

Environmental Assessment

for

I-94 Corridor

Interchange Improvements

Racine and Kenosha Counties

Project I.D. 1032-07-05

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Approvals

determined, after review of the EA and comments from the public others, that this action would not significantly affect the environment. This document is a Finding of No Significant Impact (FNIS).

Environmental Assessment No Significant Impacts Indicated by Initial Assessment

Env. Report (2-ER)

Environmental Assessment EIS Required

Programmatic Env. Report (2-pER)

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Wisconsin Department of Transportation

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	<input type="checkbox"/> Environmental Assessment EIS Required	<input type="checkbox"/> Programmatic Env. Report (2-pER)
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Description of Proposed Action

Location And Termini

The project area is located on Interstate 94 (I-94) in Kenosha and Racine Counties in southeastern Wisconsin (Figure 1). The south terminus is the State Trunk Highway (STH) 165 interchange in Kenosha County, and the north terminus is the 27th Street/U.S. Highway (USH) 41 interchange in Racine County. The distance between these interchanges is approximately 35 kilometers (22 miles).

Proposed Action

The proposed action is to upgrade the interchanges along I-94 in Racine and Kenosha Counties to current design standards, including separating frontage roads and interchange ramps. The scope of the I-94 Corridor Study includes evaluating deficiencies at the existing interchanges, developing a recommended improvement alternative for each interchange, preparing long-range functional plans, and prioritizing a future interchange reconstruction schedule. The study includes the following interchanges: STH 165¹, CTH C, STH 50, STH 158, STH 142, and CTH E in Kenosha County; CTH KR at the Kenosha-Racine County line; and STH 11, STH 20, CTH K, CTH G, 7 Mile Road, and 27th Street/USH 41 in Racine County. Additional information about the proposed action is provided in the Purpose and Need discussion (see page 3).

Following the environmental analysis of the proposed improvements, WisDOT will complete the preliminary and final design of the proposed improvements. However, the timing of the reconstruction of the interchanges is uncertain. As mentioned above WisDOT, in conjunction with local governments, will prioritize the order in which the interchanges are reconstructed. The prioritization will be based on several factors: 1) existing or expected safety problems at the interchanges; 2) existing or expected capacity or operational problems; 3) physical deterioration of bridges and roadways at the interchanges; 4) jurisdiction of the interchanging crossroad; 5) existing or expected geometric deficiencies; and 6) total construction cost. The established priority should not be viewed as fixed over time. Changing conditions and unforeseen events may affect the prioritization.

After the interchanges are prioritized, construction will be triggered by several factors, including the availability of funding, the severity of existing deficiencies, the location and extent of development in the interchange, and traffic volume increases.

Relationship To Other Proposed Future Actions

The Southeastern Wisconsin Regional Planning Commission's (SEWRPC) *Land Use and Transportation System Development Plan for the I-94 South Freeway Corridor*, and *Regional Transportation System Plan for Southeastern Wisconsin: 2010* contain recommendations that relate to upgrading the existing I-94 interchanges in Kenosha and Racine Counties. These recommendations are summarized on the next page.

¹ The STH 165 interchange is not planned for improvement as part of this study because the recent interchange reconstruction project separated frontage roads and ramps, and generally improved the interchange to current design standards. The interchange, particularly the Visitors' Center in the southeast quadrant, will be evaluated for possible operational improvements by WisDOT independent of this study.

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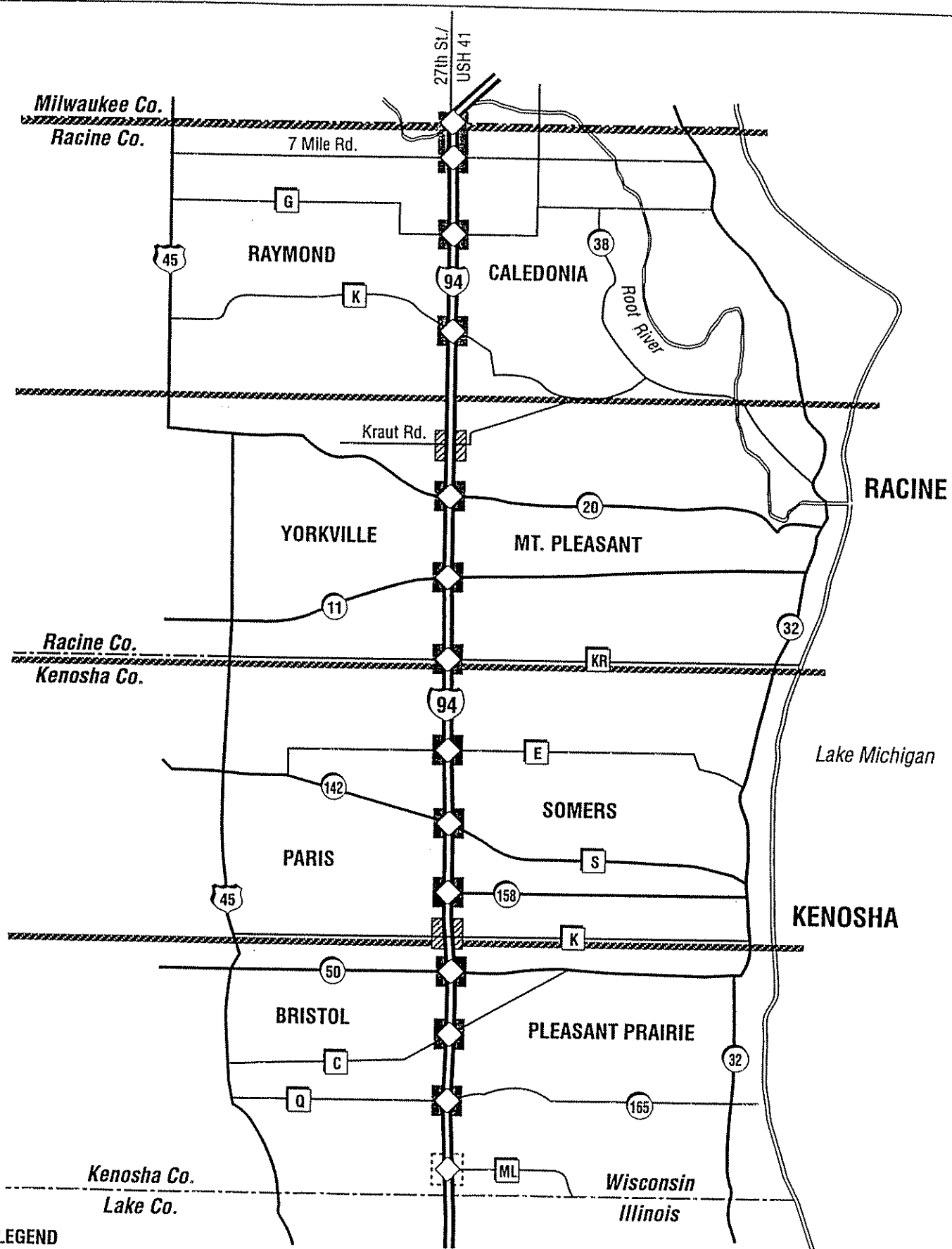
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LEGEND

