

Calumet

41



2014

Congestion & Mobility Report

28

Marquette



31

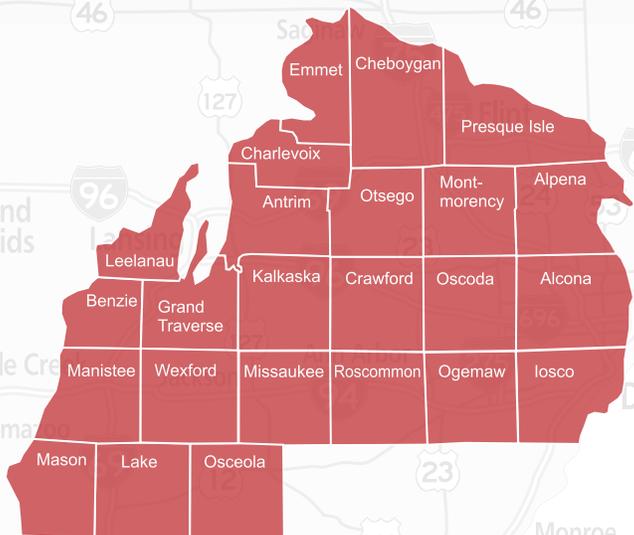
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Bay City

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Muskegon

Chapter 5 NORTH REGION SUMMARY



Detroit

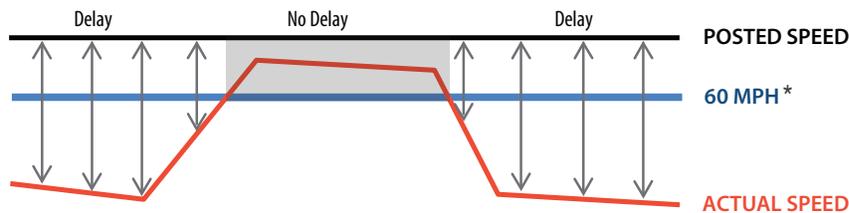
Monroe



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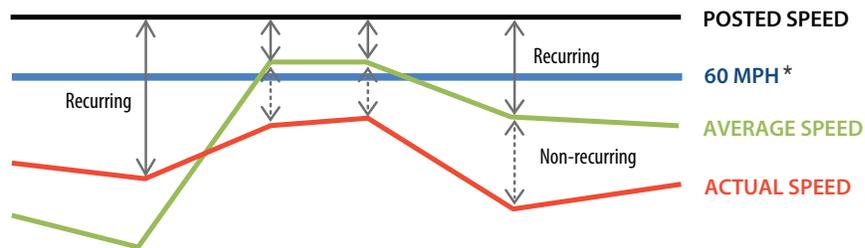
Performance Measures Definitions



Total delay > Delay is calculated by taking the difference between actual speeds when they fall below 60 mph and the posted speed limit for freeways posted at 70 mph. This is to take out the delay caused by the lower average speeds from commercial vehicles.

Total delay per mile > Delay per mile is calculated by taking the total delay and dividing it by the length of the freeway. This was performed for each route in each TSC.

Non-recurring/recurring delay > Non-recurring delay is calculated by taking the difference between the actual speed (any time the speed falls below 60 mph) and the average speed. Recurring is measured by taking the difference of the total delay and non-recurring delay.



User Delay Cost > User Delay Costs (UDC) is calculated by multiplying delay x hourly volume per hourly user cost. Delay is calculated by taking the difference between actual speeds when they fall below 60 mph and the posted speed limit. Hourly volumes are derived from Average Daily Traffic (ADT) and Commercial Average Daily Traffic (CADT). Hourly user costs are based on Federal Highway Administration (FHWA) publication number FHWA-SA-98-079, "Life-Cycle Cost Analysis in Pavement Design."

