TMP DOCUMENTATION AND REQUEST FOR APPROVAL

We are requesting approval of the Transportation Management Plan (TMP) for the project detailed below. This project is categorized as TMP type 2. Impacts resulting from project activities meet the current work zone policies of the Wisconsin Department of Transportation.

TMP/Project Type	Action
A. Project that requires a DSR and is TMP Type 1, 2 or 3.	Complete and submit this document and any attachments to BPD project services liaison.
B. Project that requires a DSR and is TMP Type 4.	Complete this document as the TMP Executive Summary and submit along with separate TMP report to BPD project services liaison.
C. Project does not require DSR and is TMP Type 1, 2 or 3.	Complete and submit this document and any attachments to BPD project services liaison.
For Federal Oversight projects, coordinate early in TMP development with BPD & FHWA project liaisons.	

1. Project Information

Design ID:	1550-21-00	PS&E Date:	08/01/2014
Project Title:	Cumberland – Spooner	Let Date:	11/11/2014
Project Limits:	South County Line to Woodyard Road	Project Length	3.807 Miles
Highway:	USH 63	Project Duration	65 Calendar Days
County:	Washburn	AADT	3070 (ATR #650002 data adjusted to 2015 AADT)

Project type (recst., recondition, SHRM, etc.): Resurface
Engineer's Estimate: ☐ < $1 Million ☒ $1M-3M ☐ $3M-10M ☐ >$10M
Is the project a National Highway System (NHS) route? ☒ Yes ☐ No
Is the project Federal Oversight? ☐ Yes ☒ No
OSOW Route? ☐ Yes ☒ No

2. Brief description of work activities:
This project is scheduled to be built during the April – October 2015 construction season. Mill 2.5" of asphaltic surface from the existing roadway and resurface with 4" HMA Pavement. Increase paved shoulder width from 3 feet to 5 feet while maintaining existing total shoulder width. Clear vision triangles, increase turning radiuses and add a right turn lane for southbound traffic at the Brickyard Road intersection on the west side of USH 63 (Brickyard Road West intersection). Roadside clearing out to 45 feet from C/L, except trees of aesthetic value in front of houses will not be removed even if within this limit. Replace permanent signing and pavement marking. Replace steel plate beam guard with MGS Guardrail. Install centerline and shoulder rumbles. Replace 3 cross drain and 2 side drain culverts. Reset the end section(s) at one or both ends of 9 cross drain culverts. Install a culvert pipe through a cattle pass and fill void with grout. Remove polystyrene insulation board and underlying frost-susceptible soils at 2 locations and remove polystyrene insulation board only at 1 location.

3. Briefly describe the staging planned for maintaining traffic:
A single lane controlled by flaggers will be open to traffic during the milling, HMA Pavement, base aggregate shoulder, rumble strip, and pavement marking construction on USH 63 and during the reconstruction of the Brickyard Road West intersection. USH 63 will be open to two-way traffic during the replacement of steel plate beam guard with MGS Guardrail, with a narrowed driving lane adjacent to the work. The replacement of 2 shallow cross drain culverts, the resetting of the end sections of 6 cross drain culverts, and polystyrene insulation board removal at 1 location just north of S. Heart Lake Road will be staged to allow daytime single lane restriction with flaggers. USH 63 will be closed and traffic detoured for the replacement of 1 shallow cross drain culvert at Chain Lake at Station 473+33 (Chain Lake culvert replacement), for polystyrene insulation board and frost-susceptible soils removal

(insulation removal/EBS) at 2 locations just north of Brickyard Road, and for the replacement of any deep cross drain culverts determined necessary during construction.

4. Will there be restrictions on pedestrian/bicycle access? Yes, any pedestrians and bicycles traveling along the shoulders of USH 63 or the sideroads will be subject to the same traffic control as motorized traffic. The only existing pedestrian or bicycle facility associated with the project is the Ice Age National Scenic Trail. Brickyard Road is an unofficial unmarked connecting route between the Timberland Hills Area segment and the Grassy Lake segment of the trail, according to the Ice Age Trail Alliance website.

If Yes:

a) Will sidewalk/multiuse path be closed? ☐ Yes ☐ No N/A – none exist in project area.

b) Describe how pedestrian and bicyclists will be accommodated (e.g., temporary paths, surface material, separation and protection from construction activities and drop-offs, etc.) There are no existing on-road or off-road pedestrian/bicycle accommodations within the project limits, which indicates there is no need to provide these accommodations during construction. The project special provisions will require the contractor to provide the Ice Age Trail Alliance with 14 calendar days minimum advance notification prior to starting the Brickyard Road West intersection reconstruction and prior to closing USH 63 for the insulation removal/EBS just north of Brickyard Road and the Chain Lake culvert replacement work, and to notify them if there are any subsequent changes in the schedule of this work, when this work is completed, and when USH 63 is re-opened to traffic, so that they can keep trail information on their website current. The special provisions will advise the contractor to be aware that pedestrians may walk through the Brickyard Road work zone in or along the open lane, and will require flaggers to stop USH 63 and Brickyard Road traffic to allow pedestrians to walk through this work zone safely, if necessary.

c) Will crosswalks be provided? ☐ Yes ☒ No
What is the spacing of crosswalks (measured in blocks or feet)? Consideration should be made for adequate spacing (measured in blocks or feet) None exist.

d) Describe how the strategies are in compliance with ADA? The Ice Age Trail is located across natural terrain, therefore ADA is not applicable.

5. Briefly describe how access to traffic generators, businesses, school buses, garbage trucks, and postal services will be mitigated (alternate routes, etc.): Access to all residential, field, and wayside entrances and all side roads on USH 63 will be maintained, except when surfacing materials are placed on the entrances. The reconstruction of the Brickyard Road West intersection will be staged to allow a daytime single lane restriction with flaggers, which will allow the businesses and cemetery located to the west of the intersection to maintain access to the highway. A 20 foot minimum width will be provided at the end of each workday to accommodate two-way traffic at this intersection during nighttime hours. When USH 63 is closed and traffic detoured for the reasons stated in Section 3 above using the state trunk highway detour route described below, local traffic including school buses, garbage trucks, and postal services will have to use alternate routes as described in Section 12 below. Disruptions of school bus traffic will be minimized by requiring that the USH 63 closure and the detour of all through traffic take place only after school is released in June 2015 until June 25, 2015. All closures of USH 63 will be done so that residents will always have access to alternate routes.

6. Will the project have lane closures? ☒ Yes ☐ No

If Yes:

a. Are there restrictions on when lane closures are allowed? ☒ Yes ☐ No

b. What hours/days are lane closures permitted? Flagging operations will be used for one-lane closures on USH 63 and all intersecting roads on the project and will be limited to daylight hours from Monday at 6:00 AM until Friday at 3:00 PM during each work week as necessary for the duration of the project. One-lane closures during the reconstruction of the Brickyard Road West intersection to a base aggregate surface capable of carrying traffic will be limited to daylight hours from Monday at 6:00 AM until Wednesday at 10:00 PM within one work week during the time period from project start to July 1. Two-way traffic will be restored at the end of

each day of single lane traffic restrictions. USH 63 will be closed to traffic at the Chain Lake culvert replacement (at Station 473+33) and at the insulation removal / EBS locations just north of Brickyard Road from Monday at 6:00 AM until Thursday at 10:00 PM within one work week during the time period of June 8 – June 25, 2015. A short-term detour will be used while USH 63 is closed. USH 63 and all intersecting roads will be kept open to two-way traffic from each Friday at 3:00 PM until the following Monday at 6:00 AM during the peak tourist season from Memorial Day to Labor Day. See Item #8 for information on the USH 63 detour route.

c. How were traffic counts used in determining permitted lane closure times? (For multi-lane road, indicate typical peak hour volume per direction of travel. For two-lane, two-way road indicate AADT). The 2010 AADT count on the project was 3000 vehicles per day. Based on this count the 2014 forecast AADT on the project was 3200 vehicles per day (see attached Traffic Forecast Report). The 2015 forecast AADT is 3070 vehicles per day, which is based on adjusted ATR #650002 data. 2012 continuous count data collected within the project limits 0.7 mile north of Barronett (ATR #650002) shows that for June, July, and August the Monthly Average Week-End Traffic (MAWET) exceeds the Monthly Average Week-Day Traffic (MAWDT) by 42% - 47% (see attached Annual Day of Week Summary for 2012 for ATR #650002).

