA be empowered as a funding and plan-implementation agency. All transportation projects supported with RTA funds would have to be drawn from the adopted regional transportation system plan. The RTA would not be enabled to construct and maintain arterial highway systems; however, the RTA would be enabled to provide funds to county and local governments for arterial highway construction, operation, and maintenance. The RTA would also be enabled to fund county and local governments that deliver transit services as well as to sponsor directly and provide transit services by contract with either public transit agencies or with private providers. The RTA would also be empowered to assume responsibilities for county and local transit services where county and local governments want to transfer that function to the RTA. Finally, the RTA would be given responsibility to carry out areawide

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[8] *Under this section of the Statutes, the term municipality is defined to include the State and any agency thereof, cities, villages, towns, counties, school districts, and regional planning commissions.*

[9] *See* Wisconsin Statutes, *Section 59.966.*

[10] *See* Southeastern Wisconsin Regional Transportation Authority Report to Governor Thompson and the Wisconsin Legislature, *May 1993.*

transportation demand management programs, such as carpooling and vanpooling promotional efforts.

4. Revenues
   The study proposed that the RTA be funded through two additional taxes levied in the Region by the RTA, a 0.4 percent general sales tax and a five-cent-per-gallon motor fuel tax. The motor fuel tax would not be levied on diesel fuel. These two taxes could be expected to raise a minimum of $90 million annually in the Region.

5. Revenue Allocation
   The study proposed that the legislation guarantee that over a six-year period every county would receive a minimum of 98 percent of the revenue raised in the county. In addition, every county would be guaranteed to receive annually at least 80 percent of the revenue raised in that county.

The RTA Board delivered its study recommendations to the seven counties in the Region early in 1993. Resolutions supporting the study recommendations were defeated by the County Boards of Kenosha, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties. The Milwaukee County Board approved the supporting resolution on the condition that the regional taxes envisioned be levied instead Statewide and be confined to motor fuel taxes. On the strength of these County Board actions, the RTA Board recommended to the Governor and the Legislature that the Board be disbanded and that a permanent authority not be created at that time.

Contracting Requirements

Important changes to the aforecited Wisconsin Statutes defining municipal powers for operation of public transit systems were enacted by the State Legislature in the spring of 1994. For all of the above operational structures, with the exceptions of the municipal transit utility, the Metropolitan Transit Authority, and the Regional Transportation Authority, the Wisconsin Statutes now prohibit the provision of transit service outside the corporate limits of the public entity or entities which directly provide, or contract for, transit service, unless a contract providing for financial assistance for the transit service has been executed with the public or private organization receiving transit service. This requirement applies only to new transit services not provided as of April 1994.

Conclusions Pertaining to State Enabling Legislation

From the information presented above, it should be apparent that there is currently no State legislation which would permit transit operators, like the City of Racine, to create an areawide or regional transit agency by means other than cooperative contract commissions. The authorizing State Statute, however, does not empower such commissions to levy taxes to support transit operations. Under current State legislation, the only tax which local municipalities can levy for transit and other uses is a vehicle registration fee, or wheel tax, which would be added to, and collected with, the State's vehicle registration fee.

The lack of State enabling legislation permitting local areas to establish regional transit services funded with a discrete source of revenue dedicated to transit was recognized in the Wisconsin Department of Transportation Intermodal Transportation Plan developed through the long-range Statewide transportation planning process termed TRANSLINKS 21.[11] The State plan proposed that the Department work with local governments and metropolitan planning organizations in the State's larger metropolitan areas to develop "metropolitan transit cooperatives" to coordinate and manage transit services that cross several jurisdictional boundaries and to assist in developing nonproperty-tax sources of local revenues dedicated to transit to ensure adequate financial support for existing and potential future transit services.

LOCAL LEGISLATION

Local legislation pertaining to bus and taxicab operations currently exists in the municipal codes of the City of Racine and Town of Mt. Pleasant. The most significant citations and their content include the following:

- Article III, Division 10 of the Racine Code
  This section establishes the Racine Transit and Parking Commission, defines its function and powers, and specifies the terms and qualifications of the individuals serving as commissioners.

- Article V, Division 4 of the Racine Code
  This section establishes sites of taxicab stands in the City and sets parking limits for taxicabs on city streets.

- Article VII, Division 2 of the Racine Code
  This section provides for the establishment of bus stops and loading zones in the City, provides for their signage by the City, prohibits parking at bus stops established by the City, and prohibits

[11] *See Wisconsin Department of Transportation report,* Wisconsin TRANSLINKS 21 Intermodal Transportation Plan, *September 1994.*

eating, drinking, or improper attire by passengers on City buses.

- Article XXVIII, Divisions 1 through 4 of the Racine Code
  These sections regulate taxicab services in the City and include provisions for the licensing of each taxicab company, licensing of taxicab drivers, and regulations for the operation of taxicab services.

- Chapter 7, Section 7.06(5) of the Mt. Pleasant Code
  This section provides for the establishment of bus stops in the Town by the transit operator and prohibits parking at bus stops.

Notably, the Racine ordinance regulating taxicab services in the City currently restricts the provision of shared-ride taxicab service unless permission is given by the first passenger served. This restriction on shared-ride operation would limit the eligibility of City taxicab services for financial assistance under current Federal and State transit assistance programs.

SUMMARY

This chapter has presented information on transit-related legislation and regulations, with emphasis on Federal and State financial assistance programs for transit services. This chapter has also summarized State enabling legislation as it applies to county and local government organizational options for establishing and operating public transit systems. On the basis of this information, the following conclusions may be drawn concerning the provision of public transit services within the Racine transit system development plan study area:

1. Public transit services provided to serve travel within that portion of Racine County lying inside the Racine urbanized area, consisting essentially of the City of Racine; the Villages of Elmwood Park, North Bay and Sturtevant; and the eastern portions of the Towns of Mt. Pleasant and Caledonia, are eligible for financial assistance under the Federal Section 5307 Urbanized Area Formula Program. For such services, Federal assistance could cover about 80 percent of the total costs of capital projects and up to 50 percent of operating deficits. Because the funds allocated to small urbanized areas in Wisconsin, like the Racine urbanized area, under the program have been insufficient to fund the operating deficits of participating transit systems at the maximum allowed level fully, the State has distributed the available operating assistance funds to cover a lower percentage of the operating expenses. For 1997, it was estimated that the total operating assistance funds available under the program to participating transit systems in the State's small urbanized areas will be sufficient to cover up to about 12 percent of operating expenses. The City of Racine has made use of both operating and capital assistance available under this program since it began public operation of the Belle Urban System in 1975.

2. Public transit services provided to serve travel within the remaining rural portions of the study area or to transport rural residents to and from the Racine urbanized area could be eligible for financial assistance under the Federal Section 5311 Nonurbanized Area Formula Program. Like the Federal urbanized area formula program, Federal funds under this program would be available to cover about 80 percent of capital project costs and up to 50 percent of operating deficits. Because the funds allocated to the State under the program in the recent past have been insufficient to fund fully the operating deficits of participating transit systems at the maximum allowed level, the State has distributed the available operating assistance funds to cover a lower percentage of the operating expenses. For 1997, it was estimated that the total operating assistance funds available under the program to participating transit systems in the State's nonurbanized areas will be sufficient to cover up to about 29 percent of operating expenses.

3. Public transit services provided throughout the study area would be eligible for financial assistance under the Federal Section 5309 Capital Program. For such services, Federal assistance could cover about 80 percent of the cost of capital projects. Most of the Nationwide appropriation of Capital Program funds has, in the recent past, been distributed on the basis of Congressional earmarks, leaving limited funding for distribution on a discretionary basis. Since 1991, the Wisconsin Department of Transportation has obtained several Capital Program grants on behalf of transit operators in the State, including the City of Racine.

4. Public transit services provided throughout the study area would be eligible for financial assistance through the State Section 85.20 Urban Mass Transit Operating Assistance Program. All transit systems participating in the Program are grouped into five separate categories, or tiers, based upon the location of the transit system or the population of the urban areas served. State aids are distributed among the

transit systems in each tier so that each transit system has an equal percentage of its total eligible operating expenses funded by the combination of Federal and State transit operating assistance, with the percent of operating expenses covered by State aid varying among tiers. The State operating assistance available to the City of Racine during 1997 covered about 42.5 percent of the operating expenses of the Belle Urban System. No State program currently exists to provide assistance to public transit systems for capital projects.

5. Funds to support the operation of, and to purchase capital equipment for, transit services in the study area on a short-term or demonstration basis may be available through the following Federal and State programs administered by the Wisconsin Department of Transportation:

   a. The Statewide Multimodal Improvement Program provides funds for transit projects through the Surface Transportation Program (STP), Discretionary, created under ISTEA. All capital projects which might otherwise be eligible for funding under other Federal Transit Administration grant programs are potentially eligible for STP funds. The City of Racine was awarded a grant for STP funds in 1995 for the purchase of new buses.

   b. The Federal Congestion Mitigation and Air Quality (CMAQ) Improvement Program provides funds to public bodies for projects aimed at reducing congestion and improving air quality in areas identified as not meeting Federal standards. The City of Racine has used CMAQ funds in the recent past for expanded transit services in the Town of Caledonia, for transit marketing activities, and for the purchase of new buses.

   c. The State Section 85.24 Transportation Demand Management Program provides funds to local governments and private organizations for projects undertaken in areas of Wisconsin experiencing significant air quality or traffic congestion problems. These projects are to promote alternatives to automobile travel, and, in particular, alternatives to making work trips by single-occupant vehicles. The City of Racine used funds under this program during 1995 and 1996 for a demonstration project providing express-bus service to major employers in the western portion of the study area.

6. As a condition for the receipt and use of Federal and State transit financial assistance, the City of Racine is required to satisfy a number of Federal and State administrative requirements. Among these are vehicle-accessibility requirements associated with the Federal Americans with Disabilities Act of 1990; the "Buy America" requirements associated with Part 661 of Title 49 of the Code of Federal Regulations; and such other Federal requirements as employment nondiscrimination, labor protection requirements, drug and alcohol testing requirements for transit operating and maintenance personnel, procurement requirements, and disadvantaged business enterprise requirements.

7. The Wisconsin Statutes provide several organizational alternatives to local municipalities and counties for the operation of public transit services including the following: contracting for services with a private operator, public ownership and operation of a municipal utility, and public ownership and operation by a municipal transit commission or cooperative contract commissions. There is currently no State legislation which would permit transit operators, like the City of Racine, to create an areawide or regional transit agency, other than cooperative contract commissions, or to levy taxes for transit or other uses, other than a vehicle registration fee. The lack of State enabling legislation permitting local areas to establish regional transit services funded with a discrete source of revenue dedicated to transit was recognized in the State Intermodal Transportation Plan. The State plan proposed that the Department of Transportation work with local governments and metropolitan planning organizations in the State's larger metropolitan areas to develop "metropolitan transit cooperatives" to coordinate and manage transit services that cross several jurisdictional boundaries and to assist in developing nonproperty-tax sources of local revenues dedicated to transit.

8. Local ordinances pertaining to bus and taxicab operations currently exist within the municipal codes of the City of Racine and the Town of Mt. Pleasant. The Racine ordinances currently for-

bid the provision of shared-ride taxicab service in the City unless permission is given by the first passenger served. This restriction on shared-ride operation would limit the eligibility of City taxicab services for financial assistance under current Federal and State transit assistance programs.

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Chapter VII

ALTERNATIVE AND RECOMMENDED TRANSIT SERVICE IMPROVEMENTS

INTRODUCTION

Previous chapters of this report have described the land uses and travel patterns of the City of Racine transit planning study area and analyzed the effectiveness with which the existing City transit system serves those patterns. In addition, the ridership levels and financial performance of the transit system have been documented. This information provided the basis for developing and evaluating alternative transit service changes and system plans for the Belle Urban System. A recommended plan, based upon evaluation of the alternative improvements, was then identified.

This chapter describes the alternative transit service improvements considered and those ultimately chosen by the Advisory Committee for adoption and implementation. The remainder of the chapter consists of three sections. The first documents an analysis and evaluation of a number of alternative service changes undertaken to determine which should be incorporated into the final transit system development plan. Included in this section are the Commission staff recommendations pertaining to each alternative service change. The second reports the recommendations the Advisory Committee relative to accepting, rejecting, or modifying the Commission staff recommendations and developing a final recommended plan. The chapter concludes with a brief summary.

ALTERNATIVE TRANSIT SERVICE CHANGES

A number of potential transit service changes, including adjustments to existing route alignments or to service schedules and periods of operation, were considered in the development of alternative transit system plans for the Belle Urban System. The changes included those identified by the Advisory Committee and the Commission staff based on the findings of the transit system performance evaluation presented in Chapter V. The changes also include those proposed by the management firm for the Belle Urban System and presented to the Racine Transit and Parking Commission in June 1997. The alternative service changes are summarized in Table 57.

The potential service changes were analyzed through a qualitative comparison of aspects of each change to identify significant probable impacts on transit system operations, ridership, effectiveness, and efficiency. The analyses provided the basis for selecting between alternative alignment options and service changes for individual or groups of routes.

Alternative Changes to Route Alignments

Table 57 identifies eight sets of alternative routing changes proposed for individual routes or groups of routes. Alternative alignment options were proposed under four of the routing changes. The key information identified and conclusions drawn in the analyses of these changes are as follows:

- Route No. 1
  Description: Two potential alignment options, identified on Map 30, were proposed for Route No. 1:

  1. Option 1A: The route would be extended to the north via Douglas Avenue to a new terminus at Four Mile Road and Douglas Avenue in the Green Tree Centre. The extension was proposed by the Town of Caledonia representative on the Advisory Committee as part of a restructuring of the bus service currently provided over Route No. 10 and as a way of improving access by transit to employers located along Douglas Avenue north of Three Mile Road. The route extension would also provide direct access for City of Racine residents to the Green Tree Centre, a major community shopping center, at the new route terminus.

  2. Option 1B: The route would be extended to the north and east to a new terminus at Four Mile Road and Erie Street in the Shorecrest Shopping Center. The extension would create a mini-hub on the north side of the City and expand transfer capabilities at the Shorecrest Shopping Centre for passengers by using the Caledonia bus service, as well as for northside City residents traveling to northside employment and commercial centers along Douglas Avenue.

Table 57

TRANSIT SERVICE CHANGES TO BE CONSIDERED FOR THE RACINE TRANSIT SYSTEM DEVELOPMENT PLAN: 1998-2002

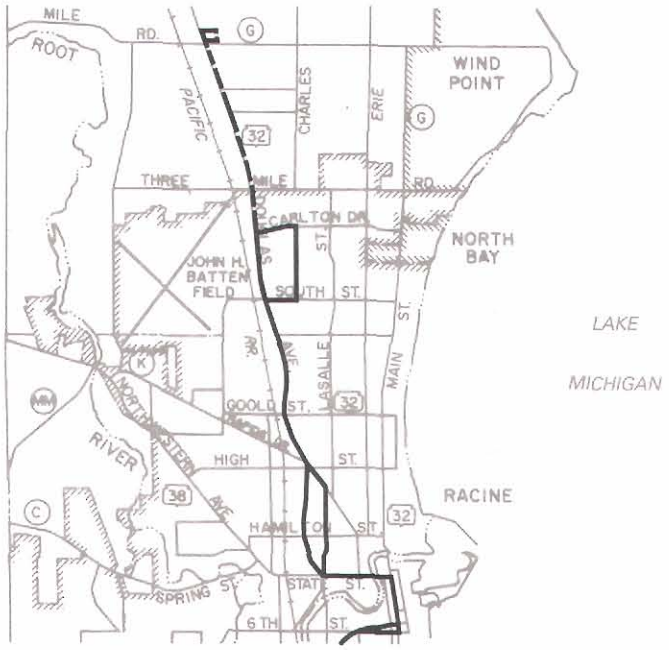
Potential Restructuring of Routes	Potential Adjustments to Schedules and Service Periods
1. Route No. 1 a. Extend route to north via Douglas Avenue to serve the Green Tree Centre at Douglas Avenue and Four Mile Road b. Extend route to north and east to serve the Shorecrest Shopping Center at Three Mile Road and Erie Street	1. Weekday Service a. Operate system with uniform 30 minute headways during peak periods by increasing headways from 20 to 30 minutes on Route Nos. 3, 4, and 7 b. Increase midday headways from 30 to 60 minutes on Route Nos. 1 through 8 c. Add evening service until 11:30 p.m. by: - operating Route Nos. 1 through 8 - operating smaller system of modified routes
2. Route Nos. 2 and 9 a. Extend route to west via 21st Street, Roosevelt Avenue, and Durand Avenue to serve eastern edge of the Racine West commercial area; eliminate Route No. 9 and extend Route No. 2 to University of Wisconsin-Parkside during class sessions via current Route No. 9 alignment south of Taylor Avenue	2. Saturday Service a. Reduce service period by starting service at 8:00 a.m. instead of 7:00 a.m. b. Reduce service by operating with 60 minute headways all day instead of 30-minute headways c. Add evening service until 11:30 p.m. by: - operating Route Nos. 1 through 8 - operating smaller system of modified routes
3. Route No. 3 a. Convert route west of 16th Street and Green Bay Road to a one-way loop via Green Bay Road, Washington Avenue, Oakes Road, and 16th Street to serve Lincoln Lutheran facilities on 16th Street west of Green Bay Road and residential area east of Oakes Road and north of 16th Street	3. Sunday Service a. Add service between 8:00 a.m. and 5:00 p.m. by: - operating Route Nos. 1 through 8 - operating smaller system of modified routes above
4. Route Nos. 3, 4, and 20 a. Extend Route No. 4 to west via Washington Avenue to serve J.I. Case High School; eliminate Route No. 20 and extend service over Route No. 4 via current Route No. 20 alignment to Grandview Industrial Park during weekday peak periods; extend Route No. 3 to south via Green Bay Road and Route No. 4 one-way loop to Racine West commercial area; convert Route No. 6 south of Washington Avenue and Ohio Street to a one-way loop via Ohio Street, Byrd Avenue, Green Bay Road, and Washington Avenue	4. All Service Periods a. Operate system with pulse scheduling utilizing transfer terminal
5. Route Nos. 5 and 9 a. Eliminate the northern half of Route No. 5 and make downtown Racine the route's new northern terminus; realign the northern end of Route No. 3 to replace Route No. 5 service to Rapids Plaza and Jacato Drive; eliminate Route No. 9 and extend service over the southern half of Route No. 5 to UW-Parkside during class sessions; replace portion of Route No. 5 south of Durand Avenue with service over Taylor and Lathrop Avenues to County Line Road then current Route No. 9 alignment to UW-Parkside b. Retain the northern half of Route No. 5 but extend the route to downtown Racine via State, Main, and 6th/7th Streets; eliminate Route No. 9 and extend service over the southern half of Route No. 5 to UW-Parkside during class sessions via Chickory Road then current Route No. 9 alignment to UW-Parkside	--
6. Route Nos. 6 and 8 a. Combine routes to create a Route No. 6-8 loop by extending existing routes via Durand Avenue, Roosevelt Avenue, 21st Street, and Ohio Street and operate routes with two-way service at 60-minute headways b. Combine existing segments of routes between downtown Racine and St. Mary's Hospital to create a Route 6-8 loop and operate routes with two-way service at 30-minute headways; realign the western end of Route No. 4 to replace Route No. 6 service over Byrd Avenue; create second loop route between St. Mary's Hospital and Racine West commercial area using remaining segments of Route Nos. 6 and 8 and operate with one-way service at 60-minute headways	--
7. Route Nos. 7 and 20 a. Replace Route No. 7 service to S. C. Johnson & Son, Inc. Waxdale plant with service over Route No. 20; provide direct service to Regency Mall only during Mall business hours	--
8. Route No. 10 (Caledonia service) a. Restructure route to eliminate most unproductive segments and create smaller one-way loop route with new route terminus at the Green Tree Centre at Douglas Avenue and 4 Mile Road b. Operate demand-responsive shared-ride taxicab service in lieu of fixed-route bus service within area served by route	--

Source: SEWRPC.

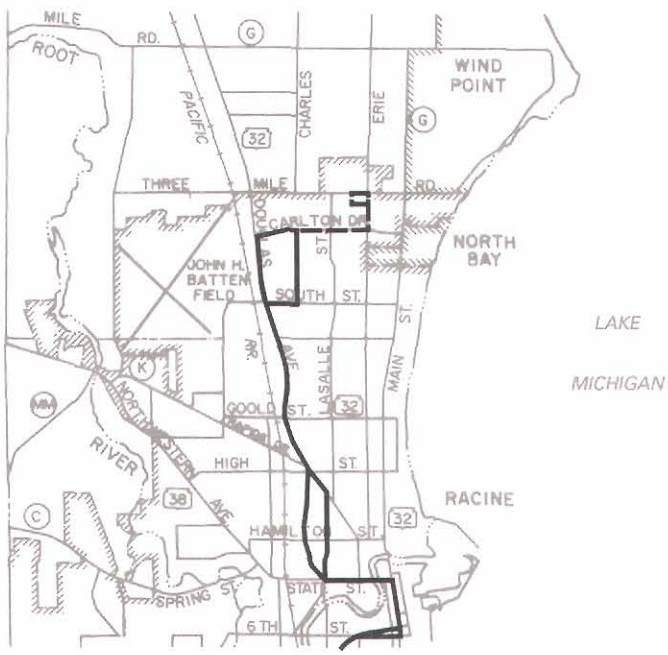
Map 30

PROPOSED ALIGNMENT CHANGES FOR ROUTE NO. 1

OPTION A



OPTION B



LEGEND

- NEW SEGMENT TO BE ADDED
- NONE EXISTING SEGMENT TO BE DROPPED
- EXISTING SEGMENT TO BE RETAINED

Source: SEWRPC.

Impacts on Existing Service, Ridership, and Costs: Round-trip route-miles on Route No. 1 would increase by 2.6 miles under Option 1A and 1.7 miles under Option 1B. The extensions would not change vehicle requirements and could be accomplished using the layover time in the current schedule, keeping the additional costs to those related to increases in vehicle-miles.

Analysis: Both options represent reasonable uses of the surplus time available on Route No. 1. On the basis of the difference in the lengths of the route extensions, the additional operating cost related to vehicle use for the extension to the Green Tree Centre would be about 50 percent higher than for extending the route to the Shorecrest Shopping Centre. While the route extension to the Green Tree Centre would pass along a stone quarry which would generate no passenger traffic, it may have the potential for generating higher ridership than the extension to the Shorecrest Shopping Center because of the location of several employers along Douglas Avenue and the major community shopping center at the route terminus. The route extension to the Shorecrest Shopping Center would serve only residential areas and a minor community shopping center.

Recommendation: The extension of Route No. 1 to the Green Tree Centre as proposed under Option 1A is recommended to be included in the final system plan. The extension of the route to the Shorecrest Shopping Centre proposed under Option 1B, however, could be revisited should the City and the

Town of Caledonia fail to agree on the funding of the extension to the Green Tree Centre.

- Route Nos. 2 and 9

  Description: Route No. 2 would be extended to the eastern edge of the Racine West commercial area by eliminating service over Ohio Street between 21st Street and Durand Avenue and operating instead over 21st Street, Roosevelt Avenue, and Durand Avenue, as shown on Map 31. The extension would provide improved access to the Racine West commercial area, bringing passengers to within reasonable walking distance of the eastern entrance to the Regency Mall Shopping Center.

  In addition, Route No. 9 service to the University of Wisconsin-Parkside would be eliminated and replaced with an extension of Route No. 2. The proposed change would eliminate a duplication of service by the alignments of Route Nos. 4 and 9 along Washington Avenue and Route Nos. 5 and 9 along Taylor Avenue, thus increasing the frequency of service to the University of Wisconsin-Parkside. To reduce running times between downtown Racine and the University of Wisconsin-Parkside, a loop with two-way service would be created at the current end of Route No. 2. In the morning, service would be operated outbound via Meachem Road and inbound via Taylor Avenue, Southwood Drive, and Emstan Hills Road. Service directions over the loop segments would be reversed in the afternoon. South of Taylor Avenue and Meachem Road, the current Route No. 9 alignment would be followed.

  Impacts on Existing Service, Ridership, and Costs: The extension would increase round-trip route-miles on Route No. 2 by 9.5 miles. Service to the University of Wisconsin-Parkside would be operated only between about 7:00 a.m. and 6:00 p.m. on those weekdays when classes are in session, as at present. At all other times of operation, including Saturdays, service would be cut back to the current end of Route No. 2. Operating headways for the University of Wisconsin-Parkside service would be reduced to 30 minutes at all times, as operated on Route No. 2, instead of the 60-minute headways operated on Route No. 9 since January 1997. Travel times between downtown Racine and the University would, however, increase from the current 21 to 25 minutes on Route No. 9 to about 32 to 35 minutes on Route No. 2.

  According to Commission passenger counts taken in October 1996, only about five passengers per day used the three bus stops along the existing route segment on Ohio Street over which service would be eliminated; no passengers would be affected by the directional service provided over the existing loop at the end of Route No. 2. Less than five passengers used the stops along the segment of Route No. 9 between Durand Avenue and Meachem Road, over which all service would be eliminated.

  Four vehicles would be needed to operate the restructured route, the same as for the two existing routes, resulting in no change in annual vehicle-hours, but vehicle-miles would be expected to increase slightly because of the extension to the Racine West commercial area. Consequently, no significant change in annual operating costs would be expected.

Map 31

PROPOSED ALIGNMENT CHANGES FOR ROUTE NOS. 2 AND 9

Source: SEWRPC.

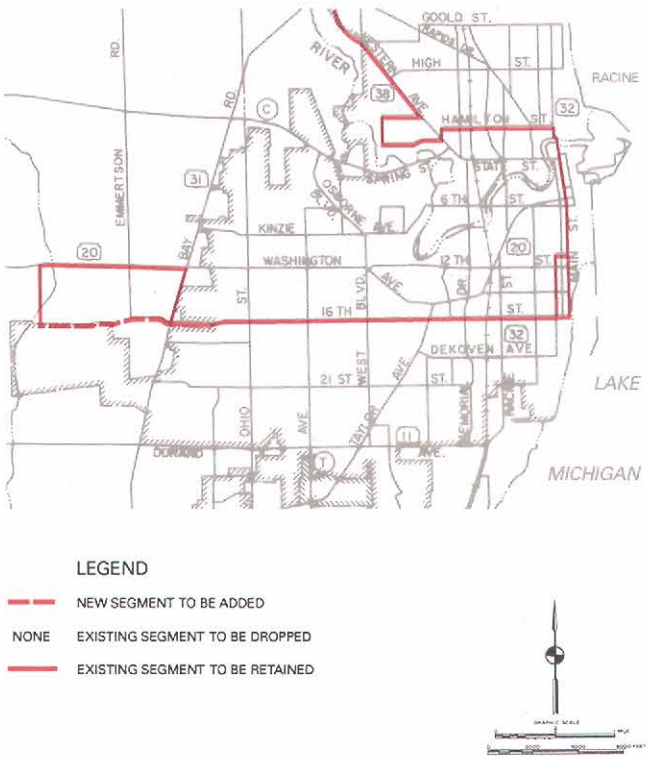
Analysis: The route extension to the Racine West commercial area represents a reasonable use of the surplus time in the current schedules for Route No. 2. The extensions would provide access to the Racine West commercial area and, along with a change recommended for Route Nos. 6 and 8 below, would create a mini-hub on the south side of the City on Roosevelt Avenue between 21st Street and Durand Avenue, where connections with Route Nos. 4, 6, 7, and 8 could be made. The route ridership generated by the improved access to the commercial area should offset the increase in operating costs associated with the extension. The existing bus stops on Ohio Street which would be eliminated are within a reasonable walking distance of stops on Ohio Street at 21st Street and at Durand Avenue, which would be retained.

The route extension to the University of Wisconsin-Parkside also represents a reasonable way to restore the service levels to the University that existed prior to January 1997. Restoring 30-minute headways for service to the University would be expected to generate additional ridership. Transfer connections with other routes in the Racine West commercial area may provide for more convenient travel. These changes would be expected to offset any ridership losses caused by increases in travel times. The net effect of the change should be to increase the efficiency of the two existing routes combined.

Recommendation: The proposed route extensions are recommended to be included in the final system plan.

Map 32

PROPOSED ALIGNMENT CHANGES FOR ROUTE NO. 3



Source: SEWRPC.

- Route No. 3

Description: The segment of Route No. 3 west of 16th Street and Green Bay Road (STH 31) would be converted to a one-way loop operated via Green Bay Road, Washington Avenue (STH 20), Oakes Road, and 16th Street, as shown on Map 32. The proposed new route segment over 16th Street would improve coverage of a residential area immediately east of Oakes Road, north of 21st Street, and would extend service to the complex of residential care and housing facilities for elderly individuals operated by Lincoln Lutheran of Racine, Inc.

Impacts on Existing Service, Ridership, and Costs: The modification would decrease round-trip route-miles on Route No. 3 by 1.0 mile, and shorten the total running time between route termini. The reduction in running time would become available to increase layover time or to extend the route to other areas as proposed under Option 5/9A for Route Nos. 5 and 9. According to Commission passenger counts taken in October 1996, about 75 passengers per day use the existing eastbound stops along Washington Avenue or the southbound stops along Green Bay Road which would be eliminated with one-way loop operation. While vehicle requirements would not change, some decrease in operating costs would be expected because of decreases in vehicle-miles.

Analysis: The proposed service change would affect one of the most productive route segments on the transit system. While maintaining comparable service for passengers using stops near J. I. Case High School, which accounted for about 65 percent

of the total boarding and alighting passenger activity on the route segment west of 16th Street and Green Bay Road, the change to one-way service would cause some indirect travel and longer travel time for the eastbound leg of a round trip for the remaining 35 percent of passengers on this route segment. Much of the proposed route segment over 16th Street, particularly along south side of 16th Street between Oakes Road and Emmertson Road, would pass through large areas of open land with only the Lincoln Lutheran complex immediately west of Green Bay Road and the residential area immediately east of Oakes Road having the potential to generate transit ridership. Past efforts to provide bus service along 16th Street between Emmertson Road and Green Bay Road to serve the Lincoln Lutheran complex have not generated significant ridership from this facility. Just prior to the elimination of Route No. 6 service along 16th Street in 1993, only four passengers per day were using the stops serving the complex. Extension of service to the southern end of the residential area east of Oakes Road could be accomplished by creating a much smaller one-way loop over streets within the subdivision which would not eliminate eastbound stops along Washington Avenue or southbound stops along Green Bay Road.

Recommendation: The proposed route extension is not recommended to be included in the final system plan.

- Route Nos. 3, 4, and 20

  Description: Route No. 4 would be extended to the west along Washington Avenue (STH 20) and Oakes Road to replace service provided by Route No. 3, as well as further to the west along Washington Avenue to the Grandview Industrial Park during weekday peak periods to replace service provided by Route No. 20, which would be eliminated. Modifications would be made to Route Nos. 3 and 6 to replace service provided over Route No. 4 in the Racine West commercial area and along portions of Ohio Street. All service over 21st Street and Ohio Street between Roosevelt Avenue and Byrd Avenue would be eliminated. The proposed changes are shown on Map 33 and would provide for more direct local bus service to the commercial areas along Washington Avenue west of Ohio Street, as well as increased service levels to the businesses along Washington Avenue west of Oakes Road and in the Grandview Industrial Park.

  Impacts on Existing Service, Ridership, and Costs: The proposed changes would essentially replace existing service provided by one route with service provided by a different route. Together, the changes would result in a net decrease of about 12.3 round-trip route-miles for the affected routes, principally because of the elimination of the Route No. 20 segments east of Oakes Road. By integrating the Route No. 20 service provided east of Oakes Road into the regular Route No. 4 service, peak-period service to the businesses along Washington Avenue and in the Grandview Industrial Park could be doubled from the two morning and two afternoon trips provided at 60-minute headways over Route No. 20, to four morning and four afternoon trips provided at 30-minute headways over Route No. 4. Running times over the route between downtown Racine and businesses in the Grandview Industrial Park, however, would increase by about 20 minutes because of operation with frequent local stops within the City of Racine.

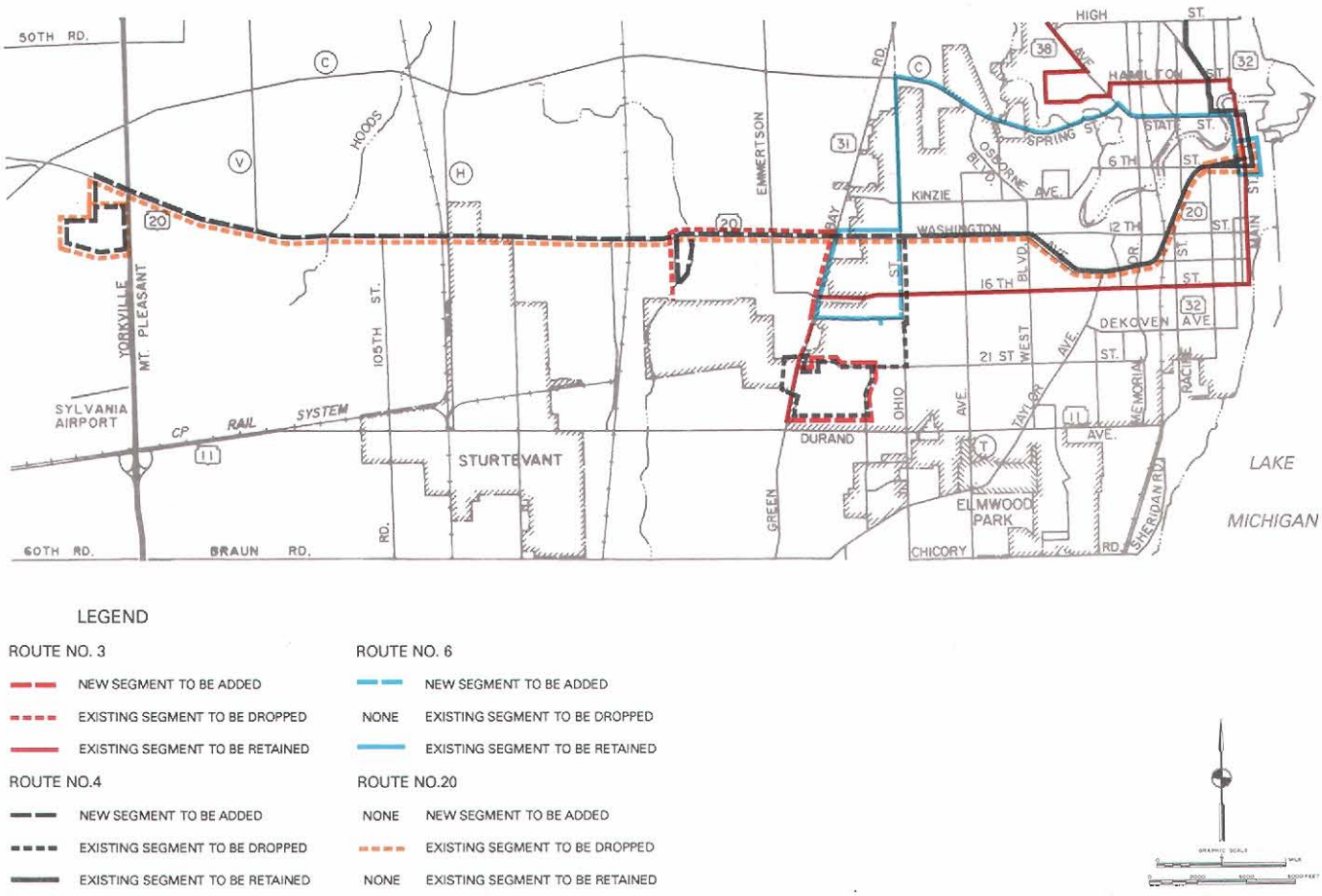
  According to Commission passenger counts taken in October 1996, about 125 passengers per day use the existing stops along the route segments where service would be eliminated, either by eliminating the route segment or by running with one-way operation. By segment, the passengers affected would include: 20 passengers on the segment of Route No. 4 operated over 21st Street and Ohio Street, 15 passengers on the segments of Routes No. 3 and 6 operated southbound over Green Bay Road, and 90 passengers on the segment of Route No. 4 operated northbound over Ohio Street.

  Vehicle requirements would not change because the vehicle used to operate Route No. 20 would be used instead to operate the extension of Route No. 4 to the Grandview Industrial Park. No significant change in operating costs would be expected with the proposed changes.

  Analysis: Increasing the service frequency for the service provided in the Washington Avenue corridor would be expected to increase ridership over current levels on Route No. 20 by better serving the work-shift times of employees, thereby reducing the time spent waiting for a bus, making the transit service more convenient to use. Offsetting this would be the expected increase in running time incurred by operating as a local rather than express service. Existing ridership levels on Route No. 20 and input from the businesses served have not indicated a need for more frequent service. The proposed

Map 33

PROPOSED ALIGNMENT CHANGES FOR ROUTE NOS. 3, 4, 6 AND 20



LEGEND

ROUTE NO. 3
- NEW SEGMENT TO BE ADDED
- EXISTING SEGMENT TO BE DROPPED
- EXISTING SEGMENT TO BE RETAINED

ROUTE NO. 6
- NEW SEGMENT TO BE ADDED
- NONE EXISTING SEGMENT TO BE DROPPED
- EXISTING SEGMENT TO BE RETAINED

ROUTE NO.4
- NEW SEGMENT TO BE ADDED
- EXISTING SEGMENT TO BE DROPPED
- EXISTING SEGMENT TO BE RETAINED

ROUTE NO.20
- NONE NEW SEGMENT TO BE ADDED
- EXISTING SEGMENT TO BE DROPPED
- NONE EXISTING SEGMENT TO BE RETAINED

Source: SEWRPC.

modifications also entail making significant changes to the two best performing routes of the transit system, Routes No. 3 and 4, and may unnecessarily alter service on some of the most productive segments of the transit system.

Recommendation: The proposed route extension is not recommended to be included in the final system plan.

- Route Nos. 5 and 9

  Description: Two potential alignment options, identified on Map 34, were proposed for Routes No. 5 and 9:

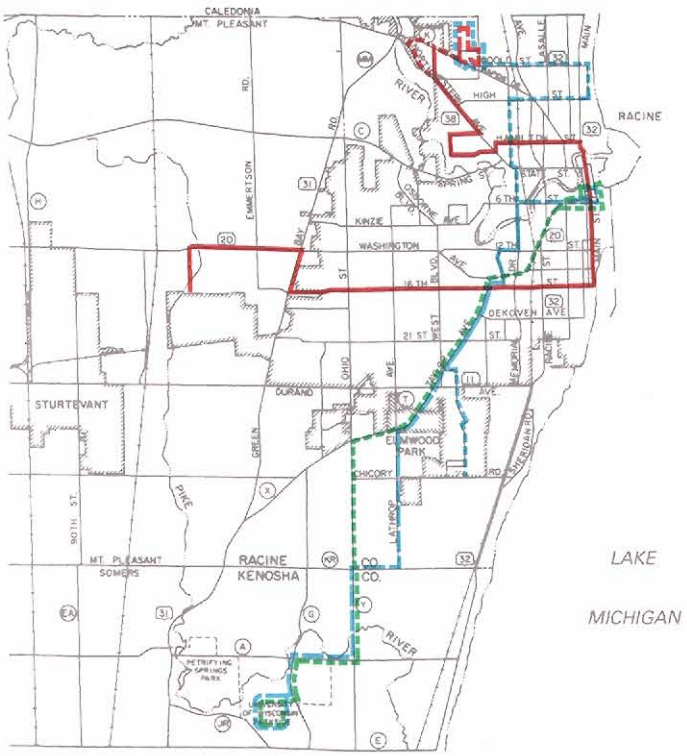
  1. Option 5/9A: Route No. 5 north of 6th Street and Memorial Drive would be eliminated, starting instead in downtown Racine. Route No. 3 would be extended to the east to replace northside Route No. 5 service to Rapids Plaza, Jacato Drive, and Layard Drive. Route No. 9 service to the University of Wisconsin-Parkside would be eliminated and replaced with an extension of Route No. 5. Service over the existing segments of Route No. 5 operated over Drexel Avenue and Knoll Place would be eliminated. The changes were proposed to eliminate a duplication of services for Route No. 5 and Routes No. 1, 2, 4, 9 and to reduce system operating costs and improve systemwide effectiveness levels.

