CONNECTING WISCONSIN

US 41 Project

▸ Annual Update 2014

Lifting US 41...

...into the 21st Century

Huge cranes carry a massive tub girder into place at the I-43 interchange. The girder is part of the new flyover ramp from I-43 to US 41.

US 41 in Brown County is bustling with construction activity, as the busiest year of US 41 Project road work is now underway. When the project is complete after the 2017 construction season, the new US 41 will be at interstate standards, with improvements and technological upgrades all along the route.

While certain aspects of highway construction have remained unchanged over the years, technology has allowed for some improvements in construction techniques, according to Mike King, P.E., US 41 Construction Supervisor for the Wisconsin Dept. of Transportation (WisDOT) Northeast Region.

"New technologies have helped in many ways" King said. "We are using them to provide a long-lasting and safer highway, and to complete the construction in less time."

For instance, bulldozers in the construction zone with large antennas sticking up from each corner of the blade are communicating with satellites. It's a high tech way to construct the road at the exact elevation and angle. Global Positioning System (GPS) data, tied to design files in the dozer's cockpit computer, place dirt and fill precisely in the right place the first time.

Probes with temperature sensors are being buried in newly poured concrete to help engineers obtain a more accurate picture of how fast the concrete is curing and strengthening. Also helping the highway is a new three-inch layer of asphalt below the concrete. It provides better hydrophobic properties for a longer-lasting roadway, and a more stable base for the paving operations, resulting in a smoother working surface and better finish.

> "(New technologies) are letting us provide a longer-lasting and safer highway, and to complete the construction in less time."
>
> -Mike King, P.E., WisDOT
> US 41 Construction Supervisor

Motorists can see the large flyover ramps at the system interchanges with WIS 29 and I-43. Tub girders are pre-fabricated and lifted into place to speed up construction. The concrete roadway is then poured over the top of these steel girders which remain hollow underneath. Lighting is installed beneath the roadway and inside of the girders, and workers will walk inside these girders for inspection while traffic rolls on up above.

High tech, embedded temperature sensors reduced roadway concrete curing time on the new US 41.

Technology is also making the roadway more safe, King said. "On the sweeping curves of the flyover ramps, we are adding a high-tech polymer overlay embedded with small stones to increase friction and keep vehicles from sliding on a wet or icy roadway."

Those are just a few of the high-tech features of the new US 41. Others include: "Weigh in Motion" truck scales embedded in the roadway which weigh trucks automatically as they roll through; Intelligent Transportation System (ITS) equipment, including cameras

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Construction outlook for 2014

"It's really going to be a busy year for US 41 construction in Brown County," said Eric Gwidt, P.E., Project Manager, US 41 North Segment. "Drivers will really begin to see the entire highway design coming together.

"But that means lots of construction activity—actually the busiest of the entire project—with many closures this year," Gwidt said, noting traffic impacts from closures at WIS 29, Shawano Avenue, Packerland Drive and Lineville Road will be significant.

Construction activity in Brown County will include work on the mainline roadway and interchanges for about 10 miles, from Glory Road to Lineville Road. Interchange work will be occurring at Waube Lane/Oneida Street, WIS 172, Lombardi Avenue, WIS 29, Velp Avenue, I-43 and Lineville Road. In addition to the interchanges, bridges are being constructed at Parkview Road, Hansen Road, Cormier Road and Morris Avenue.

"We appreciate the drivers in Brown County really stepping up and taking care in the construction zone," said Kurt Peters, P.E., Project Manager, US 41 South Segment. "We've got a lot of people working close to traffic this year—sometimes within five feet. It's important that people put down the cell phones and watch the signs and barrels—and be aware that traffic patterns will be changing frequently out there."

Although major construction activities are complete in Winnebago County, two overpasses—County GG and County Y—will be under construction and closed between March-August. This will complete the Winnebago County segment of the project.

For more information about individual projects and traffic impacts, visit the Brown or Winnebago County Project Briefs page at **US41Wisconsin.gov**.

Keeping everyone safe

Construction workers, first responders and other motorists are counting on you to be alert in the US 41 construction zone. Shoulders are narrow and construction equipment and vehicles are nearby, so obey construction signs and barrels, and eliminate distractions. "Speeding or distracted driving in the US 41 work zone creates a hazard for other drivers and for construction workers," said Wisconsin State Patrol Sgt. John Jones. "Motorists should be aware that we will be actively enforcing the reduced speed limits in the work zone—including enforcement patrols from the air and additional details from the ground. Our goal is to keep everyone safe." Jones reminds motorists to allow a little extra time if you drive through the US 41 Project. More safety tips are available at **dot.wisconsin.gov/safety.**

Sgt. John Jones
WI State Patrol

Tub girder facts

- Tub girders support bridge decks.
- Each tub girder weighs about 150,000 lbs.
- There are 216 tub girders at the WIS 29 and I-43 Interchanges.
- In total, these tub girders weigh about 32.4 million lbs., or the equivalent of about 10,800 cars...and that doesn't even include the concrete roadway on top of the girders!

