

Southeastern Wisconsin Regional Freeway System Reconstruction Study



October 9, 2001

Elements of Reconstruction Alternative Which Would Provide Design and Design-Related Safety Improvements

- **Improve Freeway System Interchanges**
 - **Reconfigure freeway-to-freeway system interchanges**
 - **Relocate left hand on- and off-ramps to right hand side of freeway**
 - **Minimize lane drops and provide route continuity**
 - **Improve freeway-to-freeway ramps to provide ramp speeds that are closer to freeway mainline speeds**
 - **Address closely spaced service interchanges with grade-separated or collector-distributor roadways**



Elements of Reconstruction Alternative Which Would Provide Design and Safety Improvements -- continued

- **Improve Freeway System Service Interchanges**
 - **Improve ramp terminal spacing and tapers**
 - **Separate ramps from frontage roads in Kenosha and Racine Counties**

- **Freeway Mainline**
 - **Improve freeway horizontal and vertical curvature, grades, and vertical clearance to meet standards**
 - **Provide full inside and outside shoulders**
 - **Provide selected auxiliary lanes to address closely spaced interchanges**



Estimated Costs and Impacts of Reconstruction Alternative Which Would Provide Design and Design-Related Safety Improvements

- **Construction Costs**
- **Right-of-Way Needs**
- **Traffic Congestion**
- **Safety**

Reminder: System planning estimates of costs and impacts. Firm estimates would be made in preliminary engineering.





Construction Cost

- **Estimated Cost of Freeway System Reconstruction Alternative Which Would Provide Design and Safety Improvements**
 - **\$4.4 billion**
 - **Approximately \$145 million annually over the next 30 years (Does not include Marquette Interchange which has estimated cost of \$1.1 billion)**





Elements of Construction Cost of this Reconstruction Alternative

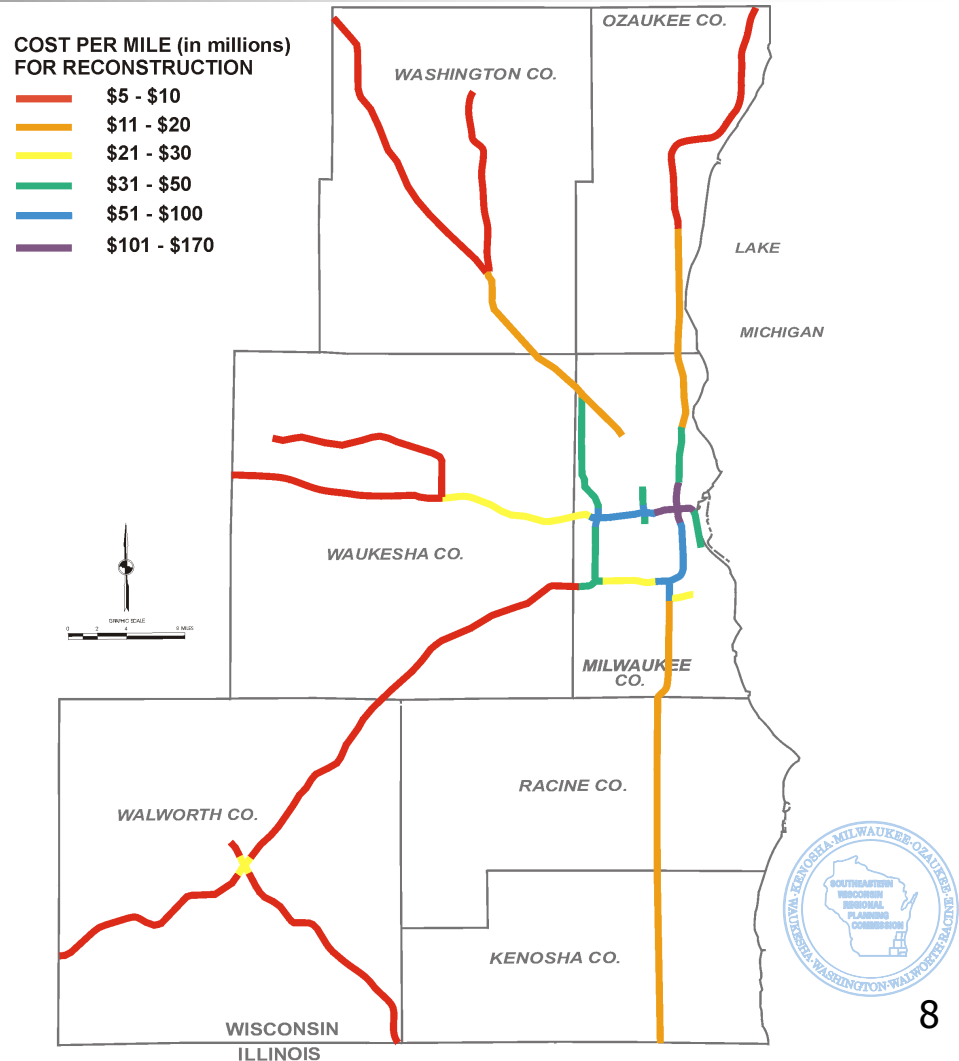
\$0.9 Billion	Freeway-to-Freeway Interchanges
\$3.5 Billion	Mainline Freeway Segments
\$4.4 Billion	Total