- Interchange Study Areas
- Being Studied by Others
- Per SEWRPC Plan – Possible Future Interchanges not to be Precluded by I-94 South Corridor Study

FIGURE 1
Project Location
 I-94 CORRIDOR STUDY
 RACINE AND KENOSHA COUNTIES



Both plans call for possible future expansion of the I-94 mainline to eight travel lanes. Specifically, the *Regional Transportation System Plan* states: "As improvements are made to IH 94, the frontage roads along IH 94, and the highway facilities which interchange with or cross IH 94, the ultimate improvement of IH 94 to eight travel lanes should be taken into consideration." The interchange improvement alternatives developed during the present study neither necessitate nor preclude future options for expanding the I-94 mainline to eight travel lanes.

Both plans acknowledge the possibility of a future interchange at CTH K in Kenosha County (between the existing STH 50 and STH 158 interchanges). Specifically, the *Regional Transportation System Plan* states: "As improvements are made to IH 94 and the frontage roads along IH 94 in the vicinity of CTH K, the ultimate provision of an interchange with CTH K should be taken into consideration." The interchange alternatives developed at STH 50 and STH 158, for the present study, neither necessitate nor preclude the possibility of a future interchange at CTH K. While the present study does not involve developing and evaluating alternatives for a new interchange at CTH K, sketch layouts have been provided to Kenosha County, at their request, for use in responding to inquiries from interested persons.

Both plans acknowledge the possibility of a future new interchange in the vicinity of CTH C and Kraut Road in Racine County (between the existing STH 20 and CTH K interchanges). Specifically, the *Regional Transportation System Plan* states: "As improvements are made to IH 94 and the frontage roads along IH 94 in the vicinity of CTH C, the ultimate relocation of CTH C about one-half mile to the north and the provision of a new interchange with IH 94 at that location (Kraut Road) should be taken into consideration." The interchange alternatives developed at STH 20 and CTH K under the present study neither necessitate nor preclude the possibility of a future interchange at Kraut Road. While the present study did not develop and evaluate alternatives for a new interchange at Kraut Road, preliminary interchange layouts have been provided to Racine County, at their request, for use in responding to inquiries from interested persons.

Purpose and Need for Proposed Action

Purpose of Proposed Action

The purpose of the I-94 Corridor Study is to develop long-range functional plans for upgrading the existing interchanges in Racine and Kenosha Counties. The functional plans will illustrate the recommended interchange improvements including ramp, frontage road, and service road locations. They will also identify proposed access to serve adjacent land uses and crossroad improvements. The functional plans will serve as a "blueprint" to guide planned development over a 25-year planning period (through Year 2020), and to preserve the necessary right-of-way for future transportation use.

Need for Proposed Action

The need to develop long-range interchange improvement plans is based on a combination of factors relating to planned development/transportation demand, existing and forecast traffic, and existing interchange deficiencies. A key deficiency this study will address is separating I-94 ramps and frontage roads. The remainder of this section discusses these need factors. Together, the purpose of and need for the proposed action shape the solutions presented in Alternatives (see page 6).

Planned Development/Transportation Demand

The *Land Use and Transportation System Development Plan for the IH 94 South Freeway Corridor* was prepared and adopted in response to rapidly changing economic and land use conditions along the I-94 corridor in Racine and Kenosha Counties. This Plan was prepared by SEWRPC in 1991 with assistance from an Intergovernmental Coordinating and Technical Advisory Committee. The Plan recommends desirable land use patterns and transportation system improvements that will guide local municipalities in making development decisions. More specifically, the Plan seeks to locate new commercial and industrial development at acceptable locations along I-94 to avoid unplanned strip development. It is also intended to serve as a basis for future infrastructure expansion.

