Southeastern Wisconsin Regional Freeway System Reconstruction Study and Preliminary Recommended Plan

Public Information Meetings and Hearings
May–June 2002
Reason for Freeway System Study

- 270-mile freeway system nearing the end of its service life, and will begin to require reconstruction before the end of the decade
- Need to determine prior to reconstruction those improvements and redesign to be incorporated in a reconstructed freeway system
Importance of Freeway System

- Important to Interstate, State, and Regional Travel
  - Carries virtually all vehicle traffic traveling through the Region on an average weekday

- Important to Residents, Businesses, and Industries
  - Nearly 90 percent of travel made on an average weekday by Southeastern Wisconsin residents is by automobile, and nearly 40 percent of that travel is on the freeway system
  - Most of the daily traffic on the freeway system in each county is made by the residents of that county, or to and from that county’s businesses and industries
Freeway System - One Element of the Regional Transportation System

- Study of the freeway system being conducted within the context of the entire regional transportation system and existing and ongoing regional land use and transportation system planning
  - Regional plans call for smart growth and curtailing urban sprawl, significant expansion of public transit, and improvements of surface arterial streets and highways.
  - The final recommendations of the freeway reconstruction study will refine and add to the recommendations of the regional plan.
Freeway System - One Element of the Regional Transportation System

- This study has been structured to consider freeway widening as a measure of last resort, by identifying the freeway traffic volumes and congestion that may be expected even if regional land use and transportation plans are fully implemented, and even if complete light rail and commuter rail systems are implemented.
  - This has been done to make clear the choice which this Region and each County faces in rebuilding the freeway system, that is, whether to reconstruct the freeway system to its same capacity and accept substantially increased freeway traffic congestion, or to rebuild the freeway system with additional lanes to avoid this substantial increase in traffic congestion.
Study Advisory Committee

- Seven Counties—Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties
  - County Executives, County Board Chairs
- Municipalities—Mayors of Milwaukee, Oak Creek, Wauwatosa, and Brookfield
- Business—MMAC and West Bend Chamber of Commerce
- Labor—Teamsters Union
- Wisconsin Department of Natural Resources
- Wisconsin Department of Transportation
- Federal Highway Administration
- Transportation Development Association
Problems and Deficiencies of the Regional Freeway System

- Physical Design
- Traffic Accidents
- Traffic Congestion
Historic Trend in Freeway Traffic Congestion

- **Extreme** - stop-and-go bumper-to-bumper traffic averaging 20 to 30 mph or less.
- **Severe** - speeds reduced by up to 15 mph and extremely difficult to change lanes.
- **Moderate** - speeds reduced by up to 5 mph and difficult to change lanes.
### Historic Trend in Freeway Traffic Congestion

#### 1972

<table>
<thead>
<tr>
<th>Most Severe Level of Weekday Hourly Congestion Experienced</th>
<th>Estimated Hours of Congestion on an Average Weekday</th>
<th>Estimated Average Weekday Hours of Congestion by Congestion Level</th>
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<tbody>
<tr>
<td>--</td>
<td>NO CONGESTION</td>
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<tr>
<td>MODERATE</td>
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<tr>
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<tr>
<td>MODERATE</td>
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<td>1</td>
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<tr>
<td>SEVERE</td>
<td>4</td>
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</table>

#### 1980

#### 1991

#### 1999

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

- Rebuild to Modern Design Standards
- Rebuild with Additional Lanes on 127 Miles of Freeway
Preliminary Plan—Includes Rebuild to Meet Modern Design Standards

- 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
Preliminary Plan—Includes Rebuild to Meet Modern Design Standards—continued

- **Improve freeway system service interchanges**
  - Lengthen and widen ramp tapers
  - Convert multi-point exits to single point exits
  - Separate ramps from frontage roads in Kenosha and Racine Counties
  - Provide selected auxiliary lanes to address closely spaced interchanges

- **Improve freeway mainline**
  - Improve freeway horizontal and vertical curvature, grades, and vertical clearance to meet standards
  - Provide full inside and outside shoulders
Preliminary Plan—Rebuild with Additional Lanes

- **Proposed Additional Lanes**
  - 127 miles, or 47 percent of the regional freeway system
  - Address existing and forecast traffic congestion
  - Most proposed lane additions are:
    - 6 lanes to 8 lanes
    - 4 lanes to 6 lanes
Construction Cost

$3.37 billion – Base Cost of Reconstruction

$2.15 billion – Cost of Improvements to Meet Modern Design Standards

$0.73 billion – Cost of Additional Lanes on 127 Miles of Freeway

$6.25 billion – Total Construction Cost Over Next 30 Years ($208 million annually)
Right-of-Way Acquisition Needs—Preliminary Plan