7. Please provide the following:

a. Minimum lane width to be maintained. 10 feet. This width will be maintained during the staged culvert replacements at Stations 494+21 and 540+18. The lane width may need to be reduced to 10 feet during the temporary widening construction for the staged culvert replacements, the polystyrene insulation board removal just north of S. Heart Lake Road, the resetting of end sections of some culverts, the guardrail replacement at Chain Lake, and the right turn lane construction at the Brickyard Road West intersection. The lane width on Brickyard Road may need to be reduced to 10 feet during the staged reconstruction of the Brickyard Road West intersection. All work that reduces the lane width to 10 feet on USH 63 will be required to be completed in one day or less. Temporary traffic control signs informing the traveling public about the width restriction will be placed at major intersections beyond the project ends – at USH 63 & STH 48 in Cumberland, USH 63 & CTH B/CTH H north of Cumberland, and USH 63 & STH 253 in Spooner. Traffic Control Signs PCMS may be placed in advance of the USH 63 & STH 48 intersection in Cumberland and the USH 63 & STH 253 intersection in Spooner to inform the traveling public of lane width restrictions as directed by the engineer. It is anticipated that a 12-foot lane width will be maintained during the other staged construction work under this project.

b. Minimum height (if less than typically available) 15 foot height restriction on detour route (see Section 8b).

c. Available roadway width (lanes + shoulder) 36 feet (12-foot paved lanes, 3-foot paved shoulders, 3-foot base aggregate dense shoulders.)

d. Total number of lanes maintained 2.

8. Will the project be detoured? ☒ Yes ☐ No

If yes:

a. Explain length of detour, travel times, improvements required for signal timing, surface and shoulder conditions, capacity, etc.: The proposed detour route for all through NB traffic is STH 48 east from USH 63 in Cumberland to USH 53, then USH 53 north to the intersection of USH 63 and USH 53 north of Spooner. The proposed detour route for all through SB traffic is USH 53 south from the intersection of USH 63 and USH 53 north of Spooner to STH 48, then STH 48 west to USH 63 in Cumberland. The length of the NB detour is 38.88 miles, and its estimated travel time is 39.2 minutes. The length of NB USH 63 between the STH 48 East intersection in Cumberland and its interchange with USH 53 north of Spooner is 24.99 miles and its estimated travel time is 32.2 minutes. The detour would add 7 minutes of estimated travel time for through NB USH 63 traffic under normal conditions. The length of the SB detour is 38.65 miles, and its estimated travel time is 39.4 minutes. The length of SB USH 63 between its interchange with USH 53 north of Spooner and the STH 48 East intersection in Cumberland is 24.89 miles and its estimated travel time is 32.0 minutes. The detour would

add 7.4 minutes of estimated travel time for through SB USH 63 traffic under normal conditions. Resurfacing projects are scheduled for construction in 2015 on both NB and SB USH 53 between 26th Avenue and CTH A, within the proposed USH 63 detour route. Work on these resurfacing projects probably will be in progress when the USH 63 detour is in effect, and they will always maintain at least one lane open in each direction on USH 53, which should be adequate for the combined USH 53 and detoured USH 63 weekday traffic volumes. For this short duration detour no improvements are required for surface and shoulder conditions or capacity. There are no signals on the detour route. The signing for this detour will be included in the contract for Projects 1560-31-71/1550-04-60.

b. Are there width and height restrictions on the detour? ☒ Yes ☐ No 15 foot vertical clearance where USH 53 overpasses STH 48. NB detoured traffic will have to travel under the USH 53 overpasses, but SB detoured traffic will not.

9. List major special events and holidays, and how traffic disruptions will be minimized: Holiday work restrictions will be included in the construction contract to limit work on Memorial Day, Fourth of July, and Labor Day holidays. Traffic disruptions will be minimized by requiring the short-term detour route be used only after school is released in June 2015 until June 25, 2015. Memorial Day restrictions will be no on-road work from noon Friday, May 22, 2015 until Tuesday, May 26, 2015 at 6:00 AM. July 4th restrictions will be no on-road work from noon Friday, July 3, 2015 until Monday, July 6, 2015 at 6:00 AM. Labor Day restrictions will be no on-road work from noon Friday, September 4, 2015 until Tuesday, September 8, 2015 at 6:00 AM.

10. Describe the method(s) (LCAT, Quadro, FDM 11-50-30, Synchro, etc.) used to estimate motorist delays or queue length? (Applicable only for freeways, expressways, and signalized corridors). USH 63 is not a freeway, expressway, or signalized corridor.

11. What is the anticipated travel delay during peak travel periods for freeways and expressways (also indicate frequency, e.g. daily and duration).

Please compare the peak hour volumes per lane with the work zone capacity criteria in 11-50-30. If it exceeds the estimated capacity, a delay calculation is required. If the delay is more than 15 minutes, the TMP will be a type 3 and if less than 15 minutes, it generally will be a type 2. The Regional Work Zone Engineer can assist you in determining your delay. USH 63 is not a freeway or expressway.

12. Identify alternate routes anticipated, and any alternate route improvements or signing planned. Several alternate routes to be used primarily by local traffic are anticipated on the town road system. Old Highway 63 runs roughly parallel to USH 63 a short distance to its east for the entire length of the project, and is connected to USH 63 by the following sideroads, listed from south to north: 30th Avenue, Brickyard Road, South Heart Lake Road, and Woodyard Road. In lieu of the old highway, traffic could leave USH 63 just north of Barronett and travel approx. 2 miles east on 30th Avenue, then proceed north on Lehman Lake Road to re-enter USH 63 a little more than one mile north of the north end of the project. Traffic could also leave USH 63 in Barronett and travel west on Wisconsin Avenue, then north on Prospect Street, west on 30th Avenue, north on Leach Lake Road, east on Brickyard Road, north on Glendenning Road, then east on CTH J to USH 63, or west on CTH J, north on Woodyard Road, then east on Woodyard Road to USH 63. Detoured USH 63 traffic has several alternate routes available to reach Shell Lake and Spooner. NB detoured traffic can travel west on CTH B from USH 53 to USH 63 on the north side of Shell Lake, and can travel west on CTH D from USH 53 to USH 63 on the south side of Shell Lake. NB detoured traffic can travel northwest on STH 253 and west on STH 70 from USH 53 to USH 63 in Spooner. SB USH 63 traffic can continue on USH 63 to reach Spooner and Shell Lake, or can elect to travel south on USH 53 and use STH 70, CTH B, or CTH D as appropriate to reach these cities. No alternate route improvements or signing are planned.

13. Are any intersection traffic control changes proposed such as temporary signals, temporary changes to an all way stop, etc? No.

14. Are there anticipated traffic impacts from the proposed project on other roads/routes in the region/corridor? Identify other projects in the corridor (only if delay anticipated on this project) Yes. The 2015 USH 63 AADT is estimated at 3,070 vehicles per day (as shown in Section 1 above), of which 1,569 vehicles per day will be NB and 1,501 vehicles per day will be SB. The USH 63 detour of through traffic will add an estimated 1,255 vehicles per day to EB STH 48 and NB USH 53 traffic and an estimated 1,201 vehicles per day to SB USH 53 and WB STH 48 traffic. An estimated 614 vehicles per day (both directions combined) will travel on local alternate routes to bypass the USH 63 closure, which will increase the amount of traffic using the town road system adjacent to the project. Traffic will also increase on CTH D, STH 253, CTH B and STH 70 as detoured USH 63 traffic uses these roads as alternate routes to reach Shell Lake and Spooner as described in Section 12 above. Even when there is no detour of USH 63 traffic, there will still be an increase in traffic on the town road system and on USH 53, CTH D, STH 253, CTH B, and STH 70 as motorists seek to avoid the single lane restrictions controlled by flaggers associated with staged construction. The information requested about delay and methods used to estimate it in Sections 10 and 11 above do not apply to this project, because USH 63 is not a freeway, expressway, or signalized corridor.

