



A TRANSPORTATION SYSTEM PLAN FOR THE BLUE MOUND ROAD (USH 18) CORRIDOR

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COMMUNITY ASSISTANCE PLANNING REPORT
NUMBER 151

A TRANSPORTATION SYSTEM PLAN FOR
THE BLUE MOUND ROAD (USH 18) CORRIDOR

Prepared by the
Southeastern Wisconsin Regional Planning Commission
P. O. Box 1607
Old Courthouse
916 N. East Avenue
Waukesha, Wisconsin 53187-1607

December 1987

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December 21, 1987

Mr. Ronald F. Fiedler, Secretary
Wisconsin Department of Transportation
4802 Sheboygan Avenue
Madison, Wisconsin 53702

Ms. Kathryn C. Bloomberg, Mayor
City of Brookfield
Brookfield City Hall
2000 N. Calhoun Road
Brookfield, Wisconsin 53005

Dear Mr. Fiedler and Ms. Bloomberg:

In August 1986, the Secretary of the Wisconsin Department of Transportation and the Mayor of the City of Brookfield requested the Southeastern Wisconsin Regional Planning Commission to undertake a reevaluation of the regional transportation system plan as that plan related to the Blue Mound Road corridor. The reevaluation was requested because the rapid changes in land development taking place within the corridor were perceived as creating massive traffic congestion, and a need for extensive roadway improvements beyond those currently planned. The reevaluation was also needed to assist the City in considering alternative land use plans for a portion of the corridor, and to assist the Department in considering the need for additional interchanges on the East-West Freeway (IH 94).

The requested reevaluation has now been completed, and the findings and recommendations are presented in this report. The recommended transportation system plan is based upon an agreed-upon land use plan, and identifies all improvements to the arterial street system needed to meet current and probable future needs to the year 2010, including required new streets and street extensions, required street widenings to provide additional traffic lanes, and required freeway improvements, including an additional freeway interchange with the surface arterial street system.

A Task Force was created by the Southeastern Wisconsin Regional Planning Commission to guide the plan reevaluation work. The Task Force was composed of elected and appointed officials representing each of the concerned and affected municipalities within the corridor, Waukesha County, and the Wisconsin Department of Transportation. The findings and recommendations of the plan reevaluation were carefully reviewed and approved by the Task Force on September 3, 1987.

The recommended transportation system plan set forth in this report is commended to the cities, villages, and towns concerned; to Waukesha County; and to the Wisconsin Department of Transportation for consideration and, hopefully, for adoption and implementation. Such implementation would permit planned population growth and anticipated economic and land use development within the corridor to proceed, while abating traffic congestion and increasing the safety and efficiency of the transportation system.

Sincerely,



Kurt W. Bauer
Executive Director

cc: Betty J. Cooper, Chairperson, Waukesha County Board
Timothy K. Tully, Mayor, City of New Berlin
Paul G. Vrakas, Mayor, City of Waukesha
James A. Brundahl, Mayor, City of Wauwatosa
Dr. Frank A. Urban, President, Village of Elm Grove
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Robert J. Wargowski, Chairman, Town of Brookfield
Brendt J. Redford, Chairman, Town of Pewaukee

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TABLE OF CONTENTS

| | Page |
|--|------|
| CHAPTER I - INTRODUCTION..... | 1 |
| CHAPTER II - LAND USE..... | 5 |
| Introduction..... | 5 |
| Existing and Planned Future Conditions Within the Corridor..... | 5 |
| Alternative Land Use Plans--Portion of the Corridor Lying West of Moorland Road and East of Brookfield Road..... | 13 |
| Selection of Preliminary Land Use Plan..... | 21 |
| Summary | 21 |
| CHAPTER III - FORECAST TRANSPORTATION NEEDS AND ALTERNATIVE TRANSPORTATION PLANS..... | 25 |
| Introduction..... | 25 |
| Trip Generation..... | 25 |
| Existing Arterial Street and Highway System..... | 26 |
| Existing and Forecast Traffic Volume and Congestion Within the Corridor..... | 28 |
| Consideration of Alternative Transportation System Improvements..... | 31 |
| Evaluation of New Freeway Interchanges..... | 31 |
| Evaluation of New Freeway Interchanges Between Moorland Road and Goerke's Corners..... | 34 |
| Evaluation of New Freeway Interchanges Between STH 100 and Moorland Road..... | 49 |
| Evaluation of New Freeway Interchanges Between Goerke's Corners and STH 164 Interchange..... | 51 |
| Summary and Recommendation..... | 51 |
| Wisconsin Department of Transportation Review of Interchange Alternatives Between Moorland Road and Goerke's Corners..... | 63 |
| Task Force Recommendation of New Interchange Between Moorland Road and Goerke's Corners..... | 68 |
| Alternative Arterial System Plan with Split Interchange..... | 69 |
| Recommended Jurisdictional Classification of Arterial Streets and Highways..... | 70 |
| Alternative Arterial System Plan with Interchange at Brookfield Road..... | 78 |
| Recommended Jurisdictional Classification of Arterial Streets and Highways Under the Alternative Transportation Plan with a Brookfield Road Interchange..... | 85 |
| Alternative Arterial System Plan with Interchange at Calhoun Road..... | 90 |
| Recommended Jurisdictional Classification of Arterial Streets and Highways Under the Alternative Transportation Plan with a Calhoun Road Interchange..... | 95 |
| Alternative Arterial System Plan with No New Interchange..... | 98 |
| Recommended Jurisdictional Classification of Arterial Streets and Highways Under the Alternative Transportation Plan with No New Interchange..... | 101 |

| | Page |
|--|------|
| Comparison of Alternative Arterial System Plans..... | 101 |
| Summary and Conclusions..... | 110 |
| CHAPTER IV - RECOMMENDED TRANSPORTATION PLAN..... | 115 |
| Introduction..... | 115 |
| Recommended Arterial Street System Improvements..... | 115 |
| Recommended Jurisdictional Classification of Arterial Streets and Highways..... | 122 |
| Summary and Conclusions..... | 123 |
| CHAPTER V - SUMMARY AND CONCLUSIONS..... | 127 |
| Existing and Future Land Use..... | 128 |
| Alternative and Recommended Transportation Plans..... | 129 |

LIST OF TABLES

| Table | | Page |
|-------------|---|------|
| Chapter II | | |
| 1 | Historical and Planned Land Use Within the Corridor: 1963, 1970, 1985, and 2010..... | 10 |
| 2 | Historical and Forecast Employment, Household, and Population Levels Within the Corridor: 1963, 1970, 1980, 1985, and 2010..... | 14 |
| 3 | Existing 1985 and Forecast 2010 Employment, Household, and Population in Subareas of the Corridor..... | 16 |
| 4 | Existing 1985 and Forecast 2010 Employment, Households, and Population Within the Blue Mound Road (USH 18) Corridor by Community..... | 16 |
| Chapter III | | |
| 5 | Estimated Historical 1963 and 1970, Existing 1985, and Forecast Year 2010 Average Weekday Person Trip Generation in the Corridor..... | 26 |
| 6 | Comparison of Differences in Forecast Year 2010 Traffic Volumes on Selected Arterial Streets in the Blue Mound Road --East-West Freeway Corridor Under the Four Alternative Land Use Plans Proposed by the City of Brookfield..... | 34 |
| 7 | Arterial Street System Improvements Required by the Year 2010 in the Blue Mound Road Corridor Under a Transportation System Plan with No New Freeway Interchanges..... | 35 |
| 8 | Traffic Impacts of a Calhoun Road Interchange..... | 40 |
| 9 | Implications of a Calhoun Road Interchange for Needed Arterial Street Improvements by the Year 2010..... | 40 |
| 10 | Traffic Impacts of a Brookfield Road Interchange..... | 41 |
| 11 | Implications of a Brookfield Road Interchange for Needed Arterial Street Improvements by the Year 2010..... | 41 |
| 12 | Traffic Impacts of a Split Interchange on Calhoun Road and Brookfield Road..... | 42 |

Table

Page

| | | |
|----|--|-----|
| 13 | Implications of a Split Interchange on Calhoun Road and Brookfield Road for Needed Arterial Street Improvements by the Year 2010..... | 43 |
| 14 | Traffic Impacts of an Interchange Between Calhoun and Brookfield Roads with Access Provided to the North and South..... | 47 |
| 15 | Traffic Impacts of an Interchange Between Calhoun and Brookfield Roads with Access Provided Only to the North..... | 48 |
| 16 | Traffic Impacts of a Sunnyslope Road Interchange..... | 54 |
| 17 | Implications of a Sunnyslope Road Interchange for Needed Arterial Street Improvements by the Year 2010..... | 54 |
| 18 | Traffic Impacts of a 124th Street Interchange..... | 55 |
| 19 | Implications of a 124th Street Interchange for Needed Arterial Street Improvements by the Year 2010..... | 55 |
| 20 | Traffic Impacts of a Springdale Road Interchange..... | 57 |
| 21 | Summary Evaluation of New Interchange Alternatives Along the East-West Freeway (IH 94) Between Moorland Road and Goerke's Corners..... | 60 |
| 22 | Selected Arterial Streets in the Milwaukee Area and Their Estimated Current Average Weekday Traffic Volumes..... | 62 |
| 23 | Recommended Arterial Street Improvements Under the Alternative Transportation Plan with a Split Diamond Interchange: 2010..... | 72 |
| 24 | Summary of Functional Criteria for the Jurisdictional Classification of Arterial Highways in Waukesha County..... | 76 |
| 25 | Recommended Jurisdictional Responsibilities for Recommended Arterial Street Improvements Under the Alternative Transportation Plan with a Split Diamond Interchange: 2010..... | 83 |
| 26 | Recommended Arterial Street Improvements Under the Alternative Transportation Plan with a Brookfield Road Interchange: 2010..... | 85 |
| 27 | Recommended Jurisdictional Responsibilities for Recommended Arterial Street Improvements Under the Alternative Transportation Plan with a Brookfield Road Interchange: 2010..... | 90 |
| 28 | Recommended Arterial Street Improvements Under the Alternative Transportation Plan with a Calhoun Road Interchange: 2010..... | 94 |
| 29 | Comparison of Arterial Street Improvement Recommendations Between Alternative Arterial Street System Plans: 2010..... | 95 |
| 30 | Recommended Jurisdictional Responsibilities for Recommended Arterial Street Improvements Under the Alternative Transportation Plan with a Calhoun Road Interchange: 2010..... | 98 |
| 31 | Comparison of Recommendations for Arterial Street Jurisdictional Responsibility Between Alternative System Plans: 2010..... | 99 |
| 32 | Recommended Arterial Street Improvements Under the Alternative Transportation Plan with No New Interchange: 2010..... | 104 |

| Table | | Page |
|-------|--|------|
| 33 | Recommended Jurisdictional Responsibilities for Recommended Arterial Street Improvements Under the Alternative Transportation Plan with No New Interchange: 2010..... | 107 |

Chapter IV

| | | |
|----|--|-----|
| 34 | Recommended Arterial Street Improvements Under the Recommended Transportation System Plan: 2010..... | 117 |
| 35 | Recommended Jurisdictional Responsibilities for Recommended Arterial Street Improvements Under the Alternative Transportation Plan with a Calhoun Road Interchange: 2010..... | 126 |

LIST OF FIGURES

| Figure | | Page |
|--------|---|------|
| | Chapter II | |
| 1 | Historical and Forecast Employment, Household, and Population Levels Within the Corridor: 1963, 1970, 1980, 1985, and 2010..... | 15 |

LIST OF MAPS

| Map | | Page |
|-----|--|------|
| | Chapter I | |
| 1 | Blue Mound Road--East-West Freeway Corridor Study Area..... | 2 |
| | Chapter II | |
| 2 | Historical 1963 Land Use Within the Corridor..... | 6 |
| 3 | Historical 1970 Land Use Within the Corridor..... | 7 |
| 4 | Existing 1985 Land Use Within the Corridor..... | 8 |
| 5 | Plan Year 2010 Land Use Within the Corridor..... | 9 |
| 6 | Subareas of the Blue Mound Road (USH 18) Corridor..... | 12 |
| 7 | High Density-Wisconsin Avenue Extension Land Use Plan for the Brookfield Square Subarea of the Corridor..... | 17 |
| 8 | High Density-No Wisconsin Avenue Extension Land Use Plan for the Brookfield Square Subarea of the Corridor..... | 18 |
| 9 | Low Density-Wisconsin Avenue Extension Land Use Plan for the Brookfield Square Subarea of the Corridor..... | 19 |
| 10 | Low Density-No Wisconsin Avenue Extension Land Use Plan for the Brookfield Square Subarea of the Corridor..... | 20 |
| | Chapter III | |
| 11 | Existing Arterial Street and Highway System in the Blue Mound Road--East-West Freeway Corridor..... | 27 |

| Map | | Page |
|-----|---|------|
| 12 | Existing Average Weekday Traffic Volumes on Corridor Arterial Street System..... | 29 |
| 13 | Existing Traffic Congestion on Arterial Streets in the Blue Mound Road--East-West Freeway Corridor..... | 30 |
| 14 | Forecast Year 2010 Average Weekday Traffic Volumes on Corridor Arterial Street System..... | 32 |
| 15 | Forecast Year 2010 Traffic Congestion on Arterial Streets in the Blue Mound Road--East-West Freeway Corridor..... | 33 |
| 16 | Arterial Street System Improvements Required by the Year 2010 in the Blue Mound Road Corridor Under a Transportation System Plan with No New Freeway Interchanges..... | 36 |
| 17 | Alternative New Interchanges Along the East-West Freeway Between the Moorland Road and Goerke's Corners Interchanges..... | 38 |
| 18 | Alternative New Interchange Along the East-West Freeway Between Calhoun and Brookfield Roads with Access Provided to the North and South..... | 44 |
| 19 | Alternative New Interchange Along the East-West Freeway Between Calhoun and Brookfield Roads with Access Provided Only to the North..... | 46 |
| 20 | Alternative New Interchange Along the East-West Freeway at N. 124th Street..... | 49 |
| 21 | Alternative New Interchange Along the East-West Freeway at Sunnyslope Road..... | 52 |
| 22 | Alternative New Interchange Along the East-West Freeway at Springdale Road..... | 56 |
| 23 | Alternative A for the Reconstruction of the Goerke's Corners Interchange..... | 65 |
| 24 | Alternative B for the Reconstruction of the Goerke's Corners Interchange..... | 66 |
| 25 | Alternative C for the Reconstruction of the Goerke's Corners Interchange..... | 67 |
| 26 | Alternative D for the Reconstruction of the Goerke's Corners Interchange..... | 68 |
| 27 | Wisconsin Department of Transportation Recommended Improvements to Goerke's Corners Interchange and Recommended Connecting Frontage Roads and Split Interchange at Calhoun and Brookfield Roads..... | 69 |
| 28 | Recommended Arterial Street System Improvements Under the Alternative Transportation Plan with a Split Diamond Interchange: 2010..... | 71 |
| 29 | Forecast Year 2010 Average Weekday Traffic Volumes Under the Alternative Transportation Plan with a Split Diamond Interchange..... | 73 |
| 30 | Existing Jurisdictional Classification of Arterial Streets and Highways: 1987..... | 74 |
| 31 | Current Proposed Jurisdictional Classification of Streets and Highways..... | 75 |
| 32 | Recommended Changes in Alternative Long-Range Arterial Street System Plan 2010 with a Split Diamond Interchange from Previous Long-Range Plan 2000..... | 79 |
| 33 | Recommended Jurisdictional Classification of Arterial Streets and Highways Under the Alternative Transportation System Plan with a Split Diamond Interchange: 2010..... | 80 |

| Map | | Page |
|-----|---|------|
| 34 | Recommended Changes in Jurisdictional Classification in the Blue Mound Corridor Under Alternative Transportation System Plan with a Split Diamond Interchange: 2010..... | 81 |
| 35 | Recommended Changes in Jurisdictional Classification in Waukesha County Under Alternative Blue Mound Corridor Transportation System Plan with a Split Diamond Interchange: 2010..... | 82 |
| 36 | Recommended Arterial Street Improvements Under the Alternative Transportation System Plan with a Brookfield Road Interchange: 2010..... | 84 |
| 37 | Optional Arterial Roadways Between Calhoun Road and the Goerke's Corners Interchange That Could be Provided Under an Alternative Plan with a Brookfield Road Interchange..... | 86 |
| 38 | Forecast Year 2010 Average Weekday Traffic Volumes Under the Alternative Transportation Plan with a Brookfield Road Interchange..... | 88 |
| 39 | Recommended Jurisdictional Classification of Arterial Streets and Highways Under the Alternative Transportation Plan with a Brookfield Road Interchange: 2010..... | 89 |
| 40 | Recommended Arterial Street System Improvements Under the Alternative Transportation Plan with a Calhoun Road Interchange: 2010..... | 91 |
| 41 | Optional Arterial Roadways Between Calhoun Road and the Goerke's Corners Interchange That Could be Provided with an Alternative Plan with a Calhoun Road Interchange..... | 92 |
| 42 | Forecast Year 2010 Average Weekday Traffic Volumes Under the Alternative Transportation Plan with a Calhoun Road Interchange..... | 96 |
| 43 | Recommended Jurisdictional Classification of Arterial Streets and Highways Under the Alternative Transportation Plan with a Calhoun Road Interchange: 2010..... | 97 |
| 44 | Recommended Arterial Street System Improvements Under the Alternative Transportation Plan with No New Interchange: 2010..... | 100 |
| 45 | Optional Arterial Roadways Between Calhoun Road and the Goerke's Corners Interchange That Could be Provided with an Alternative Plan with No New Freeway Interchange Between Moorland Road and Barker Road..... | 102 |
| 46 | Forecast Year 2010 Average Weekday Traffic Volumes Under the Alternative Transportation Plan with No New Interchange..... | 105 |
| 47 | Recommended Jurisdictional Classification of Arterial Streets and Highways Under the Alternative Transportation Plan with No New Interchange: 2010..... | 106 |
| 48 | Proposed Alignment of an Improved Calhoun Road Between Blue Mound Road and Greenfield Avenue Under the Commission Staff-Recommended Calhoun Road Interchange Alternative Plan..... | 109 |

Chapter IV

| | | |
|----|--|-----|
| 49 | Recommended Arterial Street Improvements Under the Recommended Transportation System Plan: 2010..... | 116 |
|----|--|-----|

| Map | | Page |
|-----|---|------|
| 50 | Forecast Year 2010 Average Weekday Traffic Volumes Under the Recommended Transportation System Plan..... | 118 |
| 51 | Final Land Use Plan for the Brookfield Square Subarea of the Corridor as Adopted by the City of Brookfield..... | 120 |
| 52 | Final Recommended Land Use Plan for the Blue Mound Corridor..... | 121 |
| 53 | Recommended Jurisdictional Classification of Streets and Highways Under the Recommended Transportation System Plan: 2010..... | 124 |
| 54 | Recommended Jurisdictional Classification of Arterial Streets and Highways in Waukesha County Under the Recommended Transportation System Plan..... | 125 |

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Chapter I

INTRODUCTION

This report presents a recommended transportation system plan for the Blue Mound Road (USH 18)--East-West Freeway (IH 94) corridor. That corridor is shown on Map 1 and is bounded approximately by STH 100 on the east, W. Greenfield Avenue on the south, CTH T on the west, and W. North Avenue on the north. The transportation system plan identifies those streets and highways in the corridor which are proposed to function as arterials, and which will, therefore, have as a primary function the carrying of traffic within and through the corridor. The plan identifies all improvements to the arterial street system needed to meet current and probable future traffic loadings, including required new streets and street extensions; required street widenings to provide additional traffic lanes; and required freeway improvements, including additional freeway interchanges with the surface arterial street system. The design year of the plan is 2010.

The transportation system plan herein presented is based upon a land use plan also prepared for the design year 2010. The land use plan reflects local, as well as regional, development objectives and plans, and recent proposals for development in the corridor. The attendant year 2010 levels of population, households, and employment within the corridor are identified, along with the person and vehicle trips which may be expected to be generated by the existing and planned land use development within the corridor, and the resultant traffic loadings on the arterial street and highway system within the corridor.

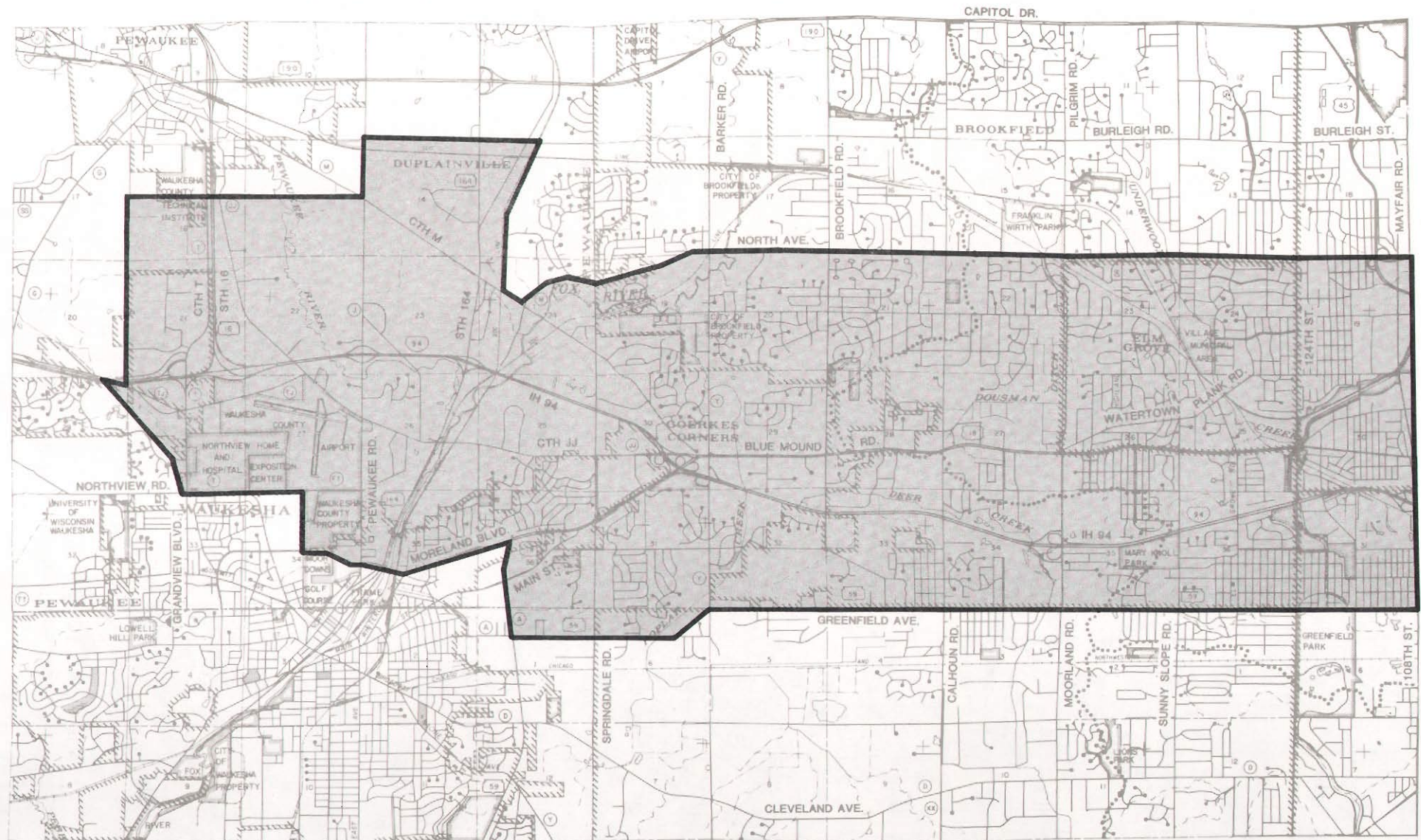
For a portion of the corridor lying within the City of Brookfield--bounded approximately by Moorland Road on the east, IH 94 on the south, Brookfield Road on the west, and Wisconsin Avenue on the north--consideration was given to four alternative land use plans as identified by the City of Brookfield. The person and vehicle trips which may be expected to be generated under each of these plans, and the attendant traffic loadings on the arterial street system, were identified. Based upon consideration of these traffic impacts, together with other factors, a recommended land use plan for that portion of the corridor was selected. The final land use and transportation system plans for the corridor reflect the recommended subcorridor land use plan.

The land use and transportation system plans for the corridor were prepared by the Regional Planning Commission in response to requests made in August 1986 by the Mayor of the City of Brookfield and the Secretary of the Wisconsin Department of Transportation. The plans were requested because rapid changes in land development within the corridor were perceived as creating massive traffic congestion within the corridor and a need for extensive roadway improvements beyond those currently planned. The plan preparation effort was also needed to assist the City in considering alternative land use plans for a portion of the corridor, and to assist the Department in considering the need for additional interchanges on IH 94.

A Task Force was created by the Southeastern Wisconsin Regional Planning Commission to guide the conduct of the requested study. The Task Force was

Map 1

BLUE MOUND ROAD--EAST-WEST FREEWAY CORRIDOR STUDY AREA



composed of officials representing each of the concerned and affected municipalities within the corridor, Waukesha County, and the Wisconsin Department of Transportation. The full membership of the Task Force is listed on the inside front cover of this report.

Following this introductory chapter, the second chapter of this report presents a preliminary land use plan for the corridor, including related information on resident population, household, employment, and land use demand levels. Four alternative land use plans for a portion of the corridor within the City of Brookfield are also presented. The third chapter of this report presents information on the person and vehicle trips which are generated by the existing land use pattern, and on those trips which may be expected to be generated by the planned land use pattern. Chapter III also presents information on the resultant traffic volumes and levels of service on the existing arterial street and highway system of the corridor; the findings of an analysis of the potential for additional freeway interchanges to abate traffic congestion in the corridor; and recommendations concerning the need for additional interchanges. Also presented are recommendations concerning arterial street and highway improvements necessary to abate the existing and probable future traffic problems in the corridor, together with a set of recommended improvements. The fourth chapter of this report presents a recommended transportation system plan for the corridor. The fifth and final chapter of this report presents a summary of the findings and recommendations of the planning effort.

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Chapter II

LAND USE

INTRODUCTION

This chapter presents a preliminary land use plan for the Blue Mound Road (USH 18)--East-West Freeway (IH 94) corridor, including related information on resident population, household, and employment levels. Four alternative land use plans for a portion of the corridor in the City of Brookfield are also presented, as identified by the City of Brookfield. The person and vehicle trips which may be expected to be generated under each of the four alternative sub-corridor land use plans, and the attendant traffic loadings on the arterial street and highway system, are identified in the next chapter of this report.

EXISTING AND PLANNED FUTURE CONDITIONS WITHIN THE CORRIDOR

The type and intensity of land use development within the corridor in 1963, 1970, and 1985 are graphically shown on Maps 2, 3, and 4, respectively, and are quantitatively summarized in Table 1 for the corridor and subareas of the corridor. Plan design year 2010 land use development within the corridor, based upon local as well as regional land use development objectives, plans, and policies, is graphically shown on Map 5, and is quantitatively summarized in Table 1 for the corridor and subareas of the corridor. Map 6 shows the subareas of the corridor.

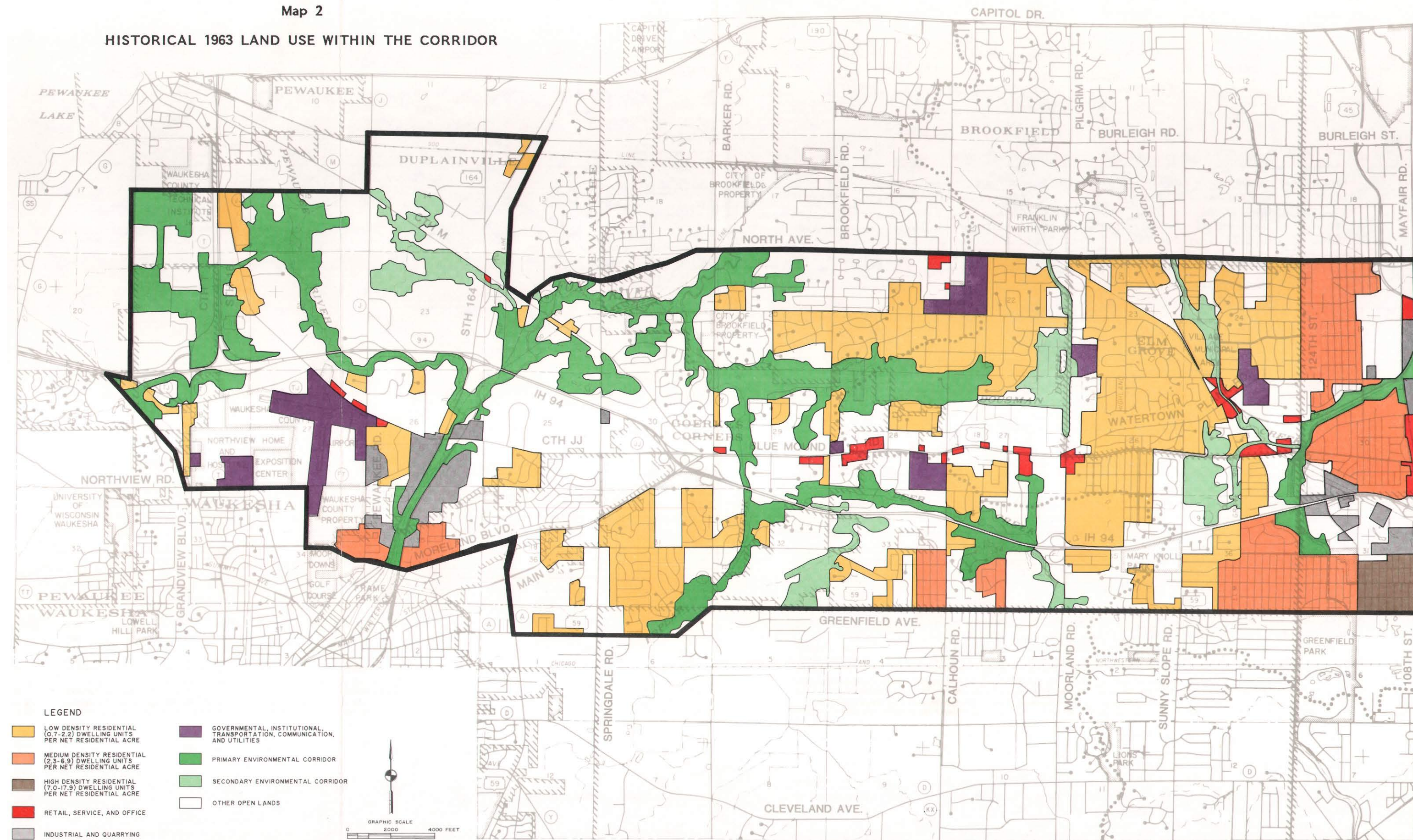
It may be seen in Table 1 and Maps 2, 3, and 4 that urban land uses within the corridor increased from about 7,090 acres in 1963, or 33 percent of the corridor, to about 12,010 acres in 1985, or 56 percent of the corridor, a 4,920-acre, or 70 percent, increase over the 22-year period. The urban land use category which experienced the largest absolute gain, residential land use, increased 2,650 acres--from about 5,860 acres in 1963 to about 8,510 acres in 1985. Retail service and office land uses experienced the largest percentage gain, over 450 percent--increasing from 230 acres in 1963 to about 1,280 acres in 1985.

As further indicated in Table 1 and shown on Map 5, urban land uses in the corridor under planned conditions would increase significantly--by about 5,140 acres, or 43 percent over existing 1985 levels. Thus, by the year 2010, urban land uses would total about 17,150 acres, or almost 80 percent of the total corridor acreage. It is envisioned that residential land use will experience the largest absolute gain under planned conditions--about 1,930 acres over existing 1985 levels--while industrial and retail, service, and office land uses will experience the largest percentage gain between 1985 and 2010, with increases of 108 percent and 88 percent, respectively. Finally, of the 4,310 acres of undeveloped land in the corridor under 2010 plan conditions, about 3,670 acres, or about 85 percent, will consist of environmental corridors and are envisioned to remain in open space uses. The remaining 640 acres of undeveloped lands consist primarily of agricultural lands and are envisioned to be converted to urban uses subsequent to the year 2010.

Existing and historical levels of employment, households, and population within

Map 2

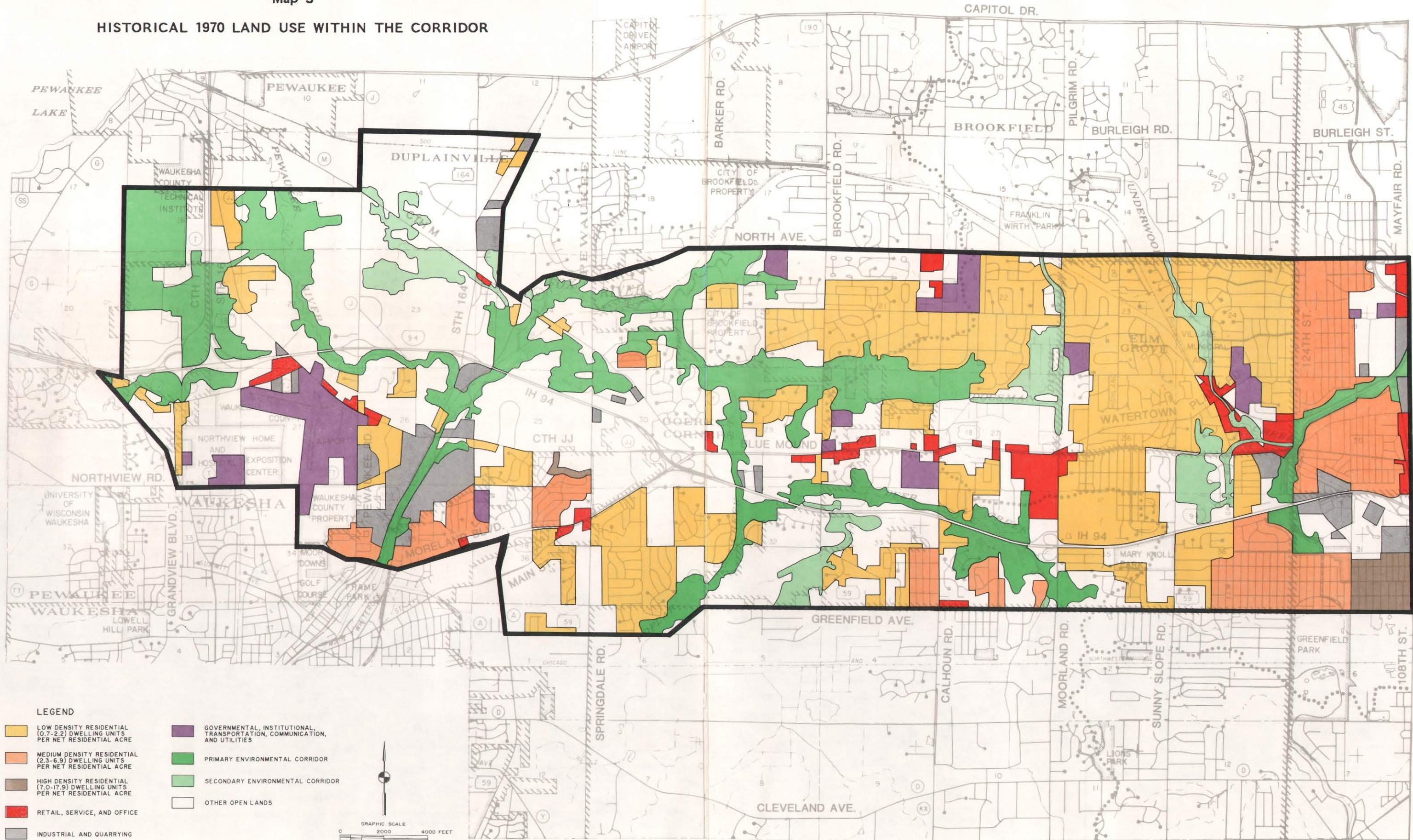
HISTORICAL 1963 LAND USE WITHIN THE CORRIDOR



Source: SEWRPC.

Map 3

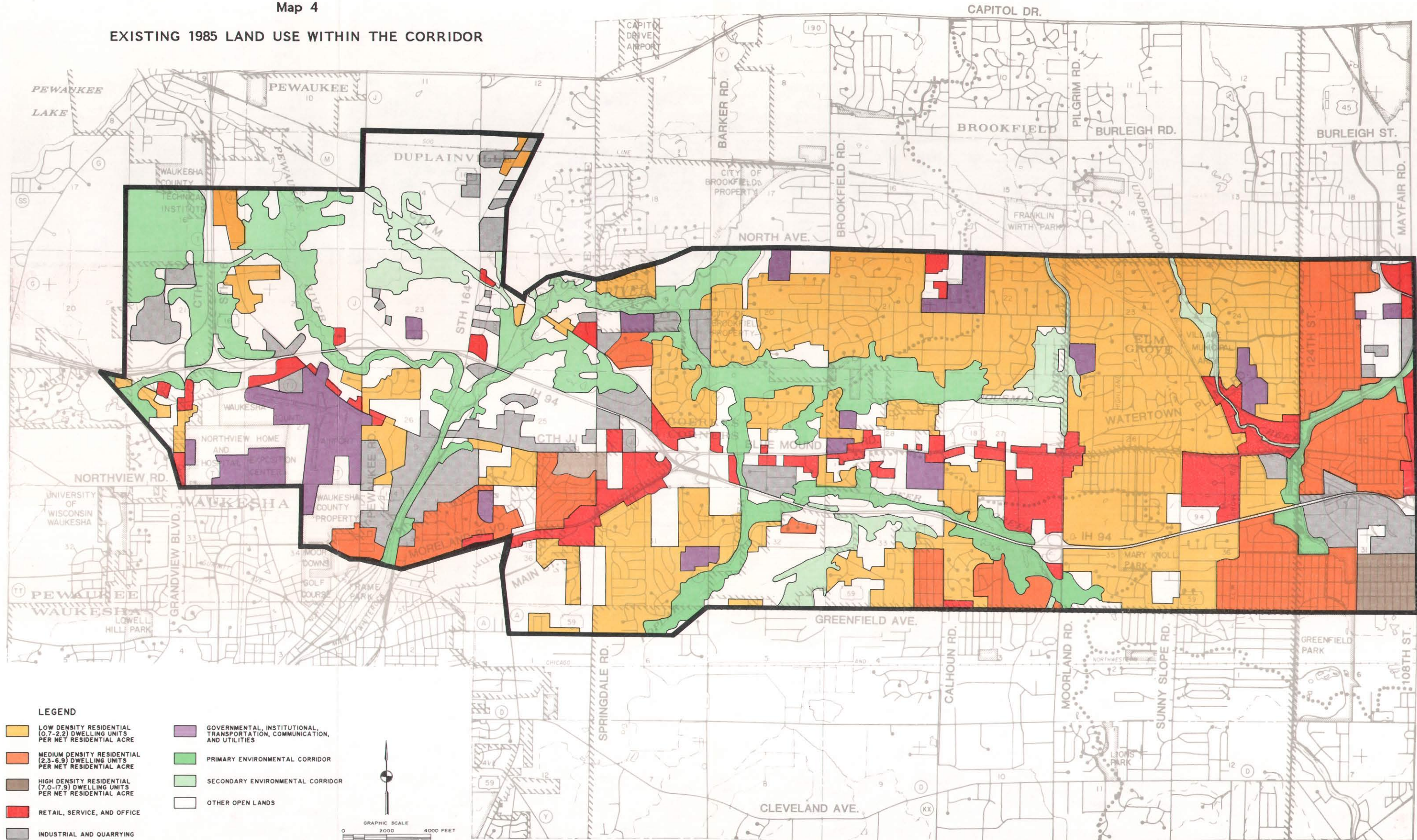
HISTORICAL 1970 LAND USE WITHIN THE CORRIDOR



Source: SEWRPC.

Map 4

EXISTING 1985 LAND USE WITHIN THE CORRIDOR



Source: SEWRPC.

Map 5

PLAN YEAR 2010 LAND USE WITHIN THE CORRIDOR

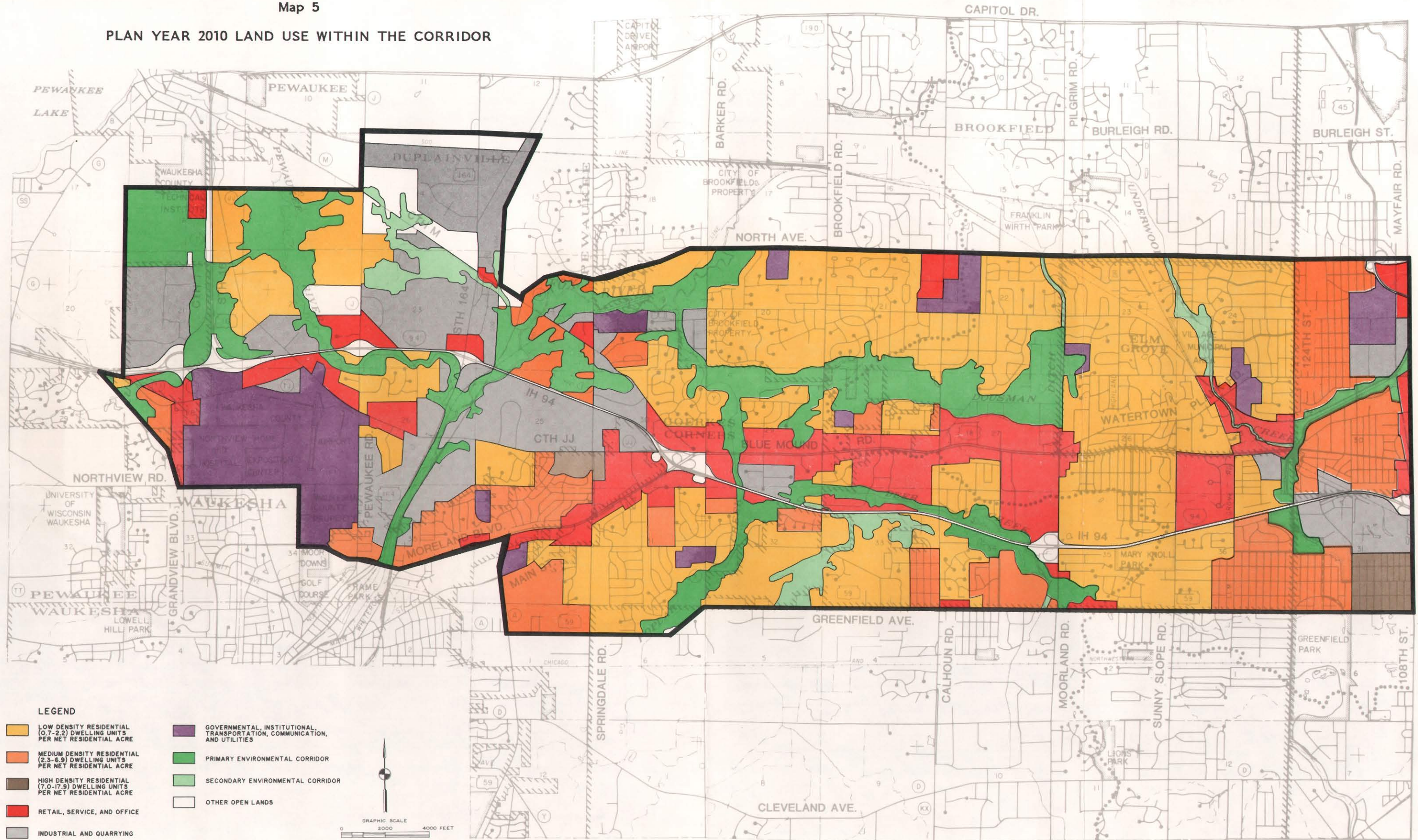


Table 1

HISTORICAL AND PLANNED LAND USE WITHIN THE CORRIDOR: 1963, 1970, 1985, AND 2010

| Elmbrook Subarea | | | | | | | | | | | | |
|---|-------|---------|-------|---------|-------|---------|----------------------|---------|-------------------|---------|----------------------|---------|
| Land Use | 1963 | | 1970 | | 1985 | | Change: 1963-1985 | | 2010 ^a | | Change: 1985-2010 | |
| | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent |
| Urban Residential | | | | | | | | | | | | |
| Low Density..... | 1,978 | 34.1 | 2,428 | 41.9 | 2,770 | 47.8 | 792 | 40.0 | 2,850 | 49.1 | 80 | 2.9 |
| Medium Density..... | 1,224 | 21.1 | 1,304 | 22.5 | 1,312 | 22.6 | 88 | 7.2 | 1,312 | 22.6 | 0 | 0.0 |
| High Density..... | 152 | 2.6 | 152 | 2.6 | 162 | 2.8 | 10 | 6.6 | 162 | 2.8 | 0 | 0.0 |
| Subtotal | 3,354 | 57.8 | 3,884 | 67.0 | 4,244 | 73.1 | 890 | 26.5 | 4,324 | 74.5 | 80 | 1.9 |
| Retail, Service, and Office..... | 124 | 2.1 | 187 | 3.2 | 434 | 7.4 | 310 | 250.0 | 497 | 8.6 | 63 | 13.6 |
| Industrial and Quarrying..... | 186 | 3.2 | 235 | 4.0 | 346 | 6.0 | 160 | 86.0 | 415 | 7.1 | 69 | 19.9 |
| Government, Institu- tional, Transporta- tion, Communication, and Utilities..... | 95 | 1.7 | 116 | 2.0 | 116 | 2.0 | 21 | 20.8 | 196 | 3.4 | 80 | 69.0 |
| Urban Subtotal | 3,759 | 64.8 | 4,422 | 76.2 | 5,140 | 88.5 | 1,381 | 36.7 | 5,432 | 93.6 | 292 | 5.7 |
| Primary Environmental Corridor..... | 192 | 3.3 | 230 | 4.0 | 233 | 4.0 | 31 | 16.1 | 246 | 4.3 | 23 | 10.3 |
| Secondary Environmental Corridor..... | 277 | 4.8 | 254 | 4.4 | 125 | 2.1 | -152 | -54.9 | 98 | 1.7 | -27 | -21.6 |
| Other Open Lands..... | 1,573 | 27.1 | 895 | 15.4 | 313 | 5.4 | -1,260 | -80.1 | 25 | 0.4 | -288 | -92.0 |
| Subarea Total | 5,801 | 100.0 | 5,801 | 100.0 | 5,801 | 100.0 | -- | -- | 5,801 | 100.0 | -- | -- |

| Brookfield Square Subarea | | | | | | | | | | | | |
|---|-------|---------|-------|---------|-------|---------|----------------------|---------|-------------------|---------|----------------------|---------|
| Land Use | 1963 | | 1970 | | 1985 | | Change: 1963-1985 | | 2010 ^a | | Change: 1985-2010 | |
| | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent |
| Urban Residential | | | | | | | | | | | | |
| Low Density..... | 1,074 | 27.3 | 1,226 | 31.1 | 1,566 | 39.7 | 492 | 45.8 | 1,789 | 45.4 | 223 | 14.2 |
| Medium Density..... | 131 | 3.3 | 161 | 4.1 | 204 | 5.2 | 73 | 55.7 | 299 | 7.6 | 95 | 46.6 |
| High Density..... | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal | 1,205 | 30.6 | 1,387 | 35.2 | 1,770 | 44.9 | 565 | 46.9 | 2,088 | 53.0 | 318 | 18.0 |
| Retail, Service, and Office..... | 76 | 1.9 | 231 | 5.9 | 361 | 9.2 | 285 | 375.0 | 857 | 21.8 | 496 | 137.4 |
| Industrial and Quarrying..... | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Government, Institu- tional, Transporta- tion, Communication, and Utilities..... | 167 | 4.3 | 180 | 4.6 | 185 | 4.7 | 18 | 10.8 | 119 | 3.0 | -66 | -35.7 |
| Urban Subtotal | 1,448 | 36.8 | 1,798 | 45.7 | 2,316 | 58.8 | 868 | 59.9 | 3,064 | 77.8 | 748 | 32.3 |
| Primary Environmental Corridor..... | 569 | 14.4 | 584 | 14.8 | 573 | 14.6 | 4 | 0.7 | 751 | 19.1 | 178 | 31.1 |
| Secondary Environmental Corridor..... | 229 | 5.8 | 189 | 4.8 | 208 | 5.3 | -21 | -9.2 | 91 | 2.3 | -117 | -56.3 |
| Other Open Lands..... | 1,692 | 43.0 | 1,367 | 34.7 | 841 | 21.3 | -851 | -50.3 | 32 | 0.8 | -809 | -96.2 |
| Subarea Total | 3,938 | 100.0 | 3,938 | 100.0 | 3,938 | 100.0 | -- | -- | 3,938 | 100.0 | -- | -- |

| Brookfield Town Subarea | | | | | | | | | | | | |
|---|-------|---------|-------|---------|-------|---------|----------------------|---------|-------------------|---------|----------------------|---------|
| Land Use | 1963 | | 1970 | | 1985 | | Change: 1963-1985 | | 2010 ^a | | Change: 1985-2010 | |
| | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent |
| Urban Residential | | | | | | | | | | | | |
| Low Density..... | 689 | 17.3 | 809 | 20.4 | 1,385 | 34.9 | 696 | 101.0 | 1,908 | 48.0 | 523 | 37.8 |
| Medium Density..... | 0 | 0.0 | 19 | 0.5 | 79 | 2.0 | 79 | -- | 185 | 4.7 | 106 | 134.2 |
| High Density..... | 0 | 0.0 | 0 | 0.0 | 16 | 0.4 | 16 | -- | 16 | 0.4 | 0 | 0.0 |
| Subtotal | 689 | 17.3 | 828 | 20.9 | 1,480 | 37.3 | 791 | 114.8 | 2,109 | 53.1 | 629 | 42.5 |
| Retail, Service, and Office..... | 15 | 0.4 | 21 | 0.5 | 246 | 6.2 | 231 | 1,540.0 | 531 | 13.4 | 285 | 115.9 |
| Industrial and Quarrying..... | 6 | 0.2 | 29 | 0.7 | 258 | 6.5 | 252 | 4,200.0 | 310 | 7.8 | 52 | 20.2 |
| Government, Institu- tional, Transporta- tion, Communication, and Utilities..... | 0 | 0.0 | 29 | 0.7 | 97 | 2.4 | 97 | -- | 125 | 3.1 | 28 | 28.9 |
| Urban Subtotal | 710 | 17.9 | 907 | 22.8 | 2,081 | 52.4 | 1,371 | 193.1 | 3,075 | 77.4 | 994 | 47.8 |
| Primary Environmental Corridor..... | 851 | 21.4 | 821 | 20.7 | 807 | 20.3 | -44 | -5.2 | 759 | 19.1 | -48 | -5.9 |
| Secondary Environmental Corridor..... | 79 | 2.0 | 79 | 2.0 | 83 | 2.1 | 4 | 5.1 | 83 | 2.1 | 0 | 0.0 |
| Other Open Lands..... | 2,331 | 58.7 | 2,164 | 54.5 | 1,000 | 25.2 | -1,331 | -57.1 | 54 | 1.4 | -946 | -94.6 |
| Subarea Total | 3,971 | 100.0 | 3,971 | 100.0 | 3,971 | 100.0 | -- | -- | 3,971 | 100.0 | -- | -- |

Table 1 (continued)

| Pewaukee East Subarea | | | | | | | | | | | | |
|--|-------|---------|-------|---------|-------|---------|----------------------|---------|-------------------|---------|----------------------|---------|
| Land Use | 1963 | | 1970 | | 1985 | | Change: 1963-1985 | | 2010 ^a | | Change: 1985-2010 | |
| | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent |
| Urban Residential | | | | | | | | | | | | |
| Low Density..... | 310 | 8.9 | 355 | 10.2 | 358 | 10.3 | 48 | 15.5 | 387 | 11.1 | 29 | 8.1 |
| Medium Density..... | 106 | 3.1 | 311 | 9.0 | 396 | 11.4 | 290 | 273.6 | 845 | 24.4 | 449 | 113.4 |
| High Density..... | 0 | -- | 15 | 0.4 | 45 | 1.3 | 45 | -- | 45 | 1.3 | 0 | 0.0 |
| Subtotal | 416 | 12.0 | 681 | 19.6 | 799 | 23.0 | 383 | 92.1 | 1,277 | 36.8 | 478 | 59.8 |
| Retail, Service, and Office..... | 5 | 0.1 | 41 | 1.2 | 145 | 4.2 | 140 | 2,800.0 | 231 | 6.7 | 86 | 59.3 |
| Industrial and Quarrying..... | 262 | 7.6 | 393 | 11.3 | 565 | 16.3 | 303 | 115.6 | 1,251 | 36.1 | 686 | 121.4 |
| Government, Institutional, Transportation, Communication, and Utilities..... | 5 | 0.1 | 26 | 0.8 | 26 | 0.8 | 21 | 420.0 | 56 | 1.6 | 30 | 115.4 |
| Urban Subtotal | 688 | 19.8 | 1,141 | 32.9 | 1,535 | 44.3 | 847 | 123.1 | 2,815 | 81.2 | 1,280 | 83.4 |
| Primary Environmental Corridor..... | 495 | 14.3 | 489 | 14.1 | 491 | 14.2 | -4 | -0.8 | 520 | 15.0 | 29 | 5.9 |
| Secondary Environmental Corridor..... | 89 | 2.6 | 88 | 2.5 | 82 | 2.3 | -7 | -7.9 | 82 | 2.4 | 0 | 0.0 |
| Other Open Lands..... | 2,195 | 63.3 | 1,749 | 50.5 | 1,359 | 39.2 | -836 | -38.1 | 50 | 1.4 | -1,309 | -96.3 |
| Subarea Total | 3,467 | 100.0 | 3,467 | 100.0 | 3,467 | 100.0 | -- | -- | 3,467 | 100.0 | -- | -- |

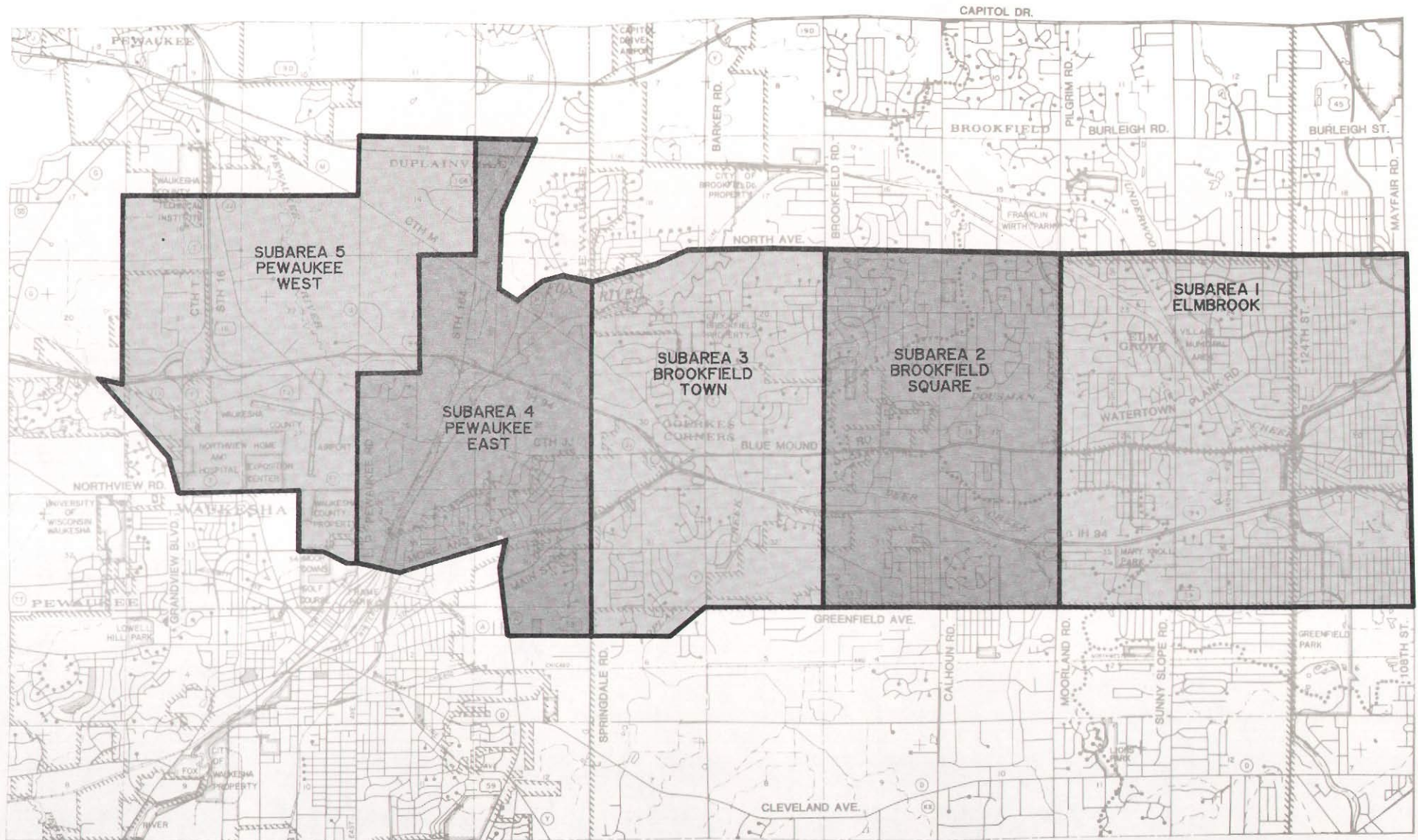
| Pewaukee West Subarea | | | | | | | | | | | | |
|--|-------|---------|-------|---------|-------|---------|----------------------|---------|-------------------|---------|----------------------|---------|
| Land Use | 1963 | | 1970 | | 1985 | | Change: 1963-1985 | | 2010 ^a | | Change: 1985-2010 | |
| | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent |
| Urban Residential | | | | | | | | | | | | |
| Low Density..... | 163 | 3.8 | 190 | 4.4 | 180 | 4.2 | 17 | 10.4 | 304 | 7.1 | 124 | 68.9 |
| Medium Density..... | 35 | 0.8 | 36 | 0.9 | 36 | 0.8 | 1 | 2.9 | 340 | 7.9 | 304 | 844.4 |
| High Density..... | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Subtotal | 198 | 4.6 | 226 | 5.3 | 216 | 5.0 | 18 | 9.1 | 644 | 15.0 | 428 | 198.1 |
| Retail, Service, and Office..... | 10 | 0.3 | 40 | 0.9 | 94 | 2.2 | 84 | 8.4 | 292 | 6.8 | 198 | 210.6 |
| Industrial and Quarrying..... | 0 | 0.0 | 21 | 0.5 | 183 | 4.3 | 183 | -- | 842 | 19.7 | 659 | 360.1 |
| Government, Institutional, Transportation, Communication, and Utilities..... | 275 | 6.4 | 366 | 8.5 | 446 | 10.4 | 171 | 62.2 | 984 | 23.0 | 538 | 120.6 |
| Urban Subtotal | 483 | 11.3 | 653 | 15.2 | 939 | 21.9 | 456 | 94.4 | 2,762 | 64.5 | 1,823 | 184.7 |
| Primary Environmental Corridor..... | 882 | 20.6 | 985 | 23.0 | 992 | 23.2 | 110 | 12.5 | 918 | 21.4 | -74 | -7.5 |
| Secondary Environmental Corridor..... | 145 | 3.4 | 138 | 3.2 | 138 | 3.2 | -7 | -4.8 | 123 | 2.9 | -15 | -10.9 |
| Other Open Lands..... | 2,775 | 64.7 | 2,509 | 58.6 | 2,216 | 51.7 | -559 | -20.1 | 482 | 11.2 | -1,734 | -78.2 |
| Subarea Total | 4,285 | 100.0 | 4,285 | 100.0 | 4,285 | 100.0 | -- | -- | 4,285 | 100.0 | -- | -- |

| Total of All Subareas | | | | | | | | | | | | |
|--|--------|---------|--------|---------|--------|---------|----------------------|---------|-------------------|---------|----------------------|---------|
| Land Use | 1963 | | 1970 | | 1985 | | Change: 1963-1985 | | 2010 ^a | | Change: 1985-2010 | |
| | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent | Acres | Percent |
| Urban Residential | | | | | | | | | | | | |
| Low Density..... | 4,214 | 19.6 | 5,008 | 23.3 | 6,259 | 29.2 | 2,045 | 48.5 | 7,238 | 33.7 | 979 | 15.6 |
| Medium Density..... | 1,496 | 7.0 | 1,831 | 8.5 | 2,027 | 9.4 | 531 | 35.5 | 2,981 | 13.9 | 954 | 47.1 |
| High Density..... | 152 | 0.7 | 167 | 0.8 | 223 | 1.0 | 71 | 46.7 | 223 | 1.1 | 0 | 0.0 |
| Subtotal | 5,862 | 27.3 | 7,006 | 32.6 | 8,509 | 39.6 | 2,647 | 45.2 | 10,442 | 48.7 | 1,933 | 22.7 |
| Retail, Service, and Office..... | 230 | 1.1 | 520 | 2.4 | 1,280 | 6.0 | 1,050 | 456.5 | 2,408 | 11.2 | 1,128 | 88.1 |
| Industrial and Quarrying..... | 454 | 2.1 | 678 | 3.2 | 1,352 | 6.3 | 898 | 197.8 | 2,818 | 13.1 | 1,466 | 108.4 |
| Government, Institutional, Transportation, Communication, and Utilities..... | 542 | 2.5 | 717 | 3.4 | 870 | 4.1 | 328 | 60.5 | 1,480 | 6.9 | 610 | 70.1 |
| Urban Subtotal | 7,088 | 33.0 | 8,921 | 41.6 | 12,011 | 56.0 | 4,923 | 69.5 | 17,148 | 79.9 | 5,137 | 42.8 |
| Primary Environmental Corridor..... | 2,989 | 13.9 | 3,109 | 14.5 | 3,086 | 14.4 | 97 | 3.2 | 3,194 | 14.9 | 108 | 3.5 |
| Secondary Environmental Corridor..... | 819 | 3.8 | 748 | 3.5 | 636 | 2.9 | -183 | -22.3 | 477 | 2.2 | -159 | -25.0 |
| Other Open Lands..... | 10,566 | 49.3 | 8,684 | 40.4 | 5,729 | 26.7 | -4,837 | -45.8 | 643 | 3.0 | -5,086 | -88.8 |
| Subarea Total | 21,462 | 100.0 | 21,462 | 100.0 | 21,462 | 100.0 | -- | -- | 21,462 | 100.0 | -- | -- |

^a Within a portion of the corridor, the City of Brookfield has identified four alternative land use plans. The alternatives include: 1) high density with a Wisconsin Avenue extension; 2) high density without the extension; 3) low density with the extension; and 4) low density without the extension. The four land use plans are shown on Maps 7 through 10. The year 2010 land use indicated in this table represents the High Density-Wisconsin Avenue Extension alternative land use plan developed by the City of Brookfield.