The SEWRPC land use plan is based on an "intermediate growth scenario" for Racine and Kenosha Counties. However, during its preparation, the Advisory Committee directed that additional commercial and industrial land reserves be included in the adopted plan to accommodate possible development that more closely resembles an "optimistic growth scenario". The project-area interchanges are identified in Appendix A – Existing Interchange Summary.

The land use plan's future growth and development assumptions were made in 1990 for the 20-year period through Year 2010. The plan assumed the I-94 corridor would experience a 17-percent population increase, a 28-percent increase in the number of households, a 196-percent increase in employment, and a 15-percent increase in urban land uses between 1985 and 2010². The forecasted large increase in employment is based mostly on existing and planned growth in the Kenosha County portion of the I-94 corridor. In 1985, there were 4,600 jobs in the Kenosha County portion of the corridor. This number is expected to

² Source: SEWRPC Planning Report No. 200, *A Land Use and Transportation System Development Plan for the IH 94 South Freeway Corridor*, 1991.

increase to 19,300 jobs by 2010. Employment in the Racine County portion of the I-94 corridor is expected to increase from 6,500 jobs in 1985 to 13,600 jobs in 2010. Most existing and planned large-scale development in the corridor occurred after 1985 (Lakeside Market, Factory Outlet Center, LakeView Corporate Park). The large discrepancy between the projected population increase and the employment increase would be caused by the large number of people that work in the I-94 Corridor, but live in Racine, Kenosha, Milwaukee, and other areas outside the study corridor.

Based on these growth and development trends, SEWRPC recommended transportation system improvements to the I-94 corridor in Racine and Kenosha Counties, including upgrading the existing interchanges. To accomplish these improvements, SEWRPC recommended that the Wisconsin Department of Transportation (WisDOT), in consultation with affected municipalities, conduct the necessary engineering and environmental studies to develop specific alternatives. The present I-94 Corridor Study carries out this recommendation.

Existing and Forecast Traffic

Existing (1994) and forecast (2020) Average Daily Traffic (ADT) volumes for Kenosha and Racine Counties are shown on Figures 2 and 3, respectively. Forecast traffic volumes are based on the information listed below³.

Forecast traffic for year 2020 uses SEWRPC's intermediate growth scenario for the I-94 corridor. Expected traffic growth on the I-94 mainline, crossroads, frontage roads, and ramps is described below. Additional information on traffic at the individual interchanges is provided in Appendix A -- Existing Interchange Summary.