  2. Option 5/9B: Route No. 9 service to the University of Wisconsin-Parkside would be elimi-

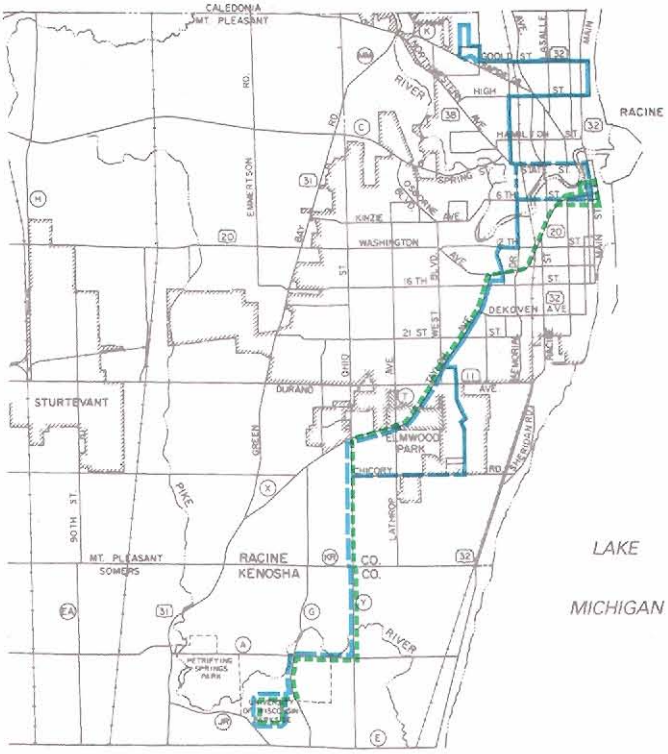
Map 34

PROPOSED ALIGNMENT CHANGES FOR ROUTE NOS. 3, 5, AND 9

OPTION A

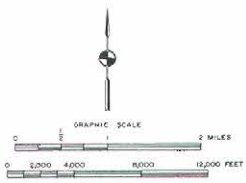


OPTION B



LEGEND

ROUTE NO. 3	ROUTE NO. 5	ROUTE NO. 9
NEW SEGMENT TO BE ADDED	NEW SEGMENT TO BE ADDED	NONE NEW SEGMENT TO BE ADDED
EXISTING SEGMENT TO BE DROPPED	EXISTING SEGMENT TO BE DROPPED	EXISTING SEGMENT TO BE DROPPED
EXISTING SEGMENT TO BE RETAINED	EXISTING SEGMENT TO BE RETAINED	NONE EXISTING SEGMENT TO BE RETAINED



Source: SEWRPC.

nated and replaced with an extension of Route No. 5. To reduce running times between downtown Racine and the University of Wisconsin-Parkside, a loop with two-way service would be created. In the morning, service would be operated outbound via Taylor Avenue and Meachem Road and inbound via Chickory Road, Knoll Place, and Drexel Avenue. Service directions over the loop segments would be reversed in the afternoon. South of Chickory Road and Meachem Road, the current Route No. 9 alignment would be followed. The proposed change would eliminate a duplication of service by the alignments of Route Nos. 4 and 9 along Washington Avenue and Route Nos. 5 and 9 along Taylor Avenue, and increase the frequency of service to the University of Wisconsin-Parkside.

Impacts on Existing Service, Ridership, and Costs: Under Option 5/9A, there would be a net decrease of about 13.8 miles in the total round-trip route-miles for the affected routes. No net change in round-trip route-miles would occur under Option 5/9B. Under both options, service to the University of Wisconsin-Parkside would be operated only between about 7:00 a.m. and 6:00 p.m. on those weekdays when classes are in session, as at present.

At all other times of operation, including Saturdays, service would be cut back, operating to Taylor Avenue and Lathrop Avenue under Option 5/9A and to Taylor Avenue and Durand Avenue under Option 5/9B. Operating headways for the University of Wisconsin-Parkside service would be reduced to 30 minutes at all times, as operated on Route No. 5, instead of the 60-minute headways operated on Route No. 9 since January 1997. Travel times between downtown Racine and the University would, however, increase from the current 21 to 25 minutes on Route No. 9 to about 28 to 31 minutes under Option 5/9A and to about 31 minutes under Option 5/9B.

Based on October 1996 passenger counts, about 400 passengers per day, representing one-half the total route ridership, used the northern route segments, and about 70 passengers per day used the route segments south of Durand Avenue, over which service would be eliminated under Option 5/9A. Under Option 5/9B, about 10 passengers per day used the stops along Memorial Drive over which service would be dropped, about 10 passengers per day would be affected by the directional service which would be provided over the route segments south of Durand Avenue, and about 10 passengers per day used the stops along the route segments south of Durand Avenue over which service would be eliminated when service to the University of Wisconsin-Parkside is not operated.

Under Option 5/9A, two vehicles would be needed to provide weekday service over the shorter, restructured route when classes are in session at the University and one vehicle would be needed at all other times of operation, a reduction of two vehicles from the vehicles needed for operating the two existing routes. The resulting reduction in annual vehicle-hours would reduce annual operating costs by about $307,000. Under Option 5/9B, four vehicles would continue to be needed for the restructured route and there would be no change in annual operating costs.

Analysis: The findings of the route performance evaluation presented in Chapter V identified Route No. 5 as one of the better performing routes in the Belle Urban System, with weekday performance levels exceeding systemwide average performance levels for all performance measures. Of the eight route segments on the route used for the evaluation, four were identified as being among the most productive in the system and three others were identified as average. These findings would suggest that significant changes to the route which would drastically impact service levels of route ridership are not needed and should not be considered at this time. On the other hand, changes to Route No. 9, which was identified as one of the poorest performing routes, with numerous unproductive route segments, should be pursued.

The modifications proposed under Option 5/9A, while having the potential to reduce operating costs on Route Nos. 5 and 9 by about 50 percent, could be expected to have a significant negative impact on system ridership. The elimination of service over the northern half of Route No. 5 would negatively impact 50 percent of the route riders. While some portion may switch to other routes, the fact that they are currently using Route No. 5 indicates that it conveniently serves their travel needs. Based on Route No. 9 passengers counts, providing service over Taylor Avenue and Lathrop Avenue would generate about 10 percent of the riders currently using the segments of Route No. 5 south of Durand Avenue.

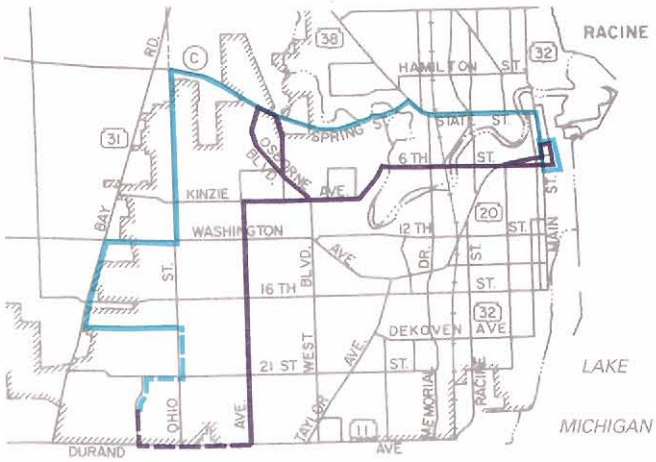
Under Option 5/9B, the negative impact of the proposed changes on system ridership would be much more limited, affecting only the few riders using the Route No. 5 segments on Memorial Drive over which service would be eliminated and the segments south of Durand Avenue over which the service periods or direction of travel would be restricted. Restoring 30-minute headways for service to the University of Wisconsin-Parkside would be expected to generate enough ridership to offset ridership losses caused by the alignment changes, and, with no change in operating costs, the net effect of the change should be to maintain about the same efficiency and effectiveness levels as for the two existing routes combined. Extending Route No. 5 to serve the University of Wisconsin-Parkside was not, however, viewed as any better than the previously recommended extension of Route No. 2 because of the anticipated ridership losses caused by the directional loop service provided between Durand Avenue and Meachem Road and the elimination of service over existing segments of Route No. 5 south of Durand Avenue when service to the University is not operated.

Recommendation: The restructuring of Route Nos. 5 and 9 as proposed under both Option 5/9A and Option 5/9B is not recommended to be included in the final system plan.

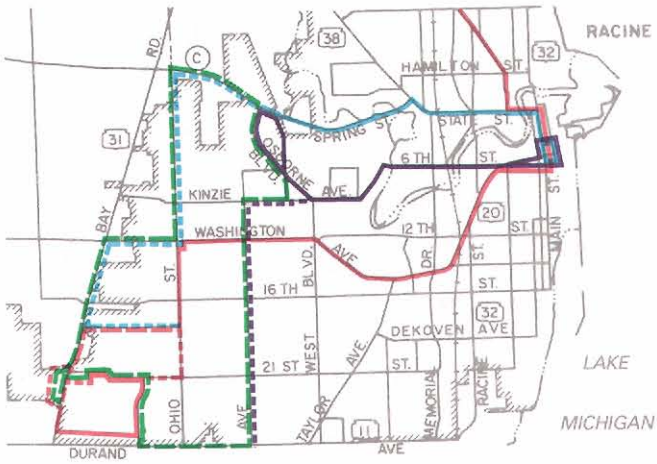
Map 35

PROPOSED ALIGNMENT CHANGES FOR ROUTE NOS. 6 AND 8

OPTION A



OPTION B



LEGEND

ROUTE NO. 4
- NEW SEGMENT TO BE ADDED
- EXISTING SEGMENT TO BE DROPPED
- EXISTING SEGMENT TO BE RETAINED

ROUTE NO. 6
- NEW SEGMENT TO BE ADDED
- EXISTING SEGMENT TO BE DROPPED
- EXISTING SEGMENT TO BE RETAINED

ROUTE NO. 8
- NEW SEGMENT TO BE ADDED
- EXISTING SEGMENT TO BE DROPPED
- EXISTING SEGMENT TO BE RETAINED

NEW ROUTE
- NEW SEGMENT TO BE ADDED
- NONE EXISTING SEGMENT TO BE DROPPED
- NONE EXISTING SEGMENT TO BE RETAINED

Source: SEWRPC.

- Route Nos. 6 and 8

  Description: Two potential alignment options, identified on Map 35, were proposed for Routes No. 6 and 8:

  1. Option 6/8A: Route Nos. 6 and 8 would be extended to the Racine West commercial area via Durand Avenue, Roosevelt Avenue, 21st Street and Ohio Street. Buses operating over the routes would be interlined, essentially creating a large loop route operated with two-way service. The extensions would provide access to the Racine West commercial area and, along with the change recommended for Route No. 2 above, would create a mini-hub on the south side of the City on Roosevelt Avenue between 21st Street and Durand Avenue, where connections with Route Nos. 2, 4, and 7 could be made.

  2. Option 6/8B: Route Nos. 6 and 8 would be cut back to St. Mary's Hospital and buses operating over the routes would be interlined, essentially creating a small loop route operated with two-way service. A new one-way loop route would be created between St. Mary's Hospital and Racine West commercial area using the western segments of Route Nos. 6 and 8. Route No. 4 would be modified to

replace service provided by Route No. 6 over Byrd Avenue and to eliminate direct service to stops in the Regency Mall and High Ridge Malls, which would be directly served by the new route. The modifications would retain existing service on the most productive segments of Route Nos. 6 and 8 operated east of St. Mary's Hospital while reducing service on the western route segments which have the poorest ridership. Access to the Racine West commercial area would also be provided, creating a mini-hub on the south side of the City similar to that proposed under Option 6/8A.

Impacts on Existing Service, Ridership, and Costs: Under Option 6/8A, round-trip route-miles on Route Nos. 6 and 8 would increase by 2.9 miles, but service would be reduced 50 percent by increasing operating headways from 30 minutes to 60 minutes. Under Option 6/8B, there would be a net decrease in the total round-trip route-miles for the affected routes of about 4.3 miles, and operating headways of 30 minutes would continue to be provided east of St. Mary's Hospital on the cutback Route Nos. 6 and 8. Service would be reduced by 50 percent west and south of the Hospital on the new loop route, with headways of 60 minutes provided.

All passengers currently using the routes would be affected by the reduced service levels under Option 6/8A. Under Option 6/8B, the reduced service levels would affect only the passengers currently using route segments west and south of the Hospital, estimated at about 25 percent of the total ridership. About 20 passengers per day used the stops along the existing route segment of Route No. 4 on 21st Street and Ohio Street, over which service would be eliminated under that option.

Under Option 6/8A, two vehicles would be needed to provide service over the restructured Route Nos. 6 and 8, a reduction of two vehicles from the four needed for the two existing routes. The resulting reduction in annual vehicle-hours would reduce annual operating costs by about $307,000. Under Option 6/8B, three vehicles would be needed to provide service over the restructured routes and the new loop route, a reduction of one vehicle from the four needed for the two existing routes. The resulting reduction in annual vehicle-hours would reduce annual operating costs by about $153,000.

Analysis: While the reductions in service levels proposed under both options could be expected to result in reductions in route ridership, the reductions would also decrease operating costs and improve the overall effectiveness and efficiency of the route and are warranted based on the poor performance of the routes noted in Chapter V. As shown in Table 58, the changes proposed under Option 6/8A could be expected to reduce total weekday ridership on the routes by 25 to 35 percent[1] but, in combination with the 50 percent reduction in service, the changes would also increase passengers per vehicle hour by 29 to 50 percent and decrease operating cost per passenger by 13 to 27 percent. The changes proposed under Option 6/8B could be expected to reduce total route ridership by 14 to 16 percent and, in combination with the 25 percent reduction in service, increase passengers per vehicle-hour by 10 to 13 percent and decrease operating costs per passenger by 9 to 10 percent.

The major advantage of Option 6/8B would be maintaining 30-minute headways between the common transfer point in downtown Racine and St. Mary's Hospital and adjacent medical offices. While the restructured service proposed under Option 6/8A would operate with 60-minute headways, the service could be scheduled to maintain service between downtown and the medical complex on the current 30-minute cycle by alternating service over the two paired routes serving the hospital. The major disadvantage of Option 6/8B would be the large one-way loop operated west and south of St. Mary's Hospital, which would result in indirect travel and longer travel time for existing passengers. This could result in higher ridership losses for these route segments than estimated on the basis of the above analysis.

Recommendation: The restructuring of Route Nos. 6 and 8 as proposed under Option 6/8A is recommended to be included in the final system plan.

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[1] *For the purpose of this analysis, the estimated ridership changes for each option assumed that the ridership would decrease due to the increased headways proposed under each option, with the decreases based on elasticities of demand for service changes ranging from -0.5, which is used as a "rule of thumb" in the transit industry, to -0.7, which is based an actual ridership change observed for a reduction in peak period bus service implemented by the Belle Urban System in September 1992.*

Table 58

ESTIMATED IMPACTS OF PROPOSED SERVICE AND ALIGNMENT CHANGES FOR ROUTE NOS. 6 AND 8 ON WEEKDAY PERFORMANCE LEVELS

Characteristic	Existing 1996[a]	With Increased Headways and Restructured Service as Proposed under:	
		Option A	Option B
Ridership	880	570-660	740-760
Revenue Vehicle-Miles	710	360	530
Revenue Hours	54.0	27.0	40.5
Operating Cost[b]	$2,340	$1,350	$1,840
Operating Deficit	$1,950	$1,060-1,100	$1,500-1,510
Effectiveness and Efficiency			
Passengers per Vehicle-Hour	1.2	1.6-1.8	1.7
Passengers per Vehicle-Hour	16.3	21.1-24.4	18.3-18.8
Operating Cost per Passenger	$2.66	$2.05-2.37	$2.42-2.49
Operating Deficit per Passenger	$2.22	$1.61-1.93	$1.99-2.03
Percent of Operating Costs Recovered through the Farebox	16.7	18.5-21.5	17.9-18.5

[a] *Figures are based on estimated performance levels for the week of October 7 through 12, 1996, as shown in Table 48 in Chapter V.*

[b] *All operating costs are expressed in 1996 dollars.*

Source: SEWRPC.

- Route Nos. 7 and 20

  Description: Peak-period bus trips provided to the S. C. Johnson & Son, Inc. Waxdale plant would be shifted from Route No. 7 to Route No. 20. This proposed routing change is shown on Map 36. Route No. 7 would also not provide direct service to stops at the entrances to the Regency Mall Shopping Center during the early morning hours, before the mall is open, but stop along Durand Avenue instead. The changes have not been proposed to address problems of poor ridership and financial performance, but to reduce running times and alleviate problems with late bus trips on Route No. 7 that have occurred since the stop location was moved to the north side of the Waxdale plant.

  Impacts on Existing Service, Ridership, and Costs: The change in service for the Waxdale plant would decrease round-trip route-miles by 2.0 miles on Route No. 7 and increase them by 1.3 miles on Route No. 20, resulting in a net change of less than one mile. In order to maintain service for all passengers using the existing Route No. 7 trips to the Waxdale plant, one special inbound bus trip would be added to Route No. 20 to serve the Waxdale plant at about 3:15 p.m. The buses operating over Route No. 7 would not directly serve mall entrances before 8:30 a.m.

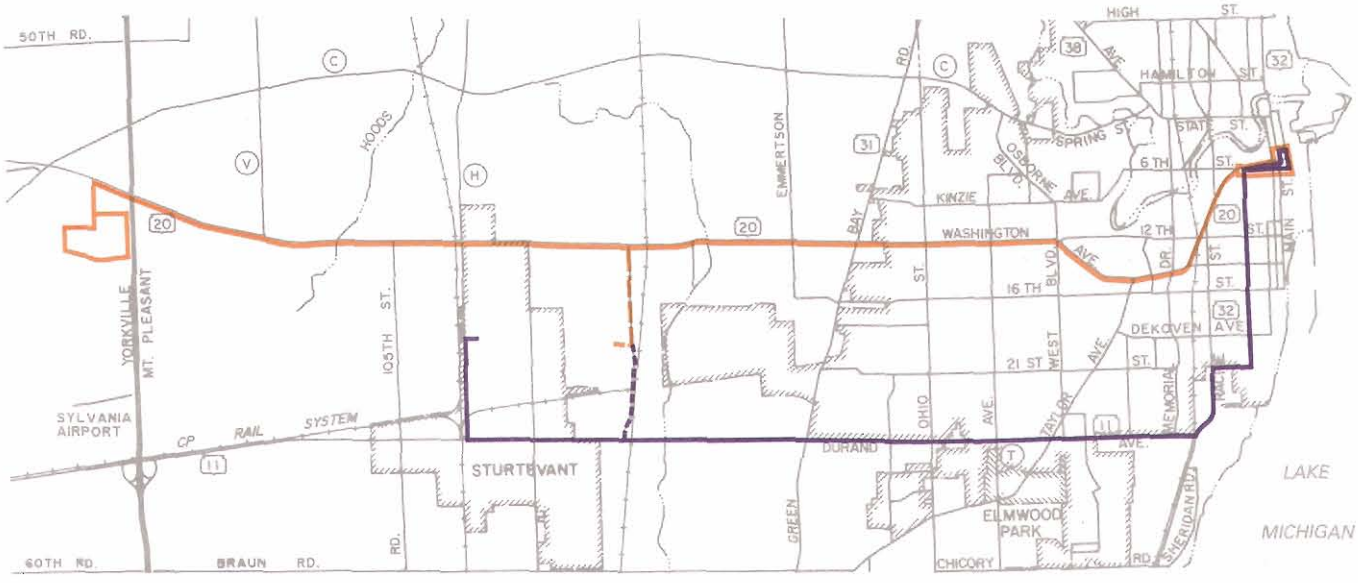
  Based on Commission passenger counts taken in October 1996, about 40 passengers per day used the Route No. 7 service to the Waxdale plant, 15 of which used the existing afternoon trip for which a special trip would be added to by Route No. 20. Less than 10 passengers used the stops at mall entrances, which would no longer be served before 8:30 a.m.

  Vehicle requirements for Route No. 7 would not change, but one additional vehicle would be needed to provide the additional bus trip over Route No. 20. The additional annual vehicle-hours would increase annual operating costs by about $19,500. These costs could potentially be reduced if the additional bus trip could be combined with tripper service provided to serve student ridership demands.

  Analysis: Shifting the service provided to the Waxdale plant to Route No. 20 represent a reasonable change in terms of operations, because the proximity of the Waxdale stop to Route No. 20 would thus make it easier to serve. Passengers using

Map 36

PROPOSED ALIGNMENT CHANGES FOR ROUTE NOS. 7 AND 20



LEGEND

ROUTE NO. 7

NONE — NEW SEGMENT TO BE ADDED

- - - - EXISTING SEGMENT TO BE DROPPED

——— EXISTING SEGMENT TO BE RETAINED

ROUTE NO. 20

— — NEW SEGMENT TO BE ADDED

NONE — EXISTING SEGMENT TO BE DROPPED

——— EXISTING SEGMENT TO BE RETAINED

Source: SEWRPC.

the existing bus stops at Regency Mall entrances to which direct service would be eliminated before 8:30 a.m could still walk to mall entrances or use the direct bus service provided by Route No. 4.

The additional ridership on Route No. 20 resulting from the inclusion of service to the S. C. Johnson and Son, Inc., Waxdale plant would be expected to improve the performance of this route, but not to the point where it would be one of the best performers in the system. A more effective and cost-efficient alternative to the Route No. 20 service provided to employers in the Washington Avenue corridor west to IH 94 would be subscription transit service. The provision of such service, which was suggested by the management firm for the Belle Urban System in its June 1997 report to the Racine Transit and Parking Commission, would entail the operation of one or more routes designed to specifically serve the concentrations of employee residences and work-shift schedules of participating employers. The routes could be operated by the Belle Urban System directly or by a private, contract transit operator, such as an operator providing the proposed demand-responsive taxicab service in the Town of Caledonia. While conventional City buses could be used where demand is sufficiently high, it is likely that smaller vehicles, such as 15-

passenger vans, would be more appropriate for some portion of the service. City and transit system management staff would need to work closely with the employers in the corridor in the design of such services. At the same time, the employers would need to cooperate with the transit system in service design and in committing sufficient private funding to pay for the operating costs not covered by passenger fares or Federal and State funds. While subscription service may have the greatest immediate potential in the Washington Avenue corridor, it could also be implemented in other parts of the service area where provision of conventional fixed-route bus service to employment centers would not be practical.

Recommendation: It is recommended that the implementation of subscription transit service be pursued to replace the existing bus service provided over Route No. 20. The restructuring of Route Nos. 7 and 20 is recommended to be undertaken only as an interim measure until the recommended subscription service is operational. The elimination of service to stops at the entrances to the Regency Mall shopping center in the early morning before the mall opens is also recommended.

- Route No. 10

  Description: Two potential service options, identified on Map 37, were proposed for the Caledonia transit service currently provided by Route No. 10:

  1. Option 10A: Route No. 10 would be significantly restructured to eliminate service over the current route segments south of Four Mile Road and east of Douglas Avenue, with the route no longer serving the Shorecrest Shopping Center. A new terminus for the shortened route would be established at Douglas Avenue and Four Mile Road in the Green Tree Centre, where connections could be made with Route No. 1. The restructuring was proposed by the Town of Caledonia representative on the Advisory Committee, along with the extension of Route No. 1 to the Green Tree Centre discussed previously, as a way of improving transit service within the Town.

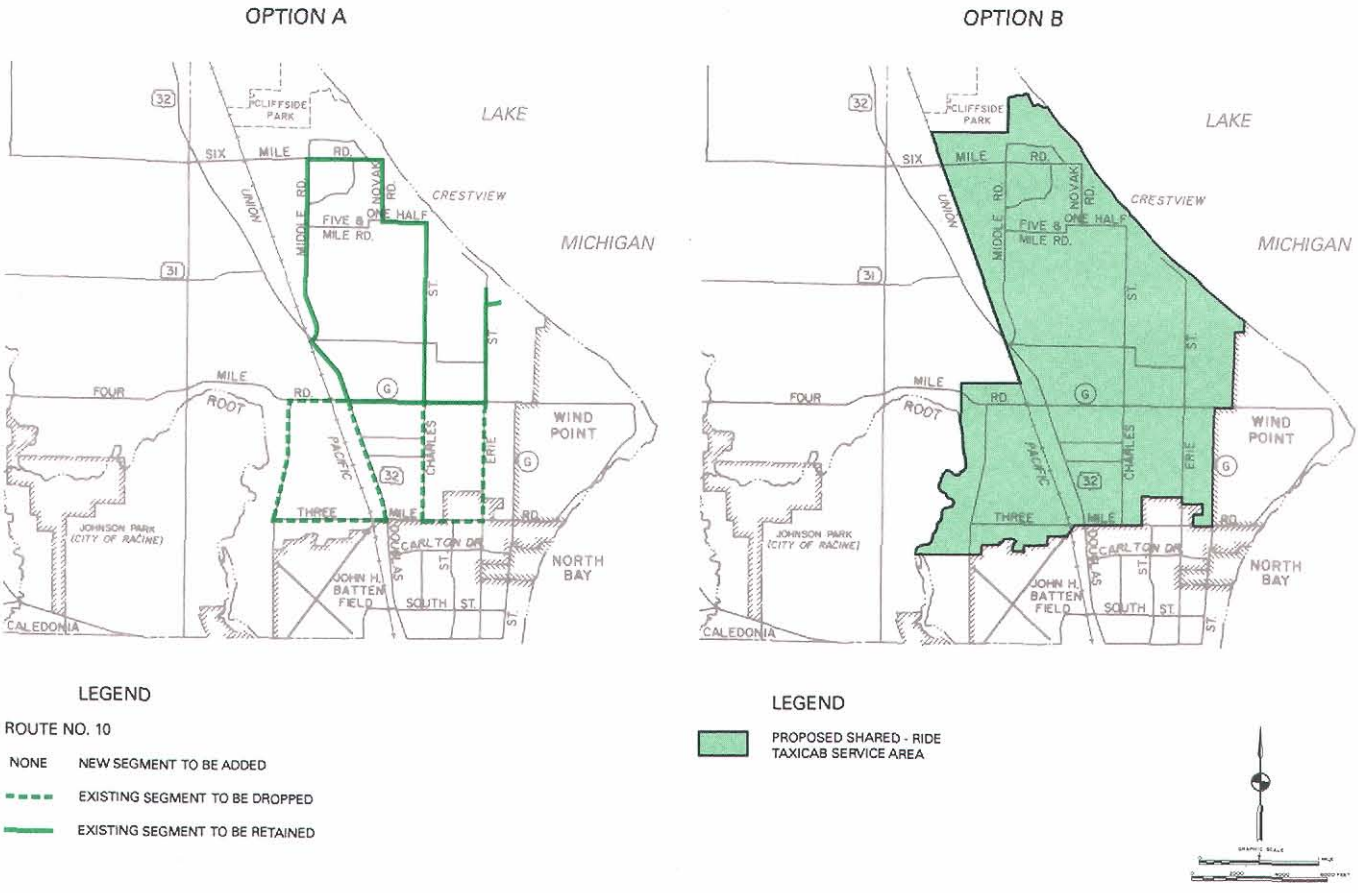
  2. Option 10B: The fixed-route bus service provided over Route No. 10 would be replaced with a demand-responsive shared-ride taxicab service with the basic operating characteristics shown in Table 59. The taxicab service would operate during the same periods and on the same days as the existing bus service and would continue to serve only the eastern portion of the Town of Caledonia. However, gaps in the existing fixed-route service area would be covered by the taxicab service. Service would be curb-to-curb between the origin and destination of each rider. The service would continue to focus on the Shorecrest Crest Shopping Center to provide a feeder service for the City bus service. A taxicab would arrive and depart every 30 minutes to coincide with scheduled bus service during weekday peak periods from 6:00 to 9:00 a.m. and from 2:00 and 5:00 p.m., and every 60 minutes during all other hours of operation. The maximum response time for trip requests would be 60 minutes, but trips would be accommodated on shorter notice, particularly during nonpeak hours; longer advance scheduling of trip requests would be allowed and encouraged to accommodate regular users. The service would be contracted from a private operator, who would be responsible for providing all necessary equipment.

  Impacts on Existing Service, Ridership, and Costs: Under Option 10A, round-trip route-miles would decrease by 7.0 miles on Route No. 10, which would allow operating headways to be reduced from the present 45 minutes to 30 minutes and allow for coordinating the schedules for Route Nos. 1 and 10 at the Green Tree Centre. The existing 45-minute headways could also be retained as a cost-saving measure. The service area for the route would also be reduced, decreasing the Town of Caledonia population served by transit from about 10,200 to 7,500 persons, or by about 26 percent. According to Commission passenger counts taken in October 1996, about 25 passengers per day used the segments of Route No. 10 over which service would be eliminated under Option 10A. Some additional ridership would also be expected to be lost to Route No. 1 upon its extension to the Green Tree Centre along Douglas Avenue. There would be no change in the vehicle requirements for route operation, but vehicle-miles, on which Route 10 operating costs are currently based, would decrease by about 7 percent if 30-minute headways were maintained and by about 38 percent if 45-minute headways were maintained.

  Under Option 10B, the shared-ride taxicab service would replace all existing Route No. 10 bus service now serving fixed bus stop locations with a curb-to-curb service directly serving the origin and destina-

Map 37

PROPOSED CHANGES FOR CALEDONIA TRANSIT SERVICE



Source: SEWRPC.

tion of each rider. A premium fare $0.25 higher than existing bus fares would be charged for this premium service. The taxicab service area would be slightly larger, increasing the Town of Caledonia population served by transit from about 10,200 to 11,200 persons or about 10 percent. All existing trips would be served by the taxicab service, although some ridership would be expected to be lost to the Route No. 1 extension to the Green Tree Centre. The service would entail operation of more vehicles and more vehicle-hours because of the wide dispersal of trip origins and destinations. Operating costs for this taxicab service would, however, be expected to be lower because of the

Table 59

PROPOSED OPERATING CHARACTERISTICS OF CALEDONIA SHARED-RIDE TAXICAB SERVICE

Operating Characteristics	Caledonia Taxicab Service
Service Administration	City administration, with service provided through contract with private operator
Response Time	Maximum of 60 minutes
Service Periods	
Weekdays	6:00 a.m. to 7:00 p.m.
Saturdays	7:30 a.m. to 5:30 p.m.
Sundays and Holidays	No service
Vehicle Requirements	
Weekday Peak Service	3
Weekday Midday Service	1
Saturday Service	1
Vehicle Type	
Accessible full-size vans	1
Nonaccessible full-size vans	2
Total	3
Passenger Fares	
Cash Fares per One-Way Trip[a]	
Adult	$1.25
Elderly Disabled	$0.75
Transfers	
To Belle Urban System Bus Routes	Free
From Belle Urban System Bus Routes	$0.25

[a]*Special convenience fares providing for discounts from regular cash fares would continue to be available.*

Source: SEWRPC.

lower unit costs for taxicab service compared with bus service in the Southeastern Wisconsin Region.[2]

Analysis: The changes proposed for Route No. 10 under Option 10A would be expected to greatly impact the current users of the Caledonia service boarding or alighting at the Shorecrest Shopping Center which, based on October 1996 passenger count data, is estimated to be about 75 percent of the route ridership. At least 50 percent of the route ridership is estimated to transfer to or from Route No. 2 or 4 at the shopping center. The restructuring of Route No. 10 would provide for connecting bus service with just Route No. 1, serving a different area on the north side of the City.

Of the two options, the taxicab service proposed under Option 10B would be expected to have a greater impact on the efficiency of Caledonia transit service. As shown in Table 60, the proposed taxicab service would be expected to have a weekday operating cost per passenger and deficit per passenger approximately 20 to 25 percent less than for the existing Route No. 10 service; 30 to 35 percent less than for the restructured Route No. 10 service with 30-minute headways; and 15 percent less than for the restructured Route No. 10 service with 45-minute headways. On Saturdays, operating cost per passenger and deficit per passenger for the proposed taxicab service would be expected to be about one-third that for the existing and proposed Route No. 10 bus service. The performance of the Caledonia taxicab service would, however, still fall well below the system-wide averages identified in Table 48 in Chapter V.

The continued poor performance of Caledonia transit services shown in the two service options should not be unexpected, given the characteristics of the Caledonia service area's effecting on the potential for transit use. Such characteristics include the following: widely separated areas of low-density residential development; no significant concentrations of employment, except along Douglas Avenue between Four Mile Road and Four and One-Half Mile Road; few potential transit trip generators; and low levels of persons residing in low-income and zero-automobile households, as shown in Table 61, which typically comprise a large proportion of transit users. On the basis of these characteristics, it may be unreasonable to expect that any transit service provided in the Caledonia service area will perform at levels observed for the rest of the routes of the Belle Urban System.

Recommendation: The replacement of the fixed-route bus service of Route No. 10 in the Town of Caledonia with a demand-responsive shared-ride taxicab service as proposed under Option 10B is recommended to be included in the final system plan.

[2]*The estimated costs per unit of service for the Belle Urban System in 1996, excluding costs for the Lakefront Trolley, paratransit service for the disabled, and capital expenses, were $3.22 per vehicle-mile and $39.61 per vehicle-hour. The estimated cost per unit of service for the four publicly subsidized shared-ride taxicab services in the Region in 1996, excluding capital expenses, were as follows: $2.35 per vehicle-mile and $23.30 per vehicle-hour for the Hartford taxicab system, $1.50 per vehicle-mile and $21.50 per vehicle-hour for the Port Washington taxicab system, $1.90 per vehicle-mile and $16.80 per vehicle-hour for the Whitewater taxicab system, and $1.30 per vehicle-mile and $17.90 per vehicle-hour for the West Bend taxicab system.*

Table 60

COMPARISON OF PROJECTED EFFICIENCY OF PROPOSED CALEDONIA SHARED-RIDE TAXICAB SERVICE AND EXISTING AND PROPOSED ROUTE NO. 10 BUS SERVICE

Characteristic	Route No. 10[a]		Restructured Route No. 10				Shared-Ride Taxicab	
			With 30-Minute Headways		With 45-Minute Headways			
	Weekdays	Saturdays	Weekdays	Saturdays	Weekdays	Saturdays	Weekdays	Saturdays
Average Daily Ridership	120	40	100	30	85	35	110	40
Average Daily Vehicle-Miles	286	223	265	216	176	137	405	150
Average Daily Vehicle-Hours	13.5	10.3	13.5	10.3	13.5	10.3	27	10
Average Daily Operating Cost	$950	$750	$882	$728	$604	$430	$675	$250
Average Daily Operating Deficit	$895	$732	$838	$710	$567	$415	$612	$229
Effectiveness and Efficiency								
Passengers per Vehicle-Mile	0.4	0.2	0.4	0.2	0.5	0.3	0.3	0.3
Passengers per Vehicle-Hour	8.9	3.9	7.4	3.9	6.3	3.4	4.1	4.0
Operating Cost per Passenger	$7.92	$18.76	$8.82	$18.20	$7.10	$12.28	$6.14	$6.25
Operating Deficit per Passenger	$7.46	$18.32	$8.38	$17.76	$6.67	$18.85	$5.57	$5.72
Farebox Recovery of Costs	5.6	2.3	5.0	2.5	6.1	3.5	9.3	8.4

[a]*Figures are based on estimated performance levels for the week of October 7 through 12, 1996, as shown in Table 48 in Chapter V.*

Source: SEWRPC.

Table 61

COMPARISON OF TRANSIT-DEPENDENT POPULATION LEVELS IN THE PROPOSED CALEDONIA SHARED-RIDE TAXICAB SERVICE AREA, THE CITY OF RACINE, AND THE STUDY AREA: 1990

Area	Population		Total Households	Transit Dependent Population Groups[a]									
				School-Age Children (ages 10 through 18)		Elderly Persons (ages 60 and older)		Persons in Low-Income Households[b]		Disabled Persons[c]		Households with No Vehicle Available	
	Total	Ages 16 and Older		Number	Percent of Block Group Population	Number	Percent of Block Group Population	Number	Percent of Block Group Population	Number	Percent of Block Group Population Ages 16 and Older	Number	Percent of Block Group Housholds
Taxicab Service Area[d]	11,200	8,300	3,900	1,600	14.3	1,400	12.5	700	6.3	300	2.7	200	5.1
City of Racine	84,300	62,100	31,800	10,900	12.9	14,500	17.2	13,100	15.5	2,800	3.3	4,500	14.2
Study Area	133,000	99,800	49,200	17,200	12.9	22,500	16.9	15,000	11.3	3,900	2.9	5,100	10.4

[a]*All figures are based on Census information derived from sample data.*

[b]*Represents persons residing in households with a total family income below Federal poverty thresholds.*

[c]*Includes persons age 16 and over with a health condition lasting six or more months which made it difficult to travel alone outside the home.*

[d]*Estimated using census data at the block group level.*

Source: U. S. Bureau of the Census and SEWRPC.

Alternative Changes to Schedules and Service Periods

Table 57 identifies several alternative service changes affecting weekday and Saturday schedules and the periods of system operation. These changes were grouped into the following three categories for analysis: changes in current systemwide scheduling technique, changes in service frequencies, and changes in service periods. The following sections summarize the key information identified and conclusions drawn in the analyses and evaluations of the changes in each category.

Changes to Current Systemwide Routing and Scheduling Technique

The Belle Urban System currently operates a largely radial network of routes with noncycle scheduling. Under the radial routing system, the bus routes originate in outlying areas and converge on a central location in the Racine. With noncycle scheduling, the schedules for each bus route are developed independently from one another, and, while buses over most routes still meet at a common transfer point in Racine central business district (CBD), the individual route schedules are not specifically designed

to have buses meet at a common time to provide for "timed-transfer" connections between bus routes. This routing and scheduling technique was recommended in the first generation transit system development plan prepared by the Commission for the Belle Urban System in 1974 and was put into place in May 1976 with the implementation of the routing and service changes recommended by that plan.

Two changes have been proposed to the current routing and scheduling technique. The first would relocate the common transfer point from its present location at Monument Square in the Racine CBD to a different location inside the central business district or, possibly, to a location outside the central business district. The second proposed changed called for consideration of cycle, or "pulse," scheduling which would provide for timed transfers between bus routes at the common transfer point. The key information identified and conclusions drawn in evaluating these changes are as follows:

- Location of the Common Transfer Point

  Description: Consideration of relocating the common transfer point was prompted by requests from representatives of local businesses indicating that bus traffic and layovers at the existing location are incompatible with existing and planned development in the immediate area around Monument Square. Investigation of other sites in the CBD was suggested. It was also noted that the Racine County Human Services Department had been moved to a new location outside the CBD, at 17th Street and Taylor Avenue, and that bus passengers could benefit from increased bus service provided to this location through relocation of the common transfer point.

  Analysis: In order to minimize the disruption to existing and proposed bus routes and system users, the transfer point for the transit system should continue to be centrally located and remain within an area bounded approximately by Lake Michigan on the east, 6th and 8th Streets on the south, Memorial Drive on the west, and State Street and the Root River on the north, as shown in Figure 17. Locations to the north, west, or south of this area, such as at the site of the Racine County Workforce Development Center, would require substantial restructuring of the existing and proposed route alignments, causing extensive duplication of service or lengthening running times, causing a need for additional vehicles.