Connect to the US 41 Project

There are many ways to stay connected and know if your commute is affected by construction. The 2014 US 41 Project Traveler's Guide has maps, timelines and details about individual segments of the Project. They are available at Division of Motor Vehicle (DMV) offices in Green Bay and Oshkosh as well as Wisconsin Tourism visitor centers and service stations near the construction zone. An electronic version of the Traveler's Guide may be downloaded from US41Wisconsin.gov.

On the Project website you'll also find interactive maps, US 41 Project news, Public Involvement presentations, a photo gallery, plus the US 41 Project "In This Together" kit for businesses, which includes:

- Print ad templates and examples
- Web banner ads
- In-store signage templates and examples
- Temporary business sign application
- Supplier letter template
- Radio commercial
- US 41 Project mini communications guide

Other ways to stay connected include Facebook, Twitter or by using the Wisconsin 511 system, which you can access by calling 511, or by visting 511wi.gov. There is also a new app available. Look for the WI511 app.

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Upcoming public meetings

- WIS 29 and Packerland Drive interchanges | Shawano Avenue
  - Early Summer 2014
- Lineville Road and Velp Avenue interchanges
  - Summer 2014
- Packerland Drive interchange open house
  - Summer 2014
- Oneida Street interchange (Mainline)
  - Fall 2014

Please check the US 41 Project website (**US41Wisconsin.gov**) for these and other US 41 meetings.

Last year in review

Much was accomplished in 2013. Besides the projects pictured here, the WIS 44 interchange and the mainline roadway from US 45 to Breezewood Lane were completed in Winnebago County.

In Brown County, the 9th Street roadway and sidewalks underneath US 41 were completed, and work began at the Lineville Road and I-43 interchanges; ramp improvements began at the WIS 172 interchange, and work at the Hansen Road Bridge began.

For more information, see: **US41Wisconsin.gov**.

1: WisDOT Secretary Mark Gottlieb cuts the ribbon as the Lake Butte des Morts Causeway was officially opened in June.

2-3: The Tribal Heritage Crossing of the WIOUWASH State Trail was opened with a ceremony in October on the Lake Butte des Morts Causeway. Loretta Metoxen (center), Wisconsin Tribal Representative from the Oneida Tribe of Indians of Wisconsin, was one of the dignitaries who spoke and assisted with the grand opening.

4: All eight new lanes of mainline US 41 from Orange Lane to Glory Road were opened to traffic in the fall.

5: Improvements at Grant Street and US 41, including two roundabouts, were completed and opened to traffic.

6: Work continued on the huge flyover ramps at the WIS 29 system interchange.

New technology used on US 41 Project

Mike King, P.E., WisDOT US 41 Construction Supervisor

(continued from p.1)

and traffic sensors that allow the DOT and first responders to monitor traffic conditions in real time; new LED lighting on all bridges; Crash Investigation Sites providing safe pull-outs for minor crash investigation; and the Freeway Service Team vehicle, a heavy-duty tow truck used to quickly clear accidents and assist stranded motorists, resulting in fewer crashes, backups and injuries on the US 41 Project.

"We are also recycling on the US 41 Project," King said. "Virtually all of the old concrete and asphalt is recycled and used on site." He noted that recycled materials are also used from elsewhere–the Fox River cleanup, for example, where cleaned and detoxified sand is being used as fill.

US 41 Facts

- Skyline of cranes: 60 large cranes are on the US 41 site this spring, the most ever.

- There have been 5,764 different workers on the US 41 corridor, totaling 2,648,764 hours. That would be one person working 40 hours per week for the next 1,273 years.

- There are a total of 1.9 million square feet of structures on the US 41 Project.

441

TRI-COUNTY EXPANSION

Project update

A six-mile stretch of US 10/WIS 441 from Cold Spring Road to a half mile east of Oneida Street will be reconstructed and expanded from four to six lanes beginning this year. The WIS 441 Tri-County Project is needed to address safety concerns and traffic demands now and in the years ahead. Currently, the crash rates on US 10/WIS 441 exceed statewide averages for similar urban freeways.

Construction begins in summer 2014 and will continue through 2019.

For more information, visit: **US41Wisconsin.gov/wis441.**

Q: What do you think of the newly improved US 41 in Winnebago County?

