The Marquette Interchange Project

Delivering a Mega Project Using Today’s Available Technology

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Wisconsin Department of Transportation

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AASHTO Highway Subcommittee on Construction
San Juan, Puerto Rico
Cornerstone of downtown; Gateway to the state

- **Downtown Milwaukee relies on the Marquette Interchange**
  - 75,000 downtown residents
  - 1.1 million residents in total market area
  - Almost 4,300 private downtown businesses
  - 121,600 private jobs
  - 7 million visitors to downtown festivals & attractions

- **Wisconsin relies on the Marquette Interchange**
  - Access to 37% of state’s jobs and population in southeastern Wisconsin
  - Access to another 24% of state’s jobs and population in eastern counties
  - Key tourism access to Door County, Green Bay, and NE Wisconsin
History of the Marquette Interchange (1952-Present)

- **1952**: A north-south/east-west freeway with an interchange is proposed southeast of the Marquette University campus.
- **1968**: The Marquette Interchange is dedicated and opens to traffic on Dec. 23rd.
- **1972**: Second proposed freeway and interchange north of downtown is de-mapped due to freeway opposition.
- **1992**: Accelerated deterioration and traffic safety issues lead to recommendation to rebuild the interchange.
- **2002**: Preliminary plans for the redesign of the Marquette Interchange complete.
- **2004**: Construction begins on $810 Million redesign of the interchange.
Marquette Interchange Program Scope

- 2M sf of bridge deck
  - Steel I girder 560,000 sf
  - Pre-stressed concrete I girder 990,000 sf
  - Steel box girder 450,000 sf
  - Structural steel 40,659,000 lbs
  - Concrete 500,000 cy

- Perpetual mainline pavement
  - Asphalt 200,000 Tons

- 5 miles of retaining walls
  - 300,000 sf
Key priorities for the project

- FHWA Mega Project
  - Financial Plan
  - Design Management Plan
  - Construction Management Plan

- Build it safely
  - No major injuries or accidents

- Build it on-time
  - Project is on schedule through first two years

- Build it with the whole community
  - DBE and minority labor goals are being met and exceeded

- Build it within budget
  - Project cost to complete is under $810 million budget
Emergency Response Solutions

- Crisis Communication Plan
  - Roles and responsibilities
  - Telephone numbers
  - Periodic Updates

- Traffic Management Plan
  - Identifying alternate routes
  - Emergency access to project
Unique WISDOT Implementations:

- Pay Plan Quantity
- Escrow Bid Documents
- Dispute Resolution Board
- Electronic Bidding Package
- Mandatory Internet Bidding
- Accelerated Shop Drawing Review
- DBE Goal Condition of Award
- Civil Rights Compliance System
WisDOT - Marquette Team
Project Organization and Roles

Program Director
- Financial Supervisor
- Auditor
- Design Mega Manager
- Project/Program Supervisor
- Construction Mega Manager
- Core Project Manager
- North Leg Project Manager
- South Leg Project Manager
- West Leg Project Manager

Consultation / Tech Support

WisDOT Technical Staff
- Structures
- Geo Tech
- Materials
- Traffic
- Utilities
- Safety
- Schedules
- Real Estate
- Design
- Public Information
- Contracting
- Cost Tracking

DOT Staff
- Consultant Inspection Team
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Construction Management Consultant
Project Management Philosophy

➢ Schedule 1st, Budget 2nd, Safety ALWAYS

◆ Minimum “Cost to Complete” will occur if the project is completed on schedule.
Electronic Project Management Controls

- **Primavera Project Planner (P3)**
  - *Network Analysis Schedule*
    - Monthly Updates
    - Critical Path Management
    - Delay Analysis

- **Primavera Expedition**
  - *Daily Accountability*
    - Turnaround time
    - Document management
    - Issues tracking and resolution
    - Cost tracking and projecting

- **Field Manager**
  - *Electronic Record Keeping*
    - Inspector daily reports
    - Change orders
    - Quantity posting and estimates

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![Diagram](image)
Schedule Management

- **Program Schedule**
  - Integration of 5 major projects to deliver program by 2008
  - Mitigation of program schedule risks through project controls
  - Production rate tracking and projections

- **Project Schedule**
  - Focused on achieving interim milestones and final completion dates.
  - Multiple interim completion dates.
  - Integrated with interim completions for other contracts
  - Calendar date completion contracts
    - No extensions for weather, local material, or local labor issues
    - Liquidated Damages - $5K to $30K per day, per milestone
Budget Management

- **Cost to Complete**
  - *Major focus toward cost projections*
    - Typical project operated with a contingency and completed within a few percent of budget
    - +/- 3% of $810 Million ---> $25 Million (Unacceptable Risk)
  - *Borrowed cost projection techniques from “Vertical” industry*
  - *Cost at completion projected in real time (Expedition)*
    - Project level reporting
    - Program level accounting
  - *Essential for Federal Mega-Project*