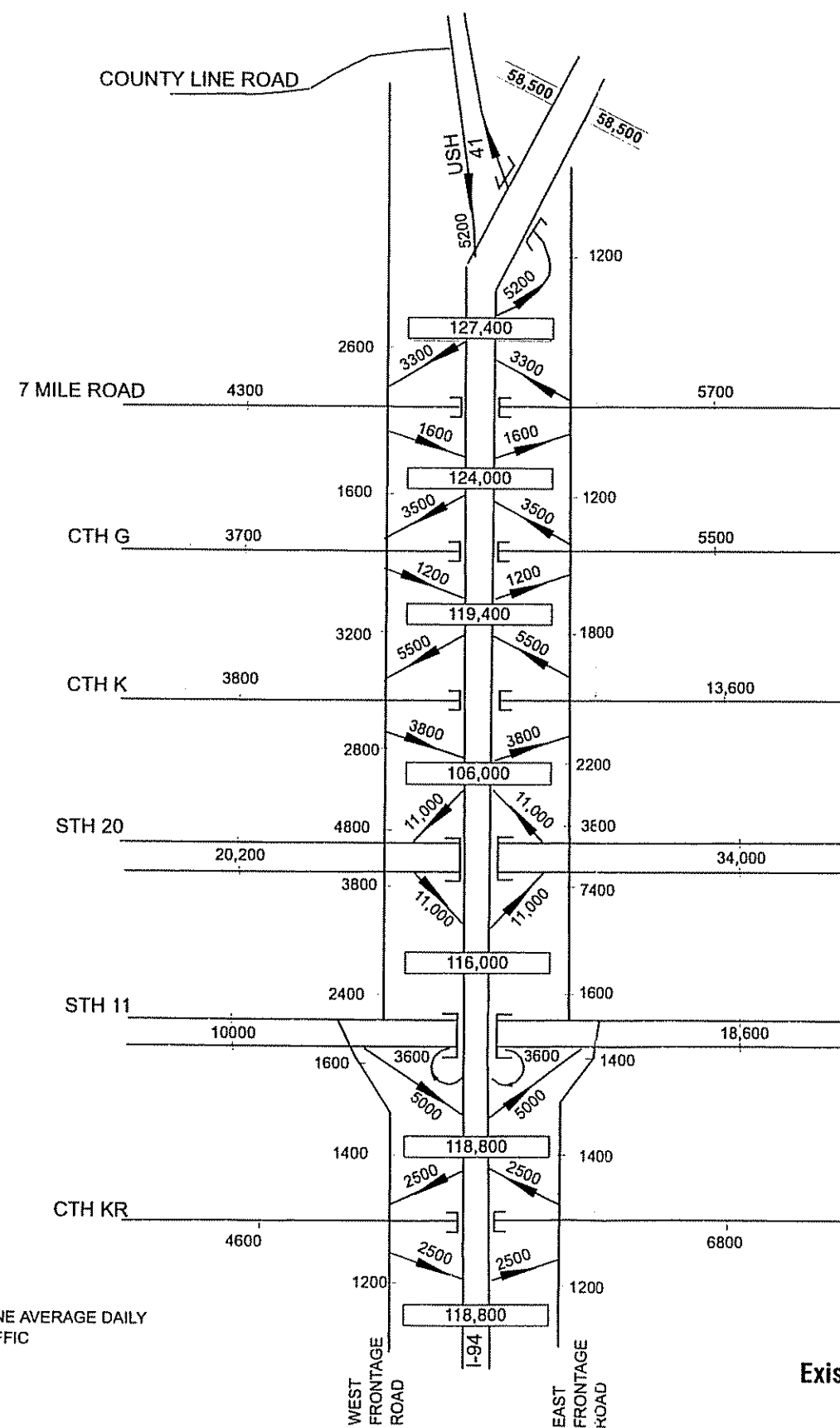
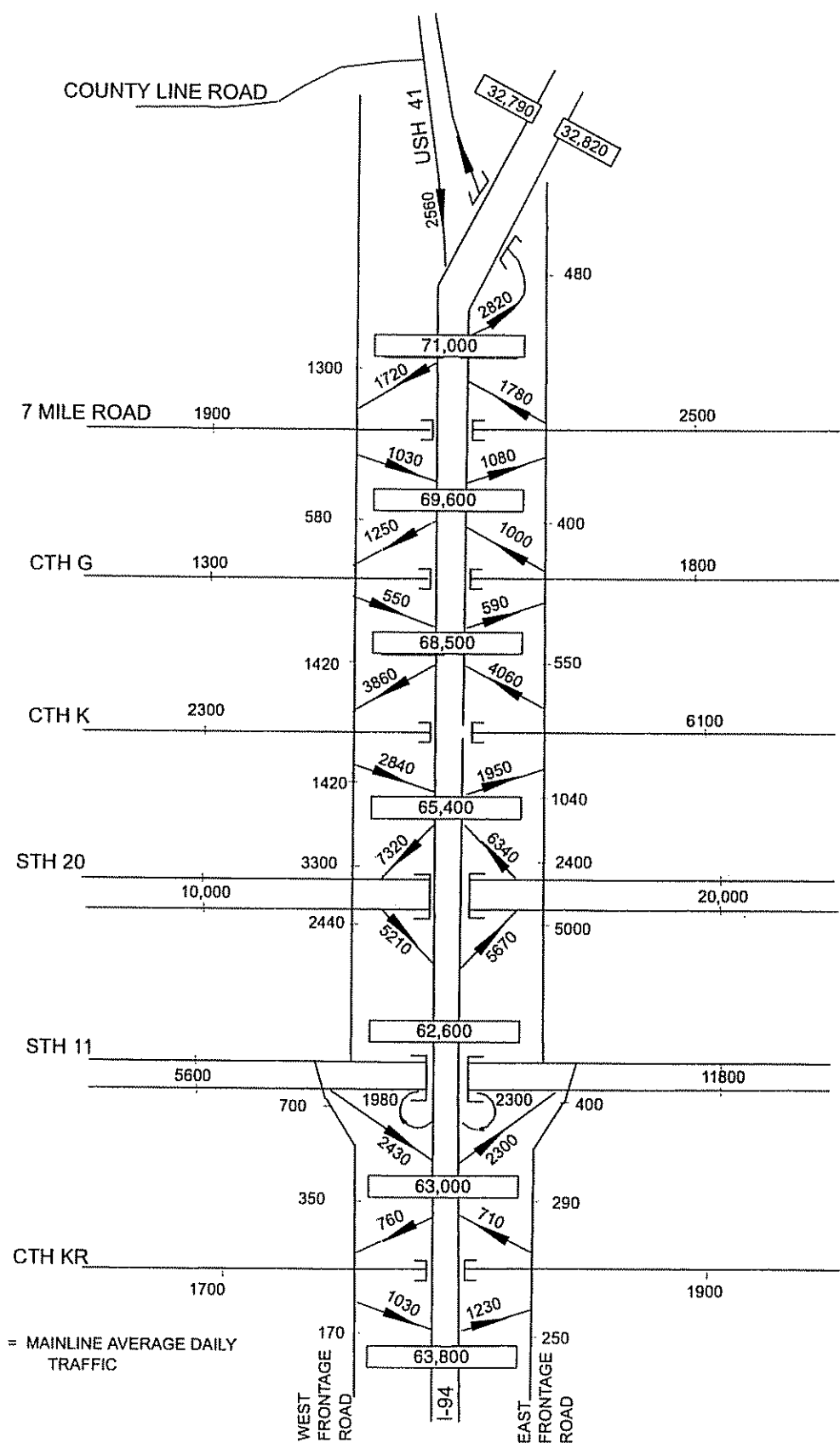
- Year 2020 traffic on the I-94 mainline is expected to range from 101,200 vehicles per day (vpd) between the STH 50 and STH 158 interchanges (Kenosha County) to 127,400 vpd between the 7 Mile Road and 27th Street/USH 41 interchanges (Racine County). This is an increase of approximately 70 percent and 80 percent, respectively, over existing traffic.
- Year 2020 traffic on the crossroads is expected to range from 3,000 vpd on CTH E west of I-94 (Kenosha County) to 47,000 vpd on STH 50 west of I-94 (Kenosha County). This is an increase of approximately 330 percent and 120 percent, respectively, over existing traffic.
- Year 2020 traffic on the frontage roads is expected to range from 1,200 vpd on the east frontage road between the CTH G and 27th Street/USH 41 interchanges (Racine County) to 5,800 vpd on the east frontage just north of STH 50 (Kenosha County). This is

