Southeastern Wisconsin Regional Freeway System Reconstruction Study

July 26, 2001
Agenda Item 3

Presentation of Projected Traffic Impacts of the Possible New Freeway Segment Connecting IH 43 and USH 45 in Northern Milwaukee County/Southern Ozaukee County
Three Alternative Alignments

- North of Good Hope Road
- North of County Line Road
- South of Pioneer Road
Projected Year 2020 Average Weekday Traffic on Alternative Freeway Alignments

- Good Hope Road Alternative
  - 60,000-65,000 vehicles per average weekday

- County Line Road Alternative
  - 25,000-35,000 vehicles per average weekday

- Pioneer Road Alternative
  - 12,000-15,000 vehicles per average weekday
Projected Traffic Impact on Existing Freeway System and Surface Arterial Street System

- Each alternative may be expected to result in a reduction of traffic on parallel surface arterial streets.

- Each alternative may be expected to result in a change in traffic patterns on the existing freeway system.
  - However, the net change in total average weekday traffic on the existing freeway system will be minimal.
Impact of New Freeway on Surface Arterial Streets and Highways

- Proposed freeway may be expected to reduce traffic on parallel arterial streets and provide a higher level of service to traffic, while reducing surface street traffic congestion.

- Selected Expected Reduction of Surface Street Traffic
  - **Good Hope Road Alternative**
    - Good Hope Road - 10,000 to 15,000 vehicles per average weekday
    - Brown Deer Road - 2,000 to 10,000 vehicles per average weekday
  - **County Line Road Alternative**
    - Mequon Road 6,000 to 9,000 vehicles per average weekday
    - Brown Deer Road - 2,000 to 7,000 vehicles per average weekday
  - **Pioneer Road Alternative**
    - Pioneer Road - 3,000 to 4,000 vehicles per average weekday
    - Mequon Road - 2,000 to 4,000 vehicles per average weekday
Impact of New Freeway on Existing Freeway System

- Two examples of expected change in freeway traffic patterns

- **Example 1**
  - Previous Route
  - New Route

- **Example 2**
  - Trip Origin
  - Trip Destination

- But, no significant net change – increase or decrease – in existing freeway system projected year 2020 average weekday traffic volumes.
### Projected Change in Year 2020
Average Weekday Traffic Volumes
as a Result of New Freeway

<table>
<thead>
<tr>
<th>Existing Freeways</th>
<th>Amount of Change</th>
<th>Percent of Total Traffic</th>
</tr>
</thead>
<tbody>
<tr>
<td>IH 94 – Marquette to Zoo Interchange</td>
<td>-800 to -2000</td>
<td>½ to 1 percent</td>
</tr>
<tr>
<td>IH 94 – Marquette to Mitchell Interchange</td>
<td>-100 to -1,500</td>
<td>less that 1 percent</td>
</tr>
<tr>
<td>IH 894 – Mitchell to Hale Interchange</td>
<td>-500 to -2,500</td>
<td>½ to 1 ½ percent</td>
</tr>
<tr>
<td>IH 894 – Hale to Zoo Interchange</td>
<td>+500 to +2,000</td>
<td>½ to 1 percent</td>
</tr>
<tr>
<td>USH 45 – Zoo to Capitol Drive</td>
<td>+2,000 to +4,000</td>
<td>1 to 2 ½ percent</td>
</tr>
<tr>
<td>IH 43 – Marquette to Capitol Drive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pioneer Road and County Line Road Freeways</td>
<td>-500 to -1,500</td>
<td>½ to 1 percent</td>
</tr>
<tr>
<td>Good Hope Road Freeway</td>
<td>+2,000 to +5,000</td>
<td>1 to 3 percent</td>
</tr>
</tbody>
</table>
Summary and Conclusions – Proposed New Freeway Connecting IH 43 and USH 45

- Proposed new freeway may be expected to reduce traffic volume and congestion on parallel surface arterial streets and provide a higher level of service to traffic.