Source: SEWRPC.

SUBAREAS OF THE BLUE MOUND ROAD (USH 18) CORRIDOR



LEGEND

— SUBAREA BOUNDARIES



the corridor, Waukesha County, Milwaukee County, and the Southeastern Wisconsin Region are summarized in Table 2. Also shown in Table 2 are forecast year 2010 employment, household, and population levels.

It may be seen in Table 2 and Figure 1 that the corridor experienced substantial employment growth from 1963 to 1970 and from 1970 to 1980, with employment increasing from 7,400 jobs in 1963 to 17,000 jobs in 1970, for a 130 percent increase, and then more than doubling from 17,000 jobs in 1970 to 36,200 jobs in 1980. From 1980 to 1985, employment in the corridor continued to increase significantly, from 36,200 jobs to 47,300 jobs, a 30 percent increase. It is projected that the number of jobs in the corridor will increase from 47,300 in 1985 to between 86,800 and 94,100 by the year 2010, a near doubling again of jobs over that 25-year period.

The number of households in the corridor increased from 8,000 in 1963 to 10,400 in 1970, an increase of approximately 30 percent; and from 10,400 in 1970 to 13,500 in 1980, also an increase of approximately 30 percent. The number of households in the corridor remained almost unchanged between 1980 and 1985, but is expected to increase to between 18,700 and 19,100 households by the year 2010, an increase over the 25-year period of about 5,000 households, or of approximately 35 percent over the 1985 level of 13,800 households.

The resident population of the corridor increased from 20,700 in 1963 to 38,900 in 1970, an increase of approximately 90 percent, and has remained relatively stable from 1970 to 1985. The resident population of the corridor is forecast to increase modestly from 40,000 to between 47,600 and 48,700 by the year 2010, an increase of about 8,000 persons over the 25-year period, or of approximately 20 percent.

Table 3 shows the existing 1985 and forecast year 2010 levels of employment, households, and population within subareas of the Blue Mound Road--East-West Freeway corridor. All subareas of the corridor are expected to experience increases in employment and households over the next 25 years. With the exception of the portion of the corridor east of Moorland Road, all subareas of the corridor are also expected to experience increases in resident population.

Table 4 shows the existing 1985 and forecast year 2010 levels of households, population, and employment within each community within the corridor: the City of Wauwatosa, Village of Elm Grove, City of Brookfield, Town of Brookfield, City of Waukesha, and Town of Pewaukee.

ALTERNATIVE LAND USE PLANS--PORTION OF THE CORRIDOR LYING WEST OF MOORLAND ROAD AND EAST OF BROOKFIELD ROAD

For that subarea of the corridor lying between Moorland Road and Brookfield Road, four alternative land use plans were prepared by the City of Brookfield which vary in the type, intensity, and extent of area to be developed for urban uses. The four land use plans are graphically summarized on Maps 7, 8, 9, and 10. The implications of these land use plans for levels of employment, households, and resident population are summarized in Tables 2 and 3.

The four alternative land use plans differ primarily with respect to intensity of use, two proposing a higher density with a greater extent of office development, and two proposing lower densities with a greater extent of residential

Table 2

**HISTORICAL AND FORECAST EMPLOYMENT,
HOUSEHOLD, AND POPULATION LEVELS WITHIN
THE CORRIDOR: 1963, 1970, 1980, 1985, AND 2010**

| Location | Employment | | | | |
|--|------------|-------------------|---------|---------|-----------|
| | 1963 | 1970 ^a | 1980 | 1985 | 2010 |
| Blue Mound Road Corridor ^b | 7,400 | 17,000 | 36,200 | 47,300 | 94,100 |
| Waukesha County.... | 33,400 | 71,400 | 119,400 | 124,100 | 196,900 |
| Milwaukee County... | 468,600 | 509,000 | 547,900 | 538,000 | 552,000 |
| Southeastern Wisconsin Region.. | 630,900 | 748,800 | 884,200 | 871,900 | 1,051,300 |

| Location | Households | | | | |
|--|------------|---------|---------|---------|---------|
| | 1963 | 1970 | 1980 | 1985 | 2010 |
| Blue Mound Road Corridor ^b | 8,000 | 10,400 | 13,500 | 13,800 | 18,700 |
| Waukesha County.... | 47,600 | 61,900 | 88,500 | 92,900 | 139,900 |
| Milwaukee County... | 328,300 | 363,600 | 402,400 | 367,300 | 402,400 |
| Southeastern Wisconsin Region.. | 487,100 | 536,500 | 628,000 | 641,300 | 772,700 |

| Location | Population | | | | |
|--|------------|-----------|-----------|-----------|-----------|
| | 1963 | 1970 | 1980 | 1985 | 2010 |
| Blue Mound Road Corridor ^b | 20,700 | 38,900 | 40,100 | 40,000 | 47,600 |
| Waukesha County.... | 184,500 | 231,300 | 280,200 | 285,900 | 378,000 |
| Milwaukee County... | 1,086,500 | 1,054,200 | 402,400 | 939,600 | 911,300 |
| Southeastern Wisconsin Region.. | 1,675,000 | 1,756,100 | 1,764,800 | 1,742,700 | 1,872,100 |

^a The 1970 employment data are estimates made for the year 1972.

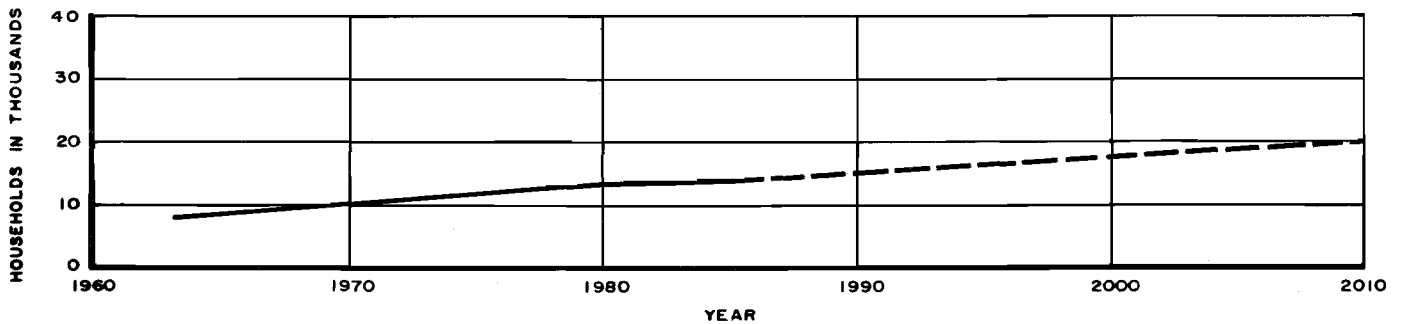
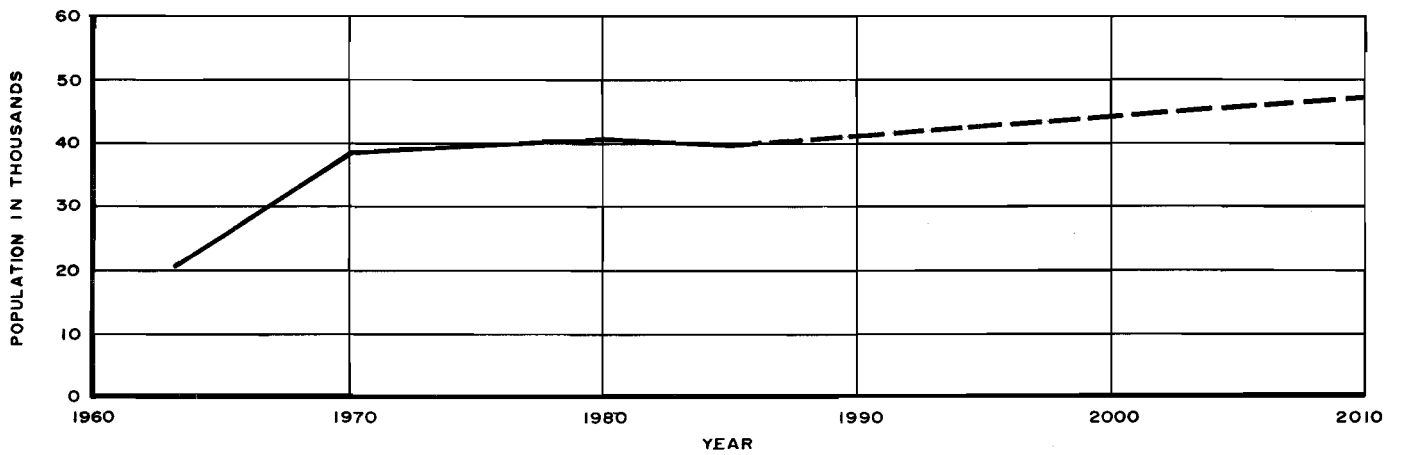
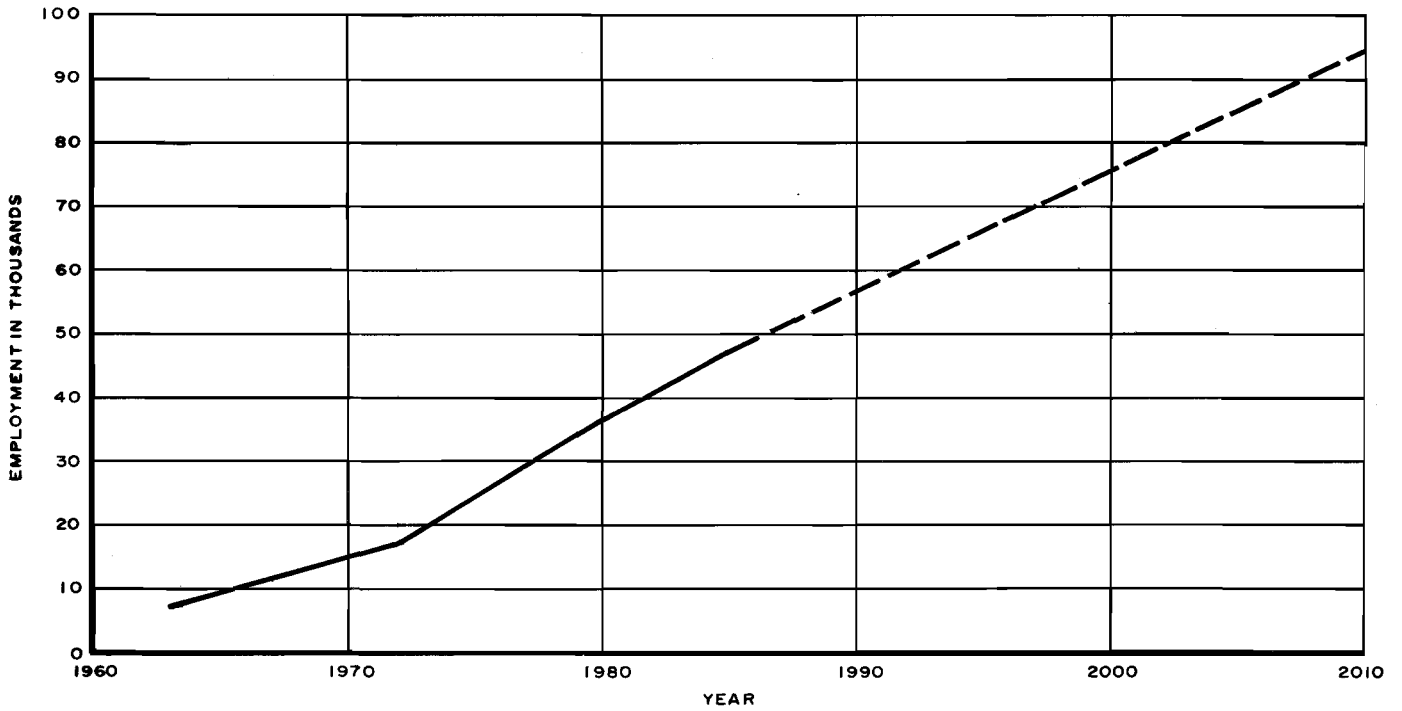
^b Within a portion of the corridor, the City of Brookfield identified four alternative land use plans. The alternatives include: 1) high density with a Wisconsin Avenue extension; 2) high density without the extension; 3) low density with the extension; and 4) low density without the extension. The four land use plans are shown on Maps 7 through 10. The year 2010 employment, household, and population levels for the Blue Mound Road--East-West Freeway corridor shown in this table reflect the High Density-Wisconsin Avenue Extension alternative land use plan for the City of Brookfield. Total forecast employment, household, and population in the corridor under the other three plans is estimated as follows: 90,800 jobs, 18,700 households, and 47,600 persons under the High Density-No Wisconsin Avenue Extension alternative; 88,500 jobs, 19,100 households, and 48,700 persons under the Low Density-Wisconsin Avenue Extension alternative; and 86,800 jobs, 19,000 households, and 48,400 persons under the Low Density-No Wisconsin Avenue Extension alternative.

Source: SEWRPC.

development. Also, one high-density plan and one low-density plan propose the extension of Wisconsin Avenue between Pilgrim Parkway and Calhoun Road, and the development of lands adjacent to Wisconsin Avenue extended. As described in Table 3, all four of the alternative plans do propose substantial increases in employment and households within the subarea of the corridor, bounded by Moorland Road-Pilgrim Parkway on the east, Greenfield Avenue on the south, Brookfield Road on the west, and North Avenue on the north.

Figure 1

HISTORICAL AND FORECAST EMPLOYMENT, HOUSEHOLD, AND POPULATION
LEVELS WITHIN THE CORRIDOR: 1963, 1970, 1980, 1985, AND 2010



Source: SEWRPC.

Table 3

**EXISTING 1985 AND FORECAST 2010 EMPLOYMENT,
HOUSEHOLD, AND POPULATION IN SUBAREAS OF THE CORRIDOR**

| Number | Subarea Description | Employment | | | Households | | | Population | | |
|--------|-------------------------------------|------------|--------|----------------------------|------------|--------|----------------------------|------------|--------|----------------------------|
| | | 1985 | 2010 | 1985-2010 Change (percent) | 1985 | 2010 | 1985-2010 Change (percent) | 1985 | 2010 | 1985-2010 Change (percent) |
| 1 | Elmbrook..... | 18,100 | 22,000 | 22 | 7,600 | 7,900 | 4 | 21,200 | 19,400 | -9 |
| 2 | Brookfield Square ^a | 11,400 | 31,400 | 175 | 2,200 | 2,900 | 32 | 7,000 | 7,500 | 7 |
| 3 | Brookfield Town..... | 5,600 | 14,100 | 152 | 1,900 | 3,600 | 89 | 5,800 | 10,200 | 76 |
| 4 | Pewaukee East..... | 5,500 | 11,300 | 105 | 1,800 | 2,800 | 55 | 5,100 | 7,200 | 41 |
| 5 | Pewaukee West..... | 6,700 | 15,300 | 128 | 300 | 1,500 | 400 | 900 | 3,300 | 267 |
| -- | Total | 47,300 | 94,100 | 99 | 13,800 | 18,700 | 36 | 40,000 | 47,600 | 19 |

^aWithin a portion of the corridor, the City of Brookfield has identified four alternative land use plans. The alternatives include: 1) high density with a Wisconsin Avenue extension; 2) high density without the extension; 3) low density with the extension; and 4) low density without the extension. The four land use plans are shown on Maps 7 through 10. The year 2010 employment, households, and population shown for Subarea 2 is for the High Density-Wisconsin Avenue extension alternative land use plan developed by the City of Brookfield. Forecast employment, households, and population in Subarea 2 under the other three alternative plans are estimated as follows: 28,100 jobs, 2,900 households, and 7,500 persons under the High Density-No Wisconsin Avenue Extension alternative; 25,800 jobs, 3,300 households, and 8,600 persons under the Low Density-Wisconsin Avenue Extension alternative; and 24,100 jobs, 3,200 households, and 8,300 persons under the Low Density-No Wisconsin Avenue Extension alternative.

Source: SEWRPC.

Table 4

**EXISTING 1985 AND FORECAST 2010 EMPLOYMENT, HOUSEHOLDS, AND
POPULATION WITHIN THE BLUE MOUND ROAD (USH 18) CORRIDOR BY COMMUNITY**

| Community | Employment | | | Households | | | Population | | |
|--|------------|--------|----------------------------|------------|--------|----------------------------|------------|--------|----------------------------|
| | 1985 | 2010 | 1985-2010 Change (percent) | 1985 | 2010 | 1985-2010 Change (percent) | 1985 | 2010 | 1985-2010 Change (percent) |
| City of Brookfield (part) ^a ... | 20,700 | 44,200 | 114 | 4,700 | 6,500 | 38 | 14,200 | 17,300 | 22 |
| Town of Brookfield (part).... | 2,900 | 10,400 | 259 | 1,000 | 1,900 | 90 | 3,400 | 5,400 | 59 |
| Village of Elm Grove..... | 1,700 | 1,700 | 0 | 1,900 | 2,000 | 5 | 5,700 | 5,100 | -11 |
| Town of Pewaukee (part)..... | 5,400 | 18,500 | 243 | 700 | 2,400 | 143 | 2,100 | 5,600 | 167 |
| Others ^b | 16,600 | 19,300 | 16 | 5,500 | 5,900 | 7 | 14,600 | 14,200 | -3 |
| Total | 47,300 | 94,100 | 99 | 13,800 | 18,700 | 36 | 40,000 | 47,600 | 19 |

^aWithin a portion of the corridor, the City of Brookfield has identified four alternative land use plans. The alternatives include: 1) high density with a Wisconsin Avenue extension; 2) high density without the extension; 3) low density with the extension; and 4) low density without the extension. The four land use plans are shown on Maps 7 through 10. The year 2010 employment, households, and population shown for the part of the City of Brookfield in the study area are representative of the High Density-Wisconsin Avenue Extension alternative land use plan developed by the City of Brookfield. Forecast employment, households, and population in the City under the other three alternative plans are estimated as follows: 40,900 jobs, 6,500 households, and 17,300 persons under the High Density-No Wisconsin Avenue Extension alternative; 38,600 jobs, 6,900 households, and 18,400 persons under the Low Density-Wisconsin Avenue Extension alternative; and 36,900 jobs, 6,800 households, and 18,100 persons under the Low Density-No Wisconsin Avenue Extension alternative.

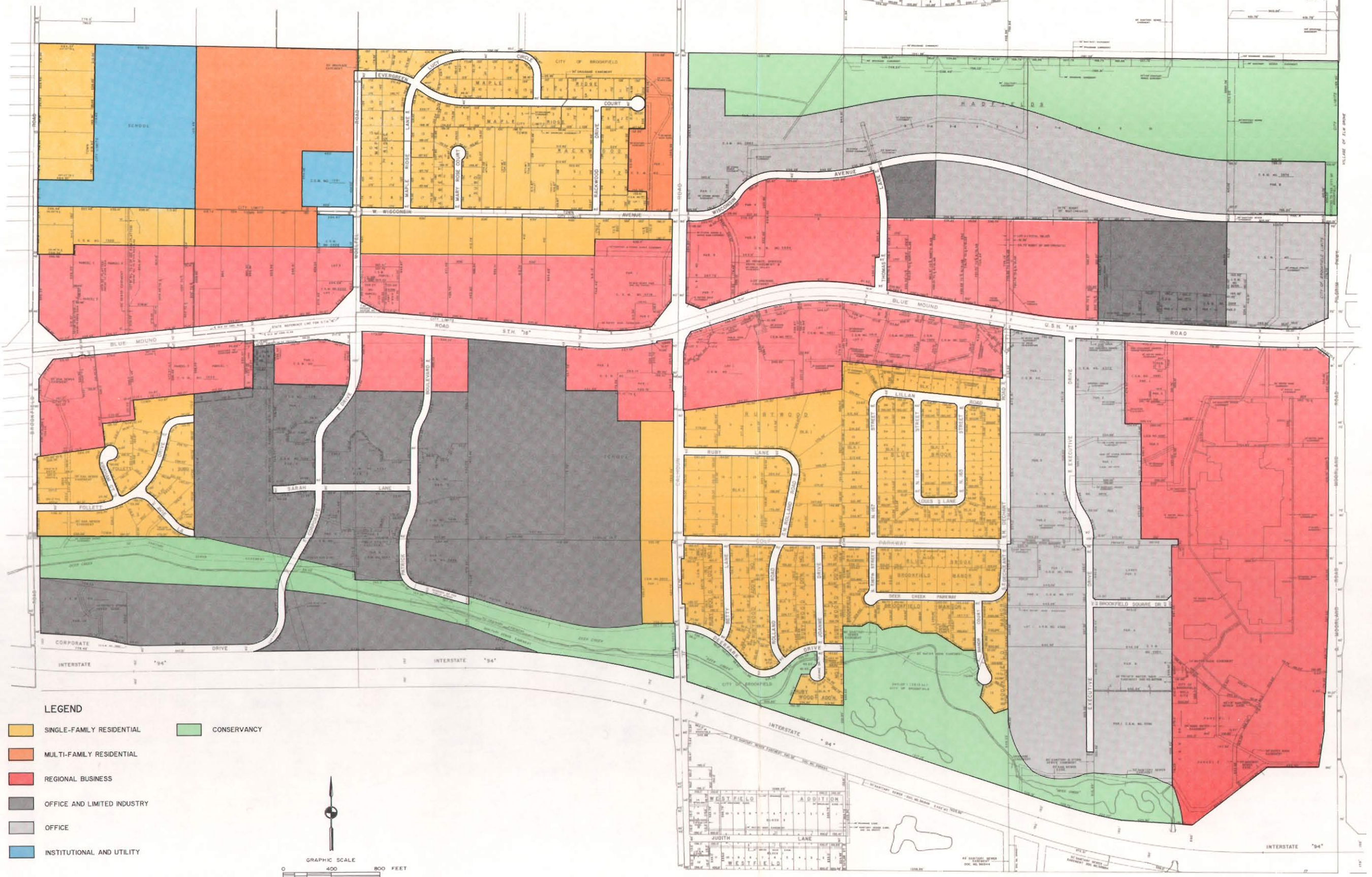
^b"Others" consist of those parts of the Cities of Waukesha, Wauwatosa, and West Allis which lie within the study area.

Source: SEWRPC.

The number of jobs in this subarea of the corridor, as envisioned under the alternative plans, would range from 24,100 under the Low Density-No Wisconsin Avenue Extension alternative to 31,400 under the High Density-Wisconsin Avenue Extension alternative, for an increase in jobs within the area ranging from 12,700, or 110 percent, to 20,000, or 175 percent, over the 11,400 jobs in the subarea in 1985. The level of households in the subarea would range from 2,900 under the two high-density land use plans to 3,300 households under the Low Density-Wisconsin Avenue Extension alternative, increases of 700, or 30 percent, and 1,100, or 50 percent, over the 2,200 households in the subarea in 1985.

Map 7

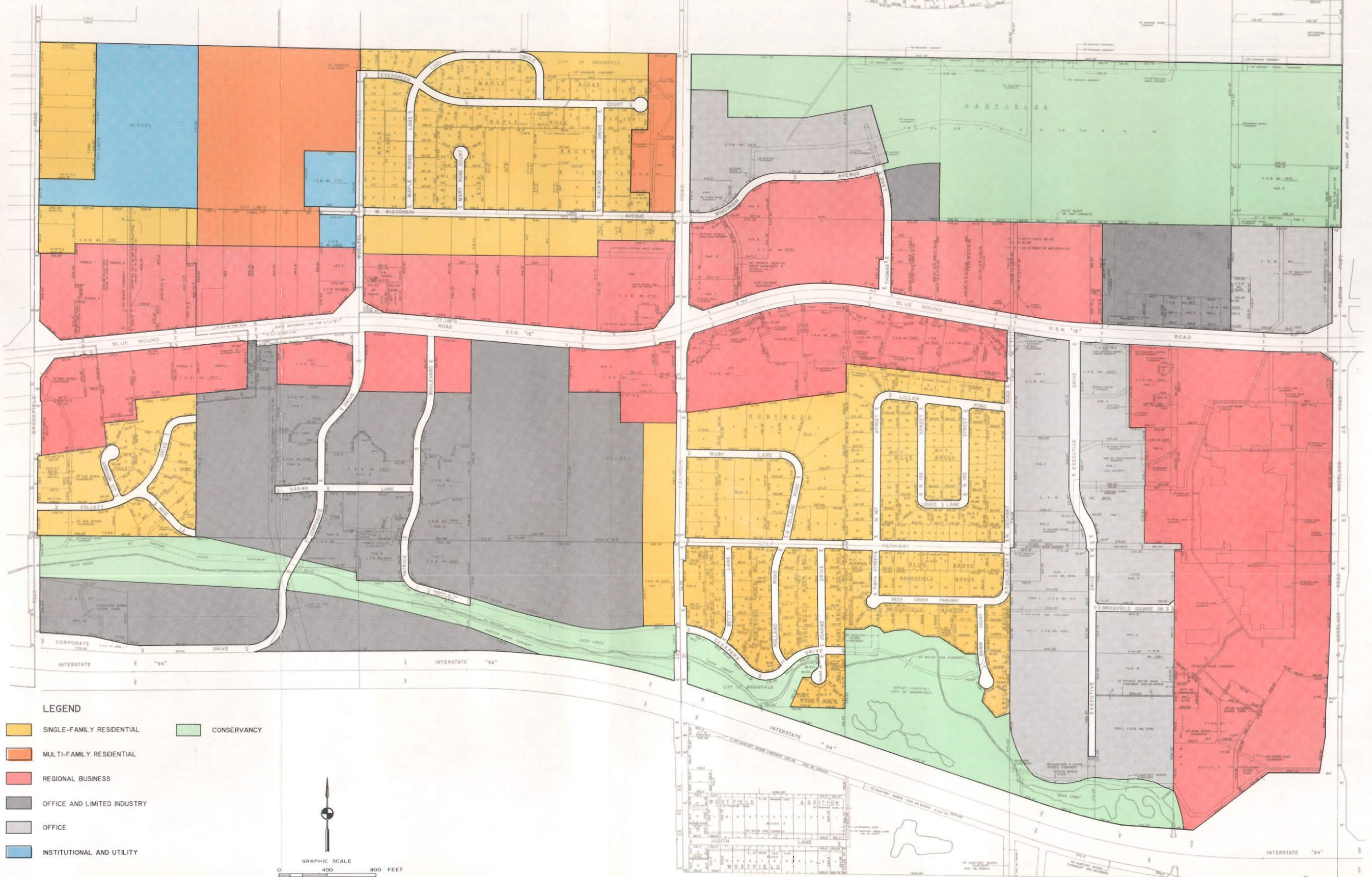
HIGH DENSITY-WISCONSIN AVENUE EXTENSION LAND USE PLAN FOR THE BROOKFIELD SQUARE SUBAREA OF THE CORRIDOR



Source: Howard, Needles, Tammen & Bergendoff and SEWRPC.

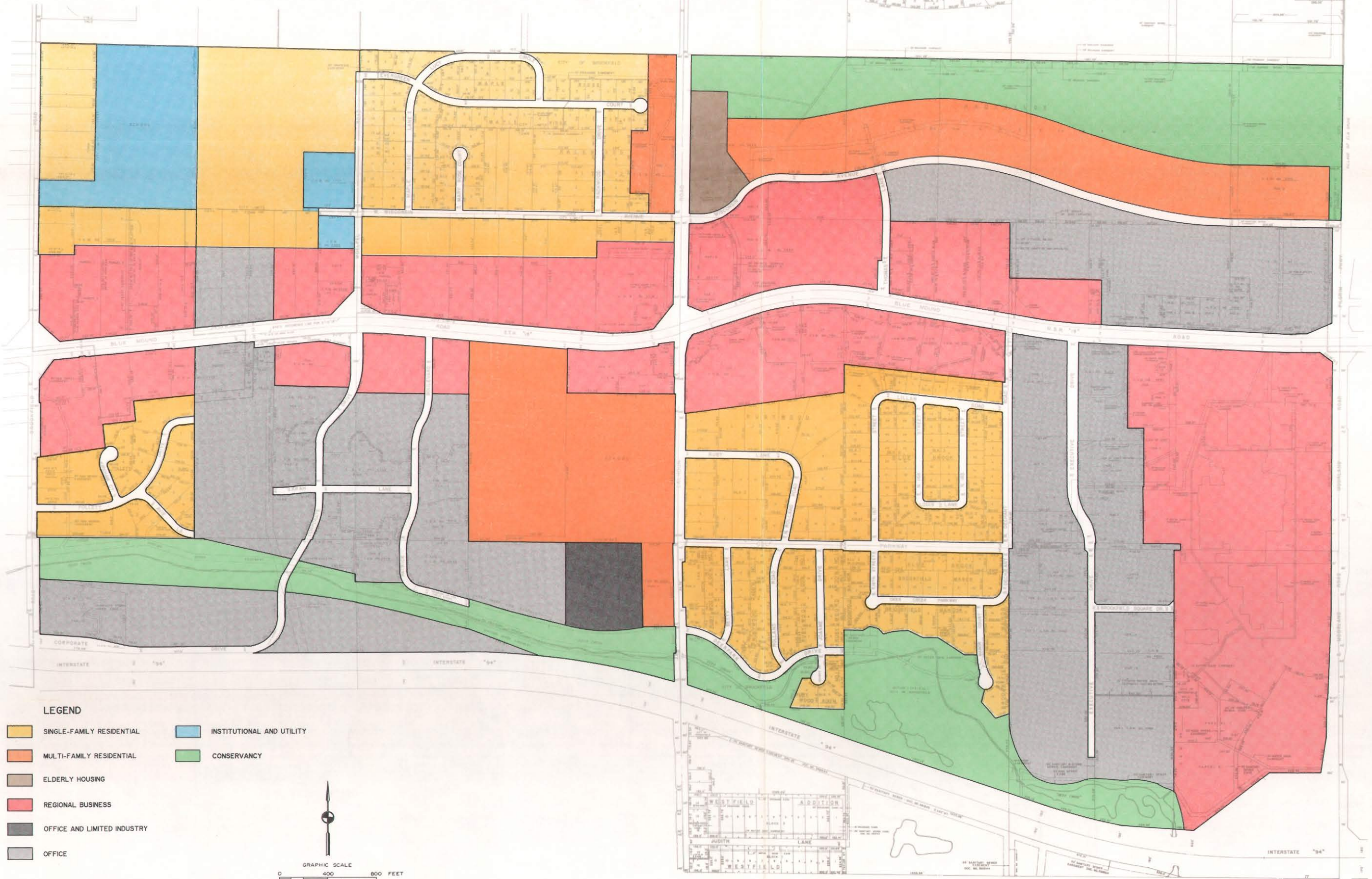
Map 8

HIGH DENSITY-NO WISCONSIN AVENUE EXTENSION LAND USE PLAN FOR THE BROOKFIELD SQUARE SUBAREA OF THE CORRIDOR

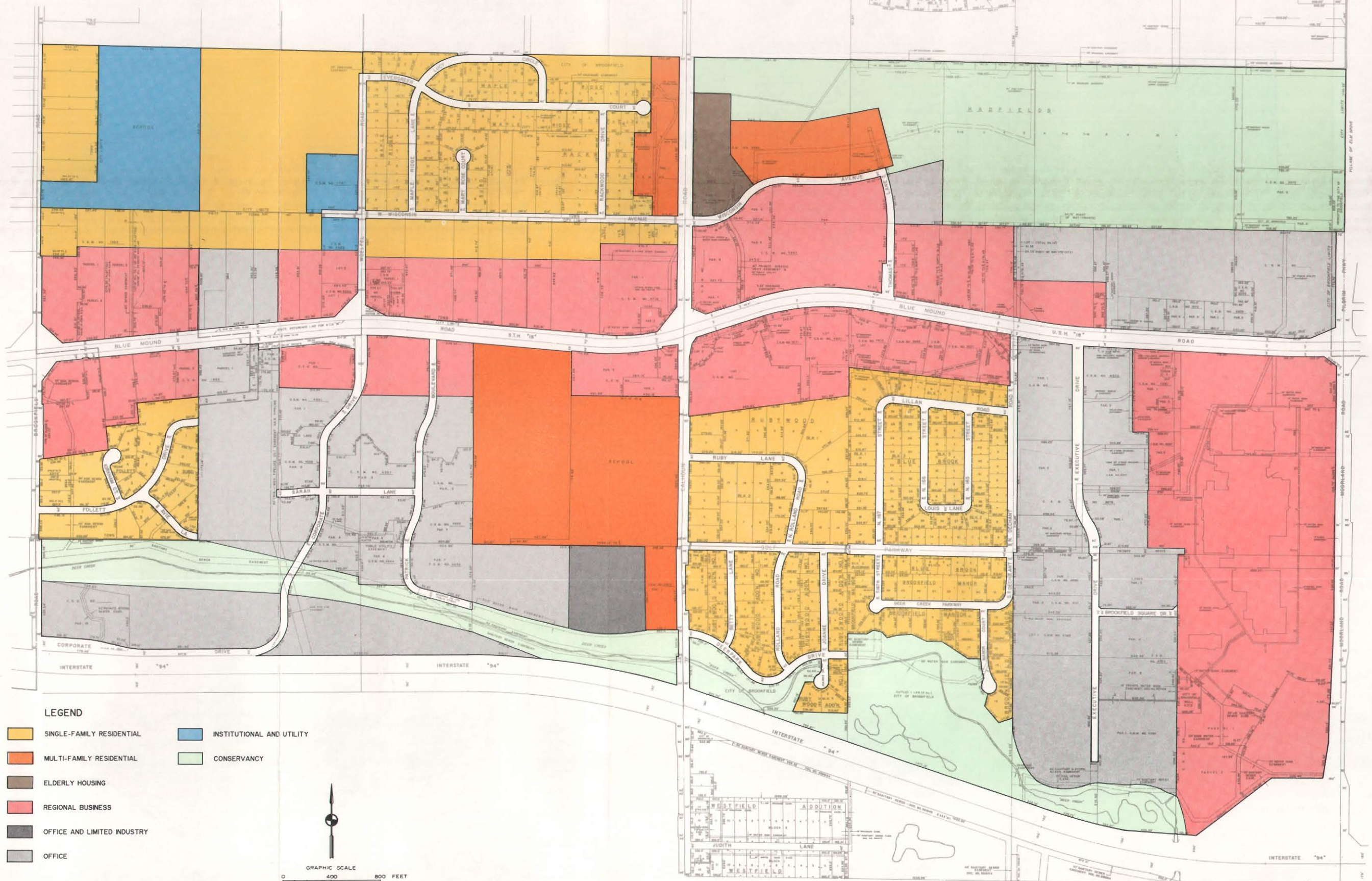


Map 9

LOW DENSITY-WISCONSIN AVENUE EXTENSION LAND USE PLAN
FOR THE BROOKFIELD SQUARE SUBAREA OF THE CORRIDOR



LOW DENSITY-NO WISCONSIN AVENUE EXTENSION LAND USE PLAN
FOR THE BROOKFIELD SQUARE SUBAREA OF THE CORRIDOR



Source: Howard, Needles, Tammen & Bergendoff and SEWRPC.

In the next chapter of this report, the person and vehicle trips which may be expected to be generated in the corridor by the year 2010 are identified for each corridor subarea, and the differences in traffic generation under each of the four alternative land use plans for that portion of the corridor between Moorland Road and Brookfield Road are established. Under the alternative plans, the number of person trips generated on an average weekday by the year 2010 is forecast to range from 219,000 in the subcorridor area under the Low Density-No Wisconsin Avenue Extension alternative to about 250,000 under the High Density-Wisconsin Avenue Extension alternative. The former would result in an estimated 70 percent increase in person trip generation in the subcorridor area over 1985 levels, and the latter about a 95 percent increase. Expressed in terms of vehicle trips, which more directly relate to loadings on the arterial street system and resultant congestion and highway improvement needs, the difference between the four land use plans would be about 20,000 trips per day, or about 10 percent.

Table 7 in Chapter III summarizes the expected differences in forecast year 2010 average weekday traffic volumes on selected arterial streets in the Blue Mound Road--East-West Freeway corridor under the four subcorridor alternative land use plans. The four plans are not expected to result in significantly different traffic volumes on arterial streets within the corridor. The differences generally range from about 1,000 to 4,000 vehicles per average weekday, or under 10 percent of total forecast year 2010 weekday traffic volumes. These differences would not result in significantly reduced traffic congestion, or in reduced needs for highway improvements in the corridor.

SELECTION OF PRELIMINARY LAND USE PLAN

After considering the foregoing information, the Task Force selected a preliminary land use plan for the study area which included the land use development assumptions set forth under the High Density-Wisconsin Avenue Extension alternative described above. The Task Force directed that this alternative be used as a basis for the analyses set forth in Chapter III of this report. In so doing, the Task Force recognized that a final recommended land use plan to be set forth in Chapter IV of the report could differ from the preliminary plan.

SUMMARY

Urban land uses within the corridor increased from about 7,090 acres in 1963, or about 33 percent of the total area of the corridor, to about 12,010 acres in 1985, or about 56 percent of the total area of the corridor, a 4,920-acre, or 70 percent, increase over the 22-year period. The urban land use category which experienced the largest absolute gain, residential land use, increased by 2,650 acres--from about 5,860 acres in 1963 to about 8,510 acres in 1985. Retail service and office land uses experienced the largest percentage increase, over 450 percent--increasing from about 230 acres in 1963 to about 1,280 acres in 1985. Urban land uses in the corridor under planned conditions would increase significantly--by about 5,140 acres, or 43 percent over existing 1985 levels. Thus, by the year 2010, urban land uses would total about 17,150 acres, or almost 80 percent of the total area of the corridor. Of the 4,310 acres of undeveloped land in the corridor, about 3,670 acres, or about 85 percent, consist of environmental corridors and are envisioned to remain permanently in essentially natural, open uses. The remaining 640 acres of undeveloped lands consist primarily of agricultural lands and are envisioned to be converted to urban uses subsequent to the plan design year 2010.

The corridor experienced a substantial growth in economic activity from 1970 to 1985, with employment increasing from about 17,000 jobs in 1970 to about 47,000 jobs in 1985, or by about 200 percent. It is projected that the number of jobs in the corridor will increase from 47,300 in 1985 to between 86,800 and 94,100 by the year 2010, a near doubling of jobs over that 25-year period.

The number of households in the corridor increased from 10,400 in 1970 to 13,800 in 1985, an increase of approximately 30 percent. The number of households in the corridor is expected to increase to between 18,700 and 19,100 by the year 2010, an increase over the 25-year period of about 5,000 households, or of approximately 35 percent.

The resident population of the corridor remained relatively stable from 1970 to 1985, increasing from about 39,000 persons in 1970 to about 40,000 persons in 1985. The resident population of the corridor is forecast to increase modestly to between 47,600 persons and 48,700 persons by the year 2010, an increase of about 8,000 persons over the 25-year period, or of approximately 20 percent.

For that subarea of the corridor lying between Moorland Road and Brookfield Road, four alternative land use plans were prepared by the City of Brookfield which vary in the type, intensity, and extent of area to be developed for urban uses. The four alternative land use plans differ primarily with respect to intensity of use, two proposing a higher density with a greater extent of office development, and two proposing lower densities with a greater extent of residential development. Also, one high-density plan and one low-density plan propose the extension of Wisconsin Avenue between Pilgrim Parkway and Calhoun Road, and the development of lands adjacent to Wisconsin Avenue extended.

The number of jobs in the year 2010 in this subarea of the corridor, as envisioned under the alternative plans, would range from about 24,000 under the Low Density-No Wisconsin Avenue Extension alternative, to about 31,000 under the High Density-Wisconsin Avenue Extension alternative. The increase in jobs within the area would thus range from about 13,000 jobs, or 110 percent, to 20,000 jobs, or 175 percent, over the 11,000 jobs in the subarea in 1985. The level of households in the year 2010 in the subarea would range from about 3,000 under the two high-density land use plans to about 3,300 under the Low Density-Wisconsin Avenue Extension alternative, increases of 700, or 30 percent, and 1,100, or 50 percent, over the 2,200 households in the subarea in 1985.

In the next chapter of this report, the person and vehicle trips that may be expected to be generated in the corridor by the year 2010 are identified for each corridor subarea, and the differences in traffic generation under each of the four alternative land use plans for that portion of the corridor between Moorland Road and Brookfield Road are described. Under the alternative plans, the number of person trips generated in the subcorridor area on an average weekday in the year 2010 is forecast to range from 219,000 to about 250,000. The former would result in an estimated 70 percent increase in person trip generation in the subcorridor area over 1985 levels, and the latter, about a 95 percent increase. Expressed in terms of vehicle trips, which more directly relate to loadings on the arterial street system and resultant congestion and highway improvement needs, the extreme difference between the four land use plans would be about 20,000 trips per day, or about 10 percent. The four plans are not expected to result in significantly different traffic volumes on arterial streets within the corridor. The differences generally range from 1,000

to 4,000 vehicles per average weekday, or under 10 percent of total forecast year 2010 weekday traffic volumes. These differences would not result in significantly reduced traffic congestion, or in reduced needs for highway improvements in the corridor.

After considering the foregoing information, the Task Force selected a preliminary land use plan for the study area which incorporated the land use development assumptions for the corridor subarea in the City of Brookfield set forth under the alternative proposing high-density office development in the subarea and the extension of Wisconsin Avenue. This alternative plan represented the greatest increase in traffic anticipated in the corridor subarea.

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Chapter III

FORECAST TRANSPORTATION NEEDS AND ALTERNATIVE TRANSPORTATION PLANS

INTRODUCTION

This chapter identifies the transportation needs attendant to the planned land use development pattern in the corridor. Estimates of the person and vehicle trips generated on an average weekday within the corridor under existing and planned conditions are presented. The arterial street system within the corridor is defined and described. Also presented is the distribution on the arterial street and highway system of the forecast year 2010 person and vehicle trips generated by the planned land use development pattern in the corridor, based upon traffic simulation model analyses. The resultant levels of service and traffic congestion are identified, along with current levels of service and traffic congestion in the corridor, the latter based on the most current average weekday traffic counts available. Alternative improvements designed to meet the identified transportation needs and resolve the existing and future traffic congestion are evaluated, including additional freeway interchanges.

TRIP GENERATION

Data on the historical 1963 and 1970, existing 1985, and forecast year 2010 average weekday person trip generation within the Blue Mound Road--East-West Freeway (IH 94) corridor are provided in Table 5. The resident population, household, and employment levels within the corridor in 1985 generated about 507,400 person trip ends--that is, person trip origins and destinations--within the corridor on an average weekday. This represents an increase of 323,000 trip ends, or 175 percent, over the 1970 level; and of 404,900 trip ends, or about 400 percent, over the 1963 level. Based on the forecast population, household, and employment levels in the corridor, person trip generation within the corridor may be expected to increase to between 815,000 and 845,000 trip ends by the year 2010, an increase of approximately 320,000 trip ends, or about 65 percent, over the 25-year period.

Less than 1 percent of the trips made within the corridor in 1985 were made by public transit, or about 1,000 trips on an average weekday. The adopted regional transportation system plan proposes an approximately four-fold increase in transit service in the corridor, as measured by bus miles of service provided, including additional freeway flyer "commuter" service to the Milwaukee central business district, with new park-ride lots at Moorland Road and CTH T. Also, local bus service would be provided along Blue Mound Road either connecting or being integrated with both City of Waukesha and Milwaukee County local transit services. With the implementation of these transit service improvements, travel within the corridor by public transit may be expected to increase from the 1985 level of about 1,000 trips per average weekday, representing about 0.2 percent of total corridor travel in 1985, to about 5,000 trips, representing about 0.6 percent of total travel by the year 2010. Without the transit service improvements recommended in the long-range plan, the

Table 5

ESTIMATED HISTORICAL 1963 AND 1970, EXISTING 1985, AND FORECAST YEAR 2010 AVERAGE WEEKDAY PERSON TRIP GENERATION IN THE CORRIDOR

| Average Weekday Person Trip Generation (number of trip ends) | | | | | | | | | |
|--|------------------------------------|---------|---------|---------|---------|------------------|---------|------------------|---------|
| Subarea | | 1963 | 1970 | 1985 | 2010 | Change 1963-1985 | | Change 1985-2010 | |
| Number | Description | | | | | Amount | Percent | Amount | Percent |
| 1 | Elmbrook..... | 69,800 | 100,700 | 199,200 | 223,600 | 129,400 | 185 | 24,400 | 12 |
| 2 | Brookfield Square ^a ... | 15,900 | 45,300 | 128,900 | 249,600 | 113,000 | 711 | 120,700 | 94 |
| 3 | Brookfield Town..... | 8,200 | 12,000 | 70,600 | 150,800 | 62,400 | 761 | 80,200 | 114 |
| 4 | Pewaukee East..... | 6,000 | 20,000 | 70,400 | 116,500 | 64,400 | 1,073 | 46,100 | 65 |
| 5 | Pewaukee West..... | 2,600 | 6,400 | 38,300 | 105,300 | 35,700 | 1,373 | 67,000 | 175 |
| -- | Total | 102,500 | 184,400 | 507,400 | 845,800 | 404,900 | 395 | 338,400 | 67 |

^a The year 2010 trip generation shown for Subarea 2 is for the High Density-Wisconsin Avenue Extension alternative land use plan. Forecast trip generation under the other three alternative land use plans for this subarea is as follows: 236,600 trips under the High Density-No Wisconsin Avenue Extension alternative; 227,300 trips under the Low Density-Wisconsin Avenue Extension alternative; and 219,100 trips under the Low Density-No Wisconsin Avenue Extension alternative.

Source: SEWRPC.

proportion of travel within the corridor which would be made by public transit may be expected to remain about the same or to decrease slightly.

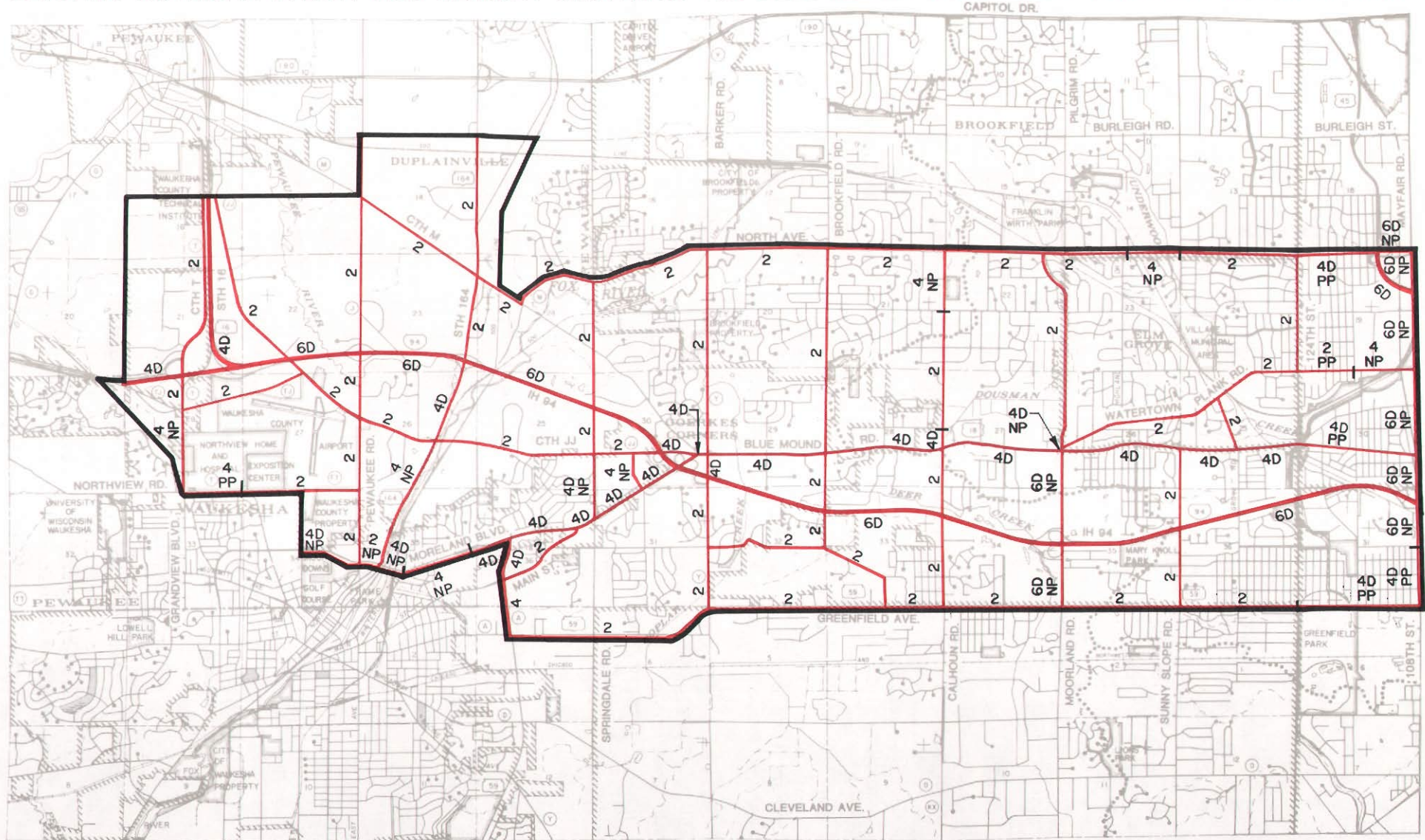
It should be noted that, in any case, transit use may be expected to constitute a very small proportion of the total travel in the corridor and, therefore, to make a very small contribution toward resolving existing and future traffic congestion. The anticipated large increase in total travel in the corridor may, therefore, be expected to result in a large increase in vehicular traffic. It should be further noted, in this respect, that the forecasts of transit ridership may be optimistic in light of recent trends in transit ridership. Between 1980 and 1985, annual transit ridership in the Milwaukee area actually declined 15 percent--from about 58 million revenue passenger trips in 1980 to about 49 million revenue passenger trips in 1985.

EXISTING ARTERIAL STREET AND HIGHWAY SYSTEM

The existing arterial street and highway system of the corridor is shown on Map 11. Arterial facilities are those streets and highways whose principal function is to move traffic within and through an area. Current and future traffic volumes are critical elements in the design of such streets and highways. Map 11 also identifies the number of traffic lanes provided on each arterial segment and whether or not a median is provided on the segment to separate traffic by direction. Also identified is whether or not parking is prohibited during the peak traffic period, or all day, to provide additional traffic lanes.

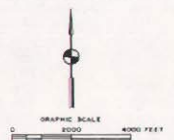
The number of traffic lanes provided on an arterial facility largely, although not entirely, establishes its traffic-carrying capacity. A two-traffic-lane urban arterial with an operating speed of 25 to 35 miles per hour (mph) generally has a design capacity of about 13,000 vehicles per day; a four-lane undivided arterial has a design capacity of about 17,000 vehicles per day; a four-lane divided arterial has a design capacity of about 25,000 vehicles per day; and a six-lane divided arterial has a design capacity of about 35,000 vehicles per day. Significantly less traffic can be safely and efficiently

EXISTING ARTERIAL STREET AND HIGHWAY SYSTEM IN THE BLUE MOUND ROAD--EAST-WEST FREEWAY CORRIDOR



LEGEND

| | | | |
|------------------------------------|-------------------------------|----|-------------------------|
| — | FREEWAYS | 2 | NUMBER OF TRAFFIC LANES |
| — | ARTERIAL STREETS AND HIGHWAYS | PP | PARKING PERMITTED |
| D | MEDIAN DIVIDED ARTERIAL | NP | PARKING PROHIBITED |



accommodated on two-lane rural highways than on urban streets. The design capacity of a two-traffic-lane rural arterial with an operating speed of 45 to 55 mph is generally about 7,000 vehicles per average weekday.

Urban arterials carrying average weekday traffic volumes exceeding their design capacity may be expected to experience significant delays at controlled intersections, reduced speeds between intersections, and increased accident rates. The reduced speeds and intersection delays on urban arterials carrying average weekday traffic volumes equaling or exceeding their design capacity will generally occur only during the morning and evening peak traffic hours, or, in some cases, during the three-hour morning and evening peak traffic periods. During midday, evening, and early morning hours, there will generally be little, if any, traffic congestion and delay. Also, on most urban arterial highways, weekend traffic peaks will be less than weekday traffic peaks.

Generally, arterials carrying traffic volumes exceeding their design capacity will experience vehicle delays at signalized intersections of at least 35 seconds during peak traffic periods, with delays to some vehicles approaching 120 seconds. Vehicles may have to wait through more than one traffic signal red phase to clear the intersection, particularly left-turning vehicles. Also, between controlled intersections, arterials carrying traffic volumes greater than their design capacity may be expected to experience restrictions on operating speed and on the ability of vehicles to maneuver. On two-lane highways the ability to pass slower vehicles will be severely restricted. The average travel times on such arterials will typically increase by one-third to one-half over the average travel times on uncongested facilities.

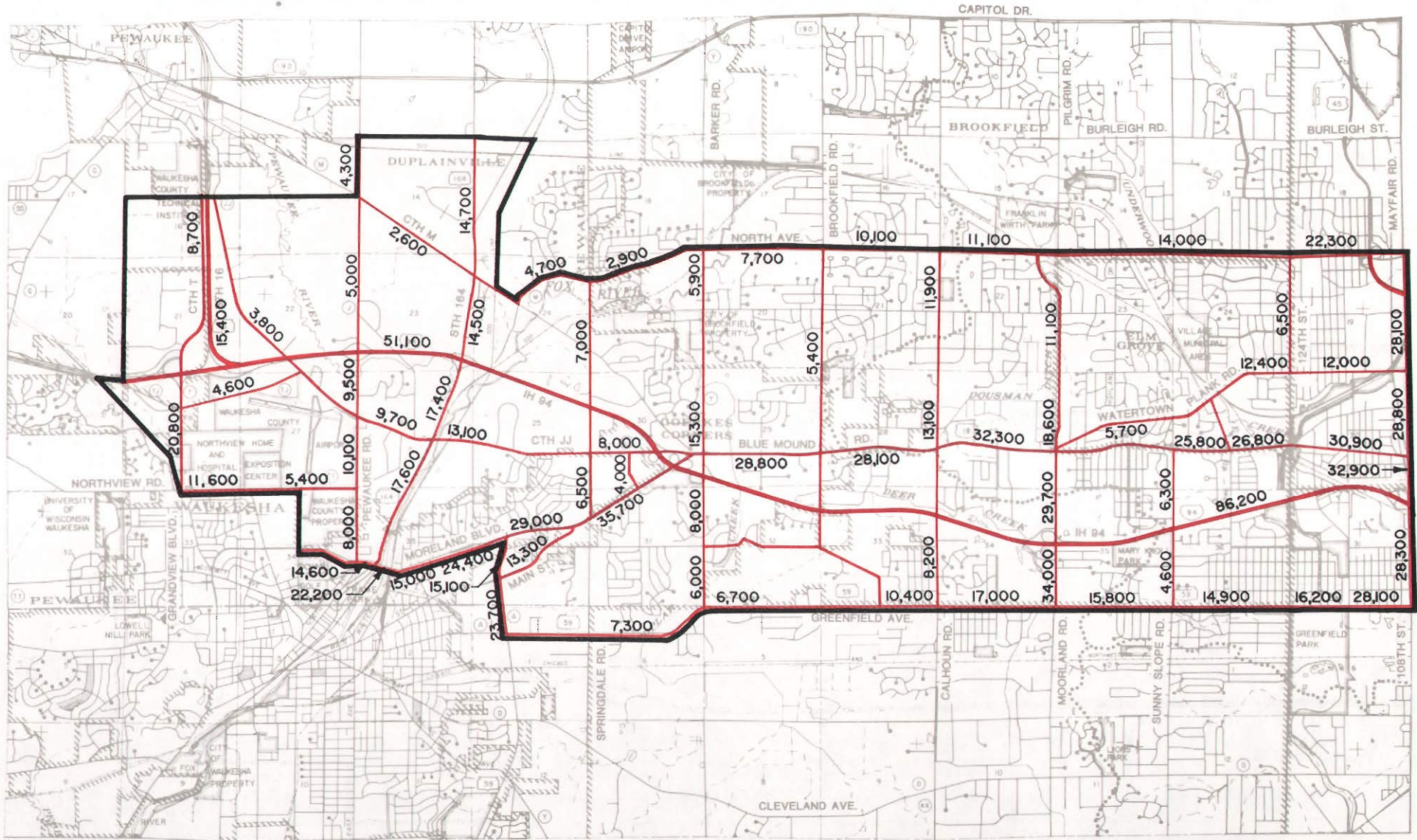
Arterials carrying traffic volumes equaling or approaching their design capacities will typically experience vehicle delays at signalized intersections during peak traffic periods of about 20 to 30 seconds, with delays to some vehicles approaching 60 to 90 seconds. The average travel times on such arterials will typically increase by up to one-third over the average travel times on uncongested facilities.

Arterials operating under their design capacity will experience little vehicle back-up at signalized intersections, and no vehicles will have to wait through more than one red traffic signal phase. The average delay to each vehicle at signalized intersections will be 5 to 15 seconds.

EXISTING AND FORECAST TRAFFIC VOLUME AND CONGESTION WITHIN THE CORRIDOR

The most currently available average weekday traffic volume counts on each arterial street and highway in the Blue Mound Road--East-West Freeway corridor are shown on Map 12. Those arterial roadways which currently carry average weekday traffic volumes exceeding their design capacity are shown on Map 13. Also identified on Map 13 are those roadway segments which currently carry traffic volumes approaching their design capacity--that is, which are operating within about 10 percent or less of design capacity. The number and extent of roadways noted on Map 13 as carrying traffic volumes exceeding design capacity, and therefore requiring improvement, should not be surprising, as the adopted, long-range, regional transportation system plans have long recommended the provision of additional traffic capacity on those roadway segments. Little action, however, has been taken by local and state governments to carry out these improvements. Yet land use development which is served by these facilities has been encouraged and has occurred at even higher rates than planned or forecast.