³Resource documents for traffic forecasts included the following:

- *A Land Use and Transportation System Development Plan for the I-94 South Freeway Corridor; Kenosha, Milwaukee, and Racine Counties*, Report No. 200, SEWRPC, December 1991.
- *Metro 2020 Traffic Data*, WisDOT, 1992.
- *Historical Traffic Data*, WisDOT, 1978-1994.
- *I-94 Corridor Study, Existing and Daily Peak Hour Traffic Assignments*, HNTB, 1994.

Existing 1994 Average Daily Traffic

Year 2020 Average Daily Traffic Projection



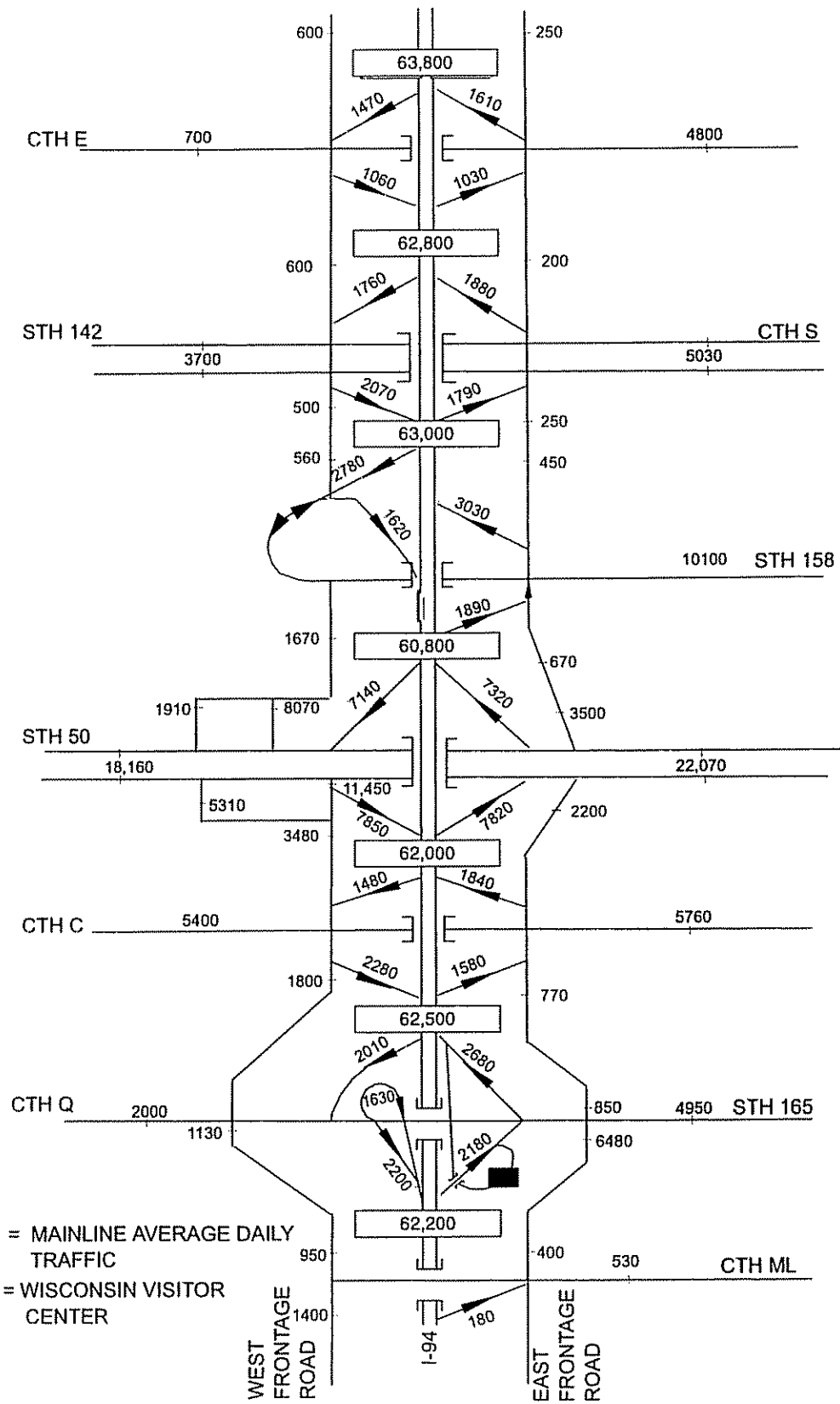
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0000 = MAINLINE AVERAGE DAILY TRAFFIC