- Proposed new freeway may be expected to modify some traffic patterns on the existing freeway system; however, the net impact on reducing or increasing freeway traffic volume and congestion will be negligible. The proposed new freeway would have no impact on the need to address existing freeway system design, safety, and congestion problems.
Recommendations – Proposed New Freeway Connecting IH 43 and USH 45

- Recommend dropping the proposed new freeway from any further consideration under this study since it would have no impact on reconstruction needs.

- Should anyone want to pursue further a northern bypass freeway or any other new freeway, there will be an opportunity to evaluate such proposals during the period 2003-2005 when the regional land use and transportation plans are updated and extended.
Agenda Item 4

Presentation of Conceptual Reconstruction Alternatives for Initial Portion of Existing Freeway System
Consideration of Conceptual Reconstruction Alternatives-
Process Overview

- Presentation of conceptual designs for individual segments at this meeting and the next Committee meeting
- System alternatives with and without additional traffic lanes on existing freeway segments will be presented and evaluated at the Committee’s September meeting.
Segment-by-Segment Consideration of Alternatives
Considerations for All Freeway Segments

- Improvements address design deficiencies and safety problems identified previously in this study.

- Additional traffic lanes are included on selected segments of the freeway system to address existing and forecast congestion problems identified previously in this study.

- Improvements outlined in the conceptual designs would be investigated further in future preliminary engineering studies, including considerations for specific service interchanges as noted.
Segment No. 1: IH 94 in Kenosha and Racine Counties

- Design includes conversion from six to eight basic traffic lanes. No additional right-of-way required for additional lanes.

- Service interchange modifications principally to separate on-and off ramps from frontage roads were recommended for this segment in a 1996 Wisconsin Department of Transportation preliminary engineering study. These recommended improvements will require additional right-of-way and have been incorporated into the conceptual design for this segment.
Summary Map of Segment No. 1: IH 94 in Kenosha and Racine Counties

Legend:
- Green: No new right of way required
- Yellow: Potential right of way required
- Red: New right of way required

Reconstruct interchange and frontage roads for improved cross road intersection spacing and improved ramp design. These improvements were recommended by WisDOT in a 1996 corridor study and will require new right of way.

Reconstruct interchange with improved curves and super-elevation. This improvement was recommended by WisDOT in a 1996 corridor study and will require new right of way.

Reconstruct freeway with:
- Conversion of 6 Basic Lanes to 8 Basic Lanes
- New pavement with full shoulders
- New bridges with additional vertical clearances
- Revise grades at CTH E and CTH A to meet standards.
These features will not require new right of way.

Note: Due to high traffic volumes and close interchange spacing, investigate adding auxiliary lanes between selected service interchanges. These features have potential for right of way requirements.
Segment No. 2: IH 94 from Milwaukee/Racine County Line to Mitchell Interchange

- Design includes conversion from six to eight basic traffic lanes. No additional right-of-way required for additional lanes.

- Design and safety improvements are proposed for the segment approaching the Mitchell Interchange and in the redesign of the Mitchell interchange. These improvements will require additional right-of-way.
Summary Map of Segment No. 2:
IH 94 from Milwaukee/Racine County Line to Mitchell Interchange

Legend:
- No new right of way required
- Potential right of way required
- New right of way required

Reconstruct freeway with:
- Conversion of 6 Basic Lanes to 8 Basic Lanes
- New pavement with full width shoulders
- New bridges with additional vertical clearance

Revise curves and grades to meet standards. This feature will not require new right of way

Investigate construction of separate roadways, or collector-distributor (C-D) roadways, between interchanges for all ramp entrance and exits to reduce weaving and lane changing conflicts and to provide better signing and operations. This feature will require new right of way.

Reconstruct interchanges for better ramp terminal intersection spacing. Reconstruct entrance ramps to provide additional capacity. Relocate park and ride lots as required. These features have the potential for right of way requirements.