15. Does the project affect other regions/states? ☐ Yes ☒ No
If yes, explain coordination and mitigation strategies: _____

16. Check mitigation strategies planned

STRATEGY		COMMENTS
Public information campaigns	☒	See Section 17 below.
Off-peak lane closures	☐	_____
Extra law enforcement	☐	_____
Temporary widening to maintain traffic lanes	☒	During staged culvert replacements, & possibly during Brickyard Road West intersection reconstruction.
Changeable message signs (PCMS)	☒	Use during detour and possibly lane width restrictions.
Ramp closures	☐	_____
Temporary signals/timing revisions	☐	_____
Coordination with adjacent projects	☒	Needed with Projects 1560-31-71 and 1550-04-60
Innovative contracting, (lane rental, A+B, etc)	☒	$13,000 per calendar day in Interim Liquidated Damages for USH 63 closure/detour.
Temporary Emergency Pullouts	☐	_____
Motorist service patrols	☐	_____
Nighttime Work	☐	_____
Enhanced Traffic control devices (Wet reflective pavement marking, temp concrete barrier, etc)	☐	_____
Reduced regulatory speed limit (requires declaration approved by Regional Traffic Engineer, & by BHO if 65-mph hwy.)	☐	_____

Other (identify):

17. Describe public information strategies planned (coordinate this activity with your Regional Communications Manager): Media news release after construction contract is executed, before the start and after the end of detour(s), and additional news releases during construction as needed. A project website will be created to keep the public informed before and during the project. Coordination with Washburn County, Town of Barronett, Town of Lakeland, and emergency response agencies. Notification by the project engineer or contractor as appropriate will be provided to the following businesses and organizations about impending project work that will impact their operations:

Shell Lake School District; businesses and organizations west of USH 63 that use Brickyard Road to access the highway (Brickyard Pottery, Lakeside Cemetery, Madison Construction); Ice Age Trail Alliance; and others as appropriate. 511 and STOC will be notified through Lane Closure System entries.

18. Describe incident management strategies planned: Coordinate with emergency service providers regarding incident and access planning. The Regional Incident Management Plan will be followed.

19. Describe how transit impacts will be mitigated:
a) Is access to bus stops affected? ☐ Yes ☒ No. If yes, explain

Attachment(s) ☒ Yes ☐ No
Please list: Traffic Forecast Report; Detour Route Map; Local Alternate Routes Map; Annual Day of Week Summary for 2012 for ATR #650002; Road User Costs and Interim Liquidated Damages Correspondence and Calculations

TMP Approval and Concurrence:

Project ID: 1550-21-00

Preparer of TMP: Greg Pesola **Title/Company: Design Project Leader/WisDOT**
☐60% (initials) ☒90% GP (initials)

Approval
Project Manager: Phil Keppers Date: 9/16/2014 Telephone: 715-395-3027

Jeffrey D. Olson — 9/18/14
Reviewer (Regional Traffic or Local Prog. Mgmt. Consultant) — Date
☐60% (initials) ☐90% (initials)

Marc B. Hahn — 9/19/14
Region Project Development Chief or Local Program Manager — Date
☐60% (initials) ☐90% (initials)

Concurrence:
John J. Stoy — 9/23/14
BPD Project Services Chief — Date
☐60% (initials) ☐90% (initials)

FHWA (Federal Oversight Projects Only) — Date
☐60% (initials) ☐90% (initials)

TRAFFIC FORECAST REPORT

PROJECT ID(S): 1550-21-00 & 1560-31-00
ROUTE(S): USH 63

DISTRICT/COUNTY(IES): NW / Washburn
LOCATION: SCL - Woodyard Rd - CTH B East
COMPLETED: November 23, 2010

Traffic Forecasting Section; Bureau of State Highway Programs; Division of Transportation Investment Management

Developed by: Lang Spicer
E-Mail ID: lang.spicer@dot.state.wi.us
Phone: (608) 266-7401
FAX #: (608) 267-0294

Design Values (%'s)

ROUTE(S):	USH 63		
Design Volume(s):			--
K250	10.8	--	--
K100	12.4	--	--
K30	14.0	--	--
P(PHV)	17.1	--	--
T(DHV)	5.4	--	--
T(PHV)	3.0	--	--
D (Dsgn hr)	63/37	--	--
K8(ADT)	--	--	--
T(A8HV)	--	--	--

Truck Class %'s

Truck Class	Seg. 1	Seg 2.	Seg. 3
2D	2.2	--	--
3AX	0.6	--	--
2S1+2S2	1.6	--	--
3-S2	2.2	--	--
DBL-BTM	0.1	--	--
TOTAL	6.7%	--	--

Specify Last Count & Forecast Year:

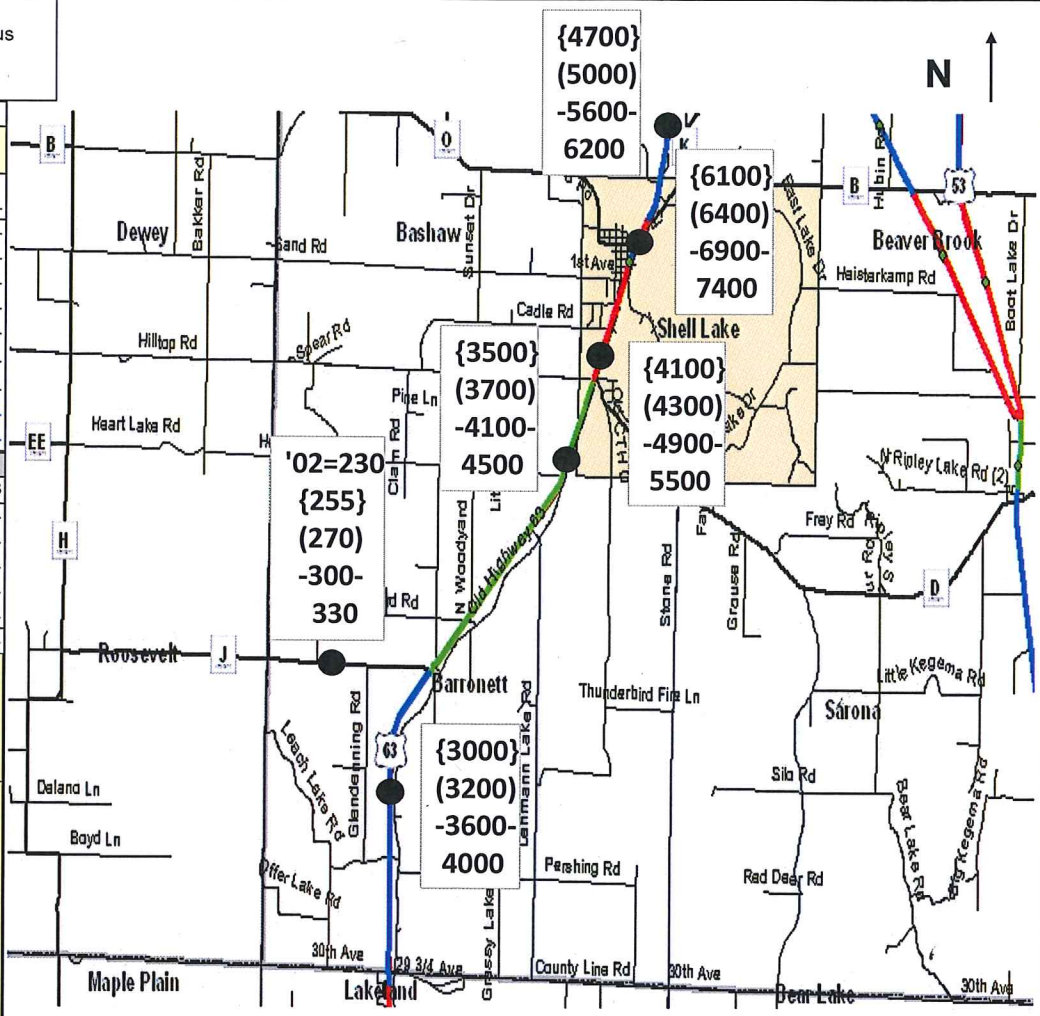
	{000}	2010	AADT
.	(000)	2014	AADT
.	-000-	2024	AADT
	000	2034	AADT