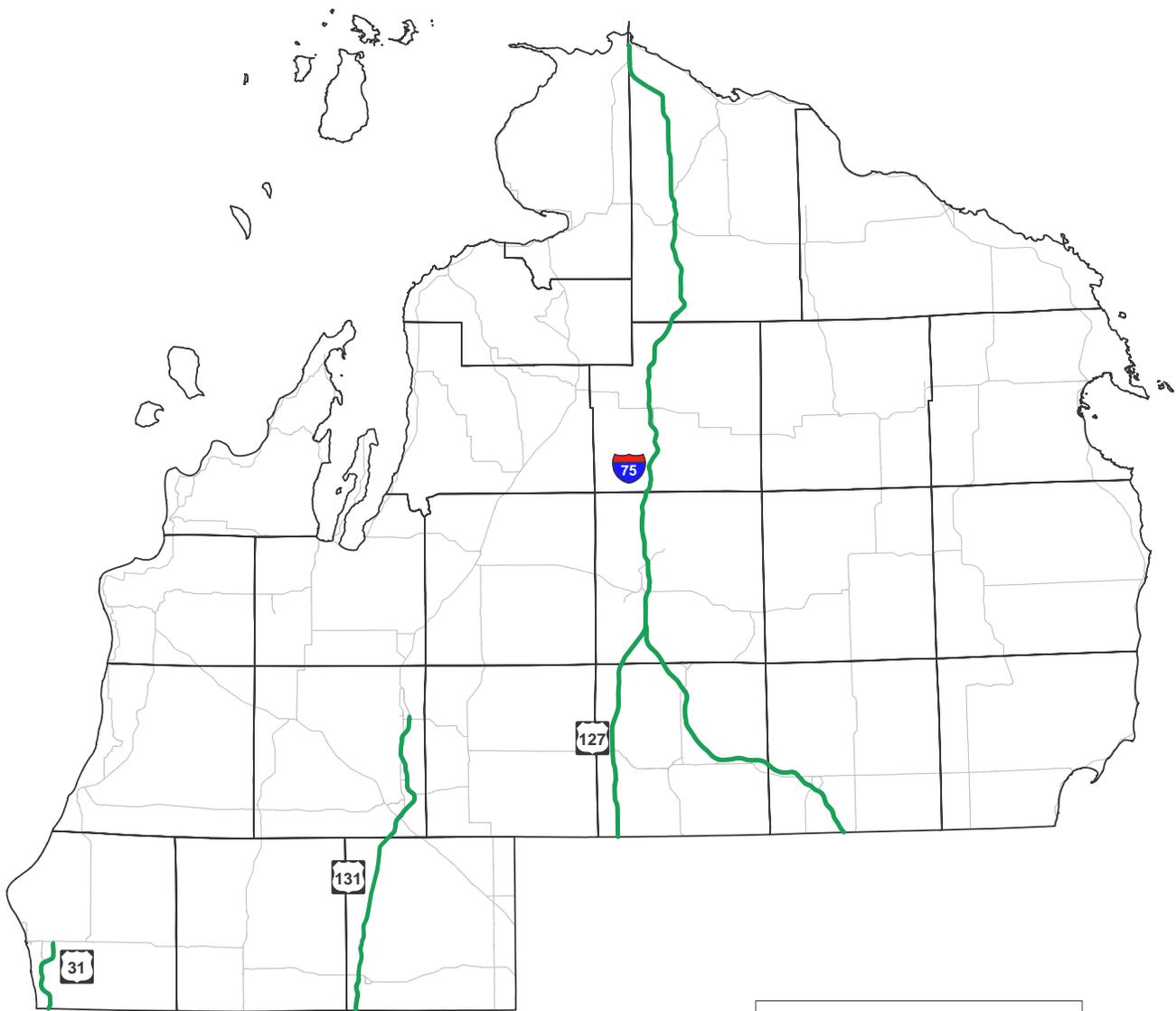
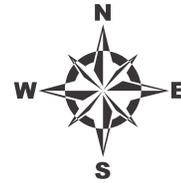
Congestion > Congestion is calculated as the number of hours below 45 mph per Traffic Message Channel (TMC). A TMC is a standard for delivering real-time traffic information. They vary from tenths of a mile long to several miles long.