Note: Does not Include Marquette Interchange. Estimated Cost of Marquette Interchange is \$1.1 billion.



Reconstruction Cost Per Mile of Freeway System

- **\$5-20 Million per Mile in Outlying Counties**
- **\$20-60 Million per Mile in Milwaukee County**





Comparison of Construction Costs of Reconstruction Alternatives

- **Rebuild to Meet Design Standards and Address Design-Related Safety Problems**
 - **\$4.4 billion (Not including Marquette Interchange at \$1.1 billion)**
- **Replace-in-Kind**
 - **\$2.9 billion (Not including Marquette Interchange at \$450 million)**
- **Difference of \$1.5 Billion or 51 Percent to Address Design and Design-Related Safety Problems**



Comparison of Construction Costs of Reconstruction Alternatives - Replace-In-Kind and Rebuild with Design and Safety Improvements

- **Major Areas of the \$1.5 Billion Construction Cost Difference**
 - **Freeway-to-freeway interchanges**
 - \$490 million (33 percent)
 - **Mainline Freeway Segments**
 - \$210 million (14 percent) IH 94 in Kenosha and Racine Counties (24 miles)
 - \$370 million (25 percent) Other selected freeway segments (31 miles)
 - IH 94 from Stadium Interchange to STH 16
 - IH 43 from Mitchell to Marquette Interchange
 - IH 894 and USH 45 from Mitchell to North Interchange
 - \$420 million (28 percent) Remainder of freeway system (195 miles)





Right-of-Way Acquisition Needs

- **Reconstruction Alternative of Meeting Modern Design Standards and Addressing Design-Related Traffic Safety Problems**
 - **561 acres**
 - **157 residences**
 - **18 commercial buildings**
 - **2 governmental buildings**
- (Marquette Interchange reconfiguration may be expected to require 16 acres, 10 residences, and 5 commercial buildings)**



Right-of-Way Acquisition Needs

■ Reconstruction Alternative of Meeting Modern Design Standards and Addressing Design-Related Traffic Safety Problems

	<u>Acres</u>	<u>Residences</u>	<u>Commercial Buildings</u>	<u>Government Buildings</u>
IH 94 in Kenosha and Racine Counties (24 miles)	284	24	9	--
Freeway-to-Freeway Interchanges Not Including Marquette Interchange (14 miles)	104	63	1	2
IH 43/94 between Mitchell and Marquette Interchanges (4 miles)	4	43	3	--
IH 43 between Silver Spring Drive and STH 60 (14 miles)	41	--	--	--
Remainder of Freeway System (208 miles)	128	27	5	--
Total	561	157	18	2