Notes on the Forecast:

1. The forecast assumes no significant new traffic generators will be developed in the area for the foreseeable future.

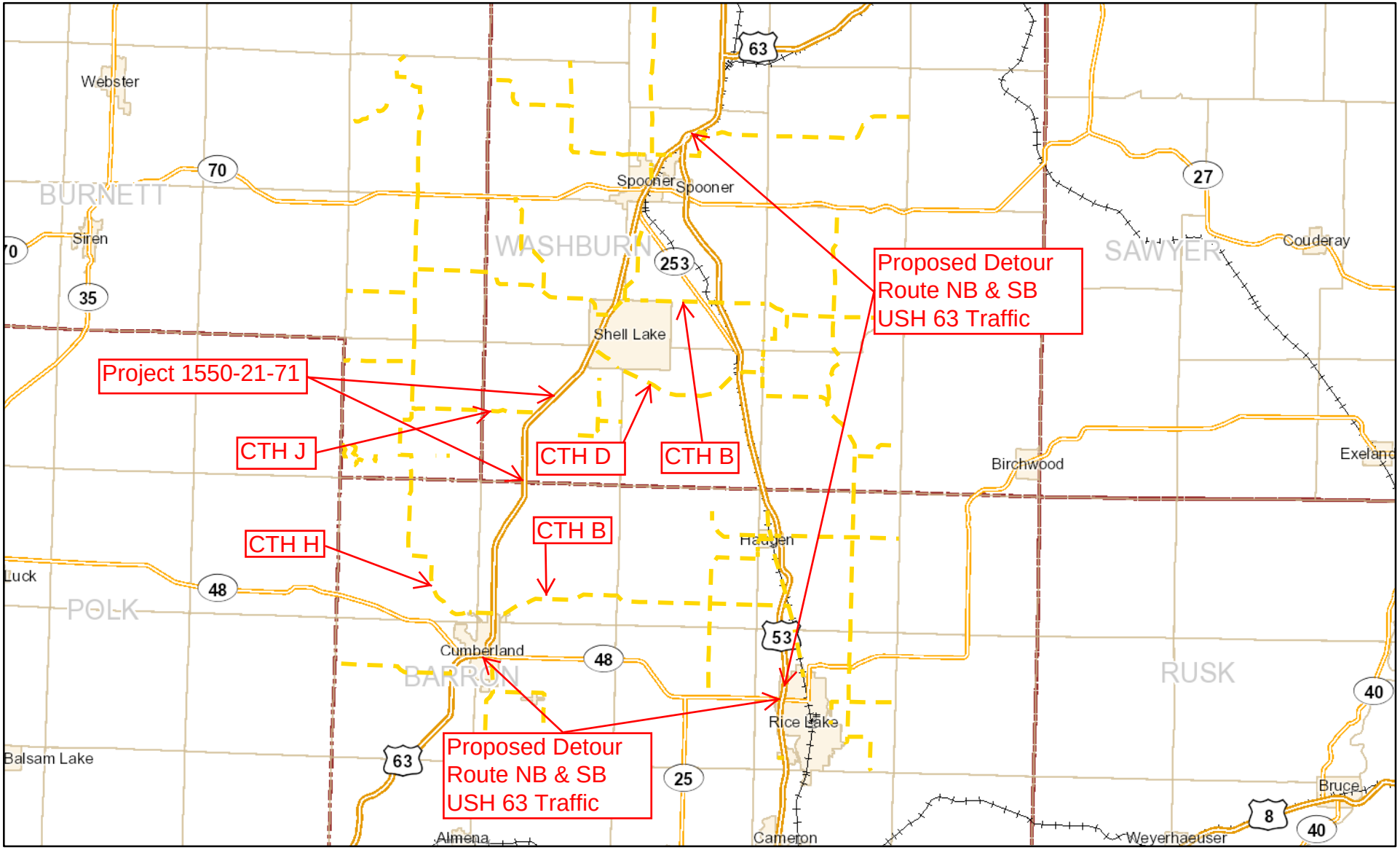
2, USH 63 is a factor group VI highway indicating high fluctuation from a seasonal perspective. USH 63 is considered a rural minor arterial highway for count purposes at this location.

3, Truck type percentages were obtained from a 2008 vehicle class site on USH 63 north of the Barron County Line.



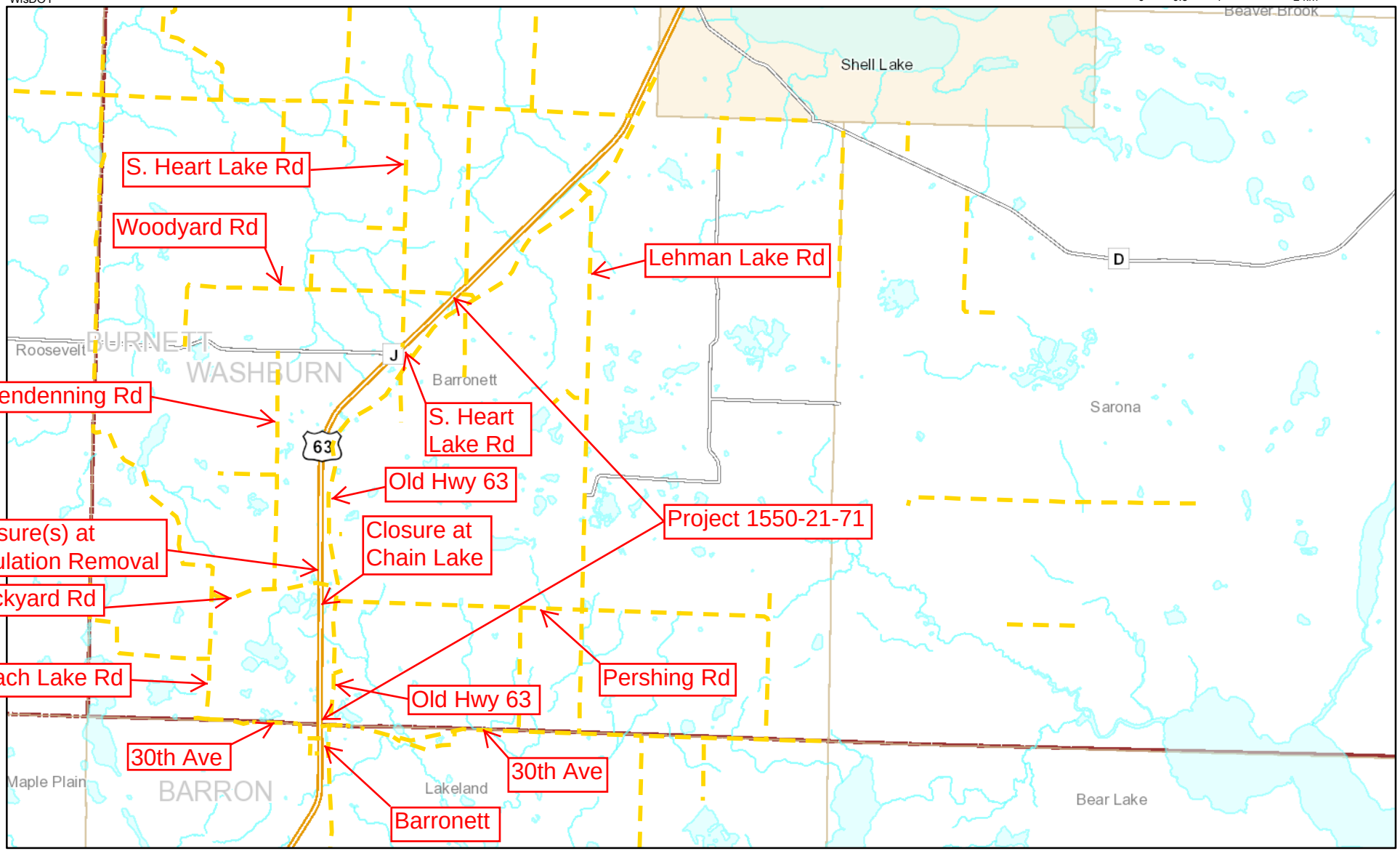
January 11, 2014
exported from dotview
WisDOT