Weighted Congestion > Number of congestion hours multiplied by the segment length. Congestion along longer segments will get more consideration than congestion along shorter segments.

* On segments with a speed limit of 55 mph, delay is calculated when speeds fall below 55 mph.

Figure 1. 2014 North Region user delay cost per mile

2014 North Region User Delay Cost per Mile



2014 UDC per Mile	
Green line	< \$50,000
Orange line	\$50,000 - \$100,000
Brown line	> \$100,000

Figure 2. 2014 North Region congestion hours northbound/eastbound

2014 North Region Congestion Hours Northbound/Eastbound

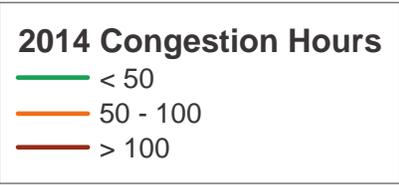
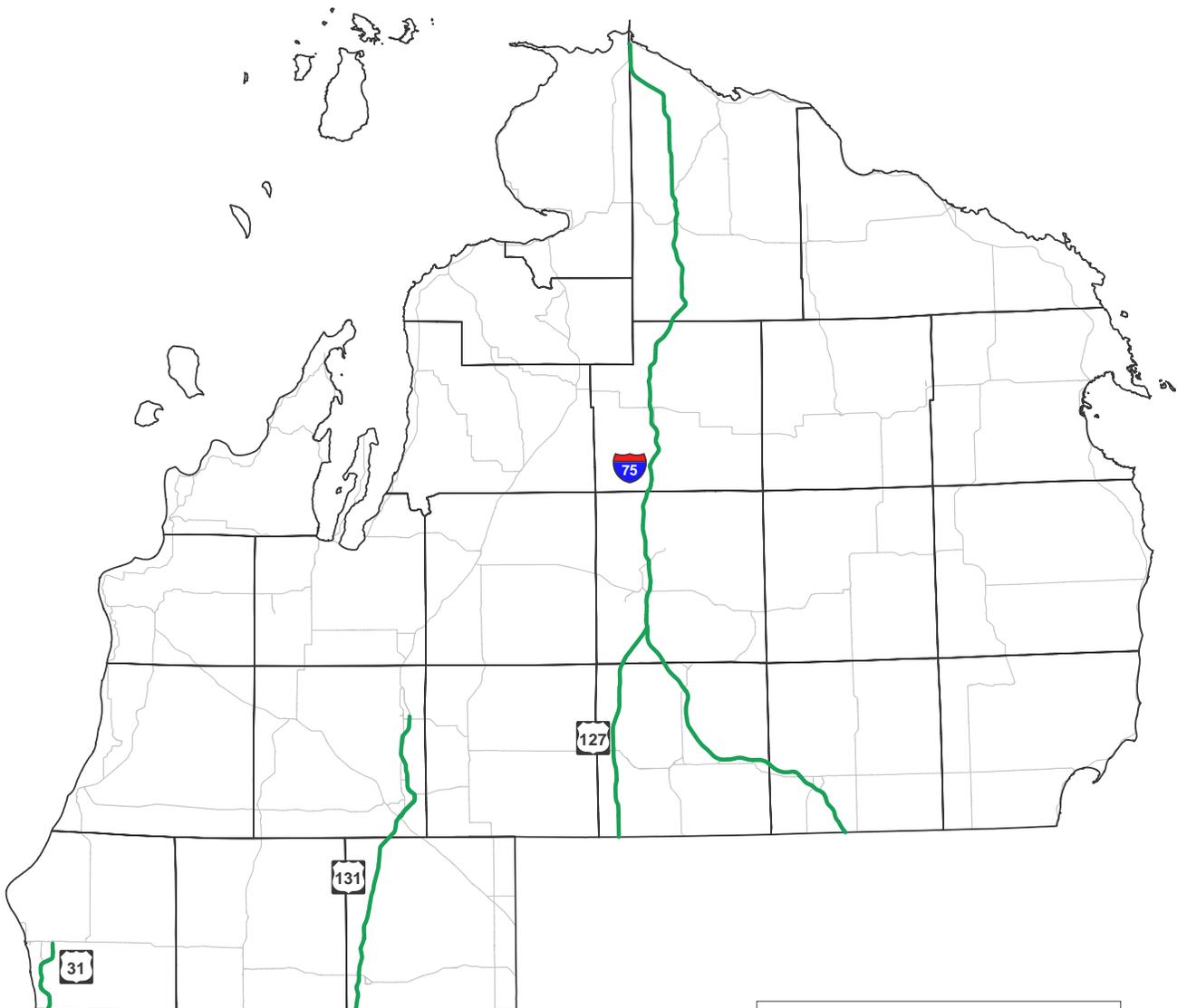
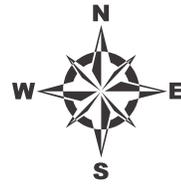