- Rebuilding the 270-mile freeway system to modern design standards with design and design-related safety improvements
  - 577 acres
  - 166 residences
  - 23 commercial/industrial buildings
  - 2 governmental/institutional buildings

- More than 50 percent of the necessary right-of-way for land and commercial/industrial buildings has already been approved through preliminary engineering and environmental assessment

- Needed right-of-way represents:
  - 5 percent expansion of freeway right-of-way
  - Additional 0.03 percent of Region to be dedicated for freeway purposes
  - A total 0.13 percent reduction in Regional tax base and 0.21 percent reduction in Milwaukee County tax base over next 30 years.
Right-of-Way Acquisition Needs—Preliminary Plan—continued

- Adding freeway lanes would entail an additional increment of right-of-way
  - 81 acres
  - 50 residences
  - 8 commercial buildings
  - 1 governmental/institutional building

- Less than 1 percent expansion of freeway right-of-way

- Less than additional 0.01 percent of Region to be dedicated for freeway purposes

- A total 0.05 percent reduction in Regional tax base and 0.13 percent reduction in Milwaukee County tax base over next 30 years
Freeway Traffic Congestion—Preliminary Plan with Additional Lanes

- Widening would permit avoiding a substantial increase in freeway system traffic congestion

(Forecasts of freeway traffic volume and congestion consider freeway widening as a measure of last resort, as they identify the freeway traffic volume and congestion expected even with smart land use growth, substantially expanded public transit, and improved surface arterial streets)
Other Traffic Congestion Impacts—Preliminary Plan

- Avoid a doubling of daily travel delay on the freeway system by the year 2020
- Increased freeway system travel time reliability
- Safety problems due to both design deficiencies and traffic congestion would be significantly addressed—rear-end crash rates are 5 to 15 times higher on congested freeway segments
- Reduced traffic volumes and neighborhood impacts on surface arterial streets
Air Quality Impacts—Rebuild with Additional Lanes

Whether the freeway system is rebuilt with or without additional lanes will have a negligible impact on the level of transportation system ozone-related and other air pollutant emissions and air quality, and also vehicle motor fuel consumption.

- Similar levels of regional vehicle traffic are expected with or without additional lanes.
- Transportation system derived ozone-related air pollutant emissions have been significantly declining, and are projected to continue to decline. This is principally a result of new motor vehicle standards for air pollutant emissions—“tailpipe technology”
Southeastern Wisconsin Six County Severe Ozone Non-Attainment Area Transportation System Ozone-Related Air Pollutant Emissions

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<th>Year</th>
<th>Transportation Volatile Organic Compounds (VOC)</th>
<th>Tons per Hot Summer Weekday</th>
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<td>1999</td>
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<td>2020</td>
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<table>
<thead>
<tr>
<th>Year</th>
<th>Transportation Nitrogen Oxides (NOₓ)</th>
<th>Tons per Hot Summer Weekday</th>
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<tr>
<td>1990</td>
<td>112</td>
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<tr>
<td>1999</td>
<td>108</td>
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<tr>
<td>2007</td>
<td>64</td>
<td></td>
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<tr>
<td>2020</td>
<td>21</td>
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NOTE: Wisconsin Department of Natural Resources State Implementation Plan for Ozone Air Quality Standard Attainment has emission budgets for the year 2007 of 32 tons for VOC and 71 tons for NOₓ.
Land Use Impacts—Preliminary Plan

The preliminary plan with the proposed additional lanes may not be expected to have a significant impact on land use patterns.

- Transportation is one of many possible causes of decentralization, and is generally not considered a significant cause compared to rising affluence, cost of living, schools, environmental amenities, preferences for single family homes and larger lots, perceived and/or actual crime and safety, and other factors.

- In addition, the levels of congestion forecast in the year 2020 under the preliminary plan are only modestly less than existing levels of congestion. Thus, the preliminary plan is not expected to result in any substantial change in travel times or accessibility which could be considered to impact land use patterns.

- However, the alternative plans with no additional lanes would permit a doubling of traffic congestion and delay. It may be argued that this significant increase in congestion could contribute to a decline in regional economic growth and continued decentralization.
Induced Travel—Preliminary Plan

The preliminary plan with the proposed additional lanes may not be expected to induce additional travel.

- Adding freeway lanes may be expected to result in levels of congestion in the year 2020 which are only modestly less than current levels of congestion. Therefore, adding freeway lanes cannot be expected to induce more travel over the existing situation.