Forecast Year 2020 Traffic Congestion Under Reconstruction Alternative Which Would Provide Design and Design-Related Safety Improvements

- **Assumes Full Implementation of Regional Land Use and Transportation Plans**
 - **“Smart growth”**
 - **Public transit expansion**
 - **Surface arterial improvements**
- **Incorporates all Design and Design-Related Safety Improvements Under this Alternative**

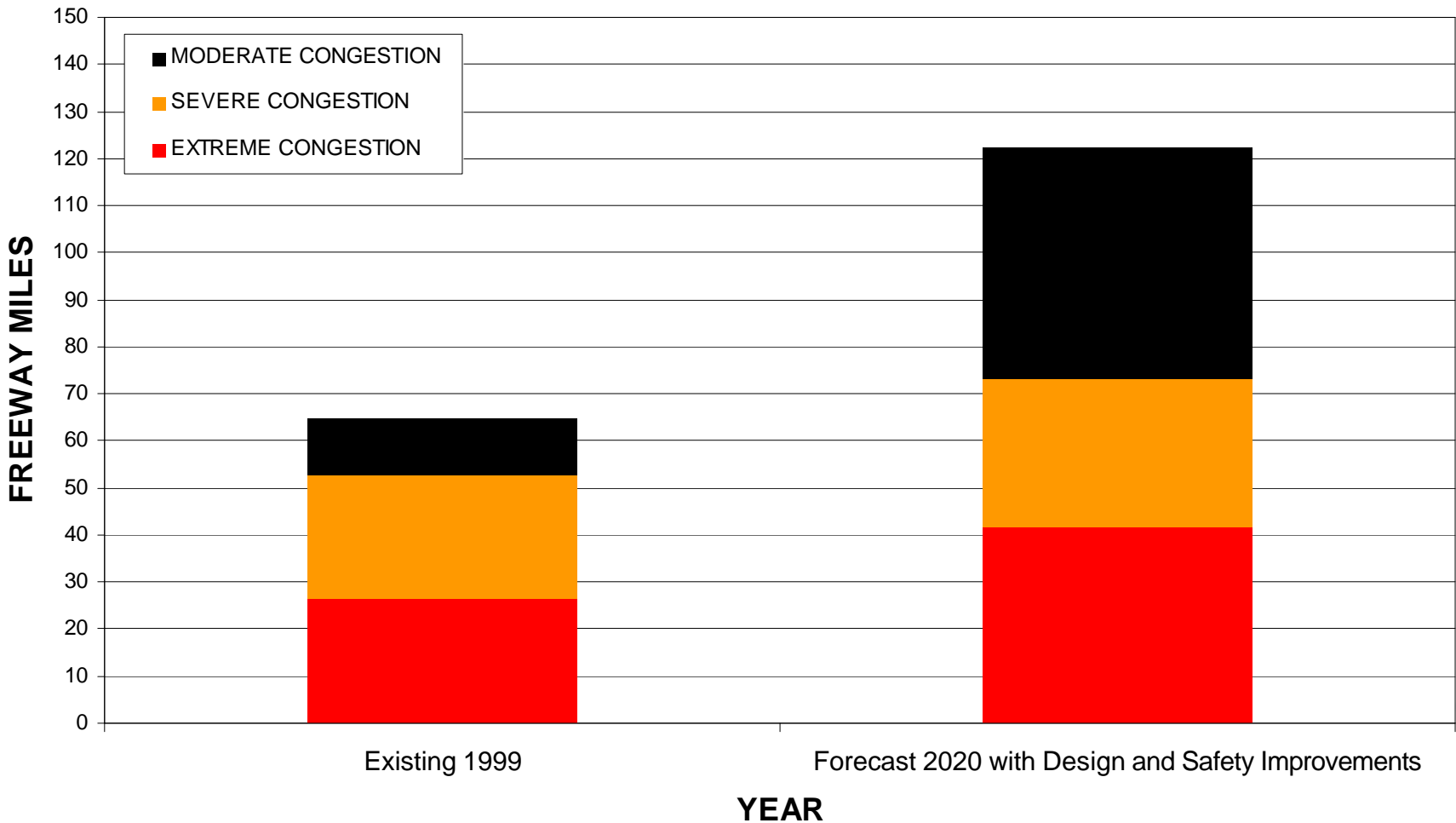


Forecast Significant Increase in Traffic Congestion By Year 2020 Under Reconstruction Alternative Which Would Provide Design and Safety Improvements