Figure 3. 2014 North Region congestion hours southbound/westbound

2014 North Region Congestion Hours Southbound/Westbound

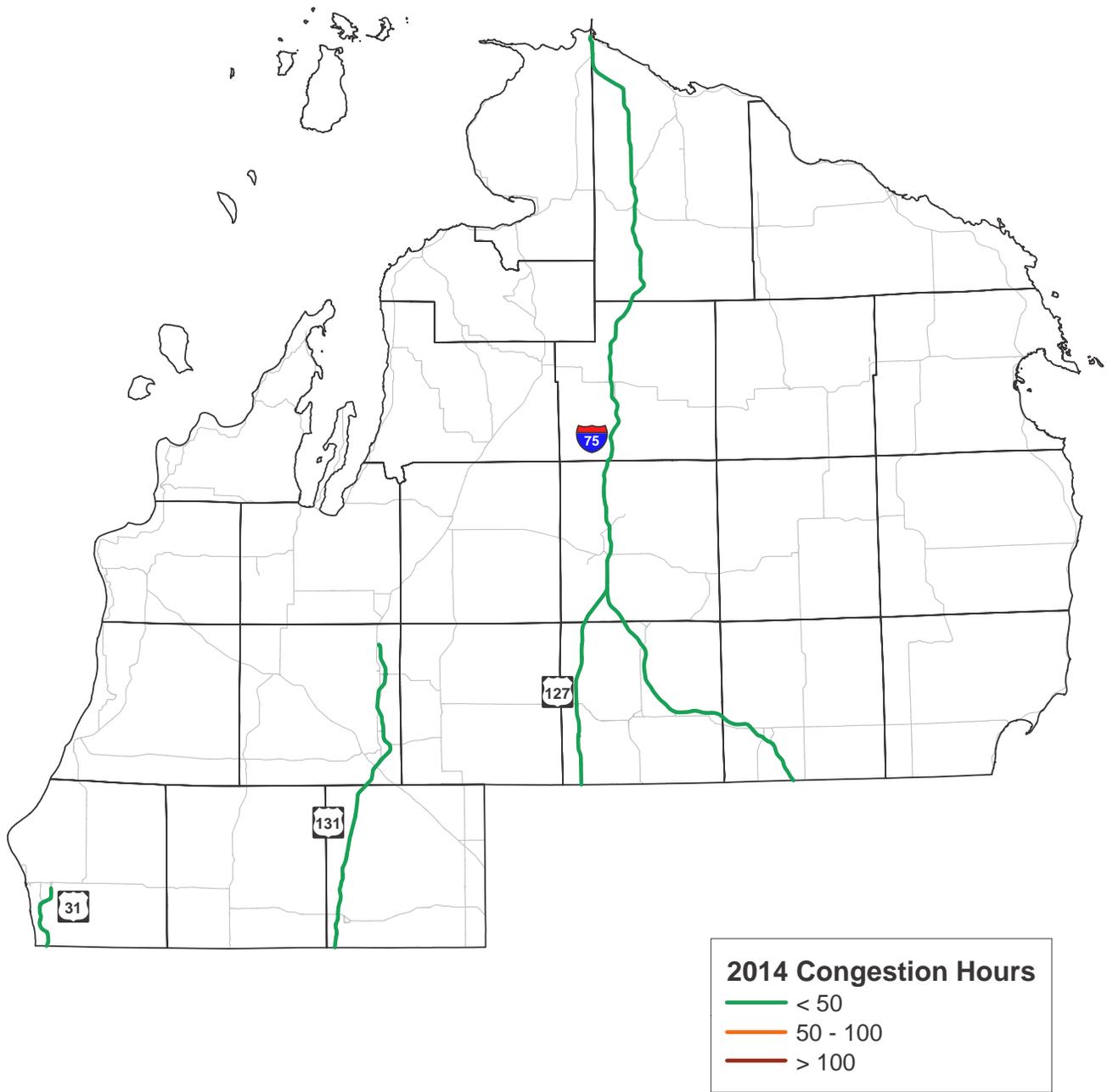
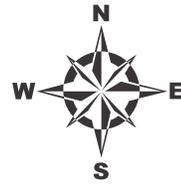


