Agenda Item 3

Consideration of Preliminary Recommendation that the Freeway System be Reconstructed with Additional Lanes
Determination at Meeting of December 13, 2001

- Advisory Committee preliminarily recommended that the Southeastern Wisconsin regional freeway system be reconstructed with systemwide design and design-related safety improvements
Elements of Freeway System Design and Design-Related Safety Improvements

- Improve and 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 Freeway System Design and Design-Related Safety Improvements — 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

- Freeway mainline
  - Improve freeway horizontal and vertical curvature, grades, and vertical clearance to meet standards
  - Provide full inside and outside shoulders
Design and Design-Related Safety Improvements — Construction Costs and Right-of-Way Impacts

- Rebuilding with design and design-related safety improvements represents a significant increase in cost compared to replace-in-kind
  - $5.5 billion as compared to $3.4 billion
  - $2.1 billion, or 64 percent, more

- Rebuilding with design and design-related safety improvements would require right-of-way acquisitions
  - 577 acres
  - 166 residences
  - 23 commercial/industrial buildings
  - 2 governmental/institutional buildings
Freeway System Reconstruction Alternative with Additional Lanes

- Alternative with additional lanes (in addition to design and design-related safety improvements) was presented to the Advisory Committee at its December 13, 2001, meeting
  - Additional lanes warranted for 127 miles of the regional freeway system based on traffic volumes and congestion
Freeway System Reconstruction Alternative 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
Freeway System Reconstruction Alternative with Additional Lanes — continued

- Marginal increase in freeway system reconstruction costs compared to reconstruction alternative with design and design-related safety improvements only
  - $6.2 billion as compared to $5.5 billion; $700 million, or 13 percent more

- Relatively modest additional right-of-way acquisition needs
  - 81 acres
  - 50 residences
  - 8 commercial/industrial buildings
  - 1 governmental/institutional building (Milwaukee County Courthouse Annex)
Freeway Traffic Reconstruction Alternative with Additional Lanes — Continued

- Widening would permit avoiding a substantial increase in traffic congestion
  - Reduction in year 2020 total freeway system congestion
    - More than a 50 percent reduction in extent of freeways expected to be affected by congestion in year 2020. A reduction from 122 miles, or 44 percent of freeway system, to 58 miles, or 21 percent of freeway system
  - Reduction in year 2020 freeway system extreme and severe congestion
    - More than a 40 percent reduction in the extent of freeways expected to be affected by extreme or severe congestion in year 2020. A reduction from 73 miles, or 26 percent of system, to 43 miles, or 16 percent of system
Traffic Congestion — Comparison of Existing 1999 and Forecast Year 2020 Under Freeway Reconstruction Alternatives

- **Existing 1999**
- **Forecast Year 2020 Replace-In-Kind Freeway Reconstruction Alternative**
- **Forecast Year 2020 Freeway Reconstruction Alternative with Design and Design-Related Safety Improvements**
- **Forecast Year 2020 Freeway Reconstruction Alternative with Design and Design-Related Safety Improvements and Additional Lanes**

The chart illustrates the comparison of traffic congestion levels under different reconstruction alternatives, with categories for moderate, severe, and extreme congestion.
Traffic Congestion —
Forecast Year 2020 Under Freeway Reconstruction Alternatives

Freeway Reconstruction Alternative with Design and Design-Related Safety Improvements

<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>
</tr>
</thead>
<tbody>
<tr>
<td>--</td>
<td>NO CONGESTION</td>
<td>EXTREME  SEVERE  MODERATE</td>
</tr>
<tr>
<td>MODERATE</td>
<td>1</td>
<td>--  --  1</td>
</tr>
<tr>
<td>MODERATE</td>
<td>3</td>
<td>--  --  3</td>
</tr>
<tr>
<td>SEVERE</td>
<td>3</td>
<td>--  1  2</td>
</tr>
<tr>
<td>SEVERE</td>
<td>4</td>
<td>--  1  3</td>
</tr>
<tr>
<td>SEVERE</td>
<td>4</td>
<td>--  2  2</td>
</tr>
<tr>
<td>EXTREME</td>
<td>6</td>
<td>1  2  3</td>
</tr>
<tr>
<td>EXTREME</td>
<td>8</td>
<td>1  3  4</td>
</tr>
<tr>
<td>EXTREME</td>
<td>11</td>
<td>2  4  5</td>
</tr>
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<td>EXTREME</td>
<td>13</td>
<td>2  5  6</td>
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<td>EXTREME</td>
<td>14</td>
<td>2  5  7</td>
</tr>
<tr>
<td>EXTREME</td>
<td>15</td>
<td>3  5  7</td>
</tr>
<tr>
<td>EXTREME</td>
<td>16</td>
<td>4  5  7</td>
</tr>
<tr>
<td>EXTREME</td>
<td>17</td>
<td>4  6  7</td>
</tr>
</tbody>
</table>