EXISTING AVERAGE WEEKDAY TRAFFIC VOLUMES ON CORRIDOR ARTERIAL STREET SYSTEM

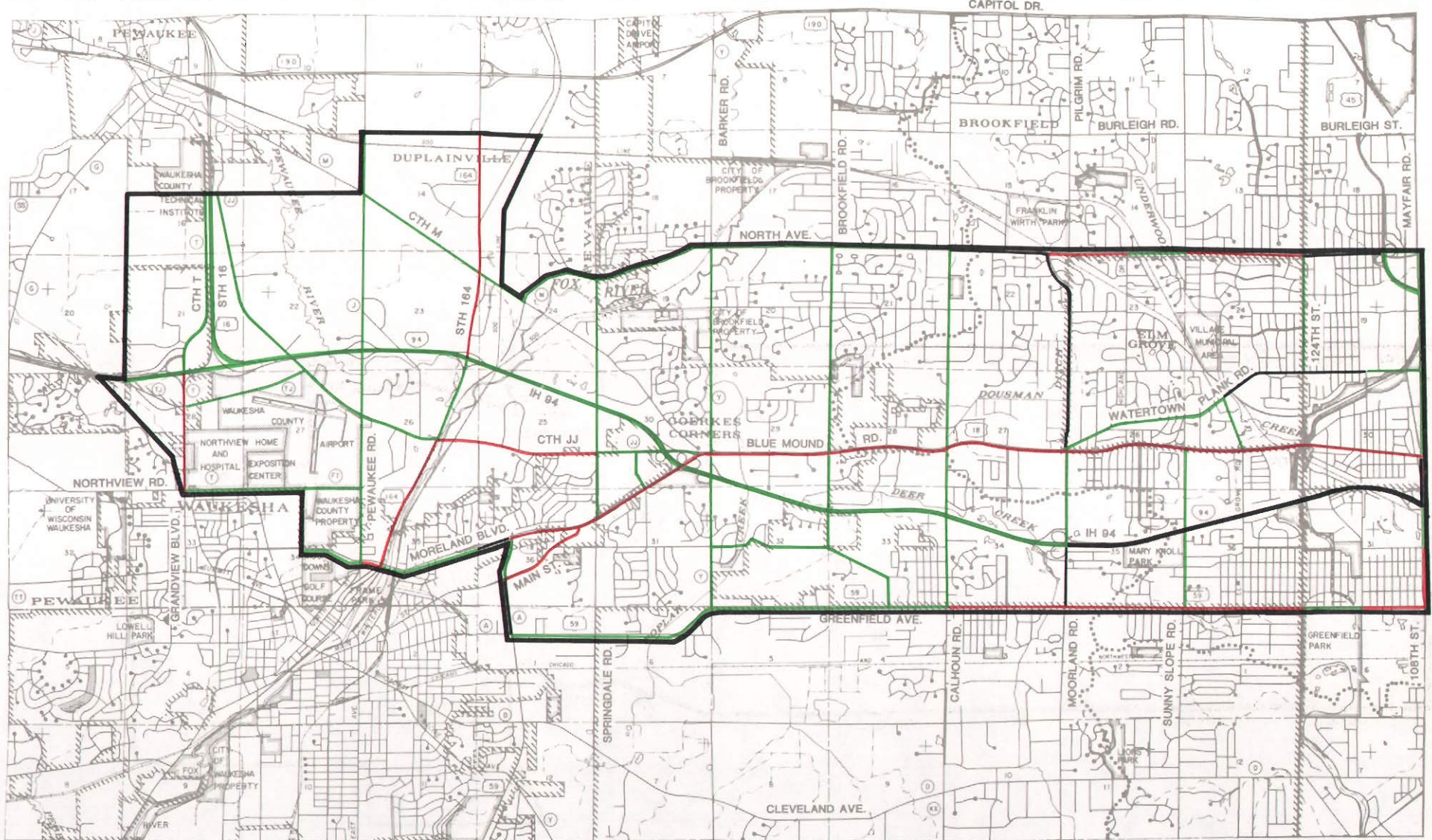


LEGEND

- FREEWAYS
- ARTERIAL STREETS AND HIGHWAYS
- 28,800 AVERAGE WEEKDAY TRAFFIC VOLUME

Source: SEWRPC.

EXISTING TRAFFIC CONGESTION ON ARTERIAL STREETS IN THE BLUE MOUND ROAD--EAST-WEST FREEWAY CORRIDOR



LEGEND

- TRAFFIC VOLUMES EXCEED DESIGN CAPACITY
- TRAFFIC VOLUMES APPROACHING DESIGN CAPACITY
- TRAFFIC VOLUMES BELOW DESIGN CAPACITY



Map 14 identifies the forecast year 2010 average weekday traffic volumes on the arterial street system in the Blue Mound Road--East-West Freeway corridor. These forecast volumes are based upon the forecast population, household, and employment levels previously presented. Map 15 identifies those arterial segments which, based upon the forecast year 2010 traffic volumes, may be expected to carry average weekday traffic volumes exceeding their design capacity. Also identified are those arterial segments which may be expected to carry traffic volumes approaching the design capacity of the facilities. The forecast year 2010 traffic volumes and attendant areas of traffic congestion shown on Maps 14 and 15 are based upon the alternative land use plan for the subcorridor in the City of Brookfield extending from Moorland Road-Pilgrim Parkway to Brookfield Road, which proposes high-density development and the extension of Wisconsin Avenue. The implications of the forecast year 2010 traffic volumes and areas of traffic congestion of the other three alternative land use plans are summarized in Table 6. Traffic volumes on selected arterials, principally in the City of Brookfield portion of the corridor, would be somewhat lower under the lower density alternative land use plans, generally ranging from 1,000 to 5,000 fewer vehicles per average weekday. The lower traffic volumes attendant to these land use plans, however, are not significant, given the substantial increase in volume compared to existing traffic volumes attendant to any of the land use plans. Traffic congestion would not be significantly different under any of the four subcorridor land use plans, and arterial roadway improvement needs would not significantly change. As noted earlier, each of the four land use plans for the subcorridor area provides for substantial increases in average weekday trip generation over existing levels, with the increases ranging from about 90,000 trips, or about 70 percent, to about 121,000 trips, or about 95 percent, over the 1985 level of trip generation in the subcorridor area of about 129,000 trips.

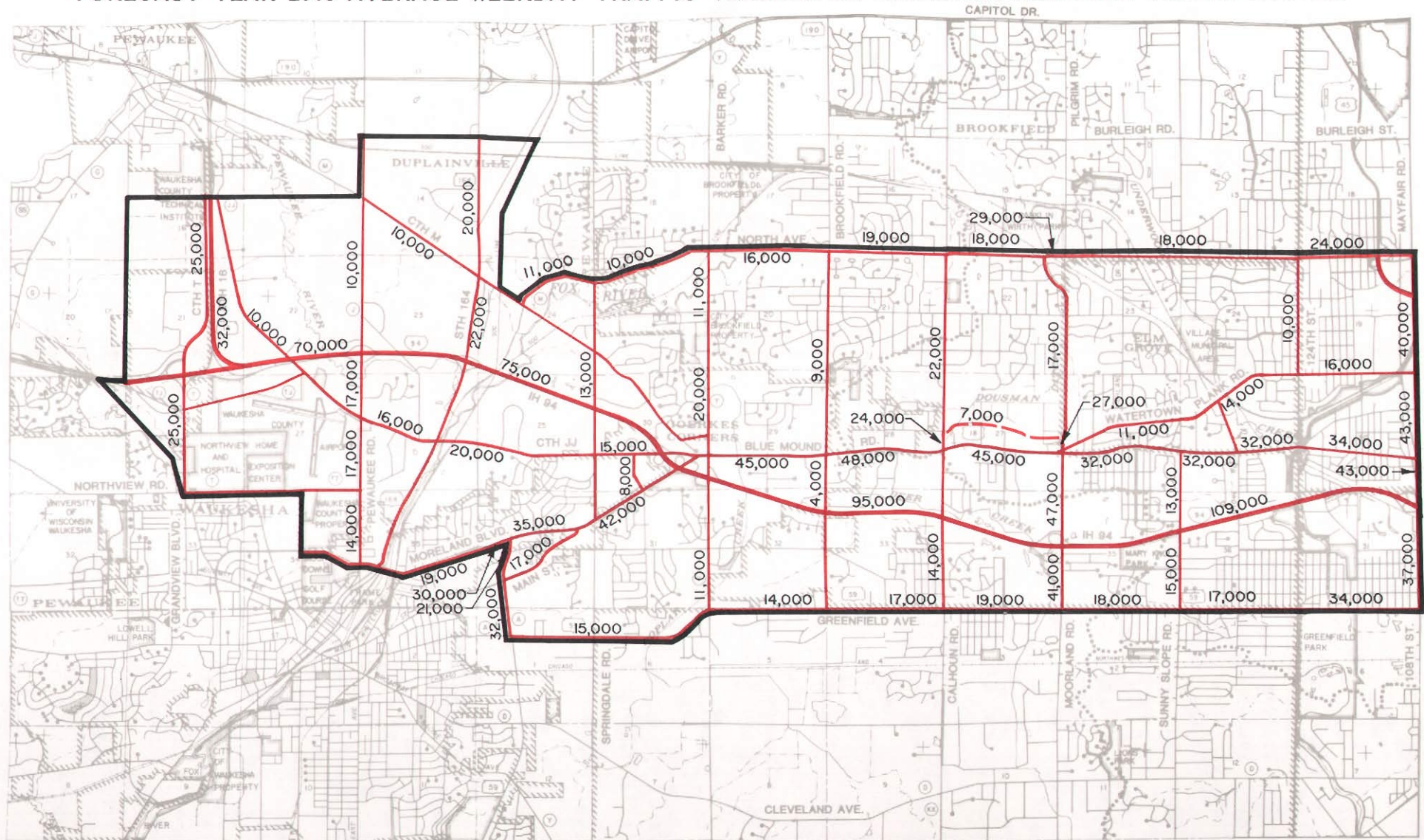
CONSIDERATION OF ALTERNATIVE TRANSPORTATION SYSTEM IMPROVEMENTS

The arterial street system improvements which may be expected to be required by the year 2010 to resolve the identified traffic congestion problems in the Blue Mound Road corridor are listed in Table 7 and shown on Map 16. The arterial street improvements identified in this table are necessary to alleviate over-design-capacity traffic congestion in the corridor, and are based on an assumption that no new freeway interchanges will be provided in the corridor. Proposals, however, have been advanced for new freeway interchanges on the East-West Freeway (IH 94), particularly between the Moorland Road and Goerke's Corners interchanges. Therefore, the implications of such new freeway interchanges were also determined, including the effect on average weekday traffic volumes and the need for arterial street improvements in the corridor.

Evaluation of New Freeway Interchanges

The addition of new freeway interchanges on the East-West Freeway (IH 94) was considered at three locations: one between the interchanges at STH 100 and Moorland Road--a distance of about three miles; one between the interchanges at Moorland Road and Goerke's Corners--a distance of about three miles; and one between the interchanges at Goerke's Corners and STH 164--a distance of about two miles. Substantial population and employment concentrations are served by the STH 100, Moorland Road, and Goerke's Corners interchanges; and significant population and employment growth is anticipated in the service areas of these interchanges. In the Milwaukee area, medium- and high-density

FORECAST YEAR 2010 AVERAGE WEEKDAY TRAFFIC VOLUMES ON CORRIDOR ARTERIAL STREET SYSTEM

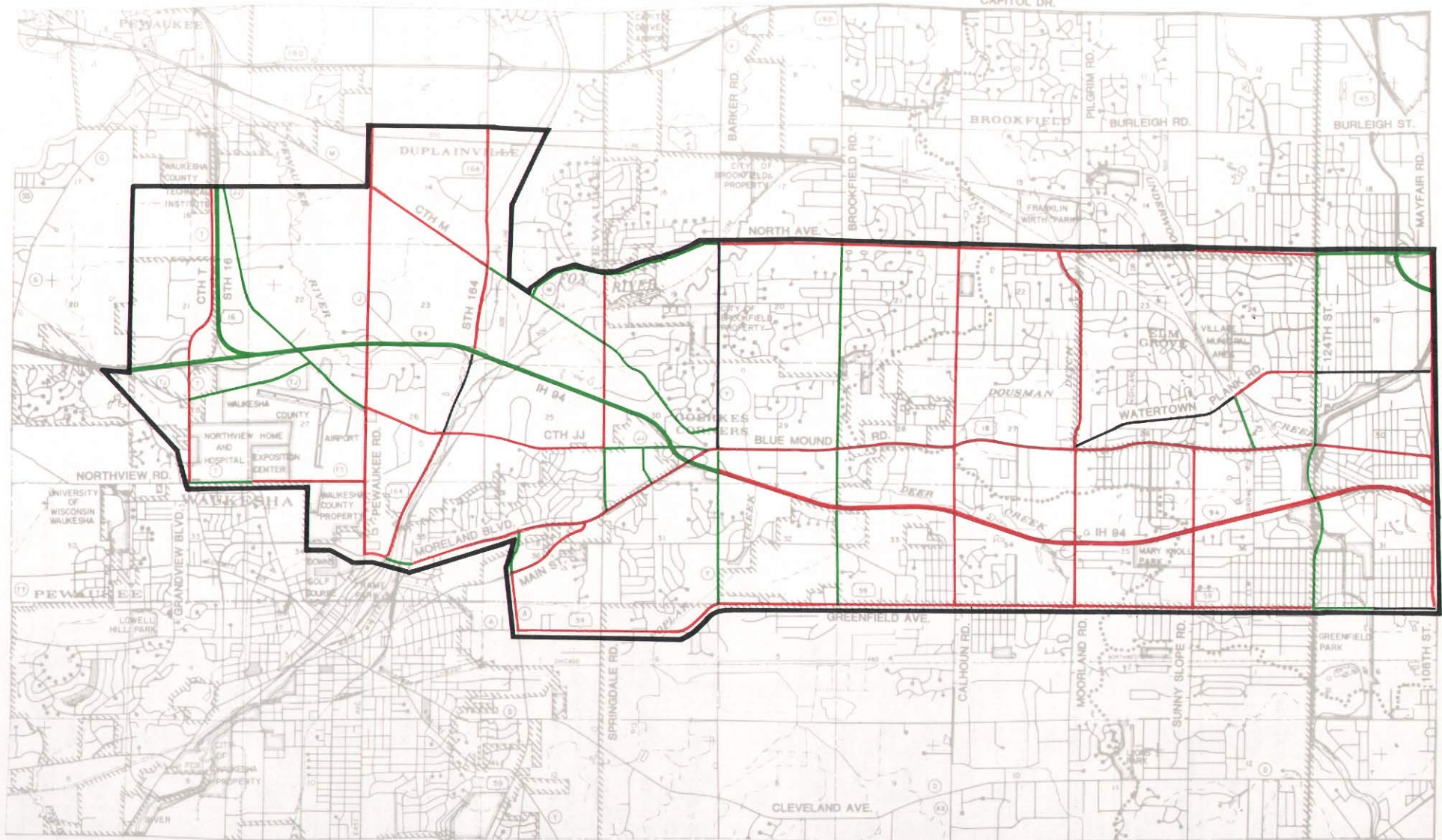


LEGEND

- FREEWAYS
- ARTERIAL STREETS AND HIGHWAYS
- 43,000 AVERAGE WEEKDAY TRAFFIC VOLUME
- PROPOSED COLLECTOR STREET



FORECAST YEAR 2010 TRAFFIC CONGESTION ON ARTERIAL STREETS IN THE BLUE MOUND ROAD--EAST-WEST FREEWAY CORRIDOR



LEGEND

- TRAFFIC VOLUMES EXCEED DESIGN CAPACITY
- TRAFFIC VOLUMES APPROACHING DESIGN CAPACITY
- TRAFFIC VOLUMES BELOW DESIGN CAPACITY



Source: SEWRPC.

Table 6

**COMPARISON OF DIFFERENCES IN FORECAST YEAR 2010 TRAFFIC
VOLUMES ON SELECTED ARTERIAL STREETS IN THE BLUE MOUND ROAD
--EAST-WEST FREEWAY CORRIDOR UNDER THE FOUR ALTERNATIVE
LAND USE PLANS PROPOSED BY THE CITY OF BROOKFIELD**

| Streets | Traffic Volumes (vehicles per average weekday) | | | |
|------------------------------------|--|---|---|--|
| | High Density- Wisconsin Avenue Extension | High Density- No Wisconsin Avenue Extension | Low Density- Wisconsin Avenue Extension | Low Density- No Wisconsin Avenue Extension |
| East-West Arterial | | | | |
| IH 94 | | | | |
| Moorland Road to USH 18..... | 95,000 | 94,000 | 94,000 | 94,000 |
| IH 94 | | | | |
| Moorland Road to STH 100..... | 106,000 | 104,000 | 103,000 | 102,000 |
| Blue Mound Road | | | | |
| Calhoun Road to Barker Road..... | 45,000 | 44,000 | 43,000 | 42,000 |
| Blue Mound Road | | | | |
| Moorland Road to Calhoun Road.... | 45,000 | 45,000 | 40,000 | 42,000 |
| Blue Mound Road | | | | |
| Moorland Road to 124th Street.... | 32,000 | 31,000 | 30,000 | 30,000 |
| Greenfield Avenue | | | | |
| Calhoun Road to CTH A..... | 15,000 | 14,000 | 14,000 | 14,000 |
| North-South Arterial | | | | |
| Moorland Road | | | | |
| Blue Mound Road to IH 94..... | 47,000 | 44,000 | 43,000 | 42,000 |
| Calhoun Road | | | | |
| Blue Mound Road | | | | |
| to Greenfield Avenue..... | 14,000 | 13,500 | 13,000 | 13,000 |
| Calhoun Road | | | | |
| Blue Mound Road to North Avenue... | 22,000 | 21,000 | 20,000 | 20,000 |

Source: SEWRPC.

urban development such as is located in, and proposed to be located in, the corridor is typically served by a closer spacing of freeway interchanges than three miles. The inadequacy of the current interchange spacing is indicated by the very high average weekday traffic volumes that use the existing interchanges and that may be expected to use these interchanges in the future. The Moorland Road interchange was the most heavily used freeway-to-surface street interchange in the Milwaukee area in 1986. Approximately 47,000 vehicles used the ramps of the Moorland Road interchange on an average weekday in 1986 to get to and from the freeway. Approximately 70,000 vehicles per average weekday may be expected to use these ramps by the year 2010. The STH 100, STH 164, and Goerke's Corners interchanges are also among the most heavily used interchanges in the Milwaukee area. Traffic volumes of 25,000, 22,000, and 41,000 vehicles per average weekday, respectively, utilized the ramps of these three interchanges in 1986. These volumes may be expected to increase to 32,000, 33,000, and 64,000 vehicles per average weekday, respectively, by the year 2010.

Evaluation of New Freeway Interchanges Between Moorland Road and Goerke's Corners: Three alternative locations and configurations for a new freeway interchange between Moorland Road and Goerke's Corners were identified and evaluated: 1) a new diamond interchange at Calhoun Road; 2) a new diamond interchange at Brookfield Road; and 3) a new split interchange, with one-half the interchange provided at Calhoun Road and the other half provided at Brookfield Road. The half interchanges would be connected by frontage roads. The half interchange provided at Calhoun Road would include the westbound off-ramp and the eastbound on-ramp of the East-West Freeway; and the half interchange at Brookfield Road would include the westbound on-ramp and the eastbound off-ramp of the East-West Freeway. The three interchange alternatives are shown on Map 17. Each of these interchanges would be located a sufficient distance from

Table 7

**ARTERIAL STREET SYSTEM IMPROVEMENTS REQUIRED BY THE
YEAR 2010 IN THE BLUE MOUND ROAD CORRIDOR UNDER A
TRANSPORTATION SYSTEM PLAN WITH NO NEW FREEWAY INTERCHANGES^a**

| Arterial Street | Limits | Needed Number of Traffic Lanes |
|---|--|---|
| East-West Arterial Greenfield Avenue..... East-West Freeway..... Blue Mound Road..... Moreland Boulevard..... Main Street..... CTH JJ..... North Avenue..... | N. 124th Street to CTH A STH 100 to Goerke's Corners STH 100 to Moorland Road Moorland Road to Barker Road Barker Road to Main Street Main Street to Manhattan Drive Moreland Boulevard to CTH A Kossow Road to CTH J N. 124th Street to Barker Road | 4 8 b 6 8 b 8 b 6 4 b 4 b 4 |
| North-South Arterial N. and S. 124th Street (extension and improvement).. Sunnyslope Road..... Moorland Road..... Pilgrim Parkway (with direct connection to Pilgrim Road).. Calhoun Road..... Brookfield Road (extension)... Barker Road..... Springdale Road..... CTH A..... STH 164..... CTH J..... CTH T..... | W. Greenfield Avenue to W. North Avenue W. Greenfield Avenue to W. Blue Mound Road W. Greenfield Avenue to W. Blue Mound Road W. Blue Mound Road to W. Wisconsin Avenue W. Wisconsin Avenue to W. North Avenue W. Greenfield Avenue to W. North Avenue Davidson Road to W. Greenfield Avenue East-West Freeway to W. North Avenue CTH JJ to W. North Avenue Main Street to W. Greenfield Avenue East-West Freeway to W. Capitol Drive Moreland Boulevard to CTH M Northview Road to CTH JJ | 2 4 b 8 b 6 4 4 c 2 d 4 4 b 6 b 4 4 b 6 b |

^aThe planned improvements to STH 164, CTH JJ, and Blue Mound Road (STH 18) from 124th Street to Manhattan Drive are currently programmed for implementation.

^bThe current adopted regional transportation system plan recommends two fewer traffic lanes on each of these roadway segments. The increased need for traffic-carrying capacity may be attributed to the substantial increase in land development density proposed under the revised land use plans being considered for the Blue Mound Road corridor.

^cThe current adopted regional transportation system plan recommends two fewer traffic lanes on Calhoun Road between W. Greenfield Avenue and the East-West Freeway.

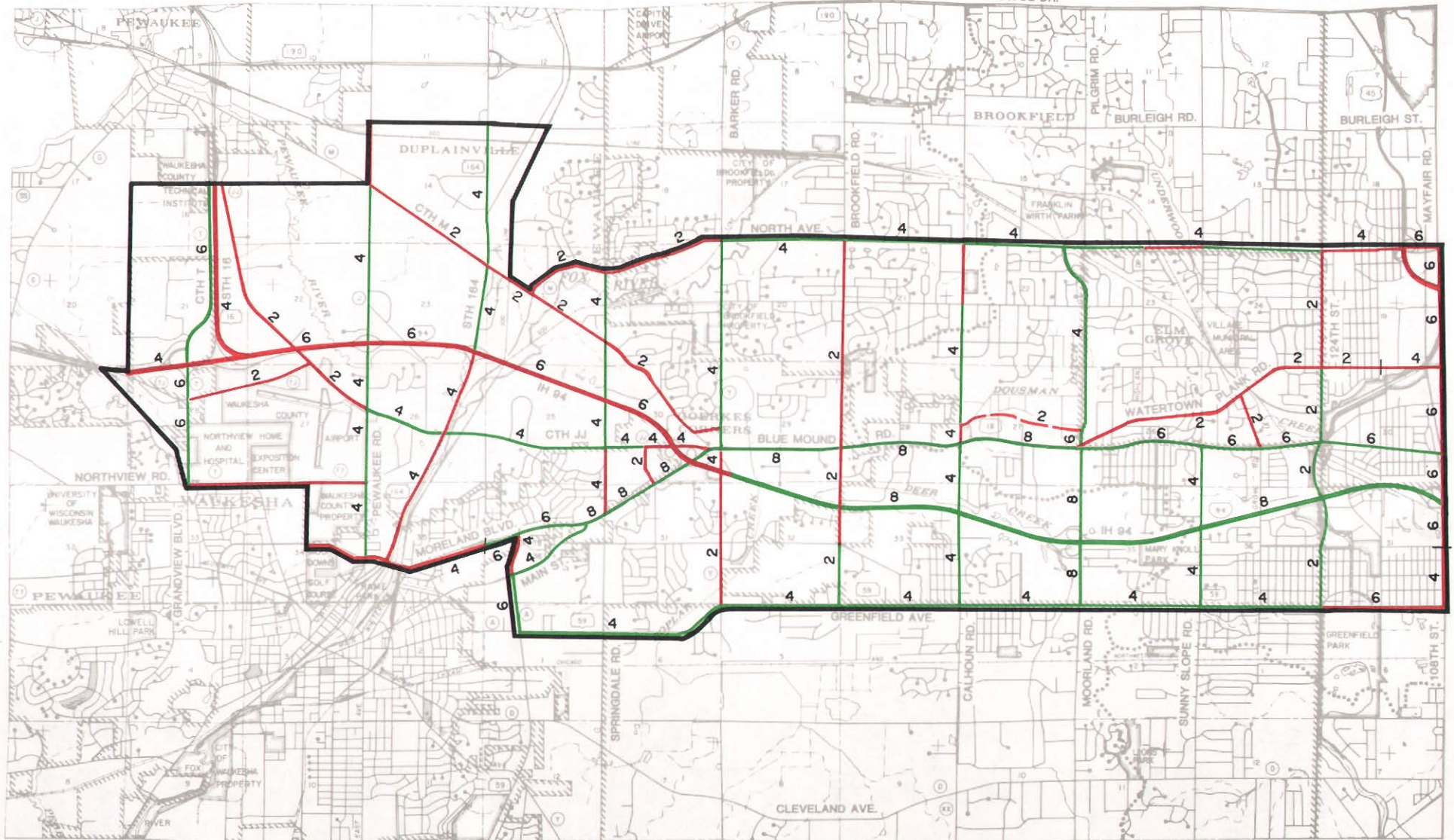
^dThe current adopted regional transportation system plan did not recommend the extension as an arterial street of Brookfield Road from Davidson Road to Greenfield Avenue.

Source: SEWRPC.

adjacent existing interchanges to have no significant adverse impacts on the operation of those interchanges, or of the freeway itself, with respect to weaving or lane changing movements.

The capital cost of the three interchange alternatives was estimated. Also, the potential effect of each interchange on average weekday traffic volumes on the arterial street system in the corridor was determined, along with the implications for arterial street improvement needs in the corridor. A benefit-cost ratio was calculated for each alternative interchange to facilitate a quantitative comparison of the transportation benefits of the interchange to the capital costs. The transportation benefits considered included the poten-

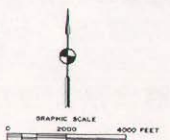
ARTERIAL STREET SYSTEM IMPROVEMENTS REQUIRED^a BY THE YEAR 2010 IN THE BLUE MOUND ROAD CORRIDOR UNDER A TRANSPORTATION SYSTEM PLAN WITH NO NEW FREEWAY INTERCHANGES



LEGEND

- | | |
|---|--|
| — FREEWAYS | — PROPOSED COLLECTOR STREET |
| — ARTERIAL STREETS AND HIGHWAYS | 4 NUMBER OF TRAFFIC LANES |
| — IMPROVED OR NEW ARTERIAL STREETS | |

^aTHE PLANNED IMPROVEMENTS TO STH 164, CTH JJ, AND BLUE MOUND ROAD (USH 18) FROM 124TH STREET TO MANHATTAN DRIVE ARE CURRENTLY PROGRAMMED FOR IMPLEMENTATION.



tial of the interchange to provide for more direct traffic routing, thus reducing vehicle miles and hours of travel; to improve transportation safety by reducing vehicle miles of travel and by carrying more traffic on the safer freeway element of the arterial street system; and to reduce vehicle operating costs by reducing vehicle miles of travel, and by carrying traffic on more efficient arterial facilities such as freeways.

The capital cost--including construction, engineering, and right-of-way costs--of a new interchange on the East-West Freeway at Calhoun Road was estimated at \$3.3 million. The potential impacts of the interchange on average weekday traffic volumes in the Blue Mound Road corridor are summarized in Tables 8 and 9. The analyses indicate that the addition of a new interchange at Calhoun Road would remove substantial traffic from Moorland Road between Greenfield Avenue and Blue Mound Road, and from Blue Mound Road between Moorland Road and Barker Road. Without the new interchange, this stretch of Moorland Road would need to be widened by the year 2010. With the interchange, the need for such widening can be avoided. The new interchange, however, may be expected to result in substantial additional traffic on the East-West Freeway between Moorland Road and Calhoun Road, and on Calhoun Road between Greenfield Avenue and Blue Mound Road. Without the new interchange, Calhoun Road will need to be widened by the year 2010 to provide four traffic lanes. If the new interchange were to be provided, the further widening of Calhoun Road to provide six traffic lanes between Greenfield Avenue and Blue Mound Road would be required by the year 2010.

The benefit-cost ratio of an interchange at Calhoun Road was estimated to range from 3.4 to 5.8, depending upon the interest rate used to discount the transportation benefits of the interchange. The benefit-cost ratio was estimated to be 5.8 at a 4 percent discount rate, 4.8 at a 6 percent discount rate, and 3.4 at a 10 percent discount rate. The new interchange would require the acquisition of 2.3 acres of right-of-way, including some parkland in the northeast and southwest quadrants of the interchange.

The capital cost of a new interchange on the East-West Freeway at Brookfield Road was estimated at \$3.5 million. The potential impacts of the interchange on average weekday traffic volumes in the Blue Mound Road corridor are summarized in Tables 10 and 11. A new interchange at Brookfield Road may be expected to remove traffic from Blue Mound Road between Moorland Road and Barker Road, and from Moorland Road between Greenfield Avenue and Blue Mound Road. However, the new interchange may also be expected to result in substantial additional traffic on Brookfield Road from Greenfield Avenue to North Avenue and on the East-West Freeway between Goerke's Corners and Moorland Road. The interchange may be expected to result in a need to widen Brookfield Road from two to four traffic lanes from the East-Freeway to Blue Mound Road by the year 2010; such widening would not be required without the interchange.

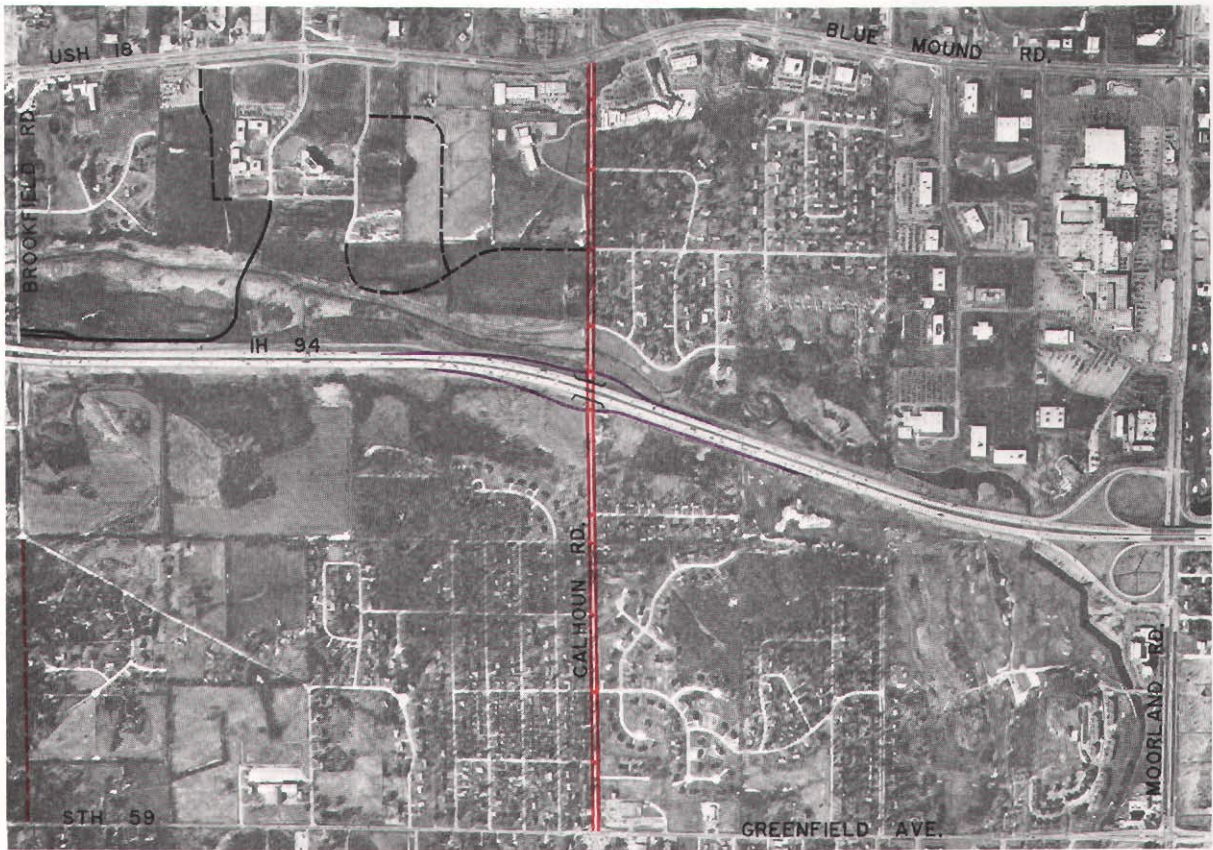
The benefit-cost ratio of an interchange at Brookfield Road was estimated to range from 3.3 to 5.6, depending upon the interest rate used to discount the benefits of the interchange. The benefit-cost ratio was estimated to be 5.6 at a 4 percent discount rate, 4.6 at a 6 percent discount rate, and 3.3 at a 10 percent discount rate. The new interchange would require the acquisition of 2.3 acres of right-of-way.

The capital cost of a new interchange on the East-West Freeway that would be split between Calhoun Road and Brookfield Road was estimated at \$7.2 million. As already noted, one-half of the new interchange would be provided at Calhoun

Map 17

ALTERNATIVE NEW INTERCHANGES ALONG THE EAST-WEST FREEWAY
BETWEEN THE MOORLAND ROAD AND GOERKE'S CORNERS INTERCHANGES

AT CALHOUN ROAD



AT BROOKFIELD ROAD



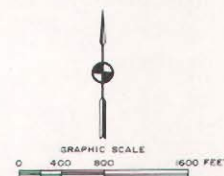
Map 17 (continued)

AT BROOKFIELD ROAD AND CALHOUN ROAD



LEGEND

- PROPOSED FREEWAY INTERCHANGE
- PROPOSED ARTERIAL STREET
- PROPOSED NONARTERIAL STREET
- NEEDED ARTERIAL STREET IMPROVEMENT^a
- NONARTERIAL STREET CONSTRUCTED
SUBSEQUENT TO DATE OF PHOTOGRAPHY



Source: SEWRPC.

Road and the other half at Brookfield Road, and the two halves would be connected with frontage roads. The impacts of the interchange on average weekday traffic volumes and on arterial street improvement needs in the Blue Mound Road corridor are summarized in Tables 12 and 13. This new interchange may be expected to remove substantial traffic from Moorland Road between Greenfield Avenue and Blue Mound Road, and from Blue Mound Road between Moorland Road and Barker Road. Without the new interchange, the stretch of Moorland Road from Greenfield Avenue to Blue Mound Road would need to be widened to eight traffic lanes by the year 2010. With the new interchange, this need may not be expected to develop. The new interchange may also be expected to result in substantial additional traffic on the East-West Freeway between Moorland Road and Goerke's Corners, and on Calhoun Road and Brookfield Road between W. Greenfield Avenue and Blue Mound Road.

Table 8

TRAFFIC IMPACTS OF A CALHOUN ROAD INTERCHANGE

| Arterial Facility | Average Weekday Traffic Volume: 1986 | Forecast Average Weekday Traffic Volume Without Interchange: 2010 | Forecast Average Weekday Traffic Volume With Interchange: 2010 |
|---|--------------------------------------|---|--|
| Freeway Interchange Moorland Road..... Goerke's Corners..... Calhoun Road..... | 47,000 41,000 -- | 70,000 64,000 -- | 47,000 51,000 36,000 |
| North-South Arterial Moorland Road Greenfield Avenue to Blue Mound Road..... | 29,700 to 34,000 | 41,000 to 47,000 | 30,000 to 35,000 |
| Pilgrim Parkway Blue Mound Road to Watertown Plank Road..... | 18,600 | 27,000 | 25,000 |
| Watertown Plank Road to North Avenue..... | 11,000 | 17,000 | 15,000 |
| Calhoun Road Greenfield Avenue to Blue Mound Road..... | 8,200 | 14,000 | 26,000 |
| Blue Mound Road to Wisconsin Avenue..... | 13,100 | 24,000 | 27,000 |
| Wisconsin Avenue to North Avenue..... | 11,900 | 22,000 | 24,000 |
| Barker Road Greenfield Avenue to Blue Mound Road..... | 6,000 to 8,000 | 11,000 | 10,000 |
| Blue Mound Road to North Avenue..... | 5,900 to 15,300 | 11,000 to 20,000 | 10,000 to 19,000 |
| East-West Arterial Blue Mound Road Moorland Road to Calhoun Road..... | 32,300 | 45,000 | 36,000 |
| Calhoun Road to Brookfield Road..... | 28,100 | 48,000 | 42,000 |
| Brookfield Road to Barker Road..... | 28,800 | 45,000 | 36,000 |
| East-West Freeway Calhoun Road to Moorland Road..... | 68,000 | 95,000 | 109,000 |

Source: SEWRPC.

Table 9

IMPLICATIONS OF A CALHOUN ROAD INTERCHANGE FOR NEEDED ARTERIAL STREET IMPROVEMENTS BY THE YEAR 2010

| Arterial | Implications of Implementation of the Calhoun Road Interchange |
|---|--|
| Moorland Road Greenfield Avenue to East-West Freeway..... | Widening from 4 to 6 lanes needed, rather than to 8 lanes |
| East-West Freeway to Blue Mound Road..... | Widening from 6 to 8 lanes not needed |
| Calhoun Road Greenfield Avenue to Blue Mound Road..... | Widening from 2 to 6 lanes needed, rather than to 4 lanes |

Source: SEWRPC.

Table 10

TRAFFIC IMPACTS OF A BROOKFIELD ROAD INTERCHANGE

| Arterial Facility | Average Weekday Traffic Volume: 1986 | Forecast Average Weekday Traffic Volume Without Interchange: 2010 | Forecast Average Weekday Traffic Volume With Interchange: 2010 |
|--|--------------------------------------|---|--|
| Freeway Interchange Moorland Road..... Goerke's Corners..... Brookfield Road..... | 47,000 41,000 -- | 70,000 64,000 -- | 58,000 49,000 27,000 |
| North-South Arterial Moorland Road Greenfield Avenue to Blue Mound Road..... | 29,700 to 34,000 | 41,000 to 47,000 | 37,000 to 40,000 |
| Calhoun Road Blue Mound Road to North Avenue..... | 11,900 to 13,100 | 22,000 to 24,000 | 20,000 to 22,000 |
| Brookfield Road Greenfield Avenue to East-West Freeway..... | 2,000 | 4,000 | 10,000 |
| East-West Freeway to Blue Mound Road..... | 2,000 | 4,000 | 16,000 |
| Blue Mound Road to North Avenue..... | 5,400 | 9,000 | 12,000 |
| Barker Road Greenfield Avenue to Blue Mound Road..... | 6,000 to 8,000 | 11,000 | 9,000 |
| Blue Mound Road to North Avenue..... | 5,900 to 15,300 | 11,000 to 20,000 | 10,000 to 19,000 |
| East-West Arterial Blue Mound Road Moorland Road to Brookfield Road..... | 28,100 to 32,300 | 45,000 to 48,000 | 38,000 to 43,000 |
| Brookfield Road to Barker Road..... | 28,800 | 45,000 | 33,000 to 39,000 |
| East-West Freeway Goerke's Corners to Moorland Road..... | 68,000 | 95,000 | 101,000 |

Source: SEWRPC.

Table 11

IMPLICATIONS OF A BROOKFIELD ROAD INTERCHANGE FOR NEEDED ARTERIAL STREET IMPROVEMENTS BY THE YEAR 2010

| Arterial | Implication of Implementation of the Brookfield Road Interchange |
|---|--|
| Brookfield Road East-West Freeway to Blue Mound Road..... | Widening from 2 to 4 lanes needed |

Source: SEWRPC.

Table 12

**TRAFFIC IMPACTS OF A SPLIT INTERCHANGE
ON CALHOUN ROAD AND BROOKFIELD ROAD**

| Arterial Facility | Average Weekday Traffic Volume: 1986 | Forecast Average Weekday Traffic Volume Without Interchange: 2010 | Forecast Average Weekday Traffic Volume With Interchange: 2010 |
|--|--|--|---|
| Freeway Interchange Moorland Road..... Goerke's Corners..... Split between Calhoun Road and Brookfield Road..... | 47,000 41,000 -- | 70,000 64,000 -- | 47,000 49,000 38,000 |
| North-South Arterial Moorland Road Greenfield Avenue to Blue Mound Road..... | 29,700 to 34,000 | 41,000 to 47,000 | 30,000 to 35,000 |
| Pilgrim Parkway Blue Mound Road to Watertown Plank Road.... | 18,600 | 27,000 | 25,000 |
| Watertown Plank Road to North Avenue..... | 11,000 | 17,000 | 15,000 |
| Calhoun Road Greenfield Avenue to Blue Mound Road..... | 8,200 | 14,000 | 22,000 |
| Blue Mound Road to Wisconsin Avenue..... | 13,100 | 24,000 | 24,000 |
| Wisconsin Avenue to North Avenue..... | 11,900 | 22,000 | 21,000 |
| Brookfield Road Greenfield Avenue to East-West Freeway.... | 2,000 | 4,000 | 10,000 |
| East-West Freeway to Blue Mound Road..... | 2,000 | 4,000 | 10,000 |
| Blue Mound Road to North Avenue..... | 5,400 | 9,000 | 12,000 |
| Barker Road Greenfield Avenue to Blue Mound Road..... | 6,000 to 8,000 | 11,000 | 9,000 |
| Blue Mound Road to North Avenue..... | 5,900 to 15,300 | 11,000 to 20,000 | 10,000 to 19,000 |
| East-West Arterial Blue Mound Road Moorland Road to Calhoun Road..... | 32,300 | 45,000 | 35,000 |
| Calhoun Road to Brookfield Road..... | 28,100 | 48,000 | 40,000 |
| Brookfield Road to Barker Road..... | 28,800 | 45,000 | 33,000 to 39,000 |
| East-West Freeway Goerke's Corners to Moorland Road..... | 68,000 | 95,000 | 101,000 to 109,000 |

Source: SEWRPC.

Table 13

**IMPLICATIONS OF A SPLIT INTERCHANGE ON
CALHOUN ROAD AND BROOKFIELD ROAD FOR NEEDED
ARTERIAL STREET IMPROVEMENTS BY THE YEAR 2010**

| Arterial | Implications of Implementation of the Calhoun Road Interchange |
|---|---|
| Moorland Road Greenfield Avenue to East-West Freeway..... East-West Freeway to Blue Mound Road..... | Widening from 4 lanes to 6 lanes needed, rather than to 8 lanes Widening from 6 lanes to 8 lanes not needed |
| Calhoun Road Greenfield Avenue to Blue Mound Road..... | Widening from 2 lanes to 4 lanes with median needed, rather than widening from 2 lanes to undivided 4 lanes |

Source: SEWRPC.

The benefit-cost ratio of a split interchange at Calhoun Road and Brookfield Road was estimated to range from 1.5 to 2.6, depending on the interest rates used to discount the transportation benefits of the interchange. The benefit-cost ratio was estimated to be 2.6 at a 4 percent discount rate, 2.2 at a 6 percent discount rate, and 1.5 at a 10 percent rate. The new interchange would require the acquisition of 5.6 acres, including parkland, north and south of the East-West Freeway at Calhoun Road.

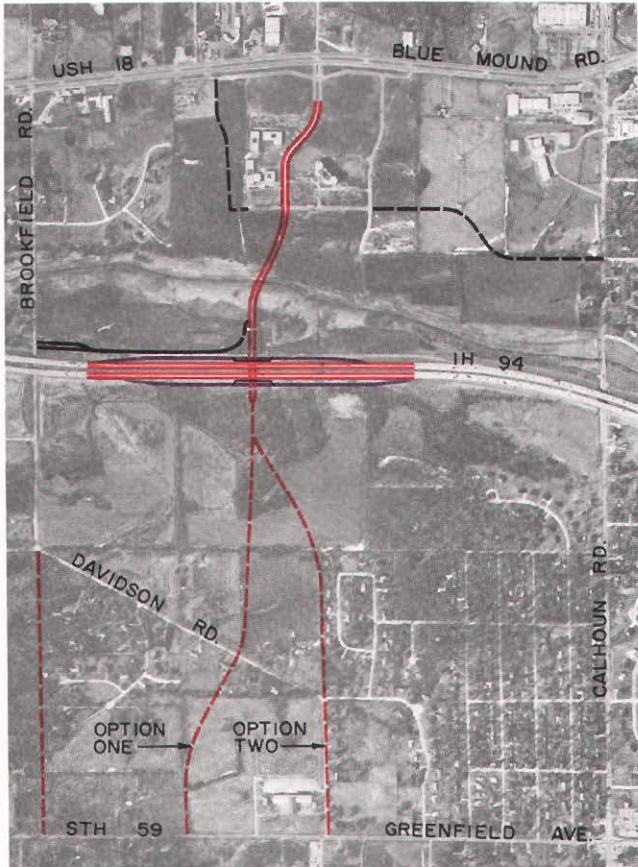
Following a review of these three alternative locations for a new interchange between the Moorland Road and Goerke's Corners interchanges on the East-West Freeway (IH 94), the Blue Mound Road Corridor Study Task Force requested that an additional alternative location be considered. The new interchange would be located between Calhoun and Brookfield Roads, and would require connections to the arterial street system--to Blue Mound Road to the north and Greenfield Avenue to the south--to be made over new arterial streets. The additional interchange alternative was proposed as a result of concerns that the traffic traveling to and from the proposed interchanges on Calhoun Road and/or Brookfield Road would have an adverse impact on existing residential land uses fronting and backing these streets. Between Greenfield Avenue and Blue Mound Road, 53 residences abut Calhoun Road, of which 31 front Calhoun Road, and 19 residences abut Brookfield Road, of which 13 front Brookfield Road.

A number of options exist for locating a new interchange, along with the connecting arterial streets, between Calhoun and Brookfield Roads, as shown on Map 18. Two alternative alignments for the northern access to the interchange were identified. One alternative alignment would be located along Corporate Drive within the Brookfield Lakes Corporate Center, a facility that presently

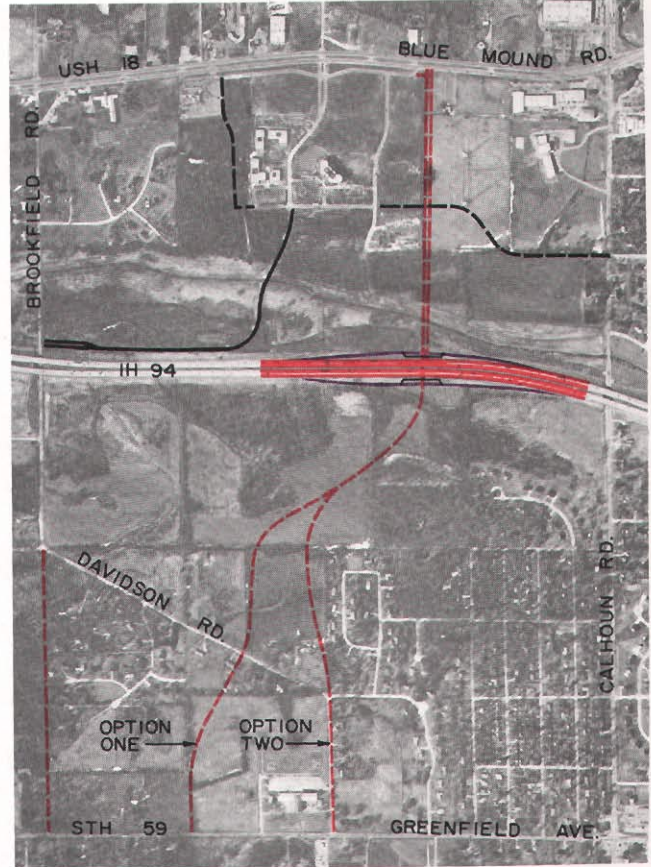
Map 18

ALTERNATIVE NEW INTERCHANGE ALONG THE EAST-WEST FREEWAY BETWEEN CALHOUN AND BROOKFIELD ROADS WITH ACCESS PROVIDED TO THE NORTH AND SOUTH

ALTERNATIVE ONE

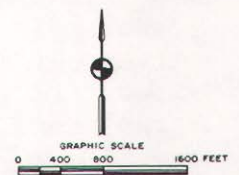


ALTERNATIVE TWO



LEGEND

- PROPOSED FREEWAY INTERCHANGE
- - - PROPOSED ARTERIAL STREET
- - - PROPOSED NONARTERIAL STREET
- NEEDED ARTERIAL STREET IMPROVEMENT
- NONARTERIAL STREET CONSTRUCTED
SUBSEQUENT TO DATE OF PHOTOGRAPHY



Source: SEWRPC.

functions as a collector street. The other alternative alignment would be located immediately east of the Brookfield Lakes Corporate Center within the WTMJ transmission towers property. Consideration was given to the potential extension of these northern access routes of the interchange beyond Blue Mound Road to Wisconsin Avenue. Such extension, however, would result in adverse impacts on 16 existing residential properties located along Wisconsin Avenue. A desire to minimize, and if possible avoid, such impacts was the principal reason that this new alternative interchange location was proposed. Consequently, the analysis of this new interchange assumed that the northern access road to the interchange would terminate at Blue Mound Road.

The alternative alignment for the northern access to the potential interchange that would be located along Corporate Drive would require the widening of Corporate Drive from two traffic lanes to four to six traffic lanes. This widening would not be expected to require the removal of any office buildings, but would require right-of-way acquisition and result in the need to replace some surface parking with parking structures and alter the "campuslike" design of the Brookfield Lakes Corporate Center. The other alternative alignment, immediately to the east of the Brookfield Lakes Corporate Center, would require the acquisition of right-of-way and the relocation and reconstruction of the WTMJ radio transmission towers.

To provide access from the new interchange to the south to Greenfield Avenue, a number of optional alignments were similarly identified. These are also shown on Map 18. All the roadway alignments would impact existing residential property. The roadway connecting the new interchange to Greenfield Avenue would entail either the acquisition of one residential property and the location of a new or widened roadway along nine other residential properties, or the location of a new roadway along 15 residential properties. In comparison, along Calhoun Road between Greenfield Avenue and Blue Mound Road there are 53 abutting residential properties; and along existing and an extended Brookfield Road between Greenfield Avenue and Blue Mound Road, there are 19 abutting residential properties. Because the provision of a connecting roadway to the south could have adverse impacts on existing residential properties, two alternative configurations for the new interchange were considered--one which would provide both a northern and a southern connection to the arterial street system from the interchange, and one which would provide only a northern connection. Map 18 shows the assumed configuration of an interchange that would provide both a northern and southern connection; Map 19 shows the assumed configuration of an interchange that would provide only a northern connection.

The capital cost of a new interchange on the East-West Freeway (IH 94) between Calhoun Road and Brookfield Road with both northern and southern connections was estimated at \$12.0 million along an alignment on Corporate Drive, and at \$13.5 million along an alignment over the WTMJ property. These estimates include the costs that may be entailed in acquiring additional right-of-way along Corporate Drive, and in relocating and reconstructing the WTMJ radio transmission towers. The relocation of the transmission towers would be required if the alignment within the WTMJ property were selected for implementation. The estimated cost of a new interchange on the East-West Freeway between Calhoun Road and Brookfield Road with only a northern connection was estimated at \$12.5 million along an alignment on Corporate Drive, and \$14.0 million along an alignment over the WTMJ property. The capital cost of the interchange with only a northern connection would be somewhat higher than that with both northern and southern connections because the latter could be constructed as a simple diamond interchange, while the former would have to be constructed with separate loop ramps for eastbound freeway traffic, as shown on Maps 18 and 19.

The estimated capital cost of a new interchange between Calhoun Road and Brookfield Road with connecting roadways to the north and south is \$12.0 to \$13.5 million, including an estimated \$1.5 million for right-of-way acquisition; an estimated \$7.5 million for freeway, freeway interchange, and connecting roadway construction; and \$3.0 to \$4.5 million for additional costs attendant to a connecting roadway through the Corporate Lakes Office Center, including new roadway structures and replacement of some surface parking with structure

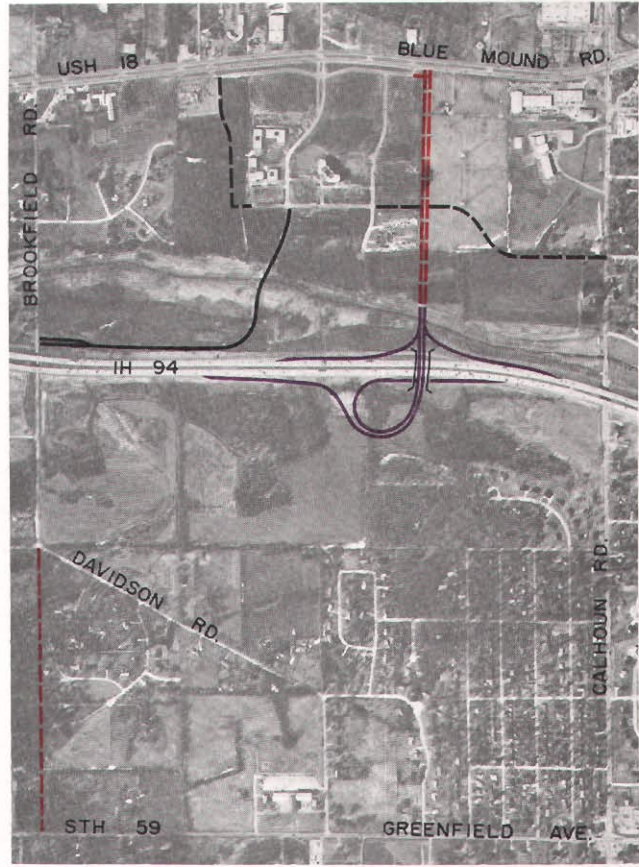
Map 19

ALTERNATIVE NEW INTERCHANGE ALONG THE EAST-WEST FREEWAY BETWEEN CALHOUN AND BROOKFIELD ROADS WITH ACCESS PROVIDED ONLY TO THE NORTH

ALTERNATIVE ONE

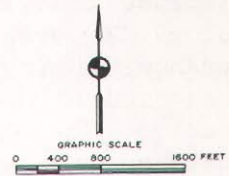


ALTERNATIVE TWO



LEGEND

- PROPOSED FREEWAY INTERCHANGE
- PROPOSED ARTERIAL STREET
- PROPOSED NONARTERIAL STREET
- NEEDED ARTERIAL STREET IMPROVEMENT
- NONARTERIAL STREET CONSTRUCTED
SUBSEQUENT TO DATE OF PHOTOGRAPHY



Source: SEWRPC.

parking, or through the WTMJ transmission tower property, including relocation and reconstruction of the transmission towers. The estimated total cost of a new interchange between Calhoun Road and Brookfield Road with a connecting roadway to the north only is \$12.5 to \$14.0 million, including an estimated \$2.1 million for right-of-way acquisition; \$7.4 million for freeway, freeway interchange, and connecting roadway construction; and \$3.0 to \$4.5 million for additional costs attendant to a connecting roadway through the Corporate Lakes Office Center, including new roadway structures and replacement of some surface parking with structure parking, or through the WTMJ transmission towers property, including relocation and reconstruction of the transmission towers.

Table 14

**TRAFFIC IMPACTS OF AN INTERCHANGE BETWEEN CALHOUN AND
BROOKFIELD ROADS WITH ACCESS PROVIDED TO THE NORTH AND SOUTH**

| Arterial Facility | Average Weekday Traffic Volume: 1986 | Forecast Average Weekday Traffic Volume Without Interchange: 2010 | Forecast Average Weekday Traffic Volume With Interchange: 2010 |
|---|---|--|---|
| Freeway Interchange Moorland Road..... Goerke's Corners..... Interchange location between Calhoun Road and Brookfield Road..... | 47,000 41,000 -- | 70,000 64,000 -- | 55,000 51,000 28,000 |
| North-South Arterial Moorland Road Greenfield Avenue to Blue Mound Road..... Barker Road Greenfield Avenue to Blue Mound Road..... Blue Mound Road to North Avenue..... | 29,700 to 34,000 6,000 to 8,000 5,900 to 15,300 | 41,000 to 47,000 11,000 11,000 to 20,000 | 36,000 to 37,000 10,000 10,000 to 19,000 |
| East-West Arterial Blue Mound Road Moorland Road to Calhoun Road..... Calhoun Road to Brookfield Road..... Brookfield Road to Barker Road..... East-West Freeway Goerke's Corners to Moorland Road..... | 32,300 28,100 28,800 68,000 | 45,000 48,000 45,000 95,000 | 35,000 to 38,000 42,000 to 44,000 35,000 to 38,000 98,000 to 106,000 |

Source: SEWRPC.

The potential impacts of the interchange on average weekday traffic volumes in the Blue Mound Road corridor are summarized in Tables 14 and 15. A new interchange located between Brookfield Road and Calhoun Road and with both northern and southern connections may be expected to carry about 28,000 vehicles per average weekday in the year 2010. About 11,000, or 40 percent, of these 28,000 trips may be expected to have one end in the area bounded by Blue Mound Road on the north, Calhoun Road on the east, the East-West Freeway on the south, and Brookfield Road on the west--which includes the Trammel Crow Company, Brookfield Lakes Corporate Center development, the Ruby farm, the WTMJ transmission towers property, and the Swanson School property. About 10,000, or 35 percent, of these 28,000 trips may be expected to have one end in other areas north of the East-West Freeway, principally along Blue Mound Road between Thomas Lane and Janacek Road. The remaining 7,000, or 25 percent, of these 28,000 trips may be expected to have one end in the area south of the East-West Freeway.

Table 15

**TRAFFIC IMPACTS OF AN INTERCHANGE BETWEEN CALHOUN AND
BROOKFIELD ROADS WITH ACCESS PROVIDED ONLY TO THE NORTH**

| Arterial Facility | Average Weekday Traffic Volume: 1986 | Forecast Average Weekday Traffic Volume Without Interchange: 2010 | Forecast Average Weekday Traffic Volume With Interchange: 2010 |
|---|--|--|--|
| Freeway Interchange Moorland Road..... Goerke's Corners..... Location between Calhoun Road and Brookfield Road..... | 47,000 41,000 -- | 70,000 64,000 -- | 57,000 52,000 25,000 |
| North-South Arterial Moorland Road Greenfield Avenue to Blue Mound Road..... Calhoun Road Greenfield Avenue to Blue Mound Road..... Barker Road Greenfield Avenue to Blue Mound Road..... Blue Mound Road to North Avenue..... | 29,700 to 34,000 8,200 6,000 to 8,000 5,900 to 15,300 | 41,000 to 47,000 14,000 11,000 11,000 to 20,000 | 37,000 to 38,000 15,000 to 16,000 8,000 to 9,000 10,000 to 19,000 |
| East-West Arterial Blue Mound Road Moorland Road to Calhoun Road..... Calhoun Road to Brookfield Road..... Brookfield Road to Barker Road..... East-West Freeway Goerke's Corners to Moorland Road..... | 32,300 28,100 28,800 68,000 | 45,000 48,000 45,000 95,000 | 35,000 to 38,000 42,000 to 44,000 35,000 to 38,000 98,000 to 105,000 |

Source: SEWRPC.

The new interchange between Brookfield Road and Calhoun Road with both northern and southern connections may be expected to remove traffic from Moorland Road between Greenfield Avenue and Blue Mound Road, and from Blue Mound Road between Moorland Road and Barker Road. The new interchange may be expected to result in an increase in traffic on the East-West Freeway between Barker Road and Moorland Road, and on its new connecting roadway segments, with the connecting roadway to the south expected to carry about 7,000 vehicles per average weekday and the connecting road to the north expected to carry 15,000 to 21,000 vehicles per average weekday. The new interchange would not be expected to reduce the need to provide arterial street improvements in the corridor. Also, the new interchange would not be expected to result in a need to provide additional street improvements in the corridor beyond the new roadway segments to the north and south which would be constructed to connect the interchange to the arterial street system.

The provision of a connection to the north only may be expected to result in only a minor decrease in the volume of traffic using the interchange, from 28,000 vehicles per average weekday in the year 2010 to 25,000 vehicles in the year 2010, a decrease of about 10 percent. The reason for this small decrease is the fact that 21,000, or 75 percent, of the 28,000 vehicles per average weekday that would use the interchange with northern and southern connections would be making trips with orientations to and from the north.