Figure 4. Ranked UDC by location

2012-2013 Average		
Rank	UDC Per Mile	Location (Route, TSC)
1	\$24,417	US-131 Cadillac TSC
2	\$12,507	I-75 Gaylord TSC
3	\$8,885	US-31 Cadillac TSC
4	\$3,406	US-127 Gaylord TSC

2014		
Rank	UDC Per Mile	Location (Route, TSC)
1	\$14,979	US-131 Cadillac TSC
2	\$7,510	US-31 Cadillac TSC
3	\$6,424	I-75 Gaylord TSC
4	\$2,134	US-127 Gaylord TSC

2012-2013 Average		
Rank	Total UDC	Location (Route, TSC)
1	\$3,376,955	I-75 Gaylord TSC
2	\$1,245,263	US-131 Cadillac TSC
3	\$252,067	US-127 Gaylord TSC
4	\$204,345	US-31 Cadillac TSC
Total =	\$5,078,630	

2014		
Rank	Total UDC	Location (Route, TSC)
1	\$1,734,559	I-75 Gaylord TSC
2	\$763,938	US-131 Cadillac TSC
3	\$172,729	US-31 Cadillac TSC
4	\$157,935	US-127 Gaylord TSC
Total =	\$2,829,162	

Corridor



Interstate 75: **Gaylord TSC**



US-31: **Mason**



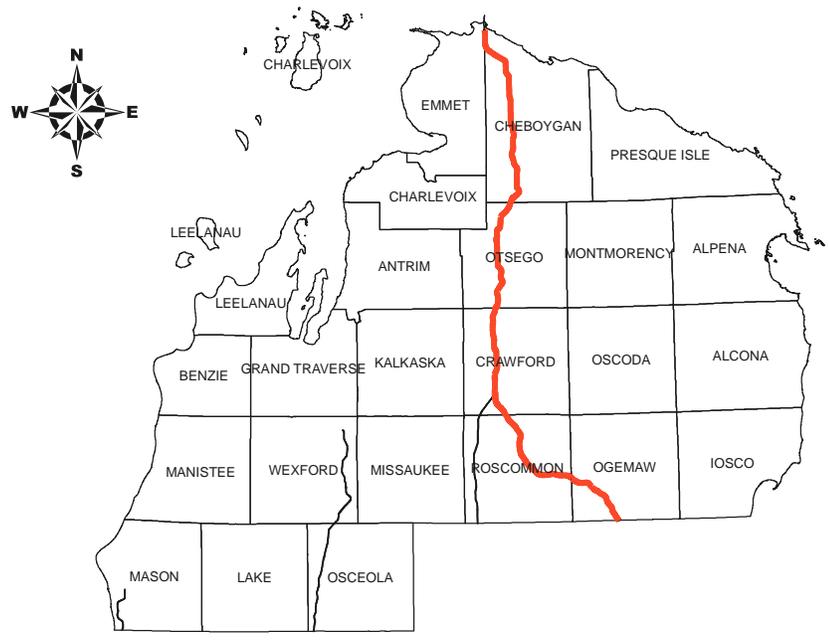
US-127: **Gaylord TSC**



US-131: **Cadillac TSC**