Note: Color represents most severe level of congestion experienced for at least one hour in each direction on an average weekday.
Freeway Reconstruction Alternative with Additional Lanes — continued

- Other traffic congestion and travel time benefits of additional lanes
  - Reduced total hours of congestion and number of hours of extreme and severe congestion on an average weekday on freeway segments which would remain congested even with additional lanes
  - Reduced traffic volumes and neighborhood impacts on surface arterial streets
  - Increased freeway system travel time reliability
  - Avoid a 15 to 40 percent increase in freeway system peak hour travel times by the year 2020
  - Avoid a doubling of total daily travel delay on the freeway system by the year 2020
Freeway System Weekday Total Travel Delay — Comparison of Existing 1999 and Forecast Year 2020 Under Freeway Reconstruction Alternatives

Hours of Travel Delay on an Average Weekday

- **Existing 1999**: 11,500 Hours
- **Forecast Year 2020 Freeway Reconstruction Alternative with Design and Design-Related Safety Improvements**: 26,200 Hours
- **Forecast Year 2020 Freeway Reconstruction Alternative with Design and Design-Related Safety Improvements and Additional Lanes**: 13,600 Hours
Freeway Reconstruction Alternative with Additional Lanes — Other Impacts

- Safety problems due to traffic congestion would be significantly addressed — rear-end crash rates are 5 to 15 times higher on congested freeway segments.

- Negligible impact on the level of transportation system ozone-related and other air pollutant emissions and air quality, and also vehicle motor fuel consumption.

- Little or no effect on land use is anticipated. Rebuilding freeway system with additional lanes may be expected to provide little change - a minor reduction - from existing levels of congestion.

- Also not expected to “induce” additional travel. Rebuilding freeway system with additional lanes may be expected to provide little change - a minor reduction - from existing levels of congestion.
Technical Subcommittee
Consideration of Additional Lanes

- Technical Subcommittee met twice in January 2002 to consider alternatives with additional lanes
  - Alternative presented to Advisory Committee
    - 127 miles of freeway widening
  - Two subalternatives with additional lanes based on Committee member requests
    - 121 miles of freeway widening
      - No widening on IH 94 between the Zoo and Marquette Interchanges
    - 108 miles of freeway widening
      - No widening on IH 94 between the Zoo and Marquette Interchanges
      - No widening on IH 43 between the Mitchell Interchange and Bender Road
      - Reduced widening on IH 43 between Bender and Brown Deer Roads from 8 to 6 lanes
Freeway System Reconstruction Alternatives with Additional Lanes

127 Miles of Freeway Widening

121 Miles of Freeway Widening

108 Miles of Freeway Widening

Widen from 6 to 8 Lanes

Widen from 4 to 6 Lanes

Widen from 4 to 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)
  - Reconstruction costs with Additional Lanes
    - $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 25 feet. This freeway redesign configuration will be required whether or not additional lanes are provided if grave disturbance is to be avoided.
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 Mitchell Park

Existing Design

Reconfiguration Design
Freeway Redesign Configuration of IH 94 between Mitchell Boulevard and Hawley Road - Perspective: Looking North from Wood National Cemetery
121 Miles of Freeway Widening Option — Traffic Congestion

Additional hours and severity of congestion on IH 94 between Zoo and Marquette Interchanges

Hours of Congestion on an Average Weekday - 2020

<table>
<thead>
<tr>
<th></th>
<th>Extreme</th>
<th>Severe</th>
<th>Moderate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Widening of IH 94</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>Widening of IH 94 to Eight Lanes</td>
<td>2</td>
<td>5</td>
<td>6</td>
<td>13</td>
</tr>
</tbody>
</table>

Increase in peak hour travel times

IH 94 between Marquette and Zoo Interchanges

- 2020 with No Widening of IH 94: 19 minutes
- 2020 with Widening of IH 94 to Eight Lanes: 14 minutes
121 Miles of Freeway Widening Option — Traffic Congestion — continued

- Increase in year 2020 average weekday traffic on surface arterial streets
  - 3,000 to 4,500 added vehicles per weekday
    - Wisconsin Avenue
  - 1,000 to 3,000 added vehicles per weekday
    - Greenfield Avenue
    - St. Paul Avenue
    - Lisbon Avenue
    - 27th Street

- Reduced travel time reliability and traffic safety
  - Increased traffic congestion may be expected to result in reduced reliability of travel time and increased rear-end accidents

- Minimal traffic diversion and additional traffic congestion and delay on remainder of freeway system
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 construction costs**
  - $260 million less (four percent reduction in system reconstruction costs)
  - **Reconstruction costs with Additional Lanes**
    - $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>
<th></th>
<th>IH 43 Segment</th>
<th>IH 94 Segment</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres</td>
<td>24</td>
<td>22</td>
<td>46 fewer</td>
</tr>
<tr>
<td>Residences</td>
<td>18*</td>
<td>18</td>
<td>36 fewer</td>
</tr>
<tr>
<td>Commercial/Industrial Buildings</td>
<td>3**</td>
<td>5</td>
<td>8 fewer</td>
</tr>
<tr>
<td>Governmental/Institutional Building</td>
<td>1</td>
<td>--</td>
<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