A: The new work on US 41 has made it flow better, and has done a lot to improve the interchanges. Overall, it was a very good project and I'm especially pleased with the enhancements they made to the Butte des Morts Causeway. I think it was a very beneficial project for this area.

Mark Harris, County Executive
Winnebago County

A: Oshkosh welcomes over a million visitors each year, and the new highway expands our capacity for more traffic and better traffic flow. The Lake Butte des Morts Causeway and Tribal Heritage Crossing of the WIOUWASH State Recreational Trail is an exciting opportunity to invite people to Oshkosh for outdoor recreation.

Wendy K. Hielsberg, Executive Director
Oshkosh Convention & Visitors Bureau

A: The Highway is now just a lot nicer to drive. I think the trail is beautiful. It's something that a lot of communities would want to have, so we feel pretty special here, and I think it's really uniquely Oshkosh. Recreation is one great reason to have trails, but transportation and connectivity are just as important, and this trail lets everyone do that.

Emily Dieringer, Coalition Coordinator
re:TH!NK | Winnebago County Health Dept.

A: The improved highway greatly enhances the movement of not just people but products and raw material in and out of the community. It was definitely worth the wait and inconvenience. I think the new US 41 is a reflection of the vibrancy and vitality of the economic base here, and now some development projects which had been on the back burner are moving to the front burner.

John Casper, President/CEO
Oshkosh Chamber of Commerce

A: The characteristics of this trail crossing on the Lake Butte des Morts Causeway will be a tremendous asset to the county. Not only will it attract great attention from persons interested in viewing the 11 kiosks dedicated to Wisconsin Native American Heritage, but it will also facilitate fishing access at a key spot within the Winnebago waterways.

Rob Way, Parks Director/Expo Manager
Winnebago County Parks Dept.

A: The feedback (on the trail) has all been positive. There are tons of people on there all the time. It's become a big walking area and a lot of families are enjoying it. And the new trail is kind of a catalyst too, to finish the Oshkosh bike-pedestrian plan and connect the new trail to the Riverwalk on the south side.

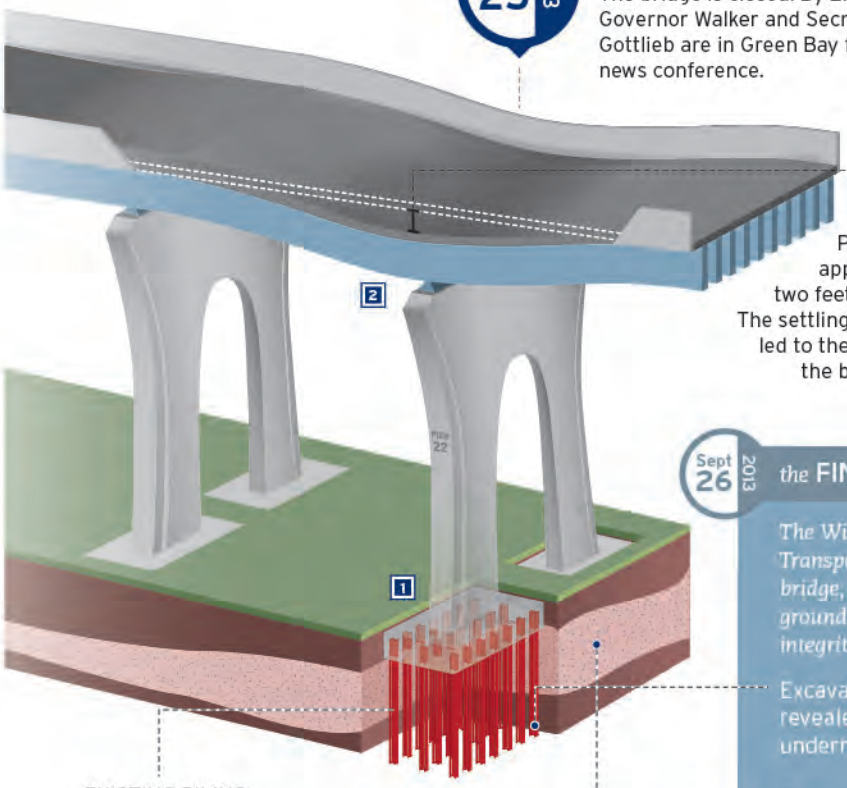
Vicky Redlin, Program Manager
Winnebago County Parks Dept.

Repairing *the* Leo Frego Memorial Bridge (I-43)

the FACTS

Sept 25 2013

Early morning 911 calls report the Leo Frigo Bridge is sagging. The bridge is closed. By 2:30 p.m., Governor Walker and Secretary Gottlieb are in Green Bay for a news conference.