Within the identified area, a location east of the Root River in the CBD would have the following advantages:

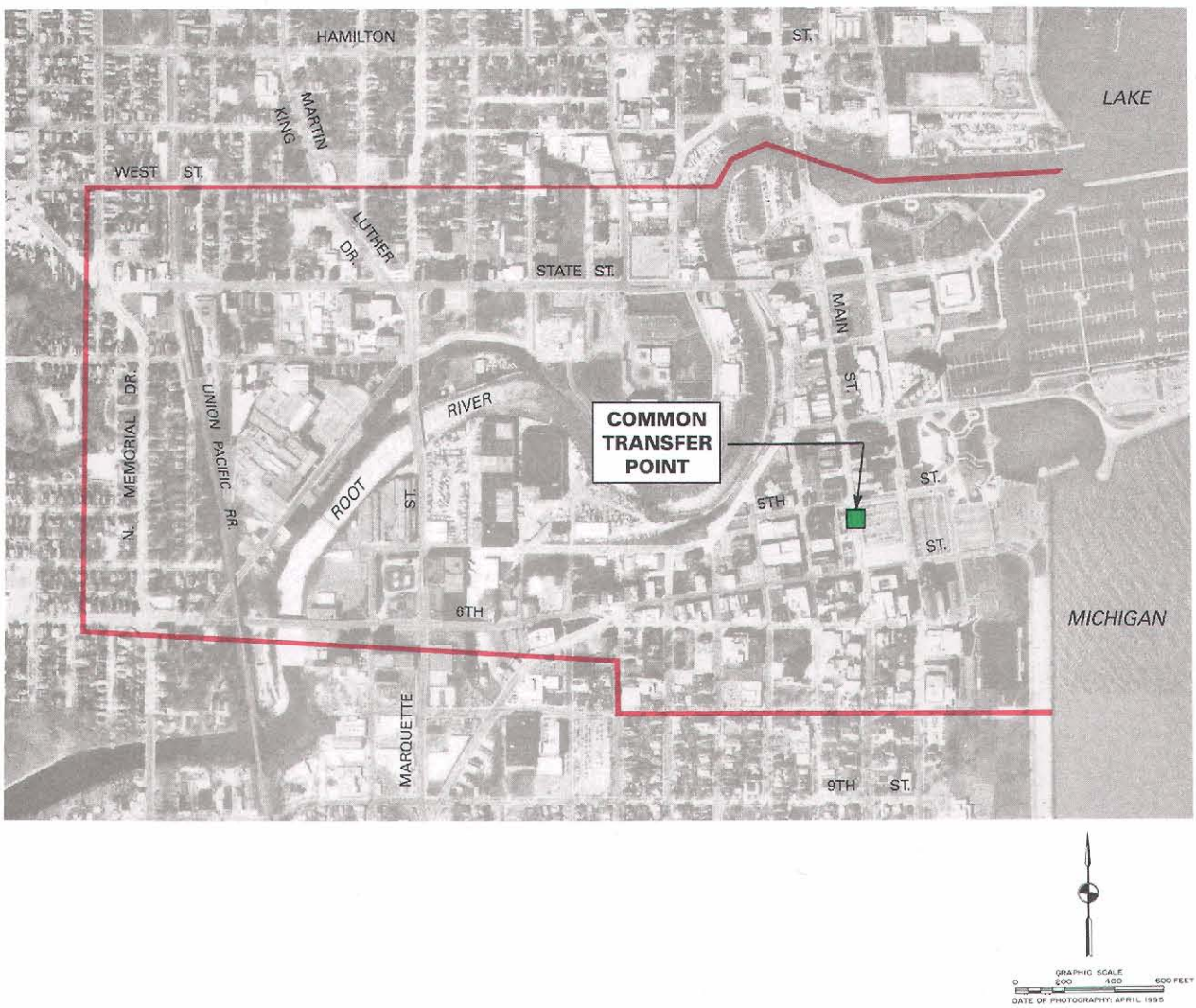
1. A downtown location would best serve the existing downtown business development and the trips which it generates. A review of the Commission's 1990 employment data and 1991 total person travel information indicates that the Racine CBD, which constitutes the portion of the identified area between Center Street and the Root River on the west and Lake Michigan on the east, contains the highest concentration of jobs and total person trip ends within the area, as indicated in Figure 17. Total employment within the Racine CBD was estimated at 3,100 jobs in 1990, an equivalent density of about 18,600 jobs per square mile. The CBD also attracted an estimated 24,800 total person trip ends and had the highest concentration of transit person trip attractions with approximately 1,600 transit person trips, in 1991. By comparison, the remaining western portion of the identified area had an estimated employment of 2,100 jobs in 1990, an equivalent density of about 6,300 jobs per square mile, and attracted approximately 5,100 total person trip ends and 100 transit person trip ends in 1991. A downtown location for the central transfer point would retain service over eight bus routes to the significant concentrations of employment and trips in the Racine CBD.

2. A downtown location for the central transfer terminal may also help serve redevelopment efforts in the downtown area. A downtown terminal would provide a strong transit presence which could be sold to potential business development as a means of providing access to new jobs, commercial development, and recreational activities, such as events at the City's lakefront Festival Park.

The advantages of a location west of the Root River, outside the CBD, would be related to improved system operation because of a more centrally located transfer site. A more centrally located site would be expected to improve crosstown travel times because not all routes would need to travel through downtown. Routes not serving downtown would also be expected to have higher operating speeds, allowing routes to be extended to serve new areas, as warranted, in the future.

Figure 17

AREA FOR LOCATION OF CENTRAL TRANSFER TERMINAL FOR THE BELLE URBAN SYSTEM



Source: SEWRPC.

Recommendation: On the basis of this information, it is proposed to retain the common transfer point for the Belle Urban System in the Racine CBD. A detailed examination of alternative site locations and the identification of a site recommended by the Advisory Committee is included in the discussion of the recommended transit development plan in Chapter VIII.

- Pulse Scheduling

  Description: Prior to the May 1976 restructuring of the Belle Urban System, the City bus routes were operated with pulse type scheduling with buses meeting every 40 minutes in downtown Racine. The timed-transfer connections provided with pulse scheduling made transferring between bus routes more convenient and were looked upon as essential when operating with the long headways. In Wisconsin it is unusual for transit systems the size of the Belle Urban System not to operate with pulse scheduling. Such systems in Wisconsin typically operate with headways of 30 and 60 minutes; pulse scheduling enables a transit system to provide for convenient passenger transfers while operating such headways. Most systems using nonpulse scheduling operate with headways of 15 minutes or less. To allow adequate time for all transfer connections to be made, systems using pulse scheduling provide approximately five minutes of layover or standing time at the common transfer point in their route schedules.

  While pulse scheduling increases the convenience of transferring between routes by providing for timed-

transfer connections, the fixed time for pulsing into and out of the common transfer point places limits on route operation. Sufficient time is needed to cycle buses over an entire round trip and provide for layover or standing time at the common transfer point. For routes where the common transfer point is in the middle of the route, total running and standing time over the two legs of the route on either side of the transfer point must be equal to, or a multiple of, the headway being operated if buses in both directions are to meet at the same time at the common transfer point. For example, operation with 30-minute headways would require total times of 30, 60, 90 or 120 minutes over each leg of the route; operation with 60-minute headways would require total times of 60 or 120 minutes over each leg. These requirements may restrict the area which can be covered by a route without requiring additional vehicles. Many systems operating with headways of 60 minutes pair shorter routes to share vehicles. When this occurs, the buses on the paired routes do not meet at the same time at the common transfer point but alternately serve the transfer point every half-hour.

While not specifically utilizing pulse scheduling at present, the Belle Urban System has over time adapted the schedules for Route Nos. 1 through 4 to provide passengers traveling in the same direction as the route from which they transferred a common transfer time in downtown Racine on weekdays between Memorial Day and Labor Day, when Route Nos. 3 and 4 are operated with 30-minute headways, and on Saturdays. On weekdays between Labor Day and Memorial Day Route, coordinated arrival and departure times in downtown Racine are maintained at different times for Route Nos. 1 and 2 and for Route Nos. 3 and 4. The schedules for Route Nos. 1 through 4 are not coordinated for passengers traveling in the opposite direction and do not provide for any layover or standing time in downtown Racine at the common transfer point.

Analysis: Pulse scheduling would not be possible for the routes of the Belle Urban System with the current 30-minute headways without some modifications to the alignments proposed in the previous section in order to adjust running times to allow for sufficient standing and layover times or to add vehicles to routes. The estimated round-trip running times over the bus routes of the system with the recommended alignment changes are presented in Table 62. Moving the common transfer point to the north side of the CBD could solve running time problems with the north halves of Route Nos. 2 and 4. However, some changes, as shown in Table 63, would still be needed for Route Nos. 1, the north half of Route No. 3, and the south half of Route No. 4.

Table 62

ESTIMATED ROUND-TRIP RUNNING TIMES FOR BELLE URBAN SYSTEM BUS ROUTES AFTER RECOMMENDED ALIGNMENT CHANGES

Route No.[a]	Round Trip Running Times (minutes)		
	North of Downtown	South of Downtown	Total
1	40	41	80
2	27	50-69[b]	77-96
3	32	50	82
4	29	52	81
5	40	37	77
6	--	--	55
7	--	--	71
8	--	--	55
20	--	--	77

[a]Existing Route No. 9 was recommended to be eliminated, with its service incorporated into Route No. 2. Existing Route No. 10 was recommended to be eliminated and replaced with a demand responsive taxicab service.

[b]The longer time would be incurred when service is provided to the University of Wisconsin-Parkside.

Source: SEWRPC.

According to counts of boarding and alighting passengers taken in October 1996, the modifications could be expected to impact about 140 passengers using Route Nos. 3 and 4, representing between 4 and 8 percent of the weekday ridership on these routes and about 1 percent of the weekday passengers using the entire transit system. Not all of the 140 affected passengers associated with the changes would, however, be expected to be lost from the system. Less than 20 percent of the passengers using the segment of Route No. 3 to be eliminated used bus stops located further than one-quarter mile from Northwestern Avenue, where the revised route would operate; about 50 percent of the passengers using stops in the High Ridge Mall Shopping Center use the stop at the northern end of the mall, close to the location of the proposed stop on the 21st Street.

The additional vehicle identified for Route No. 1 would be needed in order for buses in each travel

Table 63

POTENTIAL MODIFICATIONS TO ROUTE NOS. 1, 3, AND 4 TO ENABLE OPERATION WITH PULSE SCHEDULING

Route Number	Potential Modifications	Estimated Weekday Passengers Using Route Segment[a]
1	Increase the number of vehicles operated over the route from three to four	--
3	Eliminate service west of Northwestern Avenue over High Street, Jefferson Street, and Prospect Street	60
4	Eliminate direct service to stops in High Ridge Mall shopping center, stopping instead at stop at mall driveway on 21st Street	80
Total	--	140

[a]Based on counts of boarding and alighting passengers taken October 6-8, 1996.

Source: SEWRPC.

direction to meet simultaneously at the common transfer point with the 30-minute headways currently operated at all times on the route. Without the extra vehicle, Route No. 1 buses stopping at the common transfer point would alternate between the northbound and southbound directions. The additional annual cost of adding the vehicle to the current service would be about $137,000. The extra vehicle would not be needed for operation with 60-minute headways as has been proposed for weekday middays, weekends, and evenings.

Recommendation: It is recommended that the final system plan incorporate the use of pulse scheduling. While operation with nonpulse scheduling has been very successful in the past for the Belle Urban System, the trends of declining ridership experienced since 1982 may make it an appropriate time to reconsider pulse scheduling as a means of making the transit system more convenient to use and regaining some of the lost ridership. Pulse scheduling will also allow the transit system to provide for convenient transfer connections for routes operated with 60-minute headways, as is recommended for Route Nos. 6 and 8 and proposed for all routes during weekday midday, weekend, and evening service periods.

With respect to the extra vehicle for Route No. 1, it is recommended that the final system plan not assume the addition of this vehicle. The vehicle would be used only to increase layover times to permit full coordination of the Route No. 1 arrivals at the common transfer point with those for the other routes serving downtown, not to increase the amount of revenue service operated over the route or extend areal coverage. Operation of the route with partially coordinated schedules at the common transfer point will be assumed.

A consequence of the decision to utilize pulse scheduling will be the need to identify a location for the common transfer point of sufficient size to accommodate vehicles from all routes at the same time. Based on the proposed route structure and service schedules, a total of 11 vehicles during peak periods and off-peak periods would meet at the same time at the common transfer location. Allowing for some future expansion of the transit system and accommodation of vehicles for express service to Milwaukee or Kenosha, the common transfer terminal should accommodate up to 15 buses.

Changes to Service Frequencies: The Belle Urban System is currently operated with headways ranging from 20 to 60 minutes during weekday peak periods, 30 to 60 minutes during weekday offpeak periods, and 30 to 45 minutes on Saturdays. Potential adjustments to the current headways were examined, including the following: an increase in weekday peak-period headways on Route Nos. 3, 4, and 7 from 20 minutes to 30 minutes; an increase in weekday midday offpeak headways from 30 minutes to 60 minutes; and an increase in Saturday headways from 30 minutes to 60 minutes. The key information identified and conclusions drawn in evaluating these changes are as follows:

- Increase Peak-Period Headways on Route Nos. 3, 4, and 7

  Description: Route Nos. 3, 4, and 7 are currently operated with headways of 20 minutes from about 6:30 a.m. until 9:00. a.m. and from about 2:00 p.m. until 5:30 p.m. on weekdays between Memorial Day and Labor Day. Between Labor Day and Memorial Day, the routes operate with weekday headways of 30 minutes at all times. Operation of the routes with 30-minute weekday peak-period headways year-round has been proposed because of decreases in systemwide ridership levels.

Impacts on Existing Service and Costs: The increase in peak-period headways would reduce number of bus

Table 64

ESTIMATED IMPACTS OF INCREASING PEAK-PERIOD HEADWAYS FROM 20 TO 30 MINUTES ON ROUTE NOS. 3, 4, AND 7 ON WEEKDAY PERFORMANCE LEVELS

Characteristic	Existing 1996[a]		With Increased Peak Period Headways	
	Route Nos. 3, 4, and 7	Systemwide	Route Nos. 3, 4, and 7	Systemwide
Ridership	3,730	7,580	3,160-3,320	7,010-7,170
Revenue Vehicle-Miles	1,800	4,564	1,539	4,303
Revenue Hours	147.3	360.7	118.9	332.3
Operating Cost[b]	$6,390	$15,640	$5,350	$14,600
Operating Deficit	$4,750	$12,300	$3,890-3,960	$11,450-11,520
Effectiveness and Efficiency				
Passengers per Vehicle-Hour	2.1	1.7	2.1-2.2	1.7
Passengers per Vehicle-Hour	25.3	21.0	26.6-27.9	21.1-21.6
Operating Cost per Passenger	$1.71	$2.06	$1.61-1.69	$2.04-2.08
Operating Deficit per Passenger	$1.27	$1.62	$1.17-1.25	$1.60-1.64
Percent of Operating Costs Recovered through the Farebox	25.7	21.4	26.0-27.3	21.1-21.6

[a]*Figures are based on estimated performance levels for the week of October 7 through 12, 1996, as shown in Table 48 in Chapter V.*

[b]*All operating costs are expressed in 1996 dollars.*

Source: SEWRPC.

trips per hour from three to two, representing a reduction in service of about 33 percent. The change would also reduce weekday peak vehicle requirements on Route Nos. 3, 4, and 7 from 14 vehicles to nine and weekday peak-period revenue vehicle-hours by between 32 and 40 percent. The resulting reduction in annual vehicle-hours may reduce annual operating costs by about $203,000.

Analysis: Operation of the routes with 20-minute weekday peak-period headways was initiated in October 1982 in response to high systemwide ridership levels and overcrowded conditions on the bus routes. Ridership levels on the transit system have declined steadily since 1982, decreasing by about 25 percent between 1982 and 1996. Analysis of current passenger loads on the routes and the potential impacts on passenger loads of operating the routes with 30-minute peak-period headways conducted as part of the performance evaluation of the existing routes indicated potential problems with overcrowded buses only on Route No. 3, serving J. I. Case High School students. This analysis, however, assumed there would be no reduction in ridership as a result of the increase in headways.

The reductions in service levels resulting from increased headways could be expected to result in reductions in weekday route ridership during the school year. As shown in Table 64, the higher headways could be expected to reduce total weekday ridership on the routes by 11 to 15 percent. The headway change would make small improvements in the efficiency of the routes, but would not significantly improve systemwide effectiveness.

Recommendation: Increasing the weekday peak-period headways on Route Nos. 3, 4, and 7 from 20 minutes to 30 minutes during the school year is recommended to be included in the final system plan. This change is not recommended to improve route or systemwide performance levels. Rather, the recommendation recognizes that service levels on the affected routes should be adjusted to reflect current passenger levels, and that the savings realized from the service reduction could be applied to an expansion of service.

- Increase Weekday Midday Headways from 30 to 60 Minutes

  Description: Under this service change, it was proposed that headways of 60 minutes be used during weekday middays. Headways of 30 minutes are currently operated during the weekday midday period, between about 9:00 a.m. and 2:00 p.m., on all routes of transit system except Route Nos. 9, 10,

Table 65

ESTIMATED TOTAL AVERAGE WEEKDAY AND SATURDAY PASSENGERS ON BELLE URBAN SYSTEM BUS ROUTES BY TIME OF DAY: OCTOBER 7 THROUGH 12, 1996

Route Number	Weekday[a]									
	5:30 a.m. - 8:29 a.m.		8:30 a.m. - 2:29 p.m.		2:30 p.m. - 5:59 p.m.		After 6:00 p.m.		Total	
	Number	Percent of Route Ridership	Number	Percent of Route Ridership	Number	Percent of Route Ridership	Number	Percent of Route Ridership	Number	Percent of Route Ridership
1	275	30	258	28	359	39	28	3	920	100
2	203	25	316	39	267	33	24	3	810	100
3	346	26	505	38	452	34	27	2	1,330	100
4	283	21	513	38	513	38	41	3	1,350	100
5	248	31	264	33	272	34	16	2	800	100
7	220	21	399	38	399	38	32	3	1,050	100
9	17	7	145	58	80	32	8	3	250	100
Subtotal	1,592	24	2,400	37	2,342	36	176	3	6,510	100
6	59	14	198	46	151	35	22	5	430	100
8	84	19	221	49	140	31	5	1	450	100
10	43	36	44	37	28	23	5	4	120	100
20	29	42	--	--	41	58	--	--	70	100
Subtotal	215	20	463	43	360	34	32	3	1,070	100
Total	1,807	23	2,863	38	2,702	36	208	3	7,580	100

Route Number	Saturday[a]							
	Before 10:00 a.m.		10:00 a.m. - 3:59 p.m.		After 4:00 p.m.		Total	
	Number	Percent of Route Ridership	Number	Percent of Total	Number	Percent of Total	Number	Percent of Route Ridership
1	106	24	250	55	94	21	450	100
2	85	20	244	58	91	22	420	100
3	94	18	332	62	104	20	530	100
4	145	13	735	68	200	19	1,080	100
5	52	14	239	67	69	19	360	100
7	72	10	482	70	136	20	690	100
Subtotal	554	16	2,282	64	694	20	3,530	100
6	51	20	162	65	37	15	250	100
8	41	19	138	62	41	19	220	100
10	7	18	32	79	1	3	40	100
Subtotal	99	19	332	66	79	15	510	100
Total	653	16	2,614	65	773	19	4,040	100

[a]*Based on counts of total boarding passengers by bus trip taken by bus operators.*

Source: City of Racine Department of Transportation and SEWRPC.

and 20. Route No. 20 does not operate during the midday service period. The analysis of alternative routing changes presented in the first part of the chapter recommended restructuring Route Nos. 6 and 8 to operate with 60-minute headways at all times, incorporating Route No. 9 into Route No. 2, and replacing Route No. 10 with a demand-responsive taxicab service. The proposed change in midday service levels was examined for the remaining routes, Route Nos. 1 through 5, and 7.

The examination of midday demand and service levels was requested by the Advisory Committee in response to the declines in transit ridership levels experienced over the past several years. Table 65 presents the estimated weekday ridership by route for both peak and offpeak periods based on driver counts by bus trip taken in October 1996. For this analysis, it was assumed that weekday midday headways would be reduced between 8:30 a.m. and 2:30 p.m. This period more closely matches the

times when survey data has shown a marked drop in ridership from that carried during weekday peak periods.

Impacts on Existing Service and Costs: Operation with 60-minute headways would require some modifications to the recommended route alignments and the operation of the routes to allow for the use of pulse scheduling. These modifications, identified in Table 66, would include pairing the northern portions of Routes No. 2 and 3 for operation with one vehicle, and operating the southern portions of each routes separately. These changes would reduce the number of total vehicles needed during the period. Buses on the paired northern halves of Route Nos. 2 and 3 would alternately serve the common transfer point every half-hour, as would the buses on Route Nos. 6 and 8, to provide service every 30 minutes to St. Mary's Hospital. Headways on Route No. 4, the highest ridership route in the system, would, therefore, be kept at 30 minutes to permit timed transfers at all times with Route Nos. 6 and 8.

The increase in weekday midday headways would reduce the number of bus trips per hour on Route Nos. 1, 2, 3, 5, and 7 from two to one, a reduction in service of about 50 percent to passengers. There would be no change in service levels on Route No. 4. The change would also reduce weekday midday vehicle requirements for the six routes from the present 19 vehicles to 13 vehicles, and midday revenue vehicle-hours by about 38 percent. The resulting reduction in annual vehicle-hours would reduce annual operating costs by about $364,000.

Analysis: Operation of the routes with 30-minute headways at all times was initiated in may 1976 as part of the restructuring of service recommended in the first-generation transit system development plan. A substantial part of the ridership increases experienced by the transit system in its early years of public operation, as well as a segment of its current ridership base, may be attributed to operation with 30-minute service levels all day. However, given the current emphasis on improving the efficiency of transit services in response to declines in Federal funds and increases in local funds, operation with 30-minute headways all day should be revisited.

A review of the information in Table 65 indicates that weekday midday ridership on all routes of the Belle Urban System was about 63 percent of weekday peak-period ridership in October 1996, and ridership on the six routes considered for this service change was about 61 percent of weekday peak-period ridership. This can be interpreted as indicating that midday ridership levels do not justify operation with midday service levels equal to peak-period service levels.

Table 66

MODIFICATIONS TO ROUTE NOS. 1 THROUGH 5 AND 7 TO ALLOW OPERATION WITH 60-MINUTE HEADWAYS DURING THE WEEKDAY MIDDAY PERIOD

Route Number	Modification	Vehicles Needed	Headway (minutes)
1	--	2.0	60
2	North half of route paired with north half of Route No. 3; south half of route operated as separate route with no through service to north half of route	1.5 - 2.5[a]	60
3	North half of route paired with north half of Route No. 2; south half of route operated as separate route with no through service to north half of route	1.5	60
4	--	3.0	30
5	--	2.0	60
7	--	2.0	60
Total	--	12.0 -13.0	--

[a]The south half of Route No. 2 will require two vehicles for operation of service to the University of Wisconsin-Parkside and one vehicle when service to the University is not operated.

Source: SEWRPC.

The reductions in service levels resulting from increased headways could be expected to result in significant reductions in weekday route ridership. As shown in Table 67, the higher headways could be expected to reduce weekday midday ridership on the affected routes by 20 to 28 percent, total weekday ridership on the affected routes by 7 to 10 percent, and average weekday ridership system-wide by 6 to 9 percent. The headway change would make small improvements in the effectiveness and efficiency of the routes and also in system-wide effectiveness.

Recommendation: Increasing in weekday midday headways on Route Nos. 1, 2, 3, 5, and 7 from 30 minutes to 60 minutes is recommended to be included in the final system plan only if it is needed as a cost-reduction measure to offset the costs of an improvement or expansion of service, representing a service strongly desired by the

Table 67

ESTIMATED IMPACTS OF INCREASING MIDDAY HEADWAYS FROM 30 TO 60 MINUTES ON ROUTE NOS. 1 THROUGH 5, 7, AND 9 ON WEEKDAY PERFORMANCE LEVELS

Characteristic	Existing 1996[a]		With Increased Midday Headways	
	Midday[b]	All Day	Midday[b]	All Day
Ridership	2,400	6,510	1,740-1,930	5,850-6,040
Vehicle-Revenue-Miles	1,515	4,196	833	3,514
Vehicle-Revenue-Hours	124.8	289.2	780	242.4
Operating Cost[c]	$5,410	$12,540	$3,690	$10,820
Operating Deficit	$4,350	$9,680	$2,840-2,920	$8,160-8,250
Effectiveness and Efficiency				
Passengers per Vehicle-Mile	1.6	1.6	2.1-2.3	1.7
Passengers per Vehicle-Hour	19.2	22.5	22.3-24.7	24.1-24.9
Operating Cost per Passenger	$2.25	$1.93	$1.91-2.12	$1.79-1.85
Operating Deficit per Passenger	$1.81	$1.49	$1.47-1.68	$1.35-1.41
Percent of Operating Costs Recovered through the Farebox	19.6	22.8	20.9-23.0	23.8-24.6

[a]Figures are based on estimated performance levels for the week of October 7 through 12, 1996, as shown in Table 48 in Chapter V for only the routes affected by the increase in midday headways for this analysis. The impacts on Route Nos. 6 and 8, were considered as part of the analysis of the restructuring of these routes, which included operation with 60 minute headways at all times.

[b]The period between 8:30 a.m. and 2:29 p.m.

[c]All operating costs are expressed in 1996 dollars.

Source: SEWRPC.

Racine community. This recommendation recognizes the significant negative effect this change would have on systemwide ridership levels, potentially reducing annual levels by up to 6 to 8 percent.

- Increase Saturday Headways from 30 to 60 Minutes Description: Under this service change, it was proposed that headways of 60 minutes be operated on Saturdays. All routes of transit system currently operate with headways of 30 minutes on Saturdays, with the exception of Route No. 10, which operates with 45-minute headways. The evaluation of routing changes presented in the first part of the chapter recommended replacing Route No. 10 with a demand-responsive taxicab service, along with restructuring Route Nos. 6 and 8 to operate with 60-minute headways at all times. The proposed change in midday service levels was examined for the remaining routes, Route Nos. 1 through 5, and 7.

  The examination of Saturday demand and service levels was suggested by the management firm for the Belle Urban System in response to the declines in transit ridership levels experienced over the past several years. Table 65 presents the estimated Saturday ridership by route by period based on driver counts by bus trip taken in October 1996.

  Two options for reducing headways on Saturdays were identified:

  1. Option A: Headways would be reduced to 60 minutes throughout the day on Route Nos. 1 through 5 and 7 under this analysis, essentially as proposed for weekday middays. Under the recommended restructuring of Route Nos. 6 and 8, these routes would operate with 60-minute headways at all times, including Saturdays. Only Route No. 4 would continue to be operated with 30-minute headways, providing timed-transfer connections with all other routes.

  2. Option B: Route Nos. 1 through 5, and 7 would be operated with 60- minute headways as proposed under Option A above only before 10:00 a.m. and after 4:00 p.m. Between 10:00 a.m. and 4:00 p.m., the period of highest ridership on Saturday, these routes would operate with 30-minute headways as at present. Route No. 4 would continue to be operated with 30-minute headways throughout the day.

Impacts on Existing Service and Costs: Under both options, operation with 60-minute headways on Saturday would require the same modifications to the recommended route alignments and the operation of the routes identified in Table 66 for weekday midday operation with 60-minute headways. The increase in Saturday headways would reduce the number of bus trips per hour on Route Nos. 1, 2, 3, 5, and 7 from two to one, a reduction in service of about 50 percent compared with the 60-minute headways. There would be no change in service levels on Route No. 4.

With 60-minute headways, the Saturday vehicle requirements for the six routes would be reduced from the 18 vehicles used at present to 12. With operation of 60-minute headways through the day as proposed under Option A, Saturday revenue vehicle-hours would be reduced by about 29 percent; with the resulting reduction annual vehicle-hours and annual operating costs would be reduced by about $113,000. With operation of 60-minute headways only during the early morning and late afternoon periods, as proposed under Option B, Saturday revenue vehicle-hours would be reduced by about 11 percent and annual operating costs would be reduced by about $41,000.

Analysis: A review of the information in Table 65 indicates that Saturday ridership systemwide was about 53 percent of weekday ridership in October 1996; ridership on the six routes considered for this service change was about 54 percent of weekday ridership. Again, this can be interpreted as indicating that Saturday ridership levels do not justify operation with service levels equal to weekday service levels.

The reductions in service levels resulting from increased headways could be expected to result in reductions in Saturday ridership levels on the affected routes. As shown in Table 68, the higher headways proposed for all day on Saturday under Option A could be expected to reduce total Saturday ridership on the routes by 17 to 24 percent. The increased head-ways would make small improvements in the efficiency of the routes and systemwide efficiency. A review of the information in Table 65 indicates that most of the ridership on Saturdays occurs during the middle of the day between about 10:00 a.m. and 4:00 p.m. Increasing headways from 30 to 60 minutes in the morning and in the afternoon outside of this period, or for about half of the Saturday service day as proposed under Option B, could be expected to reduce total Saturday ridership on the routes by 7 to 9 percent. The expected improvement in the efficiency of the routes as well as in systemwide efficiency would be less than under Option A.

Recommendation: Increasing Saturday headways on Route Nos. 1, 2, 3, 5, and 7 from 30 minutes to 60 minutes is recommended to be included in the final system plan. While Option B would minimize the negative effect which increasing headways would have on systemwide ridership, Option A is needed to generate savings to offset the costs of an improvement or expansion of service.

Changes to Service Periods

The Belle Urban System currently operates six days a week, excluding holidays, including weekdays from 5:30 a.m. until 7:00 p.m. and Saturdays from 7:00 a.m. until 6:00 p.m. Potential adjustments to these service periods were examined including the following: starting service one hour later on Saturdays; providing weekday and Saturday evening service; and providing Sunday and holiday service. The key data identified and the conclusions drawn in analyzing these changes are as follows:

- Reduce the Saturday Service Period by One Hour

  Description: Saturday service hours would be cut back by one hour in the morning, starting at 8:00 a.m. instead of the present 7:00 a.m.. This change was proposed by the transit management firm as a means of adjusting Saturday service more to demand.

  Impacts on Existing Service, Ridership, and Costs: According to Commission passenger counts taken in October 1996, about 180 passengers used the transit system during its first hour of operation on Saturdays, about 4 percent of the total Saturday ridership. With the existing 30-minute headways operated on Saturdays, the change would reduce Saturday revenue vehicle-hours by about 18, or about 7 percent, and reduce annual operating costs by about $36,000. Assuming operation with the 60-minute headways recommended for Saturday service in the preceding section, the change would reduce Saturday revenue vehicle-hours by about 12 hours, or between 7 and 9 percent, and reduce annual operating costs by about $24,000.

  Analysis: As identified in Table 65, ridership on Saturdays was lowest between 7:00 a.m. and 10:00 a.m., when the system carried about 650 passengers, an average of about 217 passengers

Table 68

ESTIMATED IMPACTS OF INCREASING SATURDAY HEADWAYS FROM 30 TO 60 MINUTES ON ROUTE NOS. 1 THROUGH 5 AND 7 ON SATURDAY PERFORMANCE LEVELS

Characteristic	Existing 1996[a]	With Increased Headways	
		Option A: All Day	Option B: During Early Morning and Late Afternoon[b]
Average Daily Ridership	3,530	2,670-2,920	3,210-3,300
Average Daily Vehicle-Miles	2,290	1,372	1,726
Average Daily Vehicle-Hours	193.3	136.5	172.5
Average Daily Operating Cost	$8,380	$6,290	$7,610
Average Daily Operating Deficit	$6,830	$5,010-5,120	$6,160
Effectiveness and Efficiency			
Passengers per Vehicle-Mile	1.5	2.0-2.1	1.9
Passengers per Vehicle-Hour	18.3	19.6-21.4	18.6-19.1
Operating Cost per Passenger	$2.37	$2.15-2.36	$2.31-2.37
Operating Deficit per Passenger	$1.93	$1.72-1.92	$1.87-1.93
Percent of Operating Costs Recovered through the Farebox	18.5	18.6-20.3	18.5-19.1

[a]*Figures are based on estimated performance levels for the week of October 7 through 12, 1996, as shown in Table 48 in Chapter V for only the routes affected by the increase in Saturday headways for this analysis. The impacts of increasing Saturday headways on Route Nos. 6 and 8 were considered as part of the analysis of restructuring of these routes which included operation with 60-minute headways at all times.*

[b]*Headways of 60 minutes would be operated prior to 10:00 a.m. and after 4:00 p.m.*

Source: SEWRPC.

per hour. The ridership during the first hour was not significantly below the average ridership for the three-hour period, but was only about 75 percent of the average of about 237 passengers for the following two hours. Ridership during the first hour on Saturday was also similar to ridership during the last hour of service on weekdays, about 86 percent of the approximately 210 passengers carried on weekdays after 6:00 p.m.

Recommendation:
Starting Saturday service hours at 8:00 a.m. instead of 7:00 a.m. as at present, is not recommended to be included in the final system plan because ridership levels do not appear to be unreasonably low in comparison with ridership during the rest of the early Saturday period or during the last hour on weekdays. Rather than reduce service, the Advisory Committee favored starting service one hour earlier on Saturdays, that is at 6:00 a.m., instead of 7:00 a.m.

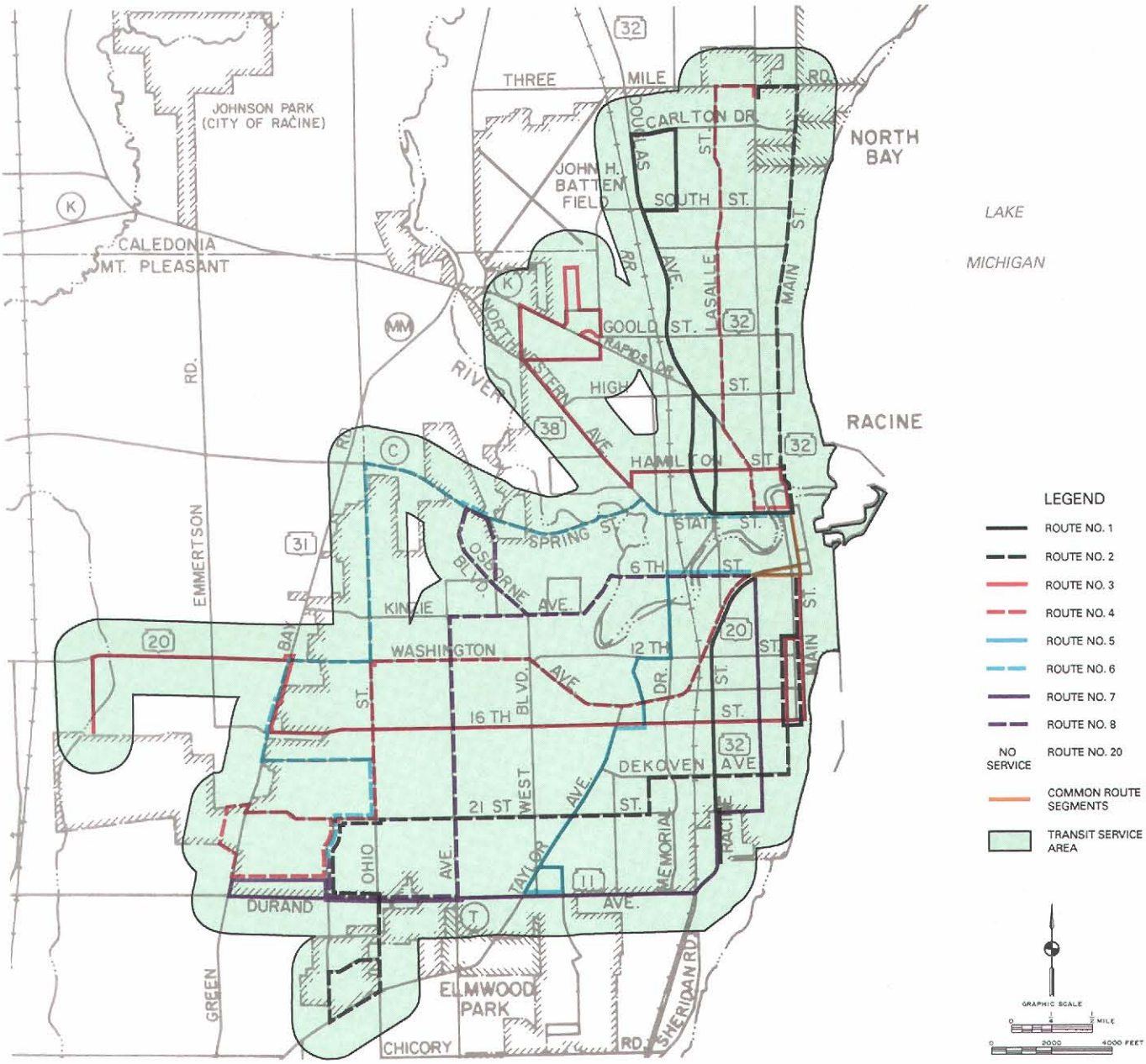
- Weekday and Saturday Evening Service
Description: Evening service would be added to both the weekday and Saturday operating periods of the transit system. On weekdays, service would be extended from the current 7:00 p.m. ending time until 11:30 p.m., a total of about four and one-half hours. Saturday service would be extended from its current 6:00 p.m. ending time until 9:30 p.m., a total of about three and one-half hours. The extension of service hours would address a need expressed by transit system users and non-users to provide access to jobs, services and other activities during the evening.

To provide evening service most efficiently and effectively, the routes and route operation would be modified slightly to minimize the vehicles required and the expected operating costs. Two potential options for operation of the routes were identified:

1. Option A: Evening service would be provided over the system of routes shown on Map 38, including service over the entire length, or significant portions, of Route Nos. 1 through 8. The modifications to the routes to permit evening operation are identified in Table 69 and would include the following: cutting back

Map 38

PROPOSED ROUTE STRUCTURE FOR OPERATING EVENING SERVICE UNDER OPTION A



Source: SEWRPC.

Route Nos. 1 and 7 to approximately the corporate limits of the City of Racine, operating only the southern half of Route No. 5, and extending service over Route No. 3 to an area currently served by the northern end of Route No. 5. In addition, the southern halves of Route Nos. 2, 3, and 4 would be operated independently from the northern halves. The northern halves of Route Nos. 2 and 4 would then be paired with the northern half of Route No. 3 and the southern half of Route No. 5, respectively, to allow operation of each route pair with only one vehicle.

Table 69

MODIFICATIONS TO BUS ROUTES FOR SYSTEM PROPOSED UNDER EVENING SERVICE OPTION A

Route Number	Modification	Paired Route	Vehicles Needed	Headway (minutes)
1	No service operated north of Douglas Avenue and Carlton Drive or south of Racine Street and 24th Street	--	1.0	60
2 North	--	3 North	0.5	60
2 South	--	--	1.0	60
3 North	Service extended to replace Route No. 5 service to Rapids Plaza and Jacato Drive by eliminating service over Rapids Drive and Northwestern Avenue west of Golf Avenue	2 North	0.5	60
3 South	--	--	1.0	60
4 North	--	5 South	0.5	60
4 South	--	--	2.0	30
5 North	No service operated	--	--	--
5 South	Route extended to downtown Racine via 6th Street and Main Street; no service operated south of Durand Avenue	4 North	0.5	60
6-8 Loop	--	--	2.0	60
7	No service operated west of Green Bay Road	--	1.0	60
20	No service operated	--	--	--
Total	--	--	10.0	--

Source: SEWRPC.