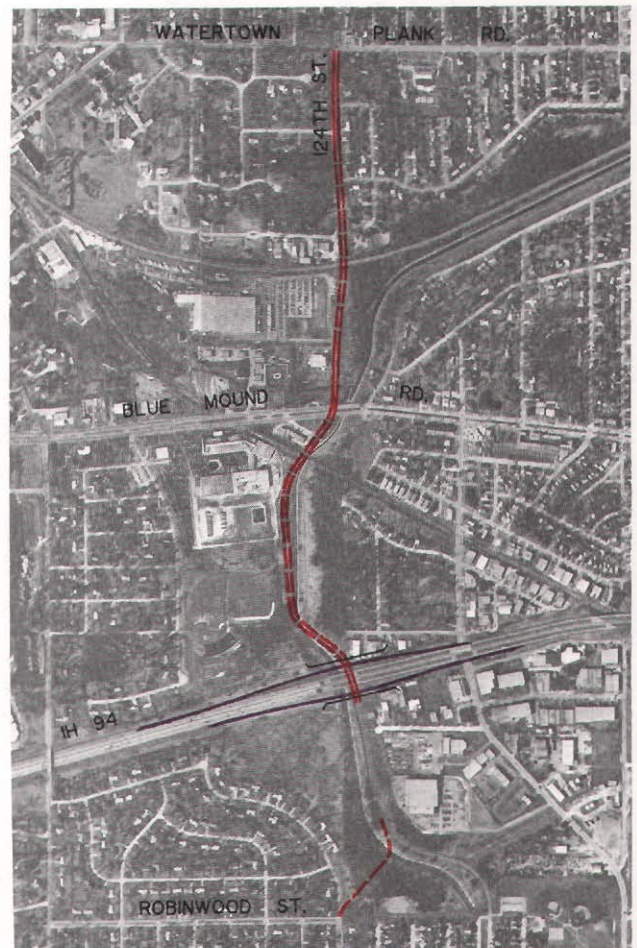
The benefit-cost ratio of a new interchange between Brookfield Road and Calhoun Road, and configured to provide only a connection to the north, was estimated to range from 0.6 to 1.2, depending upon the interest rate used to discount the benefits of the interchange. The benefit-cost ratio was estimated to be 1.0 to 1.2 at a 4 percent discount rate, 0.8 to 0.9 at a 6 percent discount rate, and 0.6 to 0.7 at a 10 percent discount rate--in each case, the higher benefit-cost ratio being attendant to a connection alignment along Corporate Drive. The new interchange and its connecting roadway would require the acquisition of about 22 acres of right-of-way.

The benefit-cost ratio of a new interchange between Brookfield Road and Calhoun Road configured to provide connections to both the north and the south was estimated to range from 0.7 to 1.3, depending upon the interest rate used to discount the transportation benefits of the interchange. The benefit-cost ratio was estimated to be 1.2 to 1.3 at a 4 percent discount rate, 1.0 to 1.1 at a 6 percent discount rate, and 0.7 to 0.8 at a 10 percent discount rate--in each case, the higher benefit-cost ratio being attendant to a connection alignment along Corporate Drive. The new interchange and its connecting roadways would require the acquisition of 12 to 19 acres of right-of-way.

Evaluation of New Freeway Interchanges Between STH 100 and Moorland Road: Two alternative locations and configurations for a new freeway interchange between STH 100 and Moorland Road were identified and evaluated. The two alternatives consisted of a new interchange at Sunnyslope Road and a new interchange at 124th Street. The alternative at 124th Street is shown on Map 20.

Map 20

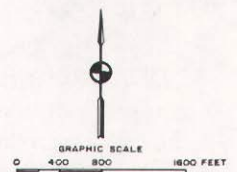
ALTERNATIVE NEW INTERCHANGE ALONG THE EAST-WEST FREEWAY AT N. 124TH STREET



LEGEND

- PROPOSED FREEWAY INTERCHANGE
- - - PROPOSED ARTERIAL STREET^a
- NEEDED ARTERIAL STREET IMPROVEMENT

^a IMPLEMENTATION OF THE 124TH STREET INTERCHANGE WOULD RESULT IN THE NEED TO WIDEN 124TH STREET BETWEEN THE EAST-WEST FREEWAY AND WATERTOWN PLANK ROAD FROM 2 LANES TO 4 LANES



Source: SEWRPC.

The alternative at Sunnyslope Road is shown on Map 21. Each of these interchanges would be located a sufficient distance from adjacent existing interchanges to have no significant adverse impacts on the operation of these interchanges, or of the freeway itself, with respect to weaving or lane changing movements.

The capital cost of a new interchange on the East-West Freeway at Sunnyslope Road was estimated at \$4.0 million, assuming the interchange would be constructed with simple diamond ramps for westbound freeway on and off movements and eastbound off movements, and with a loop ramp used for the eastbound freeway on movement. The potential impacts of the interchange on average weekday traffic and on arterial street improvement needs in the Blue Mound Road corridor are summarized in Tables 16 and 17. The new interchange at Sunnyslope Road may be expected to remove traffic from STH 100, Moorland Road, and Blue Mound Road within the corridor, but may be expected to add substantial traffic to the East-West Freeway between STH 100 and Moorland Road, and to Sunnyslope Road between Greenfield Avenue and Blue Mound Road. The interchange may be expected to result in the need for additional improvements of this stretch of Sunnyslope Road. Without this new interchange, Sunnyslope Road will need to be widened to four traffic lanes on an undivided cross-section by the year 2010. If an interchange were to be provided at Sunnyslope Road, Sunnyslope Road would need to be widened to four to six traffic lanes on a divided cross-section.

The benefit-cost ratio of an interchange at Sunnyslope Road was estimated to range from 0.7 to 1.2, depending upon the interest rates used to discount the transportation benefits of the interchange. The benefit-cost ratio was estimated to be 1.2 at a 4 percent discount rate, 1.0 at a 6 percent discount rate, and 0.7 at a 10 percent discount rate. The new interchange would require the acquisition of 4.4 acres, including some parkland in the southwest quadrant of the interchange.

The capital cost of a new interchange on the East-West Freeway at 124th Street was estimated at \$2.3 million. The potential impacts of the interchange on average weekday traffic volumes and on arterial street improvement needs in the Blue Mound Road corridor are summarized in Tables 18 and 19. A new interchange at 124th Street may be expected to remove traffic from STH 100, Moorland Road, and Blue Mound Road. However, a new interchange at 124th Street may also be expected to result in additional traffic on the East-West Freeway between STH 100 and Moorland Road, and on an extended 124th Street, resulting in the need to provide additional traffic lanes on 124th Street. The extension of 124th Street from Watertown Plank Road to Greenfield Avenue is a long-standing recommended improvement, and the analyses reconfirm the need for this improvement. Without a new interchange at 124th Street, the recommended cross-section for 124th Street from North Avenue to Greenfield Avenue would carry two traffic lanes. If an interchange were provided on 124th Street, there would be a need for four traffic lanes on 124th Street between the East-West Freeway and North Avenue.

The benefit-cost ratio of an interchange at 124th Street was estimated to range from 1.4 to 2.4, depending on the interest rates used to discount the transportation benefits of the interchange. The benefit-cost ratio was estimated to be 2.4 at a 4 percent discount rate, 2.0 at a 6 percent discount rate, and 1.4 at a 10 percent discount rate. No right-of-way acquisition would be expected to be required for the new interchange.

Evaluation of New Freeway Interchanges Between Goerke's Corners and STH 164 Interchange: Only one location and configuration for a new freeway interchange between the Goerke's Corners and STH 164 interchanges was identified and evaluated: a new interchange at Springdale Road. This interchange is shown on Map 22. This new interchange would be located so close to the Goerke's Corners interchange that it may be expected to disrupt the potential operation of the Goerke's Corners interchange and of the freeway itself between the Springdale Road and Goerke's Corners interchanges. However, this problem could be resolved through the construction of auxiliary lanes between the existing interchange and the new interchange.

The capital cost of a new interchange on the East-West Freeway at Springdale Road was estimated at \$3.0 million. The impacts of this new interchange on average weekday traffic in the Blue Mound Road corridor are summarized in Table 20. A new interchange at Springdale Road may be expected to remove some traffic from STH 164 north of the East-West Freeway and from Moreland Boulevard between the East-West Freeway and Kossow Road. However, the new interchange may be expected to result in additional traffic on the East-West Freeway between Goerke's Corners and STH 164, and on Springdale Road between CTH JJ and North Avenue. A Springdale Road interchange should not result in a need to provide additional arterial street improvements in the corridor, nor would it reduce the need for any arterial street improvements within the corridor.

The benefit-cost ratio of an interchange at Springdale Road was estimated to range from 0.2 to 0.4, depending upon the interest rate used to discount the transportation benefits of the interchange. The benefit-cost ratio was estimated to be 0.4 at a 4 percent discount rate, 0.3 at a 6 percent discount rate, and 0.2 at a 10 percent discount rate. The new interchange would require the acquisition of 2.4 acres of right-of-way.

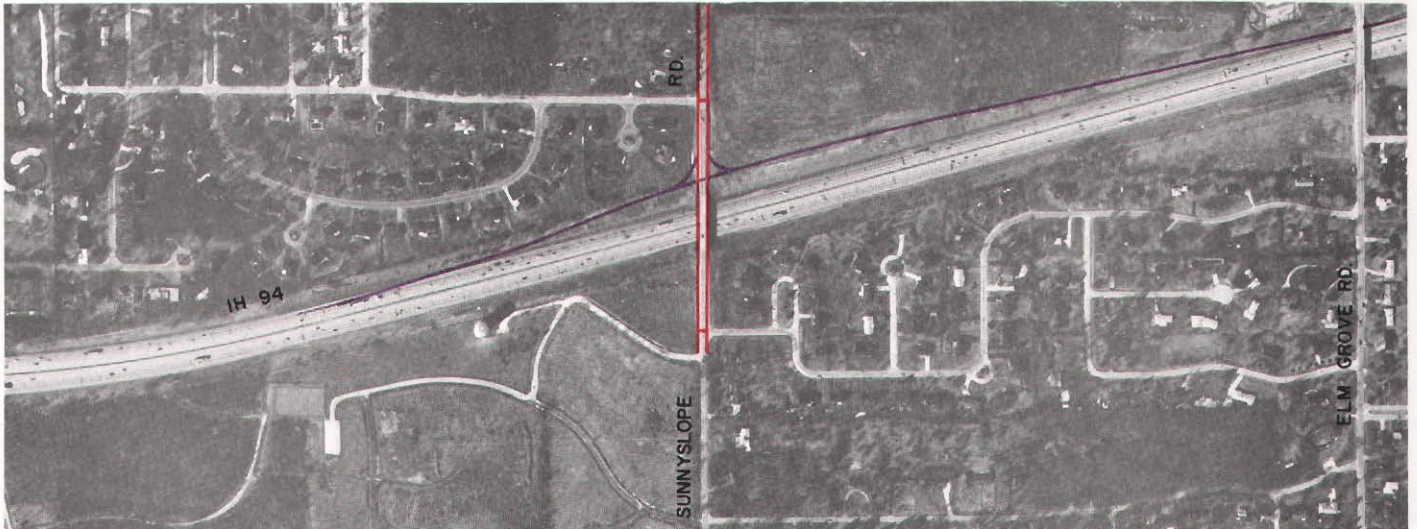
Summary and Recommendation: The addition of new interchanges was considered along three segments of the East-West Freeway within the corridor--specifically between the STH 100 and Moorland Road interchanges, between the Moorland Road and Goerke's Corners interchanges, and between the Goerke's Corners and STH 164 interchanges.

Only one alternative location for a new interchange--Springdale Road--was considered between the existing Goerke's Corners and STH 164 interchanges. This interchange is not recommended. The interchange would have to be located so close to the Goerke's Corners interchange that the operation of that interchange and of the freeway segment between that interchange and the new interchange would be disrupted. In addition, the direct benefits of the interchange were found to be substantially less than the direct costs entailed, the benefit-cost ratio ranging from 0.2 to 0.4. Analyses indicated that an interchange at Springdale Road may be expected to receive relatively limited use, and, as a result, have limited impacts on reducing traffic at the Goerke's Corners and STH 164 interchanges, and on alleviating traffic problems at those interchanges and on the associated surface arterial facilities.

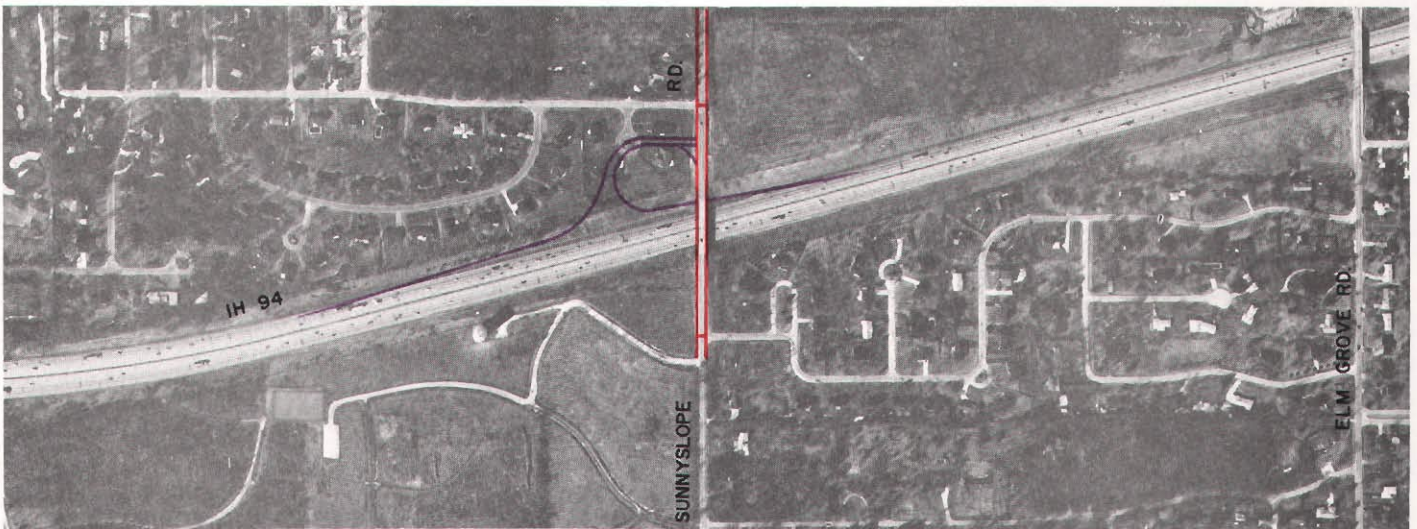
Between STH 100 and Moorland Road, two alternative interchange locations and configurations were identified and evaluated, including an interchange at Sunnyslope Road and an interchange at 124th Street. One of these alternatives, the 124th Street interchange, would constitute a beneficial transportation

Map 21

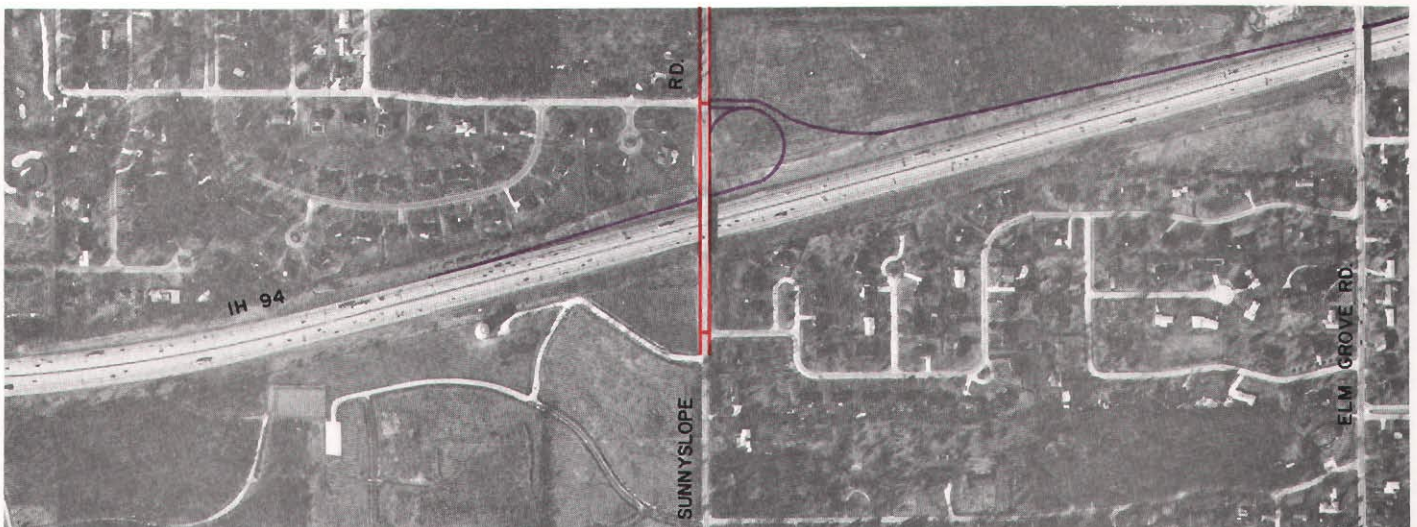
ALTERNATIVE NEW INTERCHANGE ALONG THE
EAST-WEST FREEWAY AT SUNNYSLOPE ROAD
WESTBOUND FREEWAY OFF-RAMP AND ON-RAMP ALTERNATIVE ONE



WESTBOUND FREEWAY OFF-RAMP AND ON-RAMP ALTERNATIVE TWO

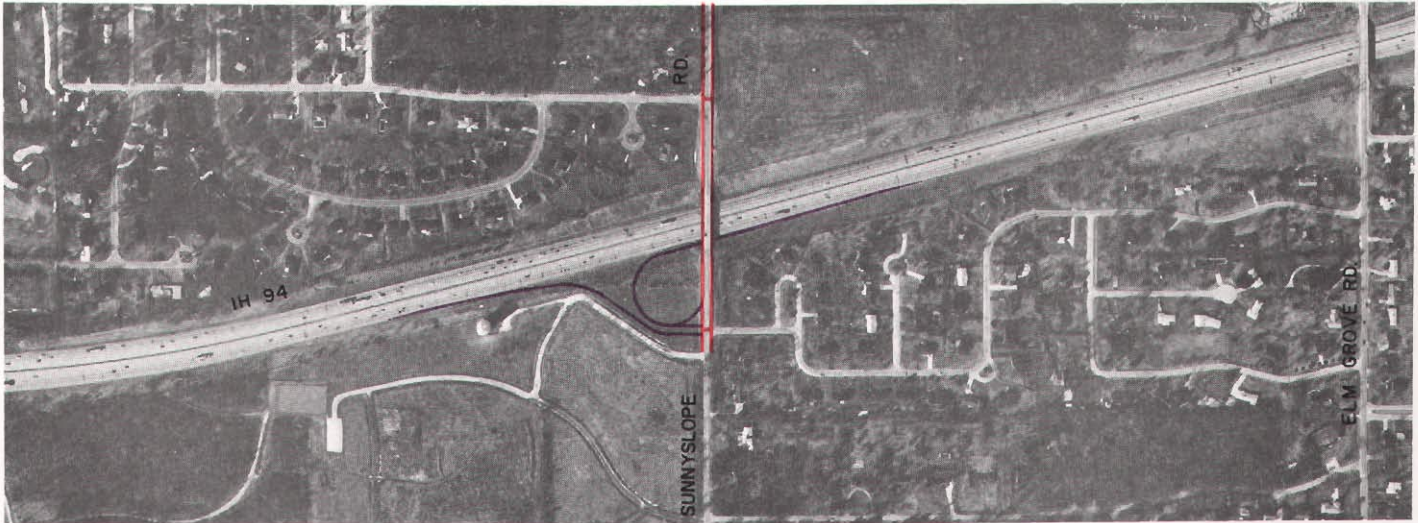


WESTBOUND FREEWAY OFF-RAMP AND ON-RAMP ALTERNATIVE THREE

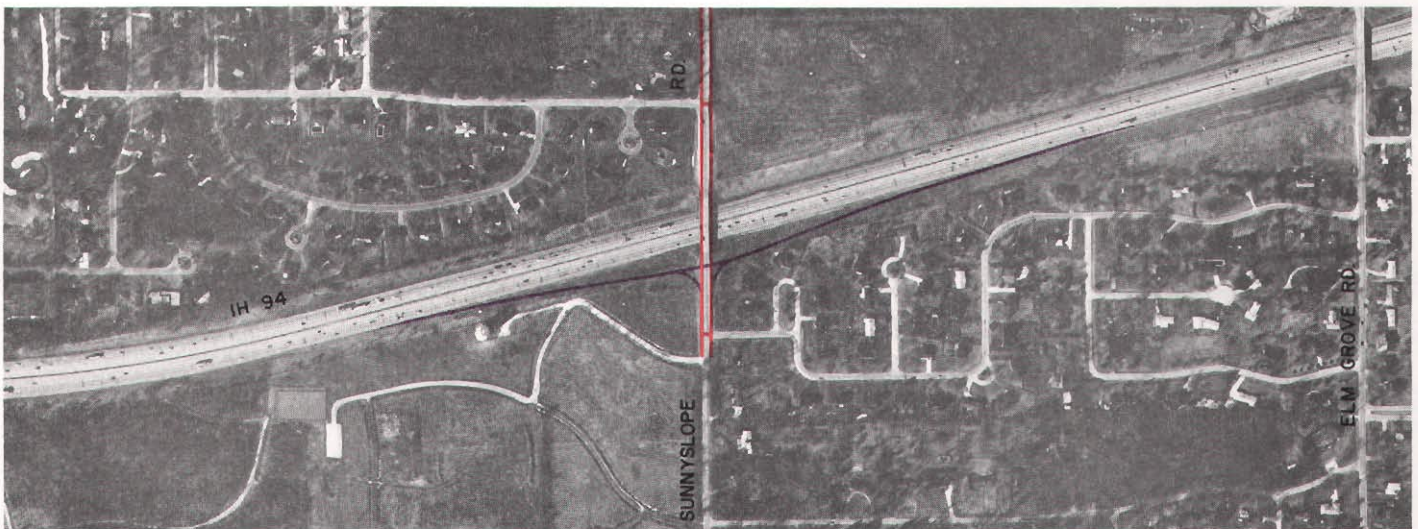


Map 21 (continued)

EASTBOUND FREEWAY OFF-RAMP AND ON-RAMP ALTERNATIVE ONE



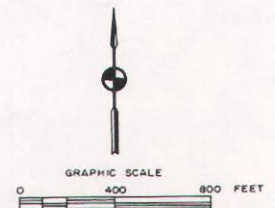
EASTBOUND FREEWAY OFF-RAMP AND ON-RAMP ALTERNATIVE TWO



LEGEND

- PROPOSED FREEWAY INTERCHANGE
- NEEDED ARTERIAL STREET IMPROVEMENT^a

^aIMPLEMENTATION OF THE SUNNYSLOPE ROAD INTERCHANGE WOULD RESULT IN THE NEED TO WIDEN SUNNYSLOPE ROAD BETWEEN THE EAST-WEST FREEWAY AND BLUE MOUND ROAD FROM 2 LANES TO 4 TO 6 LANES WITH A MEDIAN RATHER THAN FROM 2 LANES TO 4 LANES WITHOUT A MEDIAN.



Source: SEWRPC.

improvement as the direct benefits may be expected to exceed the direct costs, the benefit-cost ratio ranging from 1.4 to 2.4. The interchange may be expected to remove a limited amount of traffic from the heavily used Moorland Road interchange. The only surface arterial facilities from which the new interchange may be expected to remove substantial traffic would be Blue Mound Road between STH 100 and 124th Street, and STH 100 between Blue Mound Road and Greenfield Avenue. The other interchange location considered, at Sunnyslope

Table 16

TRAFFIC IMPACTS OF A SUNNYSLOPE ROAD INTERCHANGE

| Arterial Facility | Average Weekday Traffic Volume: 1986 | Forecast Average Weekday Traffic Volume Without Interchange: 2010 | Forecast Average Weekday Traffic Volume With Interchange: 2010 |
|---|--------------------------------------|---|--|
| Freeway Interchange STH 100..... Moorland Road..... Sunnyslope Road..... | 25,000 47,000 -- | 32,000 70,000 -- | 25,000 60,000 17,000 |
| North-South Arterial STH 100 East-West Freeway to Blue Mound Road..... | 32,900 | 43,000 | 37,000 |
| Sunnyslope Road Greenfield Avenue to Blue Mound Road..... | 4,600 to 6,300 | 13,000 to 15,000 | 21,000 to 25,000 |
| Moorland Road Greenfield Avenue to Blue Mound Road..... | 29,700 to 34,000 | 41,000 to 47,000 | 36,000 to 42,000 |
| East-West Arterial Blue Mound Road STH 100 to Moorland Road..... | 25,100 to 30,900 | 32,000 to 34,000 | 27,000 to 31,000 |
| Greenfield Avenue 124th Street to Moorland Road..... | 14,900 to 15,800 | 17,000 to 18,000 | 16,000 to 17,000 |
| East-West Freeway STH 100 to Moorland Road..... | 86,200 | 109,000 | 113,000 to 120,000 |

Source: SEWRPC.

Table 17

IMPLICATIONS OF A SUNNYSLOPE ROAD INTERCHANGE FOR NEEDED ARTERIAL STREET IMPROVEMENTS BY THE YEAR 2010

| Arterial | Implication of Implementation of the Sunnyslope Road Interchange |
|---|--|
| Sunnyslope Road East-West Freeway to Blue Mound Road..... | Widening from 2 lanes to 4 to 6 lanes with median needed, rather than 4 lanes on undivided cross-section |

Source: SEWRPC.

Table 18

TRAFFIC IMPACTS OF A 124TH STREET INTERCHANGE

| Arterial Facility | Average Weekday Traffic Volume: 1986 | Forecast Average Weekday Traffic Volume Without Interchange and With N. 124th Street Extension: 2010 | Forecast Average Weekday Traffic Volume With Interchange: 2010 |
|---|--|--|---|
| Freeway Interchange STH 100..... Moorland Road..... 124th Street..... | 25,000 47,000 -- | 32,000 70,000 -- | 18,000 65,000 19,000 |
| North-South Arterial STH 100 Greenfield Avenue to East-West Freeway..... | 28,300 to 32,900 | 35,000 to 38,000 | 28,000 to 32,000 |
| N. and S. 124th Street North Avenue to Watertown Plank Road..... | 6,500 | 12,000 | 14,000 |
| Watertown Plank Road to Blue Mound Road..... | -- | 11,000 | 13,000 |
| East-West Freeway to Blue Mound Road..... | -- | 8,000 | 18,000 |
| Greenfield Avenue to East-West Freeway..... | -- | 8,000 | 12,000 |
| Moorland Road Greenfield Avenue to Moorland Road..... | 29,700 to 34,000 | 41,000 to 47,000 | 38,000 to 45,000 |
| East-West Arterial Blue Mound Road STH 100 to 124th Street..... | 30,900 | 34,000 | 25,000 |
| 124th Street to Moorland Road..... | 25,100 to 26,800 | 32,000 | 31,000 to 33,000 |
| Greenfield Avenue 124th Street to Moorland Road..... | 14,900 to 15,800 | 17,000 to 18,000 | 16,000 to 17,000 |
| East-West Freeway STH 100 to Moorland Road..... | 86,200 | 109,000 | 113,000 to 116,000 |

Source: SEWRPC.

Table 19

IMPLICATIONS OF A 124TH STREET
INTERCHANGE FOR NEEDED ARTERIAL STREET
IMPROVEMENTS BY THE YEAR 2010

| Arterial | Implication of Implementation of the 124th Street Interchange |
|---|---|
| 124th Street East-West Freeway to North Avenue..... | Widening from 2 lanes to 4 lanes needed |

Source: SEWRPC.

Map 22

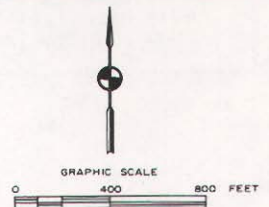
ALTERNATIVE NEW INTERCHANGE ALONG THE EAST-WEST FREEWAY AT SPRINGDALE ROAD



LEGEND

- PROPOSED FREEWAY INTERCHANGE
- NEEDED ARTERIAL STREET IMPROVEMENT

Source: SEWRPC.



Road, may be expected to constitute a marginal improvement, the benefit-cost ratio ranging from 0.7 to 1.2. This interchange may be expected to carry less traffic than an interchange located at 124th Street, and therefore to remove less traffic from existing interchanges and surface arterials.

Both 124th Street and Sunnyslope Road within the corridor have been developed with adjacent residential land uses. Currently, 124th Street is not continuous across the corridor; its extension from Watertown Plank Road to Greenfield Avenue, which is a long-standing recommended improvement, would provide a

Table 20

TRAFFIC IMPACTS OF A SPRINGDALE ROAD INTERCHANGE

| Arterial Facility | Average Weekday Traffic Volume: 1986 | Forecast Average Weekday Traffic Volume Without Interchange: 2010 | Forecast Average Weekday Traffic Volume With Interchange: 2010 |
|--|--|--|---|
| Freeway Interchange Goerke's Corners..... | 41,000 | 64,000 | 60,000 |
| STH 164..... | 22,000 | 33,000 | 28,000 |
| CTH J..... | 10,000 | 20,000 | 19,000 |
| Springdale Road..... | -- | -- | 10,000 |
| North-South Arterial Barker Road Blue Mound Road to North Avenue..... | 5,900 to 15,300 | 11,000 to 20,000 | 10,000 to 19,000 |
| Springdale Road CTH JJ to North Avenue..... | 7,000 | 13,000 | 17,000 to 19,000 |
| STH 164 East-West Freeway to Duplainville Road..... | 14,500 | 20,000 to 22,000 | 17,000 |
| Kossow Road Moreland Boulevard to CTH JJ..... | 4,000 | 8,000 | 5,000 |
| East-West Arterial Moreland Boulevard East-West Freeway to Kossow Road..... | 35,700 | 42,000 | 39,000 |
| CTH JJ Kossow Road to STH 164..... | 8,000 to 13,100 | 15,000 to 20,000 | 13,000 to 18,000 |
| East-West Freeway Goerke's Corners to STH 164..... | 58,000 | 75,000 | 79,000 |

Source: SEWRPC.

direct arterial route through the corridor and along the Milwaukee-Waukesha County line from Grange Avenue to Silver Spring Drive. This extension may be expected to result in substantial additional traffic on 124th Street. The addition of an interchange, as well, on 124th Street may be expected to further add traffic to 124th Street, particularly between the East-West Freeway and Blue Mound Road. Because the benefits of an interchange between STH 100 and Moorland Road may be expected to only marginally meet the costs, and because such an interchange would provide only limited relief to existing freeway interchanges and surface arterial facilities while impacting adjacent land uses, the addition of an interchange to the East-West Freeway between STH 100 and Moorland Road is not recommended.

Between the Moorland Road and Goerke's Corners interchanges on the East-West Freeway, four alternative interchange locations were identified and evaluated, including an interchange at Calhoun Road; an interchange at Brookfield Road; a split interchange, with one-half the interchange provided at Calhoun Road and

the other one-half provided at Brookfield Road, with frontage roads connecting the two halves; and an interchange between Calhoun and Brookfield Roads. There are two subalternatives for the alternative that would locate the interchange between Calhoun and Brookfield Roads. One subalternative would provide both northern and southern connections from the interchange to the arterial street system, and the other subalternative would only provide a connection from the interchange to the north to Blue Mound Road. A summary of the findings of the evaluation of the alternative freeway interchanges is provided in Table 21, including information on the average weekday traffic which may be expected to be carried by the interchange and connecting arterial streets in the plan design year 2010; their construction cost; their benefit-cost ratio or ratio of direct transportation benefits to direct transportation costs; and their impacts on residential property. Table 22 identifies selected streets in the Milwaukee area within various average weekday traffic volume ranges.

The Calhoun Road interchange may be considered to be a good transportation improvement. It may be expected to remove a substantial amount of traffic--about 36,000 vehicles per average weekday in the plan design year--from the heavily used Moorland Road and Goerke's Corners interchanges. Its benefit-cost ratio is estimated to be 4.8 at a 6 percent discount rate. Its construction cost is estimated at \$3.3 million. The principal disadvantage of the interchange is that it would add substantial traffic to Calhoun Road between Blue Mound Road and Greenfield Avenue, along which 53 residences are located. Without the interchange, the average weekday traffic on Calhoun Road in the plan design year may be expected to be about 14,000 vehicles between Greenfield Avenue and Blue Mound Road; and with the interchange, about 26,000. This segment of Calhoun Road presently carries about 8,200 vehicles per average weekday.

The Brookfield Road interchange may also be considered to be a good transportation improvement. It may be expected to remove about 27,000 vehicles per average weekday from the heavily used Moorland Road and Goerke's Corners interchanges--substantially less than the amount of traffic that would be diverted by the Calhoun Road interchange. Its benefit-cost ratio is estimated to be 4.6 at a 6 percent discount rate, very similar to the benefit-cost ratio for the Calhoun Road interchange. Its construction cost is estimated at \$3.5 million. The impacts of the Brookfield Road interchange on residential property would be less than the impacts of the Calhoun Road interchange. Without the interchange, the average weekday traffic in the plan design year on Brookfield Road between Greenfield Avenue and Blue Mound Road may be expected to be about 4,000 vehicles; and with the interchange, about 16,000 vehicles. This segment of Brookfield Road presently carries about 2,000 vehicles per average weekday. Nineteen residential properties are located along the stretch of Brookfield Road between Greenfield Avenue and Blue Mound Road.

The alternative that would split the interchange, providing one-half at Calhoun Road and one-half at Brookfield Road, may also be considered to be a good transportation improvement. Of all the new interchanges considered, it may be expected to remove the most traffic--about 38,000 vehicles per average weekday--from the heavily used Moorland Road and Goerke's Corners interchanges. Construction costs, estimated at \$7.2 million, would be substantially more than for either the Calhoun Road or Brookfield Road interchanges. Because of this higher cost, the benefit-cost ratio of the split interchange would be substantially less than the benefit-cost ratios of the Calhoun Road or Brookfield Road interchanges, about 2.2 at a 6 percent discount rate. Traffic diversion related

to the split interchange would affect 53 existing residential properties along Calhoun Road and 19 existing residential properties along Brookfield Road between Blue Mound Road and Greenfield Avenue. However, the traffic would be substantially less on these streets with the split interchange than with a full interchange at either Calhoun Road or Brookfield Road. Traffic on Calhoun Road may be expected to increase from 14,000 vehicles per average weekday in the plan design year without an interchange to 22,000 vehicles with the split interchange; and traffic on Brookfield Road may be expected to increase from 4,000 vehicles per average weekday without an interchange to 10,000 vehicles with the split interchange.

The remaining alternative location considered for a new interchange was between Calhoun Road and Brookfield Road. This alternative included a number of subalternatives. Under one subalternative, connections would be provided from the interchange both to the north to Blue Mound Road and to the south to Greenfield Avenue. Under another subalternative, a connection would be provided only to the north to Blue Mound Road.

Under the subalternative with both northerly and southerly connections, the interchange may be expected to carry about 28,000 vehicles per average weekday in the plan design year, or about the same number as would be carried by the Brookfield Road interchange, and substantially less than would be carried by the Calhoun Road and split interchanges. The subalternative with both northerly and southerly connections would have impacts on residential property similar to those of the interchanges considered at Calhoun Road and Brookfield Road. Specifically, the southerly connection for the subalternative would need to be located adjacent to 9 to 15 residential properties and, depending upon the specific alignment, may require the taking of one property. The estimated cost of this subalternative would be substantially more than that of the other alternatives considered, \$12.0 to \$13.5 million, depending upon the route location and alignment of the connecting streets. The potential benefit-cost ratio was estimated to range from 1.0 to 1.1 at a 6 percent interest rate.

The subalternative that would provide a connection only to the north may be expected to carry the least amount of traffic of all the alternative interchanges considered, about 25,000 vehicles per average weekday in the plan design year. This figure is somewhat less than the 27,000 vehicles per average weekday expected to be carried by the Brookfield Road interchange, and substantially less than the 36,000 and 38,000 vehicles per average weekday expected to be carried by the Calhoun Road interchange and split interchange, respectively. The cost of this subalternative would be the highest of all the alternatives considered, \$12.5 to \$14.0 million, depending upon the location and alignment of the connecting street. The attendant benefit-cost ratio would be the lowest, ranging from 0.8 to 0.9 at a 6 percent interest rate. This indicates that the transportation benefits of this interchange would be expected, at best, to only marginally equal the direct costs. The alternative would be expected to have no negative impacts on existing residential property in the corridor.

It may thus be concluded that the Calhoun Road, Brookfield Road, and split interchange alternatives all represent sound transportation investments. The Calhoun Road interchange represents the best transportation investment as it would remove substantial traffic from heavily loaded existing arterial streets and freeway interchanges in the area at a relatively modest cost. Moreover, the connecting street would directly serve such important land uses and traf-

Table 21

**SUMMARY EVALUATION OF NEW INTERCHANGE ALTERNATIVES ALONG THE
EAST-WEST FREEWAY (IH 94) BETWEEN MOORLAND ROAD AND GOERKE'S CORNERS**

| | No New Interchange | Calhoun Road Interchange | Brookfield Road Interchange | Split Diamond Interchange | New Interchange between Calhoun and Brookfield Roads |
|---|--|---|---|--|---|
| Freeway Interchange Traffic | | | | | |
| Year 2010 Average Weekday Traffic Carried by New Interchange..... | -- | 36,000 | 27,000 | 38,000 | 25,000 to 28,000 |
| Year 2010 Average Week- day Traffic Carried by Moorland Road Interchange (1986--47,000)..... | 70,000 | 47,000 | 58,000 | 47,000 | 55,000 to 57,000 |
| Year 2010 Average Weekday Traffic Carried by Goerke's Corners Interchange (1986--41,000)..... | 64,000 | 51,000 | 49,000 | 49,000 | 51,000 to 52,000 |
| Impact on Needed Improvements on North-South Streets between Greenfield Avenue and Blue Mound Road | | | | | |
| Moorland Road--2010 Average Weekday Traffic (1986--30,000 to 34,000)..... Number of Lanes Needed..... | 41,000 to 47,000 8 | 30,000 to 35,000 6 | 37,000 to 40,000 8 | 30,000 to 35,000 6 | 36,000 to 38,000 8 |
| Calhoun Road--2010 Average Weekday Traffic (1986--8,200).. Number of Lanes Needed..... | 14,000 4 | 26,000 6 | 14,000 4 | 22,000 4 | 14,000 to 16,000 4 |
| Brookfield Road--2010 Average Weekday Traffic (1986--2,000).. Number of Lanes Needed..... | 4,000 2 | 4,000 2 | 10,000 to 16,000 2-4 | 10,000 2 | 4,000 2 |
| Impact on Needed Improvements on East-West Arterial Streets between Moorland Road and Barker Road | | | | | |
| Blue Mound Road--2010 Average Weekday Traffic (1986-- 31,800 to 36,700)..... Number of Lanes Needed..... | 45,000 to 48,000 8 | 36,000 to 42,000 8 | 38,000 to 43,000 8 | 33,000 to 40,000 8 | 35,000 to 44,000 8 |
| Greenfield Avenue--2010 Average Weekday Traffic (1986--6,700 to 17,000)..... Number of Lanes Needed..... | 14,000 to 19,000 4 | 14,000 to 19,000 4 | 14,000 to 19,000 4 | 14,000 to 15,000 4 | 14,000 to 19,000 4 |
| North Avenue--2010 Average Weekday Traffic (1986-- 7,700 to 11,100)..... Number of Lanes Needed..... | 16,000 to 19,000 4 | 16,000 to 19,000 4 | 16,000 to 19,000 4 | 16,000 to 19,000 4 | 16,000 to 19,000 4 |
| Freeway Impacts (between Moorland Road and Goerke's Corners Interchanges) | | | | | |
| Desirable Number of Lanes on Freeway..... | 4, with 5 at Moorland Road and Goerke's Corners inter- changes | 5 | 5 | 5, with 4 between Calhoun Road and Brookfield Road | 5 |
| Interchange Level of Service.... | Traffic volume substantially exceeding design capacity | Traffic volume at design capacity | Traffic volume at design capacity | Traffic volume at design capacity | Traffic volume at design capacity |

Table 21 (continued)

| | No New Interchange | Calhoun Road Interchange | Brookfield Road Interchange | Split Diamond Interchange | New Interchange between Calhoun and Brookfield Roads |
|--|--------------------|------------------------------|------------------------------|---|--|
| <u>Improvement in Accessibility</u> | None--poor | Good--due to new interchange | Good--due to new interchange | Best--due to new interchange and frontage roads. Frontage roads make split interchange nearly serve as two interchanges and provide accessibility to adjacent development | Good--due to new interchange |
| <u>Capital Costs^a (millions of dollars). Includes Construction and Right-of-Way Costs of Interchange and Attendant Cost of Improvement on Surface Streets--Increase or Decrease--Compared to No Interchange Alternative</u> | \$ -- | \$3.3 | \$3.5 | \$7.2 | \$12.0 to \$14.0 |
| <u>Benefit-Cost Ratio (6 percent discount rate)</u> | -- | 4.8 | 4.6 | 2.2 | 0.8 to 1.1 |
| <u>Impacts on Adjacent Development on Streets Connected to the Interchange</u> | | | | | |
| Streets Directly Affected by Interchange..... | -- | Calhoun Road | Brookfield Road | Calhoun Road and Brookfield Road | New southern extension of interchange |
| Number of Abutting Residential Properties | -- | 53 | 19 | 72 | 9 to 15, with one taking |

^aThe capital cost estimates shown were prepared by the Commission staff. The costs shown are incremental costs compared to the no-new-interchange alternative, and include the construction and right-of-way costs attendant to the proposed alternative interchange and any additional costs--compared to the no-new-interchange alternative--of attendant arterial street improvements. The only new interchange alternative that would entail additional costs of attendant arterial street improvements compared to the no-new-interchange alternative is the Brookfield Road interchange alternative. The additional cost is attendant to the improvement of Brookfield Road which would be required, and would represent an estimated \$0.5 million of the \$3.5 million incremental cost shown.

These capital cost estimates may be compared to those prepared by Jack E. Leisch & Associates for the Wisconsin Department of Transportation. The Jack E. Leisch & Associates estimates of the construction costs--not including right-of-way costs--of the alternative interchanges and the net costs of attendant connecting surface arterial improvements were as follows: Calhoun Road, \$2.3 million; Brookfield Road, \$1.7 million; split diamond, \$8.2 million; and new interchange between Brookfield and Calhoun Roads, \$4.0 to \$4.8 million. With the addition of right-of-way costs, as estimated by Commission staff, the directly comparable interchange cost estimates of Jack E. Leisch & Associates to those shown in the table would be as follows: Calhoun Road, \$2.5 million; Brookfield Road, \$1.9 million; split diamond, \$8.8 million; and interchange between Calhoun and Brookfield Roads, \$8.5 to \$11.4 million. These cost estimates compare favorably to the cost estimates shown in the table.

In addition, Jack E. Leisch & Associates prepared a total cost estimate--not including right-of-way costs--for each interchange alternative by including all costs--not net costs--of connecting surface street improvements, and including the costs of freeway widening. These total costs--not including right-of-way costs--were as follows: No new interchange or no build alternative, \$10.0 million; Calhoun Road interchange, \$13.0 million; Brookfield Road interchange, \$14.2 million; split diamond, \$18.3 million; and interchange between Calhoun and Brookfield Roads, \$16.1 to \$16.9 million. Again, the incremental cost differences of each interchange alternative from the no build alternative as estimated by Jack E. Leisch & Associates compare favorably with the Commission staff estimates shown in the table.

Source: Wisconsin Department of Transportation and SEWRPC.

Table 22

**SELECTED ARTERIAL STREETS IN THE MILWAUKEE AREA AND
THEIR ESTIMATED CURRENT AVERAGE WEEKDAY TRAFFIC VOLUMES^a**

| Overall Traffic Volumes | Arterial Street | Estimated Existing Average Weekday Traffic Volume |
|--|--|--|
| 30,000 to 40,000 and More Vehicles per Average Weekday | W. Capitol Drive (STH 190) from N. 34th Street to W. Hopkins Street..... W. Brown Deer Road from N. 60th Street to N. 68th Street..... W. Blue Mound Road (USH 18) from Moorland Road to Calhoun Road..... Moorland Road from Greenfield Avenue (STH 59) to W. Blue Mound Road..... | 47,000 37,100 36,700 34,000 |
| 20,000 to 29,999 Vehicles per Average Weekday | Sherman Boulevard from W. North Avenue to W. Burleigh Street..... N. Oakland Avenue from E. Edgewood Avenue to E. Capitol Drive.... W. Blue Mound Road from N. 76th Street to Glenview Avenue..... W. North Avenue from N. 68th Street to Wauwatosa Avenue..... | 25,000 20,900 20,000 20,000 |
| 10,000 to 19,999 Vehicles per Average Weekday | N. Lake Drive from E. Edgewood Avenue to E. Lake Drive..... Wauwatosa Avenue from Harmonee Avenue to North Avenue..... Greenfield Avenue (STH 59) from S. 124th Street to S. Sunnyslope Road..... North Avenue from N. 124th Street to Pilgrim Road..... | 18,000 16,200 14,900 14,000 |

^aIt may be noted that, with implementation of a new freeway interchange at Calhoun Road, the stretch of Calhoun Road from Greenfield Avenue to Blue Mound Road would be expected to carry an average weekday traffic volume of 26,000 vehicles, or about the same amount of traffic that the segment of Sherman Boulevard from W. North Avenue to W. Burleigh Street carries. Also, with implementation of the split diamond interchange, the same segment of Calhoun Road may be expected to carry about 22,000 vehicles per average weekday, or about the same amount of weekday traffic carried by the segment of N. Lake Drive from E. Edgewood Avenue to E. Capitol Drive.

Source: SEWRPC.

fic generators as Brookfield Central High School, the Brookfield City Hall, and the New Berlin Industrial Park. The split interchange would remove slightly more traffic from the existing arterial streets and freeway interchanges; however, its cost would be much higher, and benefit-cost ratio much lower. The Brookfield Road interchange would remove less traffic from the existing arterial street and freeway interchanges, but would also have less impact on existing residences.

The alternative that would provide an interchange between Brookfield Road and Calhoun Road does not represent a sound transportation investment. This alternative, with both northerly and southerly connections to the arterial street system, would have substantially greater capital costs than the alternatives of locating a new interchange on either Calhoun Road or Brookfield Road. Moreover, it would carry substantially less traffic than the Calhoun Road and split

interchange alternatives, but would have similar impacts on residential property. The option of providing a connection only to the north would have the highest cost of all the alternatives considered, \$12.5 to \$14.0 million, depending upon the route location and alignment of the connecting street, and would carry the lowest amount of traffic. Its direct transportation benefits may, at best, be expected to only marginally meet its costs. Therefore, it would be more efficient to continue to carry heavy traffic on the Moorland Road and Goerke's Corners interchanges and on arterial streets in the Blue Mound Road corridor than to construct this interchange.

Wisconsin Department of Transportation Review of Interchange Alternatives Between Moorland Road and Goerke's Corners--The Wisconsin Department of Transportation conducted an independent review focusing on the freeway capacity and operational impacts of the four alternatives proposed for the location of a new interchange between the Moorland Road and Goerke's Corners interchanges on the East-West Freeway (IH 94). The findings of that review are summarized in the Wisconsin Department of Transportation report entitled, I 94-Blue Mound Road Corridor Planning Study: Wisconsin Department of Transportation, May 1987, prepared by Jack E. Leisch & Associates of Brookfield, Wisconsin. The referenced report presents the results of an independent evaluation of, and recommendations with respect to, an interchange between the Moorland Road and Goerke's Corners interchanges. The report also presents recommended improvements for the Goerke's Corners interchange on the East-West Freeway, and provides recommendations for continuous frontage roadway connections immediately north and south of the freeway.

Based upon the independent review, the Department concurred with the Regional Planning Commission staff finding that an additional interchange is necessary between Moorland Road and Goerke's Corners on the East-West Freeway. The independent evaluation further concluded that the best interchange alternative was a split diamond interchange, with one-half of the interchange at Calhoun Road and the other one-half at Brookfield Road, and with connecting one-way frontage roadways on both sides of the freeway between Goerke's Corners and Moorland Road. This conclusion was reached for a number of reasons. First, the split diamond interchange would, with fewer freeway lanes between Calhoun Road and Brookfield Road than the other interchange locations considered, provide the same level of service on the East-West Freeway. Second, the split diamond interchange would, unlike the other alternatives, provide new east-west arterial roadways between Brookfield Road and Calhoun Road, which should serve to reduce traffic on Blue Mound Road and Greenfield Avenue. In addition, the east-west arterial facilities that would be part of the split diamond interchange configuration could provide further traffic benefits if extended not only to the west to Goerke's Corners, but also to the east to Moorland Road. Such westerly extension would constitute an integral part of the improvements proposed for the Goerke's Corners interchange in the report. Third, the split diamond interchange would remove the most traffic from the Moorland Road and Goerke's Corners interchanges and the arterial street system in the corridor. Fourth, the split diamond interchange would result in a need to provide fewer lane miles of arterial widenings on the affected north-south arterials of Moorland Road, Calhoun Road, and Brookfield Road.

The independent evaluation did recognize, however, that the split diamond interchange would have a substantially higher construction cost than the Calhoun Road and Brookfield Road interchange alternatives. The evaluation also recognized that, although the split interchange would have a somewhat lesser

impact than a Calhoun Road interchange on urban development along the streets to which it would be connected, it would have greater impacts than an interchange located at Brookfield Road.

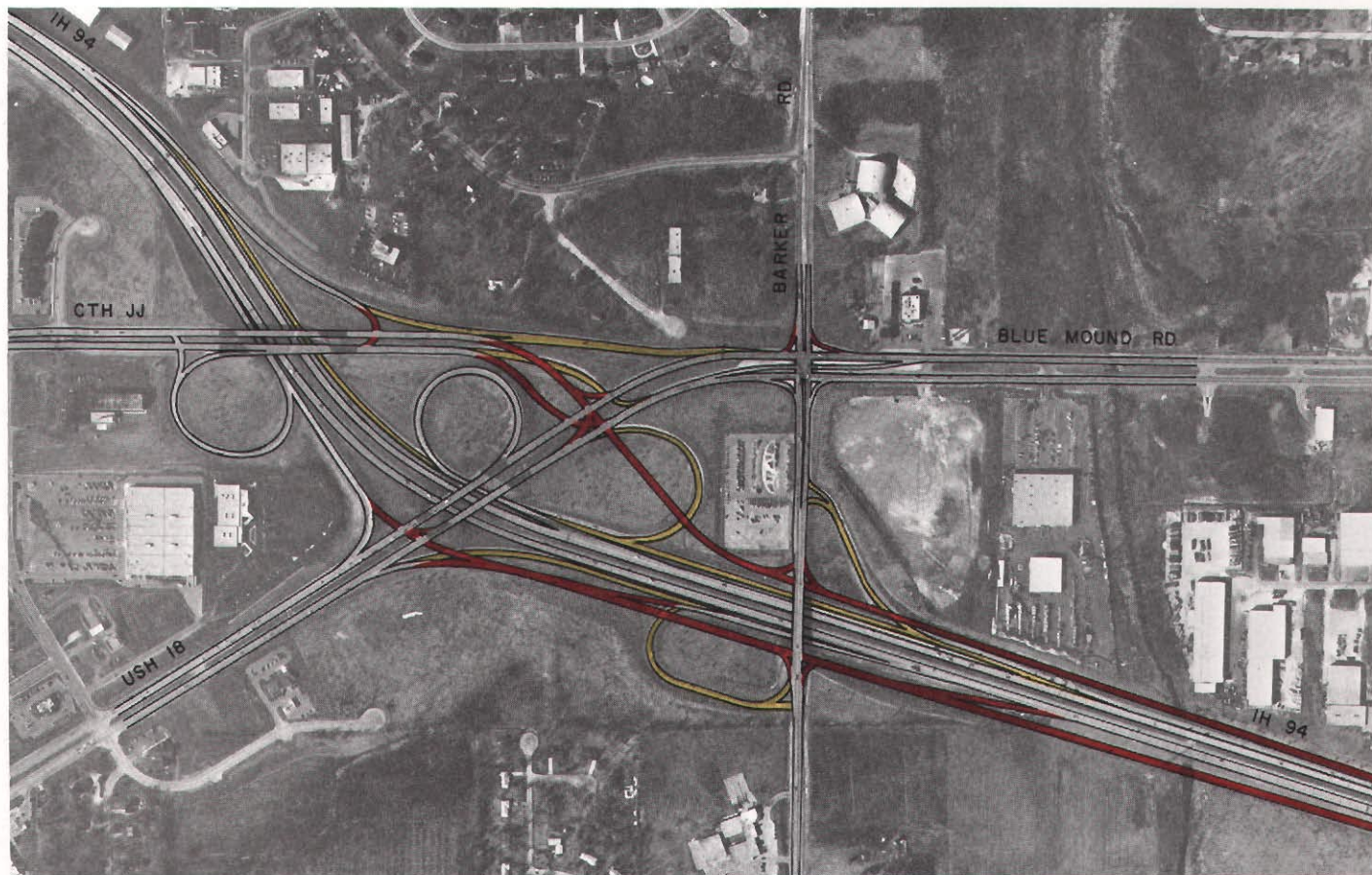
In considering the conclusions of this independent evaluation, it should be noted that, of the four reasons cited in support of the split diamond interchange, one is not an advantage unique to that interchange alternative. Frontage roadways, or new east-west arterial streets connecting Brookfield and Calhoun Roads and potentially extending farther to the east and west, could be provided under any of the interchange alternatives. Also, it should be noted that although the split diamond interchange may be expected to result in the need for one fewer freeway lane in each direction between Calhoun Road and Brookfield Road than the other interchange alternatives, this is so not because the split diamond interchange would accommodate traffic more efficiently, but because the traffic would be carried on the frontage roadways provided under this alternative. Thus, the only unique advantages of the split diamond interchange are its expected removal of the most traffic from the Moorland Road and Goerke's Corners interchanges and, as well, from attendant north-south and east-west arterial streets, and the resultant need to provide fewer lane-miles of widening on north-south arterial streets. This alternative, however, has the disadvantage of a higher capital cost, and would have more severe traffic impacts on Calhoun Road than a Brookfield Road interchange would.

As a result of the independent evaluation, the Wisconsin Department of Transportation has also proposed the reconstruction of the Goerke's Corners interchange and the provision of frontage roadways, or arterial connections, between the Goerke's Corners interchange and Moorland Road. The four alternatives considered for the reconstruction of the Goerke's Corners interchange are shown on Maps 23, 24, 25, and 26. The alternative preferred by the Wisconsin Department of Transportation is shown on Map 26. Map 27 shows the recommended Goerke's Corners interchange reconstruction, along with the extension of the frontage roads to Calhoun Road and the Department's proposed split diamond interchange with Calhoun and Brookfield Roads.

The Regional Planning Commission staff analyses concluded that three of the interchange alternatives considered--the Calhoun Road interchange, the Brookfield Road interchange, and the split diamond interchange--could all be considered good transportation improvements. That is, each of the three alternatives may be expected to remove substantial traffic from the Moorland Road and Goerke's Corners interchanges and from the arterial streets to which these interchanges would be connected. In addition, each alternative would provide substantial direct travel benefits of improved travel safety, reduced travel costs, and reduced travel time, which would exceed the direct costs of the interchanges. The Commission staff further concluded that, from a transportation perspective, the Calhoun Road interchange would be the preferred alternative interchange. An interchange at this location would remove substantially more traffic from the Moorland Road and Goerke's Corners interchanges and related arterials than a Brookfield Road interchange would. The Calhoun Road interchange would remove about 36,000 vehicles per average weekday from these two interchanges and the related arterial streets. The Brookfield Road interchange would remove about 27,000 vehicles per average weekday in the year 2010 from the two existing interchanges, or about 25 percent less than the volume expected to be removed from the two interchanges by the Calhoun Road interchange. The Calhoun Road interchange would remove slightly less traffic from the Moorland Road and Goerke's Corners interchanges than would the split dia-

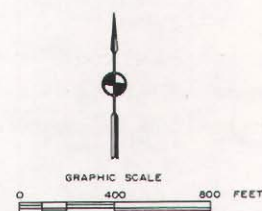
Map 23

ALTERNATIVE A FOR THE RECONSTRUCTION OF THE GOERKE'S CORNERS INTERCHANGE



LEGEND

- EXISTING FREEWAY AND SURFACE STREETS
- NEW FREEWAY RAMPS AND SURFACE STREETS
- EXISTING PAVEMENT TO BE REMOVED



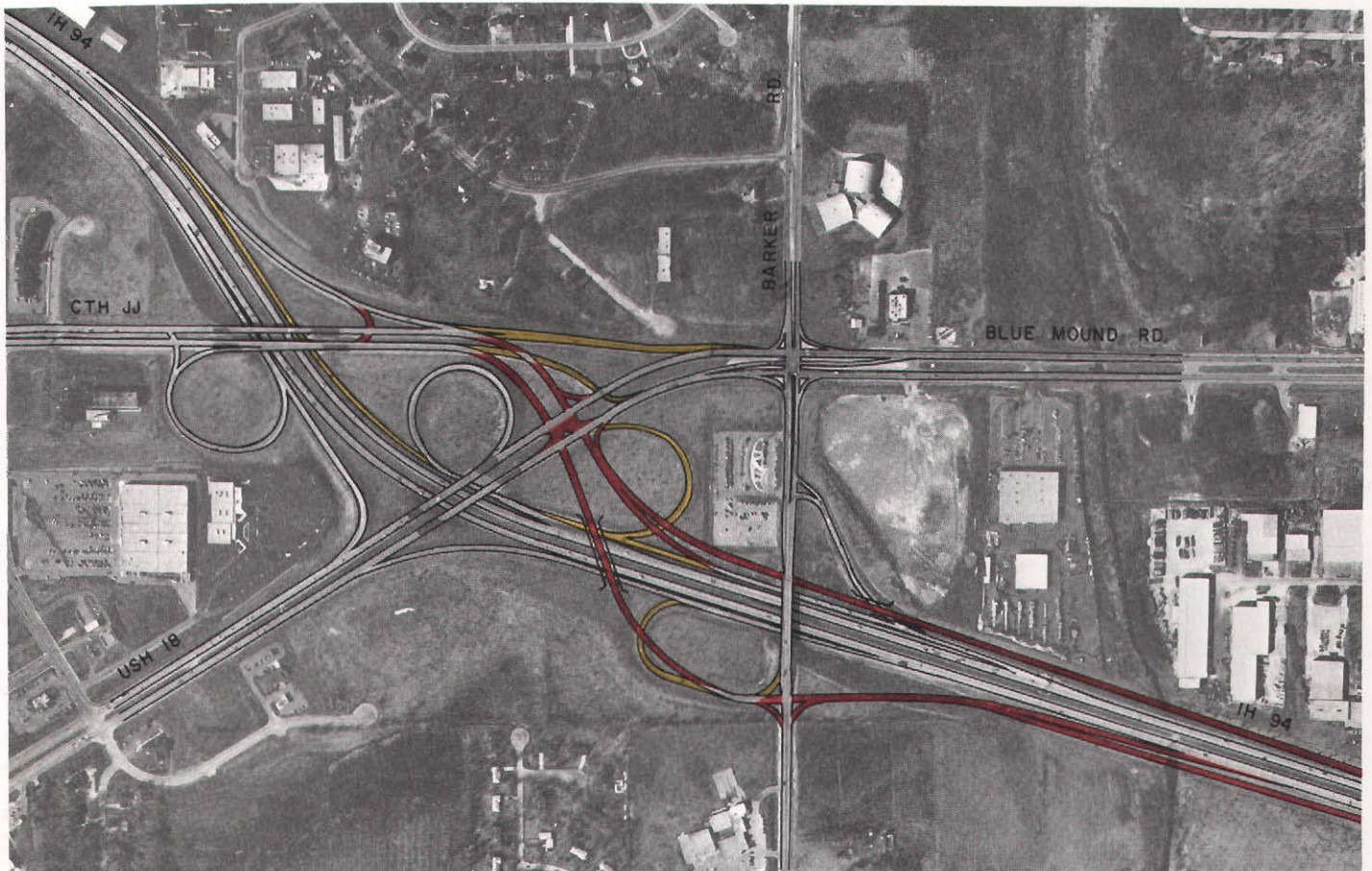
Source: Wisconsin Department of Transportation and SEWRPC.

mond interchange--36,000 as compared to 38,000 vehicles per average weekday. The capital cost of the Calhoun Road interchange would be substantially less than that of the split diamond interchange.