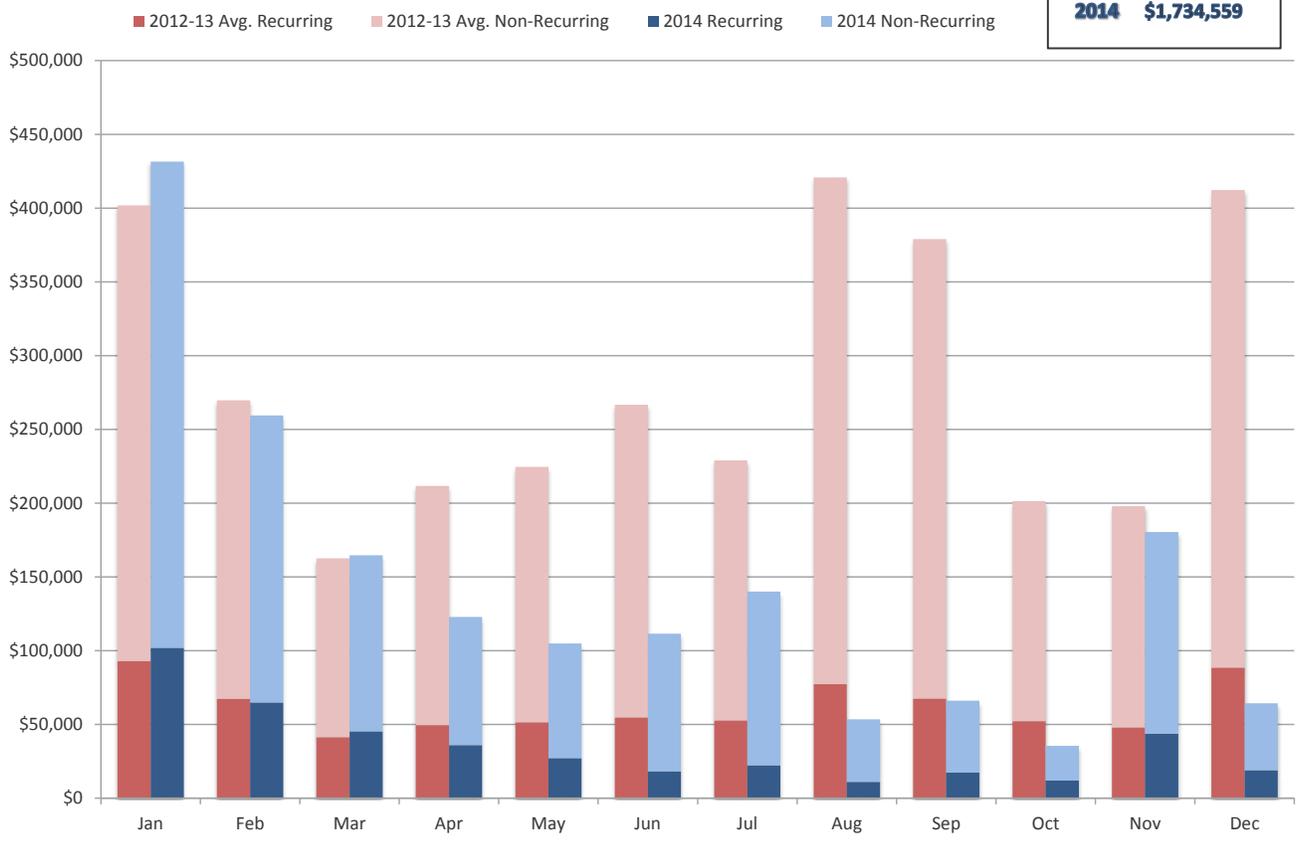


Figure 5. Gaylord TSC I-75 Corridor total user delay cost



Gaylord TSC I-75 Corridor Total User Delay Cost

User Delay Cost	
Avg.	\$3,376,955
2014	\$1,734,559



Corridor



Interstate 75: **Gaylord TSC**



US-31: **Mason**



US-127: **Gaylord TSC**



US-131: **Cadillac TSC**

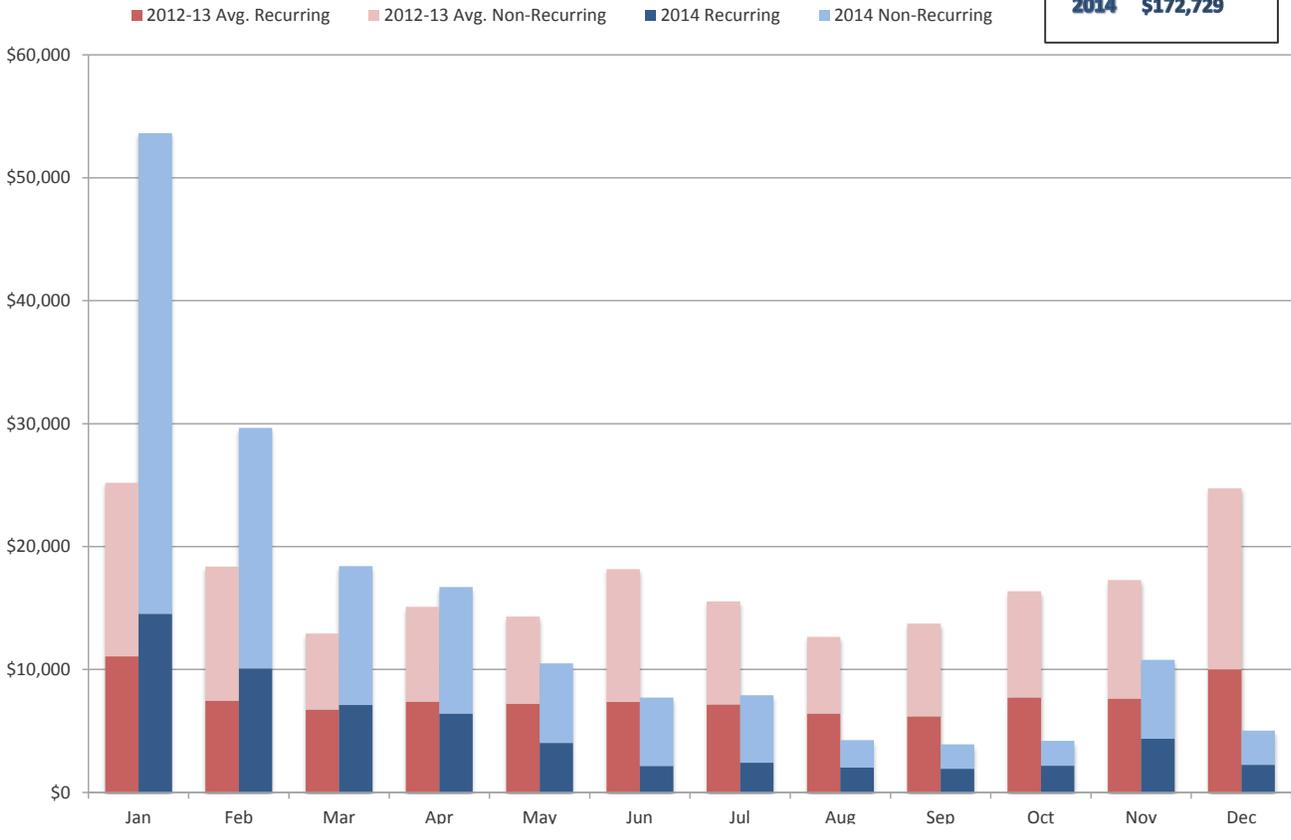


Figure 6. Mason County US-31 Corridor total user delay cost



**Mason County US-31 Corridor
Total User Delay Cost**