<table>
<thead>
<tr>
<th>Category</th>
<th>Contract Amount</th>
<th>Approved Changes</th>
<th>Total</th>
<th>Pending Changes</th>
<th>Cost At Complete</th>
<th>Actual Cost</th>
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<td>$500,000</td>
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<td><strong>115,104,954</strong></td>
<td>$77,165,241</td>
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Issue Management – YESTERDAY

Request Resolution
Issue Management – TODAY

- Field Book Entries
- Verbal Discussions
- Meeting Minutes
- Letters
- Plan Revisions
- Phone Calls
- RFI
- Email
- Field Inspections

Document Control

Issue Tracking

Issue Management

Issue Resolution
Change Management

- Tracking of a cost related issue
  - Identification of a potential cost issue
  - Issue development and resolution
  - Cost tracking
  - Approval and justification documentation
  - Issuance of contract modification
  - Real time “Cost to Complete” projection based upon:
    - Initial estimate
    - Contractors proposal
    - Negotiated amount
    - Issued contract change order

SUMMARY OF PROJECT COSTS

- Original Contract Amount: $314,759,249.96
- Approved Contract Mods: ($347,988.29)
- Revised Contract Amount: $314,411,261.67
- *Pending Changes Amount: $2,042,267.28
- Anticipated Contract Amount: $316,453,528.95

At any given time a cost is projected onto the $810 Million program budget.
Build it with the whole community

- Out of $508 million of construction contracts to-date, $93 million (18%) have included work for DBE contractors or subcontractors.

- 55 different DBE firms are involved in design and construction contracts, including 45 firms from southeast Wisconsin.
Filling jobs from the community

- M-Trans labor program - which trains minorities in construction trades - had 70 graduates in 2004-05 ... about 60% of early graduates had found work in construction.

- Through January 2006, 24% of all project construction hours were filled by minority workers. The federal goal is 8%.

- Nearly 90% of the construction workers on the project are from Wisconsin.
PUBLIC INFORMATION
“Tell it like it is”

- Reliable information available to motorists
- Web site: mchange.org
  - Interactive mapping
  - Traffic bug alerts
  - Closure schedules
  - Real-time traffic flow
  - Over 63 million hits
- Print materials
  - Updated get around guide
  - Project brochures
- Grassroots communications
  - Meet anybody, anytime, anywhere!
- Media communications

“Change your approach…. 
…. not your destination”
The Marquette Interchange is a gateway to Wisconsin and a vital connector that links almost one-third of the state’s freeway traffic to the rest of the country. The original interchange, completed in 1968 at a cost of around $33 million dollars, has paid back untold dividends as a transportation workhorse and as an engine for economic development statewide.

By the early 2000’s, the Marquette Interchange:

- Carried 300,000 vehicles per day, more than double the number for which it was designed
- Provided access to 37 percent of the state’s jobs and population in southeastern Wisconsin and another 24 percent in counties along Lake Michigan
- Carried 7 million visitors annually to downtown festivals and attractions, provided key access to tourist destinations in northeastern Wisconsin, including Door County and Green Bay

Today, an urban renaissance is under way in Milwaukee’s downtown and southeast Wisconsin is poised for significant growth. The new Marquette Interchange, to be completed in 2008 at a cost of $810 million dollars, is an important re-investment in Wisconsin’s future.
Getting Around | Project Guide | News and Talk | Traffic Information | Comments Form | Site Map | Home

Home > Getting Around > Map-It Routing

To Milwaukee Area  From Milwaukee Area  Map and Driving Directions

1. STARTING POINT:
   Approaching from:
   West (Madison)

2. DESTINATION:
   Select a location from the list:
   *Indicates driving directions returned as PDF for these destinations.

3. OR Enter a street address within the service area:
   Address or Intersection:
   Milwaukee  WI

4. Select travel year and month:
   2006  Current

5. Get Driving Directions

NOTE: The Lake Parkway and Hoan Bridge will remain open as key routes during the entire Marquette Interchange reconstruction. In addition, all I-794 ramps east of the Milwaukee River will remain open, including:
### Directions for July, 2008

<table>
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<tr>
<th>Maneuvers</th>
<th>Distance</th>
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<tr>
<td>1. Start West of Milwaukee on I-94 heading EAST</td>
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<tr>
<td>2. Continue onto I-794 EASTBOUND</td>
<td>0.12 mile(s)</td>
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<tr>
<td>3. Take the JAMES LOVELL ST EXIT RAMP</td>
<td>0.25 mile(s)</td>
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<tr>
<td>4. Turn LEFT onto N JAMES LOVELL ST</td>
<td>0.14 mile(s)</td>
</tr>
<tr>
<td>5. Turn RIGHT onto W MICHIGAN ST</td>
<td>0.22 mile(s)</td>
</tr>
<tr>
<td>6. Turn LEFT onto N 4TH ST</td>
<td>&lt;0.1 mile(s)</td>
</tr>
<tr>
<td>7. Ends at N 4TH ST</td>
<td></td>
</tr>
</tbody>
</table>

**START** From West (Madison)

**END** To N 4TH ST & W WISCONSIN AVE
MARQUETTE INTERCHANGE PROJECT
Through April 2005
Get Around Guide
Ramp and Roadway Closures*

1. North 13th Street I-94 Westbound Entrance Ramp
   Closed Permanently

2. North 13th Street (Under I-94)
   Closed May 2004, Opens November 2008

3. I-43 Northbound Exit Ramp to West Kilbourn Avenue
   Closed October 2004, Opens July 2005

4. West Villa/Winnibago Street Bridge
   Closed October 2004, Opens June 2006

5. West State Street I-43 Southbound Entrance Ramp
   Closed Permanently

6. I-43 Southbound Exit Ramp to Eastbound Wells Street
   Exit to 11th St. Southbound and Wells St. Westbound remain open.