The Calhoun Road interchange alternative was not supported by representatives of the City of Brookfield on the Task Force as it would result in substantial additional traffic on Calhoun Road between Blue Mound Road and Greenfield Avenue. The representatives of the City of Brookfield supported a new interchange at Brookfield Road, as it would not be expected to result in any additional traffic on Calhoun Road between Greenfield Avenue and Blue Mound Road beyond the 14,000 vehicles per average weekday anticipated without an inter-

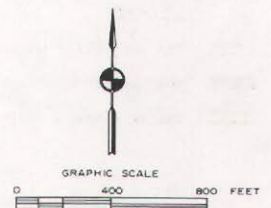
Map 24

ALTERNATIVE B FOR THE RECONSTRUCTION OF THE GOERKE'S CORNERS INTERCHANGE



LEGEND

- EXISTING FREEWAY AND SURFACE STREETS
- NEW FREEWAY RAMPS AND SURFACE STREETS
- EXISTING PAVEMENT TO BE REMOVED



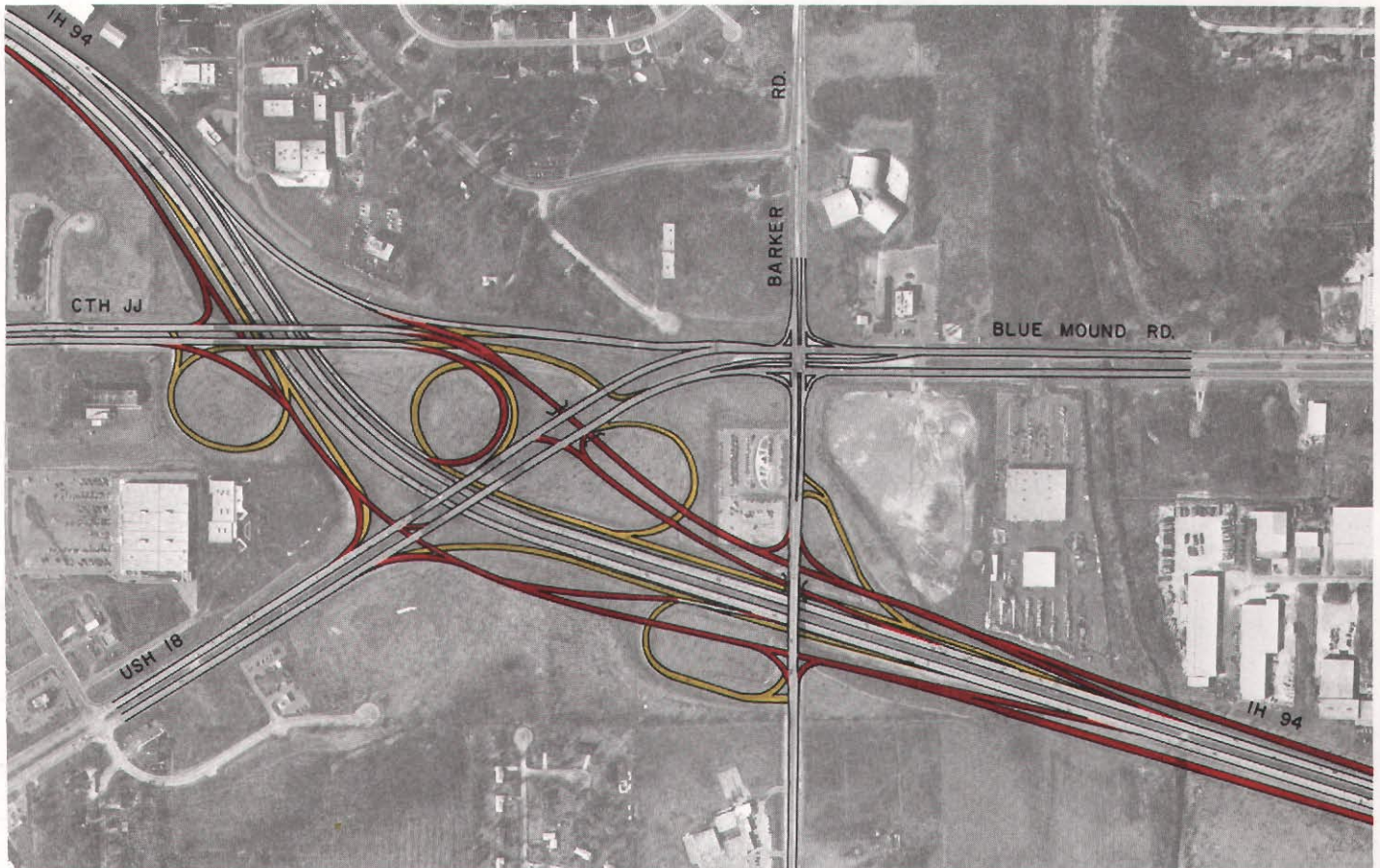
Source: Wisconsin Department of Transportation and SEWRPC.

change, and average weekday traffic on Brookfield Road between Greenfield Avenue and Blue Mound Road would only be expected to increase to between 10,000 to 16,000 vehicles.

The split diamond interchange represents an intermediate alternative to the Calhoun Road interchange alternative with its substantial transportation benefits but substantial impacts on adjacent urban development on Calhoun Road, and to the Brookfield Road interchange alternative with its more limited transportation benefits and more limited impacts on adjacent urban development. The split diamond interchange would remove slightly more traffic from the Moorland Road and Goerke's Corners interchanges than the other alternatives considered. The split diamond interchange would also entail the smallest number of lane-miles of widening on north-south arterial streets in this portion of the cor-

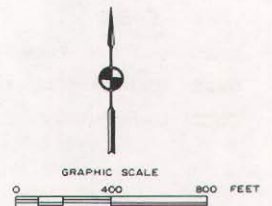
Map 25

ALTERNATIVE C FOR THE RECONSTRUCTION OF THE GOERKE'S CORNERS INTERCHANGE



LEGEND

- EXISTING FREEWAY AND SURFACE STREETS
- NEW FREEWAY RAMP AND SURFACE STREETS
- EXISTING PAVEMENT TO BE REMOVED

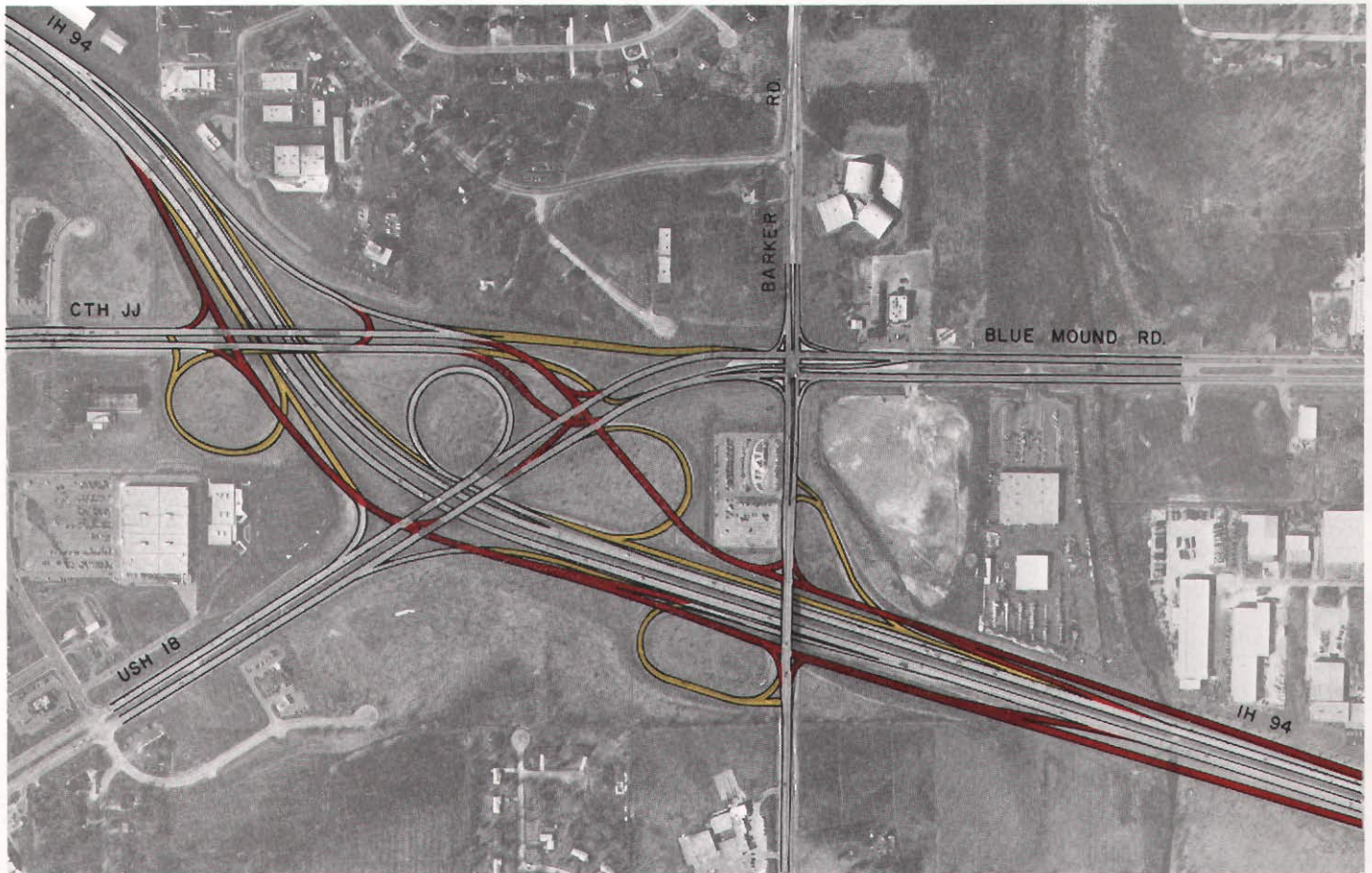


Source: Wisconsin Department of Transportation and SEWRPC.

ridor. The existing traffic volume on Calhoun Road between Blue Mound Road and Greenfield Avenue is approximately 8,200 vehicles per average weekday. Without a new interchange between Moorland Road and Goerke's Corners, traffic on this segment of Calhoun Road may be expected to increase to approximately 14,000 vehicles per average weekday by the year 2010. Under the Calhoun Road interchange alternative, the average weekday traffic on Calhoun Road may be expected to increase to approximately 26,000 vehicles. With a split diamond interchange, the traffic on Calhoun Road may be expected to increase to approximately 22,000 vehicles per average weekday. However, with the extension of the frontage roadways, providing alternative east-west arterials between Calhoun Road and the Goerke's Corners interchanges, it is anticipated that traffic on Calhoun Road with the split diamond interchange would increase to about 20,000 vehicles per average weekday in the year 2010 between Blue Mound Road and Greenfield Avenue.

Map 26

ALTERNATIVE D FOR THE RECONSTRUCTION OF THE GOERKE'S CORNERS INTERCHANGE



LEGEND

- EXISTING FREEWAY AND SURFACE STREETS
- NEW FREEWAY RAMP AND SURFACE STREETS
- EXISTING PAVEMENT TO BE REMOVED



GRAPHIC SCALE

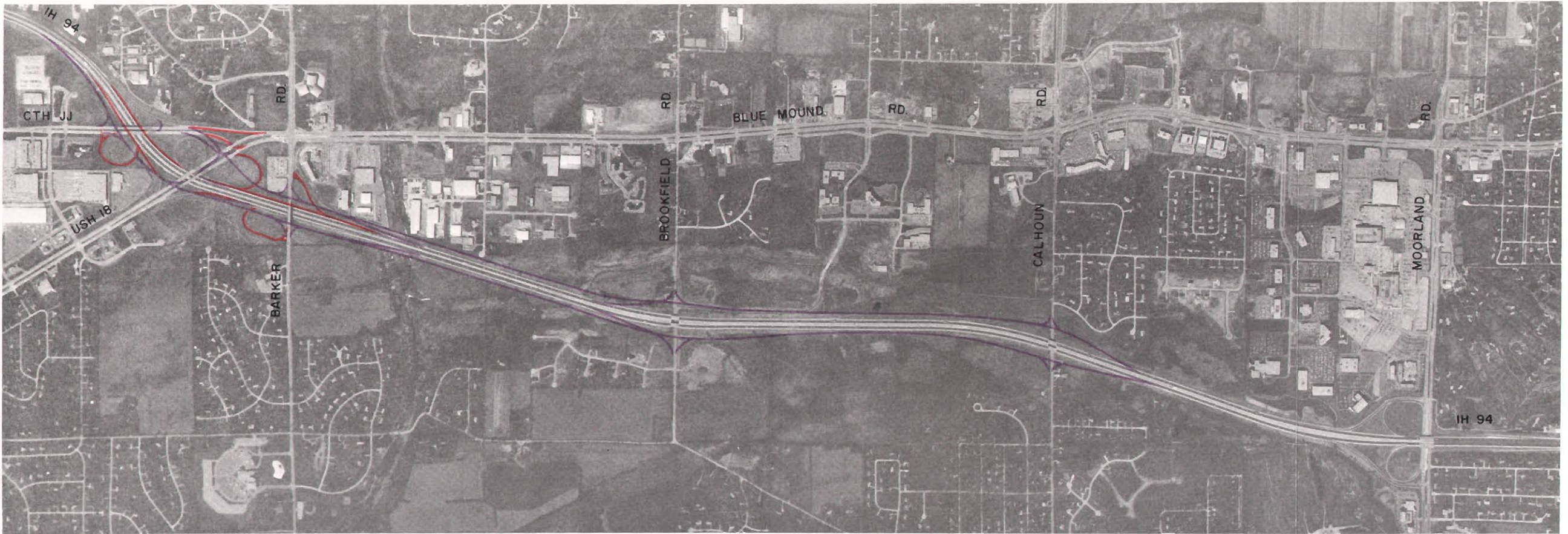
0 400 800 FEET

Source: Wisconsin Department of Transportation and SEWRPC.

Task Force Recommendation of New Interchange Between Moorland Road and Goerke's Corners--On June 29 and August 3, 1987, the Blue Mound Road Task Force requested that the Commission staff prepare four complete alternative system plans for the Blue Mound Road corridor freeway. One plan was to incorporate the split diamond interchange on IH 94, with freeway access divided between Calhoun and Brookfield Roads. A second plan was to incorporate a new interchange on IH 94 at Brookfield Road. A third plan was to incorporate a new interchange at IH 94 at Calhoun Road, and the fourth plan was to provide for no new interchange. These four alternative system plans were to be comparatively evaluated against each other and against a no build alternative. Based upon this Task Force request, system plans for the corridor were prepared identifying recommended arterial street expansion and improvements; anticipated year 2010 traffic volumes on all arterial facilities in the corridor;

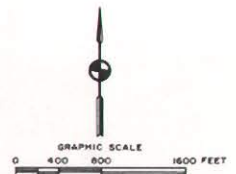
Map 27

WISCONSIN DEPARTMENT OF TRANSPORTATION RECOMMENDED IMPROVEMENTS TO GOERKE'S CORNERS INTERCHANGE AND RECOMMENDED CONNECTING FRONTAGE ROADS AND SPLIT INTERCHANGE AT CALHOUN AND BROOKFIELD ROADS



LEGEND

- PROPOSED FREEWAY RAMPS AND FRONTAGE ROADS
- FREEWAY RAMPS AND FRONTAGE ROADS TO BE ABANDONED



Source: Wisconsin Department of Transportation and SEWRPC.

the attendant number of lanes required to carry the traffic volume at the design capacity of the arterials; and the recommended jurisdictional responsibility for each segment of the arterial street system.

ALTERNATIVE ARTERIAL SYSTEM PLAN WITH SPLIT INTERCHANGE

Map 28 presents an arterial system plan for the Blue Mound Road corridor proposing a split diamond interchange between Moorland Road and Goerke's Corners, with half the interchange provided at Calhoun Road and half provided at Brookfield Road. Frontage roads are proposed to connect the split interchange, and to extend to CTH JJ to the west with potential extensions to the east. A reconstructed Goerke's Corners interchange is included in the plan. The recommended arterial street improvements include the extension of arterial streets and the

widening of existing arterial streets to abate the existing and anticipated year 2010 traffic congestion in the Blue Mound Road corridor as identified earlier in this chapter.

All the proposed arterial street improvements are listed in Table 23, along with the number of traffic lanes recommended to be provided and the attendant estimated capital costs. The proposed arterial street system includes certain arterial street extensions. These extensions include 124th Street from Watertown Plank Road to Greenfield Avenue in the Village of Elm Grove, City of Wauwatosa, City of West Allis, and City of Brookfield. The extension of 124th Street through these communities is a long-standing recommendation of the adopted regional transportation system plan, and the analyses conducted under this study have reaffirmed the need for this improvement. The extension of N. 124th Street is necessary to provide an adequate spacing of arterial streets, and to address existing and future traffic congestion, particularly on Watertown Plank Road.

Another recommended arterial street extension is the removal of the jog in Pilgrim Road and Pilgrim Parkway at North Avenue in the City of Brookfield. This is also a long-standing recommendation of the adopted regional transportation system plan; and the analyses conducted under this study have indicated, based upon the substantial planned increases in urban land development in the corridor, that the need for this improvement is even greater than was anticipated in the past.

Another recommended improvement is the extension of Brookfield Road south of the East-West Freeway (IH 94) to Greenfield Avenue (STH 59) in the City and Town of Brookfield. This is a newly recommended arterial street extension, as is the addition of Brookfield Road to the arterial street system. These recommendations reflect the extent and density of urban development that is now planned for this portion of the Blue Mound Road corridor.

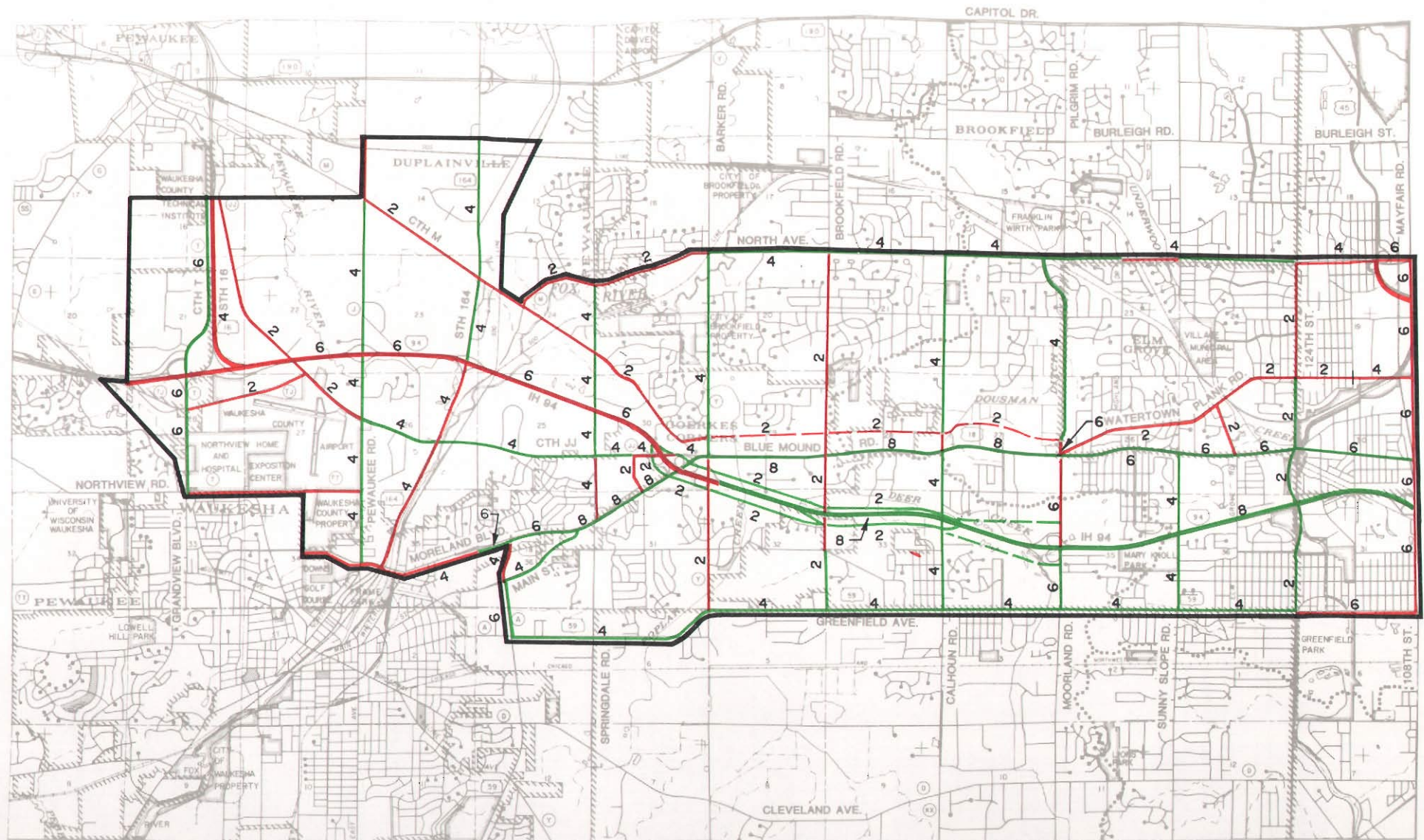
Another recommended street extension in the Blue Mound Road corridor is the extension of Wisconsin Avenue from Moorland Road to Barker Road in the City and Town of Brookfield. This extension is not intended to function as an arterial but, rather, to serve existing and future urban development abutting Wisconsin Avenue and to provide a needed collector and distribution function in the area.

Map 29 identifies the forecast year 2010 average weekday traffic volumes that are forecast for the arterial streets in the corridor under the proposed plan for a split diamond interchange on IH 94. The forecast volumes for Wisconsin Avenue are also shown, although it is proposed as a collector and not an arterial street.

Recommended Jurisdictional Classification of Arterial Streets and Highways

The current--as of July 1987--jurisdictional classification of each segment of arterial street facility in the corridor is shown on Map 30. Jurisdictional classification establishes which level of government--state, county, or local--should have primary responsibility for the planning, design, construction, operation, and maintenance of each segment of the total arterial system. The currently proposed jurisdictional classification of the arterial street system in the Blue Mound Road corridor is shown on Map 31. The proposed jurisdictional

RECOMMENDED ARTERIAL STREET SYSTEM IMPROVEMENTS UNDER THE ALTERNATIVE TRANSPORTATION PLAN WITH A SPLIT DIAMOND INTERCHANGE: 2010



LEGEND

- | | |
|--|---|
| — FREEWAYS | — IMPROVED OR NEW ARTERIAL STREETS |
| — ARTERIAL STREETS AND HIGHWAYS | — PROPOSED COLLECTOR STREET |
| — POTENTIAL ARTERIAL FRONTAGE ROAD EXTENSIONS | 4 NUMBER OF TRAFFIC LANES |



Table 23

**RECOMMENDED ARTERIAL STREET IMPROVEMENTS UNDER THE ALTERNATIVE
TRANSPORTATION PLAN WITH A SPLIT DIAMOND INTERCHANGE: 2010**

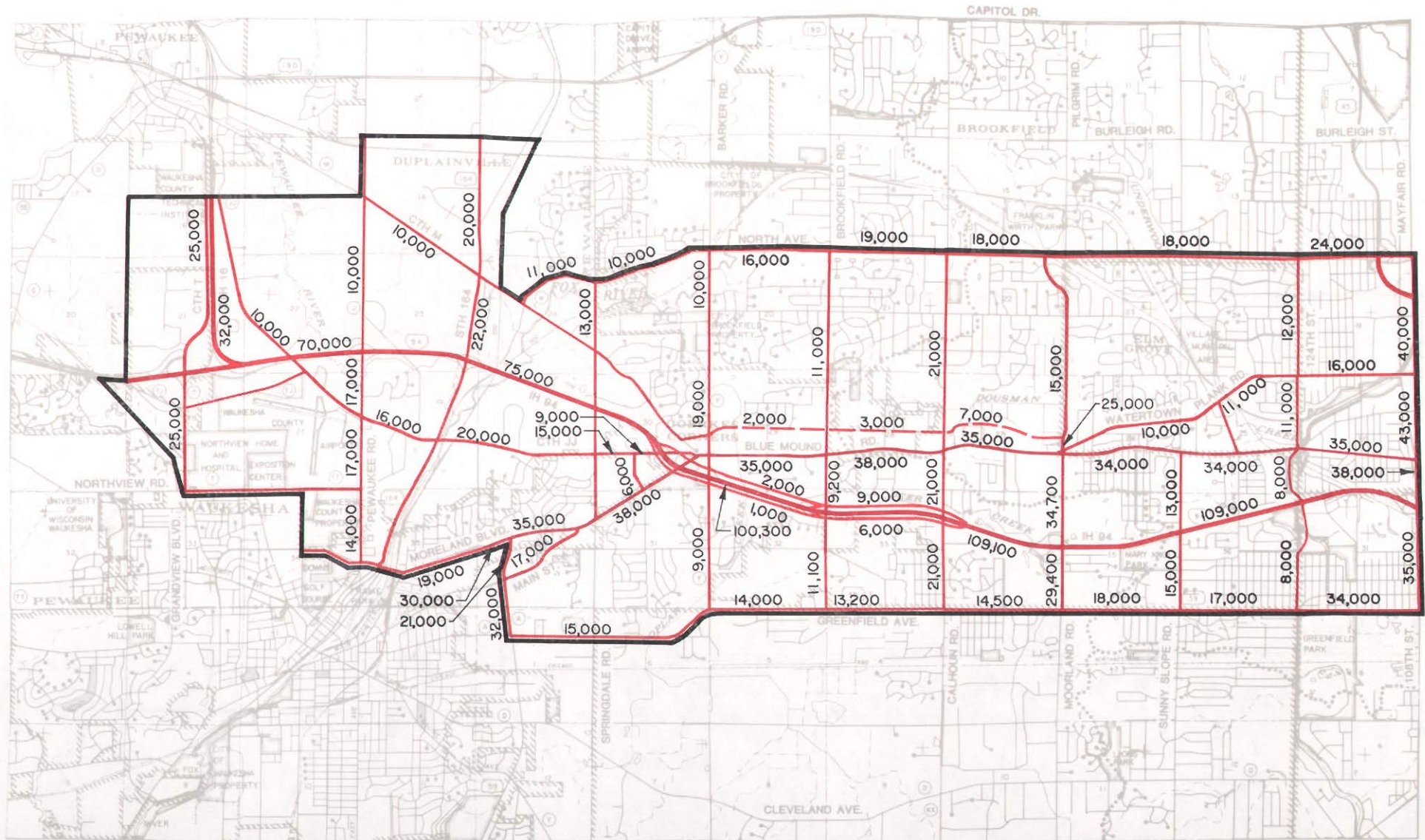
| Arterial Street | Limits | Recommended Number of Lanes |
|--|---|-----------------------------------|
| North-South Arterial | | |
| 124th Street (Milwaukee and Waukesha Counties)..... | Greenfield Avenue to Watertown Plank Road | 2 |
| Sunnyslope Road..... | Greenfield Avenue to USH 18 | 4 |
| Moorland Road..... | USH 18 to Wisconsin Avenue | 6 |
| Moorland Road..... | Greenfield Avenue to USH 18 | 6 |
| Pilgrim Road..... | Wisconsin Avenue to North Avenue | 4 |
| Calhoun Road..... | Greenfield Avenue to North Avenue | 4 |
| Brookfield Road..... | Davidson Road to Greenfield Avenue | 2 |
| Barker Road..... | IH 94 to North Avenue | 4 |
| Springdale Road..... | CTH JJ to North Avenue | 4 |
| STH 164..... | IH 94 to STH 190 | 4 |
| CTH J/Pewaukee Road..... | Moreland Boulevard to CTH M | 4 |
| CTH T..... | Northview Road to CTH JJ | 6 |
| CTH A..... | Main Street to STH 59 | 6 |
| East-West Arterial | | |
| STH 59..... | 124th Street to CTH A | 4 |
| USH 18..... | STH 100 to Moorland Road | 6 |
| USH 18..... | Moorland Road to Main Street | 8 |
| USH 18..... | Main Street to Manhattan Drive | 6 |
| Wisconsin Avenue..... | Moorland Road to Barker Road | 2 |
| CTH JJ..... | Kossow Road to CTH J | 4 |
| Main Street..... | USH 18 to CTH A | 4 |
| North Avenue..... | 124th Street to Barker Road | 4 |
| IH 94..... | STH 100 to CTH JJ | 8 |
| Reconstruction of Goerke's Corners Interchange..... | Barker Road to CTH JJ | -- |
| New Interchange..... | Brookfield Road to Calhoun Road | -- |
| Optional New Roadway Parallel to Freeway..... | Barker Road to Calhoun Road | 4 |

Source: SEWRPC.

classification is based upon the recommendations contained in SEWRPC Planning Report No. 18, A Jurisdictional Highway System Plan for Waukesha County, as adopted by the Waukesha County Board of Supervisors on May 20, 1975, and its subsequent amendments by SEWRPC Planning Report No. 25, A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin: 2000; and by action of the Waukesha County Board on March 15, 1983. The criteria applied in preparing this proposed jurisdictional classification are summarized in Table 24. The basic criteria applied to establish jurisdictional classification--that is, whether a facility should be a local, county, or state trunk facility--include trip length, traffic volume, travel speed, facility spacing, and land uses served.

Those arterial facilities that are classified as local trunk highways through the application of the criteria are those facilities that serve primarily local traffic, or traffic that begins and ends within the local municipality. The construction, operation, and maintenance of such a facility should be the function of the local level of government. Such arterial facilities typically operate at the lowest speeds, carry the lowest traffic volumes, serve trips of the shortest length, and serve land use activities of local interest.

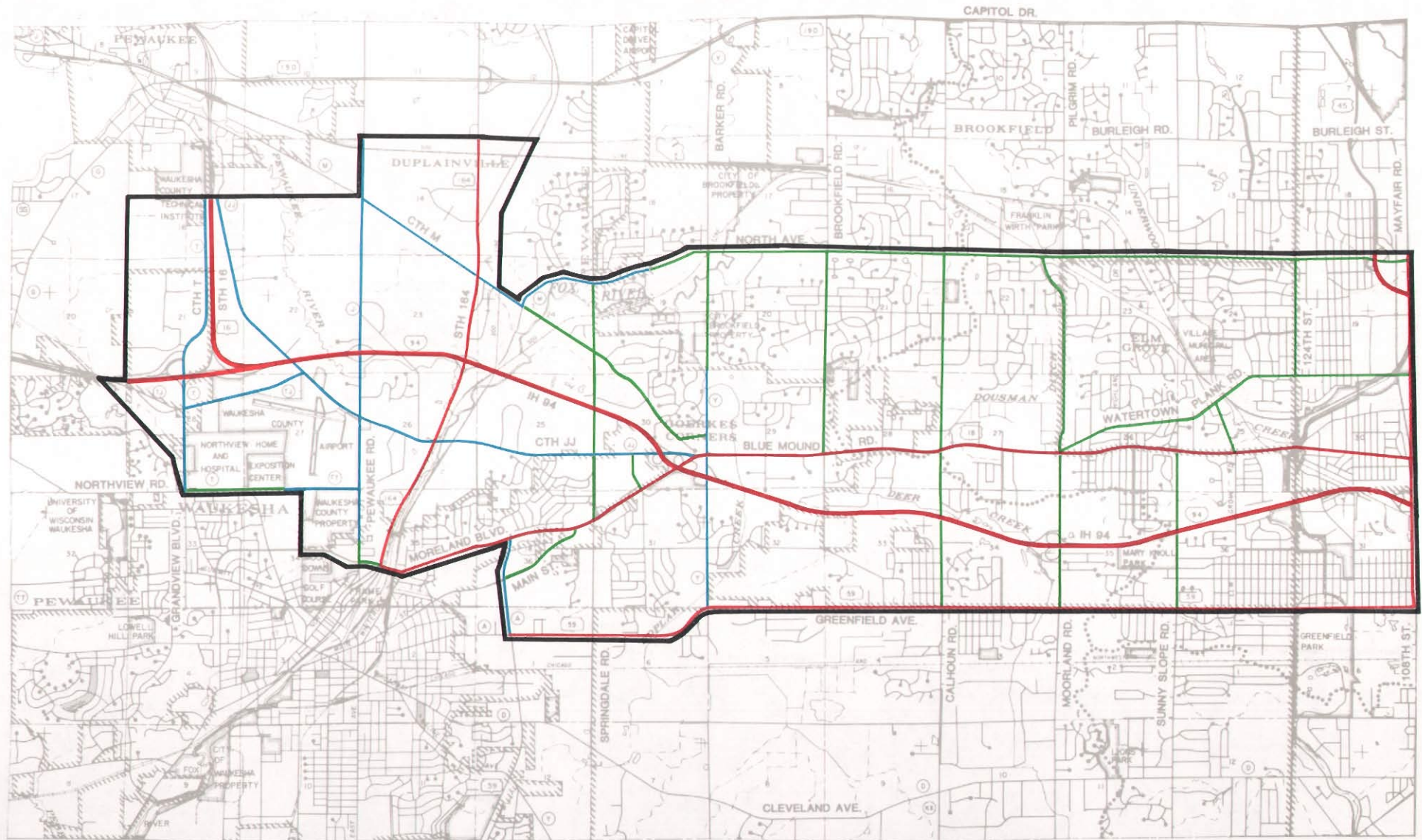
FORECAST YEAR 2010 AVERAGE WEEKDAY TRAFFIC VOLUMES UNDER THE ALTERNATIVE TRANSPORTATION PLAN WITH A SPLIT DIAMOND INTERCHANGE



LEGEND

- FREEWAYS
- PROPOSED COLLECTOR STREET
- ARTERIAL STREETS AND HIGHWAYS
- 23,000 AVERAGE WEEKDAY TRAFFIC VOLUME

EXISTING JURISDICTIONAL CLASSIFICATION OF ARTERIAL STREETS AND HIGHWAYS: 1987

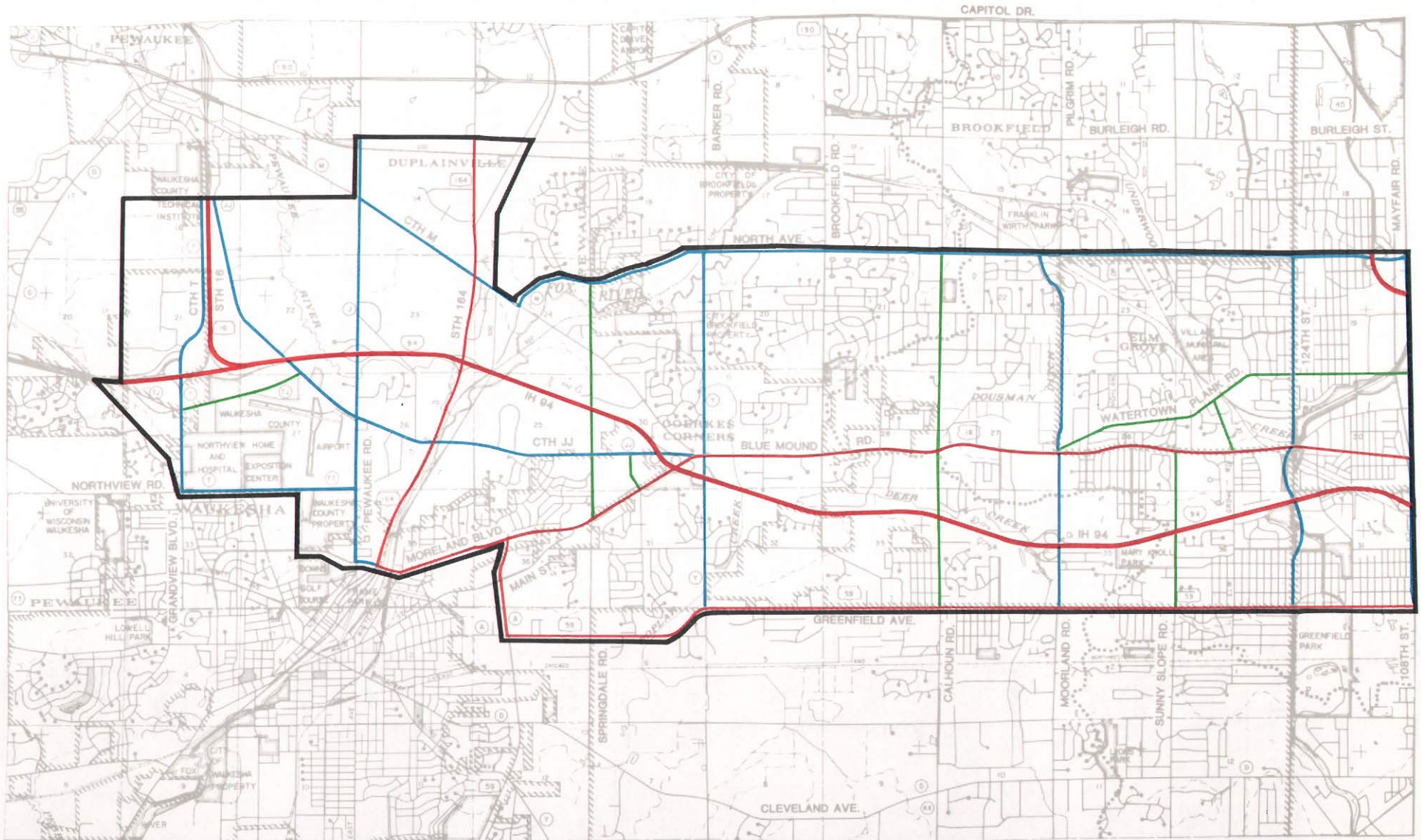


LEGEND

- STATE TRUNK HIGHWAY - FREEWAY
- STATE TRUNK HIGHWAY - NONFREEWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY



CURRENT PROPOSED JURISDICTIONAL CLASSIFICATION OF STREETS AND HIGHWAYS



LEGEND

- STATE TRUNK HIGHWAY - FREEWAY
- STATE TRUNK HIGHWAY - NONFREEWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY

Source: SEWRPC.



Table 24

SUMMARY OF FUNCTIONAL CRITERIA FOR THE JURISDICTIONAL CLASSIFICATION OF ARTERIAL HIGHWAYS IN WAUKESHA COUNTY

| Criteria | Arterial Type | | |
|------------------------------------|--|---|--|
| | I (State Trunk) | II (County Trunk) | III (Local Trunk) ^a |
| <u>Service Trip</u> | | | |
| Average Trip Length (miles) | <u>Urban</u> 12.0 or more <u>Rural</u> 18.0 or more | <u>Urban</u> 7.5 to 11.9 <u>Rural</u> Less than 18.0 | <u>Urban</u> Less than 7.5 |
| <u>Land Use Service</u> | | | |
| Transportation Terminals | <u>Urban^b and Rural^c</u> Connect and serve interregional rail, bus, and major truck terminals; air carrier airports; and seaports | <u>Urban^b and Rural^c</u> Connect and serve freeway interchanges, general aviation airports, pipeline terminals, major intraregional truck terminals, and rapid transit system loading and unloading points not served by Type I arterials | <u>Urban^b</u> Connect and serve truck terminals generating 250 or more truck trips per average weekday, and off-street parking facilities having a minimum of 150 parking spaces not served by Type I and II arterials |
| Recreational Facilities | <u>Urban and Rural</u> Connect and serve all state parks having a gross area of 500 acres or more | <u>Urban and Rural</u> Connect and serve regional parks and special recreational use areas of county-wide significance, such as zoological and botanical gardens, arenas and stadia seating a minimum of 10,000 persons not served by Type I arterials, and public recreation areas providing onsite parking for a minimum of 250 vehicles | <u>Urban</u> Connect and serve community parks not served by Type I and II arterials |
| Commercial Centers | <u>Urban and Rural</u> Connect and serve major retail and service centers | <u>Urban and Rural</u> Connect and serve community retail and service centers not served by Type I arterials | <u>Urban</u> Connect and serve neighborhood retail and service commercial centers not served by Type I and II arterials |
| Industrial Centers | <u>Urban and Rural</u> Connect and serve major regional industrial centers | <u>Urban and Rural</u> Connect and serve major community industrial centers not served by Type I arterials | <u>Urban</u> Connect and serve minor community industrial centers not served by Type I and II arterials |
| Institutional | <u>Urban and Rural</u> Connect and serve universities, county seats, and state institutions | <u>Urban and Rural</u> Connect and serve county institutions; accredited, degree-granting colleges; public vocational schools; and community hospitals not served by Type I arterials | <u>Urban</u> Connect and serve city and village halls and high schools not served by Type I and II arterials |
| Urban Areas | <u>Rural</u> Connect and serve urban areas of 2,500 or more population | <u>Rural</u> Connect and serve developed areas of 500 or more population | -- |
| <u>Operational Characteristics</u> | | | |
| System Continuity | <u>Urban and Rural</u> Interregional or regional continuity comprising total systems at the regional and state level | <u>Urban and Rural</u> Intermunicipality and inter-county continuity comprising integrated systems at the county level | <u>Urban</u> Intracommunity continuity comprising an integrated system at the city, village, or town level |
| Spacing | <u>Urban and Rural</u> Minimum 2 miles | <u>Urban and Rural</u> Minimum 1 mile | <u>Urban</u> Minimum 0.5 mile |
| Volume | <u>Urban</u> Minimum 9,000 vehicles per average weekday (1990 forecast) <u>Rural</u> Minimum 3,500 vehicles per average weekday (1990 forecast) | <u>Urban</u> 5,000 to 8,999 vehicles per average weekday (1990 forecast) <u>Rural</u> Maximum 3,500 vehicles per average weekday (1990 forecast) | <u>Urban</u> Maximum 5,000 vehicles per average weekday (1990 forecast) -- |

Table 24 (continued)

| Criteria | Arterial Type | | |
|---------------------|--|--|--|
| | I (State Trunk) | II (County Trunk) | III (Local Trunk) ^a |
| Traffic Mobility | <u>Urban</u> Average overall travel speed ^d 30 to 70 miles per hour | <u>Urban</u> Average overall travel speed ^d 25 to 50 miles per hour | <u>Urban</u> Average overall travel speed ^d 20 to 40 miles per hour |
| | <u>Rural</u> Average overall travel speed ^d 40 to 70 miles per hour | <u>Rural</u> Average overall travel speed ^d 30 to 60 miles per hour | -- |
| Land Access Control | Full or partial control of access ^{e,f} | Partial control of access ^f | Minimum control of access ^g |

^a A rural subcategory for Type III arterials is not provided.

^b Urban arterial facilities are considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is available within the following maximum over-the-road distances from the main vehicular entrance to the land use to be served: Type I arterial facility, 1 mile; Type II arterial facility, 0.5 mile; Type III arterial facility, 0.25 mile.

^c Rural arterial facilities are considered to "connect and serve" given land uses when direct access from the facility to roads serving the land use area is available within the following maximum over-the-road distances from the main vehicular entrance to the land use to be served: Type I arterial facility, 2 miles; Type II arterial facility, 1 mile.

^d Average overall travel speed is defined as the sum of the distances traveled by all vehicles using a given section of highway during an average weekday divided by the sum of the actual travel times, including traffic delays.

^e Full control of access is defined as the exercise of eminent domain or police power to control access so as to give preference to the movement of through traffic by providing access connections only at selected public roads via grade-separated interchanges.

^f Partial control of access is defined as the exercise of eminent domain or police power to control access so as to give preference to the movement of through traffic to a degree that, in addition to access connections at selected public roads, there may be some direct access to abutting land uses, with generally one point of reasonably direct access to each parcel of abutting land as these parcels existed at the time of an official declaration that partial control of access shall be exercised.

^g Minimum control of access is defined as the exercise of eminent domain or police power to regulate the placement and geometrics of direct access roadway connections as necessary for safety.

Source: SEWRPC.

Those arterial street facilities that are classified as county trunk highways through application of the criteria are those facilities that carry traffic between the various municipalities of a county--those that carry traffic having origins and destinations within the county but within different municipalities of the county. The construction, operation, and maintenance of such a facility should be the function of the county level of government. Such arterial facilities typically operate at intermediate speeds, carrying intermediate traffic volumes, and serve trips of intermediate lengths and serve land use activities of countywide interest.

Those arterial facilities that are classified as state trunk highways through application of the criteria are those facilities that carry traffic between a county and other counties, and traffic that travels through the county. The construction, operation, and maintenance of such facilities should be the function of the state level of government. Such arterial facilities typically operate at the highest speeds, carry the highest traffic volumes, serve trips of the longest lengths, and serve land use activities of regional and statewide interest.

Based on the proposed changes in the previously recommended long-range arterial street system plan for the corridor, which are identified on Map 32, and on the amended long-range land use plan for the corridor, a number of changes in the proposed jurisdictional classification of the arterial street and highway system in the corridor are proposed. The new recommended jurisdictional classification for the arterial street system plan, which includes the split diamond interchange on IH 94, is shown on Map 33. The resultant recommended changes from the existing jurisdictional classification are shown on Maps 34 and 35.

Table 25 presents the recommended improvements in the Blue Mound Road corridor and, based upon the recommended jurisdictional classification, identifies the unit and level of government proposed to be responsible for each improvement.

The State of Wisconsin would be the primary agency responsible for about \$48.7 million in arterial street improvements in the corridor; Waukesha County would be the primary agency responsible for \$28.2 million in arterial street improvements; and the local units of government would be the primary agencies responsible for \$9.9 million of arterial street improvements.

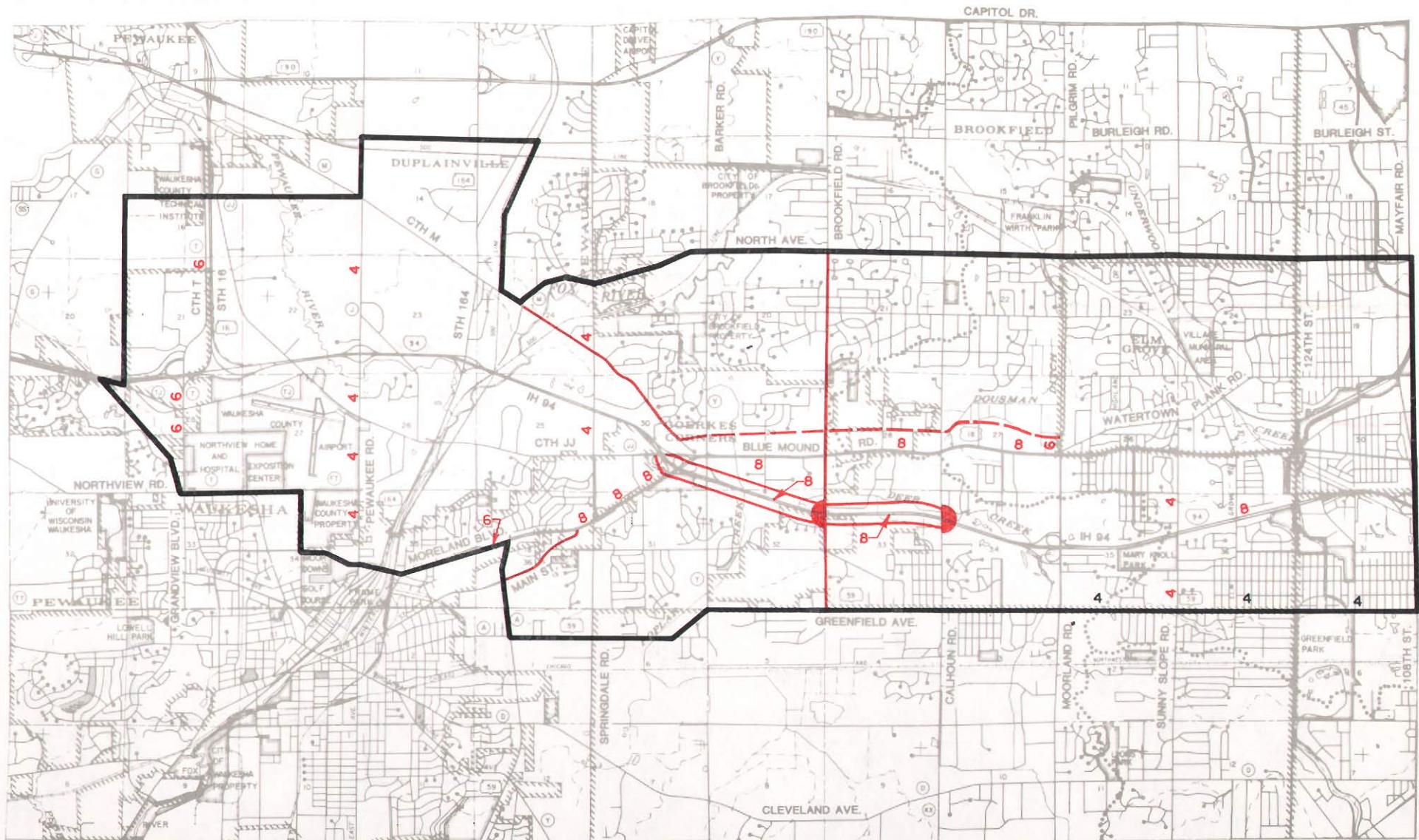
ALTERNATIVE ARTERIAL SYSTEM PLAN WITH INTERCHANGE AT BROOKFIELD ROAD

As already noted, the Task Force requested that an alternative arterial system plan that would include a Brookfield Road interchange also be developed. Map 36 presents such an arterial system plan. This alternative plan includes the Brookfield Road interchange and a reconstructed Goerke's Corners interchange. The recommended arterial street improvements include the extension of arterial streets and the widening of existing arterial streets necessary to abate the existing and anticipated year 2010 traffic congestion in the Blue Mound Road corridor, as identified earlier in this chapter.

The plan could also include roadways parallel to the freeway between Calhoun Road and the Goerke's Corners interchange, as under the split diamond interchange alternative. The optional roadways, as shown on Map 37, could be one-way arterial frontage roads or two-way arterial streets. Either would provide some additional relief to Blue Mound Road between Calhoun Road and the Goerke's Corners interchange. The potential relief beyond that which would be provided with two-way collector streets in about the same locations would be expected to be minimal--a reduction in Blue Mound Road traffic of 1,000 to 3,000 vehicles per average weekday. Providing much greater relief to this stretch of Blue Mound Road, particularly the intersection of Blue Mound Road with Barker Road, and greatly reducing the traffic that could be carried by these frontage roads would be the new freeway interchange. For example, without the new interchange, traffic between the Blue Mound Road area (between Moorland Road and Goerke's Corners) and points west along IH 94 would be expected to use the existing Goerke's Corners interchange and Blue Mound Road. With the frontage roads and no new interchange, a portion of this traffic would be expected to use the Goerke's Corners interchange and the frontage roads, rather than Blue Mound Road. With the new interchange, the traffic may be expected to use the new interchange and not the Goerke's Corners interchange, and therefore would also not use connecting segments of either Blue Mound Road or the frontage roads.

All the proposed arterial street improvements are listed in Table 26, along with the number of traffic lanes recommended to be provided and the estimated capital costs. The proposed arterial street system includes certain arterial street extensions. These extensions include 124th Street from Watertown Plank

RECOMMENDED CHANGES IN ALTERNATIVE LONG-RANGE ARTERIAL STREET SYSTEM PLAN 2010 WITH A SPLIT DIAMOND INTERCHANGE FROM PREVIOUS LONG-RANGE PLAN 2000

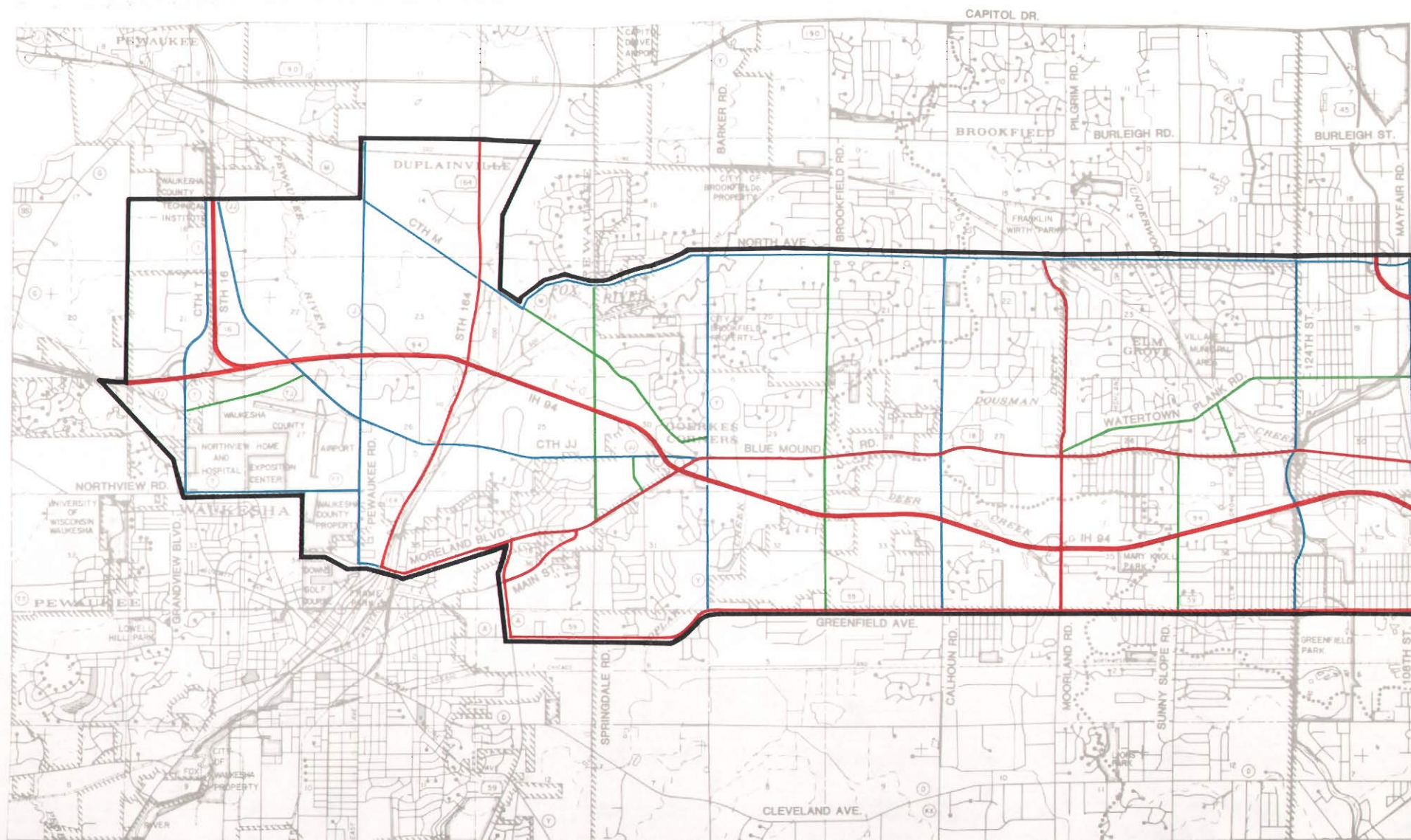


LEGEND

- | | | | |
|--|----------------------------------|--|----------------------------------|
| | FACILITY ADDED TO PLAN | | NUMBER OF TRAVEL LANES DECREASED |
| | HALF OF NEW SPLIT INTERCHANGE | | PROPOSED NEW COLLECTOR FACILITY |
| | NUMBER OF TRAVEL LANES INCREASED | | |



RECOMMENDED JURISDICTIONAL CLASSIFICATION OF ARTERIAL STREETS AND HIGHWAYS UNDER THE ALTERNATIVE TRANSPORTATION SYSTEM PLAN WITH A SPLIT DIAMOND INTERCHANGE: 2010

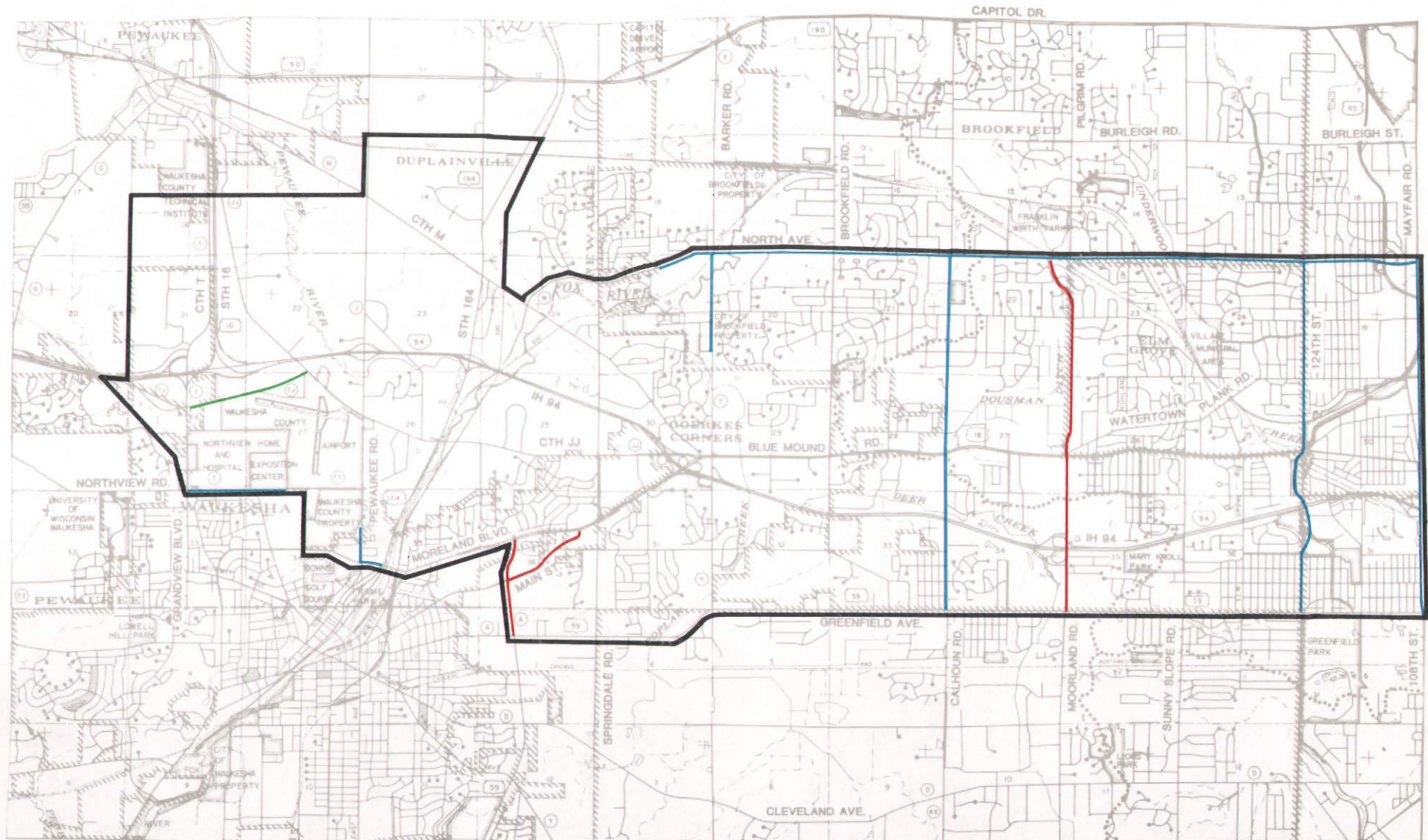


LEGEND

- STATE TRUNK HIGHWAY - FREEWAY
- STATE TRUNK HIGHWAY - NONFREEWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY



RECOMMENDED CHANGES IN JURISDICTIONAL CLASSIFICATION IN THE BLUE MOUND CORRIDOR UNDER ALTERNATIVE TRANSPORTATION SYSTEM PLAN WITH A SPLIT DIAMOND INTERCHANGE: 2010



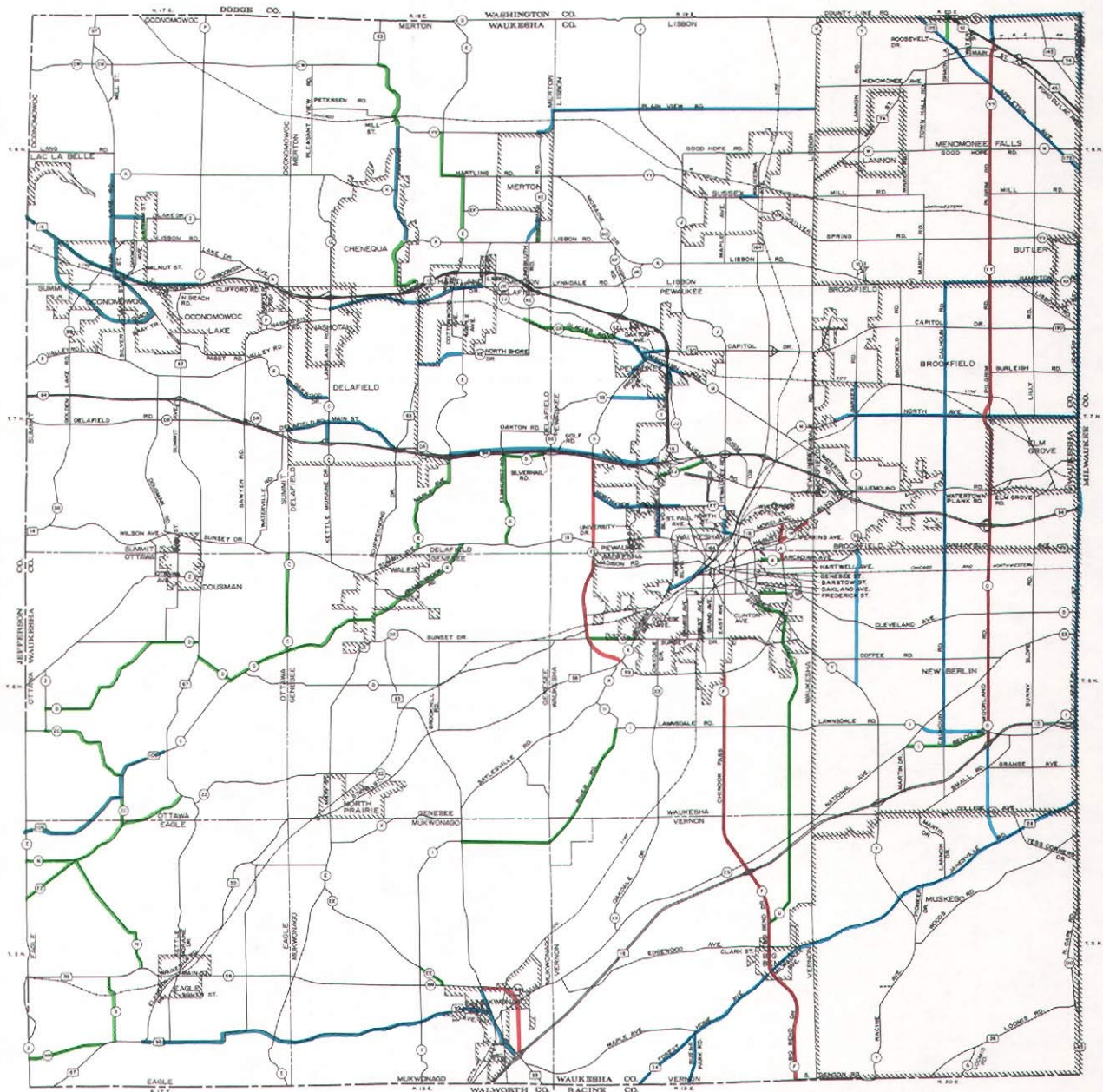
LEGEND

- FACILITY REVERTS TO LOCAL UNIT OF GOVERNMENT
- FACILITY ADDED TO COUNTY TRUNK HIGHWAY SYSTEM
- FACILITY ADDED TO STATE TRUNK HIGHWAY SYSTEM



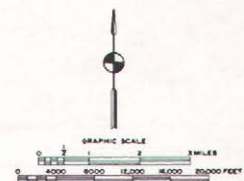
Map 35

RECOMMENDED CHANGES IN JURISDICTIONAL CLASSIFICATION IN WAUKESHA COUNTY UNDER ALTERNATIVE BLUE MOUND CORRIDOR TRANSPORTATION SYSTEM PLAN WITH A SPLIT DIAMOND INTERCHANGE: 2010



LEGEND

- FACILITY REVERTS TO LOCAL UNITS OF GOVERNMENT
- FACILITY ADDED TO COUNTY TRUNK HIGHWAY SYSTEM
- FACILITY ADDED TO STATE TRUNK HIGHWAY SYSTEM



Source: SEWRPC.