2. Option B: Evening service would be provided over the system routes shown on Map 39, including service over the entire length, or significant portions, of six routes, including Route Nos. 3, 4, and 7, which currently have the highest daytime ridership, along with Route Nos. 1, 6, and 8. The modifications to the routes needed to permit evening operation are identified in Table 70 and would include the following: cutting back Route Nos. 1, 3, and 7 to approximately the corporate limits of the City of Racine, operating the southern half of Route No. 4 independently from the northern half and pairing the northern halves of Route Nos. 1 and 4 to allow operation with a single vehicle.

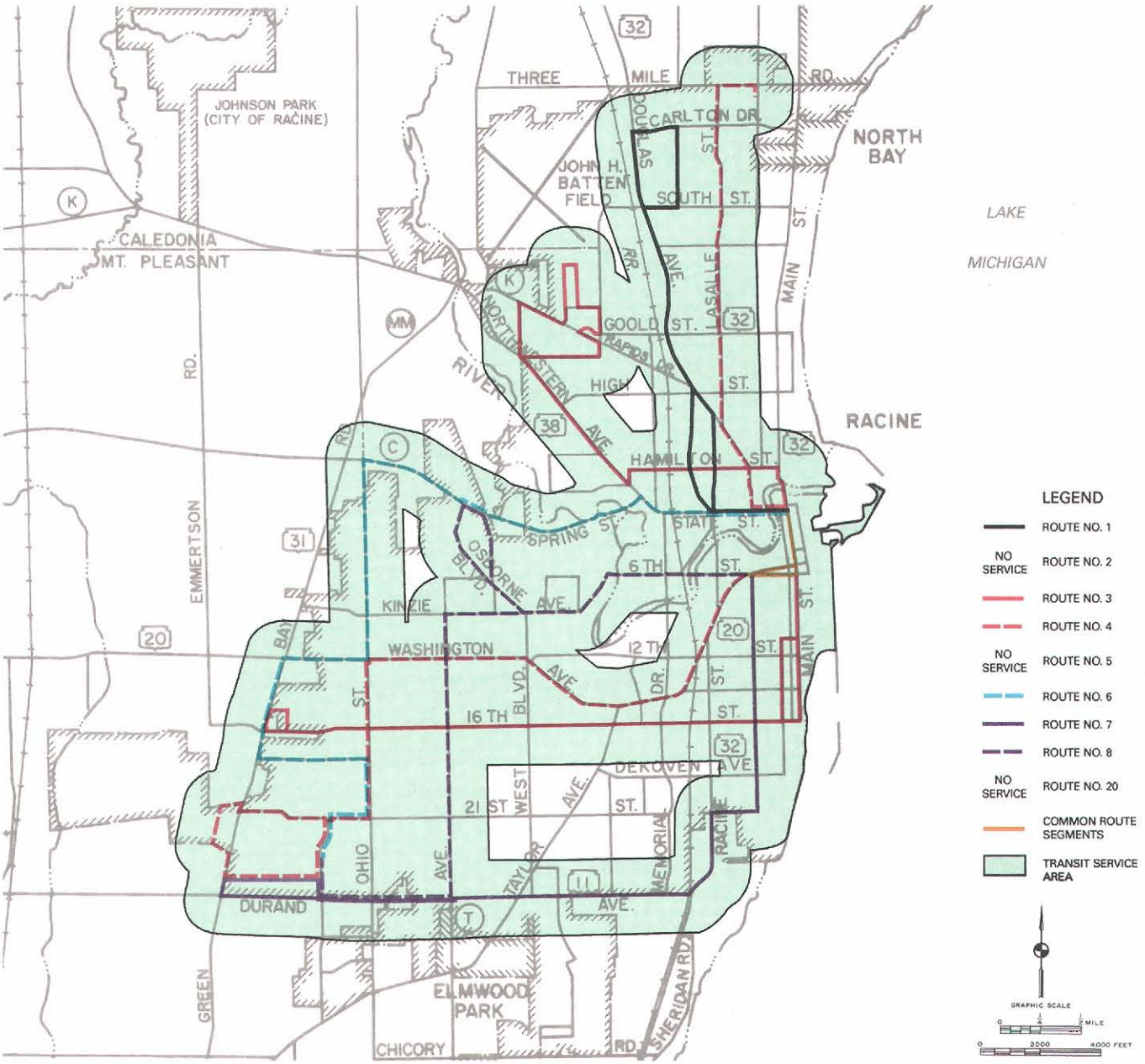
Impacts on Service and Costs: Under both options, evening service would be operated with 60-minute headways on all routes except the southern half of Route No. 4, which would continue to be operated with 30-minute headways. This would permit coordination of transfers between Route No. 4 and the paired routes, as well as Route Nos. 6 and 8, because buses over these routes would serve the common transfer point alternately every half hour.

The system operated to provide evening service under Option A would require a total of 10 vehicles, which would be four to five fewer than needed to operate weekday midday service over Route Nos. 1 through 8 with 60-minute service. The annual operating cost for providing evening service with the system proposed under Option A, including the cost of both fixed-route bus service and Federally required paratransit service for disabled individuals, would be about $480,000 for weekday evening service and about $80,000 for Saturday evening service, a total of approximately $560,000. The system proposed under Option B would require seven vehicles to operate, or about one-half the number of vehicles required to provide weekday midday service with 60-minute headways. The annual operating costs for providing evening service with this system were estimated to be about $340,000 for weekday evening service and about $60,000 for Saturday evening service, a total of about $400,000.

Analysis: The two systems proposed for providing evening service differ principally with respect to areal coverage. The estimated population and

Map 39

PROPOSED ROUTE STRUCTURE FOR OPERATING EVENING SERVICE UNDER OPTION B



Source: SEWRPC.

employment levels within the two service areas are presented in Table 71. The system proposed under Option A would be expected to serve approximately 83 percent of the total area population and about 99 percent of the City of Racine population lying inside the daytime transit system service area. The system under Option A would also serve about 85 percent of the total job locations and about 99 percent of the jobs in the City of Racine inside the daytime service area. The system proposed under Option B would be expected to serve about 67 percent of the total population and about

Table 70

MODIFICATIONS TO BUS ROUTES FOR SYSTEM PROPOSED UNDER EVENING SERVICE OPTION B

Route Number	Modification	Paired Route	Vehicles Needed	Headway (minutes)
1 North	--	4 North	0.5	60
1 South	No service operated	--	--	--
2	No service operated	--	--	--
3	No service operated west of Green Bay Road; service extended to replace Route No. 5 service to Rapids Plaza and Jacato Drive by eliminating service over Rapids Drive and Northwestern Avenue west of Golf Avenue	--	1.0	60
4 North	--	1 North	0.5	60
4 South	--	--	2.0	30
5	No service operated	--	--	--
6-8 Loop	--	--	2.0	60
7	No service operated west of Green Bay Road	--	1.0	60
20	No service operated	--	--	--
Total	--	--	7.0	--

Source: SEWRPC.

Table 71

ESTIMATED POPULATION AND EMPLOYMENT LEVELS IN THE SERVICE AREA UNDER EVENING SERVICE OPTIONS A AND B

Characteristic	Existing Daytime Service Area	Service Area Under Option A		Service Area Under Option B	
		Number	Percent of Daytime Figure	Number	Percent of Daytime Figure
Population[a]					
Within City of Racine	84,000	83,200	99	68,500	82
Total Service Area	113,000	93,700	83	75,500	67
Employment Locations[b]					
Within City of Racine	46,700	46,200	99	43,500	93
Total Service Area	64,600	55,100	85	50,100	77

[a]*Population figures based on 1990 U. S. Census.*

[b]*Employment figures based on 1990 estimates.*

Source: SEWRPC.

82 percent of the City of Racine population inside the daytime service area. The system under Option B would also serve about 78 percent of the total job locations and about 93 percent of the job locations within the City of Racine inside the daytime transit service area. The system proposed under Option B would serve approximately 80 percent of the total population and about 91 percent of the jobs served by the system under Option A.

The ridership projections for the evening service provided under the two options reflect the difference in service area coverage. Under Option A, evening service would be expected to generate an average

Table 72

COMPARISON OF PROJECTED EFFICIENCY OF PROVIDING EVENING SERVICE WITH THE MODIFIED ROUTE STRUCTURES PROPOSED UNDER OPTIONS A AND B

Characteristic	Option A Evening Service		Option B Evening Service	
	Weekday	Saturday	Weekday	Saturday
Average Daily Ridership	400	300	300	225
Average Daily Revenue Vehicle-Hours	45.0	35.0	31.5	24.5
Average Daily Operating Cost[a]	$1,720	$1,340	$1,200	$940
Average Daily Operating Deficit	$1,460	$1,150	$1,010	$800
Effectiveness and Efficiency				
Passengers per Vehicle-Hour	8.9	8.6	9.5	9.36
Operating Cost per Passenger	$4.30	$4.47	$4.00	$4.18
Operating Deficit per Passenger	$3.65	$3.83	$3.37	$3.56
Percent of Operating Costs Recovered through the Farebox	15.1	14.2	15.8	14.9

[a]*All operating costs are expressed in 1997 dollars.*

Source: SEWRPC.

of about 400 passengers on weekdays and about 300 passengers on Saturdays. Annually, evening service would be expected to generate an additional 77,000 revenue passengers for weekday evening service and about 12,000 revenue passengers for Saturday evening service. The total additional annual ridership of about 89,000 revenue passengers would represent an increase of about 5 percent over the approximately 1,736,000 revenue passengers carried by the transit system in 1996. Under Option B evening service would be expected to generate an average of about 300 passengers on weekdays and about 225 passengers on Saturdays, an additional 67,000 revenue passengers annually, or an increase of about 4 percent of the total 1996 revenue passengers for the system, including about 58,000 revenue passengers for weekday evening service and about 9,000 passengers for Saturday evening service.

The projected efficiency of the evening services under Options A and B are presented in Table 72. In general, the performance of evening service would be expected to be about one-half the levels observed for daytime service. The two options do not vary significantly with respect to the projected efficiency of evening service.

Recommendation: It is recommended that evening service on weekdays as proposed under Option A and evening service on Saturdays as proposed under Option B be included in the final system plan. This recommendation recognizes that the better coverage of the daytime transit service area provided under Option A would be appropriate to serve weekday evening travel for work and other purposes and would warrant the higher cost, but that the less extensive service coverage provided under Option B may be all that is needed to serve Saturday evening travel adequately.

- Sunday and Holiday Service

  Description: Service on Sundays and holidays would be added to make the transit system a seven-day-a-week operation. Sunday and holiday service would be provided for a nine hours, from 8:00 a.m. to 5:00 p.m. The same system modifications proposed above under Options A and B for providing weekday and Saturday evening service were examined for providing Sunday and holiday service. The addition of Sunday and holiday service hours would address a need expressed by transit system users and nonusers to provide access to Sunday activities.

  Impacts on Service and Costs: As proposed for weekday evening service, Sunday and holiday service would be provided with 60-minute headways on all routes except for the southern half of Route No. 4, which would be operated with 30-minute headways to maintain timed-transfer connections with all other routes. Operation of Sunday and holiday service under Option A would require 10 vehicles, Option B would require seven. The

annual operating cost for providing service on Sundays and holidays, including cost for both fixed-route bus service and Federally required paratransit service for disabled individuals, would be about $209,000 under Option A and about $147,000 under Option B.

Analysis: The differences in service area coverage for Options A and B noted in the analysis of evening service would also affect Sunday and holiday ridership. Because service would be provided over a longer period and during daytime hours, when travel is greater, ridership levels for Sunday and holiday service would be expected to be higher than for evening service. Sunday and holiday service under Option A would be expected to generate an average Sunday and holiday ridership of about 1,000 passengers and an annual ridership of about 44,000 revenue passengers, an increase of about 3 percent over the 1,736,000 passengers carried on the transit system in 1996. Under Option B, Sunday and holiday service would be expected to generate an average Sunday and holiday ridership of about 800 passengers and a total ridership of about 35,000 revenue passengers, an increase of about 2 percent over 1996 annual system ridership. The average Sunday and holiday ridership levels would, however, be expected to be only 15 to 20 percent of average weekday levels.

The projected efficiency of Sunday and holiday service under Options A and B are presented in Table 73. In general, the performance of Sunday and holiday service would be expected to be about two-thirds the weekday levels, but about the same a expected for weekday midday and Saturday service. The Sunday and holiday service under Option B would be expected to show somewhat better performance levels than Option A.

Recommendation: It is recommended that Sunday and holiday service, as proposed under Option B, be included in the final system plan because of its slightly higher projected effectiveness.

Summary of Commission Staff Recommendations Concerning Alternative Service Changes

The transit service changes which have been recommended by the Commission staff in the preceding analyses and evaluations are summarized in Table 74, along with their projected impacts on system ridership and annual operating costs. Each of the routing and service changes was presented to the Advisory Committee for their consideration and recommendation on including them in the final transit system development plan.

Table 73

COMPARISON OF PROJECTED EFFICIENCY OF PROVIDING SUNDAY AND HOLIDAY SERVICE WITH THE MODIFIED ROUTE STRUCTURES PROPOSED UNDER OPTIONS A AND B

Characteristic	Option A Sunday-Holiday Service	Option B Sunday-Holiday Service
Average Daily Ridership	1,000	800
Average Daily Revenue Vehicle-Hours	90.0	63.0
Average Daily Operating Cost[a]	$3,440	$2,410
Average Daily Operating Deficit	$2,800	$1,900
Effectiveness and Efficiency		
Passengers per Vehicle-Hour	11.1	12.7
Operating Cost per Passenger	$3.44	$3.01
Operating Deficit per Passenger	$2.80	$2.38
Percent of Operating Costs Recovered through the Farebox	18.6	21.2

[a] *All operating costs are expressed in 1997 dollars.*

Source: SEWRPC.

RECOMMENDATIONS

The Advisory Committee met three times in the summer 1997 to review various elements of the proposed service changes as discussed in the preceding sections. Of particular concern to the Committee were the projected impacts of the service changes upon the annual ridership, operating costs, and local funding requirement for the Belle Urban System, as presented in Table 74. The Committee determined that no other information need be considered for it to make recommendations on the proposed changes.

With respect to the service changes proposing restructuring of routes, the Advisory Committee accepted without modification all the Commission staff recommendations. With respect to the adjustments to schedules and service periods considered, the Advisory Committee accepted without modification all the Commission staff recommendations except two: the proposed expansion of Saturday service to include evening service and the addition of service on Sundays and holidays. The Committee determined that there was little need to expand bus service into these periods on the basis of service requests received recently. The Committee indicated that it would rather see City resources used in other areas where a need for service had been more firmly established. The Committee also modified two Commission staff proposals by recommending that the plan reflect the operation of bus service on weekday evenings until 12:30 a.m., rather than

Table 74

ESTIMATED IMPACTS ON ANNUAL RIDERSHIP AND OPERATING COSTS OF THE ALTERNATIVE ROUTING ADJUSTMENTS AND SERVICE CHANGES RECOMMENDED BY COMMISSION STAFF

Type of Change	Commission Staff Recommendation	Estimated Impacts on Annual Systemwide Projections for Calendar Year 1997[a]						
		Change in Ridership	Change in Operating Expenses	Change in Operating Revenues	Change in Total Operating Deficit	Change in Operating Subsidies by Funding Source		
						Federal and State[b]	Local	Total
Restructuring of Routes	• Extend Route No. 1 north via Douglas Avenue to Four Mile Road and Douglas Avenue to serve the Green Tree Centre shopping center in the Town of Caledonia	Less than +1 percent	Slight increase from increase in vehicle-miles	Less than +1 percent	--	--	--	--
	• Extend Route No. 2 west via 21st Street, Roosevelt Avenue, and Durand Avenue to serve the eastern edge of the Racine West commercial area	Less than +1 percent	Slight increase from increase in vehicle-miles	Less than +1 percent	--	--	--	--
	• Extend Route No. 2 south via current Route No. 9 alignment from Meachem Road and Taylor Avenue to the University of Wisconsin-Parkside when classes are in session, and eliminate Route No. 9	Less than +1 percent	--	Less than +1 percent	--	--	--	--
	• Extend Route No. 6 and 8 to the Racine West commercial area by extending Route No. 6 south via Ohio Street, 21st Street, and Roosevelt Avenue, and Route No. 8 west via Durand Avenue and Roosevelt Avenue; pair the routes to operate as a loop with two-way service provided at 60-minute headways at all times instead of the current 30-minute headways	-2.7 to -3.8 percent	-$307,000	-$33,400 to -$47,000	-$260,000 to -$273,600	-$169,600	-$90,400 to -$104,000	-$260,000 to -$273,600
	• Replace service provided over Route No. 20 with subscription transit services provided by the Belle Urban System or a private transit operator; until such service can be implemented, shift bus trips serving the S. C. Johnson & Son, Inc. Waxdale plant in the Town of Mt. Pleasant from Route No. 7 to Route No. 20. Discontinue direct bus service to the entrances of the Regency Mall shopping center in early morning hours before the mall opens	--	$19,500	--	$19,500	$10,700	$8,800	$19,500
	• Replace fixed-route bus service in the Town of Caledonia provided by Route No. 10 with demand-responsive, shared-ride taxicab service provided by a contract transit operator	+ less than 1 percent	-$75,000	--	-$75,000	-$41,500	-$33,500	-$75,000
Adjustments to Schedules and Service Periods	• Retain a downtown site as the location for the common transfer point for transit system routes	--	--	--	--	--	--	--
	• Use pulse scheduling to provide a "timed transfer" at the common transfer point	- less than 1 percent	Slight decrease from decrease in vehicle-miles	--	--	--	--	--
	• Increase weekday peak period headways on Route Nos. 3, 4, and 7 to 30-minutes from the 20 minutes currently operated between Labor Day and Memorial Day; add extra buses or tripper service to routes if passenger loads or scheduling needs indicate additional service is warranted at peak times	-3.9 to -5.4 percent	-$203,000	-$48,200 to -$66,700	-$136,300 to -$154,800	-$112,200	-$24,100 to -$42,600	-$136,300 to -$154,800

Table 74 (continued)

Type of Change	Commission Staff Recommendation	Estimated Impacts on Annual Systemwide Projections for Calendar Year 1997[a]						
		Change in Ridership	Change in Operating Expenses	Change in Operating Revenues	Change in Total Operating Deficit	Change in Operating Subsidies by Funding Source		
						Federal and State[b]	Local	Total
Adjustments to Schedules and Service Periods (continued)	• Increase headways on Route Nos. 1, 2, 3, 5, and 7 during weekday midday period to 60 minutes from the 30 minutes currently operated; operate 30-minute headways on Route No. 4 to provide timed-transfer connects with all other routes. (This service reduction to be included only if the savings in existing operating costs it generates is needed to fund new or expanded services desired by the Racine community)	-5.6 to -8.0 percent	-$364,000	-$69,200 to -$98,900	-$265,100 to -$294,800	-$201,000	-$64,100 to -$93,800	-$265,100 to -$294,800
	• Increase headways on Route Nos. 1, 2, 3, 5, and 7 on Saturday to 60 minutes at all times from the 30 minutes currently operated; operate 30-minute headways on Route No. 4 to provide timed-transfer connections with all other routes. (This service reduction to be included only if the savings in existing operating costs it generates is needed to fund new or expanded services desired by the Racine community)[c]	-1.6 to -2.3 percent	-$113,000	-$19,800 to -$28,400	-$84,600 to -$93,200	-$62,400	-$22,200 to -$30,800	-$84,600 to -$92,300
	• Expand the weekday service period to include evening service until 11:30 p.m. using the modified system of eight routes shown on Map 38	+5.1 percent	$480,000	$63,000	$417,000	$265,100[d]	$151 ,900[d]	$417,000
	• Expand the Saturday service period to include evening service until 9:30 p.m. using the modified system of six routes shown on Map 39	+0.6 percent	$60,000	$7,400	$52,600	$33,100[d]	$19,500[d]	$52,600
	• Add Sunday and holiday service between 8:00 a.m. and 5:00 p.m. using the modified system of six routes shown on Map 39	+2.3 percent	$147,000	$28,400	$118,600	$81,200[d]	$37,400[d]	$118,600
Total	For service reductions in City of Racine	-13.8 to -19.5 percent	-$987,000	-$170,600 to -$241,000	-$746,000 to -$816,400	-$545,200	-$200,800 to -$271,200	-$746,000 to -$816,400
	For service expansion in City of Racine	+8.0 percent	$706,500	$98,800	$607,700	$390,100	$217,600	$607,000
	For change to demand responsive service for the Town of Caledonia	+ less than 1 percent	-$75,000	--	-$75,000	-$41,500	-$33,500	-$75,000
	Net Total	-5.8 to -11.5 percent	-$355,500	-$71,800 to -$142,200	-$213,300 to -$283,700	-$196,600	-$16,700 to -$87,100	-$213,300 to -$283,700

[a]All financial data are presented in 1997 dollars.

[b]Based on the 1997 projected levels of Federal and State operating assistance funds, which are expected to cover approximately 53 percent of the City of Racine transit system's projected 1997 operating expenses, along with Federal capital maintenance funds, which are expected to cover approximately 2 percent of the transit system's projected 1997 operating expenses.

[c]An increase in Saturday headways on Route Nos. 1, 2, 3, 5, and 7 only before 10:00 a.m. and after 4:00 p.m. to 60 minutes from the 30 minutes currently operated was also identified. This change would be expected to reduce annual system ridership by between 0.6 and 0.8 percent; reduce annual operating expenses by about $41,000; reduce annual operating revenues by between $7,400 and $ 9,900; reduce the total system operating deficit by between $31,100 and $ 33,600; and reduce local funding by between $8,400 and $10,900.

[d]The transit services proposed for weekday and Saturday evenings and on Sunday would potentially be eligible for higher levels of Federal funding under the Federal Congestion Mitigation and Air Quality Improvement Program (CMAQ). Up to 80 percent of the operating deficits of these services could potentially be covered if the services were approved for CMAQ funding by the Wisconsin Department of Transportation and sufficient funds were available statewide. If funded at the maximum level, Federal and State funds for weekday evening service would increase to about $367,900 and local funding would decrease to about $49,100; Federal and State funds for Saturday evening service would increase to about $46,400 and local funding would decrease to about $6,200; and Federal and State funds for Sunday service would increase to about $104,700 and local funding would decrease to about $13,900.

Source: SEWRPC.

11:30 p.m., as originally proposed, and a starting time for Saturday bus service of 6:00 a.m., instead of 7:00 a.m., as proposed. These modifications are reflected in the final plan documented in the following chapter.

SUMMARY

This chapter has described the alternative transit service improvements considered and those ultimately chosen by the Advisory Committee for adoption and implementation. The potential transit service changes consisted of adjustments to existing route alignments or to the service schedules and periods of operation for the transit system, including changes identified by the Belle Urban System management firm in June 1997.

Routing Adjustments
Eight sets of routing changes for individual routes or groups of routes were proposed and evaluated. The analyses of these changes and the Commission staff recommendations can be summarized as follows:

1. Two potential extensions of Route No. 1 were considered:

   - One to the north via Douglas Avenue to a new route terminus in the Green Tree Centre at Four Mile Road and Douglas Avenue in the Town of Caledonia and

   - One to the north and east to a new terminus in the Shorecrest Shopping Center at Three Mile Road and Erie Street in the City of Racine

   Both options represented reasonable uses of the surplus time available on Route No. 1. The route extension to the Green Tree Centre, however, was recommended by the Commission staff in light of its potential for generating higher ridership because of the location of several employers along Douglas Avenue and the major community shopping center at the new route terminus

2. Two potential extensions of Route No. 2 were considered:

   - One to the eastern edge of the Racine West commercial area over 21st Street, Roosevelt Avenue, and Durand Avenue and

   - One to the University of Wisconsin-Parkside over the current Route No. 9 alignment south of Taylor Avenue and Meachem Road, allowing Route No. 9 to be discontinued.

   Both route extensions were recommended by the Commission staff because of the service improvements associated with each. These included providing improved access to the Racine West commercial area, elimination of a duplication of service along Washington and Taylor Avenues between the alignments of Route No. 9 and those of Route Nos. 4 and 5, and restoration of 30-minute headways for service to the University of Wisconsin-Parkside.

3. Consideration was given to the conversion of Route No. 3 west of 16th Street and Green Bay Road to a one-way loop by adding a new route segment over 16th Street between Oakes Road and Green Bay Road. The service change was not recommended by the Commission staff in light of its potential adverse affects on the existing passengers using the two-way bus service currently provided on Route No. 3 west of 16th Street and Green Bay Road and the poor potential for the proposed new route segment over 16th Street to generate additional ridership;

4. Consideration was given to modifying the alignments of Route Nos. 3, 4, 6, and 20 to allow the extension of Route No. 4 to the west via Washington Avenue to serve the J. I. Case High School and replace service provided by Route No. 20 to the businesses along Washington Avenue and in the Grandview Industrial Park. Adjustments to the alignments of Route Nos. 3 and 6 would also be needed to replace service provided over Route No. 4 in the Racine West commercial area and along portions of Ohio Street. The proposed changes were not recommended by the Commission staff because they would entail altering service on some of the most productive segments of the transit system operated by Route Nos. 3 and 4, the two best performing routes of the transit system; neither the existing ridership levels on Route No. 20 or input from the businesses served indicated a need for the more frequent bus service which this change would have provided.

5. Consideration was given to two options for modifying the alignment of Route No. 5 to incorporate the service to the University of Wisconsin-Parkside currently provided over Route No. 9, thereby eliminating a duplication of service between the two routes along Taylor Avenue. Neither option, however, was recommended by the Commission staff and they were not viewed as better than the recom-

mended extension of Route No. 2 to the University of Wisconsin-Parkside.

6. The following two potential alignment options for restructuring and reducing service over Route Nos. 6 and 8 were considered:

   - One proposing the extension of both routes from their current western termini over Ohio Street, 21st Street, Roosevelt Avenue, and Durand Avenue to the Racine West commercial area to create a large loop route with two-way service at 60-minute headways instead of the existing 30-minutes headways and

   - One proposing cutting back service on Route Nos. 6 and 8 to St. Mary's Hospital to create a small loop with two-way service at the existing 30-minute headways and creating a new one-way loop route operated with 60-minute headways between St. Mary's Hospital and the Racine West commercial area using the western segments of Route Nos. 6 and 8 and the extension of these routes proposed under the previous option.

   The restructuring of Route Nos. 6 and 8 as proposed under the first option was recommended by the Commission staff in light of a potential decrease of about $307,000 in annual operating costs, compared to only about $153,000 under the second option; and the indirect travel and longer travel times for existing passengers which would result from the new one-way loop route proposed under the second option.

7. Consideration was given to shifting bus trips serving employees at the S. C. Johnson & Son, Inc. Waxdale plant from Route No. 7 to Route No. 20 to reduce running times and alleviate problems with late bus trips that currently exist on Route No. 7. The proposed service change was recommended by the Commission staff but only in the short term, to correct the current service problems with Route No. 7. The implementation of subscription transit service was recommended to replace the existing bus service provided over Route No. 20 as the longer-term solution.

8. Two options for modifying the existing transit service provided in the eastern portion of the Town of Caledonia were considered:

   - Restructuring Route No. 10 to eliminate service over the most unproductive segments of the route south of Four Mile Road and east of Douglas Avenue, which would establish a new terminus for the shortened route in the Green Tree Centre and

   - Replacing the existing fixed-route bus service with a demand-responsive shared-ride taxicab service in the existing Route No. 10 service area to be provided by a contract private operator.

   The implementation of demand-responsive shared-ride taxicab service to serve the existing Route No. 10 service area was recommended by Commission staff because it would retain connections for existing Route No. 10 passengers with Route Nos. 2 and 4 at the Shorecrest Shopping Center and would be expected to have a significantly lower operating cost and operating deficit per passenger than the existing or proposed Route No. 10 service.

Changes to Schedules and Service Periods

Additional service changes directed at the current systemwide scheduling technique, weekday and Saturday service schedules, and the periods of system operation were also considered. The analyses of these changes and the Commission staff recommendations may be summarized as follows:

1. The following two changes to the current routing and scheduling technique used by the Belle Urban System were considered:

   - Relocating the common transfer point for the transit system from the present Monument Square location in the Racine CBD to a different location in the CBD or, possibly, to a location outside the CBD. Retaining a downtown location for the common transfer point was recommended by the Commission staff because it would best serve the existing downtown business development and the trips which that development generates; it may also help redevelopment efforts in the CBD;

   - Revising the schedules of the transit system routes to operate with cycle, or "pulse," scheduling to provide for timed transfers between bus routes at the common transfer point. It was recommended by the Commission staff that the system switch to pulse scheduling because timed-transfer connections would be essential

to the system if service is to be operated with 60-minute headways, as recommended for Route Nos. 6 and 8 and proposed for weekday midday and evening bus service.

2. Three potential adjustments to the schedules and service periods for weekday service were considered:

   - Increasing weekday peak-period headways operated on Route Nos. 3, 4, and 7 between Memorial Day and Labor Day from 20 minutes to 30 minutes. The increase in peak-period headways on these routes was recommended by the Commission staff because an analysis of current passenger loadings on the routes indicated the routes could be operated with 30-minute peak-period headways without serious problems with overcrowded buses; the reduction in annual vehicle-hours resulting from the service change would reduce annual operating costs by an estimated $203,000, which, in turn, could be applied to an expansion of service

   - Increasing weekday midday headways from 30 minutes to 60 minutes on Route Nos. 1, 2, 3, 5, and 7. Analysis of the weekday ridership on these routes indicated that ridership during the midday period was only about 55 percent of peak-period ridership, indicating that midday ridership may not justify operation with service levels equal to peak-period levels. Increasing weekday midday headways was recommended by the Commission staff if it was needed as a cost-saving measure to offset the cost of an improvement or expansion of service desired by the Racine community. The reduction in annual vehicle-hours resulting from the increase in midday headways was expected to decrease annual operating costs by about $364,000.

   - Adding evening service until 11:30 p.m. with either a modified system of eight routes, identified as Option A, which would serve virtually all of the City of Racine, or a modified system of six routes, identified as Option B, which would serve about 80 percent of the City of Racine. The total cost of adding evening service, including both fixed-route bus service and Federally-required paratransit service for disabled individuals, was estimated at about $480,000 under Option A and about $340,000 under Option B. The provision of weekday evening bus service proposed under Option A was recommended by Commission staff in recognition of the more complete coverage of the daytime transit service area provided under Option A, considered to be necessary to serve weekday evening travel for work and other purposes.

3. The potential adjustments to the schedules and service period for Saturday service included:

   - Starting service at 8:00 a.m. instead of the current 7:00 a.m. to reduce Saturday service levels in response to low ridership levels during the early morning period. The proposed reduction in Saturday service hours was not recommended by Commission staff because an analysis found that Saturday ridership during the first hour of system operation did not appear to be unreasonably low compared to ridership during the rest of the Saturday morning period.

   - Increasing Saturday headways from the existing 30 minutes to 60 minutes on Route Nos. 1, 2, 3, 5, and 7, either by operating with 60-minute headways throughout the service day or by operating with 60-minute headways only before 10:00 a.m. and after 4:00 p.m. and continuing to operate with the existing 30-minute headways during the middle of the day. Analysis of the Saturday ridership on these routes indicated ridership levels were approximately one-half of weekday ridership levels, indicating that Saturday operation with weekday service levels may not be justified. Increasing Saturday headways to 60 minutes all day was recommended by Commission staff because the reduction in annual vehicle-hours resulting from the increase in operating headways would be expected to decrease annual operating costs by about $113,000, compared with $41,000 reduction under the second option. This saving could be applied to service expansion.

   - Adding Saturday evening service until 9:30 p.m. using either Option A or Option B of the modified systems of routes identified in the analysis of adding weekday evening service. The total annual operating cost of providing evening service, including the cost of both fixed-route bus service and Federally-required paratransit service for disabled individuals, was estimated at about $80,000 for the system of routes proposed under Option A and about $60,000 for the system of routes proposed

under Option B. The provision of evening service as proposed under Option B was recommended by the Commission staff because it was believed the less extensive service coverage provided under Option B would be adequate to serve Saturday evening travel.

4. Consideration was given to adding Sunday and holiday service between 8:00 a.m and 5:00 p.m. using either of the modified systems of routes proposed for providing weekday and Saturday evening transit service. The total annual operating costs for providing service on Sundays and holidays, including costs for both fixed-route bus service and Federally-required paratransit service for disabled individuals, was estimated at about $209,000 for the service as operated under Option A, and about $147,000 for the service as operated under Option B. The operation of Sunday and holiday service as proposed under Option B was recommended by Commission staff because Sunday and holiday service because the projected efficiency of the service would be expected to be about two-thirds the levels observed for weekdays and about the same as expected for weekday middays and Saturdays.

Advisory Committee Recommendations

After careful review of the proposed transit service changes and projected impacts on annual systemwide ridership, operating cost, and local funding requirements, the Advisory Committee determined that it should accept all the Commission staff recommendations concerning the proposed adjustments to existing route alignments and all the staff recommendations concerning changes to service schedules and periods of operation except those proposing the provision of transit service on Saturday evenings and on Sundays and holidays. The Advisory Committee also modified Commission staff recommendations pertaining to the operation of weekday evening bus service, recommending that service be provided until 12:30 a.m. instead of 11:30 p.m., as originally proposed, and retaining the 7:00 a.m. starting time for Saturday service, recommending rather that service should instead start at 6:00 a.m.

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Chapter VIII

RECOMMENDED TRANSIT SYSTEM DEVELOPMENT PLAN

INTRODUCTION

The Racine Area Public Transit Planning Advisory Committee carefully considered a number of alternative service changes, documented in Chapter VII, in developing its recommended transit system development plan for the City of Racine Belle Urban System. In its deliberations, the Committee recognized that there was an expressed need felt by the local community to expand service beyond the current hours of operation of the transit system, in particular on weekday evenings. The Committee also recognized that the City could not simply add the new service to the existing system, given the attendant additional costs of the expansion and the current funding constraints, which the Committee considered likely to continue through the planning period. Such constraints included the following: stable levels of Federal funds which would not keep pace with inflation, the inability to increase existing levels of local funds provided through property taxes to cover probable shortfalls in Federal funds, and no short-term prospect for a source of dedicated funding to fund the desired transit service expansion. Consequently, the Advisory Committee concluded that, if the short-range transit plan was to be prepared within the context of the limited funding available, then any service expansion would have to be balanced against service reductions. The final plan ultimately identified by the Advisory Committee was structured accordingly.

This chapter describes the Advisory Committee's recommended transit system development plan for the Belle Urban System for the five years from 1998 through 2002. The remainder of this chapter consists of four sections. The first describes the recommended transit services, including changes to the route alignments, service schedules, and service periods for the Belle Urban System. The second summarizes the anticipated performance of the recommended transit service, including information on ridership, farebox revenues, and cost. The third sets forth the actions required by the various agencies to achieve plan implementation. The chapter concludes with a brief summary.

RECOMMENDED TRANSIT SERVICE

Alignment and Service Changes to Bus Routes

The recommended plan calls for a number of changes in existing alignments and schedules of the Belle Urban System, all of which are proposed to be implemented in 1998. The recommended routing and service changes are set forth in Table 75. These changes may be grouped as follows:

- Adjustments to Route Alignments

  Routing changes are recommended for Route Nos. 1 through 4 and 6 through 9. The specific routing changes recommended for these routes are shown on Map 40. The change proposed for Route No. 1 would provide direct access for City of Racine residents to the Green Tree Centre, a major community shopping center, at the intersection of Four Mile Road and Douglas Avenue, in the Town of Caledonia, and provide improved access by transit to employers located along Douglas Avenue north of Three Mile Road. The routing changes proposed for Route No. 2 would provide access to the east side of the Racine West commercial area and would replace service provided by Route No. 9 to the University of Wisconsin-Parkside. The latter change would allow the City to discontinue Route No. 9, thereby eliminating a service duplication between it and Route Nos. 4 and 5 along Washington and Taylor Avenues and reducing operating headways for University service without increasing operating costs. The changes proposed for Route Nos. 3 and 4 are necessary to enable operation of these routes with pulse scheduling, as discussed below. The change to Route No. 3 would consist of eliminating service west of Northwestern Avenue over High Street, Jefferson Street, and Prospect Street. The change to Route No. 4 would consist of eliminating direct service to stops in the High Ridge Mall shopping center, stopping instead at the mall driveway on 21st Street. The extension of Route Nos. 6 and 8 to the eastern edge of the

Table 75

ROUTING ADJUSTMENTS AND SERVICE CHANGES FOR THE BELLE URBAN SYSTEM UNDER THE RECOMMENDED PLAN

Type of Change	Affected Routes	Advisory Committee Recommendation	Reasons for Recommendation
Adjustments to Route Alignments	Route No. 1	• Extend route northward via Douglas Avenue to Four Mile Road and Douglas Avenue	Would provide direct access for City of Racine residents to the Green Tree Centre shopping center, in the Town of Caledonia, as well to employers along Douglas Avenue north of Three Mile Road
	Route No. 2	• Extend route westward via 21st Street, Roosevelt Avenue, and Durand Avenue	Would provide direct access to the Racine West commercial area for Route No. 2 passengers and facilitate development of a mini-hub on Roosevelt Avenue where transfer connections could be made with Route Nos. 2, 4, 6, 7, and 8
		• Extend route southward via current Route No. 9 alignment from Meachem Road and Taylor Avenue to the University of Wisconsin-Parkside when classes are in session	Would reduce operating headways for service to the University of Wisconsin-Parkside from 60 minutes to 30 minutes during peak periods without increasing operating costs and allow elimination of Route No. 9
	Route No. 3	• Eliminate service over route segments on High Street, Jefferson Street, and Prospect Street west of Northwestern Avenue	Would be necessary to reduce running times on portion of route north of the central business district to allow operation with pulse scheduling
	Route No. 4	• Eliminate direct service to stops within High Ridge Mall shopping center, stopping instead at entrance to Mall parking lot on 21st Street	Would be necessary to reduce running times on portion of route south of the central business district to allow operation with pulse scheduling
	Route No. 5	--	--
	Route Nos. 6 and 8	• Extend routes to the Racine West commercial area as follows: Route No. 6 to south via Ohio Street, 21st Street, and Roosevelt Road, and Route No. 8 to west via Durand Avenue and Roosevelt Road. Pair the routes to operate as a loop with two-way service	Would provide direct access to the Racine West commercial area for Route No. 6 and 8 passengers and facilitate development of a mini-hub on Roosevelt Avenue where transfer connections could be made with Route Nos. 2, 4, 6, 7, and 8
	Route Nos. 7 and 20	• Shift bus trips serving the S. C. Johnson & Son, Inc. Waxdale plant in the Town of Mount Pleasant from Route No. 7 to Route No. 20 as a short-term, interim measure until bus service provided over Route No. 20 is replaced with subscription transit services (see below). Discontinue direct service to the entrances of the Regency Mall shopping center in early morning hours before the mall opens	Would be needed in the short term to reduce running times on route to alleviate problems with late bus trips
	Route No. 9	• Eliminate route and replace its service with extension of Route No. 2 to the University of Wisconsin-Parkside (see above)	Would eliminate a duplication of service with Route Nos. 4 and 5 along Washington and Taylor Avenue. More frequent service to the University of Wisconsin-Parkside could be provided through the extension of Route No. 2 at no additional cost
Replacement of Bus Services	Route No. 10	• Replace fixed-route bus service provided by route in the Town of Caledonia with demand-responsive, shared-ride taxicab service provided by a contract transit operator.	Would improve the level of service available, fill in gaps within existing fixed-route service area, and have lower operating costs both in total and on a per passenger basis
	Route No. 20	• Replace fixed-route bus service provided by route to business along STH 20 in the Town of Mt. Pleasant, and in the Grandview Industrial Park, in the Town of Yorkville, with subscription transit service provided by either the Belle Urban System or contract transit operator and supported financially by the businesses served	Would improve the level of service available to employment centers along STH 20 and in the Grandview Industrial Park with service designed to specific needs of employees. Increased ridership and employer commitment to fund local portion of costs would reduce City of Racine's share of operating deficit
Adjustments to Service Schedules	Route Nos. 6 and 8	• Increase weekday and Saturday all day headways on routes to 60 minutes from the 30 minutes currently operated	Existing ridership levels on each route do not justify continued operation with 30-minute headways throughout the day. The resulting savings in operating costs could be applied to service expansion
	Route Nos. 3, 4, and 7	• Increase weekday peak-period headways on routes to 30 minutes from the 20 minutes currently operated between Labor Day and Memorial Day. Add extra buses or tripper service to routes if passenger loads or scheduling needs indicate additional service is warranted at peak times	Existing ridership levels on each route during weekday peak periods do not justify continued operation with 20-minute headways. The resulting savings in operating costs could be applied to service expansion
	Route Nos. 1, 2, 3, 5, and 7	• Increase headways on routes during weekday midday period to 60 minutes from the 30 minutes currently operated, but continue to operate 30-minute headways on Route No. 4 to provide timed-transfer connects with all other routes[a]	Existing ridership levels on each route during weekday middays do not justify continued operation with 30-minute headways. The resulting savings in operating costs could be applied to service expansion
		• Increase headways on routes on Saturday to 60 minutes at all times from the 30 minutes currently operated, but continue to operate 30-minute headways on Route No. 4 to provide timed-transfer connections with all other routes[a]	Existing ridership levels on each route on Saturdays do not justify continued operation with 30-minute headways. The resulting savings in operating costs could be applied to service expansion
Expansion of Service Periods	All routes except Route No. 20	• Expand the weekday service period to include evening service until 12:30 a.m. using the modified system of eight routes shown on Map 38. Operate service with 60-minute headways on all routes except Route No. 4, which would operate with 30-minute headways to provide timed-transfer connections with the other routes	Would respond to the need for transit service for work-related travel on weekday evenings when the Belle Urban System currently does not operate
		• Expand the Saturday service period by starting one hour earlier at 6:00 a.m. instead of 7:00 a.m. Operate service with 60-minute headways on all routes except Route No. 4, which would operate with 30-minute headways to provide timed-transfer connections with the other routes	Would respond to the need for transit service for work-related travel early on Saturday mornings when the Belle Urban System currently does not operate
Changes to Scheduling Technique	All routes except Route No. 5	• Use pulse scheduling to provide for a "timed transfer" at the common transfer point	Would be essential to the transit system in order to provide for convenient transfers when service is provided with 60-minute headways
		• Relocate central transfer terminal from Monument Square to a new central transfer terminal in the middle of the block bounded by Park Avenue, Water Street, College Avenue, and 6th Street	The Monument Square location should not be used with pulse scheduling because it lacks the proper configuration for safe and convenient passenger movements between the buses from all routes

[a] *This service reduction to be included only if the savings in existing operating costs it generates is needed to fund new or expanded services desired by the Racine community.*

Source: SEWRPC.