USH 63 Detour Route



January 11, 2014
exported from dotview
WisDOT

Local Alternate Routes



Railroads
Interstate Highways
US Highways
State Highways
Off-Mainline Routes
County Trunks
Rivers/Streams
Bodies of Water
City
Village
Township
Counties
Transportation Regions

Wisconsin Department of Transportation

Annual Day of Week Summary for 2012

Site Names: 650002, 6423, NW
County: Washburn
Funct. Class: R Principal Arterial - Other
Location: USH 63 - 0.7 MI N OF BARRON COUNTY - BARRONETT

Seasonal Factor Group: 6
Daily Factor Group: 6
Axle Factor Group: 1
Growth Factor Group: 1

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	MADT	MAWDT	MAWET	% POS
Jan	2,242	2,009	1,996	1,925	2,171	2,867	2,258	2,210	2,025	2,250	49
Feb	2,600	2,148	1,896	1,731	2,361	3,310	2,334	2,340	2,034	2,467	50
Mar	2,570	2,048	2,055	2,085	2,309	3,120	2,498	2,383	2,124	2,534	50
Apr	2,870	2,288	2,162	2,197	2,548	3,440	2,625	2,590	2,299	2,747	50
May	3,888	3,671	2,572	2,531	2,957	4,907	3,424	3,421	2,933	3,656	50
Jun	4,806	3,041	2,798	3,009	3,417	5,137	3,884	3,727	3,066	4,345	51
Jul	6,019	3,611	3,562	3,494	4,130	5,782	4,782	4,483	3,699	5,400	49
Aug	5,580	3,324	3,012	3,207	3,800	5,874	4,207	4,143	3,335	4,893	50
Sep	4,288	3,715	2,818	2,638	3,088	4,559	3,827	3,562	3,065	4,058	48
Oct	3,613	2,618	2,450	2,494	2,886	4,115	3,130	3,044	2,612	3,372	50
Nov	2,831	2,354	2,455	2,557	2,585	3,330	2,369	2,640	2,487	2,600	49
Dec	1,755	2,050	2,069	2,252	2,248	2,789	2,198	2,194	2,155	1,977	51

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	AADT	AAWDT	AAWET	% POS
2012	3,589	2,740	2,487	2,510	2,875	4,102	3,128	3,061	2,653	3,358	50
2011	3,376	2,619	2,431	2,455	2,875	4,053	2,957	2,967	2,595	3,166	50
2010	3,541	2,783	2,423	2,548	2,869	4,063	3,046	3,039	2,656	3,293	50
2009	3,646	2,653	2,385	2,456	2,802	3,970	3,058	2,996	2,574	3,352	50
2008	3,297	2,520	2,248	2,413	2,705	3,750	2,865	2,828	2,472	3,081	50
2007	3,470	2,661	2,408	2,471	2,800	3,963	3,079	2,979	2,585	3,274	50
2006	3,457	2,563	2,363	2,407	2,640	3,890	3,004	2,903	2,493	3,230	50
2005	3,417	2,618	2,420	2,393	2,702	3,855	3,104	2,930	2,533	3,260	50
2004	2,901	2,268	2,115	2,140	2,300	3,279	2,733	2,534	2,205	2,817	50
2003	3,747	2,825	2,620	2,656	2,944	4,100	3,320	3,173	2,761	3,534	50

From:	Pesola, Gregory - DOT
To:	Keppers, Philip - DOT
Subject:	FW: Detour Route Info; Normal USH 63 Info, for Project 1550-21-00/71
Date:	Thursday, August 21, 2014 4:08:00 PM
Importance:	High

I will stay with the current $13,000 per day ILD for the USH 63 closure on the subject project per our conversation this afternoon.

From: Pesola, Gregory - DOT
Sent: Wednesday, August 20, 2014 10:49 AM
To: Keppers, Philip - DOT
Subject: FW: Detour Route Info; Normal USH 63 Info, for Project 1550-21-00/71
Importance: High

Phil,

See attached correspondence with Larry Jones regarding road user costs and interim liquidated damages (ILD) for the USH 63 closure on the subject project. $13,000 per calendar day is currently shown in the Prosecution and Progress special as ILD for the closure. As shown in my August 19th email, the total road user costs (RUC) for the revised detour route are 76% of the RUC for the original detour route. If the Max ILD and comfortable ILD provided by Larry for the original detour route are reduced by 24%, the Max ILD is $11,400 per day which when rounded to the nearest thousand dollars is $11,000 per day and the comfortable ILD is $9,880 per day which rounds to $10,000 per day for the revised detour route. Should the ILD shown in the Prosecution and Progress special for the USH 63 closure be reduced to $10,000 or $11,000 per day to reflect the revised detour route, or should we stay with the current $13,000 per day ILD because Larry is still comfortable with it?

Greg

From: Jones, Larry - DOT
Sent: Wednesday, August 20, 2014 8:55 AM
To: Pesola, Gregory - DOT
Subject: RE: Detour Route Info; Normal USH 63 Info, for Project 1550-21-00/71

Greg,

On this project I am still comfortable with the previous numbers. As I said previously, should NWR wish to reduce the $amount for the ILD's on the 4 day closure it is your prerogative. I only provide a min/max that would be appropriate.

Larry

From: Pesola, Gregory - DOT

Sent: Tuesday, August 19, 2014 6:39 PM
To: Jones, Larry - DOT
Subject: RE: Detour Route Info; Normal USH 63 Info, for Project 1550-21-00/71

Larry,

I checked the input values shown in the pdf files attached below (except for the CPI components), and they were all the same as what I had calculated and Ralph Meir had confirmed. The total RUC for both directions accounting for the 20% self diverters of $18,636 per day for the revised detour route should be good.

For the original detour route (STH 48/USH 53/STH 70) the total RUC for both directions accounting for the 20% self diverters was $24,487 per day. Based on this amount you gave a Max ILD of $15,000 per day and a comfortable level ILD of $13,000 per day. The below reduced total RUC for the revised detour route (STH 48/USH 53) of $18,636 per day is 76% of the amount for the original detour route. Would your Max ILD and comfortable level ILD for the original detour route be proportionately reduced by this or a similar percentage for the revised detour route? Please advise.

Greg Pesola

WisDOT DTSD NW Region Superior Office Project Development Section

715-392-7998

From: Jones, Larry - DOT
Sent: Tuesday, August 19, 2014 3:23 PM
To: Pesola, Gregory - DOT
Subject: RE: Detour Route Info; Normal USH 63 Info, for Project 1550-21-00/71

Greg,

Revised as per your detour changes.

ADT's have been adjusted to 2015 numbers.

Also, noted error in the CPI components.

<< File: 1550-21-00 Detours.pdf >>

<< File: 1550-21-00 Neg detour RUC.pdf >>

<< File: 1550-21-00 Pos detour RUC.pdf >>

With the 20% self diverters as before $9,176 Negative Direction and $9,460 Positive Direction total of $18,636.

Larry E Jones, PE.

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larry.jones@dot.wi.gov

From: Pesola, Gregory - DOT
Sent: Friday, August 15, 2014 2:25 PM
To: Jones, Larry - DOT
Subject: RE: Detour Route Info; Normal USH 63 Info, for Project 1550-21-00/71
Importance: High

Larry,

I have calculated revised road user costs for the revised detour route for the subject project by hand editing the sheets you provided for the original detour route (see attached pdf files). The distance and travel speed increased on the detour route, and the distance increased but the travel speed decreased on normal USH 63 between the detour begin and end points. The decreased travel speed on normal USH 63 is the result of additional 25 mph speed zone in Spooner north of STH 70 and two signalized intersections in Spooner, at STH 70 and Walnut Street. I assumed a 50 s control delay for both intersections combined, with 30 s delay at the STH 70 intersection because there is a protected left turn phase for WB STH 70 traffic turning to go south on USH 63. The Year 1 LOS on USH 63 for the segments from STH 70 north to CTH K (Walnut St is in between) is 2.66 – 2.70 in Meta-Manager, which is LOS B.