Table 25

**RECOMMENDED JURISDICTIONAL RESPONSIBILITIES FOR RECOMMENDED
ARTERIAL STREET IMPROVEMENTS UNDER THE ALTERNATIVE
TRANSPORTATION PLAN WITH A SPLIT DIAMOND INTERCHANGE: 2010**

| Level of Government | Facility | Limits | Recommended Number of Traffic Lanes | Estimated Cost ^a |
|---------------------|---|--|-------------------------------------|-----------------------------|
| Local | Brookfield Road (City and Town of Brookfield)..... | Davidson Road to Greenfield Avenue | 2 | \$ 550,000 |
| | Springdale Road (City and Town of Brookfield and Town of Pewaukee)..... | CTH JJ to North Avenue | 4 | 1,800,000 |
| | Sunnyslope Road (City of Brookfield)..... | Greenfield Avenue to USH 18 | 4 | 1,560,000 |
| | Wisconsin Avenue (City and Town of Brookfield)..... | Moorland Road to Barker Road | 2 | 3,410,000 |
| | Collector Roadways Parallel to Freeway between Barker Road and Calhoun Road (Town and City of Brookfield) | Barker Road to Calhoun Road | 4 | 2,590,000 |
| | Subtotal | -- | -- | \$ 9,910,000 |
| County | Barker Road..... | IH 94 to North Avenue | 4 | \$ 2,040,000 |
| | Calhoun Road..... | Greenfield Avenue to North Avenue | 4 | 3,772,000 ^b |
| | North Avenue..... | 124th Street to Barker Road | 4 | 7,380,000 ^b |
| | Pewaukee Road..... | Moreland Boulevard to City of Waukesha/Town of Pewaukee limits | 4 | 360,000 |
| | 124th Street (Milwaukee and Waukesha Counties)..... | Greenfield Avenue to Watertown Plank Road | 2 | 2,310,000 |
| | CTH J..... | City of Waukesha/Town of Pewaukee limits to CTH M | 4 | 3,600,000 |
| | CTH T..... | Northview Road to CTH JJ | 6 | 4,920,000 |
| | CTH JJ..... | Kossow Road to CTH J | 4 | 3,772,000 |
| | Subtotal | -- | -- | \$28,154,000 |
| State | Main Street..... | USH 18 to CTH A | 4 | \$ 960,000 |
| | Moorland Road..... | USH 18 to Wisconsin Avenue | 6 | 328,000 ^b |
| | Moorland Road..... | Greenfield Avenue to USH 18 | 6 | 2,132,000 ^b |
| | Pilgrim Road..... | Wisconsin Avenue to North Avenue | 4 | 2,460,000 ^b |
| | CTH A..... | Main Street to STH 59 | 6 | 820,000 ^b |
| | USH 18..... | STH 100 to Moorland Road | 6 | 3,444,000 ^b |
| | USH 18..... | Moorland Road to Main Street | 8 | 8,148,000 ^b |
| | USH 18..... | Main Street to Manhattan Drive | 6 | 1,476,000 ^b |
| | STH 59..... | 124th Street to CTH A | 4 | 8,400,000 ^b |
| | STH 164..... | IH 94 to STH 190 | 4 | 2,143,000 ^b |
| | IH 94..... | STH 100 to CTH JJ | 8 | 9,400,000 |
| | Reconstruction of Goerke's Corners Interchange..... | Barker Road to CTH JJ | -- | 2,880,000 |
| | New Interchange..... | Brookfield Road to Calhoun Road | -- | 6,070,000 |
| | Subtotal | -- | -- | \$48,661,000 |
| Total | | -- | -- | \$86,725,000 |

^a The estimated cost of arterial facility improvements assumes that the recommended improvements may be constructed within the existing right-of-way.

^b Based upon forecast year 2010 traffic volumes, cost estimates of these improvements have assumed implementation of a divided roadway.

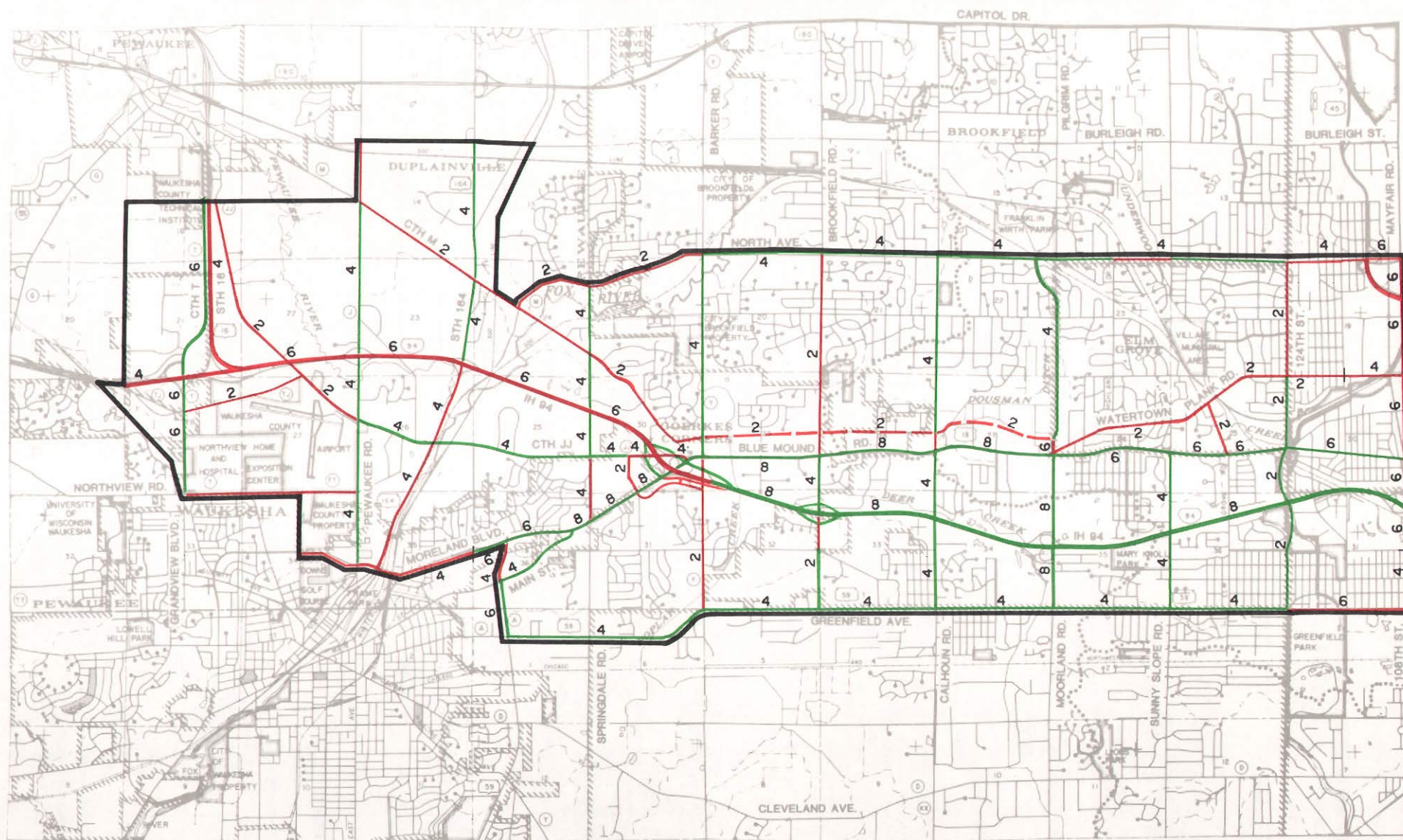
Source: SEWRPC.

Road to Greenfield Avenue; the removal of the jog in Pilgrim Road and Pilgrim Parkway at North Avenue; the extension of Brookfield Road south of the East-West Freeway (IH 94) to Greenfield Avenue; and the extension of Wisconsin Avenue as a collector facility from Moorland Road to Barker Road.

Map 38 identifies the year 2010 average weekday traffic volumes forecast for the arterial streets in the corridor under the proposed plan with a Brookfield Road interchange on IH 94.

The primary differences in the needed arterial street improvements under the two alternative plans other than the location of the new freeway interchange are the need for eight rather than six traffic lanes on Moorland Road between Greenfield Avenue and Blue Mound Road and the need for four rather than two traffic lanes on Brookfield Road between the East-West Freeway (IH 94) and Blue Mound Road under the alternative plan that includes the Brookfield Road interchange.

RECOMMENDED ARTERIAL STREET IMPROVEMENTS UNDER THE ALTERNATIVE TRANSPORTATION SYSTEM PLAN WITH A BROOKFIELD ROAD INTERCHANGE: 2010



LEGEND

- | | |
|---|--|
| — FREEWAYS | --- PROPOSED COLLECTOR STREET |
| — ARTERIAL STREETS AND HIGHWAYS | 4 NUMBER OF TRAFFIC LANES |
| — IMPROVED OR NEW ARTERIAL STREETS | |



Table 26

**RECOMMENDED ARTERIAL STREET IMPROVEMENTS UNDER THE ALTERNATIVE
TRANSPORTATION PLAN WITH A BROOKFIELD ROAD INTERCHANGE: 2010**

| Arterial Street | Limits | Recommended Number of Lanes |
|--|---|-----------------------------------|
| North-South Arterial | | |
| 124th Street..... | Greenfield Avenue to Watertown Plank Road | 2 |
| Sunnyslope Road..... | Greenfield Avenue to USH 18 | 4 |
| Moorland Road..... | Greenfield Avenue to USH 18 | 8 |
| Moorland Road..... | USH 18 to Wisconsin Avenue | 6 |
| Pilgrim Road..... | Wisconsin Avenue to North Avenue | 4 |
| Calhoun Road..... | Greenfield Avenue to USH 18 | 4 |
| Calhoun Road..... | USH 18 to North Avenue | 4 |
| Brookfield Road..... | Davidson Road to Greenfield Avenue | 2 |
| Brookfield Road..... | IH 94 to USH 18 | 4 |
| Barker Road..... | IH 94 to North Avenue | 4 |
| Springdale Road..... | CTH JJ to North Avenue | 4 |
| STH 164..... | IH 94 to STH 190 | 4 |
| CTH J/Pewaukee Road..... | Moreland Boulevard to CTH M | 4 |
| CTH T..... | Northview Road to CTH JJ | 6 |
| CTH A..... | Main Street to STH 59 | 6 |
| East-West Arterial | | |
| STH 59..... | 124th Street to CTH A | 4 |
| USH 18..... | STH 100 to Moorland Road | 6 |
| USH 18..... | Moorland Road to Main Street | 8 |
| USH 18..... | Main Street to Manhattan Drive | 6 |
| Wisconsin Avenue..... | Moorland Road to Barker Road | 2 |
| CTH JJ..... | Kossow Road to CTH J | 4 |
| Main Street..... | USH 18 to CTH A | 4 |
| North Avenue..... | 124th Street to Barker Road | 4 |
| IH 94..... | STH 100 to CTH JJ | 8 |
| Reconstruction of Goerke's Corners Interchange..... | Barker Road to CTH JJ | -- |
| New Interchange..... | Brookfield Road to Calhoun Road | -- |
| Optional New Roadway Parallel to Freeway..... | Barker Road to Calhoun Road | 4 |

Source: SEWRPC.

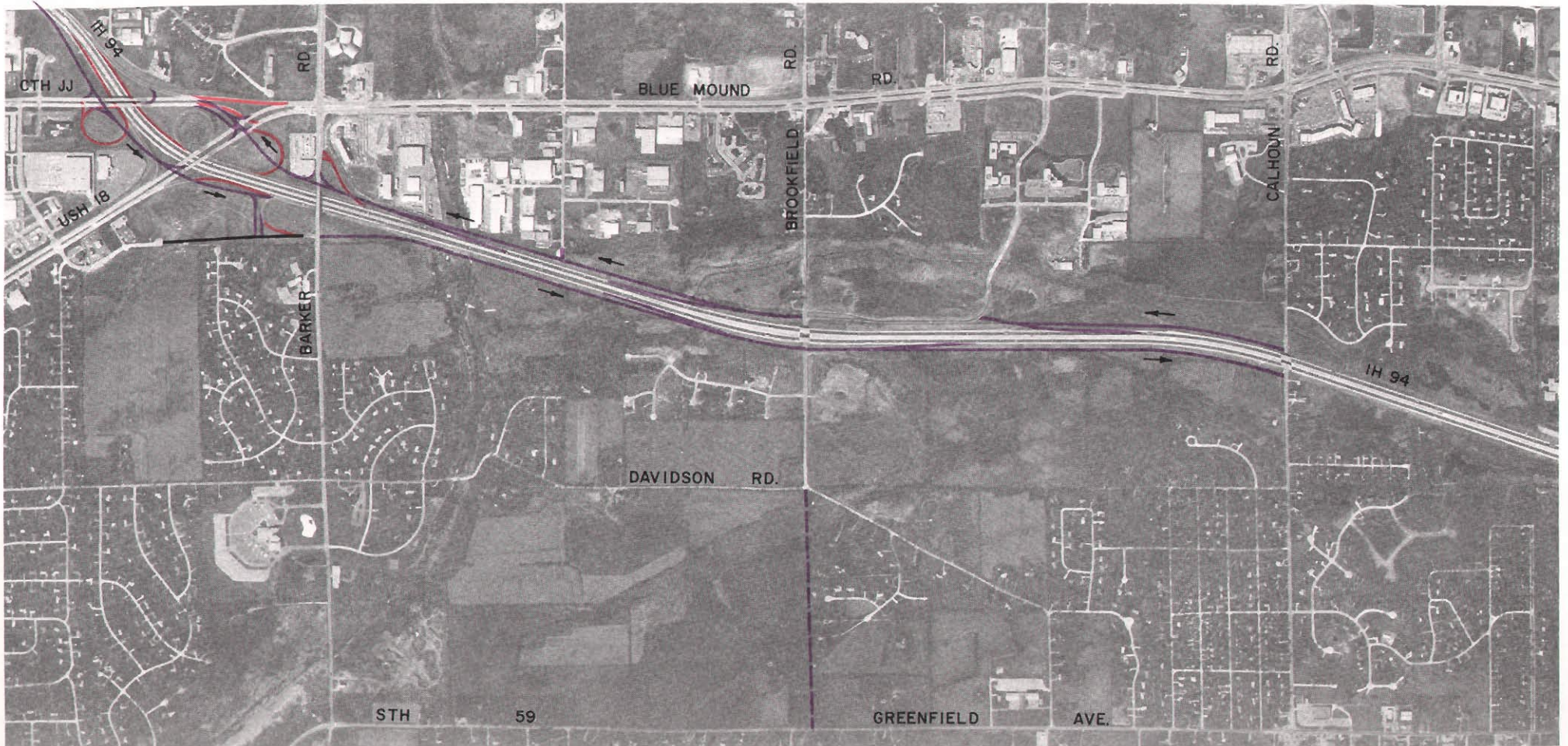
**Recommended Jurisdictional Classification of
Arterial Streets and Highways Under the Alternative
Transportation Plan with a Brookfield Road Interchange**

The recommended jurisdictional classification for the alternative arterial system plan that includes the Brookfield Road interchange is shown on Map 39. Table 27 presents the recommended improvements in the Blue Mound Road corridor under the alternative transportation plan based upon this recommended jurisdictional classification, and identifies the unit and level of government proposed to be responsible for each improvement. The State of Wisconsin would be the primary agency responsible for \$46.0 million in arterial street improvements in the corridor under this alternative transportation plan; Waukesha County would be the primary agency responsible for \$25.5 million in arterial street improvements; and the local units of government would be the primary agencies responsible for \$12.6 million in arterial street improvements.

The primary differences in jurisdictional classification between the alternative plan with the Brookfield Road interchange and the plan with a split diamond interchange are as follows:

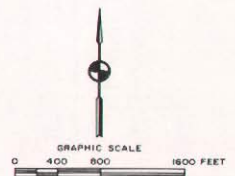
- Brookfield Road would be a county trunk highway under the Brookfield Road interchange plan, but a local trunk highway under the plan for a split diamond interchange.
- Calhoun Road would be a local trunk highway under the Brookfield Road interchange plan, but a county trunk highway under the plan for a split diamond interchange.

OPTIONAL ARTERIAL ROADWAYS BETWEEN CALHOUN ROAD AND THE
GOERKE'S CORNERS INTERCHANGE THAT COULD BE PROVIDED UNDER
AN ALTERNATIVE PLAN WITH A BROOKFIELD ROAD INTERCHANGE

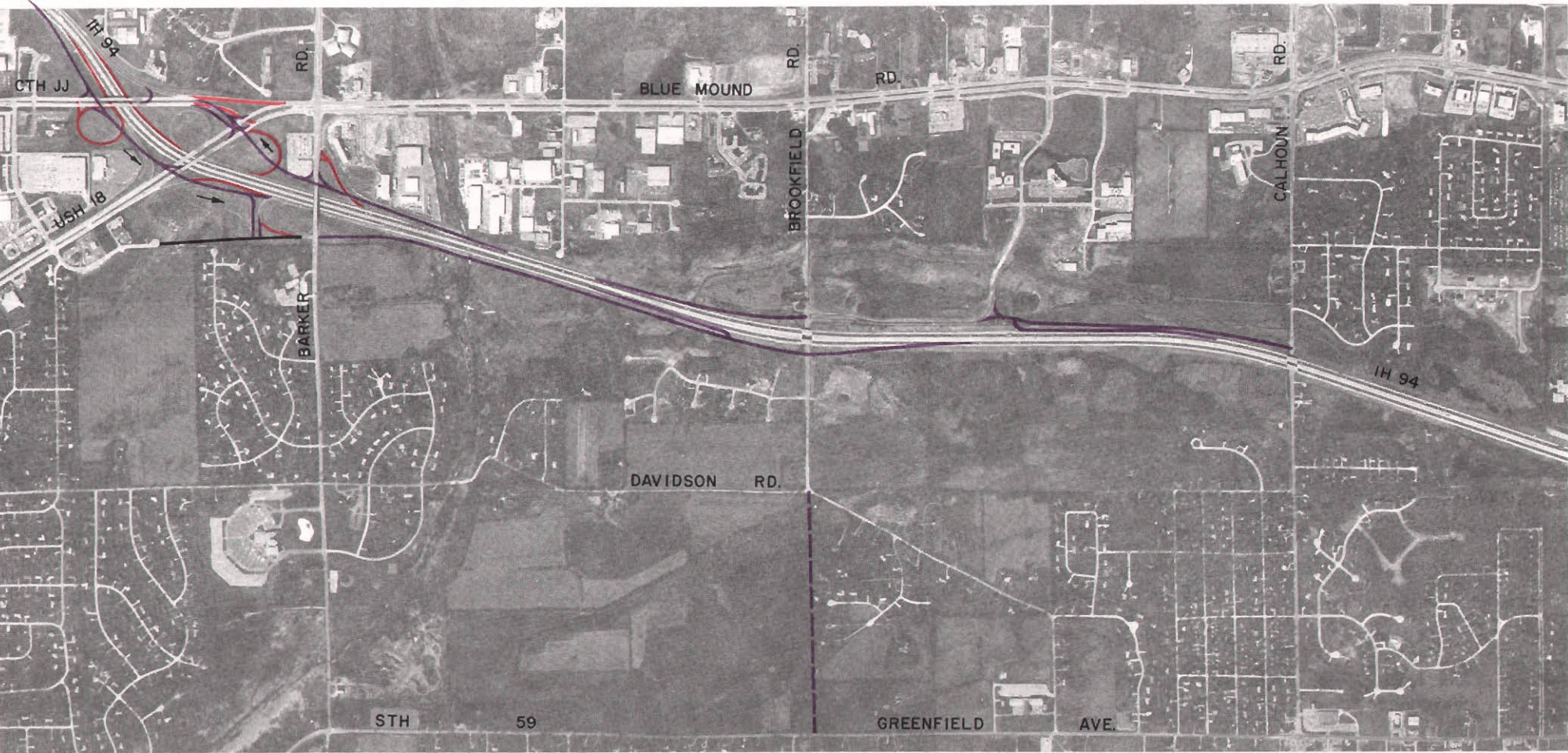


LEGEND

- EXISTING ARTERIAL STREET CONSTRUCTED SUBSEQUENT TO DATE OF PHOTOGRAPHY
- PROPOSED FREEWAY RAMPS AND FRONTAGE ROADS
- PROPOSED ARTERIAL STREET
- FREEWAY RAMPS AND FRONTAGE ROADS TO BE REMOVED

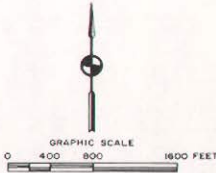


Map 37 (continued)



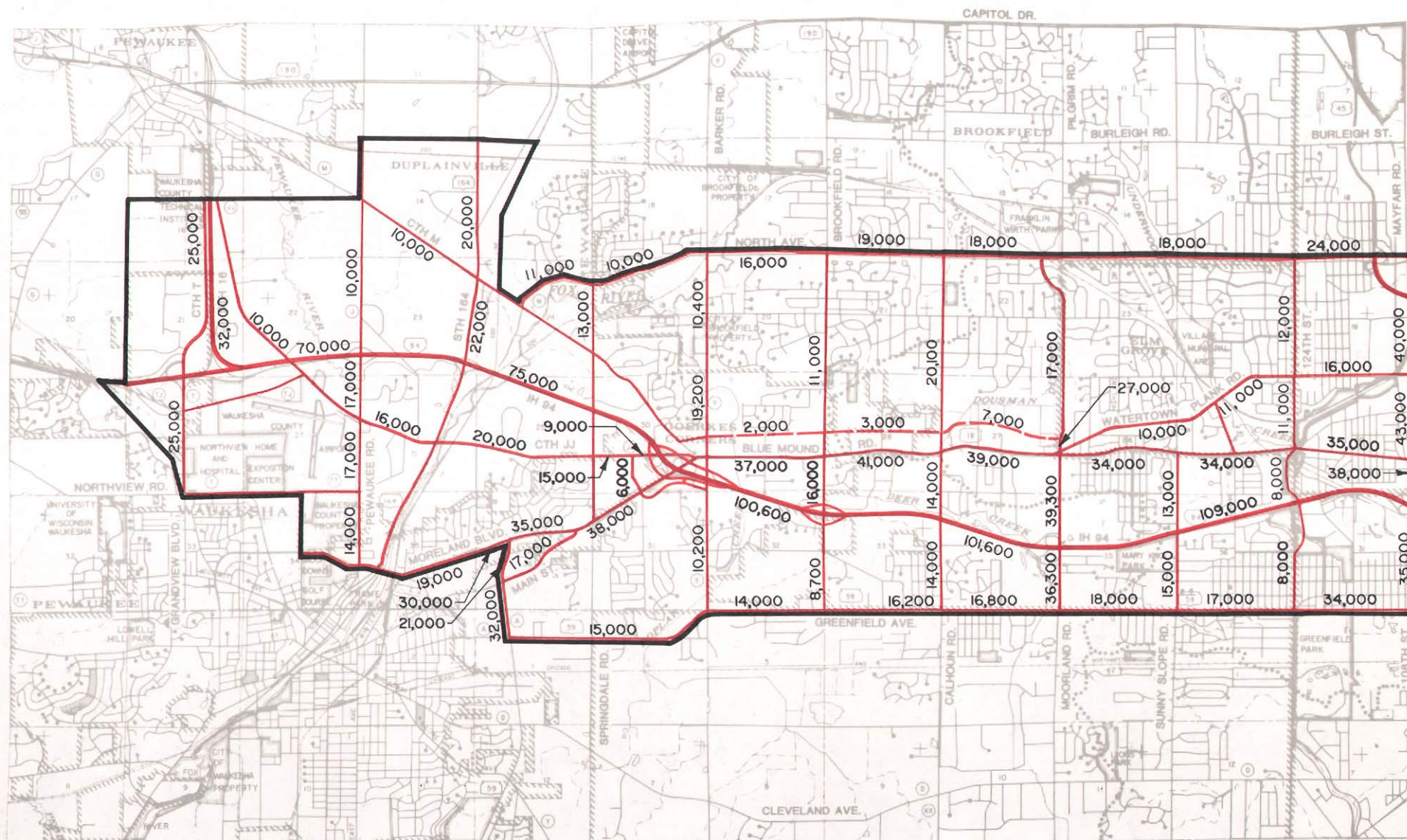
LEGEND

- EXISTING ARTERIAL STREET CONSTRUCTED SUBSEQUENT TO DATE OF PHOTOGRAPHY
- PROPOSED FREEWAY RAMPS AND FRONTAGE ROADS
- PROPOSED ARTERIAL STREET
- FREEWAY RAMPS AND FRONTAGE ROADS TO BE REMOVED



Source: SEWRPC.

FORECAST YEAR 2010 AVERAGE WEEKDAY TRAFFIC VOLUMES UNDER THE ALTERNATIVE TRANSPORTATION PLAN WITH A BROOKFIELD ROAD INTERCHANGE

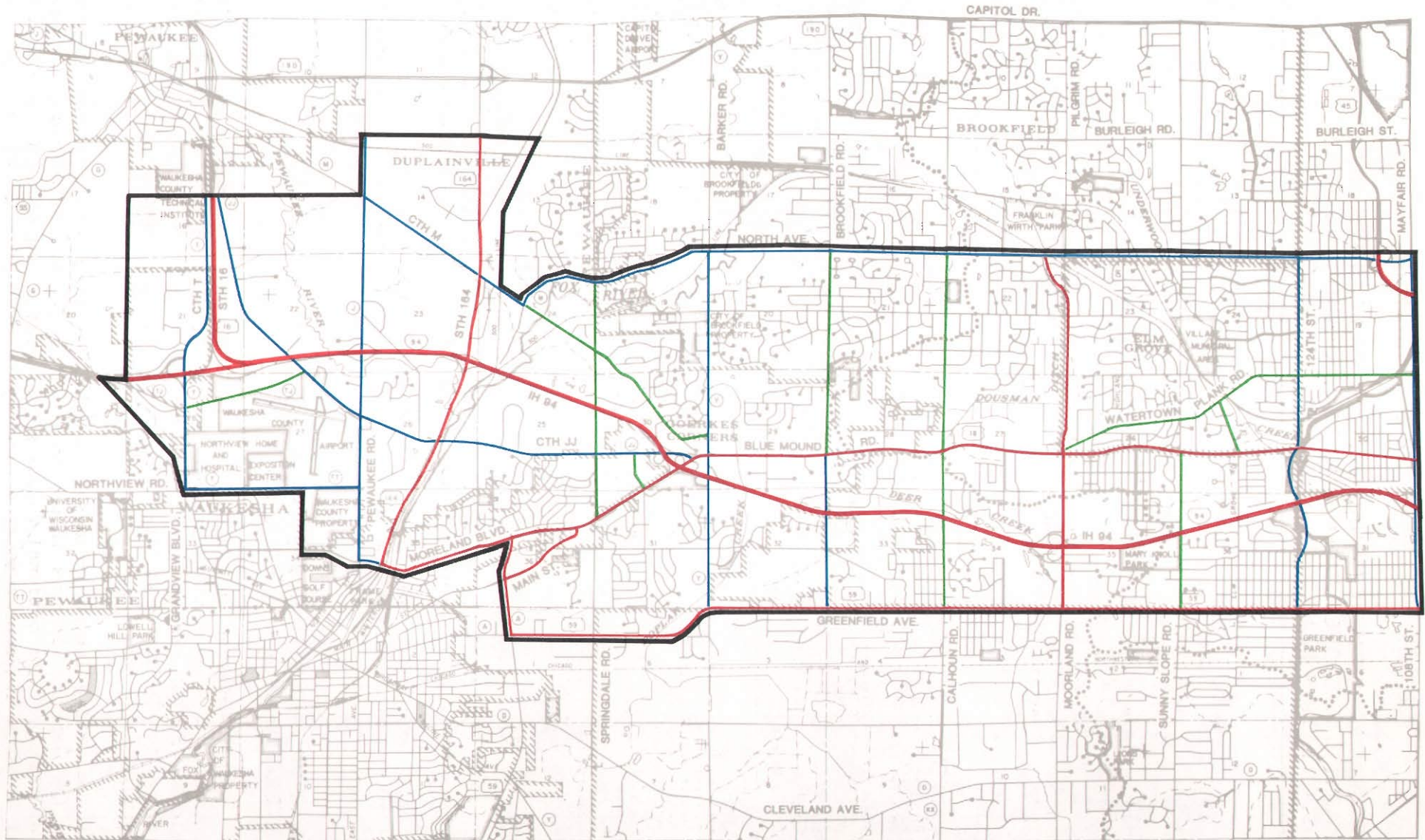


LEGEND

- FREEWAYS
- PROPOSED COLLECTOR STREET
- ARTERIAL STREETS AND HIGHWAYS
- 23,000 AVERAGE WEEKDAY TRAFFIC VOLUME

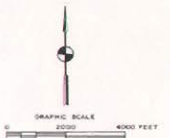


RECOMMENDED JURISDICTIONAL CLASSIFICATION OF ARTERIAL STREETS AND HIGHWAYS UNDER THE ALTERNATIVE TRANSPORTATION PLAN WITH A BROOKFIELD ROAD INTERCHANGE: 2010



LEGEND

- STATE TRUNK HIGHWAY - FREEWAY
- STATE TRUNK HIGHWAY - NONFREEWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY



Source: SEWRPC.

Table 27

**RECOMMENDED JURISDICTIONAL RESPONSIBILITIES FOR RECOMMENDED
ARTERIAL STREET IMPROVEMENTS UNDER THE ALTERNATIVE
TRANSPORTATION PLAN WITH A BROOKFIELD ROAD INTERCHANGE: 2010**

| Level of Government | Facility | Limits | Recommended Number of Traffic Lanes | Estimated Cost ^a |
|---------------------|---|--|-------------------------------------|-----------------------------|
| Local | Calhoun Road (City and Town of Brookfield)..... | USH 18 and North Avenue | 4 | \$ 1,640,000 ^c |
| | Calhoun Road (City and Town of Brookfield)..... | Greenfield Avenue to USH 18 | 4 | 1,560,000 |
| | Springdale Road (City and Town of Brookfield and Town of Pewaukee)..... | CTH JJ to North Avenue | 4 | 1,800,000 |
| | Sunnyslope Road (City of Brookfield)..... | Greenfield Avenue to USH 18 | 4 | 1,560,000 |
| | Wisconsin Avenue (City and Town of Brookfield)..... | Moorland Road to Barker Road | 2 | 3,410,000 |
| | Collector Streets Parallel to Freewayb | Calhoun Road to Barker Road | 2-4 | 2,590,000 |
| | Subtotal | -- | -- | \$12,560,000 |
| County | Barker Road..... | IH 94 to North Avenue | 4 | \$ 2,040,000 |
| | Brookfield Road..... | Davidson Road to Greenfield Avenue | 2 | 550,000 |
| | Brookfield Road..... | IH 94 to USH 18 | 4 | 600,000 |
| | North Avenue..... | 124th Street to Barker Road | 4 | 7,380,000 ^c |
| | Pewaukee Road..... | Moreland Boulevard to City of Waukesha/Town of Pewaukee limits | 4 | 360,000 |
| | 124th Street (Milwaukee and Waukesha Counties)..... | Greenfield Avenue to Watertown Plank Road | 2 | 2,310,000 |
| | CTH J..... | City of Waukesha/Town of Pewaukee limits to CTH M | 4 | 3,600,000 |
| | CTH T..... | Northview Road to CTH JJ | 6 | 4,920,000 ^c |
| | CTH JJ..... | Kossow Road to CTH J | 4 | 3,772,000 ^c |
| | Subtotal | -- | -- | \$25,532,000 |
| State | Main Street..... | USH 18 to CTH A | 4 | \$ 960,000 |
| | Moorland Road..... | USH 18 to Wisconsin Avenue | 6 | 328,000 ^c |
| | Moorland Road..... | Greenfield Avenue to USH 18 | 8 | 2,522,000 |
| | Pilgrim Road..... | Wisconsin Avenue to North Avenue | 4 | 2,460,000 ^c |
| | CTH A..... | Main Street to STH 59 | 6 | 820,000 ^c |
| | USH 18..... | STH 100 to Moorland Road | 6 | 3,444,000 ^c |
| | USH 18..... | Moorland Road to Main Street | 8 | 8,148,000 ^c |
| | USH 18..... | Main Street to Manhattan Drive | 6 | 1,476,000 ^c |
| | STH 59..... | 124th Street to CTH A | 4 | 8,400,000 ^c |
| | STH 164..... | IH 94 to STH 190 | 4 | 2,143,000 ^c |
| | IH 94..... | STH 100 to CTH JJ | 8 | 9,400,000 |
| | Reconstruction of Goerke's Corners Interchange..... | Calhoun Road to CTH JJ | 2 | 2,880,000 |
| | New Interchange..... | Brookfield Road | -- | 3,040,000 |
| | Subtotal | -- | -- | \$46,021,000 |
| Total | | -- | -- | \$84,113,000 |

^aThe estimated cost of arterial facility improvements assumes that the recommended improvements may be constructed within the existing right-of-way.

^bThese roadways may also be provided as either two-way, or a one-way pair of, arterial roadways.

^cBased upon forecast year 2010 traffic volumes, cost estimates of these improvements have assumed implementation of a divided roadway.

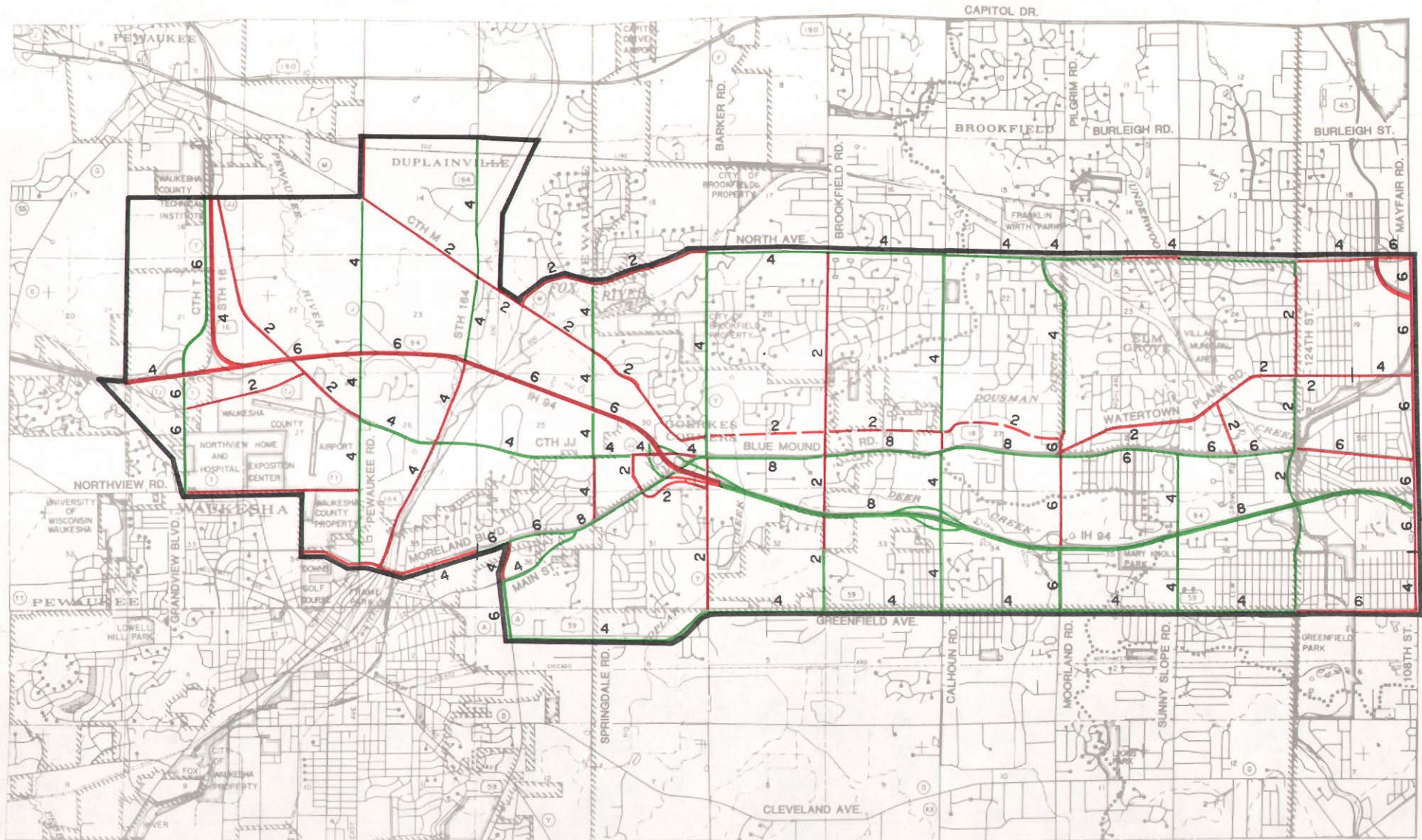
Source: SEWRPC.

ALTERNATIVE ARTERIAL SYSTEM PLAN WITH INTERCHANGE AT CALHOUN ROAD

The Task Force requested that an alternative arterial system plan that would include an interchange on the East-West Freeway (IH 94) with Calhoun Road also be developed. Map 40 presents such an arterial system plan. This alternative plan includes the Calhoun Road interchange and a reconstructed Goerke's Corners interchange.

The plan could also include roadways parallel to the freeway between Calhoun Road and the Goerke's Corners interchange, as under the split diamond interchange alternative. The optional roadways, as shown on Map 41, could be one-way arterial frontage roads or two-way arterial streets. Either would provide some

RECOMMENDED ARTERIAL STREET SYSTEM IMPROVEMENTS UNDER THE ALTERNATIVE TRANSPORTATION PLAN WITH A CALHOUN ROAD INTERCHANGE: 2010



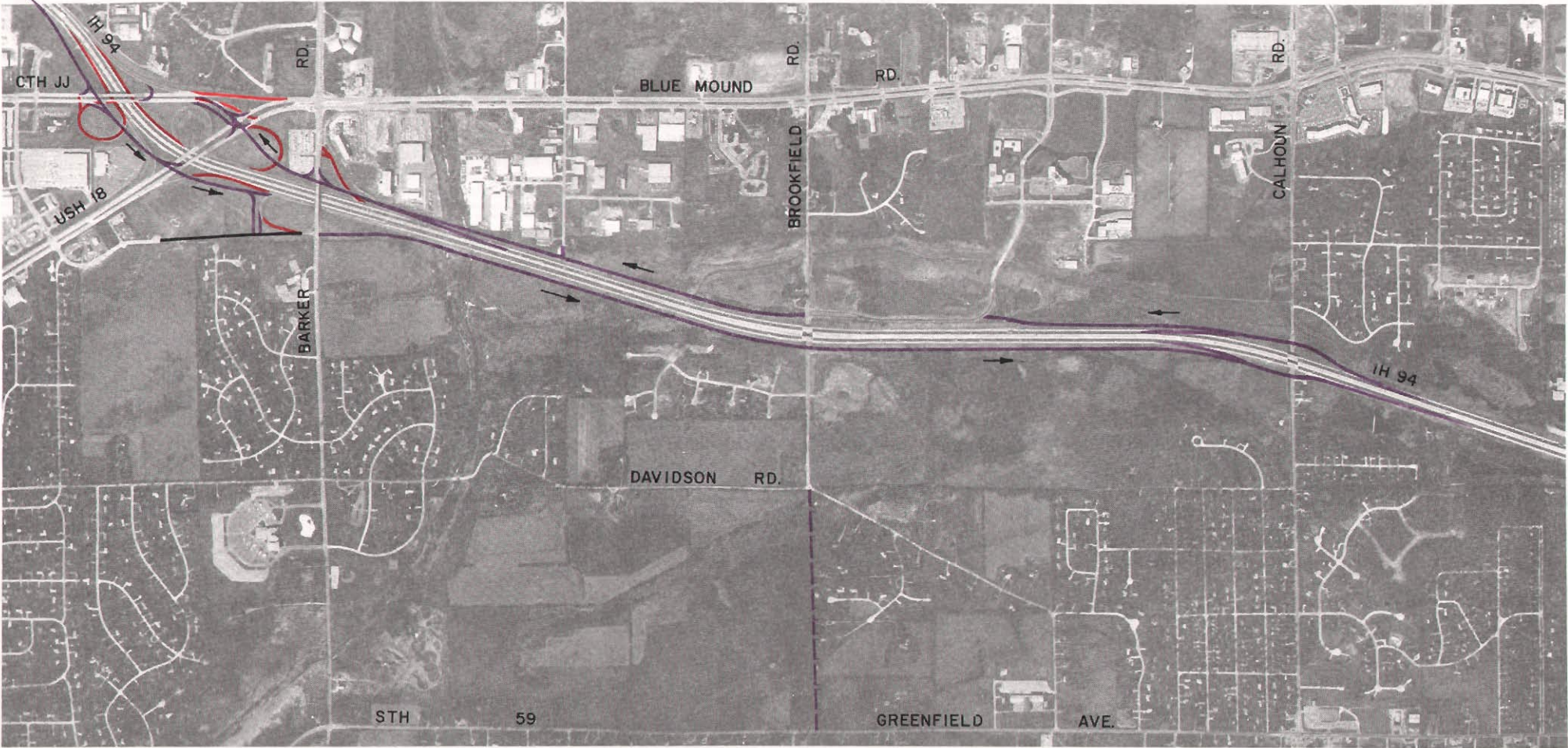
LEGEND

- | | |
|---|--|
| — FREEWAYS | --- PROPOSED COLLECTOR STREET |
| — ARTERIAL STREETS AND HIGHWAYS | 4 NUMBER OF TRAFFIC LANES |
| — IMPROVED OR NEW ARTERIAL STREETS | |



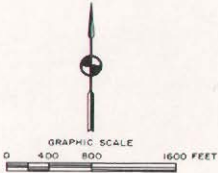
Map 41

OPTIONAL ARTERIAL ROADWAYS BETWEEN CALHOUN ROAD AND THE
GOERKE'S CORNERS INTERCHANGE THAT COULD BE PROVIDED WITH
AN ALTERNATIVE PLAN WITH A CALHOUN ROAD INTERCHANGE

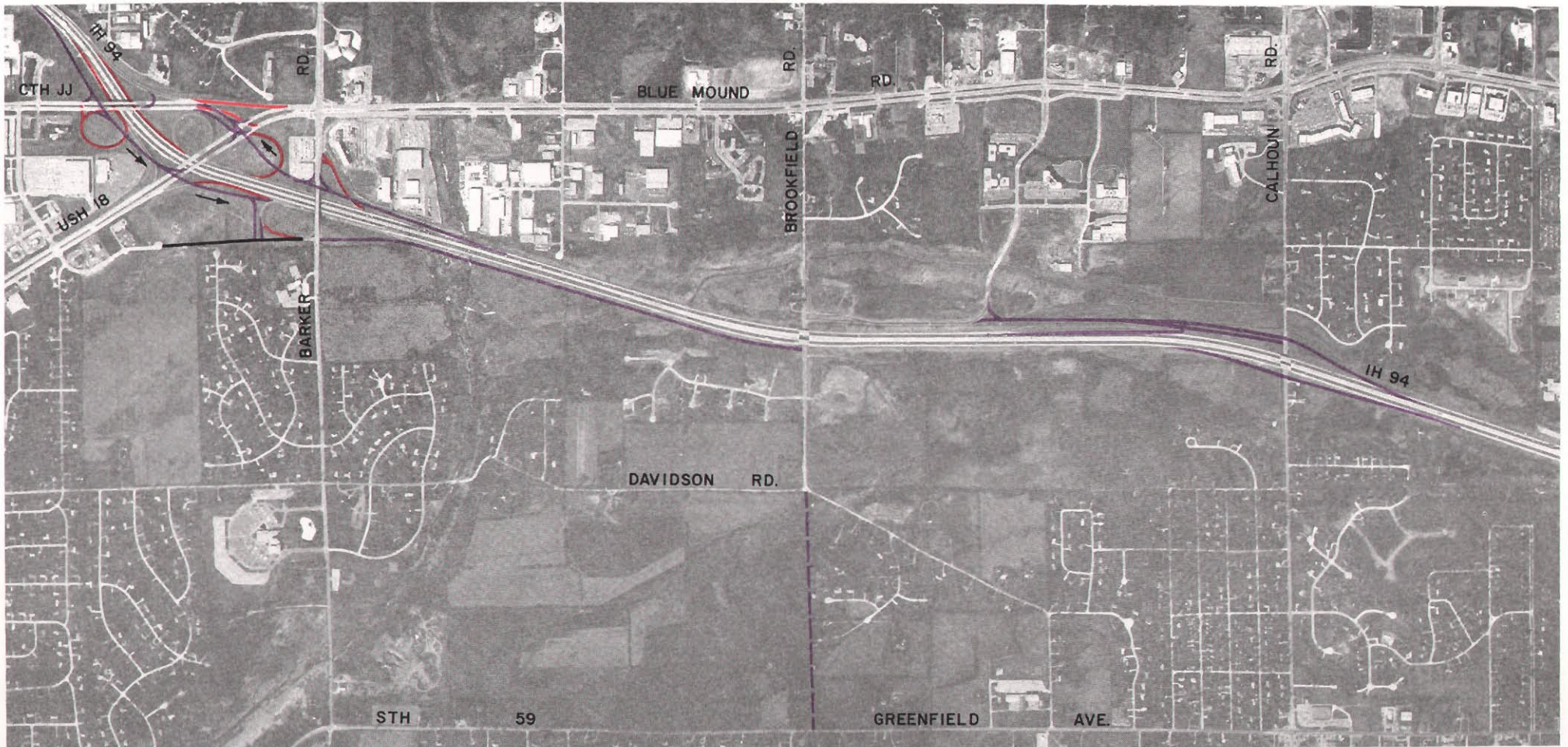


LEGEND

- EXISTING ARTERIAL STREET CONSTRUCTED SUBSEQUENT TO DATE OF PHOTOGRAPHY
- PROPOSED FREEWAY RAMP AND FRONTAGE ROADS
- PROPOSED ARTERIAL STREET
- FREEWAY RAMP AND FRONTAGE ROADS TO BE REMOVED



Map 41 (continued)



LEGEND

- EXISTING ARTERIAL STREET CONSTRUCTED SUBSEQUENT TO DATE OF PHOTOGRAPHY
- PROPOSED FREEWAY RAMPS AND FRONTAGE ROADS
- PROPOSED ARTERIAL STREET
- FREEWAY RAMPS AND FRONTAGE ROADS TO BE REMOVED

Source: SEWRPC.

Table 28

**RECOMMENDED ARTERIAL STREET IMPROVEMENTS UNDER THE ALTERNATIVE
TRANSPORTATION PLAN WITH A CALHOUN ROAD INTERCHANGE: 2010**

| Arterial Street | Limits | Recommended Number of Lanes |
|--|---|-----------------------------------|
| North-South Arterial | | |
| 124th Street (Milwaukee and Waukesha Counties)..... | Greenfield Avenue to Watertown Plank Road | 2 |
| Sunnyslope Road..... | Greenfield Avenue to USH 18 | 4 |
| Moorland Road..... | USH 18 to Wisconsin Avenue | 6 |
| Moorland Road..... | Greenfield Avenue to USH 18 | 6 |
| Pilgrim Road..... | Wisconsin Avenue to North Avenue | 4 |
| Calhoun Road..... | Greenfield Avenue to USH 18 | 6 |
| Calhoun Road..... | USH 18 to North Avenue | 4 |
| Brookfield Road..... | Davidson Road to Greenfield Avenue | 2 |
| Barker Road..... | IH 94 to North Avenue | 4 |
| Springdale Road..... | CTH JJ to North Avenue | 4 |
| STH 164..... | IH 94 to STH 190 | 4 |
| Pewaukee Road/CTH J..... | Moreland Boulevard to CTH M | 4 |
| CTH T..... | Northview Road to CTH JJ | 6 |
| CTH A..... | Main Street to STH 59 | 6 |
| East-West Arterial | | |
| STH 59..... | 124th Street to CTH A | 4 |
| USH 18..... | STH 100 to Moorland Road | 6 |
| USH 18..... | Moorland Road to Main Street | 8 |
| USH 18..... | Main Street to Manhattan Drive | 6 |
| Wisconsin Avenue..... | Moorland Road to Barker Road | 2 |
| CTH JJ..... | Kossow Road to CTH J | 4 |
| Main Street..... | USH 18 to CTH A | 4 |
| North Avenue..... | 124th Street to Barker Road | 4 |
| IH 94..... | STH 100 to CTH JJ | 8 |
| Reconstruction of Goerke's Corners Interchange..... | Barker Road to CTH JJ | -- |
| New Interchange..... | Calhoun Road | -- |
| Optional New Roadway Parallel to Freeway..... | Barker Road to Calhoun Road | 4 |

Source: SEWRPC.

additional relief to Blue Mound Road between Calhoun Road and the Goerke's Corners interchange. The potential relief beyond that which would be provided with two-way collector streets in about the same locations would be expected to be minimal--a reduction in Blue Mound Road traffic of 1,000 to 3,000 vehicles per average weekday. Providing much greater relief to this stretch of Blue Mound Road, particularly the intersection of Blue Mound Road with Barker Road, and greatly reducing the traffic that would be carried by these frontage roads would be the new freeway interchange. For example, without the new interchange, traffic between the Blue Mound Road area (between Moorland Road and Goerke's Corners) and points west along IH 94 would be expected to use the existing Goerke's Corners interchange and Blue Mound Road. With the frontage roads and no new interchange, a portion of this traffic would be expected to use the Goerke's Corners interchange and the frontage roads, rather than Blue Mound Road. With the new interchange, the traffic may be expected to use the new interchange and not the Goerke's Corners interchange, and therefore would also not use connecting segments of either Blue Mound Road or the frontage roads.

This alternative arterial system plan includes recommended arterial street improvements and extensions necessary to abate traffic congestion in the Blue Mound Road corridor. These proposed arterial street improvements are listed in Table 28, along with the number of traffic lanes recommended to be provided and the estimated capital costs.

Table 29

**COMPARISON OF ARTERIAL STREET IMPROVEMENT RECOMMENDATIONS
BETWEEN ALTERNATIVE ARTERIAL STREET SYSTEM PLANS: 2010**

| Roadway | Differences in Arterial Street Improvement Recommendations Between Alternative Plans | | | |
|--|--|--|---|-------------------------------------|
| | Brookfield Road Interchange Alternative Plan | Split Diamond Interchange Alternative Plan | Calhoun Road Interchange Alternative Plan | No New Interchange Alternative Plan |
| <u>Moorland Road between Greenfield Avenue and Blue Mound Road</u> Year 2010 Average Weekday Traffic..... Number of Traffic Lanes Recommended... | 37,000 to 40,000 8 | 30,000 to 35,000 6 | 30,000 to 35,000 6 | 41,000 to 47,000 8 |
| <u>Calhoun Road between Greenfield Avenue and Blue Mound Road</u> Year 2010 Average Weekday Traffic..... Number of Traffic Lanes Recommended... | 14,000 4 | 20,000 4 | 26,000 6 | 14,000 4 |
| <u>Brookfield Road between Greenfield Avenue and Blue Mound Road</u> Year 2010 Average Weekday Traffic..... Number of Traffic Lanes Recommended... | 10,000 to 16,000 2-4 | 9,000 to 11,100 2 | 4,000 to 9,000 2 | 4,000 to 9,000 2 |

Source: SEWRPC.

The proposed arterial street system includes certain arterial street extensions. These extensions include 124th Street from Watertown Plank Road to Greenfield Avenue; the removal of the jog in Pilgrim Road and Pilgrim Parkway at North Avenue; the extension of Brookfield Road south of the East-West Freeway (IH 94) to Greenfield Avenue; and the extension of Wisconsin Avenue as a collector facility from Moorland Road to Barker Road.

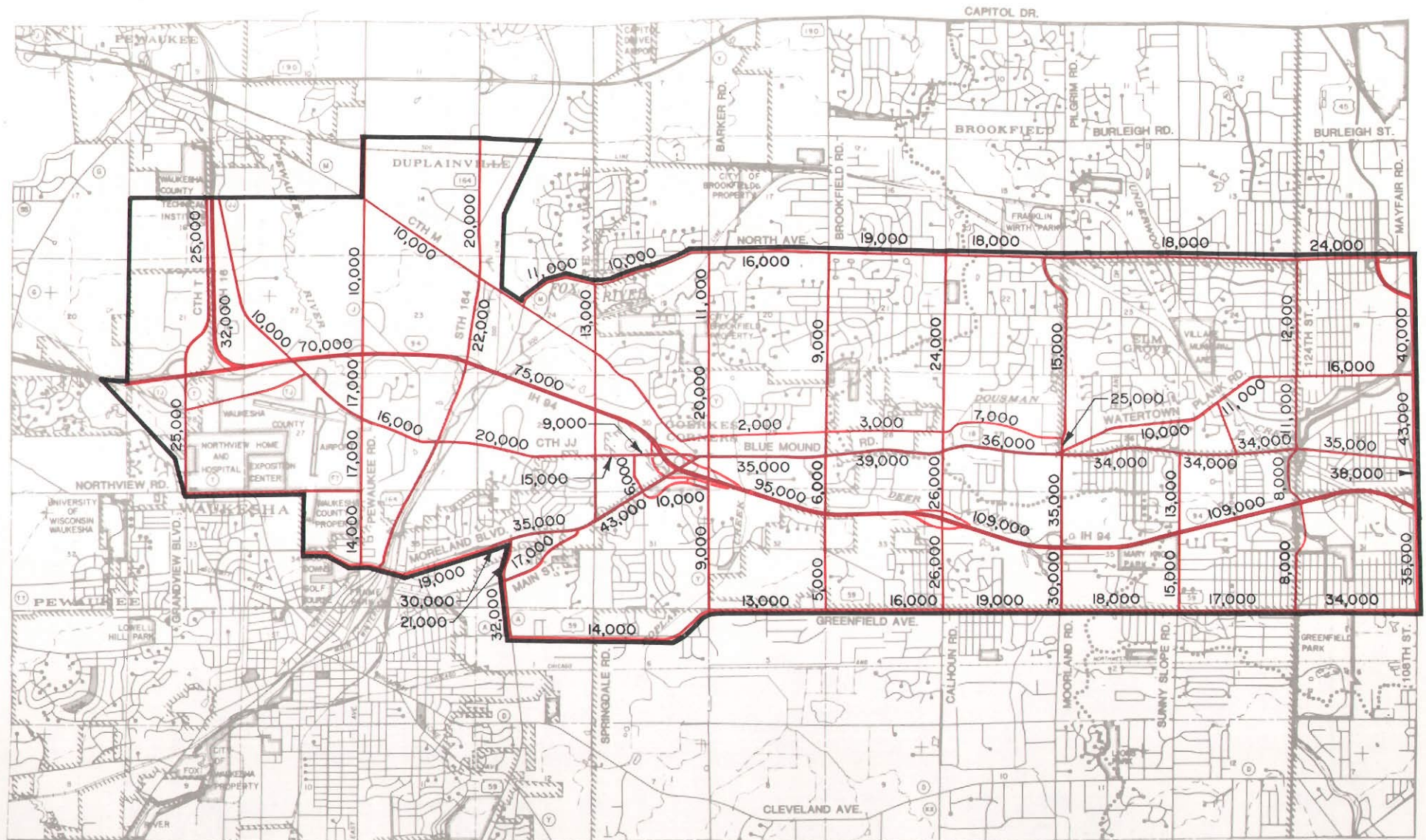
Map 42 identifies the year 2010 average weekday traffic volumes forecast for the arterial streets in the corridor under the proposed plan with a Calhoun Road interchange on IH 94.

The primary differences in the needed arterial street improvements between this alternative plan and the alternative plans calling for a Brookfield Road interchange and a split diamond interchange are summarized in Table 29.