- Review of historic traffic growth in Southeastern Wisconsin including the period during which the freeway system was first constructed and significantly reduced both peak and off-peak period travel times indicates that nearly 90 percent of historic traffic growth was a result of factors such as economic and household growth and changing population lifestyles, and not travel which was “induced.”
Two Subalternatives to Full 127 Miles of Freeway Widening

- 121 miles of freeway widening
  - No widening of IH 94 between Marquette and Zoo Interchanges

- 108 miles of freeway widening
  - No widening of IH 94 between Marquette and Zoo Interchanges
  - No widening of IH 43 between Mitchell Interchange and Bender Road
  - Reduced widening of IH 43 between Bender and Brown Deer Roads to 6 rather than 8 lanes
121 Miles of Freeway Widening Option—Eliminate Widening of IH 94 from Marquette to Zoo Interchanges

- Reduced construction costs
  - $90 million less (one percent reduction in system reconstruction costs)
    - $6.16 billion - 121 miles of freeway widening
    - $6.25 billion - 127 miles of freeway widening

- Reduced right-of-way acquisition
  - 22 fewer acres
  - 18 fewer residences (located along the south side of IH 94 from 76th Street to 70th Street)
  - 5 fewer commercial/industrial buildings (located along the south side of IH 94 from 30th Street to 13th Street)
Impact on Wood National Cemetery and adjacent cemeteries

- Widening to 8 lanes can be accomplished without requiring any relocation or disturbance of graves
  - No increase in land dedicated to freeways and streets is likely in Wood National Cemetery owing to the elimination of Zablocki Drive (Cemetery Access Road) bridge

- Between Mitchell Boulevard and Hawley Road westbound IH 94 lanes would be elevated and overlap eastbound lanes and the northern cemeteries by up to 15 to 25 feet. This freeway redesign configuration will be required whether or not additional lanes are provided if grave disturbance is to be avoided and if safety shoulders are to be provided
Freeway Redesign Configuration of IH 94 between Mitchell Boulevard and Hawley Road

Elevated Westbound Lanes
Freeway Redesign Configuration of IH 94 between Mitchell Boulevard and Hawley Road—Perspective: Looking South from Story Parkway

Existing Design

Reconfiguration Design
Freeway Redesign Configuration of IH 94 between Mitchell Boulevard and Hawley Road—Perspective: Looking North from Wood National Cemetery

Existing Design

Reconfiguration Design
121 Miles of Freeway Widening Option—Traffic Congestion

- Additional hours and severity of congestion on IH 94 between Zoo and Marquette Interchanges
- Doubling of peak hour travel delay
- Increase in traffic on surface arterial streets
- Reduced travel time reliability and traffic safety
- Minimal traffic diversion and additional traffic congestion and delay on remainder of freeway system
Reduced construction costs

$260 million less (four percent reduction in system reconstruction costs)

- $5.99 billion - 108 miles of freeway widening
- $6.25 billion - 127 miles of freeway widening
108 Miles of Freeway Widening Option—Eliminate Widening of IH 94 from Marquette to Zoo Interchanges and of IH 43 from Mitchell Interchange to Silver Spring Drive

Reduced right-of-way acquisition

<table>
<thead>
<tr>
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<th>IH 43 Segment</th>
<th>IH 94 Segment</th>
<th>Total</th>
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<tbody>
<tr>
<td>Acres</td>
<td>24</td>
<td>22</td>
<td>46 fewer</td>
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<tr>
<td>Residences</td>
<td>18*</td>
<td>18</td>
<td>36 fewer</td>
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<tr>
<td>Commercial/Industrial Buildings</td>
<td>3**</td>
<td>5</td>
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<tr>
<td>Governmental/Institutional Building</td>
<td>1</td>
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<td>1 fewer</td>
</tr>
</tbody>
</table>

* Three residences west of IH 43 and north of W. North Avenue and 15 residences along IH 43 between Bender and Brown Deer Roads

**Located along IH 43 between Bender and Green Tree Roads
108 Miles of Freeway Widening Option—Traffic Congestion

- Additional hours and severity of congestion
- Doubling of peak hour travel delay
- Increase in traffic on surface arterial streets
- Reduced travel time reliability and traffic safety
- Minimal traffic diversion and additional traffic congestion and delay on remainder of freeway system
Process for Developing a Final Recommended Plan

- Solicit public comment and feedback on preliminary plan (April-July 2002)
  - County boards and executives
- Advisory Committee determination of final plan recommendations and an accompanying program, taking into account the comment and feedback (August 2002)
- Submittal of final plan and program for formal adoption by each county board and executive (September-November 2002)
- Amendment of regional transportation plan by SEWRPC (December 2002)
- Submittal of plan and program to WisDOT Secretary (December 2002)