	Existing 1999			Forecast 2020		
Extreme Congestion	27 miles	10%	8.8 total hours	42 miles	16%	11.1 total hours
Severe Congestion	26 miles	10%	3.8 total hours	31 miles	11%	3.5 total hours
Moderate Congestion	12 miles	4%	1.8 total hours	49 miles	18%	2.1 total hours
Total	65 miles	24%	5.5 average total hours	122 miles	45%	5.6 average total hours

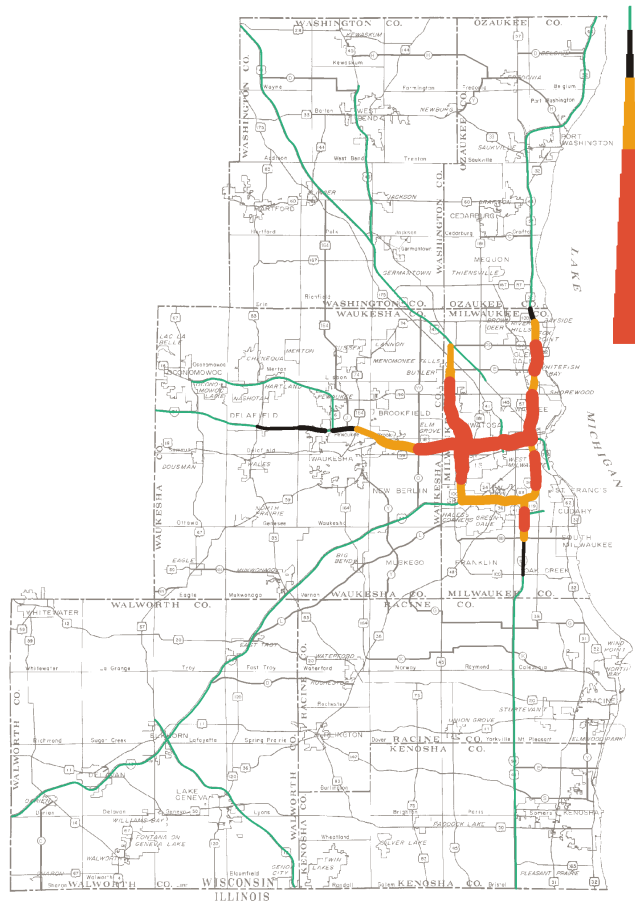


Forecast Significant Increase in Traffic Congestion Under Reconstruction Alternative Which Would Provide Design and Safety Improvements



Traffic Congestion- Existing 1999 and Forecast Year 2020 with Reconstruction Alternative Which Would Provide Design and Design Related Safety Improvements