LEGEND
0000 = MAINLINE AVERAGE DAILY TRAFFIC

FIGURE 2
 Existing and Future Traffic
 Racine County
 I-94 CORRIDOR STUDY
 RACINE AND KENOSHA COUNTIES



Existing 1994 Average Daily Traffic



Year 2020 Average Daily Traffic Projection

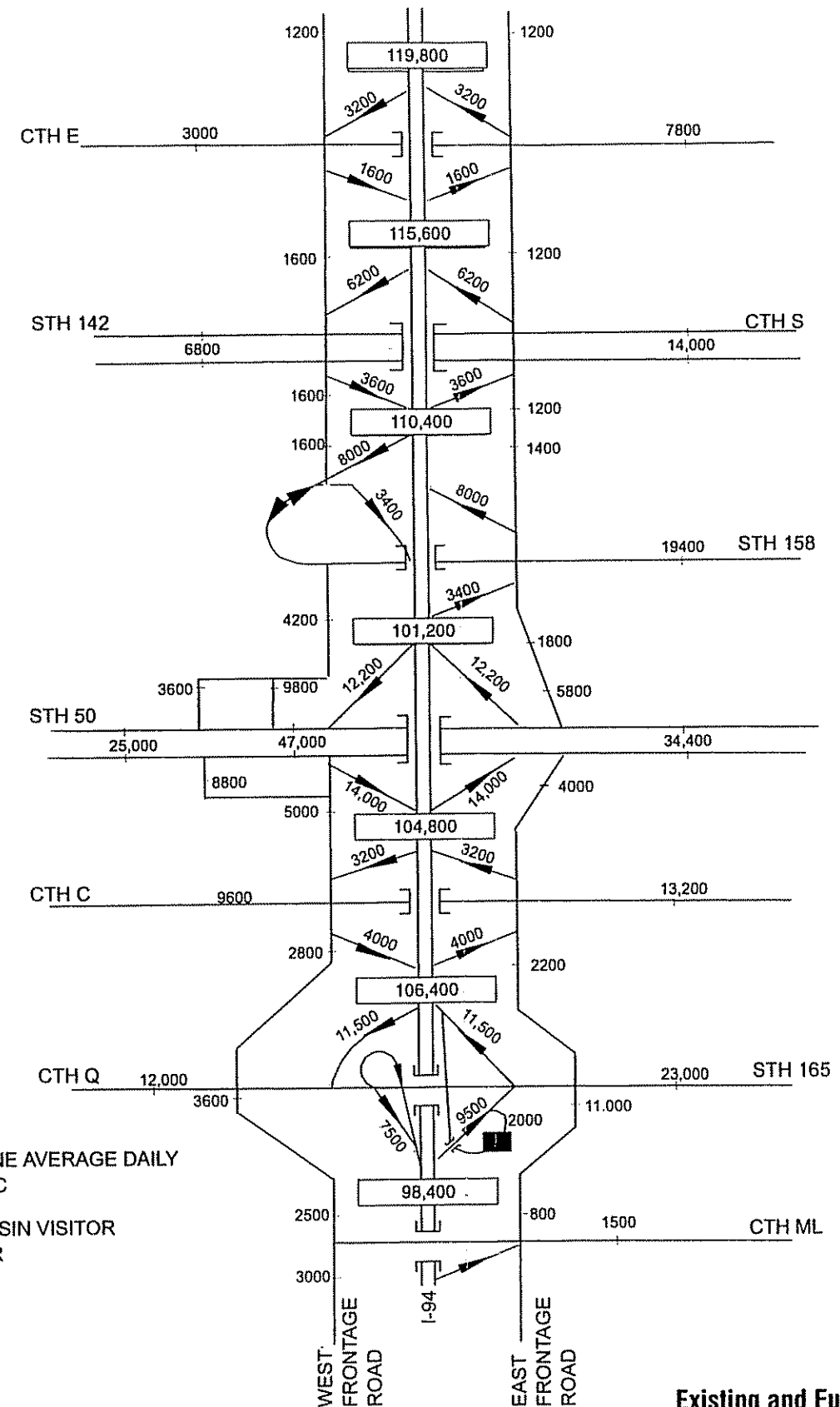


FIGURE 3
 Existing and Future Traffic
 Kenosha County
 I-94 CORRIDOR STUDY
 RACINE AND KENOSHA COUNTIES