I came up with $23,049 per day in total road user costs for both directions. Applying the 20% reduction for local traffic, the reduced RUC is $18,439 per day for both directions. Because this amount is greater than $13,000 per day, I am assuming that $13,000 per day is still an appropriate amount of interim liquidated damages for the USH 63 closure for this project. Please confirm this.

I am requesting that you enter the numbers on my hand edited sheets into your spreadsheets to generate updated .PDFs for the revised detour route for the project records. If you know of a better estimate of control delay at the signalized intersections in Spooner, please use it. I will also need to update the 60% TMP worksheet for the project to change the detour route description as well as some other items, and printouts of the updated .PDFs could be attached to the TMP.

Please provide the requested confirmation and updated .PDFs by the end of next week. If you have any questions or comments or need additional information please contact me.

Greg Pesola

WisDOT DTSD NW Region Superior Office Project Development Section

715-392-7998

<< File: 20140815_NB_RoadUserCosts_RevDetourRoute_15502100.pdf >>

<< File: 20140815_SB_RoadUserCosts_RevDetourRoute_15502171.pdf >>

From: Jones, Larry - DOT
Sent: Monday, August 11, 2014 9:33 AM
To: Pesola, Gregory - DOT
Cc: Stolzman, John J - DOT; Wischhoff, Peggy F - DOT
Subject: RE: Detour Route Info; Normal USH 63 Info, for Project 1550-21-00/71

Greg,

Thank You for the update.

If the distance has increased as well as the travel speed I feel that the use of the $13,000/day would still be appropriate. The total RUC generated with the original detour was more than used in the P&P. The language as submitted should be appropriate.

Larry E Jones, PE.

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larry.jones@dot.wi.gov

From: Pesola, Gregory - DOT
Sent: Friday, August 08, 2014 5:32 PM
To: Jones, Larry - DOT
Subject: RE: Detour Route Info; Normal USH 63 Info, for Project 1550-21-00/71
Importance: High

Larry,

The detour route for the subject project was changed to: Proposed detour route for USH 63 NB through traffic is STH 48 east from Cumberland to USH 53, then USH 53 north to the USH 63 / USH 53 intersection north of Spooner. USH 63 SB through traffic would travel this route in reverse. STH 70 was included in the detour route in the TMP attached to the DSR for Project 1560-31-00 that was prepared by NWBE, but was subsequently removed. I didn't find out about the change until the afternoon of July 31st. This change increases the length of the detour route, but should decrease its travel time because the additional length is all on 65 mph expressway. The length of USH 63 between the detour end points also increases, which will increase its travel time. I used $13,000 per day as interim liquidated damages for the USH 63 closure in the Prosecution and Progress special for the subject project. Would this change in the detour route change the road user costs enough to change the interim liquidated damages amount of $13,000 per day? Because this project is in the November letting, comments from the plan checker may be received sometime next week. The lengths of the posted speed limit zones on the revised signed detour route for this closure, and on USH 63 between the begin and end of the revised detour route, are shown in the attached Excel spreadsheet. Please answer this question, and provide a revised interim liquidated damages amount if necessary, by the end of next Wednesday August 13th. If you have any questions or need additional information, please contact me.

Greg Pesola

WisDOT DTSD NW Region Superior Office Project Development Section

715-392-7998

<< File:
STH_Detour_fromPhotolog_Rev_NorthEndatUSH63&USH53Intersection_15502100.xlsx >>

From: Jones, Larry - DOT
Sent: Thursday, July 31, 2014 9:28 AM
To: Pesola, Gregory - DOT
Cc: Sippel, Brian R - DOT; Heidtke, Andrew - DOT; Amakobe Atepe, Peter - DOT; Clary, Angela - DOT; Luke, Morris - DOT; Olson, Jeffrey - DOT
Subject: FW: Detour Route Info; Normal USH 63 Info, for Project 1550-21-00

Greg,

The below attached .PDF's are for your records.

The $ amounts were developed with detour length information provided by you and the use of ATR #650002 located on USH 63 south of the CTH J intersection for 2014 ADT's.

The ADT's were not adjusted to 2015 numbers and that increase would only have a

minor impact for these calculations.

The total Road User Cost (RUC) for the project would be $30,609 per day. Though there is would be a portion of the locals that will know other less lengthy routes than those that would follow the official detour. Thus a 20% reduction has been applied to account for that. This reduced RUC would be $24,487 per day total for both directions.

Assuming that the duration of 4 calendar days is appropriate for the work requiring the closure, then a maximum of $15,000 could be used though I would be very comfortable with $13,000 per day as an Interim liquidated damage. This should not place to much risk on the contractor though keep them on schedule.

The specials should indicate that once the detour is in place that USH 63 will be reopened to traffic in 4 calendar days.

Others have been cc'd since we are in the transition for the calculation of RUC on a state wide basis.

Should you have any questions or comments feel free to contact me.

Larry E Jones, PE.

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larry.jones@dot.wi.gov

From: Jones, Larry - DOT
Sent: Tuesday, July 29, 2014 4:28 PM
To: Sippel, Brian R - DOT
Cc: Heidtke, Andrew - DOT; Amakobe Atepe, Peter - DOT
Subject: RE: Detour Route Info; Normal USH 63 Info, for Project 1550-21-00

Brian,

The traffic that normally travels the detour route is not accounted for. We are looking at the impact on the traffic being detoured. Though in some locations, with detour routes being near capacity there would be the possibility of LOS falling or reaching jam density.

The department should make sure that we do not use routes that are not susceptible to that problem.

<< File: 1550-21-00 Detour.pdf >>

<< File: 1550-21-00 Neg detour RUC.pdf >> << File: 1550-21-00 Pos detour RUC.pdf >>

my calcs reflect 20% of traffic (locals) had another shorter route around on town roads and shows $24,487 per day. This is the sum of both directions.

Larry E Jones, PE.

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From: Sippel, Brian R - DOT
Sent: Tuesday, July 29, 2014 9:40 AM
To: Jones, Larry - DOT
Cc: Heidtke, Andrew - DOT; Amakobe Atepe, Peter - DOT
Subject: RE: Detour Route Info; Normal USH 63 Info, for Project 1550-21-00

Larry,

This is what Andy and I have done so far with the Quadro. If you average the two directions of road user costs we get $24,266 per day. We are working on doing it with the NJ spreadsheet. We started taking a look at the NJ spreadsheet and we were wondering if you know how the spreadsheet accounts for the traffic that is normally travelling on the detour route.

<< File: US63 ID 1550-21-00.pdf >>

Thanks,

Brian Sippel, EIT

WisDOT Bureau of Traffic Operations

Work Zone Engineer

Cell (414) 531-9279

brian.sippel@dot.wi.gov

From: Jones, Larry - DOT
Sent: Monday, July 28, 2014 9:05 AM
To: Sippel, Brian R - DOT; Heidtke, Andrew - DOT; Amakobe Atepe, Peter - DOT
Cc: Pesola, Gregory - DOT
Subject: FW: Detour Route Info; Normal USH 63 Info, for Project 1550-21-00

Importance: High

Andy, Brian,

This is a project that we can use to start comparing Quadro and NJ workbook. Greg is on a short time line August 1 PSE. Can we run and get the numbers and we can discuss the brackets of $ that we would provide to a project team. If you wish I can run the NJ portion.

Please advise.

Larry E Jones, PE.

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larry.jones@dot.wi.gov

From: Pesola, Gregory - DOT
Sent: Friday, July 25, 2014 6:51 PM
To: Jones, Larry - DOT
Subject: Detour Route Info; Normal USH 63 Info, for Project 1550-21-00
Importance: High

Re: Project 1550-21-00

USH 63

Cumberland – Spooner

South County Line to Woodyard Road

Washburn County

Larry,

Per our conversation this morning, this email contains information for you to calculate road user costs to determine appropriate interim liquidated damages for the USH 63 closure for the proposed work described below.