Racine West commercial area would, in combination with the extension of Route No. 2, create a mini-hub on the southwest side of the City on Roosevelt Avenue between 21st Street and Durand Avenue, where connections between Route Nos. 2, 4, 6, 7, and 8 could be made. The routes of the transit system with these changes are shown on Map 41.

- Replacement of Bus Services

  The plan also proposes a change in how transit service is provided in the Town of Caledonia and to the businesses west of the City along Washington Avenue (STH 20), in the Town of Mt. Pleasant, and in the Grandview Industrial Park, in the Town of Yorkville. Fixed-route bus service in the eastern portion in the Town of Caledonia, which is currently provided by Route No. 10, would be replaced by a demand-responsive shared-ride taxicab service with the basic operating characteristics shown in Table 76. The taxicab service would operate during the same periods and on the same days as the existing route, but would fill in gaps in the existing fixed-route service area, as shown on Map 41. Taxicab service would be provided on a curb-to-curb basis between the origin and destination of each rider. The service would provide a feeder service for the City bus service at the Shorecrest Shopping Center. A taxicab would arrive and depart every 30 minutes, coinciding with scheduled bus service during weekday peak periods, and every 60 minutes during all other hours of operation. The maximum response time for trip requests would be 60 minutes, but trips would be accommodated on shorter notice, particularly during nonpeak hours; longer advance scheduling of trip requests would be allowed in order to accommodate regular users. The plan recommends that the service be provided by a private operator under contract with the Belle Urban System, with the operator responsible for all necessary operating equipment.

  The plan also recommends the implementation of subscription transit service to replace the existing Route No. 20 bus service and to provide access to other major employment concentrations which are currently unserved by, or difficult to serve with, existing City bus routes. The provision of such service would entail the operation of one or more routes designed specifically to serve the concentrations of employee residences and shift changes of participating employers. The routes could be operated directly by the Belle Urban System or by a private contract transit operator. A mix of vehicles, ranging from 15-passenger vans to conventional City buses where demand is sufficiently high, would be used to provide the service. City and transit system management staff will need to work closely with the employers in the corridor in the design of such services. At the same time, the employers would need to cooperate with the transit system in service design and in committing sufficient private funding to pay for the operating costs not covered by passenger fares and Federal and State operating assistance funds. As an interim measure, until implementation in 1998, to replace Route No. 20, the plan recommends that bus service currently provided on Route No. 7 to the S. C. Johnson & Son, Inc., plant entrance on Willow Road be shifted to Route No. 20 to reduce running time and alleviate problems with late Route No. 7 bus trips which have occurred as a result of serving the Willow Road plant entrance.

- Scheduling Changes

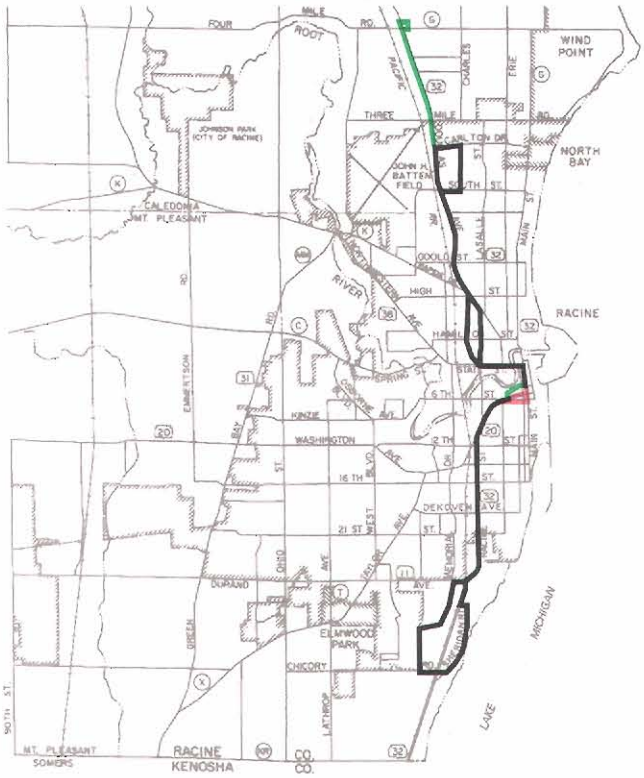
  The recommended plan includes a number of schedule changes to reduce service levels on the routes with the lowest ridership and on the system as a whole during periods when existing ridership does not justify operation with the current headways. These service reductions include the following: increasing headways on Route Nos. 6 and 8 from 30 minutes to 60 minutes at all times of operation; increasing weekday peak-period headways on Route Nos. 3, 4, and 7 between Labor Day and Memorial Day from 20 minutes to 30 minutes; and increasing headways on Route Nos. 1, 2, 3, 5, and 7 from 30 minutes to 60 minutes during weekday midday periods and all day on Saturdays. Route No. 4 would continue to operate with 30-minute headways during weekday middays and on Saturday to allow for convenient transfers to all other routes.

  The plan also recommends a change in the current scheduling technique used by the Belle Urban System in order to incorporate the use of cycle, or "pulse," scheduling for the routes serving the Racine central business district (CBD). Operation with pulse scheduling will allow the transit system to provide for convenient, timed-transfer connections between bus routes at the common transfer point in downtown Racine. Providing for such a timed transfer will be essential when bus service is provided with 60-minute headways. With pulse scheduling, buses operating in each travel direction over each route, except Route No. 1, would meet simultaneously and lay over for a brief period at the

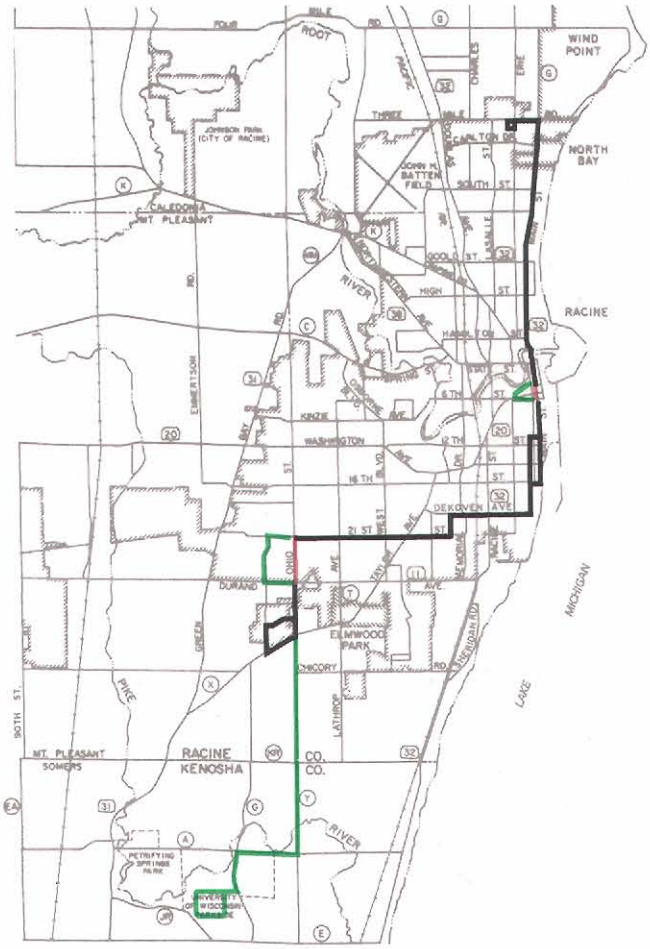
Map 40

RECOMMENDED ROUTING CHANGES FOR THE BELLE URBAN SYSTEM BUS ROUTES

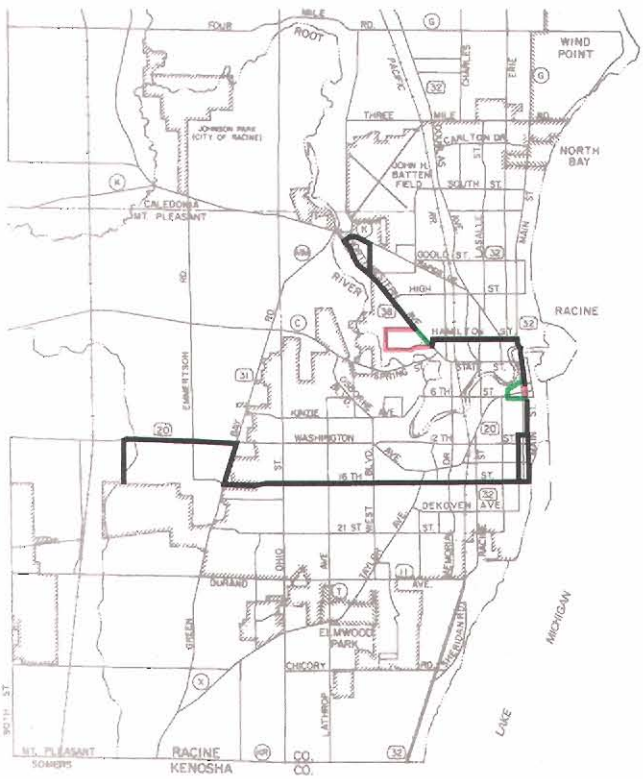
ROUTE NO. 1



ROUTE NO. 2

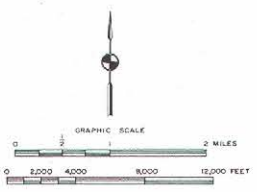


ROUTE NO. 3



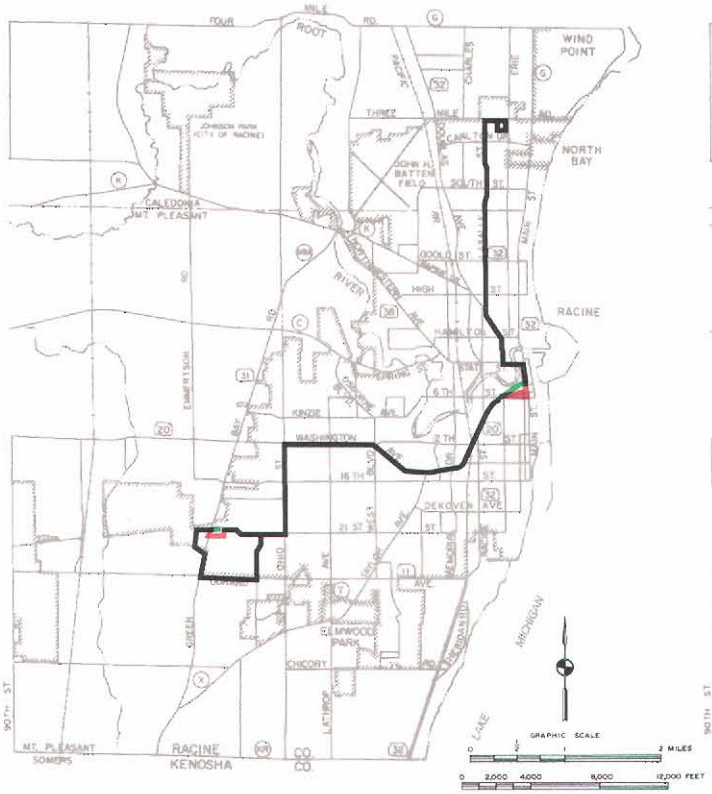
LEGEND

- EXISTING SEGMENTS TO BE RETAINED
- EXISTING SEGMENTS TO BE DROPPED
- NEW SEGMENTS TO BE ADDED

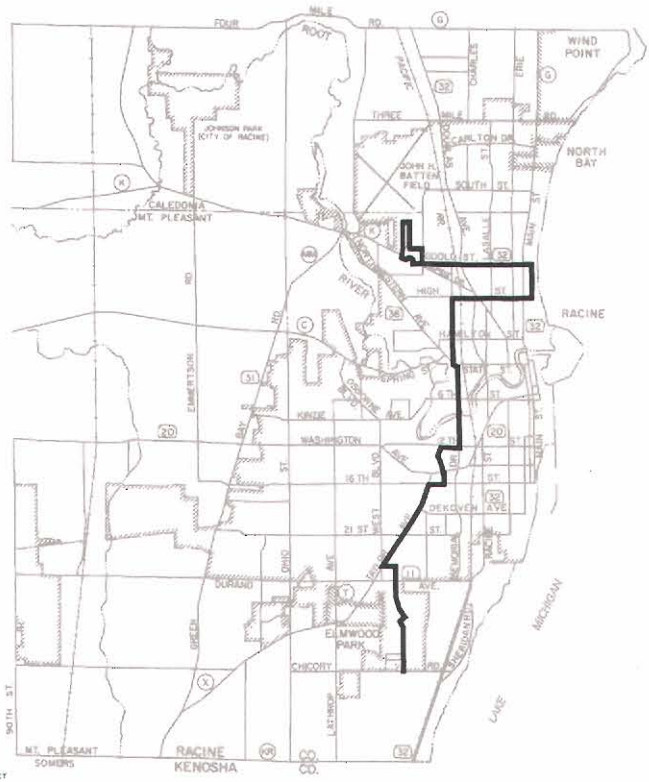


Map 40 (continued)

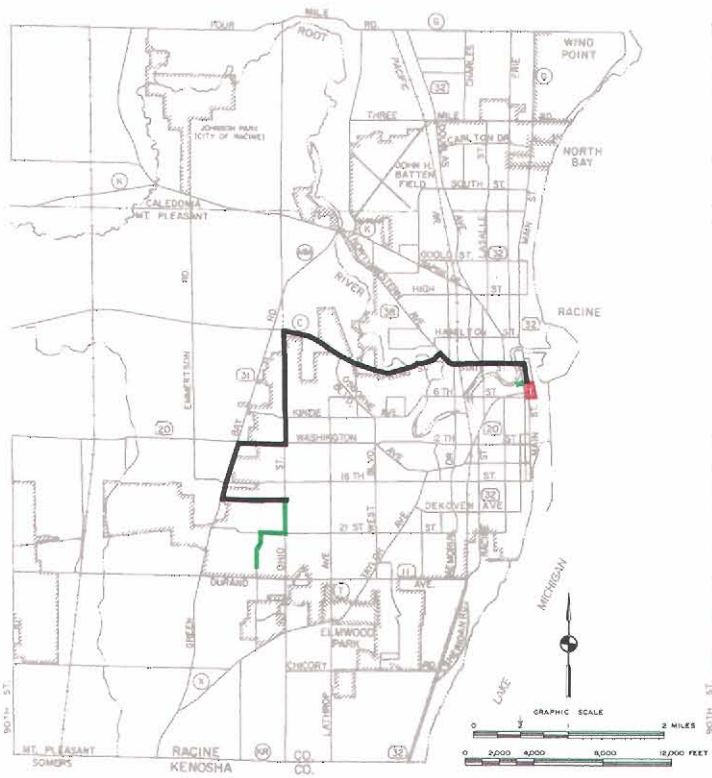
ROUTE NO. 4



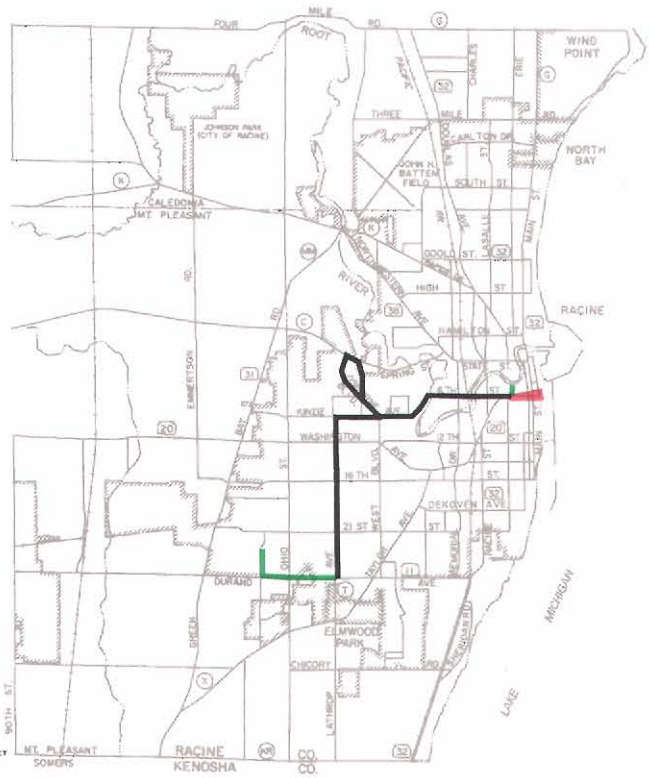
ROUTE NO. 5



ROUTE NO. 6

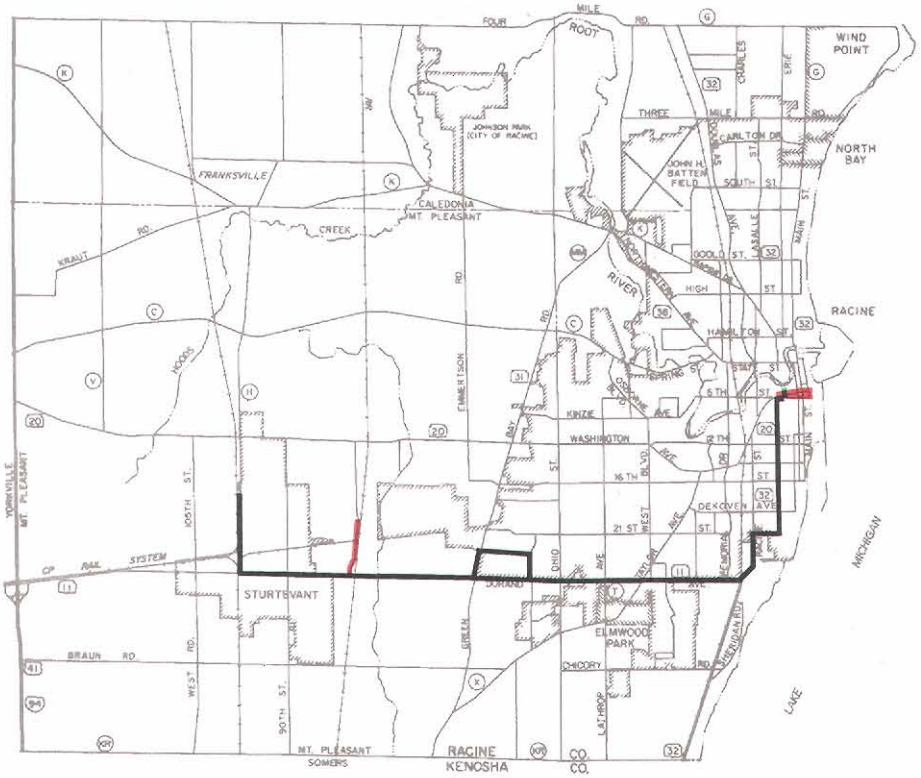


ROUTE NO. 8

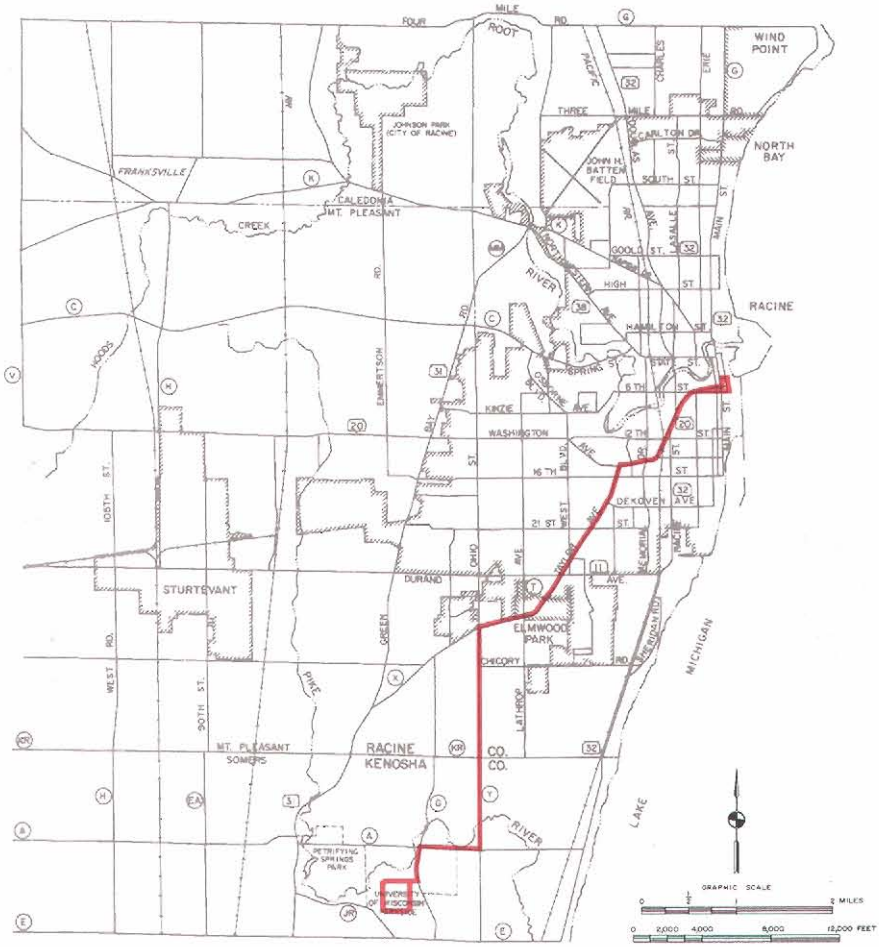


Map 40 (continued)

ROUTE NO. 7

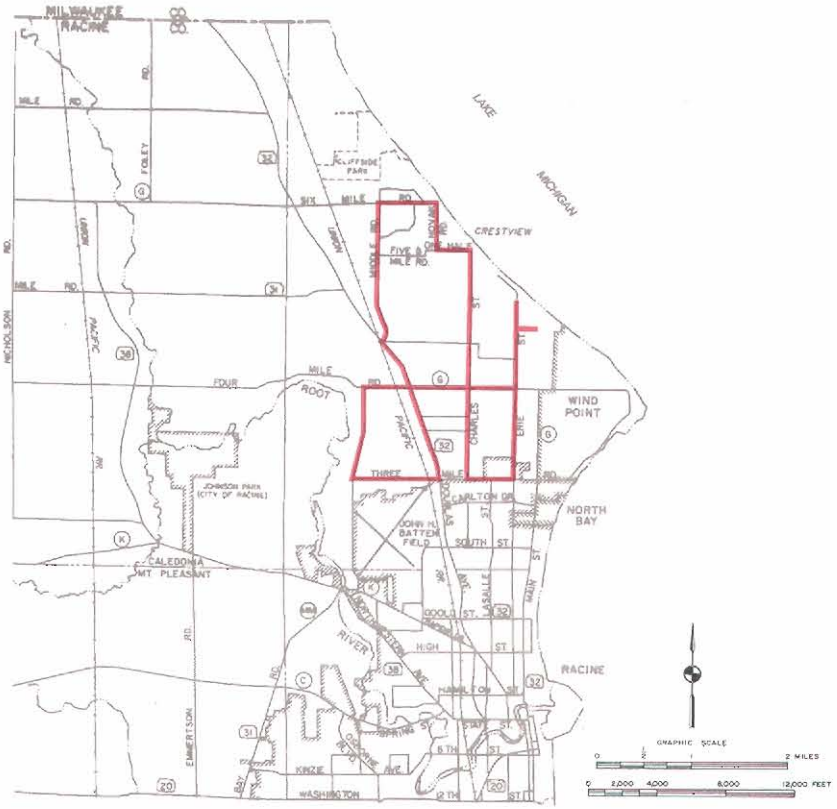


ROUTE NO. 9

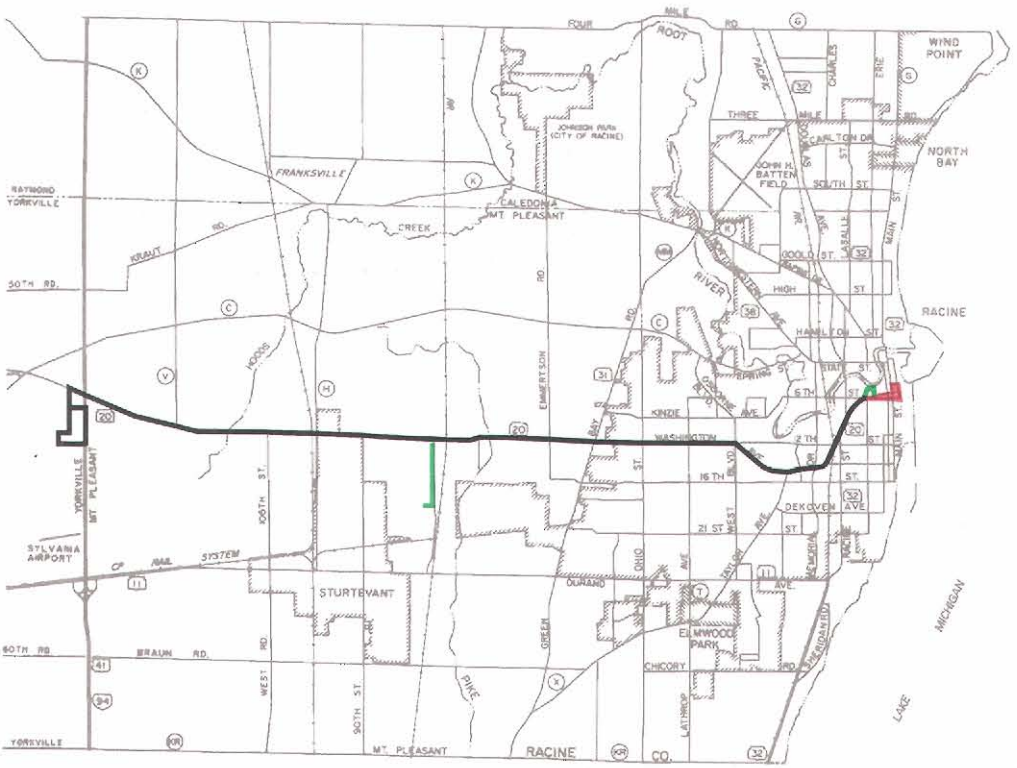


Map 40 (continued)

ROUTE NO. 10



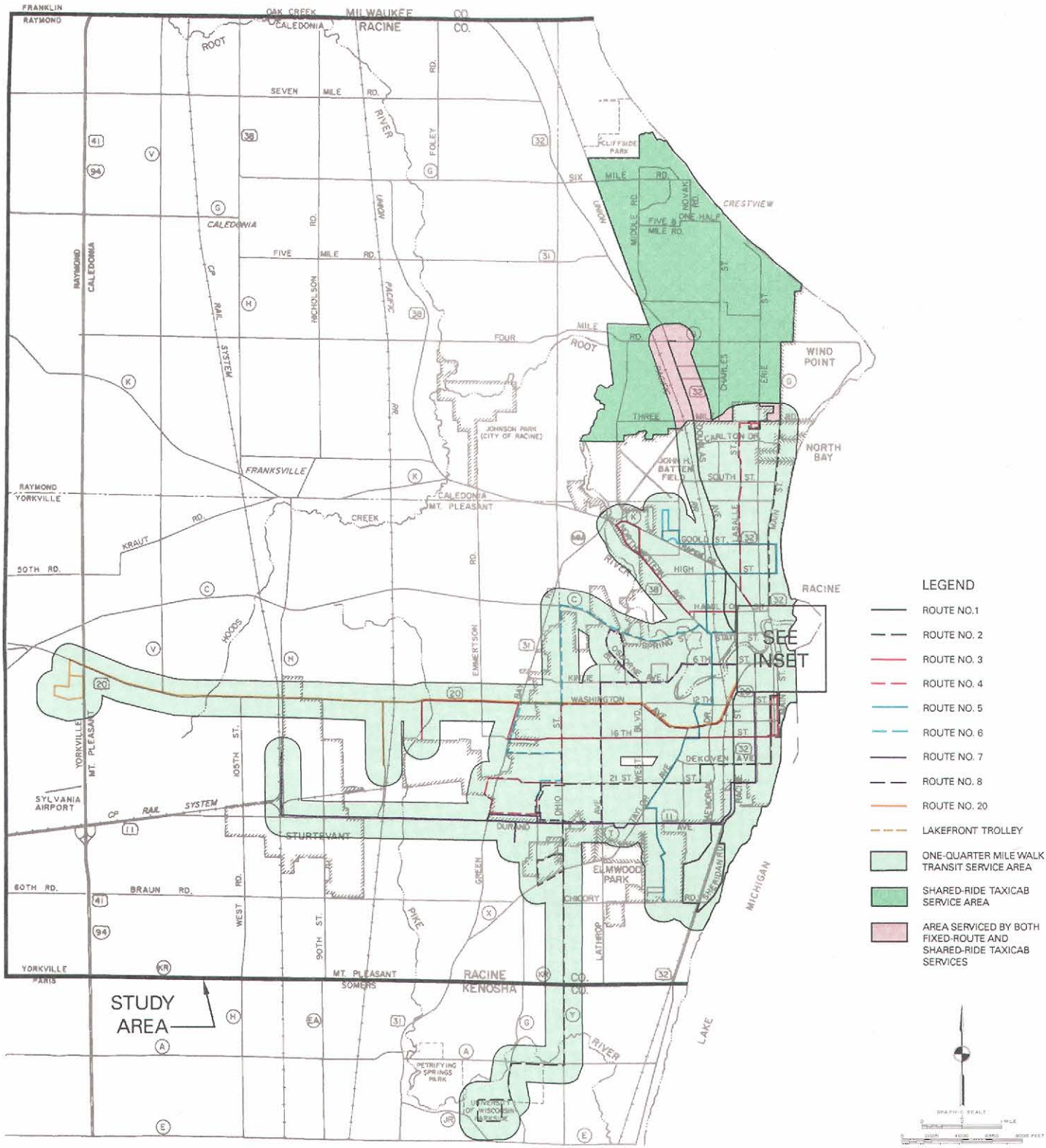
ROUTE NO. 20



Source: SEWRPC.

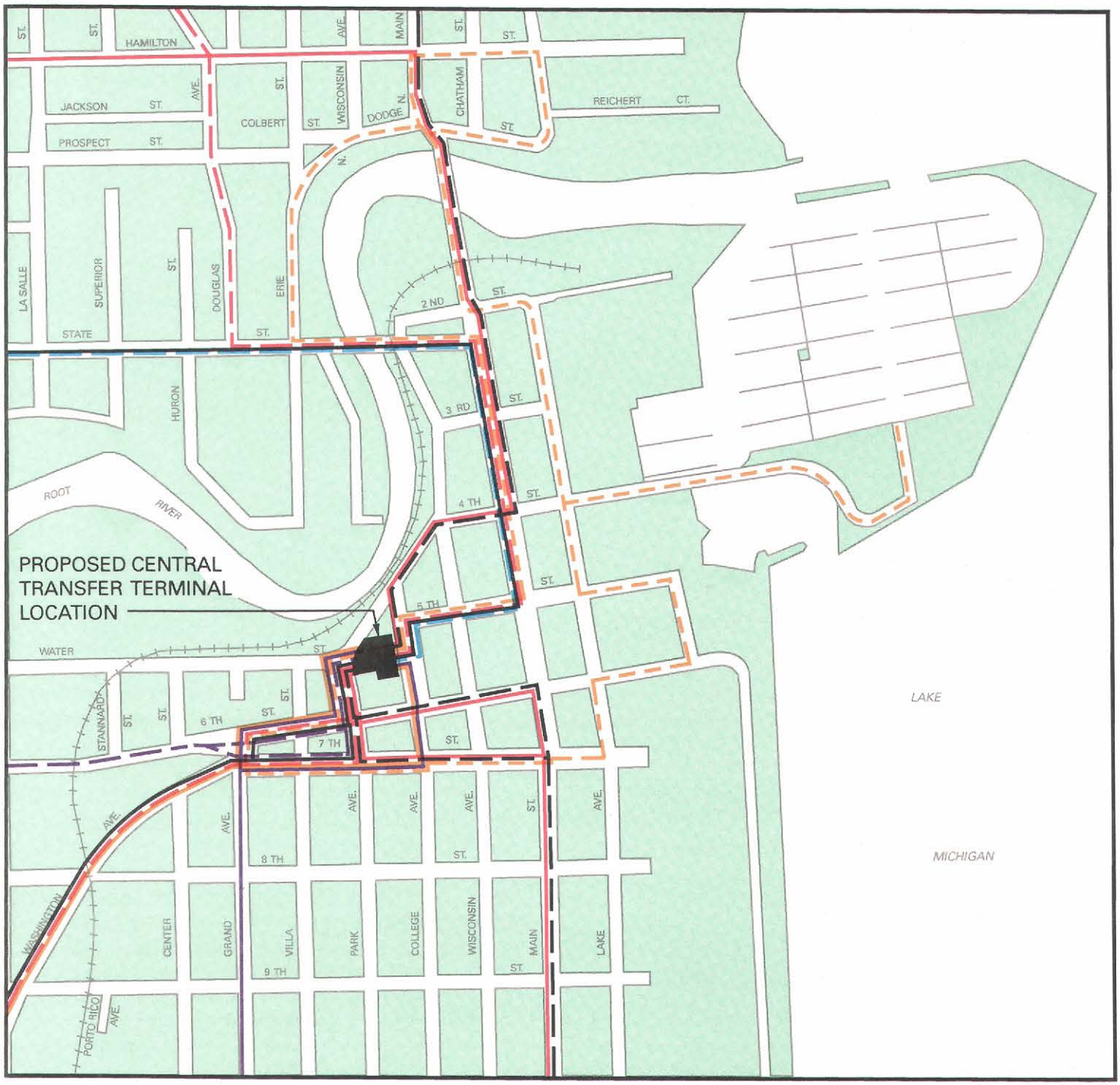
Map 41

RECOMMENDED ROUTE STRUCTURE FOR THE BELLE URBAN SYSTEM



Source: SEWRPC.

Inset to Map 41



GRAPHIC SCALE
0 200 400 800 FEET

Table 76

OPERATING CHARACTERISTICS OF THE RECOMMENDED SHARED-RIDE TAXICAB SERVICE FOR THE TOWN OF CALEDONIA

Operating Characteristics	Caledonia Taxicab Service
Service Administration	City administration, with service provided through contract with private operator
Response Time	Maximum of 60 minutes
Service Periods	
Weekdays	6:00 a.m. to 7:00 p.m.
Saturdays	6:30 a.m. to 5:30 p.m.
Sundays and Holidays	No service
Vehicle Requirements	
Weekday Peak Service	3
Weekday Midday Service	1
Saturday Service	1
Vehicle Type	
Nonaccessible full-size vans	2
Accessible full-size vans	1
Total	3
Passenger Fares	
Cash Fares per One-way trip[a]	
Adult and Student	$1.25
Elderly and Disabled	$0.75
Transfers	
To Belle Urban System bus routes	Free
From Belle Urban System bus routes	$0.25

[a]Special convenience fares which provide for discounts from regular cash fares would continue to be available.

Source: SEWRPC.

common transfer point. During weekday peak periods, when service is provided with 30-minute headways, Route No. 1 buses meeting buses from other routes at the common transfer point would alternate between the northbound and southbound directions.[1]

- Changes to Service Periods

  The plan proposes to reallocate the savings generated by the service reductions described above to expand service into new periods on weekdays and Saturdays which are outside the existing transit system hours of operations. Foremost would be extending the existing weekday hours of operation by approximately five and one-half hours by adding evening service between approximately 7:00 p.m. and 12:30 a.m. Service during this period would be provided over a modified system of routes serving principally the City of Racine, as shown on Map 38 in Chapter VII. Under this modified route structure, Route Nos. 1 and 7 would be cut back to approximately the corporate limits of the City of Racine, Route No. 5 would provide service only over portions of its southern route segments, and Route No. 3 would be extended to serve the area surrounding the Rapids Plaza Shopping Center served by the northern end of Route No. 5 during daytime service hours. Evening service would be operated with 60-minute headways on all routes except the southern half of Route No. 4, over which service would continue to be operated with 30-minute headways to provide for convenient transfers between the other routes of the system at the common transfer point in the Racine CBD.

  The plan also recommends that the starting time for Saturday service be moved up by one hour to 6:00 a.m. from the current 7:00 a.m. Service during this period would continue to be provided over the full system of routes with the proposed routing changes and the higher headways recommended for Saturday service as discussed above.

The basic operating characteristics for the Belle Urban System with the proposed and service changes are presented in Table 77. A significant effect of the recommended changes will be a reduction in the number of busses required for fixed-route service from 30 to 23 during weekday peak periods. Three more vehicles would be needed to provide the recommended shared-ride taxicab service in the Town of Caledonia. This would bring the total vehicle requirements for weekday service provided by the Belle Urban System to 26.