Existing 1999



MOST SEVERE LEVEL OF WEEKDAY HOURLY CONGESTION EXPERIENCED

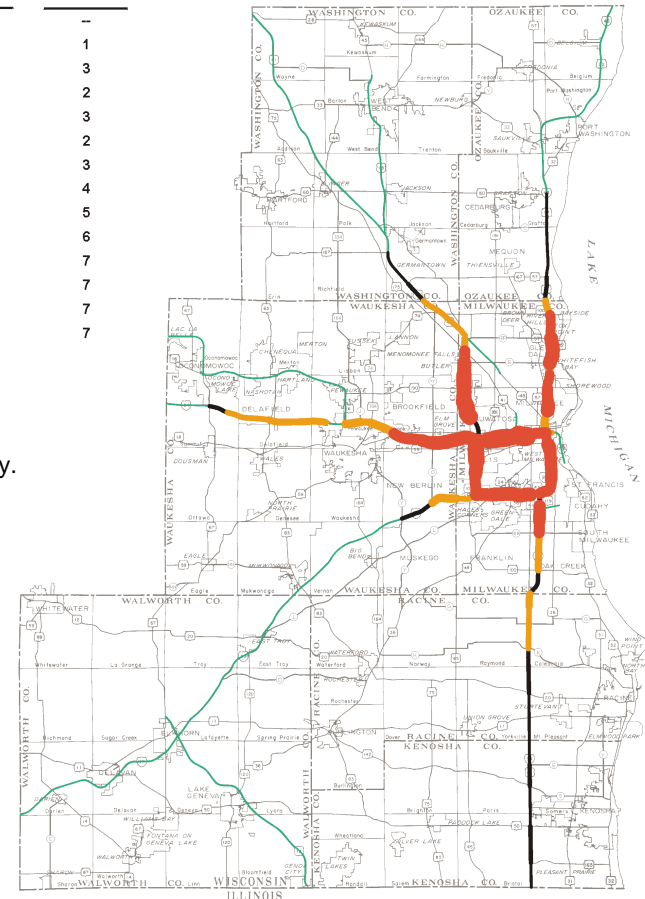
ESTIMATED HOURS OF CONGESTION ON AN AVERAGE WEEKDAY

ESTIMATED AVERAGE WEEKDAY HOURS OF CONGESTION BY CONGESTION LEVEL

		EXTREME	SEVERE	MODERATE
--	NO CONGESTION	--	--	--
MODERATE	1	--	--	1
MODERATE	3	--	--	3
SEVERE	3	--	1	2
SEVERE	4	--	1	3
SEVERE	4	--	2	2
EXTREME	6	1	2	3
EXTREME	8	1	3	4
EXTREME	11	2	4	5
EXTREME	13	2	5	6
EXTREME	14	2	5	7
EXTREME	15	3	5	7
EXTREME	16	4	5	7
EXTREME	17	4	6	7

Note: Color represents most severe level of congestion experienced for at least one hour in each direction on an average weekday.

Forecast 2020





Freeway Traffic Safety

- **Improvement in Freeway Traffic Safety Expected**
 - **Reduced lane changing**
 - **Speeds on freeway-to-freeway ramps closer to mainline speeds**
 - **Adequate stopping and decision sight distance**
 - **Improved service interchange entrance and exit ramps**
 - **Elimination of rural service interchange designs**
- **However, safety problems due to traffic congestion would largely not be addressed, and would be exacerbated**





Summary

Southeastern Wisconsin Freeway System Reconstruction Alternative

- **Rebuild to Meet Modern Design Standards and Address Traffic Safety Problems (No Additional Traffic Lanes)**
 - **Construction cost - \$4.4 billion (Does not include Marquette Interchange at \$1.1 billion)**
 - **\$0.9 billion Freeway-to-freeway interchanges**
 - **\$3.5 billion Freeway mainline**





Summary -- continued

- **Right of Way Needs**

- **561 acres**
- **157 residences**
- **18 commercial buildings**
- **2 governmental buildings**
- **Marquette Interchange Reconfiguration may be expected to require additional 16 acres, 10 residences, and 5 commercial buildings**

- **Traffic Congestion**

- **Forecast increase in miles of congested freeways**
 - 1999 - 65 miles 24%**
 - 2020 - 122 miles 45%**
- **Forecast increase in miles of freeways with extreme congestion**
 - 1999 - 27 miles 10%**
 - 2020 - 42 miles 16%**





Next Meeting

- **Incremental Costs and Impacts of Freeway System Reconstruction Alternative Which Would Provide Design and Design-Related Safety Improvements and Provide Additional Traffic Lanes**
 - **Construction costs**
 - **Right-of-way needs**
 - **Traffic congestion**
 - **Safety**
 - **Also, for both freeway system reconstruction alternatives**
 - **Air pollutant emissions**
 - **Motor fuel consumption**
 - **Land use**