Under Project 1550-21-71 USH 63 will be closed to all traffic at the work sites for a maximum of four (4) calendar days, Monday through Thursday, within one work week during the time period of June 8 – June 25, 2015. Do not reopen until completing the following work: culvert replacement at Station 473+33 and the polystyrene insulation board removal with excavation below subgrade at Station 484+50 – Station 487+45 and Station

490+00 – Station 492+59. See attached plan sheets for locations of this work. I have also attached the title sheet for your reference.

<< File: 15502171_pln 40.pdf >> << File: 15502171_pln 41.pdf >> << File: 15502171_pln 1.pdf >>

The construction year AADT is 3,200 vpd. The percent trucks is 6.7% (% of the AADT). I have attached the traffic forecast report for your reference.

<< File: 2010_Traffic_Forecast_15502100_15603100.pdf >>

The lengths of the posted speed limit zones on the proposed signed detour route for this closure, and on USH 63 between the begin and end of the detour route, are shown in the attached Excel spreadsheet.

<< File: STH_Detour_fromPhotolog_Rev_UsingSTH70_15502100.xlsx >>

The detour route shown in the spreadsheet will be used as a truck only detour for Project 1560-31-71, and the detour signing plan for the truck detour and the all traffic detour for this project will be included in the plan for Project 1560-31-71.

Please email me the road user costs for this proposed detour of all through USH 63 traffic and the interim liquidated damages to show in the Prosecution and Progress special in the contract for Project 1550-21-71 by the end of next Tuesday, July 29. If you have any questions or need more information, please contact me.

Greg Pesola

WisDOT DTSD NW Region Superior Office Project Development Section

715-392-7998

Worksheet 3.3: Work Zone, Flagging and Circuity Delays

Work Zone Delay

3.3(A)	3.3(B)	3.3(C)	3.3(D)	3.3(E)	3.3(F)
Work Zone Length (mile)	Work Zone Speed (mph)	Unrestricted Speed (mph)	Work Zone Travel Time at Unrestricted Speed (hr/veh)	Work Zone Travel Time at Work Zone Speed (hr/veh)	Added Time to Travel Work Zone (hr/veh)
	0		#DIV/0!	#DIV/0!	#DIV/0!

Circuity (Detour) Delay

3.3(G)	3.3(H)	3.3(I)	3.3(J)	3.3(K)	3.3(L)
Travel Length without Detour (mile)	Travel Length with Detour (mile)	Added Travel Length (mile)	Travel Time without Detour (hr/veh)	Travel Time with Detour (hr/veh)	Added Time to Travel Detour (hr/veh)
24.99	38.88	13.89	0.537	0.653	0.116

Alternating Traffic (Flagging) Delay

3.3(M)	3.3(N)	3.3(O)	3.3(P)	3.3(Q)	3.3(R)	3.3(S)
Flagging Zone Length (mile)	Flagging Zone Speed (mph)	Unrestricted Speed (mph)	Flagging Zone Travel Time at Unrestricted Speed (hr/veh)	Flagging Zone Travel Time at Flagging Zone Speed (hr/veh)	Added Time to Travel Flagging Zone (hr/veh)	Added Approach Vehicle Wait Time (hr/veh)
					0.000	

Project: 1550-21-00, USH 63, Cumberland - Spooner, Washburn Co **Date:** Aug. 2014

Description: 4-day Positive Direction Detour, per day Road User Costs by LEJ

NB

Worksheet 3.4: Escalation Factors and Cost Rates

Escalation Factors

3.4(A)	3.4(B)	3.4(C)	3.4(D)
Cost Factors	**1970 (CPI-U)**	**Current (CPI-U)***	**Escalation Factor**
IDLING and VOC (transportation component)	**37.5**	223.543	5.960
TIME VALUE (all components)	**38.8**	238.343	6.140

*** CPI-U = Unadjusted Consumer Price Index for all Urban Consumers, US City Average, June** 2014

Cost Rates

3.4(E)	3.4(F)	3.4(G)	3.4(H)	3.4(I)	3.4(J)	3.4(K)
Vehicle Class	**1970 Time Value Cost Rate ($/veh-hr)**	**1970 Idling Cost Rate ($/veh-hr)**	**1970 VOC Cost Rate ($/mile)**	**Current Time Value Cost Rate ($/veh-hr)**	**Current Idling Cost Rate ($/veh-hr)**	**Current VOC Cost Rate ($/mile)**
CAR	**3.00**	**0.1819**	**0.06**	18.42	1.0841	0.358
TRUCK	**5.00**	**0.2092**	**0.12**	30.70	1.2468	0.715

Project: 1550-21-00, USH 63, Cumberland - Spooner, Washburn Co **Date:** Aug. 2014

Description: 4-day Positive Direction Detour, per day Road User Costs by LEJ

NB

Worksheet 3.5: Road User Costs

3.5(A)	3.5(B)	3.5(C)	3.5(D)	3.5(E)	3.5(F)	3.5(G)	3.5(H)
Road User Cost Component	Vehicle Class	Percent Class (%)	Total Vehicles (#)	Added Travel Length (mile/veh)	Added Time (hr/veh)	Cost Rate ($/veh-hr, $/mile)	Road User Cost ($)
Queue/Flagging Delay (Added Time)	CAR	93	0		0.000	18.42	0
	TRUCK	7	0		0.000	30.70	0
Queue/Flagging Idling VOC (Added Cost)	CAR	93	0		0.000	1.0841	0
	TRUCK	7	0		0.000	1.2468	0
Work Zone/Flagging Delay (Added Time)	CAR	93	0		0.000	18.42	0
	TRUCK	7	0		0.000	30.70	0
Circuity Delay (Added Time)	CAR	93	1,569		0.116	18.42	3,128
	TRUCK	7	1,569		0.116	30.70	374
Circuity VOC (Added Cost)	CAR	93	1,569	13.890		0.358	7,279
	TRUCK	7	1,569	13.890		0.715	1,044

Total Vehicles that Travel Queue:	0
Total Vehicles that Travel Work Zone:	0
Total Vehicles that Travel Detour:	1,569
Percent Passenger Cars:	93.3%
Percent Trucks:	6.7%

Daily / Hourly Road User Cost	11,825
Calculated Road User Cost (CRUC)	9,460
Number of Work Zone Days	1
Total Road User Cost	9,460
Total Road User Cost (per minute)	6.57

Project: 1550-21-00, USH 63, Cumberland - Spooner, Washburn Co **Date:** Aug. 2014

Description: 4-day Positive Direction Detour, per day Road User Costs by LEJ

NB

Developed by NJDOT Value Engineering Unit

Worksheet 3.3: Work Zone, Flagging and Circuity Delays

Work Zone Delay

3.3(A)	3.3(B)	3.3(C)	3.3(D)	3.3(E)	3.3(F)
Work Zone Length (mile)	Work Zone Speed (mph)	Unrestricted Speed (mph)	Work Zone Travel Time at Unrestricted Speed (hr/veh)	Work Zone Travel Time at Work Zone Speed (hr/veh)	Added Time to Travel Work Zone (hr/veh)
	0		#DIV/0!	#DIV/0!	#DIV/0!