Specialized Transportation Service for Disabled Individuals

As a consequence of the recommended changes to the service periods for the fixed-route bus service provided by the Belle Urban System, modifications will also need to be made to the City's complementary paratransit service for disabled individuals. Specifically, the operating hours

[1]*An extra vehicle would need to be added to Route No. 1 to provide for coordinated transfers in both travel directions when the route is operated with 30-minute headways. The addition of this vehicle was not included in the recommended plan because it would increase annual operating costs by an estimated $137,000 and would neither increase the amount of revenue service operated over the route nor extend service area coverage. The extra vehicle would be needed only to increase layover times to permit full coordination of transfers in both directions to and from the other routes at the common transfer point.*

facilitate coordinated actions by the two Cities in the identification and implementation of commuter service improvements, the Advisory Committee further recommended that the Commission address such improvements in the short-range transit plan it was preparing for the City of Kenosha transit system. The City of Racine would assist in this matter by working with the private operator to gather current ridership data through surveys and counts of boarding and alighting passengers along the route.

Location of a Central Transfer Terminal

As a result of using pulse scheduling for the recommended transit system, a central transfer terminal of sufficient size to accommodate vehicles from all routes simultaneously will be needed. Based on the recommended route structure and service schedules, a total of 11 vehicles during peak periods would meet at the transfer location simultaneously. Allowing for future expansion of the transit system and coordination with the existing or improved Wisconsin Coach Lines, Inc., commuter bus service, it is recommended that the common transfer terminal be sized to accommodate up to 15 buses.

The recommended plan proposes that the common transfer point be relocated from its present site at Monument Square to a different downtown location. The configuration of the current site requires passengers to cross Main Street to transfer between some routes. With pulse scheduling, both the number of buses and the volume of transferring passengers at the site simultaneously will increase significantly, as would the potential for conflicts between transferring passengers and vehicular traffic at the existing location. The relocation of the transfer point to an off-street terminal would address these concerns for the safety of transferring passengers. A new location would also allow improved bus operations and passenger amenities, which could serve to promote use of the transit system. Consequently, six alternative downtown sites for the central transfer terminal were identified as shown in Figure 18. Data on the basic characteristics of each site are presented in Table 78.

Advisory Committee members and Commission staff met with the staff of the City of Racine Department of City Development to discuss the potential downtown locations for the central transfer terminal. At this meeting it was determined that sites No. 1 and No. 2, at the intersection of State Street and Main Street, were unavailable because of other uses planned for them. It was also ascertained that long-term use of site No. 3 along Water Street for a central transfer terminal would be incompatible with its current recreational use as part of the City's Riverwalk, although its use as a short-term site may be acceptable. It was also determined that most of site No. 6, the site of a former City parking garage, had been marked for private development, leaving only a small parcel too small for use as a central transfer terminal owned by the City. The remaining sites, however, all had at least some potential for this use, depending on the possible land uses identified for each site in a downtown plan being developed for the Downtown Racine Corporation. Of those three sites, the Department of City Development staff indicated the site with the most potential was site No. 5, in the middle of the block bounded by Park Avenue, Water Street, College Avenue, and 6th Street. A portion of this site was a City-owned municipal parking lot and the privately owned properties in this block are currently vacant or for sale.

In the light of the comments on the potential sites provided by the City of Racine Department of City Development, the Advisory Committee recommended that Site No. 5 be included in the plan as the preferred site of a central transfer terminal. The preferred site would be within three-block walking distance of the existing common transfer point at Monument Square and would not cause great inconvenience to existing transit passengers. The time required to develop this terminal would be about two to three years, given the time needed to obtain Federal funds to cover 80 percent of the project costs, to acquire the privately-owned parcels on the site and clear the land, and to design and construct the terminal facility. Pending completion of the new facility, it is recommended that the transit system continue to operate using Monument Square as its common transfer point.

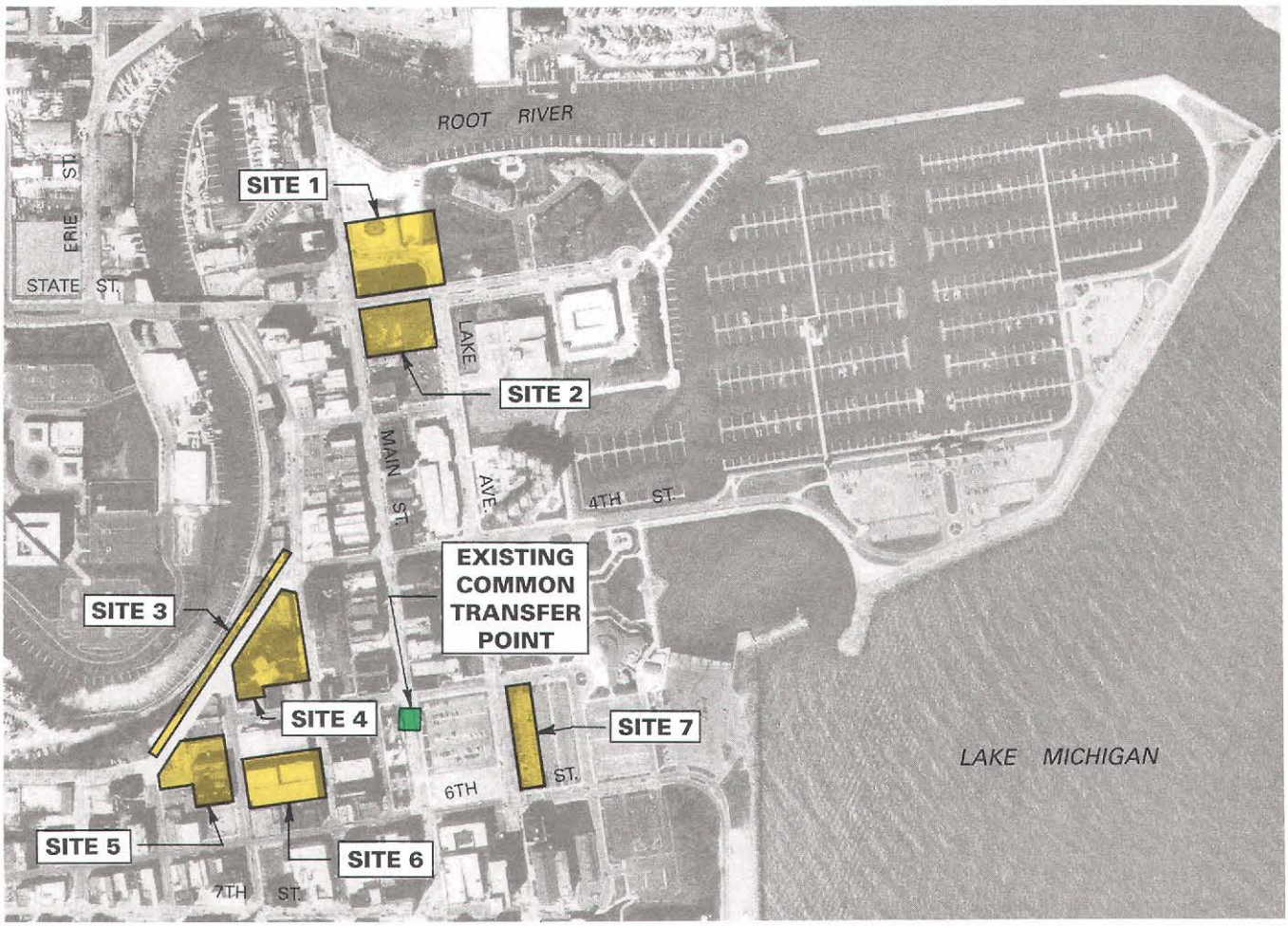
Fares

Over the last five years, the Belle Urban System has implemented two increases in passenger fares, in 1996, when the base adult cash fare increased from $0.60 to $0.75 per one-way trip, and in 1997, when the base adult cash fare increased to $1.00 per one-way trip. Ridership on the transit system declined in both of these years, largely as a result of these fare increases. However, the increases were considered necessary by local officials to generate additional revenue and maintain tolerable increases in the annual local public funding requirement for the transit system caused by inflationary increases in transit system operating expenses and decreasing levels of Federal transit operating assistance. For similar reasons, additional increases in passenger fares are recommended to be implemented over the planning period.

It is proposed that the transit system increase fares in 2000 and again in 2002 to raise the base adult cash fare by 10 cents per one-way trip in each of those years. Fares in other categories and charges for monthly passes should also be increased by similar proportions. The proposed

Figure 18

POTENTIAL LOCATIONS IN THE RACINE CENTRAL BUSINESS DISTRICT FOR A CENTRAL TRANSFER TERMINAL FOR THE BELLE URBAN SYSTEM



Source: SEWRPC.

fare increases for the transit system will be needed in order for fares to keep pace with anticipated increases in operating expenses, thereby maintaining a stable farebox recovery rate.

It also recommended that the transit system charge higher, or premium, fares for the two premium services which have been recommended to replace the existing Route Nos. 10 and 20. Fares for the demand-responsive shared-ride taxicab service for the Town of Caledonia proposed to replace Route No. 10 and for the subscription transit service proposed to replace Route No. 20 are recommended to be set at $0.25 per one-way trip over the cash fares for regular service, resulting in an initial base adult cash fare of $1.25 per subscription trip.

It is also recommended that the transit system consider establishing a special Saturday superpass to encourage

Table 77

OPERATING AND SERVICE CHARACTERISTICS OF THE ROUTES OF THE BELLE URBAN SYSTEM UNDER THE RECOMMENDED PLAN

Bus Route	Weekdays-Daytime Service (5:30 a.m. - 6:59 p.m.)					
	Total Route-Miles (round trip)	Service Frequency (Minutes)		Total Round Trip Bus Trips	Vehicles Required	
		Peak Periods	Midday Offpeak		Peak Periods	Midday Offpeak
1	17.5	30	60	22.5	3.0	2.0
2	28.0	30	60	20.5	3.0-4.0[a]	1.5-2.5[a]
3	9.3	30	60	20.5	3.0	1.5
4	17.6	30	30	26.5	3.0	3.0
5	16.0	30	60	22.5	3.0	2.0
6	15.0	30	60	13.5	1.0	1.0
7	19.1	30	60	22.5	3.0	2.0
8	4.5	30	60	13.5	1.0	1.0
20	23.4	30	60	4.5	2.0	--
System Total	170.4	--	--	166.5	22.0-23.0	14.0-15.0

Bus Route	Weekdays-Evening Service (7:00 p.m. - 12:30 a.m.)			
	Total Route-Miles (round trip)	Service Frequency (minutes)	Total Round Trip Bus Trips	Vehicles Required
1	11.1	60	5.50	1.0
2	19.7	60	5.50	1.5
3	20.4	60	5.50	1.5
4	17.6	30/60	9.25	2.5
5	6.8	60	5.50	0.5
6	15.0	60	5.50	1.0
7	12.4	60	5.50	1.0
8	14.5	60	5.50	1.0
20	--	60	--	--
System Total	117.5	--	47.80	10.0

Bus Route	Saturdays (6:00 a.m. - 6:00 p.m.)			
	Total Route-Miles (round trip)	Service Frequency (minutes)	Total Round Trip Bus Trips	Vehicles Required
1	17.5	60	16.0	2.0
2	19.7	60	12.0	1.5
3	19.3	60	12.0	1.5
4	17.6	30	24.0	3.0
5	16.0	60	16.0	2.0
6	15.0	60	12.0	1.0
7	16.8	60	16.0	2.0
8	14.5	60	12.0	1.0
20	--	60	--	--
System Total	136.4	--	120.0	14.0

[a]Route No. 2 will require one more vehicle when service is operated to the University of Wisconsin-Parkside than when the route does not serve the University.

Source: SEWRPC.

for the paratransit service will need to be extended by approximately five and one-half hours on weekday evenings to provide service between 7:00 p.m. and 12:30 a.m., as well as extended by one hour on Saturdays to start at 6:00 a.m. instead of 7:00 a.m., as at present. No other changes are envisioned for the paratransit service.

It is recommended that the City's complementary paratransit service continue to be provided through the specialized transportation program administered by the Racine County Human Services Department. The City should negotiate with the County for the expanded paratransit hours of operation noted above and for the additional costs to the City for the service expansion. It is possible that, since the expanded hours for the paratransit service would be directly tied to the expansion of City bus service and outside the current operating hours of the County program, either the County or the City may decide that the City should assume responsibility for contracting directly for the additional paratransit service. In this event, coordination with the current paratransit service provided through the Human Services Department could be assured if the City were to contract with the existing service provider, Laidlaw Transit, Inc., for the expanded service hours.

Racine County is currently conducting a study of specialized transportation services for elderly and disabled individuals in the County. The study is directed at identifying more effective methods, if possible, of providing such services and new sources of funding. Efforts have been made to coordinate the County study with this study preparing the City's new transit system development plan through having members in common sitting on the separate County and City advisory committees guiding the two studies. It will be important for the City to cooperate with the County in implementing any study recommendations pertaining to such specialized transportation services within the service area of the Belle Urban System.

As a result of the recommended service changes to the fixed-route bus system, the amount of mainline accessible bus service provided over the routes of the system would increase significantly. The City currently owns 23 accessible buses, or the same number as the weekday peak-period vehicle requirements for the recommended system. Consequently, after the recommended service changes are fully implemented, nearly all buses providing peak-period service and all buses operating during offpeak periods would be accessible to disabled individuals using wheelchairs. By the end of the planning period, the City will have acquired additional new accessible buses and the entire fleet of the Belle Urban System should be accessible.

Improvements to Wisconsin Coach Lines, Inc., Bus Service

The Advisory Committee also recommended that action be taken immediately to improve the existing Wisconsin Coach Lines, Inc., service between Milwaukee, Racine, and Kenosha. The Wisconsin Coach Lines, Inc., route passes through, and has several intermediate stops in, the Racine area. The company's current service is oriented principally toward serving Racine and Kenosha passengers commuting to and from the Milwaukee CBD and Milwaukee County's General Mitchell International Airport. The current schedules and indirect routing of the service, however, were identified by the Advisory Committee as discouraging use of the service. Because the City of Racine currently acts as both the public sponsor and applicant for the State transit operating assistance funds the company needs to subsidize continued operation of the service, the Committee believed the company would be responsive to changes suggested by the City to enhance the existing service.

Potential improvements could include the conversion of the portion of the service oriented to serving travel to and from Milwaukee County into rapid bus service over IH 94 to provide a faster link between the Cities of Racine and Kenosha and the Milwaukee CBD. Bus-on-freeway service in this corridor is recommended in the Commission's adopted long-range transportation system plan for the year 2010 and could be improved and expanded to commuter-rail service, depending on feasibility and major investment studies. Other improvements also recommended in the long-range transportation system plan include the conversion of the portion of the service oriented to serving Racine-Kenosha travel into a limited-stop express service running more frequently than the current service. Such service could provide greatly improved access for City of Racine residents to job opportunities in the Kenosha area, including in the rapidly developing LakeView Corporate Park.

The Advisory Committee recognized that such enhancements would also benefit residents of other communities served by the route, particularly those in the City of Kenosha. It also would be desirable to have these communities involved in the design and implementation of service improvements. The City of Kenosha has expressed an interest in making improvements to the existing commuter service between the Cities of Racine and Kenosha and has been awarded a Federal grant under the Congestion Management and Air Quality (CMAQ) Improvement Program to fund such improvements on a two-year demonstration basis. Concurrent with the preparation to this short-range transit plan for the City of Racine transit system, the Regional Planning Commission is preparing a similar transit plan for the City of Kenosha transit system. In light of this, the Advisory Committee recommended that the Commission work with the staffs of the Cities of Racine and Kenosha and Wisconsin Coach Lines, Inc., to identify those improvements to the existing commuter service which could be implemented soon. To

Table 78

CHARACTERISTICS OF ALTERNATIVE CENTRAL TRANSFER TERMINAL SITES FOR THE BELLE URBAN SYSTEM IN THE RACINE CENTRAL BUSINESS DISTRICT

Characteristics	Site 1: State Street North	Site 2: State Street South	Site 3: Water Street	Site 4: Wisconsin-Water North End	Site 5: Park-Water Mid Block	Site 6: Wisconsin Avenue Parking Ramp Site	Site 7: Lake Street Parking Lot
Location	Located on north side of State Street between Main Street and Lake Avenue	Located on south side of State Street between Main Street and Lake Avenue	Located along Water Street between Park and Wisconsin Avenues	Located on block bounded by College Avenue, Water Street, Wisconsin Avenue, and 5th Street	Located on block bounded by Park Avenue, Water Street, College Avenue, and 6th Street	Located inside block bounded by College Avenue, 5th Street, Wis consin Avenue, and 6th Street	Located on east side of Lake Avenue between 5th and 6th Streets
Available Area	1.94 acres	.94 acres	.29 acres	1.18 acres	.98 acres	.81 acres	.65 acres
Current Ownership	City of Racine	Private	Private; City of Racine	Private	Private; City of Racine	Private; City of Racine	City of Racine
Current Land Use	Vacant	Vacant	On-Street Parking adjacent to Park	Commercial Buildings	Parking Lot, Commercial Buildings	Vacant	Parking Lot
Maximum Vehicle Parking Spaces Lost through Development of Facility on Site	--	--	14	40	40	--	68
Distance from Current Transfer Point (Main Street between 5th and 6th Streets)	1,600 feet	1,400 feet	975 feet	625 feet	800 feet	650 feet	575 feet

Source: SEWRPC.

Saturday ridership by allowing system users to make unlimited rides on Saturday at one flat rate. Based on the 1997 fares charged by the transit system, a suggested cost of the Saturday superpass would be $1.50, 50 percent over the adult cash fare. Both the City of Kenosha and the City of Waukesha transit systems have established a Saturday superpasses and found them to be very successful in increasing Saturday ridership.

PLAN PERFORMANCE AND COSTS

Basic Assumptions and Determinations

The analyses of the anticipated performance of the recommended transit system, including the service levels, ridership, costs, and funding estimates associated with the recommended services, are predicated upon the following assumptions and determinations:

- All the recommended service changes have been assumed to be implemented at the start of the second quarter of 1998. This would be the earliest possible date, given the need to prepare new schedules, obtain required approvals, and undertake procurement activities for contract services, all as discussed under plan implementation actions.

- Costs are expressed in projected "year of expenditure" dollars and assume the following:

1. A 3.5 percent annual increase in annual operating and capital costs because of general price inflation;

2. The $0.10 fare increase recommended for the year 2000, raising the base adult fare from $1.00 to $1.10, will result in a 3.3 percent reduction in annual system ridership but will increase annual system operating revenues by about 6 percent. The $0.10 fare increase recommended for 2002, which will raise the base adult fare by 9 percent, from $1.10 to $1.20, will result in a 3 percent reduction in annual system ridership but will increase annual system operating revenues by about 6 percent;

3. State transit operating assistance funds would be adjusted to cover approximately 43 percent of eligible operating expenses, compared to 42 percent in 1997;

4. Federal transit operating assistance, including the Federal capital maintenance element of annual operating expenses, would not keep pace with inflation, declining from about 14 percent of operating costs in 1998 to about 13 percent

of operating costs by 2002.[2] Federal capital and planning assistance funds would continue to be available to cover 80 percent of eligible costs.

Ridership, Service Levels, and Financial Performance

The anticipated average annual ridership, operating characteristics, costs, and revenues associated with the recommended plan over the five-year implementation period, 1988-2002, are set forth in Table 79. Detailed information of anticipated ridership and service levels, along with operating and capital costs, over the five-year period are provided in Appendix B. For comparison purposes, information is also presented in Table 79 and in Appendix B for maintaining the existing 1997 transit system without change over the planning period and for the estimated 1997 levels for the existing transit system. The following observations may be made on the basis of an examination of the data presented in this table:

- With the recommended service changes, the Belle Urban System would operate about 92,500 revenue vehicle-hours of service annually to provide the recommended service. This represents a reduction of about 6,900 vehicle-hours, or about 7 percent, from the 1997 transit system level.

- The existing transit system may be expected to carry about 1,435,600 revenue passengers annually, or about 5 percent less than the estimated 1997 level of 1,506,000 revenue passengers. This decrease would be expected, on the basis of past trends of declining system ridership and these increases in passenger fares in 2000 and 2002.

- The recommended transit system may be expected to carry about 1,337,600 revenue passengers annually, or about 7 percent less than it would with the present system. The reduction in ridership under the recommended plan represents the net effect of the recommended service changes which, while providing for service extensions and expanded hours of operation, also included increases in operating headways.

- Over all, the number of passengers per vehicle-hour may be expected to approximate 14.4 under the recommended plan, about the same as the comparable figure for the existing transit system over the period, but less than the 15.2 passengers for the 1997 system. This is to be expected, given the expansion of service into the evening, when the number of passengers per vehicle-hour would be expected to be about 60 percent of daytime levels.

- The total costs of providing transit service, including operating and capital costs, under the recommended plan is estimated to be $5,816,800 annually. About 20 percent of this may be expected to be recovered by operating revenues. Accordingly, the total required operating and capital subsidy would approximate $4,644,500, or about 10 percent less than with the existing transit system over the planning period.

- Federal and State funds totaling over $3.4 million may be expected to be available to cover about 59 percent of the total operating and capital costs and is about 73 percent of the total required subsidy. About $1.2 million, or about 21 percent of the total costs and about 27 percent of the required subsidy, would have to be provided by the City of Racine and the other local governments and agencies contracting with the Belle Urban System for service. The total local subsidy for the recommended plan would be about 11 percent less over the period than the existing transit system subsidy.

- The local subsidy required under the recommended plan would be a slight decrease of about 2 percent from the local funding required from the City and

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[2] *The plan assumes the continued availability of Federal Transit Administration (FTA) Section 5307 formula operating assistance funds at 1997 levels over the planning period. This would amount to Federal operating assistance to cover approximately 12 percent of annual system operating expenses, excluding annual capitalized maintenance operating expenses, which would be covered with 80 percent Federal capital assistance funds. At the time the plan was being prepared, changes to this program which would increase the level of Federal transit operating assistance for the Belle Urban System were being finalized by the Wisconsin Department of Transportation, which regulates Federal operating assistance levels for the Racine transit system and the other Wisconsin transit systems of similar size. The City also had an application pending with the Wisconsin Department of Transportation for Federal funds available through the Congestion Mitigation and Air Quality Improvement Program, to be used to offset the costs of weekday evening bus service during 1998. An increase in Federal funding levels over those assumed in the financial projections for the plan could reduce the projected local funding requirement, which, in turn, potentially eliminate the need to implement some of the recommended service reductions to provide funds for the desired service expansions.*

Table 79

PROJECTED RIDERSHIP AND FINANCIAL PERFORMANCE FOR THE BELLE URBAN SYSTEM WITH THE EXISTING SYSTEM AND UNDER THE RECOMMENDED TRANSIT SYSTEM DEVELOPMENT PLAN: 1998-2002

Operating Characteristic	Estimated 1997	Average Annual[a]	
		With Existing System	Under Recommended Plan
Service and Ridership			
Revenue vehicle-hours of service provided	99,400	99,400	92,700
Revenue passengers	1,506,000	1,435,600	1,337,600
Passengers per vehicle-hour	15.2	14.4	14.4
Service Cost			
Cost			
Operating expenses	$4,798,000	$5,326,200	$4,993,200
Capital expenses	1,646,800	1,090,500	823,600
Subtotal	$6,444,800	$6,416,700	$5,816,800
Operating revenue	$1,220,300	$1,252,900	$1,172,300
Deficit	5,224,500	5,163,800	4,644,500
Percent of expenses recovered through operating revenues	18.9	19.5	20.2
Anticipated Sources of Subsidy			
Federal			
Operating Assistance	$ 674,800	$ 686,000	$ 662,300
Capital Assistance	1,317,400	872,400	658,900
Subtotal	$1,992,200	$1,558,400	$1,321,200
State Operating Assistance	$1,973,500	$2,228,700	$2,091,800
Local			
Operating Assistance	929,400	1,158,600	1,066,800
Capital Assistance	329,400	218,100	164,700
Subtotal	$1,258,800	$1,376,700	$1,231,500
Per Trip Data			
Cost	$4.28	$4.47	$4.35
Revenue	0.81	0.87	0.88
Deficit	3.47	3.60	3.47

[a]*The following assumptions were made in preparing the annual projections of ridership, revenues, and costs:*

1. *A 3.5 percent per year increase in operating expenses per unit of service.*
2. *The 10 percent fare increase in 2000, raising base adult cash fares from $1.00 to $1.10 per trip, will decrease annual system ridership by 3.3 percent.*
3. *The 9 percent fare increase in 2002, raising base adult cash fares from $1.10 to $1.20 per trip, will decrease annual system ridership by 3.0 percent.*
4. *Federal operating assistance, including the capital maintenance component of operating costs, will not keep pace with inflation and will decrease from about 14 percent of operating costs in 1998 to about 13 percent of operating costs by 2002.*
5. *State operating assistance will be adjusted to cover about 43 percent of operating expenses over the period.*

Source: SEWRPC.

other local units of government in the study area for the transit system during 1997. The relatively stable local costs for the system over the planning period would represent a successful effort on the part of the Advisory Committee to expand service to new times when the need for service has been established by the local community without adding to the costs of system operation.

PLAN ADOPTION AND IMPLEMENTATION

Plan Adoption

Adoption or endorsement of the recommended Racine area transit system 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 Racine
  The City of Racine Common Council should act to adopt the plan formally as a guide to the provision of transit services in the greater Racine area. This adoption 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 Racine, the Southeastern Wisconsin Regional Planning Commission should adopt the plan as an amendment to, and extension of, the regional transportation system plan and formally certify such adoption to all the local units of government in that portion of Racine County east of IH 94, 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 endorse the plan as a guide for the programming, administration, and granting of State transit assistance funds.

- 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.

- Local Units of Government in Eastern Racine County
  Upon receipt of the certified plan, the other concerned village and town boards in eastern Racine County should act to adopt the plan, thereby indicating their support for the City in the implementation of that plan. Such actions would be important on the part of the Racine County, the Village of Sturtevant, and the Towns of Mt. Pleasant and Caledonia, which contract with the City for transit service. In particular, the Town Board of the Town of Caledonia, by its plan adoption action, would be signifying a willingness to convert the fixed-route bus service it currently subsidizes into the recommended demand-responsive shared-ride taxicab service.

Plan Implementation

The City of Racine will have the primary responsibility for undertaking the plan implementation actions necessary for the recommended plan. It is recommended that the City's actions include the following steps:

- Refinement of Recommended Service Changes
  Transit management staff, with the advice or assistance of City staff and subject to the approval of the Transit and Parking Commission, will need to complete, by the end of 1997 or in early 1998, a detailed operating plan, reflecting a refinement of the recommended routing adjustments, replacement of bus services, scheduling changes, and expansion of weekday and Saturday service hours for bus and paratransit service, all to be implemented by the start of the second quarter of 1998. As part of this process, a comparison should be made between actual levels of Federal and State transit assistance available to the City during 1998 and those assumed under preparation of the plan. While the plan assumed no significant changes from 1997 Federal and State funding levels, changes to the Federal program which had the potential to significantly increase the level of Federal funds available to subsidize the annual operating deficits of the Belle Urban System were being finalized. The City also had an application pending with the Wisconsin Department of Transportation for Federal funds through the Congestion Mitigation and Air Quality Improvement Program to fund weekday evening bus service during 1998. With such increases in Federal funds, the City may not need to implement

all the recommended service reductions to provide funds for the desired service expansions.

- Public Hearing
  Federal regulations require that a public hearing be conducted prior to the implementation of significant changes to transit services for transit systems using Federal funds. The City must conduct a public hearing after it has refined the plan recommendations to identify a more detailed set of service changes for 1998.

- Caledonia Shared-Ride Taxicab Service
  The transit management staff, with the advice or assistance of City staff and subject to the approval of its Transit and Parking Commission, should immediately initiate negotiations with the Town of Caledonia about the conversion of the fixed-route bus service provided within the eastern portion of the Town by Route No. 10 to a demand responsive shared-ride taxicab service. The target for beginning the service should be the beginning of the second quarter of 1998, if possible. After receiving Town approval to make the service change, the following specific actions would need to be taken:

  1. The City of Racine would select a service provider for the shared-ride taxicab service. It is recommended that the service be provided via a contract with a private-sector firm and that a competitive procurement process be undertaken to that end. It should be assumed that the private firm would provide the necessary vehicles and operating facilities under the terms of the contract with the City. The procurement process should be so structured as to meet all Federal and State requirements.

  2. The City of Racine should prepare an operating budget for the service and include these costs in its applications for Federal and State grants for the Belle Urban System.

- Subscription Transit Service
  The transit management staff, with the advice or assistance of City staff and subject to the approval of its Transit and Parking Commission, should immediately initiate appropriate discussions with private-sector agencies and firms concerning the conversion of the fixed-route bus service provided by Route No. 20 in the Washington Avenue (STH 20) corridor to a subscription transit service for employees at the major employers in this corridor. The target for beginning service should be the beginning of the second quarter of 1998, if possible. A key point in these negotiations would be the need for the private sector to commit itself to providing the requisite local funding to implement and maintain continued operation of the subscription transit services. Once a commitment to fund the service is obtained, the following specific actions would need to be taken:

  1. The City of Racine or a willing private-sector partner in the effort, such as the Racine Area Manufacturers and Commerce, would obtain employee addresses and shift-change information from the interested agencies and firms to determine the specific route, or routes, to be used, the service times, and the anticipated demand levels for the subscription service. The City would then decide if there would be sufficient demand for the subscription services to be provided directly by the Belle Urban System using conventional City buses or if it would be more appropriate for the service, or some portion thereof, to be provided via a contract with a private-sector firm providing a smaller fleet of vans or small buses under the terms of the service contract with the City.

  2. If all or any part of the service is to be provided by a private-sector firm, the City of Racine should take the steps necessary to select a service provider. It is recommended that the service be provided via a contract with a private-sector firm and that a competitive procurement process be undertaken toward that end. It should be assumed that the private firm would provide the necessary vehicles and operating facilities under the terms of the contract with the City. The procurement process should be structured to meet all Federal or State requirements.

  3. The City of Racine should prepare an operating budget for the service and include the costs in its applications for Federal and State grant funds for the Belle Urban System.

- Central Transfer Terminal
  The City of Racine should begin efforts in 1998 toward construction of the central transfer terminal in the CBD. It will be needed to serve as the focus of the transit system's use of pulse scheduling. The City must include funding for the project in the City's 1998 budget. As a first step, it is recommended that funds be budgeted for a formal study of

the central transfer site to be undertaken as early as possible in 1998 to review potential sites for the facility, including the location supported by the Advisory Committee. A second potential site, Site No. 4 on Figure 18, approximately one block northeast of the Committee's preferred site, was supported by the consultant for the Downtown Racine Corporation, commissioned to prepare a redevelopment plan for downtown Racine. The study would facilitate sound decision-making regarding a final site through the involvement of the agencies and parties concerned with downtown redevelopment, including the City transit system, the City Department of City Development, and the Downtown Racine Corporation. The final design for the facility should have a configuration which facilitates its use by both local buses and buses providing express or rapid services between Racine and the Milwaukee and Kenosha areas.

It is recommended that the City apply immediately for the Federal transit assistance funds needed to support the location study and the design and construction of the terminal. The Wisconsin Department of Transportation has indicated that it could make an allocation of Federal transit assistance funds available for this project from the unobligated funds it controls.

SUMMARY

This chapter has presented the transit system development plan for the City of Racine Belle Urban System recommended by the Racine Area Public Transit Planning Advisory Committee. The plan may be summarized as follows:

1. The plan calls for a number of changes in existing alignments and schedules of the Belle Urban System proposed to be implemented by the start of the second quarter of 1998. Foremost among these changes would be the following:

    - Adjustments to the current alignments of Route Nos. 1 through 4 and 6 through 9. These changes would provide direct access for City of Racine residents to the Green Tree Centre, a major community shopping center at the intersection of Four Mile Road and Douglas Avenue, in the Town of Caledonia; provide improved access to the Racine West commercial area by creating a minihub on Roosevelt Avenue between 21st Street and Durand Avenue where connections between Route Nos. 2, 4, 6, 7, and 8 could be made; and restore 30-minute peak period headways on bus service to the University of Wisconsin-Parkside while eliminating a duplication of service on Route Nos. 4, 5 and 9 along Washington and Taylor Avenues. Some changes to Route Nos. 3 and 4 would also be necessary to enable operation of the routes with pulse scheduling, as discussed below.

    - Replacing existing bus services with low ridership with other transit services. Fixed-route bus service provided by Route No. 10 in the Town of Caledonia would be replaced with a demand-responsive shared-ride taxicab service that would serve the same area and operate during the same periods and on the same days as the existing bus route. The service provided by Route No. 20 to the businesses west of the City along Washington Avenue (STH 20), in the Town of Mt. Pleasant, and in the Grandview Industrial Park, in the Town of Yorkville, would be replaced by subscription transit service. Such service is also envisioned to be used to provide access to other major employment concentrations which are currently unserved by, or difficult to serve with, existing City routes.

    - Changes to service schedules to reduce service levels on the routes of the transit system with the lowest ridership and on the system as a whole during periods when existing ridership levels do not justify operation with the current headways. These service reductions include the following: increasing headways on Route Nos. 6 and 8 from 30 minutes to 60 minutes at all times of operation; increasing weekday peak period headways on Route Nos. 3, 4, and 7 between Labor Day and Memorial Day from 20 minutes to 30 minutes; and increasing headways on Route Nos. 1, 2, 3, 5, and 7 from 30 minutes to 60 minutes during weekday middays and all day on Saturdays.

    - Changing the current scheduling technique used by the Belle Urban System to incorporate the use of cycle, or "pulse," scheduling, which will allow the transit system to provide for convenient, timed-transfer connections between bus routes at the common transfer point in downtown Racine. Providing for such a timed transfer will be essential when service is provided with 60-minute headways.

- Expanding bus and paratransit service into new weekday and Saturday periods outside the existing transit system hours of operations and using the savings generated by the service reductions described above. The plan proposes adding weekday evening service between approximately 7:00 p.m. and 12:30 a.m., using a modified system of routes, serving principally the City of Racine. The start of Saturday service would also be moved up by one hour, to 6:00 a.m., from the current starting time of 7:00 a.m.

2. A central transfer terminal of sufficient size to accommodate simultaneously the vehicles from all the routes serving downtown will be needed to serve as the focus of the transit system's pulse scheduling. The plan proposes that the facility be developed at a location different from the exiting common transfer point at Monument Square. After reviewing the seven alternative downtown sites, the Advisory Committee recommended that a site in the middle of the block between Park Avenue, Water Street, College Avenue, and 6th Street be included in the plan as the preferred site for the terminal.

3. The plan proposes fare increases in 2000 and again in 2002 to raise the base adult cash fare by 10 cents per one-way trip in each of those years in order for fares to keep pace with anticipated increases in operating expenses, thereby maintaining a stable farebox recovery rate. Base adult cash fares for the transit system would, consequently, increase from the current $1.00 per one-way trip to $1.20 per one-way trip by the end of the planning period, an increase of about 20 percent. Fares in other categories and charges for monthly passes would be increased similarly. The transit system would also charge fares that would be $0.25 per one-way trip above the cash fares for regular bus service for the two premium services which have been recommended, the demand-responsive shared-ride taxicab service for the Town of Caledonia proposed to replace Route No. 10 and the subscription transit service proposed to replace Route No. 20.

4. The plan recommends that action be taken to improve the existing Wisconsin Coach Lines, Inc., bus service between the Cities of Milwaukee, Racine, and Kenosha. The current schedules and indirect routing were identified by the Advisory Committee as discouraging the use of the service. The Advisory Committee recommended that the Regional Planning Commission work with the City of Racine and the City of Kenosha, the two principal communities served by the existing service, to suggest improvements to this commuter service.

5. With the recommended service changes, the Belle Urban System would operate an average of about 92,700 revenue vehicle-hours of service annually, a reduction of about 6,700 vehicle hours, about 7 percent, from the 1997 levels. The average annual ridership on the recommended system of about 1,337,600 revenue passengers would be about 7 percent below the ridership levels that would be expected by maintaining the existing system without change over the planning period; it represents the net effects of the recommended service changes, including both reductions in operating headways and increases in passenger fares.

6. The total average annual cost of providing the recommended transit service is estimated at about $5,816,800, of which about 20 percent may be expected to be recovered by operating revenues. The required subsidy would amount to about $4,644,500, of which about $3.4 million, or about 73 percent, may be expected to be covered by Federal and State funds, assuming no significant changes in Federal and State transit aid programs.

7. The total local subsidy for the recommended plan would amount to about $1.2 million, about 7 percent less than the existing transit system would need over the period; it would represent a slight decrease of about 2 percent from the total local funding provided for the transit system during 1997. The relatively stable local costs for the system over the planning period indicate the successful of the efforts of the Advisory Committee to provide for service expansion into new periods when the need for service has been established by the local community without adding to the costs of system operation.

8. Following adoption of the transit system development plan, the City of Racine will have the primary responsibility for the necessary plan implementation actions through the following steps:

   - Transit management staff, with the advice or assistance of City staff and subject to the approval of the Transit and Parking Commission, will need to develop a detailed operating plan by late 1997 or early 1998 to refine the recommended routing adjustments, scheduling changes, and expansion of weekday and Saturday service periods for the Belle Urban System.

- The City will need to conduct a public hearing in early 1998, after it has refined the plan recommendations, to identify a more detailed set of service changes.

- The transit management staff, with the advice or assistance of City staff and subject to the approval of the Transit and Parking Commission, will need to negotiate with the Town of Caledonia for the conversion of the fixed-route bus service provided in the eastern portion of the Town by Route No. 10 to a demand-responsive shared-ride taxicab service. A competitive procurement process should be undertaken to select a private-sector firm to operate the taxicab service, beginning in the second quarter of 1998, if possible.

- The transit management staff, with the advice or assistance of City staff and subject to the approval of its Transit and Parking Commission, will need to negotiate with private-sector agencies and firms for the conversion of the fixed-route bus service provided by Route No. 20 in the Washington Avenue (STH 20) corridor to a subscription transit service for employees of the major employers in this corridor, with service to begin in the second quarter of 1998, if possible. The private sector must be willing to commit itself to providing the requisite local funding to implement and maintain continued operation of the subscription transit services. The City would determine the design of the subscription services to be provided; decide whether they should be directly provided by the Belle Urban System using conventional City buses or via a contract with a private-sector firm using smaller vehicles; and, possibly, undertake a competitive procurement process to select a private operator.

- The City should construct a central transfer terminal in the CBD to serve as the focus of a transit system with pulse scheduling. As initial steps, the City will need to include funds for the project in its 1998 budget and should immediately apply for the Federal transit assistance funds needed to support the design and construction of the terminal. A site search should be undertaken in early 1998 to review potential sites for the facility.

Chapter IX

SUMMARY AND CONCLUSIONS

INTRODUCTION

This report sets forth a transit system development plan for the City of Racine's public transit system, the Belle Urban System. The study was carried out between March and October 1997 within the context of the adopted design year 2010 regional transportation system plan. That plan includes a public transit element recommending that transit services within the study area be improved. The Racine area study was designed to refine, detail, and, as may be found desirable, amend and extend the regional transportation system plan.

In the conduct of the study, several tasks were performed, including an inventory and analysis of the existing land uses and of the current travel habits, patterns, and needs of the residents of the area; an evaluation of the performance of the existing City transit system; and an evaluation of alternative service changes for the existing City transit system to provide the needed service expansion. The study culminated in the preparation of a recommended transit system development plan for the City of Racine Belle Urban System.

PURPOSE OF THE TRANSIT SYSTEM DEVELOPMENT PLAN

In general, the transit system development plan was produced cognizant of the need to enhance access by transit to employment opportunities in the study area, particularly during the evening period. Specifically, the plan was intended to serve the following purposes:

1. To evaluate the effectiveness of the existing route structure and schedules, along with the financial performance of the current Racine transit system;

2. To identify, evaluate, and recommend potential transit service changes with respect to route structure, service schedules, and service periods;

3. To develop appropriate responses, in terms of the transit services provided and their attendant service levels, to recent changes in State and Federal funding programs in order to assure adequate financing of existing and planned transit services; and

4. To provide a sound basis for monitoring the status of the implementation of the plan and the updating required to maintain a valid plan through the five-year planning period.