**Hours of Congestion on an Average Weekday - 2020**

<table>
<thead>
<tr>
<th>Section</th>
<th>No Widening</th>
<th>Widening to Eight Lanes</th>
<th>Widening to Six Lanes</th>
<th>Widening to Eight Lanes</th>
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</thead>
<tbody>
<tr>
<td>IH 94 - Zoo to Marquette Interchange</td>
<td>4</td>
<td>2</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>IH 43 - Mitchell to Marquette Interchange</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>IH 43 - Marquette Interchange to Bender Road</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IH 43 - Bender Road to Brown Deer Road</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
# 108 Miles of Freeway Widening Option — continued

## Increase in peak hour travel times

<table>
<thead>
<tr>
<th>Route Description</th>
<th>Widening Options</th>
<th>Peak Hour Travel Time - Average Weekday in 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>IH 94 - Zoo to Marquette Interchange</td>
<td>No Widening</td>
<td>19 Minutes</td>
</tr>
<tr>
<td></td>
<td>Widening to Eight Lanes</td>
<td>14 Minutes</td>
</tr>
<tr>
<td>IH 43 - Mitchell to Marquette Interchange</td>
<td>No Widening</td>
<td>12 Minutes</td>
</tr>
<tr>
<td></td>
<td>Widening to Eight Lanes</td>
<td>9 Minutes</td>
</tr>
<tr>
<td>IH 43 - Marquette Interchange to Brown Deer Road</td>
<td>No widening*</td>
<td>17 Minutes</td>
</tr>
<tr>
<td></td>
<td>Widening to Eight Lanes</td>
<td>13 Minutes</td>
</tr>
</tbody>
</table>

*No widening between Marquette Interchange and Bender Road. Widening to six lanes from Bender to Brown Deer Roads.
108 Miles of Freeway Widening Option — continued

- Increase in year 2020 average weekday traffic on surface arterial streets
  - 3,000 to 4,500 added vehicles per weekday
    - Wisconsin Avenue
  - 1,000 to 3,000 added vehicles per weekday
    - Greenfield Avenue
    - St. Paul Avenue
    - Lisbon Avenue
    - 27th Street
    - Fond du Lac Avenue
    - Capitol Drive
    - National Avenue
    - Forest Home Avenue
    - Howell Avenue
    - Lincoln Memorial Drive
    - Port Washington Road
    - 43rd Street
Reduced travel time reliability and traffic safety
- Increased traffic congestion may be expected to result in reduced reliability of travel time and increased rear-end accidents

Minimal traffic diversion and additional traffic congestion and delay on remainder of freeway system
Recommendations Regarding Additional Lanes

- SEWRPC staff recommendation - inclusion of full 127 miles of freeway widening in preliminary plan to be taken to public hearings

- Technical Subcommittee Recommendation (WisDOT and WisDNR abstaining)
  - Unanimous agreement with respect to the 108 miles of freeway widening
  - Agreement on remaining 19 miles with City and County of Milwaukee staffs opposed
    - Construction costs and funding availability
    - Right-of-way needs - tax base/neighborhood impacts
    - Congestion avoidance and travel time savings
Process for Developing Preliminary and Final Recommended Plan for Freeway System Reconstruction

- Advisory Committee has recommended to include systemwide design and design-related safety improvements in a preliminary plan for the reconstruction of the Southeastern Wisconsin regional freeway system (December 2001)

- Advisory Committee determination as to whether preliminary plan should include additional lanes on freeway system and if so, to what extent (March 2002)

- Staff conduct of process to obtain feedback on preliminary plan (March-July 2002)
  - County boards/committees and executives
  - Municipalities
  - State legislators
  - Business, community, and other groups
  - Public informational meetings and hearings
Process for Developing Preliminary and Final Recommended Plan for Freeway System Reconstruction — continued

- Advisory Committee determination as to the content of the final plan and an accompanying program, taking into account the feedback received on preliminary plan (August 2002)

- Submittal of final plan and program for formal adoption by each county board and executive (September 2002)

- Amendment of regional transportation plan by SEWRPC (September 2002)

- Submittal of plan and program to WisDOT Secretary (October 2002)
Advisory Committee Consideration of Recommendations for Preliminary Plan

- Consider recommendation of 127 miles of widening sequentially
  - 108 miles of widening unanimously recommended by Technical Subcommittee
  - 13 miles of widening on IH 43 between Mitchell Interchange and Brown Deer Road
  - 6 miles of widening on IH 94 between Marquette and Zoo Interchanges