Circuity (Detour) Delay

3.3(G)	3.3(H)	3.3(I)	3.3(J)	3.3(K)	3.3(L)
Travel Length without Detour (mile)	Travel Length with Detour (mile)	Added Travel Length (mile)	Travel Time without Detour (hr/veh)	Travel Time with Detour (hr/veh)	Added Time to Travel Detour (hr/veh)
24.89	38.65	13.76	0.533	0.657	0.124

Alternating Traffic (Flagging) Delay

3.3(M)	3.3(N)	3.3(O)	3.3(P)	3.3(Q)	3.3(R)	3.3(S)
Flagging Zone Length (mile)	Flagging Zone Speed (mph)	Unrestricted Speed (mph)	Flagging Zone Travel Time at Unrestricted Speed (hr/veh)	Flagging Zone Travel Time at Flagging Zone Speed (hr/veh)	Added Time to Travel Flagging Zone (hr/veh)	Added Approach Vehicle Wait Time (hr/veh)
					0.000	

Project: 1550-21-00, USH 63, Cumberland - Spooner, Washburn Co **Date:** Aug. 2014

Description: 4-day Negative Direction Detour, per day Road User Costs by LEJ

SB

Worksheet 3.4: Escalation Factors and Cost Rates

Escalation Factors

3.4(A)	3.4(B)	3.4(C)	3.4(D)
Cost Factors	**1970 (CPI-U)**	**Current (CPI-U)***	**Escalation Factor**
IDLING and VOC (transportation component)	**37.5**	223.543	5.960
TIME VALUE (all components)	**38.8**	238.343	6.140

*** CPI-U = Unadjusted Consumer Price Index for all Urban Consumers, US City Average, June** 2014

Cost Rates

3.4(E)	3.4(F)	3.4(G)	3.4(H)	3.4(I)	3.4(J)	3.4(K)
Vehicle Class	**1970 Time Value Cost Rate ($/veh-hr)**	**1970 Idling Cost Rate ($/veh-hr)**	**1970 VOC Cost Rate ($/mile)**	**Current Time Value Cost Rate ($/veh-hr)**	**Current Idling Cost Rate ($/veh-hr)**	**Current VOC Cost Rate ($/mile)**
CAR	**3.00**	**0.1819**	**0.06**	18.42	1.0841	0.358
TRUCK	**5.00**	**0.2092**	**0.12**	30.70	1.2468	0.715

Project: 1550-21-00, USH 63, Cumberland - Spooner, Washburn Co **Date:** Aug. 2014

Description: 4-day Negative Direction Detour, per day Road User Costs by LEJ

SB

Worksheet 3.5: Road User Costs

3.5(A)	3.5(B)	3.5(C)	3.5(D)	3.5(E)	3.5(F)	3.5(G)	3.5(H)
Road User Cost Component	Vehicle Class	Percent Class (%)	Total Vehicles (#)	Added Travel Length (mile/veh)	Added Time (hr/veh)	Cost Rate ($/veh-hr, $/mile)	Road User Cost ($)
Queue/Flagging Delay (Added Time)	CAR	93	0		0.000	18.42	0
	TRUCK	7	0		0.000	30.70	0
Queue/Flagging Idling VOC (Added Cost)	CAR	93	0		0.000	1.0841	0
	TRUCK	7	0		0.000	1.2468	0
Work Zone/Flagging Delay (Added Time)	CAR	93	0		0.000	18.42	0
	TRUCK	7	0		0.000	30.70	0
Circuity Delay (Added Time)	CAR	93	1,501		0.124	18.42	3,199
	TRUCK	7	1,501		0.124	30.70	383
Circuity VOC (Added Cost)	CAR	93	1,501	13.760		0.358	6,899
	TRUCK	7	1,501	13.760		0.715	989

Total Vehicles that Travel Queue:	0
Total Vehicles that Travel Work Zone:	0
Total Vehicles that Travel Detour:	1,501
Percent Passenger Cars:	93.3%
Percent Trucks:	6.7%

Daily / Hourly Road User Cost	11,470
Calculated Road User Cost (CRUC)	9,176
Number of Work Zone Days	1
Total Road User Cost	9,176
Total Road User Cost (per minute)	6.37

Project: 1550-21-00, USH 63, Cumberland - Spooner, Washburn Co **Date:** Aug. 2014

Description: 4-day Negative Direction Detour, per day Road User Costs by LEJ

SB

Developed by NJDOT Value Engineering Unit

	DISTANCE		TIME REQ'D (s)	
	mi	ft		
			65 mph =95.33 ft/s	
	0.000	0.000	0.000	
			55 mph = 80.67 ft/s	
	19.140	101059.200	1252.748	
			50 mph = 73.33 ft/s	
	0.000	0.000	0.000	
			45 mph = 66 ft/s	
	1.360	7180.800	108.800	
			40 mph = 58.67 ft/s	
	0.980	5174.400	88.195	
			35 mph = 51.33 ft/s	
	1.730	9134.400	177.954	
			30 mph = 44 ft/s	
	0.000	0.000	0.000	
			25 mph = 36.67 ft/s	
	1.780	9398.400	256.297	
			20 mph = 29.33 ft/s	
	0.000	0.000	0.000	
			15 mph = 22 ft/s	
	0.000	0.000	0.000	
			SIGNAL/STOP DELAY	
	SIGNALS	2	50.000	1@20s, 1@30s
	STOPS	0	0.000	
TOTALS	24.990 mi	131947.200 ft	1933.994 s 0.537 hr/veh	46.52 mph

1550-21-71, USH 63, SCL Woodyard RD

	DISTANCE		TIME REQ'D (s)	
	mi	ft		
			60mph = 88.00 ft/s	
	0.120	633.600	7.200	
			55 mph = 80.67 ft/s	
	19.340	102115.200	1265.839	
			50 mph = 73.33 ft/s	
	0.000	0.000	0.000	
			45 mph = 66 ft/s	
	0.970	5121.600	77.600	
			40 mph = 58.67 ft/s	
	0.970	5121.600	87.295	
			35 mph = 51.33 ft/s	
	1.730	9134.400	177.954	
			30 mph = 44 ft/s	
	0.000	0.000	0.000	
			25 mph = 36.67 ft/s	
	1.760	9292.800	253.417	
			20 mph = 29.33 ft/s	
	0.000	0.000	0.000	
			15 mph = 22 ft/s	
	0.000	0.000	0.000	
			SIGNAL/STOP DELAY	
	SIGNALS	2	50.000	1@20s, 1@30s
	STOPS	0	0.000	
TOTALS	24.890 mi	131419.200 ft	1919.305 s 0.533 hr/veh	46.68 mph

1550-21-71, USH 63, SCL Woodyard RD

	DISTANCE		TIME REQ'D (s)	
	mi	ft		
			65 mph = 95.33 ft/s	
	25.080	132422.400	1389.095	
			55 mph = 80.67 ft/s	
	11.950	63096.000	782.149	
			50 mph = 73.33 ft/s	
	0.000	0.000	0.000	
			45 mph = 66 ft/s	
	1.170	6177.600	93.600	
			40 mph = 58.67 ft/s	
	0.000	0.000	0.000	
			35 mph = 51.33 ft/s	
	0.000	0.000	0.000	
			30 mph = 44 ft/s	
	0.440	2323.200	52.800	
			25 mph = 36.67 ft/s	
	0.240	1267.200	34.557	
			20 mph = 29.33 ft/s	
	0.000	0.000	0.000	
			15 mph = 22 ft/s	
	0.000	0.000	0.000	
			SIGNAL/STOP DELAY	
	SIGNALS	0	0.000	
	Stop sign	0	0.000	
TOTALS	38.880 mi	205286.400 ft	2352.201 s 0.653 hr/veh	59.50 mph

1550-21-71, USH 63, SCL Woodyard RD

	DISTANCE		TIME REQ'D (s)	
	mi	ft		
			65 mph = 95.33 ft/s	
	25.180	132950.400	1394.633	
			55 mph = 80.67 ft/s	
	12.180	64310.400	797.203	
			50 mph = 73.33 ft/s	
	0.000	0.000	0.000	
			45 mph = 66 ft/s	
	0.810	4276.800	64.800	
			40 mph = 58.67 ft/s	
	0.000	0.000	0.000	
			35 mph = 51.33 ft/s	
	0.000	0.000	0.000	
			30 mph = 44 ft/s	
	0.250	1320.000	30.000	
			25 mph = 36.67 ft/s	
	0.230	1214.400	33.117	
			20 mph = 29.33 ft/s	
	0.000	0.000	0.000	
			15 mph = 22 ft/s	
	0.000	0.000	0.000	
			SIGNAL/STOP DELAY	
	SIGNALS	0	0.000	0
	Stop sign	1	45.000	1-45s
TOTALS	38.650 mi	204072.000 ft	2364.754 s 0.657 hr/veh	58.84 mph

1550-21-71, USH 63, SCL Woodyard RD