**Recommended Jurisdictional Classification of
Arterial Streets and Highways Under the Alternative
Transportation Plan with a Calhoun Road Interchange**

The recommended jurisdictional classification for the Calhoun Road interchange alternative arterial system plan is shown on Map 43. Table 30 presents the recommended improvements in the Blue Mound Road corridor under the alternative transportation plan based upon this recommended jurisdictional classification, and identifies the unit and level of government proposed to be responsible for each improvement. The State of Wisconsin would be the primary agency responsible for \$45.6 million in arterial street improvements in the corridor under this alternative transportation plan; Waukesha County would be the primary agency responsible for \$28.2 million in arterial street improvements; and the local units of government would be the primary agencies responsible for \$9.9

FORECAST YEAR 2010 AVERAGE WEEKDAY TRAFFIC VOLUMES UNDER THE ALTERNATIVE TRANSPORTATION PLAN WITH A CALHOUN ROAD INTERCHANGE

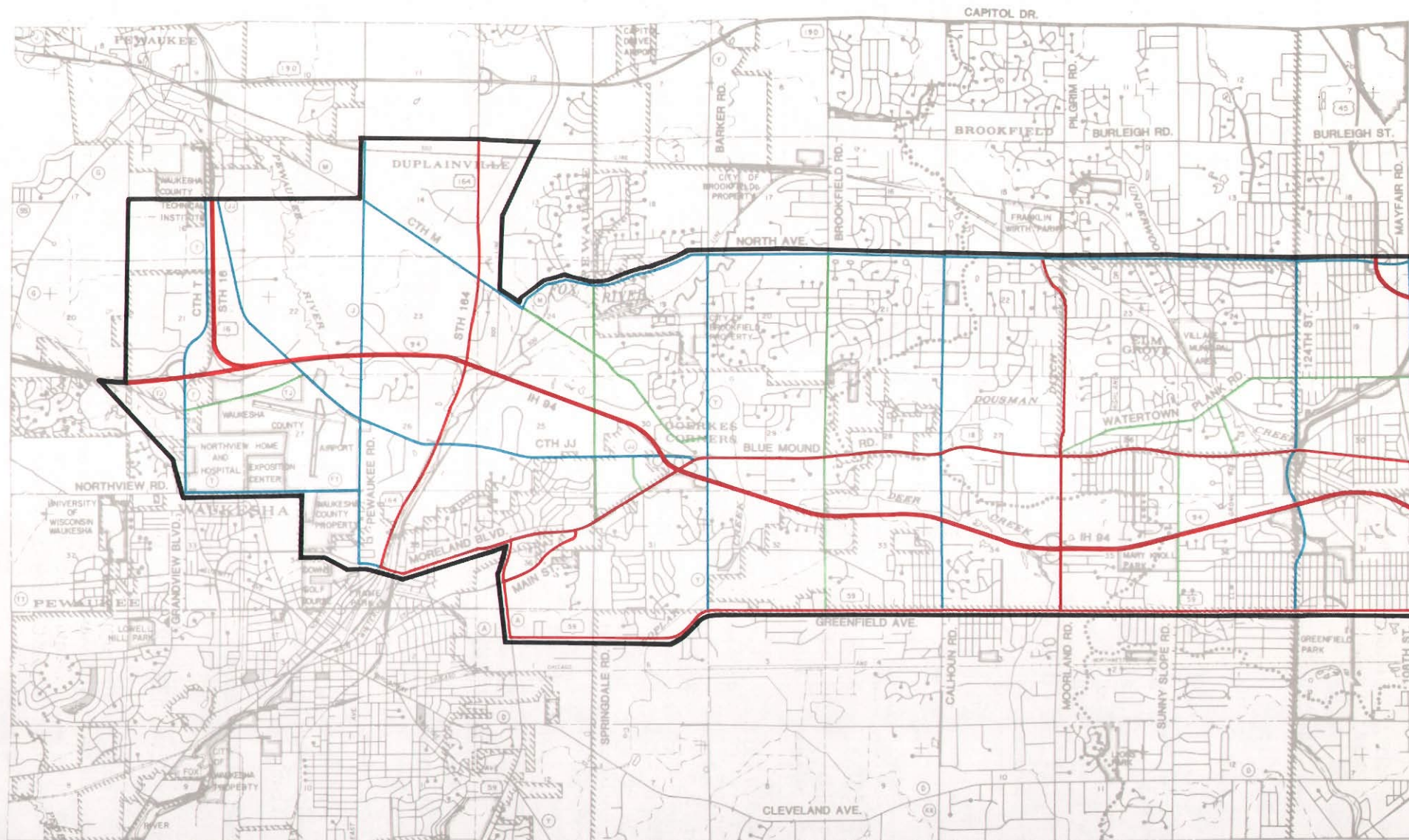


LEGEND

- FREEWAYS
- PROPOSED COLLECTOR STREET
- ARTERIAL STREETS AND HIGHWAYS
- 23,000 AVERAGE WEEKDAY TRAFFIC VOLUME



RECOMMENDED JURISDICTIONAL CLASSIFICATION OF ARTERIAL STREETS AND HIGHWAYS
UNDER THE ALTERNATIVE TRANSPORTATION PLAN WITH A CALHOUN ROAD INTERCHANGE: 2010



LEGEND





-  STATE TRUNK HIGHWAY - FREEWAY
 STATE TRUNK HIGHWAY - NONFREEWAY
 COUNTY TRUNK HIGHWAY
 LOCAL TRUNK HIGHWAY

Table 30

**RECOMMENDED JURISDICTIONAL RESPONSIBILITIES FOR RECOMMENDED
ARTERIAL STREET IMPROVEMENTS UNDER THE ALTERNATIVE
TRANSPORTATION PLAN WITH A CALHOUN ROAD INTERCHANGE: 2010**

| Level of Government | Facility | Limits | Recommended Number of Traffic Lanes | Estimated Cost ^a |
|---------------------|---|--|-------------------------------------|-----------------------------|
| Local | Brookfield Road (City and Town of Brookfield)..... | Davidson Road to Greenfield Avenue | 2 | \$ 550,000 |
| | Springdale Road (City and Town of Brookfield and Town of Pewaukee)..... | CTH JJ to North Avenue | 4 | 1,800,000 |
| | Sunnyslope Road (City of Brookfield)..... | Greenfield Avenue to USH 18 | 4 | 1,560,000 |
| | Wisconsin Avenue (City and Town of Brookfield)..... | Moorland Road to Barker Road | 2 | 3,410,000 |
| | Collector Roadways Parallel to Freeway between Barker Road and Calhoun Road (Town and City of Brookfield) ^b .. | Barker Road to Calhoun Road | 4 | 2,590,000 |
| | Subtotal | -- | -- | \$ 9,910,000 |
| County | Barker Road..... | IH 94 to North Avenue | 4 | \$ 2,040,000 |
| | Calhoun Road..... | Greenfield Avenue to USH 18 | 6 | 2,132,000 ^c |
| | Calhoun Road..... | USH 18 to North Avenue | 4 | 1,640,000 ^c |
| | North Avenue..... | 124th Street to Barker Road | 4 | 7,380,000 ^c |
| | Pewaukee Road..... | Moreland Boulevard to City of Waukesha/Town of Pewaukee limits | 4 | 360,000 |
| | 124th Street (Milwaukee and Waukesha Counties)..... | Greenfield Avenue to Watertown Plank Road | 2 | 2,310,000 |
| | CTH J..... | City of Waukesha/Town of Pewaukee limits to CTH M | 4 | 3,600,000 |
| | CTH T..... | Northview Road to CTH JJ | 6 | 4,920,000 ^c |
| | CTH JJ..... | Kossow Road to CTH J | 4 | 3,772,000 ^c |
| | Subtotal | -- | -- | \$28,154,000 |
| State | Main Street..... | USH 18 to CTH A | 4 | \$ 960,000 |
| | Moorland Road..... | USH 18 to Wisconsin Avenue | 6 | 328,000 ^c |
| | Moorland Road..... | Greenfield Avenue to USH 18 | 6 | 2,132,000 ^c |
| | Pilgrim Road..... | Wisconsin Avenue to North Avenue | 4 | 2,460,000 ^c |
| | CTH A..... | Main Street to STH 59 | 6 | 820,000 ^c |
| | USH 18..... | STH 100 to Moorland Road | 6 | 3,444,000 ^c |
| | USH 18..... | Moorland Road to Main Street | 8 | 8,148,000 ^c |
| | USH 18..... | Main Street to Manhattan Drive | 6 | 1,476,000 ^c |
| | STH 59..... | 124th Street to CTH A | 4 | 8,400,000 ^c |
| | STH 164..... | IH 94 to STH 190 | 4 | 2,143,000 ^c |
| | IH 94..... | STH 100 to CTH JJ | 8 | 9,400,000 |
| | Reconstruction of Goerke's Corners Interchange..... | Barker Road to CTH JJ | -- | 2,880,000 |
| | New Interchange..... | Calhoun Road | -- | 3,040,000 |
| | Subtotal | -- | -- | \$45,631,000 |
| Total | | -- | -- | \$83,695,000 |

^aThe estimated cost of arterial facility improvements assumes that the recommended improvements may be constructed within the existing right-of-way.

^bThese roadways may also be provided as either two-way, or a one-way pair of, arterial roadways.

^cBased upon forecast year 2010 traffic volumes, cost estimates of these improvements have assumed implementation of a divided roadway.

Source: SEWRPC.

million in arterial street improvements. The estimated local government improvement cost includes the cost of \$2.6 million for the optional roadway parallel to the freeway.

The primary differences in proposed jurisdictional classification between the alternative system plans are summarized in Table 31.

ALTERNATIVE ARTERIAL SYSTEM PLAN WITH NO NEW INTERCHANGE

The Task Force also requested that an alternative arterial system plan that would provide no new freeway interchange on the East-West Freeway (IH 94) be developed. Map 44 presents such an arterial system plan. This alternative plan includes a reconstructed Goerke's Corners interchange.

Table 31

COMPARISON OF RECOMMENDATIONS FOR ARTERIAL STREET JURISDICTIONAL RESPONSIBILITY BETWEEN ALTERNATIVE SYSTEM PLANS: 2010

| Roadway | Differences in Jurisdictional Responsibility Recommendations in Blue Mound Road Corridor Between Alternative Plans | | | |
|---|--|--|---|---|
| | Brookfield Road Interchange Alternative Plan | Split Diamond Interchange Alternative Plan | Calhoun Road Interchange Alternative Plan | No New Interchange Alternative Plan |
| Calhoun Road Throughout Corridor (Greenfield Avenue to North Avenue)... | Local trunk highway | County trunk highway | County trunk highway | Local trunk highway |
| Brookfield Road from Greenfield Avenue to Blue Mound Road..... | County trunk highway | Local trunk highway | Local trunk highway | Local trunk highway |

Source: SEWRPC.

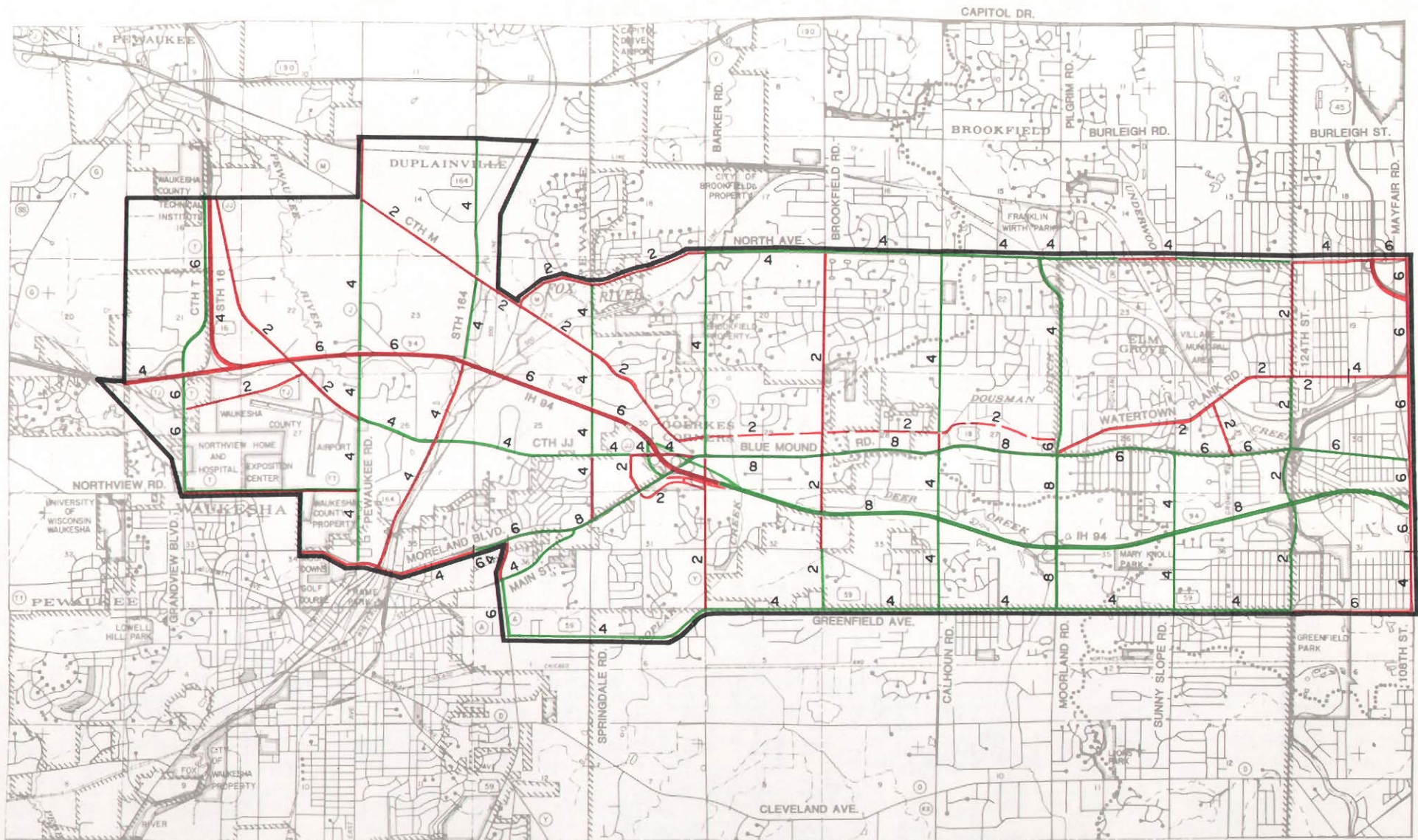
The plan could also include roadways parallel to the freeway between Calhoun Road and the Goerke's Corners interchange, as under the split diamond interchange alternative. The optional roadways, as shown on Map 45, could be one-way arterial frontage roads or two-way arterial streets. Either would provide some additional relief to Blue Mound Road between Calhoun Road and the Goerke's Corners interchange. The potential relief beyond that which would be provided with two-way collector streets in about the same locations would be expected to be minimal--a reduction in Blue Mound Road traffic of 2,000 to 3,000 vehicles per average weekday. Providing much greater potential relief to this stretch of Blue Mound Road, particularly the intersection of Blue Mound Road with Barker Road, and greatly reducing the traffic that would be carried by these frontage roads would be a new freeway interchange. For example, without a new interchange, traffic between the Blue Mound Road area (between Moorland Road and Goerke's Corners) and points west along IH 94 would be expected to use the existing Goerke's Corners interchange and Blue Mound Road. With the frontage roads and no new interchange, a portion of this traffic would be expected to use the Goerke's Corners interchange and the frontage roads, rather than Blue Mound Road. With the new interchange, the traffic may be expected to use the new interchange and not the Goerke's Corners interchange, and therefore would also not use connecting segments of either Blue Mound Road or the frontage roads.

This alternative arterial system plan includes recommended arterial street improvements and extensions necessary to abate congestion in the Blue Mound Road corridor. These proposed arterial street improvements are listed in Table 32, along with the number of traffic lanes recommended to be provided and the estimated capital costs.

The proposed arterial street system includes certain arterial street extensions. These extensions include 124th Street from Watertown Plank Road to Greenfield Avenue; the removal of the jog in Pilgrim Road and Pilgrim Parkway at North Avenue; the extension of Brookfield Road south of the East-West Freeway (IH 94) to Greenfield Avenue; and the extension of Wisconsin Avenue as a collector facility from Moorland Road to Barker Road.

Map 46 identifies the year 2010 average weekday traffic volumes forecast for the arterial streets in the corridor under the proposed plan with no new interchange on IH 94.

RECOMMENDED ARTERIAL STREET IMPROVEMENTS UNDER THE ALTERNATIVE TRANSPORTATION PLAN WITH NO NEW INTERCHANGE: 2010



LEGEND

- | | |
|---|--|
| — FREEWAYS | --- PROPOSED COLLECTOR STREET |
| — ARTERIAL STREETS AND HIGHWAYS | 4 NUMBER OF TRAFFIC LANES |
| — IMPROVED OR NEW ARTERIAL STREETS | |



The primary differences in the needed arterial street improvements between this alternative plan and the three alternative plans already presented are summarized in Table 29.

Recommended Jurisdictional Classification of Arterial Streets and Highways Under the Alternative Transportation Plan with No New Interchange

The recommended jurisdictional classification for the alternative arterial system plan calling for no new interchange is shown on Map 47. Table 33 presents the recommended improvements in the Blue Mound Road corridor under the alternative transportation plan based upon this recommended jurisdictional classification, and identifies the unit and level of government proposed to be responsible for each improvement. The State of Wisconsin would be the primary agency responsible for \$43.0 million in arterial street improvements in the corridor under this alternative transportation plan; Waukesha County would be the primary agency responsible for \$24.4 million in arterial street improvements; and the local units of government would be the primary agencies responsible for \$13.1 million in arterial street improvements. The estimated local government improvement cost includes the cost of \$2.6 million for the optional roadway parallel to the freeway as a collector street.

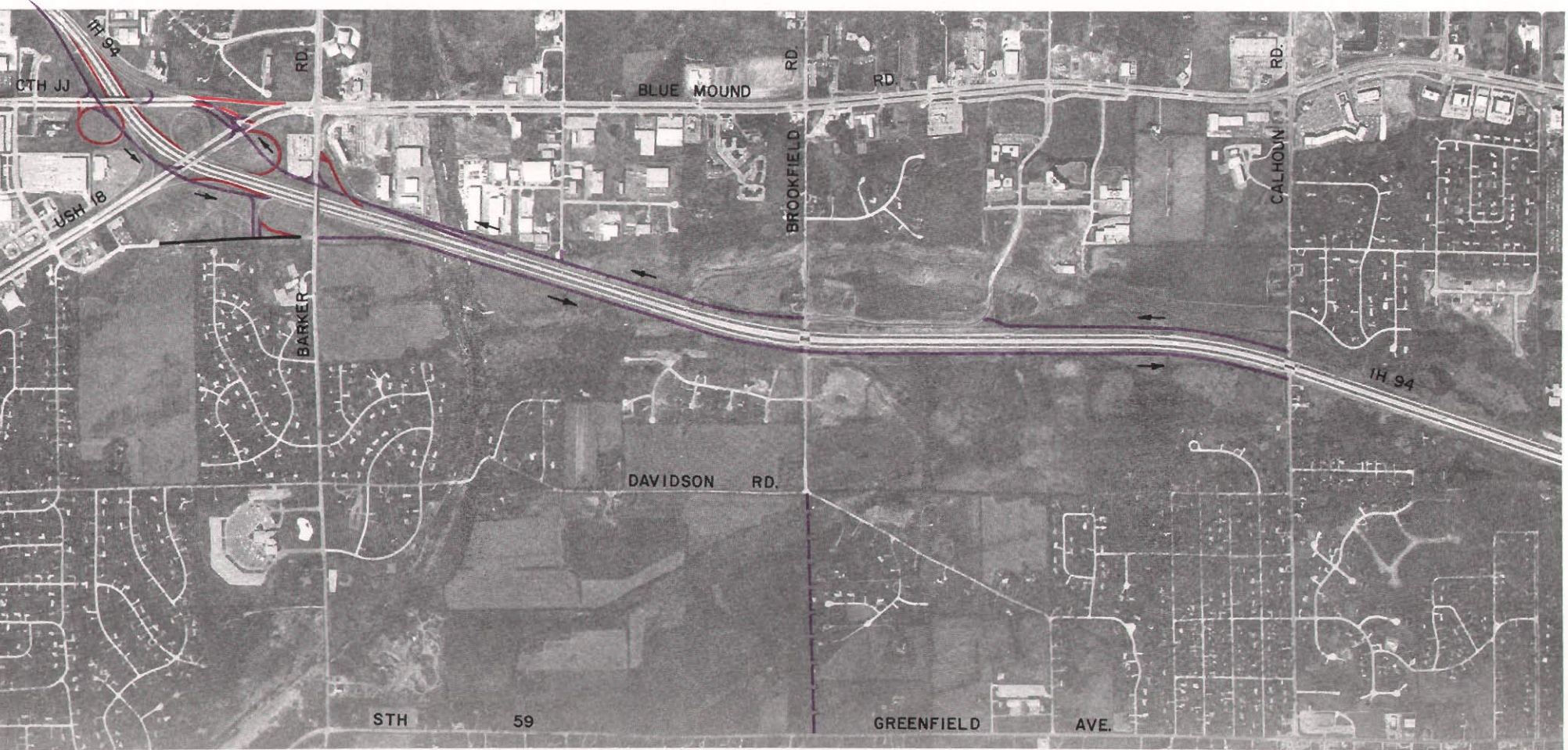
The primary differences in proposed jurisdictional classification between the alternative system plans are summarized in Table 31.

COMPARISON OF ALTERNATIVE ARTERIAL SYSTEM PLANS

The Commission analyses indicate that the four alternative arterial system plans presented--a new interchange on IH 94 at Brookfield Road; an interchange divided between Brookfield Road and Calhoun Road; a new interchange at Calhoun Road; and no new interchange, but with arterial improvements--are all clearly better than the no build alternative, as presented earlier in this chapter. Under the no build plan, arterial streets such as Blue Mound Road and Moreland Boulevard would carry average weekday traffic volumes in the year 2010 that would exceed their design capacity by approximately 20,000 vehicles. In addition, many arterial streets would be required to carry average weekday traffic volumes in the year 2010 that would exceed their design capacity by 5,000 to 10,000 vehicles, as Blue Mound Road does in 1987. Such arterials would include Greenfield Avenue, North Avenue, STH 100, Moorland Road, Pilgrim Parkway, Calhoun Road, Barker Road, Springdale Road, and CTH T. The Blue Mound Road corridor would be an area of severe areawide traffic congestion such as has not been experienced in the greater Milwaukee area.

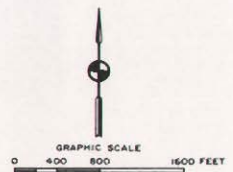
In addition, the three alternative transportation system plans calling for the addition of a new freeway interchange between Moorland Road and Goerke's Corners are clearly better than the plan proposing surface arterial street improvements but no new interchange. Without a new freeway interchange, average weekday traffic volumes on Blue Mound Road and Moorland Road in the City of Brookfield may be expected to approach 45,000 vehicles. These volumes would substantially exceed the traffic volumes currently carried on any stretch of arterial street or highway in the Milwaukee area for any substantial distance. In addition, even with the widening of major stretches of these roadways to eight traffic lanes, the traffic volumes carried per lane on these facilities by the year 2010 and the attendant traffic congestion would begin to approach unacceptable conditions. Further widening of these and other facilities, and reconsideration of a new freeway interchange, would probably be necessary again before the year 2010. Also, by the year 2010, the Moorland Road interchange on IH 94, which today is heavily loaded, would be expected to carry a 50 percent increase in average weekday traffic volume, and to require substantial reconstruction, at a cost exceeding \$1.2 million.

OPTIONAL ARTERIAL ROADWAYS BETWEEN CALHOUN ROAD AND THE
GOERKE'S CORNERS INTERCHANGE THAT COULD BE PROVIDED
WITH AN ALTERNATIVE PLAN WITH NO NEW FREEWAY
INTERCHANGE BETWEEN MOORLAND ROAD AND BARKER ROAD

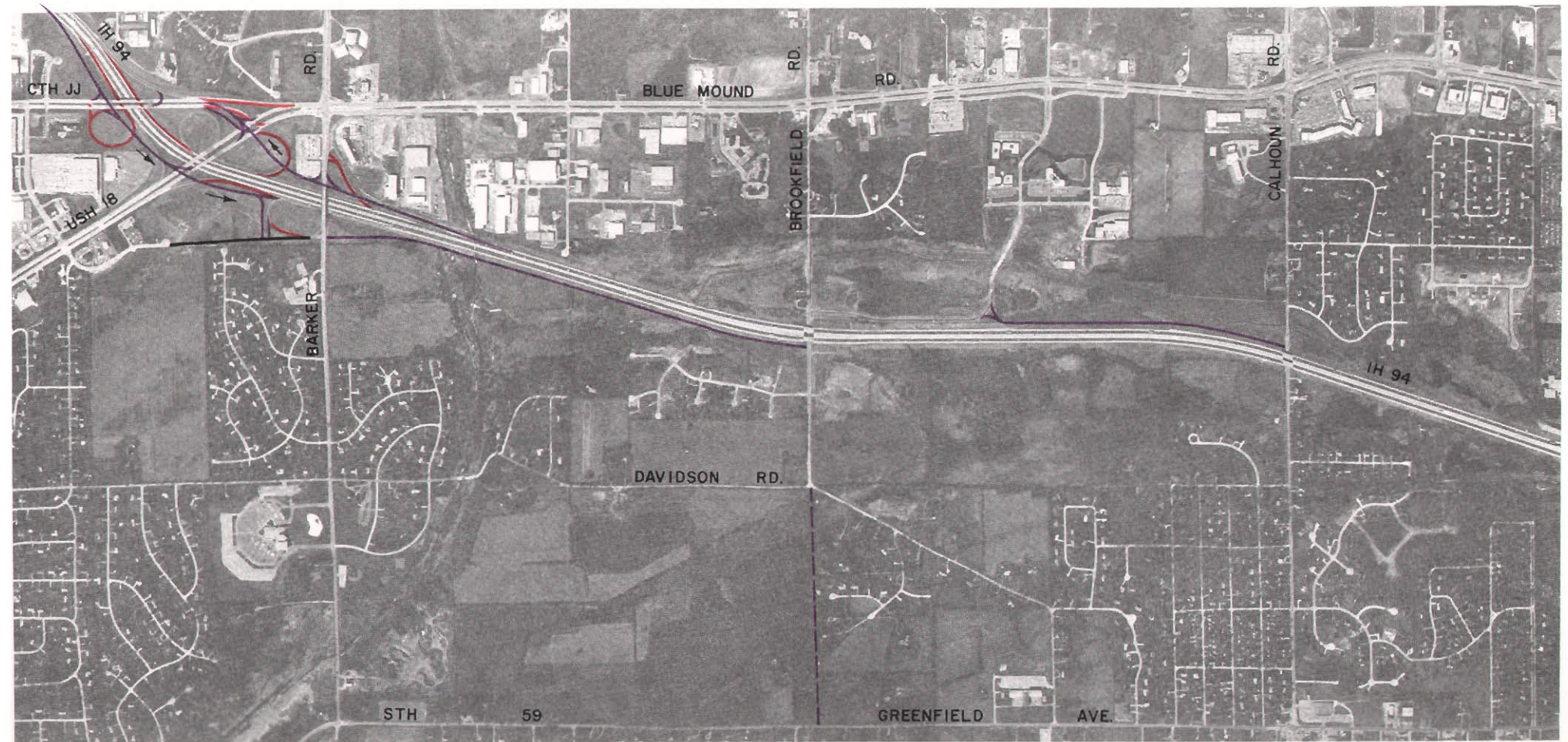


LEGEND

- EXISTING ARTERIAL STREET CONSTRUCTED SUBSEQUENT TO DATE OF PHOTOGRAPHY
- PROPOSED FREEWAY RAMPS AND FRONTAGE ROADS
- PROPOSED ARTERIAL STREET
- FREEWAY RAMPS AND FRONTAGE ROADS TO BE REMOVED

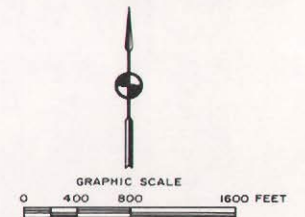


Map 45 (continued)



LEGEND

- EXISTING ARTERIAL STREET CONSTRUCTED SUBSEQUENT TO DATE OF PHOTOGRAPHY
- PROPOSED FREEWAY RAMPS AND FRONTAGE ROADS
- - - PROPOSED ARTERIAL STREET
- FREEWAY RAMPS AND FRONTAGE ROADS TO BE REMOVED



Source: SEWRPC.

Table 32

**RECOMMENDED ARTERIAL STREET IMPROVEMENTS UNDER THE
ALTERNATIVE TRANSPORTATION PLAN WITH NO NEW INTERCHANGE: 2010**

| Arterial Street | Limits | Recommended Number of Lanes |
|--|---|-----------------------------------|
| North-South Arterial | | |
| 124th Street (Milwaukee and Waukesha Counties)..... | Greenfield Avenue to Watertown Plank Road | 2 |
| Sunnyslope Road..... | Greenfield Avenue to USH 18 | 4 |
| Moorland Road..... | USH 18 to Wisconsin Avenue | 6 |
| Moorland Road..... | Greenfield Avenue to USH 18 | 8 |
| Pilgrim Road..... | Wisconsin Avenue to North Avenue | 4 |
| Calhoun Road..... | Greenfield Avenue to North Avenue | 4 |
| Brookfield Road..... | Davidson Road to Greenfield Avenue | 2 |
| Barker Road..... | IH 94 to North Avenue | 4 |
| Springdale Road..... | CTH JJ to North Avenue | 4 |
| STH 164..... | IH 94 to STH 190 | 4 |
| Pewaukee Road/CTH J..... | Moreland Boulevard to CTH M | 4 |
| CTH T..... | Northview Road to CTH JJ | 6 |
| CTH A..... | Main Street to STH 59 | 6 |
| East-West Arterial | | |
| STH 59..... | 124th Street to CTH A | 4 |
| USH 18..... | STH 100 to Moorland Road | 6 |
| USH 18..... | Moorland Road to Main Street | 8 |
| USH 18..... | Main Street to Manhattan Drive | 6 |
| Wisconsin Avenue..... | Moorland Road to Barker Road | 2 |
| CTH JJ..... | Kossow Road to CTH J | 4 |
| Main Street..... | USH 18 to CTH A | 4 |
| North Avenue..... | 124th Street to Barker Road | 4 |
| IH 94..... | STH 100 to CTH JJ | 8 |
| Reconstruction of Goerke's Corners Interchange..... | Barker Road to CTH JJ | -- |
| Optional Roadway Parallel to Freeway... | Barker Road to Calhoun Road | 4 |

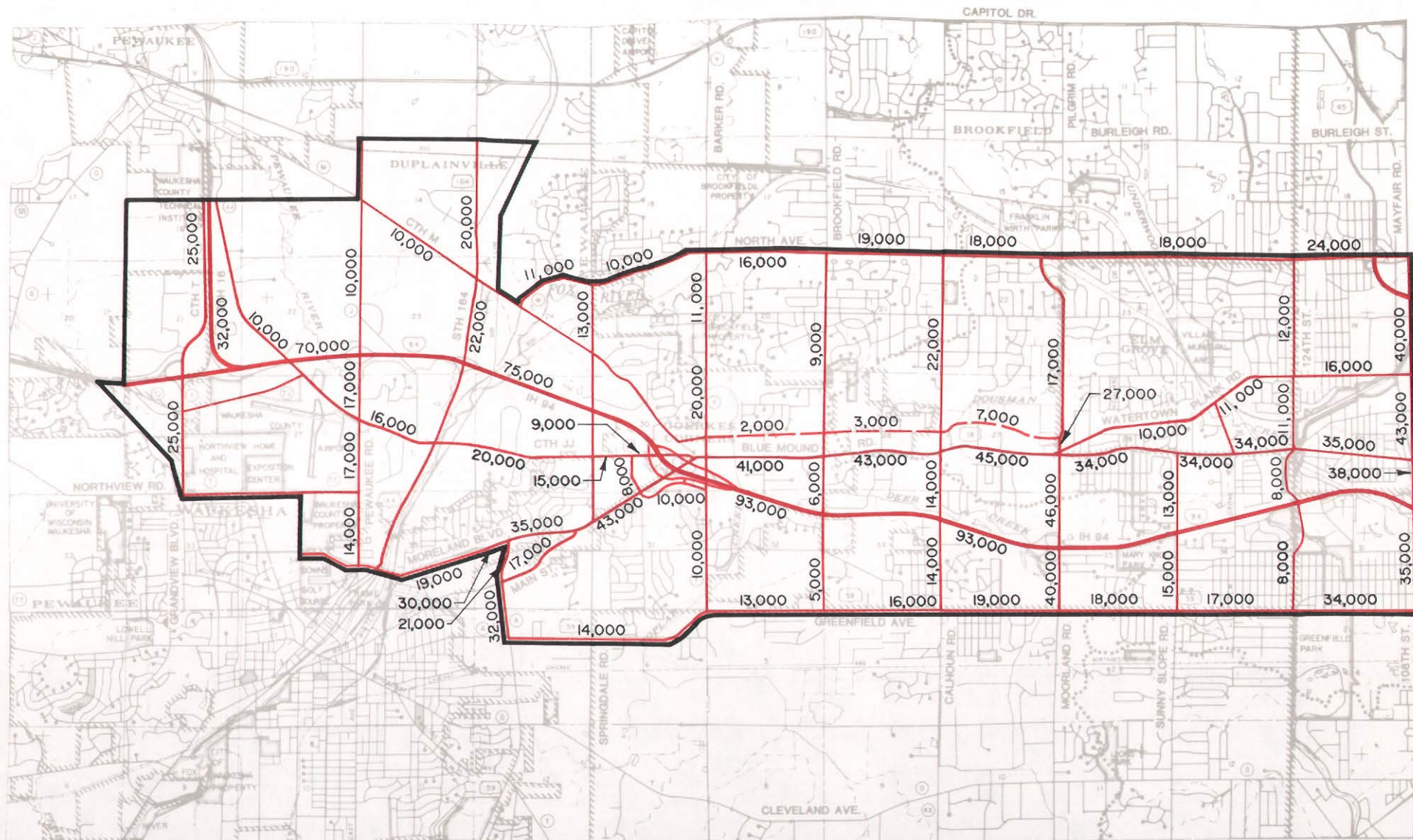
Source: SEWRPC.

The three alternative plans calling for new freeway interchanges can all be considered good plans from a transportation perspective, and indeed are similar in many important respects. The estimated costs of all arterial street improvements under the three plans are similar: \$84.3 million under the Brookfield Road interchange plan; \$86.9 million under the split diamond interchange plan; and \$83.7 million under the Calhoun Road interchange plan. All three plans would permit the corridor arterial system to operate generally within its design capacity.

The principal advantage of the plans with the Calhoun Road and split diamond interchanges compared to the plan with the Brookfield Road interchange is that they would provide greater relief to the existing Moorland Road interchange, permitting that interchange to carry its current average weekday traffic volume in the plan design year. The Moorland Road interchange and Moorland Road between Greenfield Avenue and Blue Mound Road would require widening by the year 2010 under the Brookfield Road interchange plan, but not under the Calhoun Road or split diamond interchange plans.

The principal disadvantage of the plans proposing a Calhoun Road or split diamond interchange is that they would result in an increase in year 2010 traffic on Calhoun Road between Blue Mound Road and Greenfield Avenue--from 14,000 vehicles per average weekday under a do nothing or no-new-interchange alternative to 20,000 vehicles per average weekday under the split diamond interchange plan and 26,000 vehicles per average weekday under the Calhoun Road interchange plan. The advantage of the Brookfield Road interchange plan is that it would not result in an increase in year 2010 traffic on Calhoun Road beyond the 14,000 vehicles per average weekday expected under a no-new-interchange plan.

FORECAST YEAR 2010 AVERAGE WEEKDAY TRAFFIC VOLUMES UNDER THE ALTERNATIVE TRANSPORTATION PLAN WITH NO NEW INTERCHANGE

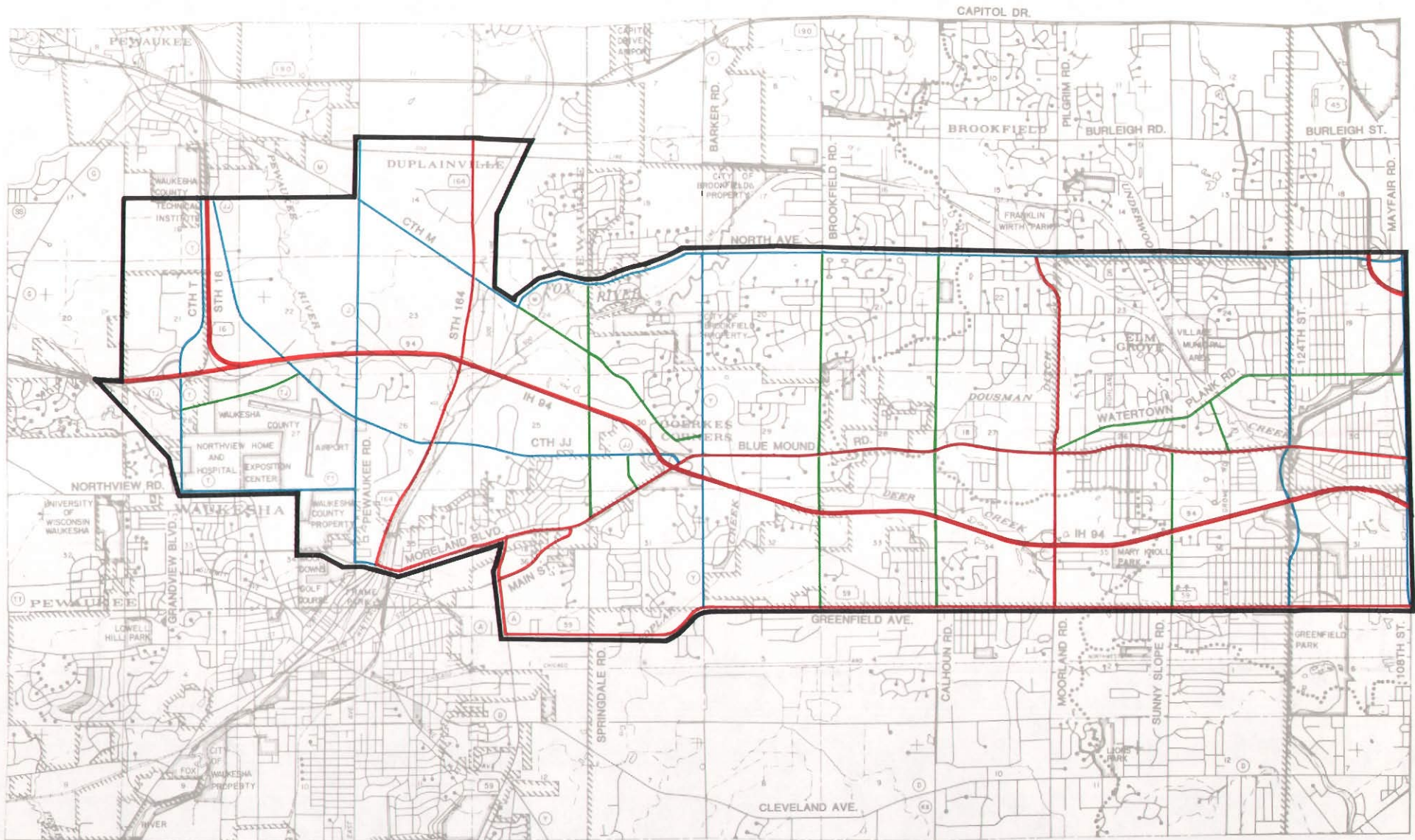


LEGEND

- FREEWAYS
- PROPOSED COLLECTOR STREET
- ARTERIAL STREETS AND HIGHWAYS
- 23,000 AVERAGE WEEKDAY TRAFFIC VOLUME



RECOMMENDED JURISDICTIONAL CLASSIFICATION OF ARTERIAL STREETS AND HIGHWAYS UNDER THE ALTERNATIVE TRANSPORTATION PLAN WITH NO NEW INTERCHANGE: 2010



LEGEND

- STATE TRUNK HIGHWAY - FREEWAY
- STATE TRUNK HIGHWAY - NONFREEWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY



Table 33

**RECOMMENDED JURISDICTIONAL RESPONSIBILITIES FOR RECOMMENDED
ARTERIAL STREET IMPROVEMENTS UNDER THE ALTERNATIVE
TRANSPORTATION PLAN WITH NO NEW INTERCHANGE: 2010**

| Level of Government | Facility | Limits | Recommended Number of Traffic Lanes | Estimated Cost ^a |
|---------------------|---|--|-------------------------------------|-----------------------------|
| Local | Brookfield Road (City and Town of Brookfield)..... | Davidson Road to Greenfield Avenue | 2 | \$ 550,000 |
| | Calhoun Road..... | Greenfield Avenue to North Avenue | 4 | 3,200,000 ^c |
| | Springdale Road (City and Town of Brookfield and Town of Pewaukee)..... | CTH JJ to North Avenue | 4 | 1,800,000 |
| | Sunnyslope Road (City of Brookfield)..... | Greenfield Avenue to USH 18 | 4 | 1,560,000 |
| | Wisconsin Avenue (City and Town of Brookfield)..... | Moorland Road to Barker Road | 2 | 3,410,000 |
| | Collector Streets Parallel to Freeway between Barker Road and Calhoun Road (Town and City of Brookfield) ^b | Barker Road to Calhoun Road | 4 | 2,590,000 |
| | Subtotal | -- | -- | \$13,110,000 |
| County | Barker Road..... | IH 94 to North Avenue | 4 | \$ 2,040,000 |
| | North Avenue..... | 124th Street to Barker Road | 4 | 7,380,000 ^d |
| | Pewaukee Road..... | Moreland Boulevard to City of Waukesha/Town of Pewaukee Limits | 4 | 360,000 |
| | 124th Street (Milwaukee and Waukesha Counties)..... | Greenfield Avenue to Watertown Plank Road | 2 | 2,310,000 |
| | CTH J..... | City of Waukesha/Town of Pewaukee Limits to CTH M | 4 | 3,600,000 |
| | CTH T..... | Northview Road to CTH JJ | 6 | 4,920,000 ^d |
| | CTH JJ..... | Kossow Road to CTH J | 4 | 3,772,000 ^d |
| | Subtotal | -- | -- | \$24,382,000 |
| State | Main Street..... | USH 18 to CTH A | 4 | \$ 960,000 |
| | Moorland Road..... | USH 18 to Wisconsin Avenue | 6 | 328,000 ^d |
| | Moorland Road..... | Greenfield Avenue to USH 18 | 8 | 2,522,000 ^d |
| | Pilgrim Road..... | Wisconsin Avenue to North Avenue | 4 | 2,460,000 ^d |
| | CTH A..... | Main Street to STH 59 | 6 | 820,000 ^d |
| | USH 18..... | STH 100 to Moorland Road | 6 | 3,444,000 ^d |
| | USH 18..... | Moorland Road to Main Street | 8 | 8,148,000 ^d |
| | USH 18..... | Main Street to Manhattan Drive | 6 | 1,476,000 ^d |
| | STH 59..... | 124th Street to CTH A | 4 | 8,400,000 ^d |
| | STH 164..... | IH 94 to STH 190 | 4 | 2,143,000 ^d |
| | IH 94..... | STH 100 to CTH JJ | 8 | 9,400,000 |
| | Reconstruction of Goerke's Corners Interchange..... | Barker Road to CTH JJ | 4 | 2,880,000 |
| | Subtotal | -- | -- | \$42,981,000 |
| Total | | -- | -- | \$80,473,000 |

^aThe estimated cost of arterial facility improvements assumes that the recommended improvements may be constructed within the existing right-of-way.

^bThese roadways may also be provided as either two-way, or a one-way pair of, arterial roadways.

^cBased upon forecast year 2010 traffic volumes, cost estimates of this improvement have assumed implementation of a divided roadway between USH 18 and North Avenue.

^dBased upon forecast year 2010 traffic volumes, cost estimates of these improvements have assumed implementation of a divided roadway.

Source: SEWRPC.

Comparison of the Calhoun Road interchange plan to the split diamond interchange plan indicates that the two plans are generally similar with respect to relief provided to existing freeway interchanges, traffic volumes on arterial facilities in the corridor, and attendant improvements required on those arterial facilities. The principal difference is that the split diamond interchange would be expected to result in less traffic in the year 2010 on Calhoun Road between Greenfield Avenue and Blue Mound Road. The split diamond interchange would be expected to result in about 20,000 vehicles per average weekday on this stretch of Calhoun Road, compared with 26,000 vehicles under the Calhoun road interchange plan.

An advantage of the Calhoun Road interchange is that it could accommodate a new two-way arterial roadway paralleling the freeway rather than a system of

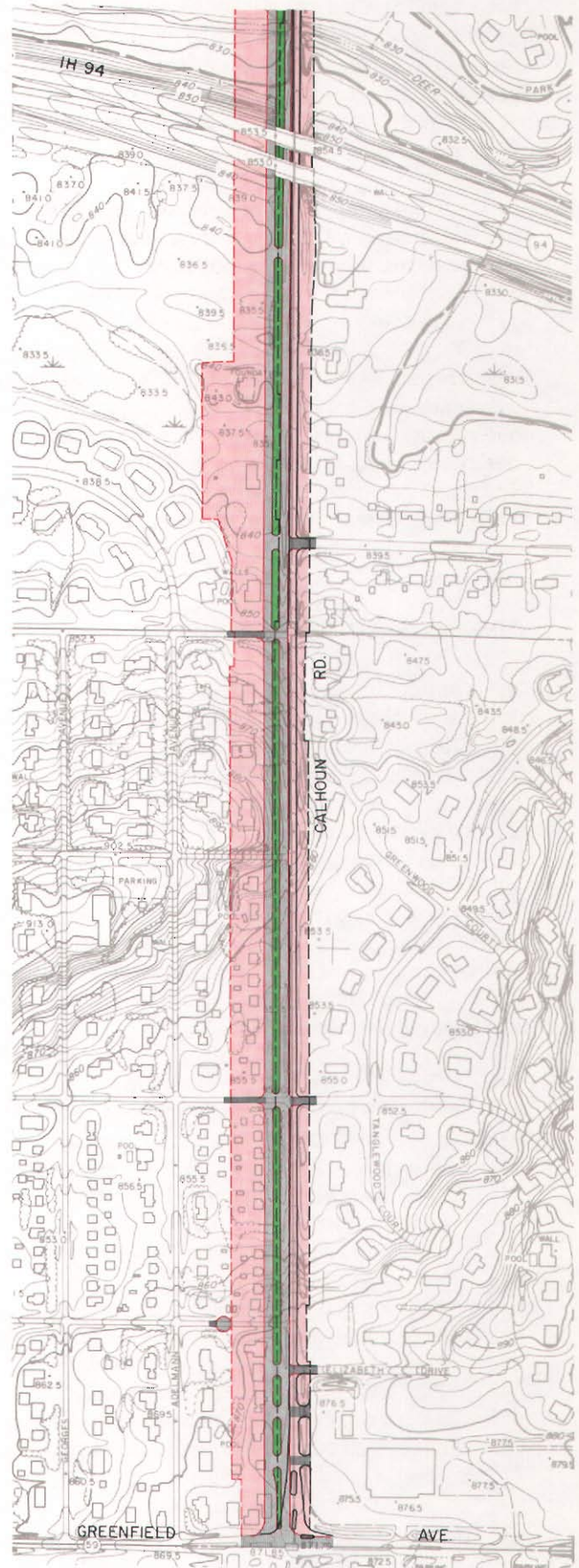
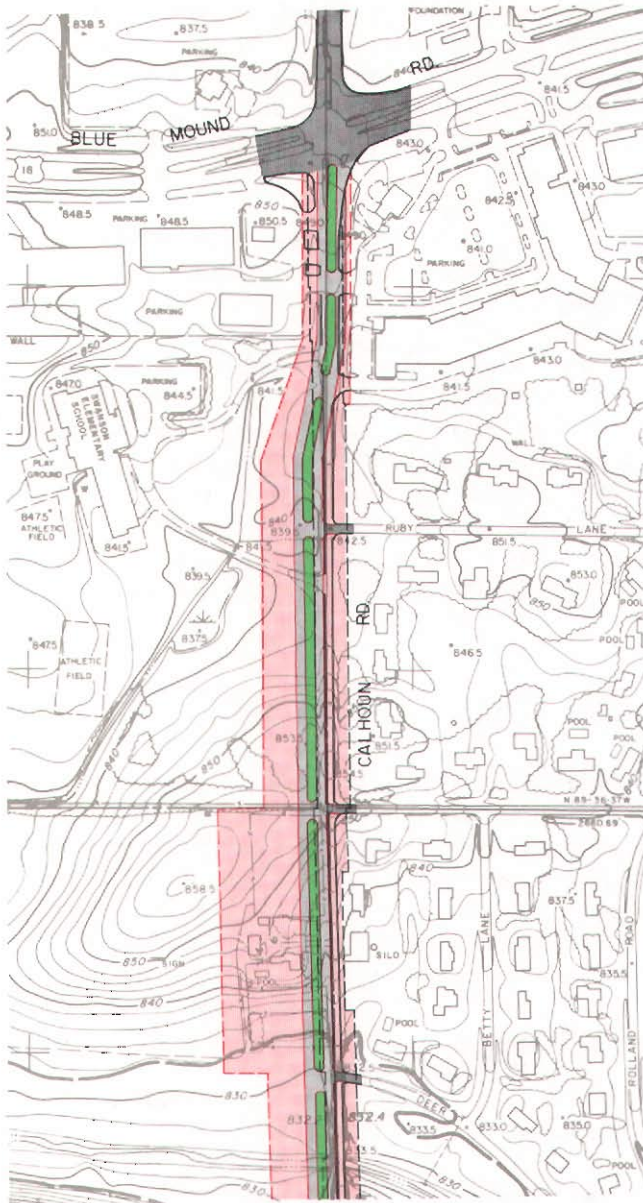
one-way frontage roads. The two-way roadway would provide better access to high-density development in the corridor, and could be better integrated with existing and future development. Another advantage of the Calhoun Road interchange is that its use would be easier to understand by motorists compared to a split diamond interchange. The incremental cost of the Calhoun Road interchange of \$3.2 million is substantially less than the incremental cost of \$6.4 million of the split diamond interchange. An important advantage of the Calhoun Road interchange alternative plan over both the split diamond and Brookfield Road interchange alternatives is that it is consistent with, and would serve to implement, the City of New Berlin land use plan, which seeks to direct urban land use development to areas in the City east of Calhoun Road, and to limit such development west of Calhoun Road. Another advantage of the Calhoun Road interchange is that it would connect the freeway to an arterial with both north and south continuity.

It is the Commission staff recommendation that the plan with the Calhoun Road interchange be selected for implementation. If a new interchange is to be provided between Goerke's Corners and Moorland Road, the best location is clearly at Calhoun Road. A Brookfield Road interchange will not resolve the problems of the Moorland Road interchange and the stretch of Moorland Road between Greenfield Avenue and Blue Mound Road connecting to that interchange. Even with the implementation of a Brookfield Road interchange, the average weekday traffic carried by the Moorland Road interchange is expected to increase from its existing 47,000 vehicles per average weekday to 58,000 vehicles per average weekday, an increase of nearly 25 percent. As a result, it would become necessary to reconstruct the Moorland Road interchange and to widen Moorland Road by the year 2010, and perhaps to consider construction of a Calhoun Road interchange.

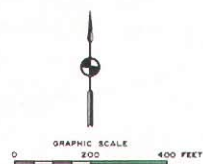
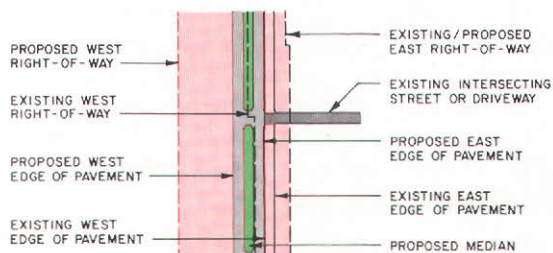
A Calhoun Road interchange is recommended over the split diamond interchange for a number of reasons, including lower costs, greater ease of use of the interchange by motorists, better connection provided to the centroid of development between Moorland Road and Goerke's Corners, and its consistency with planned development, particularly in the City of New Berlin. The only advantage of a split diamond interchange is that it would be expected to result in less traffic in the year 2010 on Calhoun Road. However, it is likely that the same roadway improvement would be required on Calhoun Road under that plan as under the Calhoun Road interchange plan.

With respect to the roadway improvement that would be required on Calhoun Road between Blue Mound Road and Greenfield Avenue, it is recommended that a four-lane divided roadway be provided. The precise location and design of such a roadway would be determined by a preliminary engineering study. However, at this system planning stage, it would appear that the best centerline location for such a roadway between the East-West Freeway (IH 94) and Blue Mound Road would be west of the present centerline of Calhoun Road, as shown on Map 48. This would require the taking of one existing structure along the west side of Calhoun Road, but would permit the eastern edge of the new roadway to be located at the western edge of the old roadway, so that existing residences located east of Calhoun Road would be an additional 24 feet away from the closest edge of the pavement. This additional separation of about 24 feet from the residences to that roadway could be used for berming and landscaping to protect the remaining land uses. It would also appear at this system planning stage that the best centerline location for the segment of Calhoun Road south of the East-West Freeway (IH 94) to Greenfield Avenue (STH 59) would also be to the west of the present centerline of Calhoun Road. This would require the taking of 30 structures, but would permit the eastern edge of the new roadway to be

PROPOSED ALIGNMENT OF AN IMPROVED CALHOUN ROAD BETWEEN
BLUE MOUND ROAD AND GREENFIELD AVENUE UNDER THE COMMISSION
STAFF-RECOMMENDED CALHOUN ROAD INTERCHANGE ALTERNATIVE PLAN



LEGEND



located at the western edge of the old roadway, so that existing residences located east of Calhoun Road would be an additional 24 feet away from the closest edge of the pavement. This additional separation of about 24 feet could be used for berming and landscaping to protect the remaining land uses. Thus, the closest residences east of Calhoun Road will be located about 95 feet away from the nearest edge of pavement and, as well, the closest residences west of Calhoun Road will be located about 105 feet away from the nearest edge of pavement.

At its meeting on September 3, 1987, the Study Task Force acted to recommend for adoption the alternative plan with the Calhoun Road interchange. This recommendation was supported by representatives of the City of Wauwatosa, the City of New Berlin, the Village of Elm Grove, the City of Waukesha, the Town of Pewaukee, and Waukesha County, but was opposed by the representatives of the City of Brookfield and the Wisconsin Department of Transportation. The Task Force also recommended the adoption of the proposed jurisdictional classification of arterial streets and highways presented as part of that plan, with one change--that being the designation of Springdale Road north of CTH JJ in the corridor as a county trunk highway. Commission studies have indicated that Springdale Road meets the established criteria for classification as a county trunk highway; however, such designation has been opposed in the past by the City of Waukesha.

SUMMARY AND CONCLUSIONS

The transportation needs in the corridor attendant to the planned future land use development pattern were identified in this chapter. Estimates of the person and vehicle trips generated on an average weekday within the corridor under existing and planned future land use conditions were presented. The distribution on the arterial street and highway system of forecast year 2010 vehicle trips generated by the planned land use development pattern in the corridor was presented, based upon traffic simulation model analyses. The resultant levels of service and traffic congestion were identified, along with current levels of service and traffic congestion in the corridor. Alternative improvements designed to meet the identified transportation needs and resolve the identified traffic congestion problems were evaluated, including additional freeway interchanges, and a recommended transportation plan for the corridor has been developed.

- The resident population, households, and employment within the corridor in 1985 generated an estimated total of 507,400 person trip ends--that is, person trip origins and destinations--within the corridor on an average weekday. This represents an increase of 323,000 trip ends, or 175 percent, over the 1970 level; and of 404,900 trip ends, or about 400 percent, over the 1963 level. Based on the forecast population, household, and employment levels in the corridor, person trip generation within the corridor may be expected to increase to between 815,000 and 845,000 trip ends by the year 2010, an increase of approximately 320,000 trip ends, or about 65 percent, over the 25-year period.
- The range in forecast year 2010 trip generation reflects the four alternative land use plans developed by the City of Brookfield for the portion of the corridor extending from Moorland Road to Calhoun Road.

generally ranging from 1,000 to 5,000 vehicles per average weekday. However, traffic congestion would not be significantly different under any of the four subcorridor land use plans, and arterial roadway improvement needs would not significantly change.

- Substantially less than 1 percent of the trips made within the corridor in 1985 were made by public transit, or about 1,000 trips on an average weekday. The adopted regional transportation system plan proposes an approximately fourfold increase in transit service in the corridor as measured by bus miles of service provided; however, the proportion of travel within the corridor that would be made by public transit, while forecast to triple to the year 2010, would still be expected to remain under 1 percent. Therefore, public transit may be expected to make only a very small contribution toward resolving existing and probable future highway traffic congestion.
- Based upon the comparison of the most currently available average weekday traffic volume counts on each arterial street and highway in the Blue Mound Road corridor to their design capacity, substantial segments of arterials were determined to be carrying traffic volumes exceeding or approaching their design capacity, and therefore experiencing congestion. Such arterials included the segment of Blue Mound Road and Moreland Boulevard (STH 18) from STH 100 to CTH A; Greenfield Avenue (STH 59) from 124th Street to Calhoun Road; North Avenue from 124th Street to Calhoun Road; the East-West Freeway (IH 94) from STH 100 to Moorland Road; Pilgrim Parkway from Watertown Plank Road to North Avenue; and Main Street from Moreland Boulevard to CTH A.

The adopted long-range regional transportation plan has long recommended the provision of additional traffic capacity on these roadway segments. Little action, however, has been taken by local, county, and state governments to carry out the recommended improvements. Yet development of the lands that are served by these facilities has been encouraged and has occurred at even higher rates than planned or forecast.

- Forecast year 2010 average weekday traffic volumes on the arterial street system in the Blue Mound Road corridor were developed based upon the forecast population, household, and employment levels. Those arterial segments which, based upon the forecasts, may be expected to carry average weekday traffic volumes exceeding their design capacity were identified. Also identified were those arterial segments which may be expected to carry traffic volumes approaching their design capacity. Additional segments of arterial facilities expected to experience congestion in the year 2010 if no improvements are made include Greenfield Avenue (STH 59) from Calhoun Road to CTH A; the East-West Freeway (IH 94) from Moorland Road to the Goerke's Corners interchange; North Avenue from Calhoun Road to Barker Road; Sunnyslope Road from Greenfield Avenue (STH 59) to Blue Mound Road (USH 18); Moorland Road from Greenfield Avenue (STH 59) to Watertown Plank Road; Calhoun Road from Greenfield Avenue (STH 59) to North Avenue; Pewaukee Road from Moreland Boulevard to CTH M; and CTH T from Northview Road to CTH JJ. In addition, traffic congestion on segments of arterial roadways already experiencing congestion may be expected to become extremely severe, particularly on Blue Mound Road and Moreland Boulevard (USH 18) from 124th Street to CTH A; Greenfield Avenue from 124th Street to Calhoun Road; and North Avenue from 124th Street to Calhoun Road.

- The arterial street improvements that may be expected to be required by the year 2010 to resolve the identified traffic congestion problems were identified. In addition, the implications of new interchanges on the East-West Freeway (IH 94) between STH 100 and STH 164 for average week-day traffic volumes and the need for improvement of arterial streets in the corridor were investigated. Between the Goerke's Corners and STH 164 interchanges, one alternative location for a new interchange--Springdale Road--was considered. This interchange was not recommended. The new interchange would have been expected to disrupt the operation of the Goerke's Corners interchange. In addition, the direct benefits of the interchange--including the potential to provide for more direct routing, to improve transportation safety, and to reduce vehicle operating costs--were found to be substantially less than its direct costs.

Between STH 100 and Moorland Road, two alternative interchange locations were identified and evaluated--an interchange at Sunnyslope Road and an interchange at 124th Street. The interchange at Sunnyslope Road was determined to constitute a marginal improvement, with its benefits only slightly exceeding its costs. This interchange location was not recommended. The direct benefits of the alternative interchange location at 124th Street were determined to exceed its costs. However, because this interchange would provide only limited relief to existing freeway interchanges and surface arterial facilities, this interchange location was also not recommended. Thus, no additional interchange was recommended between STH 100 and Moorland Road.

Between Moorland Road and Goerke's Corners, four alternative interchange locations were identified and evaluated--a Calhoun Road interchange, a Brookfield Road interchange, a split diamond interchange with half provided at Calhoun Road and the other half at Brookfield Road, and an interchange location midway between Calhoun Road and Brookfield Road. The latter alternative interchange was rejected as its benefits would not exceed its cost. The cost of this interchange alternative would be expected to be substantially higher than that of any of the other alternative interchanges, and yet this interchange would be expected to remove less traffic from congested facilities than some of the other interchanges. Commission staff analyses concluded that three of the interchange alternatives considered--the Calhoun Road interchange, the Brookfield Road interchange, and the split diamond interchange--could all be considered good transportation improvements. Each of these alternatives would provide substantial direct travel benefits of improved travel safety, reduced travel costs, and reduced travel time that would exceed the direct costs of the interchange.

- Without a new freeway interchange between the Moorland Road and Goerke's Corners interchanges, the average weekday traffic volumes on Blue Mound Road and Moorland Road in the City of Brookfield may be expected to approach 45,000 vehicles. These volumes would substantially exceed the traffic volumes currently carried on any stretch of arterial street or highway in the Milwaukee area for any substantial distance. In addition, even with the widening of major stretches of these roadways to eight traffic lanes, the traffic volumes carried per lane on these facilities by the year 2010 and the attendant traffic congestion would begin to approach unacceptable conditions. Further widening of these and other facilities, and reconsideration of a new freeway interchange, would

probably be necessary again before the year 2010. Also, by the year 2010, the Moorland Road interchange on IH 94, which today is heavily loaded, may be expected to carry a 50 percent increase in average weekday traffic volumes, and to require substantial reconstruction.

The principal advantage of the arterial system plans with the Calhoun Road and split diamond interchanges over the plan calling for a Brookfield Road interchange is that they would provide greater relief to the existing Moorland Road interchange, permitting the Moorland Road interchange to carry approximately its current average weekday traffic volume in the plan design year. The Moorland Road interchange and Moorland Road between Greenfield Avenue and Blue Mound Road would require widening by the year 2010 under the Brookfield Road interchange plan, but not under the Calhoun road or split diamond interchange plans.

The principal disadvantage of the arterial system plans with a Calhoun Road or split diamond interchange is that they would result in a substantial increase in traffic on Calhoun Road between Blue Mound Road and Greenfield Avenue by the year 2010. The advantage of the Brookfield Road interchange plan is that it would not result in an increase in traffic on Calhoun Road in the year 2010 beyond the traffic expected under a no-new-interchange plan.

Comparison of the Calhoun Road interchange alternative system plan to the split diamond interchange plan indicates that the two plans are generally similar with respect to relief provided to existing freeway interchanges, traffic volumes on arterial facilities in the corridor, and attendant improvements required on those facilities. A major advantage of the Calhoun Road interchange is that it could accommodate a new two-way collector or arterial roadway paralleling the freeway rather than a system of one-way frontage roads. The two-way roadway would provide better access to high-density development in the corridor, and could be better integrated with existing and future development. Another advantage of the Calhoun Road interchange is that its use would be easier to understand by motorists compared to a split diamond interchange. The incremental cost of the Calhoun Road interchange of \$3.2 million is substantially less than the incremental cost of \$6.3 million of the split diamond interchange. Another major advantage of the Calhoun Road interchange plan is that it is consistent with, and would serve to implement, the City of New Berlin land use plan, which seeks to direct urban land use development to areas in the City east of Calhoun Road, and to limit such development west of Calhoun Road. Finally, another advantage of the Calhoun Road interchange is that it would connect the freeway to an arterial with both north and south continuity. Accordingly, the Commission staff and the Task Force recommended adoption of the arterial system plan that provides for an interchange at Calhoun Road. Final forecast year 2010 traffic assignments were made to this recommended transportation plan. These assignments incorporated the land use plan for the Brookfield Square subarea as adopted by the City of Brookfield. The final forecast traffic volumes will be presented in the following chapter of this report.