7. Wells Street Bridge Closed December 2004, Opens June 2005

8. North 10th Street Closed December 2004, Opens June 2005


10. Eastbound Fond du Lac Avenue to Eastbound McKinley Avenue
    Closed February 2005, Opens December 2005

11. I-43 Northbound Exit Ramp to Westbound Fond du Lac Avenue
    Closed February 2005, Opens October 2005

12. I-43 Southbound Exit Ramp to Eastbound McKinley Avenue
    Closed February 2005, Opens May 2006

13. Juneau Avenue Bridge Closed March 2005 (Permanently)

14. 17th Street I-94 Westbound Entrance Ramp
    Closed late January 2005 (Permanently)

15. I-94 Westbound Exit Ramp to North 22nd Street
    Closed late January 2005 (Permanently)

* Flip for closure details and alternate routes.

Visit www.mcchange.org for the most current closure information.
Smooth sailing in downtown

Thousands at events easily handle closure of I-43

It was weird. There was nothing down there — a sort of post-apocalyptic feel.

Jay Castle, watching the demolition. He had walked south on I-43 from S. McKinley to Wells St.

Officials with the Marquette Interchange Project, the Milwaukee County Sheriff's Department and the Milwaukee Police Department were prepared for the possibility of major gridlock, with an estimated 22,000 people attending the demolition ceremony. But the event went off without a hitch, with traffic flowing smoothly.

“I was trying to go south on 43 and it just seemed like a deserted highway,” said Castle.

“I thought it was kind of weird that we had to deal with this, but it was a necessary step,” said another attendee.

The demolition of the Wells Street Bridge over I-43 by the Marquette Interchange on Friday was a major event in downtown Milwaukee. The bridge had been in service for over 50 years and was being replaced as part of the Marquette Interchange Project.

More than 2,000 people attended the event, which was held in honor of the bridge and the city it served. The event featured speeches, music, and a ribbon-cutting ceremony.

“Today marks the end of an era,” said Mayor Tom Barrett.

“I am proud of the progress we have made, and I am excited for what the future holds for Milwaukee.”

The bridge closure is expected to cause significant traffic disruptions, with many drivers opting to take alternative routes. However, city officials said they were prepared for the increase in traffic and had taken steps to minimize the impact on commuters.

“While the closure of the bridge will cause some inconvenience, we are confident that we have taken every precaution to ensure a smooth transition,” said Tom Scudder, director of the Public Works Department.

The Marquette Interchange Project is a major infrastructure project that is expected to cost $1 billion and take several years to complete.

“While it may be disruptive in the short term, we are committed to completing this project and providing a safer, more efficient roadway for all Milwaukee residents,” said Scudder.

The project includes the construction of a new bridge, as well as the creation of a new downtown pedestrian plaza.

“I am excited for what the future holds for downtown Milwaukee,” said Barrett.

“With the completion of this project, we will have a modern, efficient, and safe roadway that will serve the needs of our residents for years to come.”

The Marquette Interchange Project is expected to be completed in 2024.
Community Sensitive Design
Mitigation task force

WisDOT & FHWA

Advisory Committee

4-Subcommittees

- Freeway Operations & Incident Management
- Public Information
- Transit & Demand Management
- Local Road Operations
Owner Controlled Insurance Program
“OCIP”

- What does OCIP cover?
  - General liability
  - Worker’s Compensation
  - Builder’s Risk
  - Umbrella or excess liability

- Why consider an OCIP?
  - Potential for cost savings
    - Buying in bulk
    - Elimination of duplicate coverage
    - Efficient claims handling
  - Savings will be shared through incentives for safety compliance
Innovative construction and design techniques
Design - Temporary system ramps

SB I-43 to WB I-94
**Design** - Temporary roadways/ramps

*Eastbound I-94/794 & James Lovell Street Exit*
Construction –
Straddle Supports Under I-43 NB
Construction –
Straddle Supports Under I-43 NB
Construction –
Secant Pile Walls
Construction –
Combined Sewer
Wrap-Up

- The Marquette Interchange Project is the first mega project ever in the state of Wisconsin.
- Mega Mindset established early by organizing a team blended of WisDOT staff and consultants.
- Construction is in its third year and the project remains on schedule and on budget.
- WisDOT management and expertise provides key oversight to construction process.
- “Cost to Complete” approach vital in tracking issues and costs.
- Effective public information has lessened anticipated impacts.
- Trust your ability and your team’s ability to rise to the occasion.

Change your approach, not your destination.