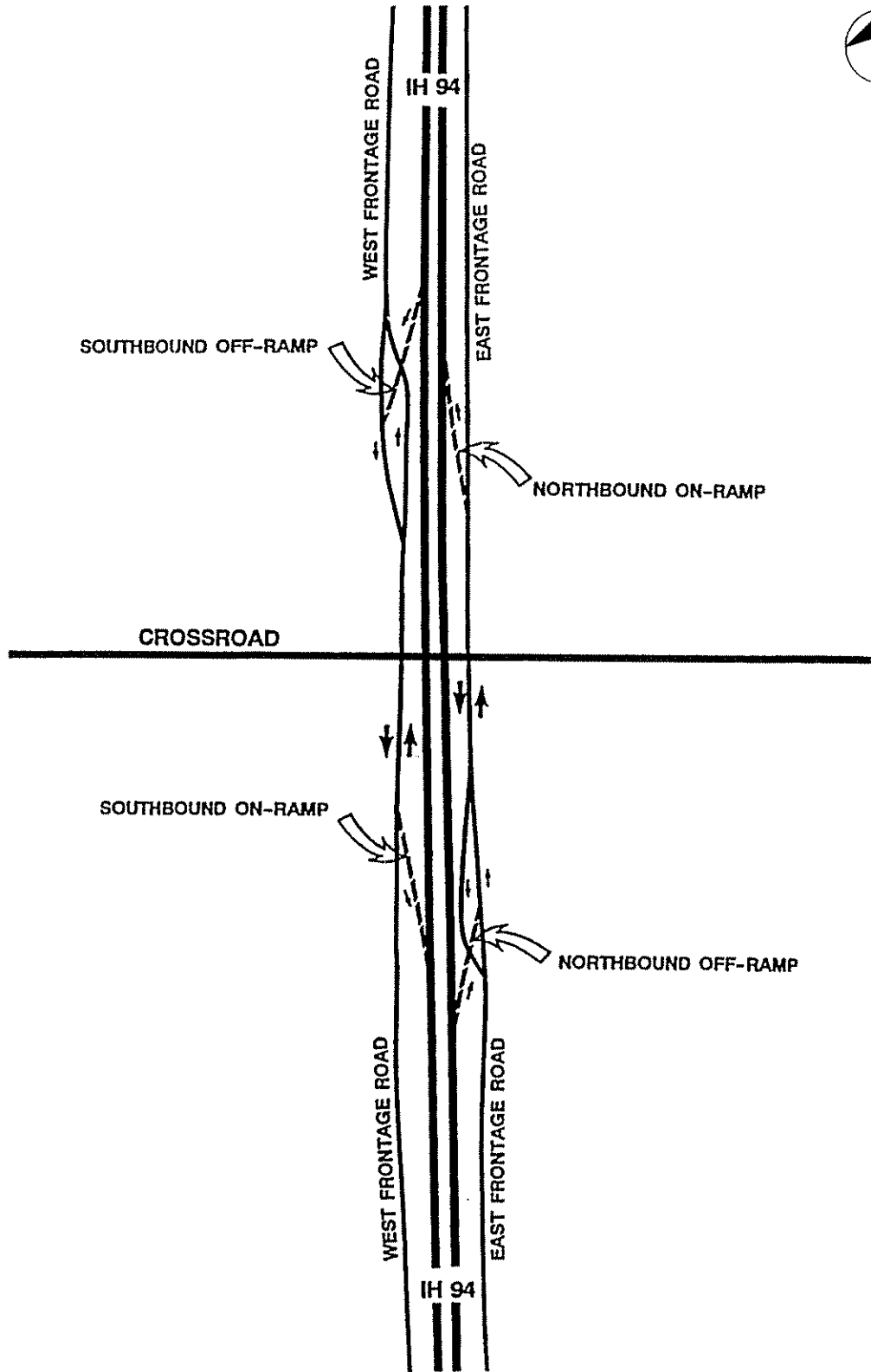


FIGURE 4
Typical Existing Braided Interchange
I-94 CORRIDOR STUDY
RACINE AND KENOSHA COUNTIES



an increase of approximately 200 percent and 70 percent, respectively, over existing traffic.

- Year 2020 traffic on the ramps is expected to range from 1,200 vpd at the CTH G northbound off-ramp (Racine County) to 14,000 vpd at the STH 50 southbound on-ramp (Kenosha County). This is an increase of approximately 100 percent and 80 percent, respectively, over existing traffic.