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Chapter IV

RECOMMENDED TRANSPORTATION PLAN

INTRODUCTION

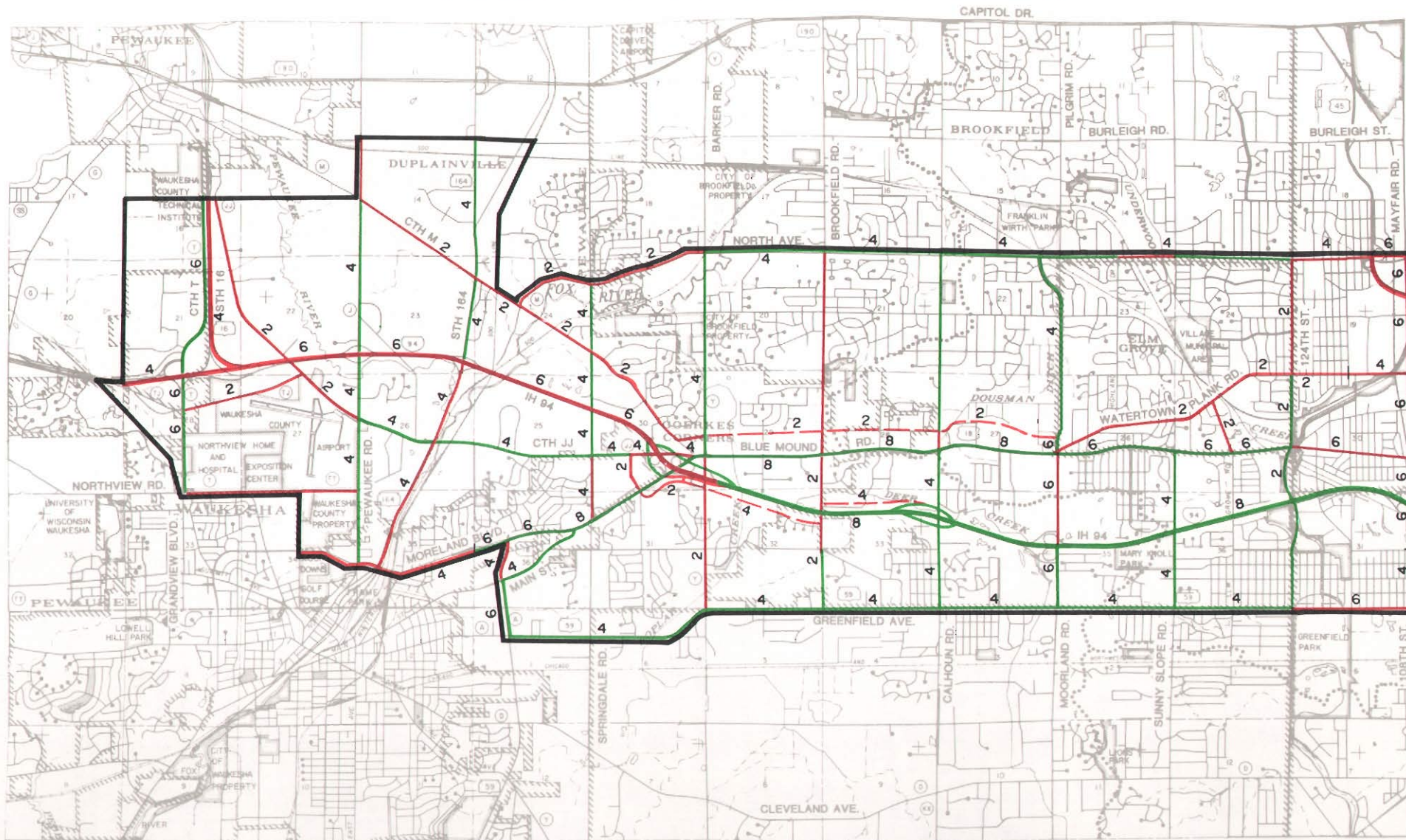
This chapter presents the recommended transportation system plan for the Blue Mound Road corridor. Those streets and highways within the corridor that are recommended to serve as arterials and thereby carry heavy volumes of through traffic are identified. The number of traffic lanes that is recommended to be provided on each segment of arterial facility in the corridor is identified. The recommended jurisdictional classification of each arterial street and highway facility within the corridor is also recommended, thus identifying the unit and level of government which should be responsible for the improvement and operation and maintenance of each segment of the recommended total arterial street and highway system.

RECOMMENDED ARTERIAL STREET SYSTEM IMPROVEMENTS

The arterial street system under the recommended transportation system plan is shown on Map 49. Also shown are the number of traffic lanes recommended to be provided on each segment of the arterial street system and the attendant required arterial improvements. Implementation of these improvements, which are also summarized in Table 34, will permit each segment of arterial facility to carry average weekday traffic volumes that will not exceed its design capacity. Therefore, the recommended improvements may be expected to significantly abate traffic congestion within the corridor to the year 2010. Arterials carrying average weekday traffic volumes exceeding their design capacity may be expected to experience significant delays at controlled intersections, reduced speeds between intersections, and increased accident rates. The reduced speeds and intersection delays generally would occur during the morning and evening peak traffic hours, or, in some cases, during the three-hour morning and evening peak traffic periods. Delays at signalized intersections may be expected to average 35 seconds during peak traffic periods, with delays for some vehicles approaching 120 seconds. Restrictions on operating speeds and on the ability of vehicles to maneuver would also occur. Average travel times on such congested facilities will typically increase by one-third over the average travel times on uncongested facilities.

The average weekday traffic volumes that are expected to be carried on each segment of the arterial street system within the Blue Mound Road corridor by the plan design year 2010 are shown on Map 50. These traffic volumes are based upon planned resident population, household, and employment levels in the corridor, as well as in the remainder of southeastern Wisconsin. The traffic volumes reflect the land use plan recently adopted for a portion of the corridor by the City of Brookfield, as shown on Map 51. The land use plan used as a basis for the transportation system planning for the corridor is shown on Map 52.

RECOMMENDED ARTERIAL STREET IMPROVEMENTS UNDER THE RECOMMENDED TRANSPORTATION SYSTEM PLAN: 2010



LEGEND

- FREEWAYS
- IMPROVED OR NEW ARTERIAL STREETS
- ARTERIAL STREETS AND HIGHWAYS
- PROPOSED COLLECTOR STREET
- 4** RECOMMENDED NUMBER OF TRAFFIC LANES



Table 34

**RECOMMENDED ARTERIAL STREET IMPROVEMENTS UNDER
THE RECOMMENDED TRANSPORTATION SYSTEM PLAN: 2010**

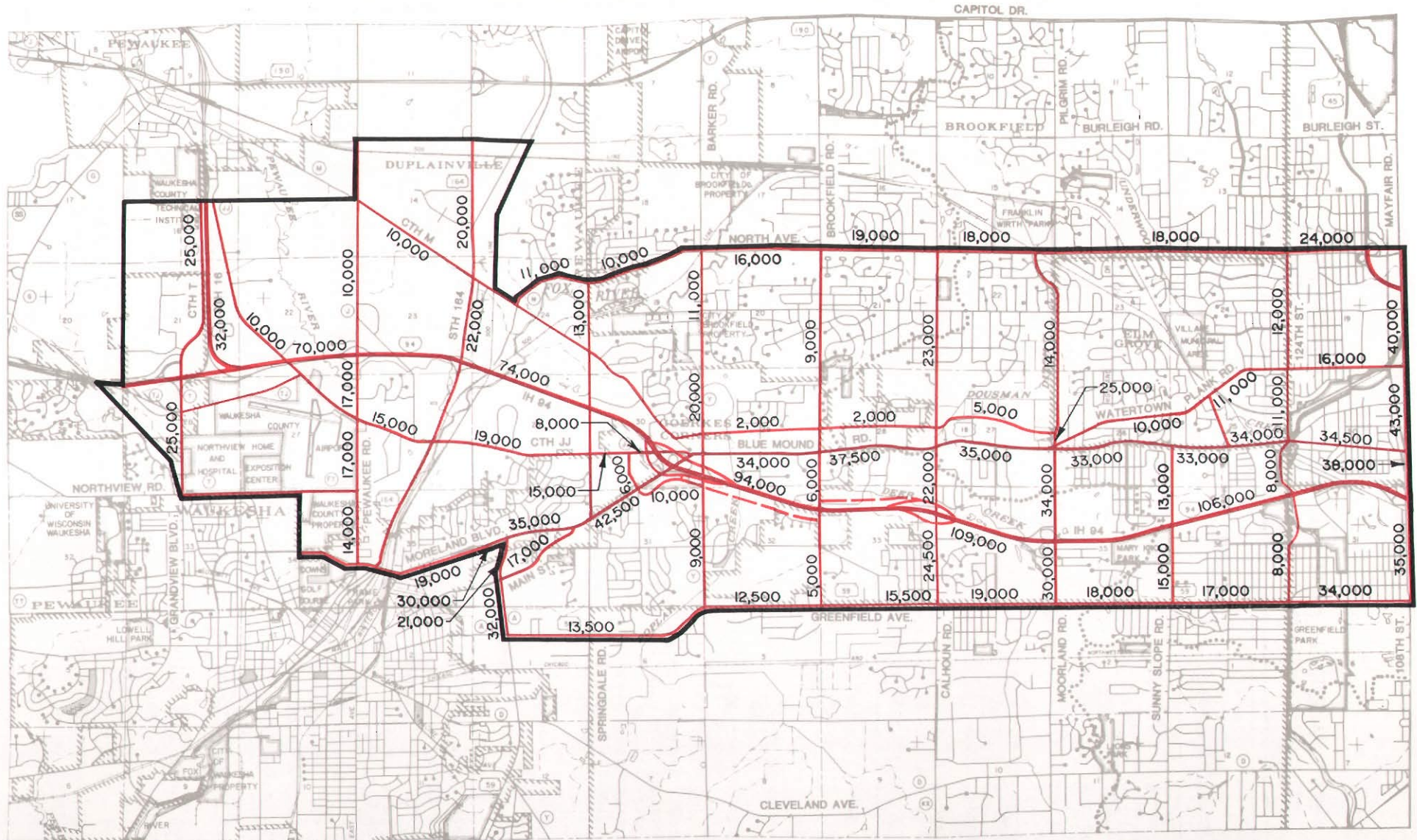
| Arterial Street | Limits | Recommended Number of Lanes |
|--|---|-----------------------------------|
| North-South Arterial | | |
| 124th Street (Milwaukee and Waukesha Counties)..... | Greenfield Avenue to Watertown Plank Road | 2 |
| Sunnyslope Road..... | Greenfield Avenue to USH 18 | 4 |
| Moorland Road..... | USH 18 to Wisconsin Avenue | 6 |
| Moorland Road..... | Greenfield Avenue to USH 18 | 6 |
| Pilgrim Road..... | Wisconsin Avenue to North Avenue | 4 |
| Calhoun Road..... | Greenfield Avenue to USH 18 | 4 |
| Calhoun Road..... | USH 18 to North Avenue | 4 |
| Brookfield Road..... | Davidson Road to Greenfield Avenue | 2 |
| Barker Road..... | IH 94 to North Avenue | 4 |
| Springdale Road..... | CTH JJ to North Avenue | 4 |
| STH 164..... | IH 94 to STH 190 | 4 |
| Pewaukee Road/CTH J..... | Moreland Boulevard to CTH M | 4 |
| CTH T..... | Northview Road to CTH JJ | 6 |
| CTH A..... | Main Street to STH 59 | 6 |
| East-West Arterial | | |
| STH 59..... | 124th Street to CTH A | 4 |
| USH 18..... | STH 100 to Moorland Road | 6 |
| USH 18..... | Moorland Road to Main Street | 8 |
| USH 18..... | Main Street to Manhattan Drive | 6 |
| Wisconsin Avenue..... | Moorland Road to Barker Road | 2 |
| CTH JJ..... | Kossow Road to CTH J | 4 |
| Main Street..... | USH 18 to CTH A | 4 |
| North Avenue..... | 124th Street to Barker Road | 4 |
| IH 94..... | STH 100 to CTH JJ | 8 |
| Reconstruction of Goerke's Corners Interchange..... | Barker Road to CTH JJ | -- |
| New Interchange..... | Calhoun Road | -- |
| Collector Roadways Parallel to Freeway..... | Barker Road to Calhoun Road | 4 |

Source: SEWRPC.

The recommended plan includes a new interchange at Calhoun Road. If a new interchange is to be provided between Goerke's Corners and Moorland Road, the best location is at Calhoun Road. A Brookfield Road interchange will not resolve the problems of the Moorland Road interchange and the stretch of Moorland Road between Greenfield Avenue and Blue Mound Road connecting to that interchange. Even with implementation of a Brookfield Road interchange, the average weekday traffic carried by the Moorland Road interchange is expected to increase from its existing 47,000 vehicles to 68,000 vehicles under the final land use plan, an increase of nearly 45 percent. As a result, it would become necessary, by the year 2010, to reconstruct the Moorland Road interchange and widen Moorland Road, and to again consider construction of a Calhoun Road interchange.

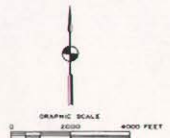
A Calhoun Road interchange is recommended over the split diamond interchange for a number of reasons, including lower costs, greater ease of use by motorists, better connection provided to the centroid of development between Moorland Road and Goerke's Corners, and its consistency with planned development, particularly in the City of New Berlin. The only advantage of a split diamond

FORECAST YEAR 2010 AVERAGE WEEKDAY TRAFFIC VOLUMES UNDER THE RECOMMENDED TRANSPORTATION SYSTEM PLAN



LEGEND

- FREEWAYS
- ARTERIAL STREETS AND HIGHWAYS
- PROPOSED COLLECTOR STREET
- 23,000 AVERAGE WEEKDAY TRAFFIC VOLUME



interchange is that it would probably result in less traffic in the year 2010 on Calhoun Road. However, the same roadway improvement would be required on Calhoun Road under that plan as under the Calhoun Road interchange plan.

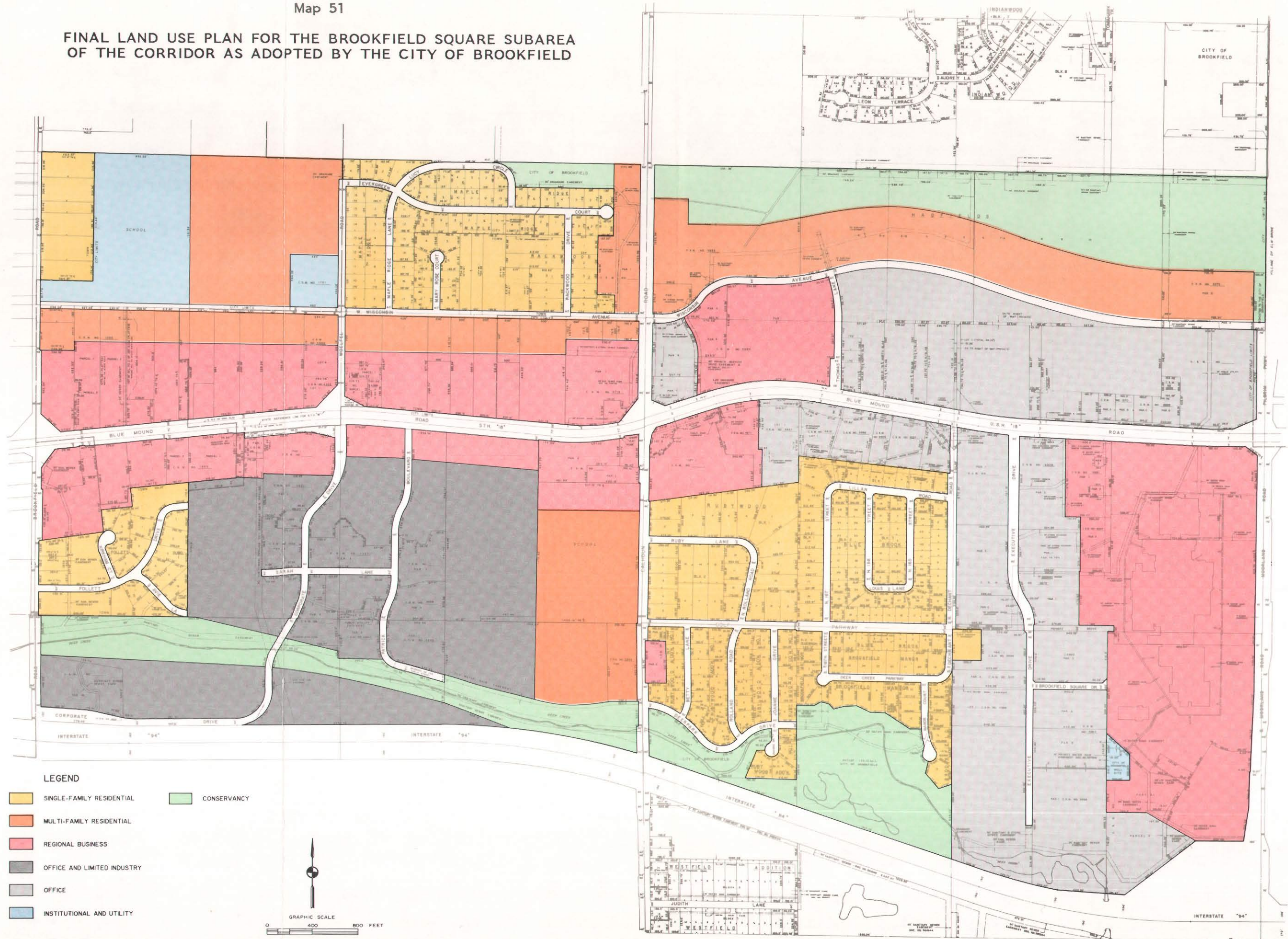
Between Blue Mound Road and Greenfield Avenue, it is recommended that a four-lane divided roadway be provided. The precise location and design of such a roadway would be determined by a preliminary engineering study. However, at this system planning stage, it would appear that the best centerline location for such a roadway between the East-West Freeway (IH 94) and Blue Mound Road would be west of the present centerline of Calhoun Road, as shown on Map 48 in Chapter III of this report. This would require the taking of one existing structure along the west side of Calhoun Road, but would permit the eastern edge of the new roadway to be located at the western edge of the old roadway, so that existing residences located east of Calhoun Road would be an additional 24 feet away from the closest edge of the pavement. This additional separation from the residences to the roadway could be used for berming and landscaping to protect the remaining land uses. In addition, it would appear that the best centerline location for the segment of Calhoun Road south of the East-West Freeway (IH 94) to Greenfield Avenue (STH 59) would also be to the west of the present centerline of Calhoun Road. This would require the taking of 30 structures, but would permit the eastern edge of the new roadway to be located at the western edge of the old roadway, so that existing residences located east of Calhoun Road would be an additional 24 feet away from the closest edge of the pavement. This additional separation could be used for berming and landscaping to protect the remaining land uses. Thus, the closest residences east of Calhoun Road will be located about 95 feet away from the nearest edge of pavement, and the closest residences west of Calhoun Road will be located about 130 feet away from the nearest edge of pavement.

The proposed arterial street system includes certain arterial street extensions. These extensions include 124th Street from Watertown Plank Road to Greenfield Avenue in the Village of Elm Grove, City of Wauwatosa, City of West Allis, and City of Brookfield. This extension of 124th Street is a long-standing recommendation of the adopted regional transportation system plan, and the analyses conducted under this study have reaffirmed the need for this improvement. The extension of N. 124th Street is necessary to provide an adequate spacing of arterial streets, and to address traffic congestion, particularly on Watertown Plank Road.

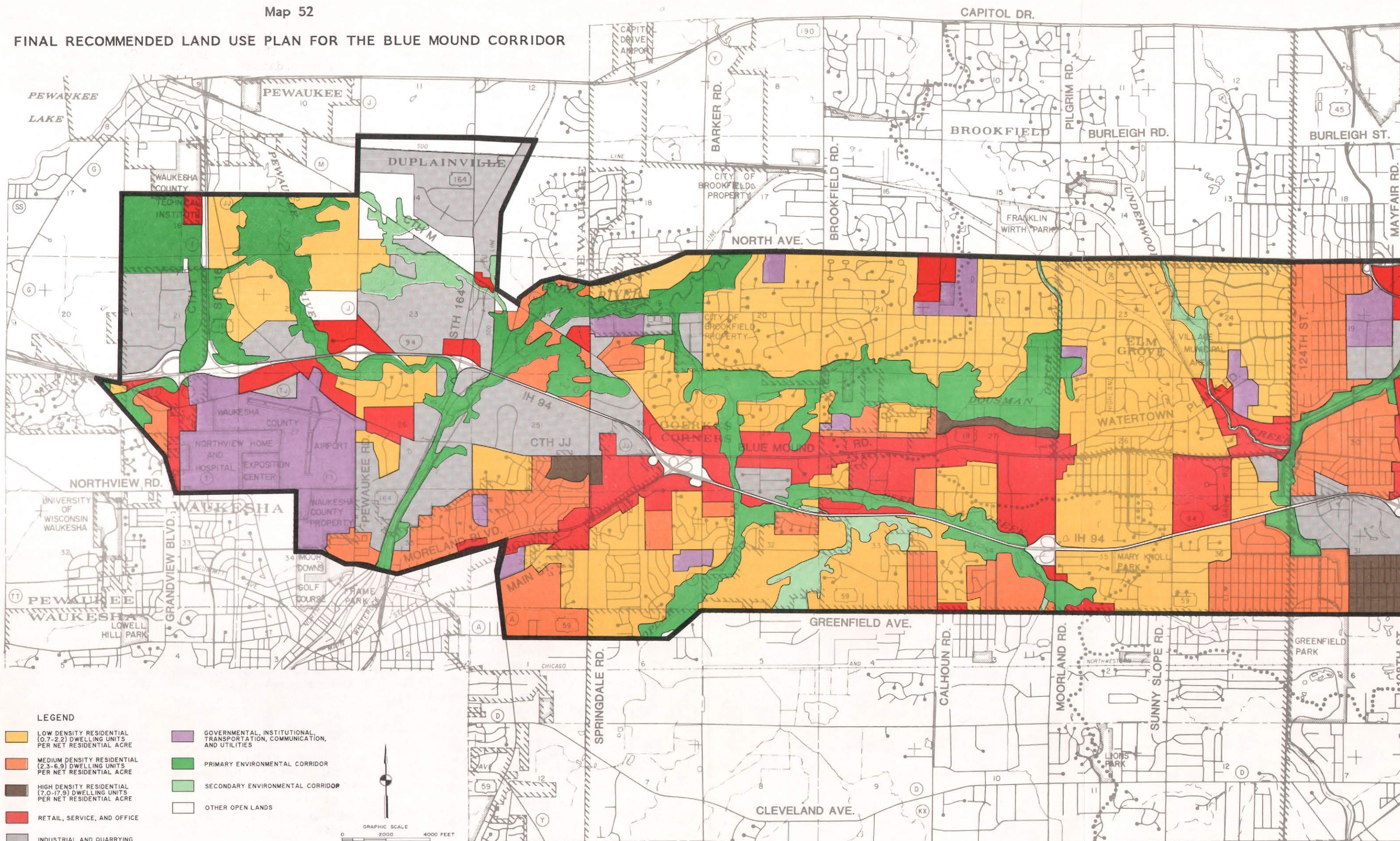
Another recommended arterial street extension is the removal of the jog in Pilgrim Road and Pilgrim Parkway at North Avenue in the City of Brookfield. This is also a long-standing recommendation of the regional transportation plan; and the analyses conducted under this study have indicated, based upon the substantial increases in urban land development planned in the corridor, that the need for this improvement is even greater than was anticipated in the past.

Another recommended improvement is the extension of Brookfield Road south of the East-West Freeway (IH 94) to Greenfield Avenue (STH 59) in the City and Town of Brookfield. This is a newly recommended arterial street extension, as is the addition of Brookfield Road to the arterial street system. These recommendations reflect the extent and density of urban development planned for this portion of the Blue Mound Road corridor.

FINAL LAND USE PLAN FOR THE BROOKFIELD SQUARE SUBAREA
OF THE CORRIDOR AS ADOPTED BY THE CITY OF BROOKFIELD



FINAL RECOMMENDED LAND USE PLAN FOR THE BLUE MOUND CORRIDOR



Source: SEWRPC.

Also recommended is the extension of Wisconsin Avenue from Moorland Road to Barker Road in the City and Town of Brookfield. This extension is not intended to function as an arterial, but rather is intended to serve urban development abutting Wisconsin Avenue and to provide a needed collector and distribution function in the area.

Another recommended street extension is the extension of collector streets paralleling the freeway from Barker Road to Calhoun Road. These extensions are intended to function as collector streets serving urban development abutting the East-West Freeway (IH 94) and providing a needed collector and distribution function in the area, and removing traffic from Blue Mound Road. As an option, these collector facilities could be provided as arterials, or as one-way arterial frontage roads, rather than as two-way streets.

Recommended Jurisdictional Classification of Arterial Streets and Highways

The current--as of July 1987--jurisdictional classification of each segment of arterial street facility in the corridor is shown on Map 30 in Chapter III of this report. Jurisdictional classification establishes which level of government--state, county, or local--should have primary responsibility for the planning, design, construction, operation, and maintenance of each segment of the total arterial system. The currently proposed jurisdictional classification of the arterial street system in the Blue Mound Road corridor is shown on Map 31 in Chapter III. The proposed jurisdictional classification is based upon the recommendations contained in SEWRPC Planning Report No. 18, A Jurisdictional Highway System Plan for Waukesha County, as adopted by the Waukesha County Board of Supervisors on May 20, 1975, and its subsequent amendments by SEWRPC Planning Report No. 25, A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin: 2000, and by action of the Waukesha County Board on March 15, 1983.

Those arterial facilities that are classified as local trunk highways are those that serve primarily local traffic, or traffic that begins and ends within the local municipality. The construction, operation, and maintenance of such facilities should be the function of the local level of government. Such arterial facilities typically operate at the lowest speeds, carry the lowest traffic volumes, serve trips of the shortest length, and serve land use activities of local interest.

Those arterial street facilities that are classified as county trunk highways are those that carry traffic between the various municipalities of a county--that is, traffic having origins and destinations within the county but within different municipalities of the county. The construction, operation, and maintenance of such facilities should be the function of the county level of government. Such arterial facilities typically operate at intermediate speeds, carrying intermediate traffic volumes, serving trips of intermediate lengths, and serving land use activities of countywide interest.

Those arterial facilities that are classified as state trunk highways are those that carry traffic between a county and other counties, and traffic that travels through the county. The construction, operation, and maintenance of such facilities should be the function of the state level of government. Such arterial facilities typically operate at the highest speeds, carry the highest traffic volumes, serve trips of the longest length, and serve land use activities of regional and statewide interest.

Based on the proposed changes in the recommended long-range arterial street system plan for the corridor, and on the amended long-range land use plan for the corridor, a number of changes in the proposed jurisdictional classification of the arterial street and highway system in the corridor are recommended. The new recommended jurisdictional classification for the recommended arterial street system plan is shown on Maps 53 and 54.

Table 35 presents the recommended improvements in the Blue Mound Road corridor and, based upon the recommended jurisdictional classification, identifies the unit and level of government proposed to be responsible for each improvement. The State of Wisconsin would be the primary agency responsible for about \$45.6 million in arterial street improvements in the corridor; Waukesha County would be the primary agency responsible for \$29.6 million in arterial street improvements; and the local units of government would be the primary agencies responsible for \$8.1 million in arterial street improvements.

SUMMARY AND CONCLUSIONS

This chapter has presented the recommended transportation plan for the Blue Mound Road corridor. Those streets within the corridor that are recommended to serve as arterials and carry through traffic are identified. The number of traffic lanes that is recommended to be provided on each segment of arterial facility in the corridor is identified, along with attendant arterial street improvements.

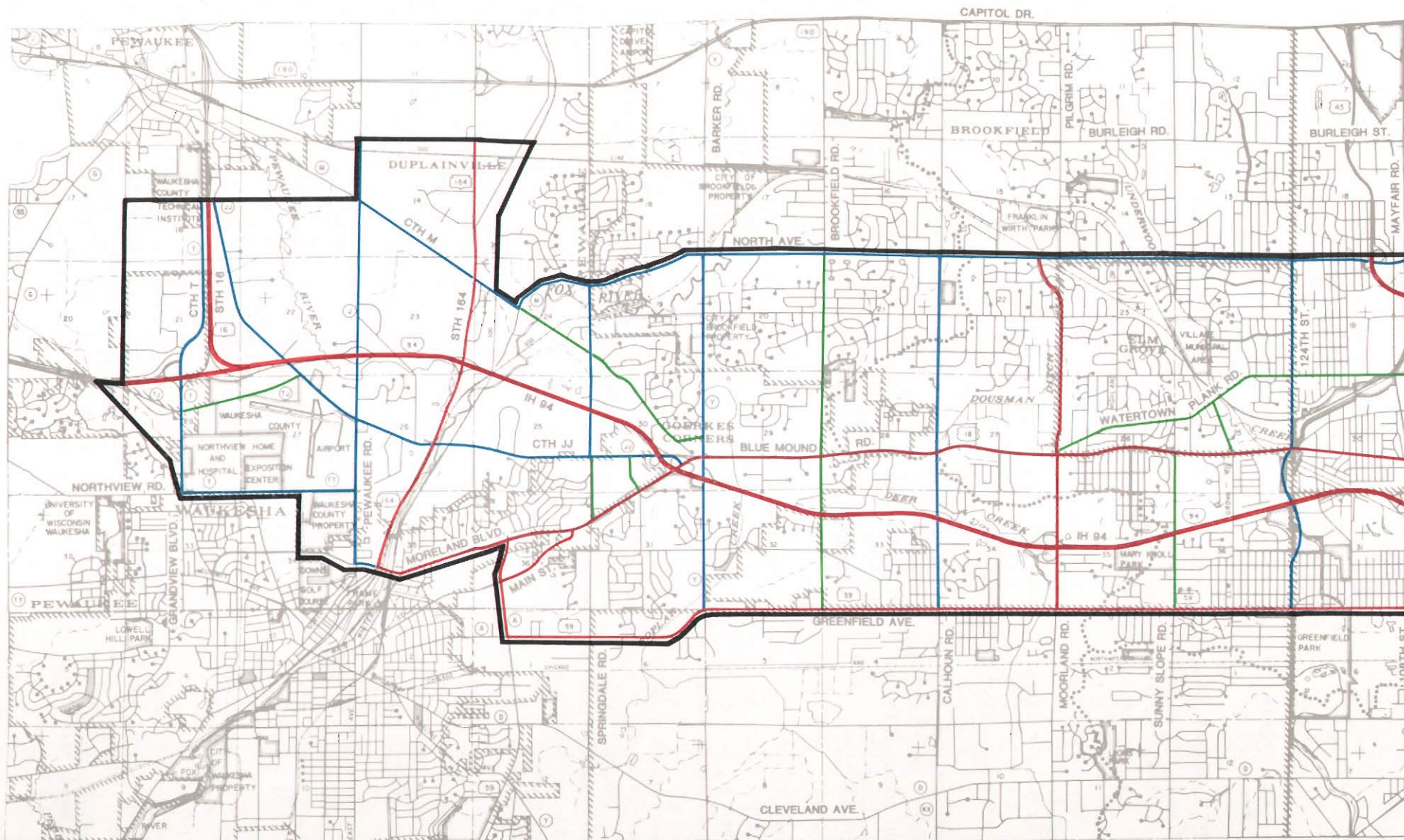
Implementation of these recommended improvements will permit each segment of arterial facility to carry average weekday traffic volumes that will not exceed their design capacity, and therefore will significantly abate traffic congestion to the year 2010.

The forecast year 2010 average weekday traffic on each segment of the arterial street system within the Blue Mound Road corridor is also presented in the chapter. These traffic volumes are based upon the resident population, household, and employment levels planned in the corridor in the year 2010, as well as in the remainder of southeastern Wisconsin. The traffic volumes reflect the final recommended land use plan recently adopted for a portion of the corridor by the City of Brookfield.

A Calhoun Road interchange is recommended for a number of reasons, including its potential to resolve the traffic problems of the Moorland Road interchange, lower costs, greater ease of use by motorists, better connection provided to the centroid of development between Moorland Road and Goerke's Corners, and its consistency with planned development, particularly in the City of New Berlin. The only disadvantage of a Calhoun Road interchange is that it would be expected to result in an increase in traffic in the year 2010 on Calhoun Road. However, roadway widening would be required on Calhoun Road by the year 2010 with or without an interchange.

The proposed arterial street system also includes certain arterial street extensions. These extensions include 124th Street from Watertown Plank Road to Greenfield Avenue; the removal of the jog in Pilgrim Road and Pilgrim Parkway at North Avenue; the extension of Brookfield Road south of the East-West Freeway (IH 94) to Greenfield Avenue; and the extension of Wisconsin Avenue as a collector facility from Moorland Road to Barker Road. Also recommended is the extension of collector streets paralleling the freeway from Barker Road to Calhoun Road. These extensions are intended to function as collector streets

RECOMMENDED JURISDICTIONAL CLASSIFICATION OF STREETS AND HIGHWAYS UNDER THE RECOMMENDED TRANSPORTATION SYSTEM PLAN: 2010



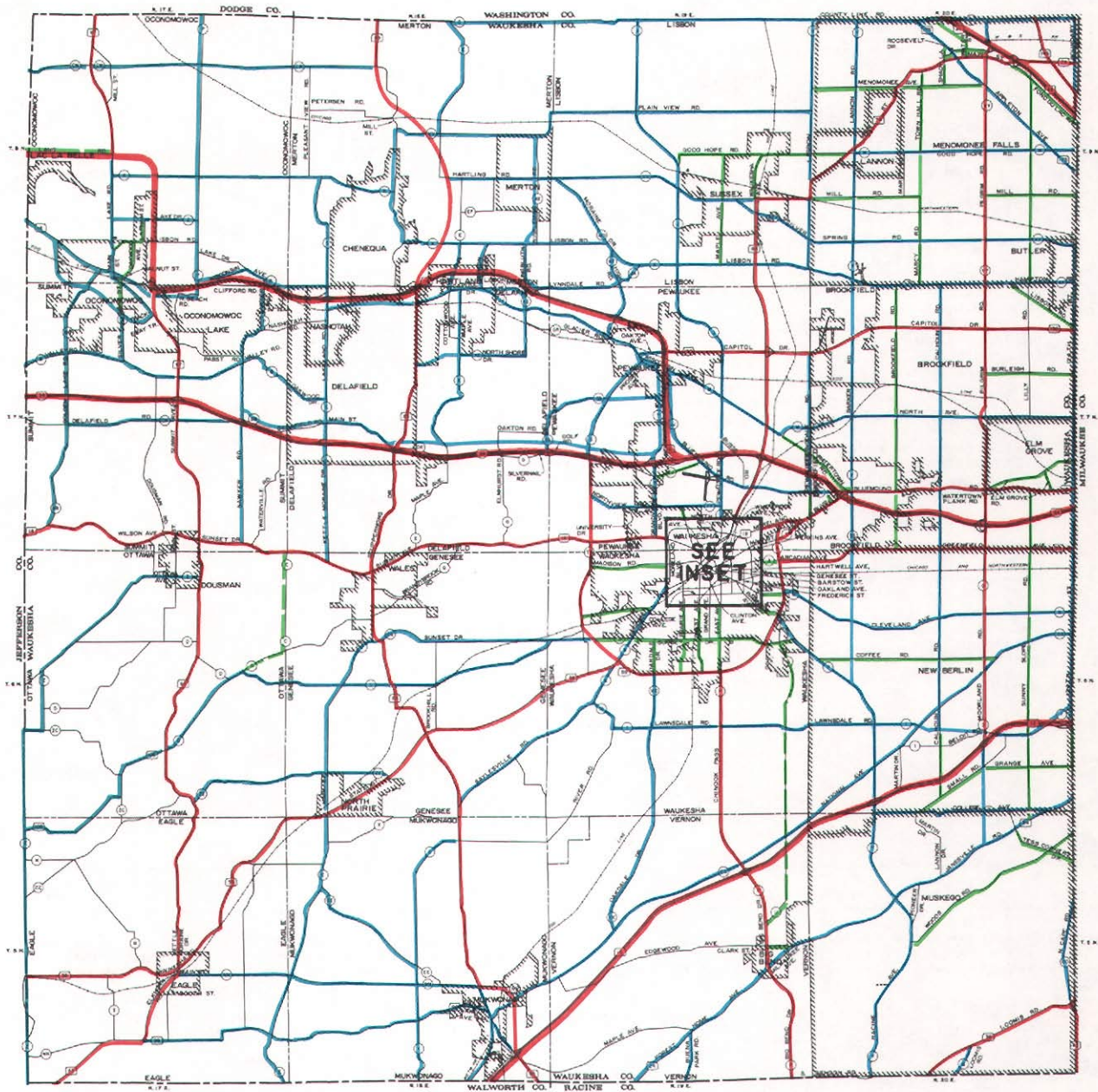
LEGEND

- STATE TRUNK HIGHWAY - FREEWAY
- STATE TRUNK HIGHWAY - NONFREEWAY
- COUNTY TRUNK HIGHWAY
- LOCAL TRUNK HIGHWAY



Map 54

RECOMMENDED JURISDICTIONAL CLASSIFICATION OF ARTERIAL STREETS AND HIGHWAYS IN WAUKESHA COUNTY UNDER THE RECOMMENDED TRANSPORTATION SYSTEM PLAN



LEGEND

- TYPE I ARTERIAL (FREEWAY-STATE TRUNK HIGHWAY)
- TYPE I ARTERIAL (STATE TRUNK HIGHWAY)
- TYPE II ARTERIAL (COUNTY TRUNK HIGHWAY)
- TYPE III ARTERIAL (LOCAL TRUNK HIGHWAY)
- - - PROSPECTIVE ARTERIAL

Source: SEWRPC.

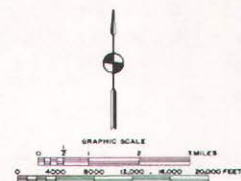


Table 35

**RECOMMENDED JURISDICTIONAL RESPONSIBILITIES FOR RECOMMENDED
ARTERIAL STREET IMPROVEMENTS UNDER THE ALTERNATIVE
TRANSPORTATION PLAN WITH A CALHOUN ROAD INTERCHANGE: 2010**

| Level of Government | Facility | Limits | Recommended Number of Traffic Lanes | Estimated Cost ^a |
|---------------------|---|--|-------------------------------------|-----------------------------|
| Local | Brookfield Road (City and Town of Brookfield) | Davidson Road to Greenfield Avenue | 2 | \$ 550,000 |
| | Sunnyslope Road (City of Brookfield)..... | Greenfield Avenue to USH 18 | 4 | 1,560,000 |
| | Wisconsin Avenue (City and Town of Brookfield)..... | Moorland Road to Barker Road | 2 | 3,410,000 |
| | Optional Collector Roadway Parallel to Freeway (Town and City of Brookfield)..... | Barker Road to Calhoun Road | 4 | 2,590,000 |
| | Subtotal | -- | -- | \$ 8,110,000 |
| County | Barker Road..... | IH 94 to North Avenue | 4 | \$ 2,040,000 |
| | Calhoun Road..... | Greenfield Avenue to USH 18 | 4 | 1,768,000 |
| | Calhoun Road..... | USH 18 to North Avenue | 4 | 1,640,000 ^b |
| | North Avenue..... | 124th Street to Barker Road | 4 | 7,380,000 ^b |
| | Pewaukee Road..... | Moreland Boulevard to City of Waukesha/Town of Pewaukee limits | 4 | 360,000 |
| | Springdale Road (City and Town of Brookfield and Town of Pewaukee)..... | CTH JJ to North Avenue | 4 | 1,800,000 |
| | 124th Street (Milwaukee and Waukesha Counties)..... | Greenfield Avenue to Watertown Plank Road | 2 | 2,310,000 |
| | CTH J..... | City of Waukesha/Town of Pewaukee limits to CTH M | 4 | 3,600,000 |
| | CTH T..... | Northview Road to CTH JJ | 6 | 4,920,000 ^b |
| | CTH JJ..... | Kossow Road to CTH J | 4 | 3,772,000 ^b |
| | Subtotal | -- | -- | \$29,590,000 |
| State | Main Street..... | USH 18 to CTH A | 4 | \$ 960,000 |
| | Moorland Road..... | USH 18 to Wisconsin Avenue | 6 | 328,000 ^b |
| | Moorland Road..... | Greenfield Avenue to USH 18 | 6 | 2,132,000 ^b |
| | Pilgrim Road..... | Wisconsin Avenue to North Avenue | 4 | 2,460,000 ^b |
| | CTH A..... | Main Street to STH 59 | 6 | 820,000 ^b |
| | USH 18..... | STH 100 to Moorland Road | 6 | 3,444,000 ^b |
| | USH 18..... | Moorland Road to Main Street | 8 | 8,148,000 ^b |
| | USH 18..... | Main Street to Manhattan Drive | 6 | 1,476,000 ^b |
| | STH 59..... | 124th Street to CTH A | 4 | 8,400,000 ^b |
| | STH 164..... | IH 94 to STH 190 | 4 | 2,143,000 ^b |
| | IH 94..... | STH 100 to CTH JJ | 8 | 9,400,000 |
| | Reconstruction of Goerke's Corners Interchange... | Barker Road to CTH JJ | -- | 2,880,000 |
| | New Interchange..... | Calhoun Road | -- | 3,040,000 |
| | Subtotal | -- | -- | \$45,631,000 |
| Total | | -- | -- | \$83,331,000 |

^aThe estimated cost of facility improvements assumes that the improvements may be constructed within the existing right-of-way, with the exception of the improvement of Calhoun Road between Blue Mound Road and Greenfield Avenue. An estimated right-of-way acquisition and preparation cost of \$3.8 million would be entailed under the recommended plan for this improvement.

^bBased upon forecast year 2010 traffic volumes, cost estimates of these improvements have assumed implementation of a divided roadway.

Source: SEWRPC.

serving urban development abutting the East-West Freeway (IH 94) and providing a needed collector and distribution function in the area, and removing traffic from Blue Mound Road. As an option, these collector facilities could be provided as arterials, or as one-way arterial frontage roads, rather than as two-way streets.

This chapter also presents the recommended jurisdictional classification for each recommended improvement in the Blue Mound Road corridor--that is, it identifies the unit and level of government proposed to be responsible for each improvement. The State of Wisconsin would be the primary agency responsible for about \$45.6 million in arterial street improvements in the corridor; Waukesha County would be the primary agency responsible for \$29.6 million in arterial street improvements; and the local units of government would be the primary agencies responsible for \$8.1 million in arterial street improvements.

Chapter V

SUMMARY AND CONCLUSIONS

This report presents a recommended transportation system plan for the Blue Mound Road (USH 18) corridor. That corridor is bounded by STH 100 on the east, W. Greenfield Avenue on the south, CTH T on the west, and W. North Avenue on the north. The transportation system plan identifies those streets and highways in the corridor that are proposed to function as arterials in the year 2010, and that will therefore have as a primary function the carrying of traffic within and through the corridor. The plan identifies all improvements to the arterial street system needed to meet current and probable future needs, including required new streets and street extensions; required street widenings to provide additional traffic lanes; and required freeway improvements, including additional freeway interchanges with the surface arterial street system. The design year of the plan is 2010.

The transportation system plan herein presented is based upon a land use plan also prepared for the design year 2010. The land use plan reflects local, as well as regional, development objectives and plans, and recent proposals for development in the corridor. For a portion of the corridor lying within the City of Brookfield, consideration was given to four alternative land use plans and a recommended land use plan, as identified by the City of Brookfield. Based on the final and alternative corridor land use plans, the plan design year 2010 levels of population, households, and employment within the corridor are identified, along with the person and vehicle trips which may be expected to be generated by the existing and planned land use development within the corridor, and the attendant traffic loadings on the arterial street and highway system within the corridor.

The land use and transportation system plans for the corridor were prepared by the Regional Planning Commission in response to specific requests made in August 1986 by the Mayor of the City of Brookfield and the Secretary of the Wisconsin Department of Transportation. The plans were requested because rapid changes in land development within the corridor were perceived as creating massive traffic congestion within the corridor and a need for extensive roadway improvements beyond those currently planned. The plan preparation effort was also needed to assist the City in considering alternative land use plans for a portion of the corridor, and to assist the Department in considering the need for additional interchanges on IH 94.

A Task Force was created by the Southeastern Wisconsin Regional Planning Commission to guide the conduct of the requested study. The Task Force was composed of elected and appointed officials representing each of the concerned and affected municipalities within the corridor, Waukesha County, and the Wisconsin Department of Transportation. The full membership of the Task Force is listed on the inside front cover of this report.

EXISTING AND FUTURE LAND USE

Urban land uses within the corridor increased from about 7,160 acres, or 33 percent of the corridor, in 1963, to about 12,160 acres, or 57 percent of the corridor, in 1985, a 5,000-acre, or 70 percent, increase over the 22-year period. The urban land use category that experienced the largest absolute gain was residential land use, which increased 2,700 acres--from about 5,900 acres in 1963 to about 8,600 acres in 1985. Retail service and office land uses experienced the largest percentage gain, almost 440 percent--from about 240 acres in 1963 to about 1,310 acres in 1985. Urban land uses in the corridor under planned conditions would increase significantly--by about 5,400 acres, or 45 percent, over existing 1985 levels. Thus, by the year 2010, urban land uses would total about 17,600 acres, or almost 82 percent of the total corridor acreage.

The corridor experienced substantial employment growth from 1963 to 1970, and from 1970 to 1980--increasing from 7,400 jobs in 1963 to 17,000 jobs in 1970, or by 130 percent, and then more than doubling to 36,200 jobs in 1980. From 1980 to 1985, employment in the corridor continued to increase significantly, to 47,300 jobs, a 30 percent increase. It is projected, based on the final recommended land use plan, that the number of jobs in the corridor will increase from 47,300 in 1985 to 90,500 by the year 2010, a near doubling again of jobs over that 25-year period.

The number of households in the corridor increased from 8,000 in 1963 to 10,400 in 1970, an increase of about 30 percent; and from 10,400 in 1970 to 13,500 in 1980, also an increase of about 30 percent. The number of households in the corridor remained almost unchanged between 1980 and 1985, but is expected to increase to 19,300 by the year 2010, an increase of about 5,500 households, or approximately 40 percent, over the 1985 level of 13,800 households.

The resident population of the corridor increased from 20,700 in 1963 to 38,900 in 1970, an increase of about 90 percent; and remained relatively stable from 1970 to 1985. The resident population of the corridor is forecast to increase modestly from 40,000 to 49,200 by the year 2010, an increase over the 25-year period of about 9,200 persons, or about 23 percent.

All subareas of the corridor are expected to experience increases in employment and households over the next 25 years. With the exception of the portion of the corridor east of Moorland Road, all subareas of the corridor are also expected to experience increases in resident population.

For that subarea of the corridor lying between Moorland Road and Calhoun Road, four alternative land use plans, and a recommended land use plan, were prepared by the City of Brookfield which vary in the type, intensity, and extent of area to be developed for urban uses. The four alternative land use plans differed primarily with respect to intensity of use, two proposing a higher density with a greater extent of office development, and two proposing lower densities with a greater extent of residential development. Also, one high-density plan and one low-density plan proposed the extension of Wisconsin Avenue between Moorland Road and Calhoun Road, and the development of lands adjacent to Wisconsin Avenue extended. All four alternative land use plans propose substantial increases in employment and households within the subarea of the corridor bounded by Moorland Road on the east, Greenfield Avenue on the south, Calhoun Road on the west, and North Avenue on the north.

The level of jobs in this subarea of the corridor, as envisioned under the alternative plans, would range from 24,100 under the low density-no Wisconsin Avenue extension alternative to 31,400 under the high density-Wisconsin Avenue extension alternative, for an increase in jobs within the area ranging from 12,700, or 110 percent, to 20,000, or 175 percent, over the 11,400 jobs in the subarea in 1985. Under the final recommended land use plan, there would be 27,800 jobs in the corridor subarea in the year 2010, an increase of 16,400 jobs, or 150 percent. The level of households in the subarea would range from 2,900 under the two high-density land use plans to 3,300 under the low density-Wisconsin Avenue extension alternative, increases of 700, or 30 percent, and 1,100, or 50 percent, over the 2,200 households in the subarea in 1985. Under the final recommended land use plan, there would be 3,500 households in the subarea in the year 2010, an increase of 1,300 households, or 60 percent. The level of population in the subarea would range from 7,500 persons under the two high-density land use plans to 8,600 persons under the low density-Wisconsin Avenue extension alternative, increases of 500, or 7 percent, and 1,600, or 23 percent, over the 7,000 persons in the subarea in 1985. Under the final recommended land use plan for the corridor subarea, there would be 9,200 households in the subarea in the year 2010, an increase of 2,200 households, or about 30 percent.

The person and vehicle trips which may be expected to be generated by the year 2010 under each of the four alternative land use plans for that portion of the corridor between Moorland Road and Calhoun Road were established. Under the four land use plans, the number of person trips generated on an average weekday in the year 2010 in the corridor subarea will range from 219,000 under the low density-no Wisconsin Avenue extension alternative to 250,000 under the high density-Wisconsin Avenue extension alternative. The former would result in an increase of about 70 percent in person trip generation in the corridor subarea over 1985 levels, and the latter in an increase of 95 percent. Under the final recommended land use plan for the corridor subarea, there would be 232,900 person trips generated per average weekday, an increase of 103,900 trips, or 80 percent. Expressed in terms of vehicle trips, which more directly relate to loadings on the arterial street system and resultant congestion and highway improvement needs, the extreme difference between the four land use plans would be about 30,000 trips per day, or about 15 percent. The final recommended plan would result in about 15,000 fewer vehicle trips in the subarea than the alternative plan generating the most trips, and about 15,000 more trips than the alternative plan generating the fewest trips.

The alternative and recommended land use plans are not expected to result in significantly different traffic volumes on arterial streets within the corridor. The differences generally range from 1,000 to 4,000 vehicles per average weekday, or under 10 percent of total forecast year 2010 weekday traffic volumes. These differences would not result in significantly reduced traffic congestion, and would not result in reduced needs for arterial street and highway improvements in the corridor.

ALTERNATIVE AND RECOMMENDED TRANSPORTATION PLANS

The resident population, households, and employment within the entire corridor in 1985 generated an estimated 507,400 person trip ends--that is, person trip origins and destinations--within the corridor on an average weekday. This

represents an increase of 323,000 trip ends, or 175 percent, over the 1963 level. Based on the forecast population, household, and employment levels in the corridor, person trip generation within the corridor may be expected to increase to 829,100 trip ends by the year 2010, an increase of approximately 321,700 trip ends, or about 65 percent, over the 25-year period.

Substantially less than 1 percent of the trips made within the corridor in 1985 were made by public transit, or about 1,000 trips on an average weekday. The adopted regional transportation system plan proposes an approximately fourfold increase in transit service in the corridor as measured by bus miles of service provided; however, the proportion of travel within the corridor that would be made by public transit, while forecast to triple to the year 2010, would still be expected to remain under 1 percent. Therefore, public transit may be expected to make only a very small contribution toward resolving highway traffic congestion problems.

Based upon a comparison of the most currently available average weekday traffic volume counts for each arterial street and highway in the Blue Mound Road corridor to their design capacity, substantial segments of arterials were determined to be carrying traffic volumes exceeding or approaching their design capacity, and therefore experiencing congestion. Such arterials include the segment of Blue Mound Road and Moreland Boulevard (USH 18) from STH 100 to CTH A; Greenfield Avenue (STH 59) from 124th Street to Calhoun Road; North Avenue from 124th Street to Calhoun Road; the East-West Freeway (IH 94) from STH 100 to Moorland Road; Pilgrim Parkway from Watertown Plank Road to North Avenue; and Main Street from Moreland Boulevard to CTH A. The adopted regional transportation plan has long recommended the provision of additional traffic capacity on these roadway segments. Little action, however, has been taken by local, county, and state governments to carry out the recommended improvements. Yet development of the lands that are served by these facilities has been encouraged, and has occurred at even higher rates than planned or forecast.

Forecast year 2010 average weekday traffic volumes on the arterial street system in the Blue Mound Road corridor were developed based upon the forecast population, household, and employment levels. Those arterial segments which, based upon the forecasts, may be expected to carry average weekday traffic volumes exceeding their design capacity were identified. Also identified were those arterial segments which may be expected to carry traffic volumes approaching their design capacity. Additional segments of arterial facilities expected to experience severe traffic congestion in the year 2010 if no improvements are made include Greenfield Avenue (STH 59) from Calhoun Road to CTH A; the East-West Freeway (IH 94) from Moorland Road to the Goerke's Corners interchange; North Avenue from Calhoun Road to Barker Road; Sunnyslope Road from Greenfield Avenue (STH 59) to Blue Mound Road (USH 18); Moorland Road from Greenfield Avenue (STH 59) to Watertown Plank Road; Calhoun Road from Greenfield Avenue (STH 59) to North Avenue; Pewaukee Road from Moreland Boulevard to CTH M; and CTH T from Northview Road to CTH JJ. In addition, traffic congestion on segments of arterial roadways already experiencing congestion may be expected to become worse, particularly on Blue Mound Road and Moreland Boulevard (USH 18) from 124th Street to CTH A; Greenfield Avenue from 124th Street to Calhoun Road; and North Avenue from 124th Street to Calhoun Road.

The arterial street improvements that may be expected to be required by the year 2010 to resolve the identified traffic congestion problems were

identified. In addition, the implications of new interchanges on the East-West Freeway (IH 94) between STH 100 and STH 164 on average weekday traffic volumes and the need for improvement of arterial streets in the corridor were investigated. Between the Goerke's Corners and STH 164 interchanges, one alternative location for a new interchange--Springdale Road--was considered. This interchange was not recommended. The new interchange would have been expected to disrupt the operation of the Goerke's Corners interchange. In addition, the direct benefits of the interchange--including the potential to provide for more direct routing, to improve transportation safety, and to reduce vehicle operating costs--were found to be substantially less than its direct costs.

Between STH 100 and Moorland road, two alternative interchange locations were identified and evaluated--an interchange at Sunnyslope Road and an interchange at 124th Street. The interchange at Sunnyslope Road was determined to constitute a marginal improvement, with its benefits only slightly exceeding its costs. This interchange location was not recommended. The direct benefits of the alternative interchange location at 124th Street were determined to exceed its costs. However, because this interchange would provide only limited relief to existing freeway interchanges and surface arterial facilities, it was also not recommended. Thus, no additional interchange between STH 100 and Moorland Road was recommended.

Between Moorland Road and Goerke's Corners, four alternative interchange locations were identified and evaluated--a Calhoun Road interchange, a Brookfield Road interchange, a split diamond interchange with half provided at Calhoun Road and the other half at Brookfield Road, and an interchange location midway between Calhoun Road and Brookfield Road. The latter alternative interchange was rejected as its benefits would not exceed its cost. Also, the cost of this interchange alternative would be expected to be substantially higher than that of any of the other alternative interchanges, and yet this interchange would be expected to remove less traffic from congested facilities than some of the other alternative interchanges. Commission staff analyses concluded that three of the interchange alternatives considered--the Calhoun Road interchange, the Brookfield Road interchange, and the split diamond interchange--could all be considered good transportation improvements. Each of these alternatives would provide substantial direct travel benefits of improved travel safety, reduced travel costs, and reduced travel time that would exceed the direct costs of the interchange.

Without a new freeway interchange between the Moorland Road and the Goerke's Corners interchanges, the average weekday traffic volumes on Blue Mound Road and Moorland Road in the City of Brookfield may be expected to approach 45,000 vehicles. These volumes would substantially exceed the traffic volumes currently carried on any stretch of arterial street or highway in the Milwaukee area for any substantial distance. In addition, even with the widening of major stretches of these roadways to eight traffic lanes, the traffic volumes carried per lane on these facilities by the year 2010 and the attendant traffic congestion would begin to approach unacceptable conditions. Further widening of these and other facilities, and reconsideration of a new freeway interchange, would probably be necessary again before the year 2010. Also, by the year 2010, the Moorland Road interchange on IH 94, which today is heavily loaded, may be expected to carry a 50 percent increase in average weekday traffic volumes, and to require substantial reconstruction.

The principal advantage of the arterial system plans with the Calhoun Road and split diamond interchanges over the plan calling for a Brookfield Road interchange is that they would provide greater relief to the existing Moorland Road interchange, permitting the Moorland Road interchange to carry its current average weekday traffic volume in the plan design year. The Moorland Road interchange and Moorland Road between Greenfield Avenue and Blue Mound Road would require widening by the year 2010 under the Brookfield Road interchange plan, but not under the Calhoun Road or split diamond interchange plans.

The principal disadvantage of the arterial system plans with the Calhoun Road and split diamond interchanges is that they would result in a substantial increase in traffic on Calhoun Road between Blue Mound Road and Greenfield Avenue by the year 2010. The advantage of the Brookfield Road interchange system plan is that it would not result in an increase in traffic on Calhoun Road in the year 2010 beyond the traffic expected under a no-new-interchange plan.

Comparison of the Calhoun Road interchange alternative system plan to the split diamond interchange plan indicates that the two plans are generally similar with respect to relief provided to existing freeway interchanges, traffic volumes on arterial facilities in the corridor, and attendant improvements required on those facilities. A major advantage of the Calhoun Road interchange is that it could accommodate a new two-way collector or arterial roadway paralleling the freeway rather than a system of one-way frontage roads. The two-way roadway would provide better access to high-density development in the corridor, and could be better integrated with existing and future development. Another advantage of the Calhoun Road interchange is that it would be easier for motorists to understand than a split diamond interchange. The incremental cost of the Calhoun Road interchange of \$3.2 million is substantially less than the incremental cost of \$6.3 million of the split diamond interchange. Another major advantage of the Calhoun Road interchange plan is that it is consistent with, and would serve to implement, the City of New Berlin land use plan, which seeks to direct urban land use development to areas in the City east of Calhoun Road, and to limit such development west of Calhoun Road. Another advantage of the Calhoun Road interchange is that it would connect the freeway to an arterial with both north and south continuity. Accordingly, the Commission staff and the Task Force recommended adoption of the arterial system plan that provides for an interchange at Calhoun Road.

The recommended transportation plan for the Blue Mound Road corridor also identifies those streets within the corridor which should serve as arterials and carry through traffic. The number of traffic lanes that is recommended to be provided on each segment of arterial facility in the corridor is identified on Map 49 and in Table 34 in Chapter IV, along with attendant arterial street improvements.

Implementation of these recommended improvements will permit each segment of arterial facility to carry average weekday traffic volumes that will not exceed its design capacity, and therefore will significantly abate traffic congestion to the year 2010. The year 2010 average weekday traffic volumes forecast to be carried on each segment of the arterial street system within the Blue Mound Road corridor are presented on Map 50 in Chapter IV. These volumes are based upon the resident population, household, and employment levels planned in the corridor as well as in the remainder of southeastern Wisconsin, in the year 2010. The traffic volumes reflect the final recommended land use plan recently adopted for a portion of the corridor by the City of Brookfield.

The proposed arterial street system also includes certain arterial street extensions. These extensions include 124th Street from Watertown Plank Road to Greenfield Avenue; the removal of the jog in Pilgrim Road and Pilgrim Parkway at North Avenue; the extension of Brookfield Road south of the East-West Freeway (IH 94) to Greenfield Avenue; and the extension of Wisconsin Avenue as a collector facility from Moorland Road to Barker Road. Also recommended is the extension of collector streets paralleling the freeway from Barker Road to Calhoun Road. These extensions are intended to function as collector streets serving urban development abutting the East-West Freeway (IH 94) and providing a needed collector and distribution function in the area, and removing traffic from Blue Mound Road. As an option, these collector facilities could be provided as arterials, or as one-way arterial frontage roads, rather than as two-way streets.

Recommendations have also been made for the jurisdictional classification of each recommended improvement in the Blue Mound Road corridor--that is, the unit and level of government which should be responsible for each improvement. The State of Wisconsin would be the primary agency responsible for about \$45.6 million in arterial street improvements in the corridor; Waukesha County would be the primary agency responsible for \$29.6 million in arterial street improvements; and the local units of government would be the primary agencies responsible for \$8.1 million in arterial street improvements.