2± feet

Pier 22 sank approximately two feet overnight. The settling of the pier led to the sagging of the bridge deck.

EXISTING PILING
A long slender column, usually of timber, steel or reinforced concrete, driven into the ground to carry a load.

Illustration purposes only.
Not to scale.

Oct 05 2013 *temporary* STABILIZATION *Completed* Nov. 06, 2013

Federal government approved Emergency Relief Funds to cover 100% of the costs for the first 180 days and 90% after.

STABILIZATION COST:
$1.6 million

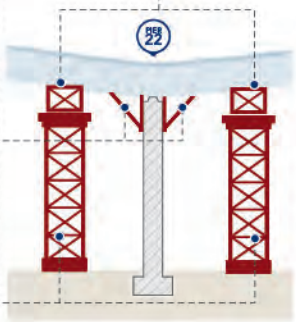
REPAIR COST:
$7.7 million

An emergency stabilization project was the DOT's first priority to ensure worker safety.

Two lateral stabilzers (four total) were placed on each side of Pier 22 to keep Pier 22 from tipping if it settles further.

Four towers (two per side) provided support for the horizontal trusses. Together, the trusses and towers protect the superstructure from further settling.

578,000 pounds od steel were used in stabilization



Sept 26 2013 *the* FINDINGS

The Wisconsin Department of Transportation investigated the entire bridge, including soil analysis, groundwater analysis, structural integrity and environmental impact.

Excavation at pier 22 revealed corroded pilings underneath the footing.

Soil analysis discovered industrial fill material led to corrosion and the eventual buckling of pilings supporting the pier.

Further investigation revealed corrosion on Piers 21 through 25.

Nov 01 2013 *the* FIX *Bridge open* Jan. 05, 2014

FIX INCLUDES:

1,374 CUBIC YARDS *of concrete*

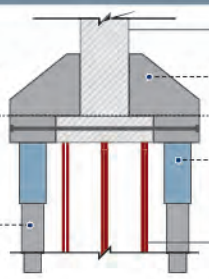
65,957 LBS *of steel*

682,670 LBS *of coated steel*

27,960 LBS *of structural carbon steel*

1

The foundations at Piers 21-25 will be stabilized with new foundation support.



EXISTING PIER

CONCRETE BUTTRESS WALL

GROUND LEVEL

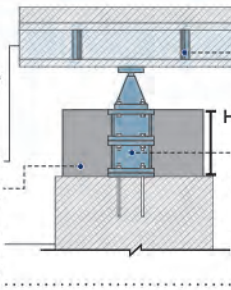
30-FOOT SPECIAL PLASTIC SLEEVE *isolates drilled shaft from industrial fill*

DRILLED SHAFT *Large 60" concrete shafts for support*

EXISTING PILING

2

Jacking will be used to raise the sagging deck back into place. Concrete reinforced with epoxy coated steel will be poured around bolsters.



EXISTING BRIDGE DECK

JACKING STIFFENER

HEIGHT VARIES

STEEL BOLSTER *A structural part designed to support the bearing after the superstructure is jacked to the proper elevation.*

EXISTING GIRDER

CONCRETE ENCASEMENT OVER BOLSTER

EXISTING PIER CAP

Wisconsin Department of Transportation

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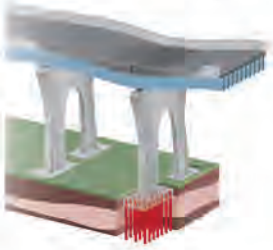
INSIDE

News you can use about the US 41 Project!

- Construction updates
- What to expect on US 41
- US 41 Facts
- Repairing the Leo Frigo Memorial Bridge (I-43)



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US 41 Project

Annual Update 2014

U.S. Department of Transportation
Federal Highway Administration

Wisconsin Department of Transportation

Brown County's big year

The upcoming US 41 Project construction season will be the busiest construction summer for the Project in Brown County. We would like to thank motorists for your patience so far on the US 41 Project, as well as during the Leo Frigo Memorial Bridge closure. See our infographic inside for an explanation of what happened on the bridge and how we repaired it.

Remember to plan a little extra travel time if you will be driving on US 41 in Brown County, and slow down for your own safety and the safety of the construction workers.

By the end of this construction season you will notice many traffic changes along US 41. This will be especially true at the WIS 29 system interchange where you will be able to drive on the new flyover ramps to and from WIS 29.

It is thanks to hard work and new technologies that we will be providing a greatly improved US 41 on time and on budget.

Colleen Harris, P.E.
Deputy Director
WisDOT NE Region

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