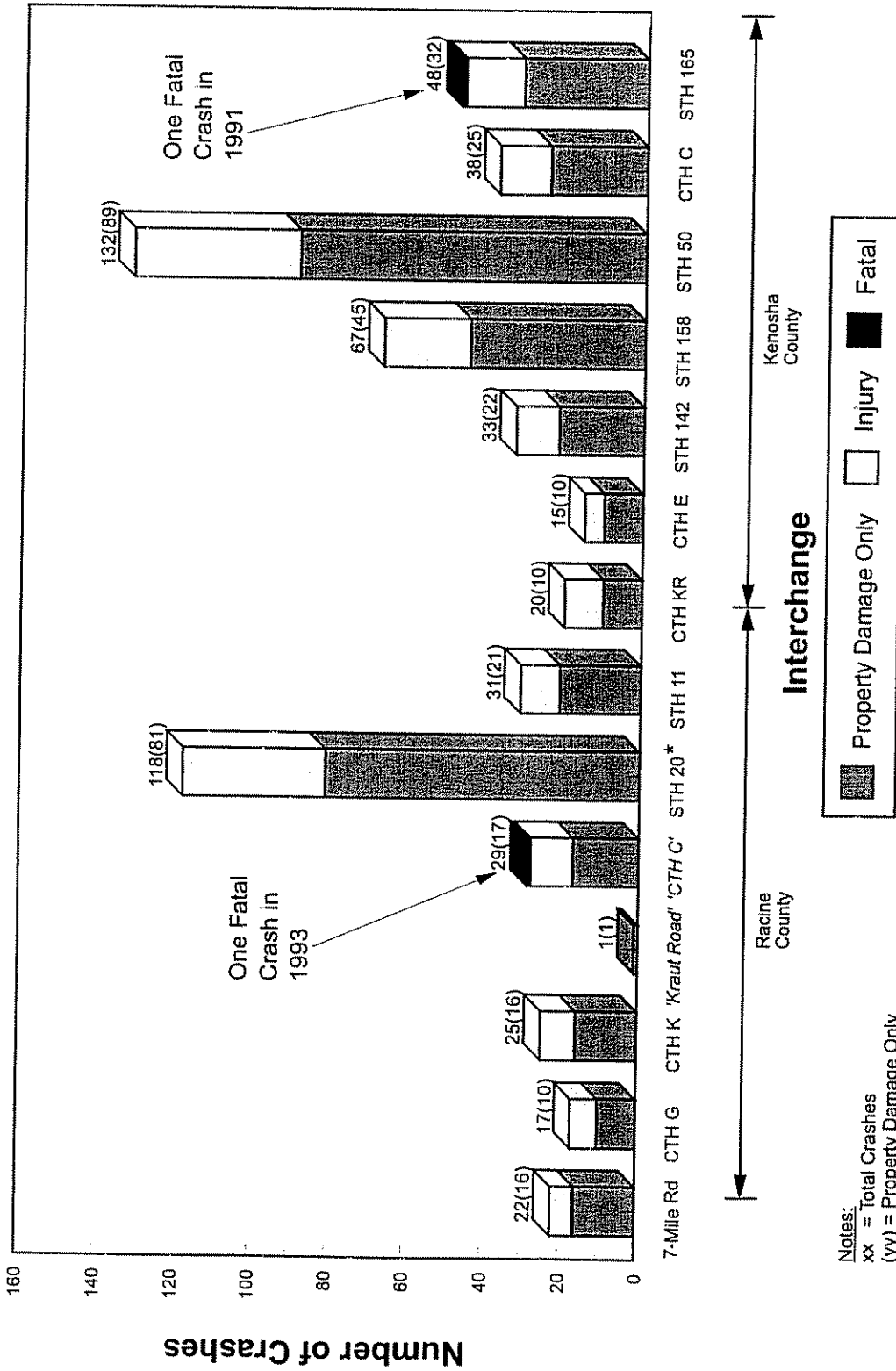
Existing Interchange Problems/Deficiencies

The I-94 mainline and most of the interchanges in Racine and Kenosha Counties were constructed over 30 years ago. The interchange configurations were based on rural, low-volume traffic conditions. While a few interchanges such as STH 165 and STH 20 have been reconstructed, most do not meet acceptable design standards. The type and extent of problems vary among the interchanges. The general deficiencies that were considered in developing and evaluating improvement alternatives are summarized below. Supporting information about problems/deficiencies at each interchange is provided in Appendix A – Existing Interchange Summary.

- **Braided Ramps and Frontage Roads** – Eight interchanges have a "braided" configuration as illustrated on Figure 4. This design requires ramp traffic exiting I-94 to cross opposing, slower-moving, frontage road traffic and merge with the frontage road traffic before reaching the crossroad intersection. Traffic leaving the frontage road to enter I-94 is also required to cross opposing frontage road traffic. The ramp-frontage road intersections are stop-sign controlled, somewhat confusing to drivers, and result in operational inefficiencies. Interchanges with braided movements do not meet modern interstate design standards, and they are inadequate for handling existing and forecast traffic volumes.
- **Insufficient Capacity** – Most of the existing interchanges have insufficient traffic handling capacity due to lack of signals and channelization for turning movements, undivided crossroads through the interchanges, and lack of separate facilities for ramp, frontage road, and service road traffic.
- **Lack of Access Control** – At most interchanges, there are numerous and closely-spaced commercial and residential driveways connecting to the frontage roads and crossroads, and in close proximity to the ramp terminals. Each access point represents a potential conflict between slower-moving exiting and entering traffic and faster-moving through traffic on the frontage road or crossroad. Desired access, in accordance with WisDOT's access management policies and guidelines, is illustrated on Figure 5.
- **Safety Concerns** – The crash frequency is not a major concern at most of the interchanges under existing traffic volumes. However, safety problems do exist, and they are expected to worsen as traffic increases. Emerging safety concerns involve the operation of the braided ramps, which could worsen as traffic increases on the frontage roads and ramps. Also, many of the existing crossroad structures provide insufficient sight distance for drivers approaching on the frontage roads. Figure 6 summarizes crash data for each interchange from 1991 through 1993.
- **Physical Deficiencies** – Given the age of the I-94 interchange structures, many will reach the end of their useful life (generally 50 years) over the next 10 to 15 years. At that time,

bridge repairs/reconstruction and pavement rehabilitation would be necessary. Most of the I-94 structures do not provide full clearances(5.1 meters or 16 feet 9 inches) beneath I-94.

Crash Severity: 1991-1993



Notes:
 xx = Total Crashes
 (yy) = Property Damage Only
 Three-year total includes 1991, 1992, 1993.
 All I-94 mainline crashes are excluded from this summary.
 Crashes identified using coded crash report data obtained from WisDOT, coded data may contain some input errors.
 *xxx = italics indicate non-interchange, provided for general I-94 corridor information only, not included as part of this study.
 * Interchange was under construction during 1992 and a portion of 1993.

FIGURE 6
Summary of Interchange Crash Frequency and Severity 1991-1993
 I-94 CORRIDOR STUDY
 RACINE AND KENOSHA COUNTIES