STUDY ORGANIZATION

The preparation of this transit system development plan was a joint effort by the staffs of the City of Racine and of the Southeastern Wisconsin Regional Planning Commission. Additional staff assistance was obtained from certain other agencies concerned with transit development in the Racine area, including the Wisconsin Department of Transportation.

To provide guidance to the technical staffs in the preparation of this plan and to involve concerned and affected public officials and citizen leaders more directly and actively in the development of transit service policies and improvement proposals, the City of Racine created the Racine Area Public Transit Planning Advisory Committee. The full membership of the Committee is listed on the inside front cover of this report.

LAND USE AND TRAVEL PATTERNS

Study Area

The study area considered in this report is the eastern portion of Racine County, including all of the City of Racine; the Villages of Elmwood Park, North Bay, Sturtevant, and Wind Point; the Towns of Caledonia and Mt. Pleasant; and the eastern one-sixth of the Towns of Raymond and Yorkville (see Map 1 in Chapter I). The study area includes the entire area served by the fixed-route bus system operated by the City of Racine in 1997 and the entire Racine urbanized area as defined by the U. S. Census in 1990. As deemed necessary, the inventory and analyses conducted under this study included certain major potential transit trip generators outside the study area, including, in particular, the University of Wisconsin-Parkside, in the Town of Somers, Kenosha County.

Land Use

The amount of land within the study area devoted to urban land uses increased from about 19.8 square miles in 1963 to about 32.4 square miles in 1990, an increase of about 64 percent. Over the same period, the population density

in the developed urban areas decreased from 5,876 to 4,103 persons per square mile, or by about 30 percent. Despite the steady increase of urban development observed since 1963, only about one-third of the land in the study area is currently fully developed for urban land uses (see Map 8 in Chapter II).

Population

Since 1960, the study area population has increased by about 21 percent, from about 114,200 persons in 1960 to about 137,600 persons in 1995. Over this period, the population of the City of Racine, however, declined by about 4 percent, from about 89,100 persons in 1960 to about 85,200 persons in 1995. The growth in study area population, consequently, occurred outside the City, primarily in the Towns of Caledonia and Mt. Pleasant, which experienced population increases of about 12,300 and 9,300 persons, respectively, between 1960 and 1995. The populations of these communities and the Village of Sturtevant have continued to increase in recent times, with about 3,700, or about 80 percent, of the estimated 4,700 new residents of the study area between 1990 and 1995 living in these three communities. The number of households in the study area increased more than twice as fast as the resident study area population between 1960 and 1995; the number of households increased by about 53 percent, from 33,600 households in 1960 to 39,800 households in 1995.

The following five population subgroups which typically exhibit high dependence on transit service for mobility were identified: school-age children (age 10 through 18), the elderly (age 60 and older), the disabled, persons in low-income households, and persons in households with no vehicles available. Since 1960, both the elderly and the low-income populations have increased significantly in terms of absolute numbers and their proportions of the total study area population, while the school-age population and zero-auto households have remained stable in absolute numbers and actually declined as a percent of the total population. Comparable data permitting a trend analysis for the disabled population since 1960 was not available. The transit-dependent population within the study area was primarily concentrated in the City of Racine in 1990.

Employment

The number of jobs in the study area has increased from about 57,100 in 1970 to about 71,900 in 1990, or by about 26 percent. Nearly two-thirds of the overall increase in employment in the study area between 1970 and 1990 occurred outside the City of Racine. Employment opportunities at new commercial, industrial, and office developments completed since 1990, or currently under way, have helped to spur further increases in job levels both inside and outside the City. The principal concentrations of employment in the study area in 1990 were in the City of Racine, particularly in the central business district (CBD), the area immediately south of the CBD, and in the southwest corner of the City.

Major Traffic Generators

Certain major land uses in the study area generate a large number of person trips on a daily basis, including commercial centers, educational centers, medical centers, governmental and public institutional centers, employment centers, and recreational areas. In 1997, these land uses, along with housing and care facilities for elderly and disabled persons and low-income housing, were identified as major potential transit trip generators in the study area (see Maps 12 and 13 in Chapter II) and were found to be scattered throughout the urban development.

Travel Habits and Patterns

Regional Planning Commission studies indicate that average weekday total person travel entirely within the study area and between the study area and other external areas has increased by about 40 percent, from about 375,500 person trips in 1963 to about 526,900 trips in 1991. This increase in person travel was equally distributed between internal and external travel. About 76 percent of the person trips were made internal to the study area in 1991, with the largest proportion being home-based other trips, such as trips made for medical, personal business, or social or recreational purposes. Map 16 in Chapter II illustrates the pattern and volume of internal person trips made on an average weekday in 1991. The distribution of person-trip productions and attractions within the study area reflects the concentrations of population, employment, and major trips generators in the City of Racine. The remaining 24 percent of all person trips were made with one trip end external to the study area, with the largest number made for work purposes. As shown on Map 17 in Chapter II, trips made between the study area and Kenosha County accounted for the largest volume of external person travel, although other significant travel was identified between the study area and Milwaukee County and western Racine County.

Commission survey data indicate that about 6,700 transit revenue passenger trips were made on an average weekday in 1991 on the fixed-route bus service provided by the Belle Urban System. Passengers were predominantly female, without a valid drivers license, 34 years old or younger, and from a household with income below $20,000 per year. Most of the trips made by system passengers were for school purposes, although trips made for work or other purposes, such as medical, personal

business, and social or recreational, were also significant. About one-third of the system ridership occurred during two peak-usage periods, coinciding with the beginning and ending of classes at local schools and first-shift jobs at employers. About 45 percent of the total daily ridership occurred during the midday period between the two peak periods. As would be expected, the distribution of transit trip productions and attractions reflects the service area for the transit system, which is principally inside the City of Racine.

EXISTING PUBLIC TRANSIT SYSTEM

The major supplier of local public transit service in the Racine area was the City of Racine, which has operated the Belle Urban System since July 1975. The City owns the facilities and equipment for its fixed-route transit system and contracts with a private firm, ATE Management and Service Company, Inc., to oversee the day-to-day operation of the system, with the management firm under the direct supervision of the City Department of Transportation. While the policy-making body of the transit system is the Racine Transit and Parking Commission, the ultimate responsibility for review and approval of certain important matters, including the annual program budget, lies with the Racine Common Council.

Fixed-Route and Specialized Transit Service

During 1997, fixed-route bus service was provided by the Belle Urban System over a system of 11 regular bus routes (see Map 21 in Chapter III). Ten of these routes provided local service, with frequent stops. Nine of these local routes provided direct service to the Racine CBD, where the City has established a common stop to facilitate transfers between routes, and four extended outside the City to serve residential areas or major trip generators in the Town of Mt. Pleasant, the Village of Sturtevant, and the Towns of Caledonia and the Somers, the latter in Kenosha County. The eleventh regular route provided express service with limited stops between the Racine CBD and businesses located along STH 20, in the Town of Mt. Pleasant, and in the Grandview Industrial Park, in the Town of Yorkville.

Service over the regular routes was provided between 5:30 a.m. and 7:00 p.m. on weekdays and between 7:00 a.m. and 6:00 p.m. on Saturdays, with operating headways of 20 to 60 minutes during weekday peak periods, 30 to 60 minutes during weekday middays, and 30 to 45 minutes all day Saturday. The base adult cash fare for the regular route service was $1.00 per trip, with a reduced fare $0.50 per trip for elderly and disabled individuals. Special reduced fares for students were provided through the Racine Unified School District. The transit system maintained a fleet of 45 buses to provide service over the regular routes.

The City also contracted with a private company for the operation of a special downtown circulator route, the Lakefront Trolley, to serve the CBD and marina area. This service was operated only between Memorial Day and Labor Day between 9:00 a.m. (weekdays) or 10:00 a.m. (weekends) and 5:30 p.m., with 10 to 20 minute headways, as well as on Thursday, Friday and Saturday nights from 5:30 p.m. to midnight. Cash fares were $1.00 for adults and $0.50 for senior citizens and children under 12 years. The transit system maintained two buses which resembled streetcars to provide this service.

The transit system also provided a paratransit service to serve the travel needs of disabled individuals unable to use the fixed-route Belle Urban System service. The door-to-door service was operated during the same hours as the fixed-route service and was available throughout the entire transit system service area. The service was provided through the Racine County Human Services Department specialized transportation program.

Ridership

Ridership on the Belle Urban System increased steadily in each year from 1976 through 1981; ridership nearly quadrupled. from about 613,000 revenue passengers in 1975 to about 2.42 million revenue passengers in 1981. These increases may be attributed to new and expanded transit services, new operating equipment, stable passenger fares, and the substantial increases in gasoline prices which occurred during this period. Since 1982, the predominant trend on the Belle Urban System has been one of declining transit ridership, broken only by modest ridership increases in 1984 and 1994. These declines may be attributed to a tripling of the base adult fare from 1982 through 1996 and decreased use of the system by the Racine Unified School District for student transportation. Other contributing factors included a severe economic recession and high unemployment levels in the Racine area; decreases in gasoline prices, which made travel by automobile more attractive; and increases in automobile availability. By 1996, the transit system carried about 1,762,000 revenue passengers, about 656,000 passengers, or 27 percent, less than the approximately 2,418,000 revenue passengers carried in 1981. Currently, Route Nos. 3, 4, and 7 are the most heavily used of the 11 regular routes in the transit system.

Financial Performance

From 1992 through 1996, the City expended, on an average annual basis, a total of about $4,568,000, or about $2.49 per trip, for transit system operations and for capital

projects. Of this total, about $926,000, or about $0.51 per trip, was recovered through farebox and other miscellaneous revenue. The remaining $3,642,000, or about $1.98 per trip, constituted the total average annual public subsidy funded through Federal and State transit assistance programs and local property taxes. The total average annual subsidy from the City of Racine amounted to about $558,000, or about $0.30 per trip; funds from other local units of government, the private sector, and other sources amounted to about $204,000, or about $0.11 per trip. The total local share of the public operating subsidy for the transit system increased by 131 percent between 1992 and 1996 because of a 35 percent decrease in Federal transit operating assistance.

Other Transit Services

Other transit services for the general public either operated inside the study area or connected with the Belle Urban System outside the study area. The City of Kenosha transit system operated one local bus route between the Kenosha CBD and the University of Wisconsin-Parkside, where connections could be made with Route No. 9 of the Belle Urban System. A commuter-oriented express bus route was operated by Wisconsin Coach Lines, Inc., between the Milwaukee CBD and the Cities of Racine and Kenosha, serving several intermediate stops in the City of Racine and Towns of Caledonia and Mt. Pleasant. Two private carriers, Greyhound Lines, Inc., and United Limo, Inc., operated intercity bus routes between Milwaukee and Chicago with a stop along IH 94. Intercity passenger train service was operated between Milwaukee and Chicago by the National Railway Passenger Corporation, Amtrak, with a stop in the Village of Sturtevant.

Specialized transportation services for elderly and disabled individuals were also provided within the study area in 1997. The most significant service was offered by the Racine County Human Services Department, which administered two Countywide programs, one providing a door-to-door transportation services to transportation-handicapped individuals for general travel and one providing a fixed-route, fixed-schedule services to developmentally disabled individuals participating in the training and employment programs offered by Careers Industries of Racine, Inc., and the Racine County Opportunity Center. Other private, nonprofit agencies and organizations providing service included the following: the American Red Cross, which provided transportation in the eastern Racine County for medical purpose trips, and the Racine County Ridgewood Care Center and Lincoln Lutheran of Racine, which provided transportation for the residents of their respective care facilities as dictated by their needs. Finally, the following four private, for-profit companies also provided service to a significant number of passengers within the study area: Bella Mobile Care, Inc.; Medix Ambulance Services, Inc.; Nichols Medical Transport, Inc.; and Recovery Medical Transport.

The Racine Unified School District provides schoolday transportation to students residing within the School District. In 1997, the District contracted for yellow school bus service for about 13,800 students from a private company, School Services and Leasing, Inc., and also provided about 500 students who resided within the service area of the Belle Urban System with special schoolday bus passes and other students with tokens used to travel to and from school on the City transit system.

PUBLIC TRANSIT SERVICE OBJECTIVES AND STANDARDS

A set of transit service objectives was formulated to provide a sound basis for evaluating the performance of the existing transit services, for postulating alternative service options and plans, and for developing recommendations for consideration by the elected officials concerned. Complementing each of the objectives was a supporting principal and a set of service and design standards. Each set of standards was directly related to the objectives and served to facilitate quantification and evaluation of the performance of the existing transit services and to design, test, and evaluate alternative transit system plans.

The specific objectives adopted envision a transit system which will effectively serve the City of Racine and adjacent communities while minimizing costs. More specifically, the following objectives were adopted by the Advisory Committee:

1. Public transit should be provided to 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 populations within those areas.

2. The public transit system should promote effective utilization of public transit services and provide for user convenience, comfort, and safety.

3. The public transit system should promote efficiency in the total transportation system.

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

EVALUATION OF THE EXISTING TRANSIT SYSTEM

A performance evaluation of the Belle Urban System was conducted at two levels, using specific performance measures related to the attainment of key transit system objectives and standards. The two levels are systemwide performance evaluation and route-by-route performance evaluation.

Systemwide Performance Evaluation

At the first level, an assessment of performance was made on a systemwide basis. This assessment examined the extent to which the transit system served the existing land use pattern and resident population of the City of Racine and environs, the overall ridership and financial performance of the transit system, and the transit system's contribution to the efficiency of the total transportation system. The conclusions reached from this systemwide performance assessment include the following:

1. The existing transit system provides excellent areal coverage of the existing residential areas inside the City of Racine, together with good coverage of the most densely populated residential areas outside the City. Virtually 100 percent of the resident population within the City and about 85 percent of the total resident population within the study area also lay within the transit system service area. The transit system also provides good areal coverage of the residential concentrations of transit-dependent population groups within the study area identified through 1990 U. S. Census data.

2. The transit system also provides excellent areal coverage of the employment concentrations within the City of Racine, with about 98 percent of the jobs within the City lying within the system service area. About 90 percent of the jobs within the study area were also within the transit system service area.

3. The transit system also provides good coverage of the existing potential transit trip generators identified in the study area. The system serves 158 of the 177 major land use trip generators and 77 of the 87 major transit-dependent population trip generators identified in the study area. Of the 29 centers not served, 27 are located outside the City of Racine, which has historically been the primary service area for the transit system. For a similar reason, the existing system is capable of serving about one-half, 26 of 49, of the new and proposed developments identified within the study area; most of the new development has been occurring outside the City.

4. The existing service provided by the transit system to disabled individuals unable to use fixed-route bus service meets all the paratransit service requirements of the Americans with Disabilities Act of 1990. This paratransit service, with its extensive service levels, is provided throughout the study area, rather than being limited to the Federally required area within three-quarters of a mile of a regular bus route. The Belle Urban System also provides service to disabled individuals by utilizing accessible vehicles on its regular bus routes. With the delivery of 23 new accessible buses in May 1997, the system has enough accessible buses to allow 100 percent of the buses operated during offpeak service periods and approximately 85 to 90 percent of the buses operated during peak-service periods to be accessible to disabled persons using wheelchairs.

5. In terms of ridership and financial performance, the Belle Urban System compares favorably to other Wisconsin urban bus systems. Ridership and effectiveness levels for the Belle Urban System were found about the same as, or slightly higher than, comparable levels for a group of Wisconsin urban bus systems from 1992 through 1996. The trends observed for the Belle Urban System with respect to operating expenses per vehicle-mile and per vehicle-hour, as well as operating costs and deficits per passenger, were found to compare favorably with the trends observed for the Statewide group of urban bus systems during this period. With respect to farebox recovery rates, the rate for the Belle Urban System has been about 18 to 24 percent higher than the average for the group of urban bus systems Statewide over the period, although the rate for the other systems has increased by about 1 percent, from 19 percent to 20 percent of operating expenses, over the period.

Evaluation of Route Performance

The second part of the performance evaluation was an assessment of the performance of the regular routes of the transit system on the basis of ridership, productivity, and financial performance. Further analyses of each route were then conducted to identify the productive and nonproductive route segments, operating headways and peak passenger loading characteristics, any problems with schedule adherence, and the directness of route alignments. The following conclusions were drown from this assessment of route performance:

1. Certain regular bus routes have weekday performance levels consistently above the specified minimum performance standard of at least 80 percent of systemwide average effectiveness levels. These routes were Route Nos. 1, 2, 3, 4, 5, and 7, with Route Nos. 3, 4, and 7 clearly the best performers, showing weekday effectiveness levels which exceed 100 percent of the systemwide average for all measures of performance. Based solely on their ridership and financial performance, these routes could continue to be operated without change.

2. The remaining five routes, Route Nos. 6, 8, 9, 10, and 20, have weekday performance levels below 80 percent for most or all of the specified performance standards. Of the 27 least productive route segments identified on the system, 23 are on these three routes, including all 12 segments of Route No. 10. While Route No. 10 had the most unproductive route segments, at least one unproductive route segment was also found on each of the other routes of the system, with the exception of Route No. 3, which had no unproductive segments. This information should be viewed as an indicator of where routing changes in the current route structure should be considered.

3. Because some bus routes must pass through areas with little residential development or few major trip generators in order to reach other residential areas or trip generators, such routes must be expected to perform at somewhat lower levels of efficiency than other routes if the transit system is to continue to provide extensive areal coverage of the City of Racine and environs.

4. In general, the same regular routes perform above or below the specified minimum performance levels on Saturdays as on weekdays, with the exception of Route No. 5, which has acceptable weekday performance levels of at least 80 percent of the system-wide average for all performance measures, but has Saturday performance levels which are less than 80 percent of the system-wide average in five of the eight performance measures. The failure of Route No. 5 to achieve the specified minimum performance levels on Saturdays was attributed to the absence of student ridership on Saturdays and fewer trips being generated on Saturdays by the various land uses and trip generators along the route.

5. The existing headways on the regular routes of the transit system are capable of accommodating existing levels of passenger demand at the recommended load standards; headway reductions are not needed on any routes. In no cases did the observed passenger loads result in load factors exceeding the maximums specified in the transit service standards. The highest load factor, 1.13, was found on Route No. 3 during the morning peak period. All other observed load factors were 1.00 or below.

6. An analysis of the potential impacts of eliminating the additional peak- hour bus service on Route Nos. 3, 4, and 7, thereby increasing headways on these routes from 20 to 30 minutes during peak periods, indicated that peak-period passenger loads and load factors would probably increase by about 15 to 20 percent on the routes if headways were increased. Load factors on most peak-period bus trips would not, however, exceed the standards. This would indicate that the City may consider eliminating some or all of the additional peak-period trips on these routes as a cost-saving measure.

7. Upon random spot checks of schedule adherence, the on-time performance of the existing transit system was found to be somewhat below the recommended performance level of 90 percent on time, as set forth under the transit service objectives and standards. Problems with schedule adherence were found to be almost equally divided between early and late departures at bus stops. To correct such problems, the scheduled running time between timepoints along each route should be reviewed and, possibly, modified to reflect different passenger loading and traffic conditions which occur throughout the day and which affect actual running time between stops.

8. The existing alignments of the routes of the transit system are relatively direct and result in only a minor amount of inconvenient travel for short trips and most longer crosstown trips. However, a ratio of transit travel time to automobile travel time in excess of 4.0 and a maximum travel time difference between the transit and automobile travel paths of 31 minutes was found on Route No. 3. In addition, the large one-way loop routing used on Route No. 10 results in inconvenient trips for passengers traveling between points along the loop. Consideration should be given to restructuring Route No. 10 to provide for more lineal, two-way routing over the most productive route segments or to the operation of a demand-responsive service with similar areal coverage to reduce the inconvenience to users of the current service.

Conclusions of Performance Evaluation

The performance evaluation indicated that the existing transit system provides good areal coverage of the existing residential area, major trip generators, and employment concentration in the study area. The Belle Urban System was found to compare favorably with similar transit systems in Wisconsin in terms of ridership and financial performance. However, the analyses indicated that changes in some bus routes and service schedules should be considered to improve the performance of individual routes as well as the overall performance of the transit system.

EXISTING TRANSIT LEGISLATION AND REGULATIONS

Federal and State legislation and rules govern the availability and distribution of financial aid for transit services. A summary of the major Federal and State transit assistance programs available in 1997 for transit services in eastern Racine County is presented in Table 55 in Chapter VI.

The principal Federal and State programs on which the City of Racine has drawn for funds to provide transit service include the following:

1. The Section 5307 Program, administered by the Federal Transit Administration, providing operating and capital funds on a formula basis to the Racine urbanized area, which encompasses the eastern portion of the study area, including the City of Racine in its entirety.

2. The Section 5309 Program, administered by the Federal Transit Administration, providing capital funds on a discretionary basis for capital investments in transit infrastructure.

3. The State Section 85.20 urban mass transit operating assistance program, administered by the Wisconsin Department of Transportation. This program provides operating funds to transit systems serving Cities or Villages with a population of 2,500 or more persons to cover a percentage of operating expenses.

4. The Statewide Multimodal Improvement Program (SMIP), which provides funds for transit projects through the Surface Transportation Program-Discretionary (STP) created under ISTEA. This program provides capital funds on a discretionary basis for capital investments, including transit infrastructure.

5. The Federal Congestion Mitigation and Air Quality (CMAQ) Improvement Program. This program provides operating and capital funds to public bodies for projects aimed at reducing congestion and improving air quality in areas identified as not meeting Federal air quality standards.

6. The State Section 85.24 transportation demand management program. This program provides funds to local governments and private organizations for transit projects directed at addressing air quality or traffic congestion problems in areas of Wisconsin experiencing significant problems.

The Wisconsin Statutes provide several organizational alternatives to local municipalities and counties as operators of public transit services, including the following: contracting for services with a private operator, public ownership and operation of a municipal utility, and public ownership and operation by a municipal transit commission or cooperative contract commissions. There is currently no State legislation which would permit transit operators, like the City of Racine, to create an areawide or regional transit agency, other than cooperative contract commissions, or to levy taxes for transit or other uses, other than a vehicle registration fee.

There are current local ordinances in force pertaining to bus and taxicab operations in the municipal codes of the City of Racine and the Town of Mt. Pleasant. The Racine ordinances currently restrict the provision of shared-ride taxicab service in the City unless permission is given by the first passenger served. This restriction on shared-ride operation would limit the eligibility of City taxicab services for financial assistance under current Federal and State programs.

ALTERNATIVE TRANSIT SERVICE CHANGES

A number of potential transit service changes for the Belle Urban System, including adjustments to existing route alignments or to service schedules and periods of operation, were considered. The changes included those identified by the Advisory Committee and the Commission staff based on the findings of the transit system performance evaluation presented in Chapter V and also changes proposed by the management firm for the Belle Urban System. The service changes are summarized in Table 57 in Chapter VII.

In considering the service changes proposed in the development of the new transit system development

plan, the Advisory Committee recognized that a need had been expressed by the local community to expand service into new periods outside the current hours of operation of the transit system, in particular on weekday evenings. The Advisory Committee also recognized that the City could not simply add the new service to the existing system given the attendant additional costs of the service expansion and current funding constraints which the Committee considered likely to continue through the planning period. Such constraints included stable levels of Federal funds which would not keep pace with inflation, the inability to increase existing levels of local funds provided through property taxes to cover probable shortfalls in Federal funds, and no short-term prospect for a source of dedicated funding to fund the desired transit service expansion. Consequently, the Advisory Committee concluded that, if the short-range transit plan was to be prepared within the context of the limited funding available, then any service expansion would have to be balanced against service reductions.

Adjustments to Route Alignments

Eight sets of alternative routing changes for individual routes or groups of routes were proposed and evaluated. The analyses of these changes and the Commission staff recommendations can be summarized as follows:

1. Two potential extensions of Route No. 1 were considered:

   - One to the north, via Douglas Avenue to a new terminus in the Green Tree Centre at Four Mile Road and Douglas Avenue, in the Town of Caledonia; and

   - One to the north and east, to a new terminus in the Shorecrest Shopping Center at Three Mile Road and Erie Street, in the City of Racine.

   Both options represented reasonable uses of the surplus time available on Route No. 1. The route extension to the Green Tree Centre, however, was recommended in light of its potential for generating higher ridership because of the location of several employers along Douglas Avenue and the major community shopping center at the new route terminus.

2. Two potential extensions of Route No. 2 were considered:

   - One to the eastern edge of the Racine West commercial area, operating over 21st Street, Roosevelt Avenue, and Durand Avenue; and

   - One to the University of Wisconsin-Parkside, operating over the current Route No. 9 alignment south of Taylor Avenue and Meachem Road, allowing Route No. 9 to be discontinued.

   Both extensions were recommended because of the service improvements associated with them. These included providing improved access to the Racine West commercial area, the elimination of a duplication of service along Washington and Taylor Avenues between the alignments of Route No. 9 and those of Route Nos. 4 and 5, and the restoration of 30-minute headways for service to the University of Wisconsin-Parkside.

3. Consideration was given to the conversion of Route No. 3 west of 16th Street and Green Bay Road to a one-way loop by adding a new route segment over 16th Street between Oakes Road and Green Bay Road. The service change was not recommended in light of its potentially adverse affects on the existing passengers using the two-way bus service currently provided on Route No. 3 west of 16th Street and Green Bay Road and the poor potential for the proposed new route segment over 16th Street to generate additional ridership.

4. Consideration was given to modifying the alignments of Route Nos. 3, 4, 6, and 20 to allow the extension of Route No. 4 to the west via Washington Avenue to serve J. I. Case High School and replace service provided by Route No. 20 to the businesses along Washington Avenue and in the Grandview Industrial Park. Adjustments to the alignments of Route Nos. 3 and 6 would also be needed to replace service provided over Route No. 4 in the Racine West commercial area and along portions of Ohio Street. The proposed changes were not recommended because they would entail altering service on some of the most productive segments of the transit system operated by Route Nos. 3 and 4, the two best performing routes of the transit system. Neither the existing ridership levels on Route No. 20 nor input from the businesses served indicated a need for the more frequent bus service which this change would have provided.

5. Consideration was given to two options for modifying the alignment of Route No. 5 to incorporate the service to the University of Wisconsin-Parkside currently provided over Route No. 9, thereby eliminating a duplication of service between the two routes along Taylor Avenue. Neither option, however, was recommended and they were

not viewed as superior to the recommended extension of Route No. 2 to the University of Wisconsin-Parkside.

6. The following two potential alignment options for restructuring and reducing service over Route Nos. 6 and 8 were considered:

   - One proposing the extension of both routes from their current western termini over Ohio Street, 21st Street, Roosevelt Avenue, and Durand Avenue to the Racine West commercial area to create a large loop route operated with two-way service at 60-minute headways instead of the existing 30-minutes headways; and

   - One proposing cutting back service on Route Nos. 6 and 8 to St. Mary's Hospital to create a small loop route operated with two-way service at the existing 30-minute headways and creating a new one-way loop route operated with 60-minute headways between St. Mary's Hospital and the Racine West commercial area using the western segments of Route Nos. 6 and 8 and the extension of these routes proposed under the previous option.

   The restructuring of Route Nos. 6 and 8 as proposed under the first option was recommended in light of a potential decrease in annual operating costs of about $307,000, compared with only about $153,000 under the second option and the indirect travel and longer travel times for existing passengers which would result from the new one-way loop route operated under the second option.

7. Consideration was given to shifting bus trips serving employees at the S. C. Johnson & Son, Inc., Waxdale plant from Route No. 7 to Route No. 20 to reduce running times and alleviate problems with late bus trips that currently exist on Route No. 7. The proposed service change was recommended but only in the short term to correct the current service problems with Route No. 7. The implementation of subscription transit service was recommended to replace the existing bus service provided over Route No. 20 as the long-term solution.

8. Two options for modifying the existing transit service provided in the eastern portion of the Town of Caledonia were considered:

   - Restructuring Route No. 10 to eliminate service over the most unproductive segments of the route south of Four Mile Road and east of Douglas, establishing a new terminus for the shortened route in the Green Tree Centre; and

   - Replacing the existing fixed-route bus service with a demand-responsive shared-ride taxicab service within the existing Route No. 10 service area to be provided by a contract private operator.

   The implementation of demand-responsive shared-ride taxicab service to serve the existing Route No. 10 service area was recommended because it would retain connections for existing Route No. 10 passengers with Route Nos. 2 and 4 at the Shorecrest Shopping Center and would be expected to have a significantly lower operating cost and operating deficit per passenger than the existing or proposed Route No. 10 service.

Changes to Service Schedules and Periods of Operation

Additional service changes directed at the current systemwide scheduling technique, weekday and Saturday service schedules, and the periods of system operation were also considered. The analyses of these changes and the Commission staff recommendations may be summarized as follows:

1. The following two changes to the current routing and scheduling technique used by the Belle Urban System were considered:

   - Relocating the system's common transfer point from its present Monument Square location in the Racine CBD to a different location in the CBD or, possibly, to a location outside the CBD. Retaining a downtown location for the common transfer point was recommended because it would best serve the existing downtown business development and the trips which that development generates; it may also help serve redevelopment efforts in the CBD; and

   - Revising the schedules of the transit system routes to operate with cycle, or "pulse," scheduling to provide for timed transfers between routes at the common transfer point. It was recommended that the system switch to operating with pulse scheduling as timed-transfer connections would be essential to the system if service is to be operated with 60-minute headways as recommended for Route

Nos. 6 and 8 and proposed for weekday middays and evening bus service.

2. The following three potential adjustments to the schedules and service periods for weekday service were considered:

   - Increasing weekday peak-period headways operated on Route Nos. 3, 4, and 7 between Memorial Day and Labor Day from 20 minutes to 30 minutes. The increase in peak-period headways was recommended because an analysis of current passenger loads on the routes indicated the routes could be operated with 30-minute peak-period headways without serious problems with overcrowded buses; the reduction in annual vehicle hours resulting from the service change would reduce annual operating costs by an estimated $203,000, which, in turn, could be applied to an expansion of service;

   - Increasing weekday midday headways from 30 minutes to 60 minutes on Route Nos. 1, 2, 3, 5, and 7. Analysis of the weekday ridership on the affected routes indicated that ridership during the midday period was only about 55 percent of the ridership during peak periods, indicating that midday ridership levels may not justify operation with midday service levels equal to peak period service levels. Increasing weekday midday headways was recommended if it was needed as a cost-saving measure to offset the cost of an improvement or expansion of service desired by the Racine community. The reduction in annual vehicle hours resulting from the increase in midday headways was expected to decrease annual operating costs by about $364,000; and

   - Adding evening service until 11:30 p.m., using either a modified system of eight routes identified as Option A, which would serve virtually all of the City of Racine, or a modified system of six routes identified as Option B, which would serve about 80 percent of the City of Racine. The total cost of adding evening service hours to the transit system, including both fixed-route bus service and Federally-required paratransit service for disabled individuals, was estimated at about $480,000 under Option A and about $340,000 under Option B. The provision of weekday evening bus service as proposed under Option A was recommended in recognition of the more complete coverage of the daytime transit service area provided under Option A, which was considered to be necessary to serve weekday evening travel for work and other purposes.

3. The potential adjustments to the schedules and service period for Saturday service included:

   - Starting service at 8:00 a.m. instead of the current 7:00 a.m. to reduce Saturday service levels in response to low ridership levels during the early morning period. The proposed reduction in Saturday service hours was not recommended because an analysis found that Saturday ridership during the first hour of system operation did not appear to be unreasonably low in comparison with ridership during the rest of the early Saturday morning period.

   - Increasing Saturday headways from the existing 30 minutes to 60 minutes on Route Nos. 1, 2, 3, 5, and 7, either by operating with 60-minute headways throughout the service day or by operating with 60-minute headways only before 10:00 a.m. and after 4:00 p.m. and continuing to operate with the existing 30-minute headways during the middle of the service day. Analysis of the Saturday ridership on the affected routes indicated ridership levels were approximately one-half of weekday ridership levels, indicating that Saturday operation with weekday service levels may not be justified. Increasing Saturday headways to 60 minutes all day was recommended because the reduction in annual vehicle-hours resulting from the increase in operating headways would be expected to decrease annual operating costs by about $113,000, compared with a roughly $41,000 reduction under the second option. The savings could be applied to an expansion of service.

   - Adding Saturday evening service until 9:30 p.m., using either of the modified systems of routes identified as Option A and Option B in the analysis of adding weekday evening service. The total annual operating cost for providing evening service, including the cost of both fixed-route bus service and Federally-required paratransit service for disabled individuals, was estimated at about $80,000 for the system of routes proposed under Option A and about $60,000 for the system of routes proposed under Option B. The provision of

evening service as proposed under Option B was recommended because it was believed the less extensive service coverage provided under Option B would be adequate to serve Saturday evening travel.

4. Consideration was given to adding Sunday and holiday service between 8:00 a.m and 5:00 p.m., using either of the modified systems of routes proposed for providing weekday and Saturday evening transit service. The total annual operating costs for providing service on Sundays and holidays, including costs for both fixed-route bus service and Federally-required paratransit service for disabled individuals, was estimated at about $209,000 for the service as operated under Option A and about $147,000 for the service as operated under Option B. The operation of Sunday service as proposed under Option B was recommended as Sunday and holiday service because the projected efficiency levels for the service, expected to be about two-thirds the levels observed for weekdays and about the same as those expected for weekday middays and Saturdays.

Advisory Committee Recommendations

After careful review of the proposed transit service changes and their projected impacts on annual systemwide ridership, operating costs, and local funding requirements, the Advisory Committee determined that it should accept all the Commission staff recommendations concerning the proposed adjustments to existing route alignments and all the staff recommendations concerning changes to service schedules and periods of operation except those proposing the provision of transit service on Saturday evenings and on Sundays and holidays. The Advisory Committee also modified Commission staff recommendations pertaining to the operation of weekday evening bus service, recommending that service be provided until 12:30 a.m., instead of 11:30 a.m. as originally proposed, and the 7:00 a.m. starting time for Saturday service, recommending instead a 6:00 a.m. start.

THE RECOMMENDED PLAN

Service Changes

The transit system development plan for the City of Racine Belle Urban System as recommended by the Racine Area Public Transit Planning Advisory Committee calls for a number of changes in existing alignments and schedules of the Belle Urban System. These service changes, which are identified in Table 75 and on Map 40 in Chapter VIII, are proposed to be implemented by the start of the second quarter of 1998 and include:

- Routing Adjustments
  The plan recommends adjustments in the current alignments of Route Nos. 1 through 4 and 6 through 9. The changes would provide direct access for City of Racine residents to the Green Tree Centre, a major community shopping center at the intersection of Four Mile Road and Douglas Avenue, in the Town of Caledonia; provide improved access to the Racine West commercial area by creating a minihub on Roosevelt Avenue between 21st Street and Durand Avenue where connections between Route Nos. 2, 4, 6, 7, and 8 could be made; and restore 30-minute peak-period headways on service to the University of Wisconsin-Parkside while eliminating a duplication of service between the alignments of Route Nos. 4, 5 and 9 along Washington and Taylor Avenues. Some changes to Route Nos. 3 and 4 would also be necessary to enable operation of the routes with pulse scheduling, as discussed below.

- Replacement of Bus Services
  The plan also proposes replacing existing bus services with low ridership with other transit services. Fixed-route bus service provided by Route No. 10 in the Town of Caledonia would be replaced with a demand-responsive shared-ride taxicab service that would serve the same area and operate during the same periods and on the same days as the existing bus route. The bus service provided by Route No. 20 to the businesses west of the City located along Washington Avenue (STH 20) in the Town of Mt. Pleasant and in the Grandview Industrial Park in the Town of Yorkville would be replaced by subscription transit service. Such service is also envisioned to be used to provide access to other major employment concentrations which are currently unserved by, or difficult to serve with, existing City bus routes.

- Scheduling Changes
  Changes to service schedules would be made to reduce service levels on the routes of the transit system with the lowest ridership and on the system as a whole during periods when existing ridership levels do not justify operation with the current headways. These service reductions include increasing headways on Route Nos. 6 and 8 from 30 minutes to 60 minutes at all times of operation; increasing weekday peak-period headways on Route Nos. 3, 4, and 7 between Labor Day and Memorial Day from 20 minutes to 30 minutes; and increasing headways on Route Nos. 1, 2, 3, 5, and 7 from 30 minutes to

60 minutes during weekday midday periods and all day on Saturdays.

- Use of Pulse Scheduling
  The plan proposes changing the current scheduling technique used by the Belle Urban System to incorporate the use of cycle, or "pulse," scheduling when the above scheduling changes are implemented. This will allow the transit system to furnish convenient, timed-transfer connections between bus routes at the common transfer point in downtown Racine. Providing for such a timed transfer will be essential when bus service operates with 60-minute headways.

- Expansion of Service Periods
  Under the recommended plan, the savings generated by the service reductions described above would be used to expand the service hours for the City's fixed-route bus service and the City's paratransit service for disabled persons into new periods on weekdays and Saturdays which are outside the existing transit system hours of operations. The plan proposes adding weekday evening service between approximately 7:00 p.m. and 12:30 a.m., using a modified system of routes serving principally the City of Racine. The starting time for Saturday service would also be moved up to 6:00 a.m. from the current starting time of 7:00 a.m.

Central Transfer Terminal

A central transfer terminal of sufficient size to accommodate simultaneously the vehicles from all the routes serving downtown will be needed to serve as the focus of the transit system with pulse scheduling. The plan proposes that the exiting common transfer point at Monument Square continue to be used on an interim basis until the new facility can be developed at a different location by late 1999 or early 2000. After reviewing information on seven alternative downtown site locations, the Advisory Committee recommended that a site in the middle of the block bounded by Park Avenue, Water Street, College Avenue, and 6th Street be included in the plan as the preferred site for the central transfer terminal.

Fares

The plan proposes fare increases in 2000 and again in 2002, raising the base adult cash fare by 10 cents per one-way trip in each of those years in order for fares to keep pace with anticipated increases in operating expenses, thereby maintaining a stable farebox recovery rate. Base adult cash fares for the transit system would, consequently, increase from the current $1.00 per one-way trip to $1.20 per one-way trip by the end of the planning period. Fares in other categories and charges for monthly passes would increase by similar proportions. The transit system would also charge $0.25 per one-way trip above the cash fares for regular bus service for the two premium services which have been recommended, the demand-responsive shared-ride taxicab service for the Town of Caledonia proposed to replace Route No. 10 and the subscription transit service proposed to replace Route No. 20.

Improvements to Wisconsin Coach Lines, Inc., Bus Service

The plan recommends that action should be taken to improve the existing Wisconsin Coach Lines, Inc., bus service between the Cities of Milwaukee, Racine, and Kenosha. The current schedules and indirect routing of the service were identified by the Advisory Committee as discouraging use of the service. The Advisory Committee recommended that the Regional Planning Commission work with the Cities of Racine and Kenosha, the two principal communities served by the existing service, to identify improvements to the existing commuter service.

PLAN PERFORMANCE AND COST

With the recommended service changes, the Belle Urban System would operate an average of about 92,700 revenue vehicle-hours of service annually, a reduction of about 6,700 vehicle-hours, or about 7 percent, from the existing 1997 levels. The average annual ridership on the recommended system of about 1,337,600 revenue passengers would be about 7 percent below the average annual ridership levels that would be expected by maintaining without change the existing system over the planning period. It represents the net effects of the recommended service changes, which included both reductions in operating headways and increases in passenger fares.

The total average annual cost of the recommended transit service is estimated at about $5,816,800, of which about 20 percent may be expected to be recovered by operating revenues. The required subsidy would amount to about $4,644,500, of which about $3.4 million, or about 73 percent, may be expected to be covered by Federal and State funds, assuming no significant changes in Federal and State transit aid programs. The total local subsidy for the recommended plan would amount to about $1.2 million, which would be about 7 percent less than for the existing transit system over the period and about 2 percent less than the total local funding provided for the transit system during 1997.