Reconstruct Mitchell Interchange with:
- Conversion for right side entrance and exit ramps
- Provision for lane and route continuity
- Provision for flatter horizontal and vertical curves
These features will require new right of way.
Segment No. 3: IH 894/ IH 43 from Mitchell Interchange to Hale Interchange

- Design includes conversion from six to eight basic traffic lanes. No additional right-of-way required for additional lanes.

- Design and safety improvements are proposed for the segments approaching the Mitchell and Hale Interchanges, and in the redesign of the Mitchell interchange and Hale Interchanges. These improvements will require additional right-of-way.
Summary Map of Segment No. 3: IH 894/ IH 43 from Mitchell Interchange to Hale Interchange

- Reconstruct freeway with:
  - Conversion of 6 Basic Lanes to 8 Basic Lanes.
  - New pavement with full shoulders.
  - New bridges with additional vertical clearance.
  - Revised vertical alignment to accommodate safer stopping sight distances.
  - These features will not require new right of way.

- Reconstruct interchanges for better ramp terminal intersection spacing. Reconstruct entrance ramps to provide additional capacity. These features have the potential for right of way requirements.

- Reconstruct Hale Interchange with:
  - Conversion for right side entrance and exit ramps
  - Provision for lane and route continuity
  - Provision for flatter horizontal and vertical curves
  - These features include potential for new right of way requirements.

- Reconstruct freeway for better horizontal and vertical geometry. This feature has the potential for new right of way requirements.

- Investigate construction of separate roadways, or collector-distributor (C-D) roadways, between interchanges for all ramp entrance and exits to reduce weaving and lane changing conflicts and to provide better signing and operations. This feature will require new right of way.
Segment No. 4: IH 894 from Hale Interchange to Zoo Interchange

- Design includes conversion from six to eight basic traffic lanes. No additional right-of-way required for additional lanes.
- Design and safety improvements are proposed for the segments approaching the Hale and Zoo Interchanges, and in the redesign of the Hale and Zoo Interchanges. These improvements will require new right-of-way.
Summary Map of Segment No. 4: IH 894 from Hale Interchange to Zoo Interchange

Reconstruct freeway with:
- Conversion of 6 Basic Lanes to 8 Basic Lanes.
- New pavement with full shoulders.
- New bridges with additional vertical clearance.
- Revised vertical alignment to accommodate safer stopping sight distances.
These features will not require new right of way.

Reconstruct Hale Interchange with:
- Conversion for right side entrance and exit ramps
- Provision for lane and route continuity
- Provision for flatter horizontal and vertical curves
These features include potential for new right of way requirements.

Reconstruct interchanges for better ramp terminal intersection spacing.
Reconstruct entrance ramps to provide additional capacity.
These features have the potential for right of way requirements.

Investigate construction of separate roadways, or collector-distributor (C-D) roadways, between interchanges for all ramp entrance and exits to reduce weaving and lane changing conflicts and to provide better signing and operations.
This feature will require new right of way.

Legend:
- Green: No new right of way required
- Yellow: Potential right of way required
- Red: New right of way required
Segment No. 5: USH 45 from Zoo Interchange to North Interchange

- Design includes conversion from six to eight basic traffic lanes. No additional right-of-way required for additional lanes.

- Design and safety improvements are proposed for the segment approaching the Zoo Interchange and in the redesign of the Zoo Interchange. These improvements will require new right-of-way.
Summary Map of Segment No. 5: USH 45 from Zoo Interchange to North Interchange

Reconstruct freeway with:
- Conversion of 6 Basic Lanes to 8 Basic Lanes
- New pavement with full shoulders
- New bridges with additional vertical clearance
- Revised vertical alignment to accommodate safer sight distances.
These features will not require new right of way.

Legend:
- Green: No new right of way required
- Yellow: Potential right of way required
- Red: New right of way required

Investigate freeway realignment to reduce sharp curves.
This feature will require new right of way.

Reconstruct east half of interchange to revise northbound exit ramp for connection to Blue Mound Road, instead of Wisconsin Avenue.
These features have potential for right of way requirements.

Reconstruct Zoo Interchange with:
- Conversion for right side entrance and exit ramps
- Provision for lane and route continuity
- Provision for flatter horizontal and vertical curves
These features will require new right of way.

Note: Due to high traffic volumes and close interchange spacing, investigate adding auxiliary lanes between all service interchanges. These features have potential for right of way requirements.

Investigate construction of separate roadways, or collector-distributor (C-D) roadways, between interchanges for all ramp entrance and exits to reduce weaving and lane changing conflicts and to provide better signage and operations.
This feature will require new right of way.

North Interchange construction will be complete in late 2001. Provide lane additions for correct lane balance when adjacent freeways are reconstructed.
This feature will not require new right of way.
Segment No. 6: USH 41/45 from North Interchange to USH 41/45 Interchange

- Design includes conversion from six to eight basic traffic lanes. Additional right-of-way may be required for additional lanes.
Summary Map of Segment No. 6: USH 41/45 from North Interchange to USH 41/45 Interchange

Reconstruct freeway with:
- Conversion of 6 Basic Lanes to 8 Basic Lanes
- New pavement with full width shoulders
- New bridges with additional vertical clearance
- Revised entrance ramps for additional capacity
These features have the potential for new right of way requirements.

Investigate adding auxiliary lanes between interchanges.
This feature has the potential for right of way requirements.

Investigate adding auxiliary lanes between interchanges. This feature will not require new right of way.
Segment No. 7: USH 41 from USH 41/45 Interchange to Washington/Dodge County Line

- Reconstruction of existing four lanes with median and shoulders which meet design standards may require additional right-of-way.
Summary Map of Segment No. 7: USH 41 from USH 41/45 Interchange to Washington/Dodge County Line
Segment No. 8: USH 45 from USH 41/45 Interchange to Washington CTH D

- Reconstruction largely “as is” is envisioned.
Summary Map of Segment No. 8: USH 45 from USH 41/45 Interchange to Washington CTH D
Segment No. 12: IH 94/43 from Mitchell Interchange to Marquette Interchange

- Design includes conversion from six to eight basic traffic lanes. No additional right-of-way required for additional lanes.

- Design and safety improvements to address poor horizontal curvature are proposed at Plainfield curve, between Oklahoma and Lincoln Avenues, and approach to Marquette Interchange. These improvements may require new right-of-way.
Summary Map of Segment No. 12: IH 94/43 from Mitchell Interchange to Marquette Interchange

Reconstruct freeway with:
- Conversion of 6 Basic Lanes to 8 Basic Lanes
- New pavement with full width shoulders
- New bridges with additional vertical clearance
- Revised vertical alignment to accommodate safer stopping distances
These features will not require new right of way.

Reconstruct Mitchell Interchange with:
- Conversion for right side entrance and exit ramps
- Provision for lane and route continuity
- Provision for flatter horizontal and vertical curves
These features will require new right of way.

Provide flatter curves for safety and operations. This realignment will require new right of way.

Reconstruct Marquette Interchange as recommended by on-going engineering studies. The recommended configuration will be documented by the approved environmental report, expected early 2002. The preferred interchange configuration includes right of way requirements.

Provide flatter curves for safety and operations. This realignment will require new right of way.

Reconstruct interchanges for better ramp terminal intersection spacing. Reconstruct entrance ramps to provide additional capacity. These features have potential for right of way requirements.

Note: Due to high traffic volumes and close interchange spacing, investigate adding auxiliary lanes between selected service interchanges. These features have potential for right of way requirements.
Next Steps in Study

- Conceptual designs for remainder of freeway segments to be presented at the Committee’s next meeting.

- Presentation and evaluation of freeway system alternatives will be provided at the Committee’s September meeting.