PLAN IMPLEMENTATION

Following adoption of the transit system development plan, the City of Racine will have the primary responsibility for plan implementation. The Advisory Committee made the following recommendations concerning the implementation actions to be followed by the City:

- Refinement of Service Changes
  Transit management staff, with the advice or assistance of City staff and subject to the approval of the Transit and Parking Commission, will need to develop a detailed operating plan by late 1997 or early 1998 which refines the recommended routing adjustments, scheduling changes, and expansion of weekday and Saturday service periods for the Belle Urban System. As part of this process, the City should review the actual levels of Federal and State transit assistance available to the City during 1998, because the plan assumed no significant changes from 1997 Federal and State funding levels. Increases in Federal funds from the assumed levels could enable the City to implement the recommended expansion of service without implementing all of the recommended service reductions.

- Public Hearing
  To comply with Federal regulations, the City will need to conduct a public hearing after it has refined the plan recommendations in order to identify a more detailed set of service changes for 1998.

- Caledonia Shared-Ride Taxicab Service
  The transit management staff, with the advice or assistance of City staff and subject to the approval of the Transit and Parking Commission, will need to negotiate with the Town of Caledonia for the conversion of the fixed-route bus service provided within the eastern portion of the Town by Route No. 10 to a demand-responsive shared-ride taxicab service. A competitive procurement process should be undertaken to select a private sector firm to operate the taxicab service beginning in the second quarter of 1998, if possible.

- Subscription Transit Service
  The transit management staff, with the advice or assistance of City staff and subject to the approval of the Transit and Parking Commission, will need to negotiate with private-sector agencies and firms for the conversion of the fixed-route bus service provided by Route No. 20 in the Washington Avenue (STH 20) corridor to a subscription transit service for employees at the major employers in this corridor, with service to begin in the second quarter of 1998, if possible. The private sector would need to be willing to commit to providing the requisite local funding to implement and maintain continued operation of the subscription transit services. The City would determine the design of the subscription services to be provided, decide whether they should be directly provided by the Belle Urban System using conventional City buses or via a contract with a private sector firm using smaller vehicles; and, possibly, undertake a competitive procurement process to select a private operator.

- Central Transfer Terminal
  The City should construct a central transfer terminal in the CBD to serve as the focus of the transit system with pulse scheduling. As initial steps, the City will need to include funds for the project in its 1998 budget and should immediately apply for the Federal transit assistance funds needed to support the design and construction of the terminal. A site study should be undertaken in early 1998 to review potential locations for the facility.

CONCLUSIONS

The transit system development plan for the City of Racine Belle Urban System recommended by the Advisory Committee addresses the need for expansion of transit services in the Racine area into new periods, in particular, on weekday evenings. To limit potential increases in local property taxes attendant to the costs of the service expansion, and given the uncertainty of future funding levels from Federal and State transit assistance programs, the plan balances the costs of service expansion with savings generated from service reductions. The service reductions identified by the Advisory Committee take the form of increases in headways on the routes of the transit system with the lowest riderships and on the system as a whole during periods when existing ridership levels did not, in the Committee's opinion, justify operation with the current headways. The relatively stable local costs for the system under the plan would represent a successful effort on the part of the Advisory Committee to provide the needed service expansion without adding to the costs of system operation or affecting the most productive components of the existing service.

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APPENDICES

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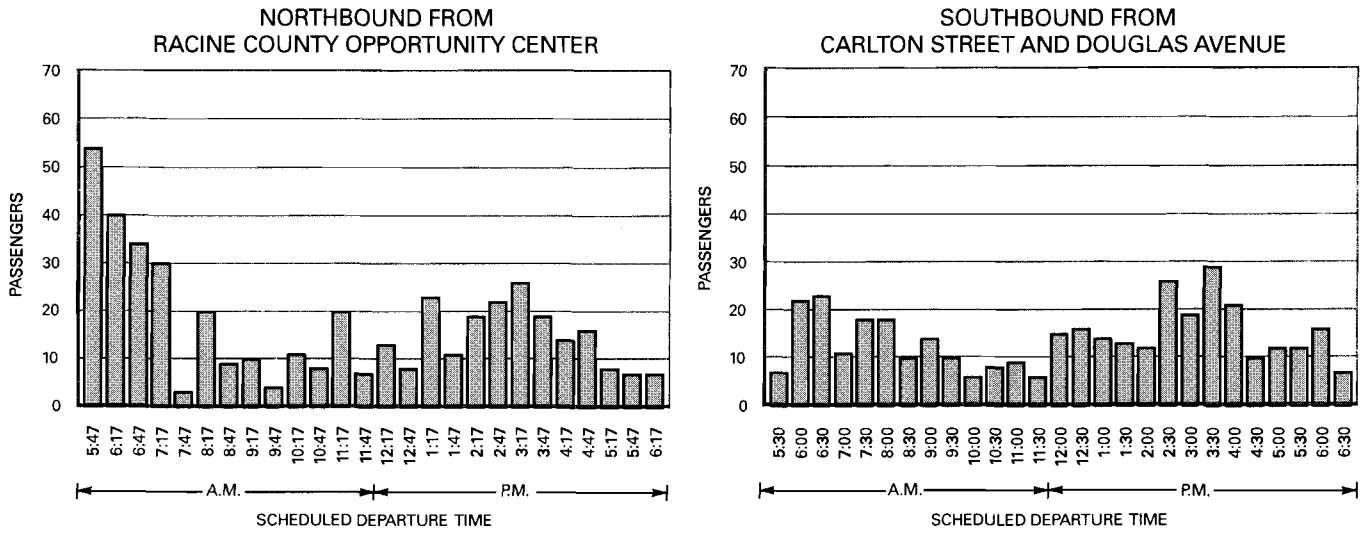
APPENDIX A

WEEKDAY BOARDING PASSENGERS BY BUS RUN ON THE REGULAR ROUTES OF THE BELLE URBAN SYSTEM: OCTOBER 8-10, 1996

Figure A-1

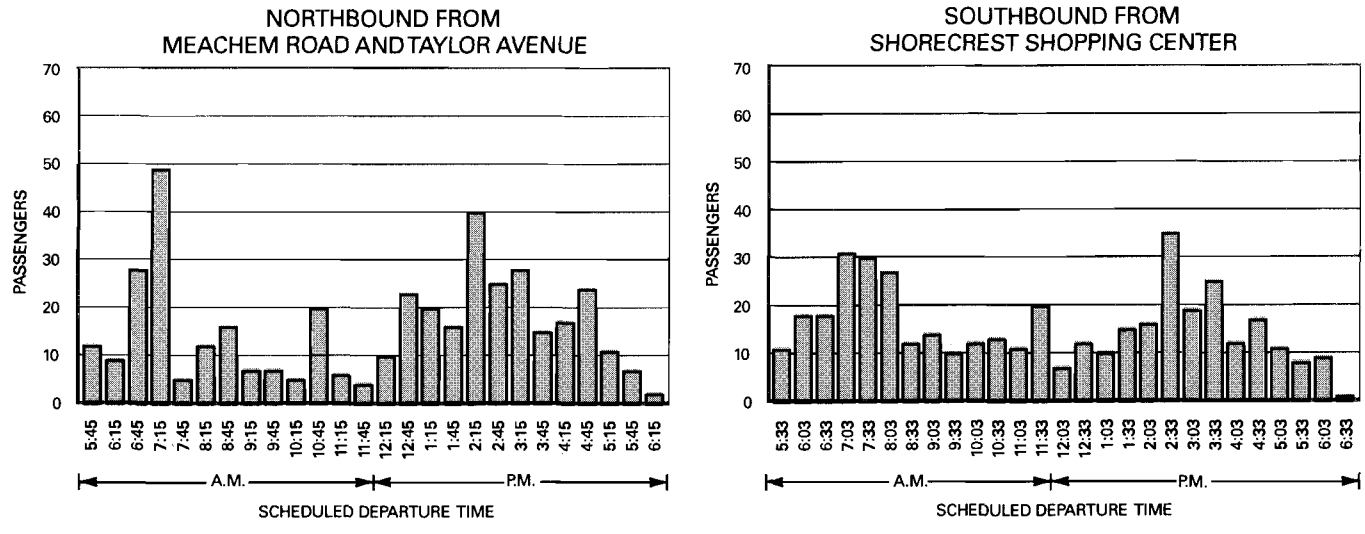
WEEKDAY BOARDING PASSENGERS ON ROUTE NO. 1



Source: SEWRPC.

Figure A-2

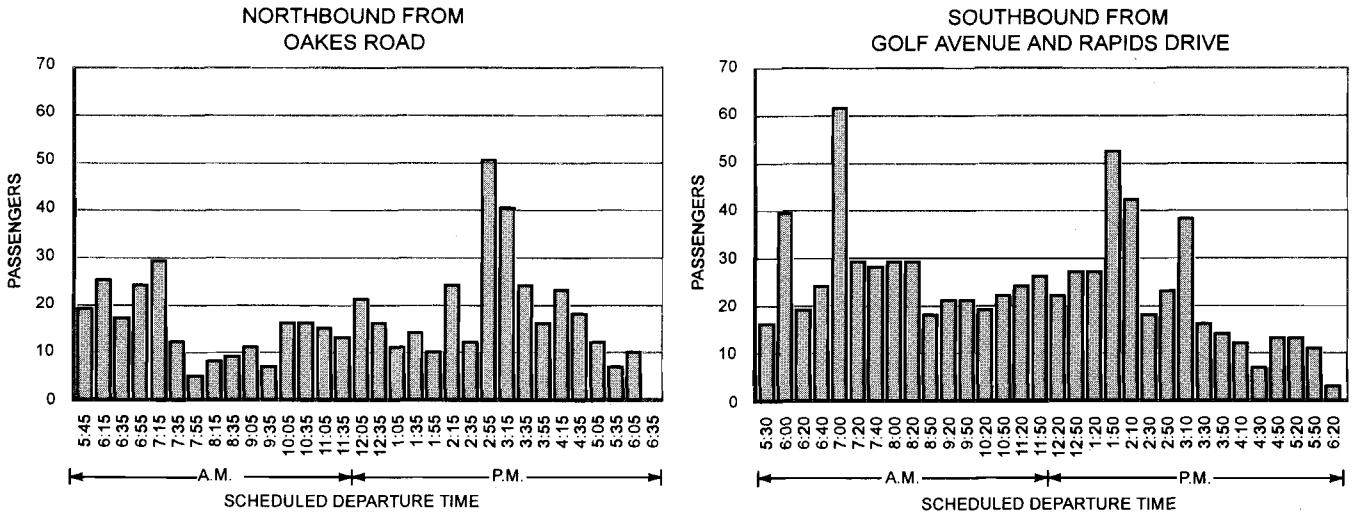
WEEKDAY BOARDING PASSENGERS ON ROUTE NO. 2



Source: SEWRPC.

Figure A-3

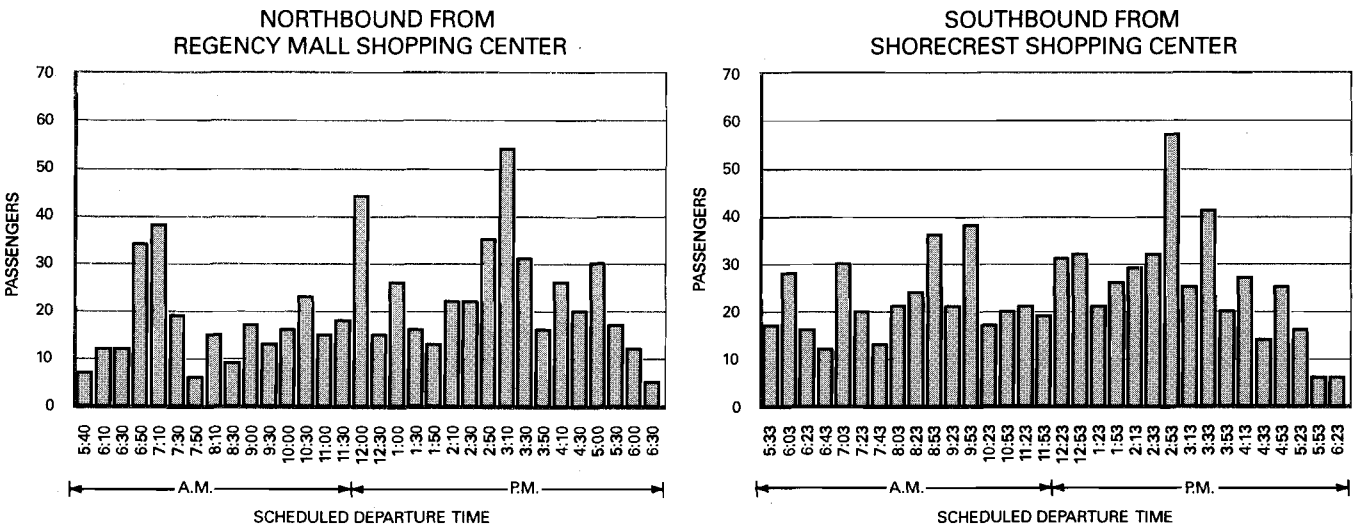
WEEKDAY BOARDING PASSENGERS ON ROUTE NO. 3



Source: SEWRPC.

Figure A-4

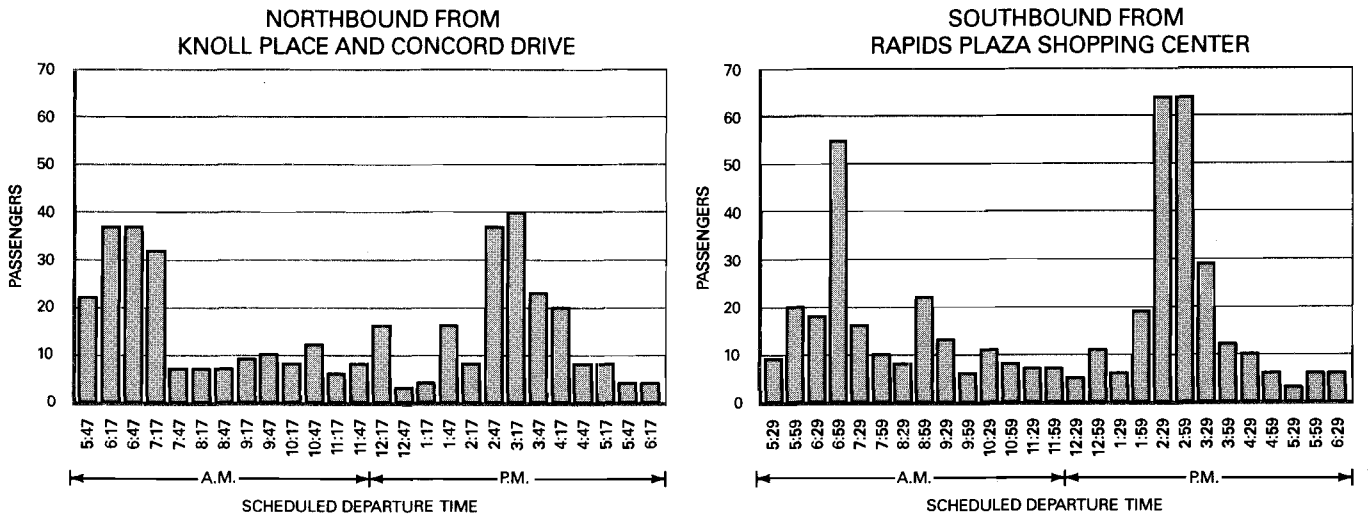
WEEKDAY BOARDING PASSENGERS ON ROUTE NO. 4



Source: SEWRPC.

Figure A-5

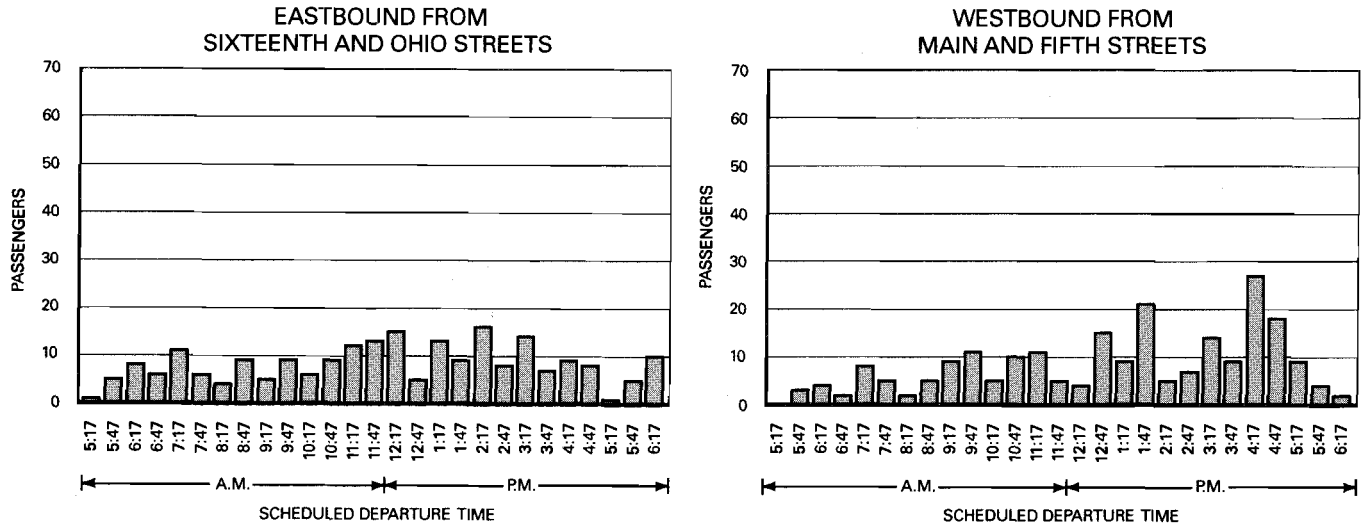
WEEKDAY BOARDING PASSENGERS ON ROUTE NO. 5



Source: SEWRPC.

Figure A-6

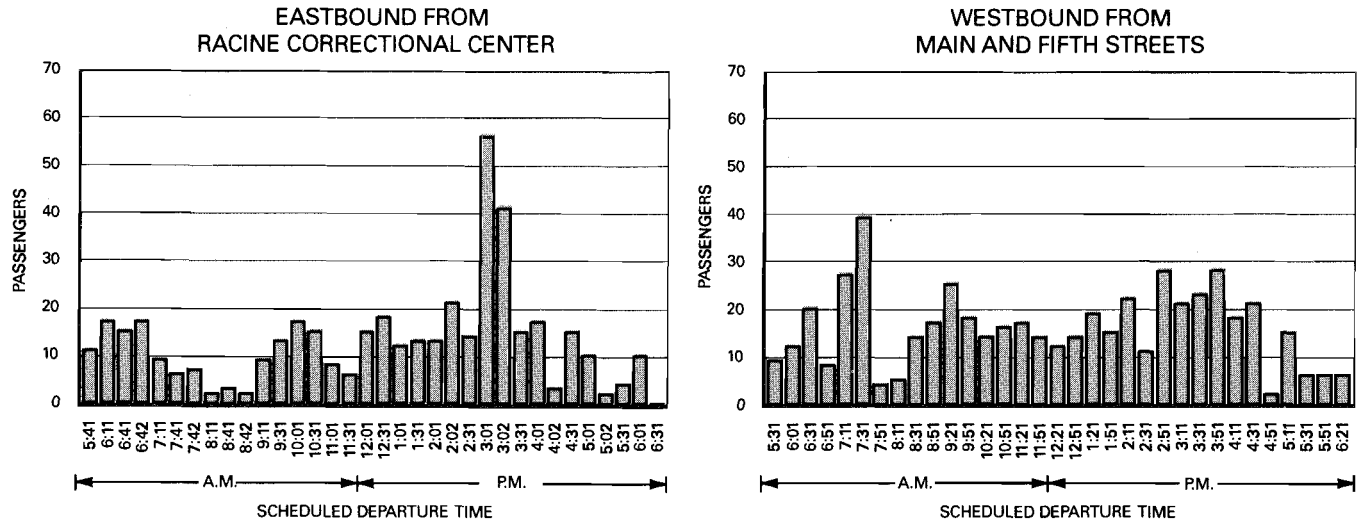
WEEKDAY BOARDING PASSENGERS ON ROUTE NO. 6



Source: SEWRPC.

Figure A-7

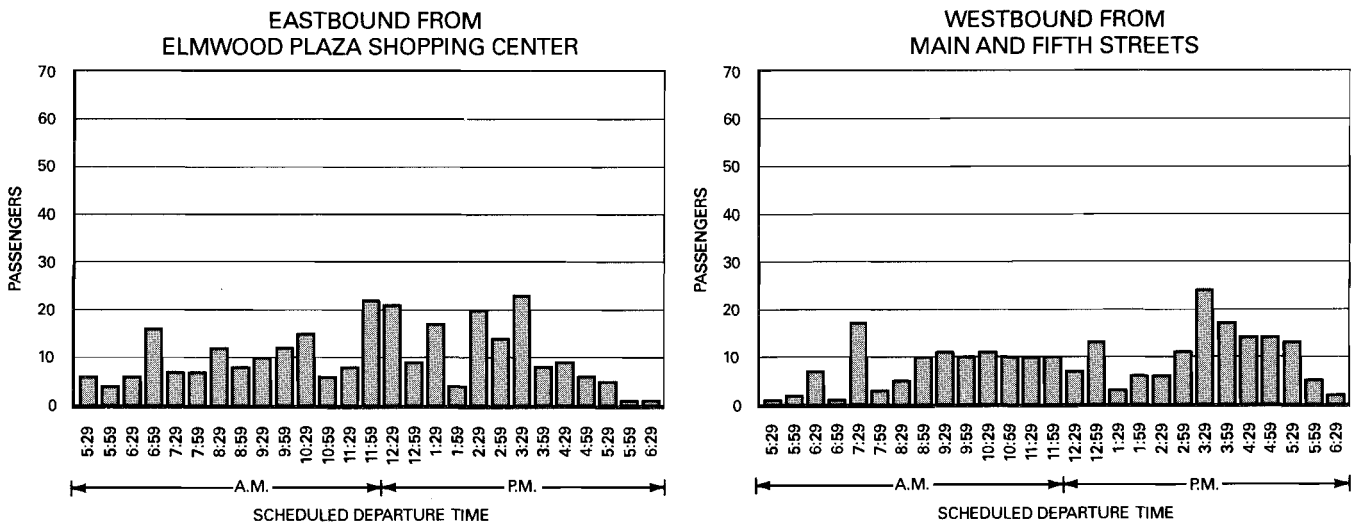
WEEKDAY BOARDING PASSENGERS ON ROUTE NO. 7



Source: SEWRPC.

Figure A-8

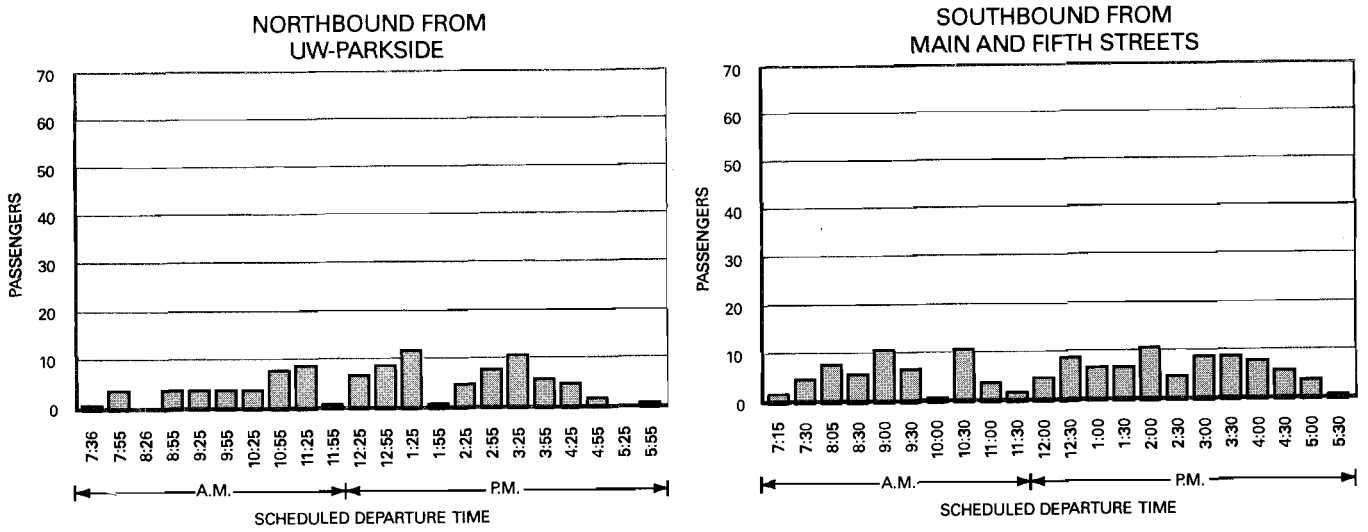
WEEKDAY BOARDING PASSENGERS ON ROUTE NO. 8



Source: SEWRPC.

Figure A-9

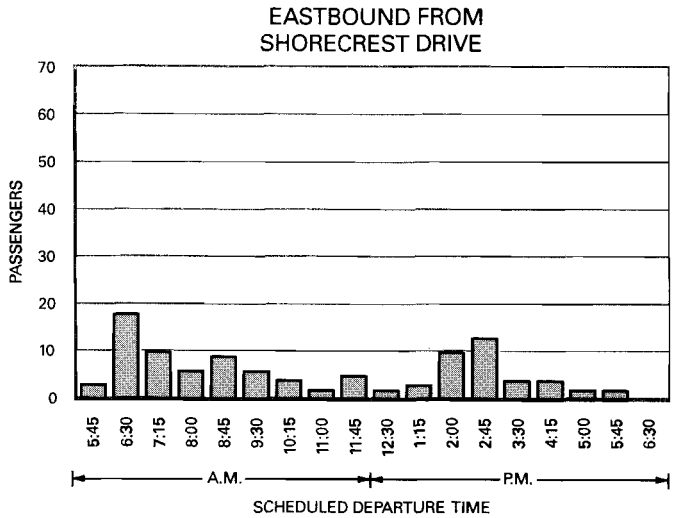
WEEKDAY BOARDING PASSENGERS ON ROUTE NO. 9



Source: SEWRPC.

Figure A-10

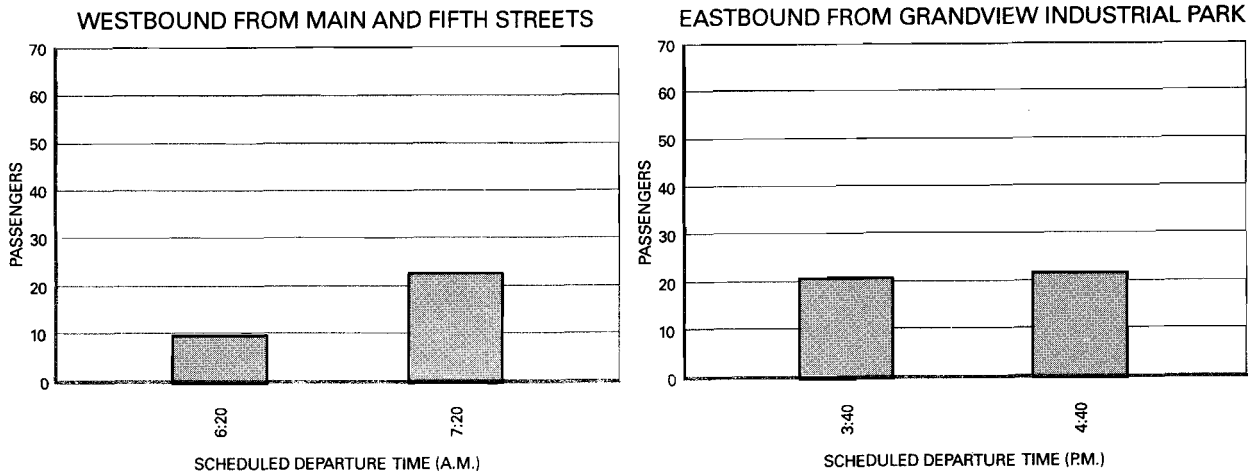
WEEKDAY BOARDING PASSENGERS ON ROUTE NO. 10



Source: SEWRPC.

Figure A-11

WEEKDAY BOARDING PASSENGERS ON ROUTE NO. 20



Source: SEWRPC.

Appendix B

DETAILED PROJECTIONS OF RIDERSHIP AND COSTS FOR THE BELLE URBAN SYSTEM UNDER THE RECOMMENDED PLAN: 1998-2002

Table B-1

PROJECTED ANNUAL RIDERSHIP AND FINANCIAL PERFORMANCE FOR THE BELLE URBAN SYSTEM WITH THE EXISTING TRANSIT SYSTEM: 1998-2002

Operating Characteristic	Estimated 1997	Projected[a]					
		1998	1999	2000	2001	2002	Average Annual
Service and Ridership							
Revenue vehicle-hours of service provided	99,400	99,400	99,400	99,400	99,400	99,400	99,400
Revenue passengers	1,506,000	1,491,000	1,476,000	1,427,000	1,413,000	1,371,000	1,435,600
Passengers per vehcicle-hour	15.2	15.0	14.8	14.4	14.2	13.8	14.4
Service Cost							
Operating expenses	$4,798,000	$4,966,000	$5,140,000	$5,320,000	$5,506,000	$5,699,000	$5,326,200
Operating revenue	1,220,300	1,208,000	1,195,700	1,270,800	1,258,200	1,331,600	1,252,900
Operating deficit	3,577,700	3,758,000	3,944,300	4,049,200	4,247,800	4,367,400	4,073,300
Percent of expenses recovered through operating revenues	25.4	24.3	23.3	23.9	22.9	23.4	23.5
Anticipated Sources of Subsidy							
Federal	$ 674,800	$ 678,200	$ 682,000	$ 685,800	$ 689,800	$ 694,000	$ 686,000
State	1,973,500	2,078,000	2,150,800	2,226,100	2,303,900	2,384,700	2,228,700
Local	929,400	1,001,800	1,111,500	1,137,300	1,254,100	1,288,700	1,158,600
Per Trip Data							
Operating cost	$3.19	$3.33	$3.48	$3.73	$3.90	$4.16	$3.71
Operating revenue	0.81	0.81	0.81	0.89	0.89	0.97	0.87
Operating deficit	2.38	2.52	2.67	2.84	3.01	3.19	2.84

[a] *The following assumptions were made in preparing the annual projections of ridership, revenues and costs:*

1. *A 3.5 percent per year increase in operating expenses per unit of service.*
2. *The 10 percent fare increase in 2000, raising base adult cash fare from $1.00 to $1.10 per trip, will decrease annual system ridership by 3.3 percent.*
3. *The 9 percent fare increase in 2002, raising base adult cash from $1.10 to $1.20 per trip, will decrease annual system ridership by 3.0 percent.*
4. *Federal operating assistance, including the capital maintenance component of operating costs, will not keep pace with inflation and will decrease from about 14 percent of operating costs in 1998 to about 13 percent of operating costs by 2002.*
5. *State operating assistance will be adjusted to cover about 43 percent of operating expenses over the period.*

Source: SEWRPC.

Table B-2

CAPITAL PROJECT EXPENDITURES REQUIRED FOR THE BELLE URBAN SYSTEM TO MAINTAIN THE EXISTING 1997 TRANSIT SYSTEM: 1998-2002

Year	Quantity	Capital Equipment or Project Description	Unit Cost[a]	Total Cost[a]	Average Annual
1998		Kentucky Street Operating Garage Modifications and Equipment			
	--	New security system for both garage buildings	--	$ 25,000	$ 5,000
	--	Improve and repair roof and electrical system	--	90,000	18,000
	--	Update fire sprinkler system	--	75,000	15,000
	--	Replacement of lighting in both garages	--	55,000	11,000
	--	Replacement of bus washer	--	80,000	16,000
	--	Miscellaneous tools and equipment[b]	--	103,500	20,700
	--	Operating Facility Replacement Study	--	5,000	1,000
	--	Purchase Transmission Jacks for RTS Buses	--	4,000	800
	--	Replace Telephone System	--	15,000	3,000
		Subtotal	--	$ 452,500	$ 90,500
1999	--	Modify Fare System for Passenger Counting	--	$ 60,000	$ 12,000
	1	Replace and Relocate Radio Antenna	$ 50,000	50,000	10,000
		Subtotal	--	$ 110,000	$ 22,000
2000	1	Route Supervisor's Automobile	$ 18,000	$ 18,000	$ 3,600
	9	35-Foot-Long, Air-Conditioned Urban Transit Coaches Equipped with Wheelchair Lifts or Ramps	275,000	2,475,000	495,000
		Subtotal	--	$2,493,000	$ 498,600
2001	8	35-Foot-Long, Air-Conditioned Urban Transit Coaches Equipped with Wheelchair Lifts or Ramps	$285,000	$2,280,000	$ 456,000
2002	960	Replacment Bus Stop Signs (installed)	$ 75	$ 72,000	$ 14,400
	1	Service Truck	45,000	45,000	9,000
		Subtotal	--	$ 117,000	$ 23,400
Total Capital Project Costs			--	$5,452,500	$1,090,500
Federal Share of Costs[c]			--	4,362,000	872,400
Local Share of Costs[d]			--	1,090,500	218,100

[a] *Assumes increases in capital and planning costs of 3.5 percent per year.*

[b] *Miscellaneous tools and equipment including the following: replacement of riding sweeper, purchase of tire changing unit, replacement of bus and engine hoists, and purchase of portable generator.*

[c] *Assumes 80 percent of eligible capital costs could be funded through the Federal Transit Administration Section 5309 capital or 5307 formula grant programs.*

[d] *Includes the 20 percent local matching funds required under the Federal Transit Administration grant programs.*

Source: City of Racine Department of Transportation and SEWRPC.

Table B-3

PROJECTED ANNUAL RIDERSHIP AND FINANCIAL PERFORMANCE FOR THE BELLE URBAN SYSTEM UNDER THE RECOMMENDED TRANSIT SYSTEM DEVELOPMENT PLAN: 1998-2002

Operating Characteristic	Estimated 1997	Projected[a] 1998	1999	2000	2001	2002	Average Annual
Service and Ridership							
Revenue Vehicle-Hours of Service Provided							
Fixed-route bus	99,400	89,300	84,800	84,800	84,800	84,800	85,700
Shared-ride taxicab	--	5,600	7,400	7,400	7,400	7,400	7,000
Total System	99,400	94,900	92,200	92,200	92,200	92,200	92,700
Revenue Passengers							
Fixed-route bus	1,506,000	1,370,000	1,327,000	1,283,000	1,296,000	1,257,000	1,306,600
Shared-ride taxicab	--	23,000	33,000	32,000	34,000	33,000	31,000
Total System	1,506,000	1,393,000	1,360,000	1,315,000	1,330,000	1,290,000	1,337,600
Passengers per Vehcicle-Hour							
Fixed-route bus	15.2	15.3	15.6	15.1	15.3	14.8	15.2
Shared-ride taxicab	--	4.1	4.5	4.3	4.6	4.5	4.4
Total System	15.2	14.7	14.8	14.3	14.4	14.0	14.4
Service Cost							
Operating expenses	$4,798,000	$4,754,000	$4,798,000	$4,964,000	$5,136,000	$5,314,000	$4,993,200
Operating revenue	1,220,300	1,131,900	1,106,500	1,175,300	1,189,300	1,258,400	1,172,300
Operating deficit	3,577,700	3,622,100	3,691,500	3,788,700	3,946,700	4,055,600	3,820,900
Percent of expenses recovered through operating revenues	25.4	23.8	23.1	23.7	23.2	23.7	23.5
Anticipated Sources of Subsidy							
Federal	$ 674,800	$ 654,800	$ 658,800	$ 662,000	$ 666,200	$ 669,500	$ 662,300
State	1,973,500	1,990,900	2,010,200	2,079,900	2,151,700	2,226,500	2,091,800
Local	929,400	976,400	1,022,500	1,046,800	1,128,800	1,159,600	1,066,800
Per Trip Data							
Operating cost	$3.19	$3.41	$3.53	$3.77	$3.86	$4.12	$3.73
Operating revenue	0.81	0.81	0.82	0.89	0.89	0.98	0.87
Operating deficit	2.38	2.60	2.71	2.88	2.97	3.14	2.86

[a] *The following assumptions were made in preparing the annual projections of ridership, revenues and costs:*

1. A 3.5 percent per year increase in operating expenses per unit of service.

2. The 10 percent fare increase in 2000, raising base adult cash fares from $1.00 to $1.10 per trip, will decrease annual system ridership by 3.3 percent.

3. The 9 percent fare increase in 2002, raising base adult cash fares from $1.10 to $1.20 per trip, will decrease annual system ridership by 3.0 percent.

4. Federal operating assistance, including the capital maintenance component of operating costs, will not keep pace with inflation and will decrease from about 14 percent of operating costs in 1998 to about 13 percent of operating costs by 2002.

5. State operating assistance will be adjusted to cover about 43 percent of operating expenses over the period.

Source: SEWRPC.

Table B-4

CAPITAL PROJECT EXPENDITURES REQUIRED FOR THE BELLE URBAN SYSTEM UNDER THE RECOMMENDED PLAN: 1998-2002

Year	Quantity	Capital Equipment or Project Description	Unit Cost	Total Cost[a]	Average Annual
1998		Kentucky Street Operating Garage Modifications and Equipment			
	--	New security system for both garage buildings	--	$ 25,000	$ 5,000
	--	Improve and repair roof and electrical system	--	90,000	18,000
	--	Update fire sprinkler system	--	75,000	15,000
	--	Replacement of lighting in both garages	--	55,000	11,000
	--	Replacement of bus washer	--	80,000	16,000
	--	Miscellaneous tools and equipment[b]	--	103,500	20,700
	--	Operating Facility Replacement Study	--	5,000	1,000
	--	Purchase Transmission Jacks for RTS Buses	--	4,000	800
	--	Replace Telephone System	--	15,000	3,000
	--	Design and Construction of Central Transfer Terminal[c]	--	1,225,000	245,000
		Subtotal	--	$1,677,500	$335,500
1999	--	Modify Fare System for Passenger Counting	--	$ 60,000	$ 12,000
	1	Replace and Relocate Radio Antenna	$ 50,000	50,000	10,000
		Subtotal	--	$ 110,000	$ 22,000
2000	1	Route Supervisor's Automobile	$ 18,000	$ 18,000	$ 3,600
	8	35-Foot-Long, Air-Conditioned Urban Transit Coaches Equipped with Wheelchair Lifts or Ramps	275,000	2,200,000	440,000
		Subtotal	--	$2,218,000	$443,600
2001	--	--	--	--	--
2002	900	Replacment Bus Stop Signs (installed)	$ 75	$ 67,500	$ 13,500
	1	Service Truck	45,000	45,000	9,000
		Subtotal	--	$ 112,500	$ 22,500
Total Capital Project Costs			--	$4,118,000	$823,600
Federal Share of Costs[d]			--	3,294,400	658,900
Local Share of Costs[e]			--	823,600	164,700

[a] *Assumes increases in capital and planning costs of 3.5 percent per year.*

[b] *Miscellaneous tools and equipment including the following: replacement of riding sweeper, purchase of tire changing unit, replacement of bus and engine hoists, and purchase of portable generator.*

[c] *Costs include $25,000 for a study of alternative downtown site locations in 1998.*

[d] *Assumes 80 percent of eligible capital costs could be funded through the Federal Transit Administration Section 5309 capital or 5307 formula grant programs.*

[e] *Includes the 20 percent local matching funds required under the Federal Transit Administration grant programs.*

Source: City of Racine Department of Transportation and SEWRPC.

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