User Delay Cost	
Avg.	\$204,345
2014	\$172,729



Corridor



Interstate 75: **Gaylord TSC**



US-31: **Mason**



US-127: **Gaylord TSC**



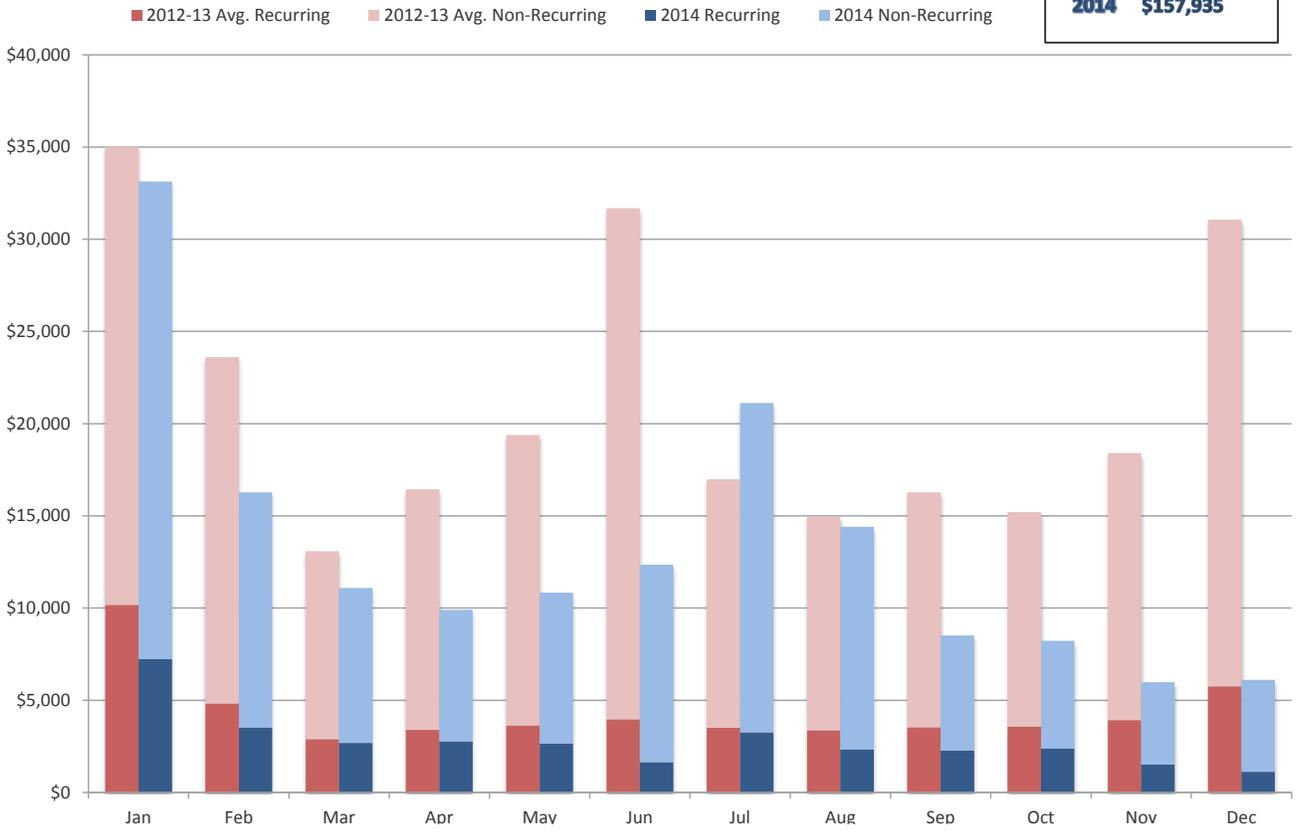
US-131: **Cadillac TSC**

Figure 7. Gaylord TSC US-127 Corridor total user delay cost



**Gaylord TSC US-127 Corridor
Total User Delay Cost**

User Delay Cost	
Avg.	\$252,067
2014	\$157,935



Corridor



Interstate 75: **Gaylord TSC**



US-31: **Mason**



US-127: **Gaylord TSC**



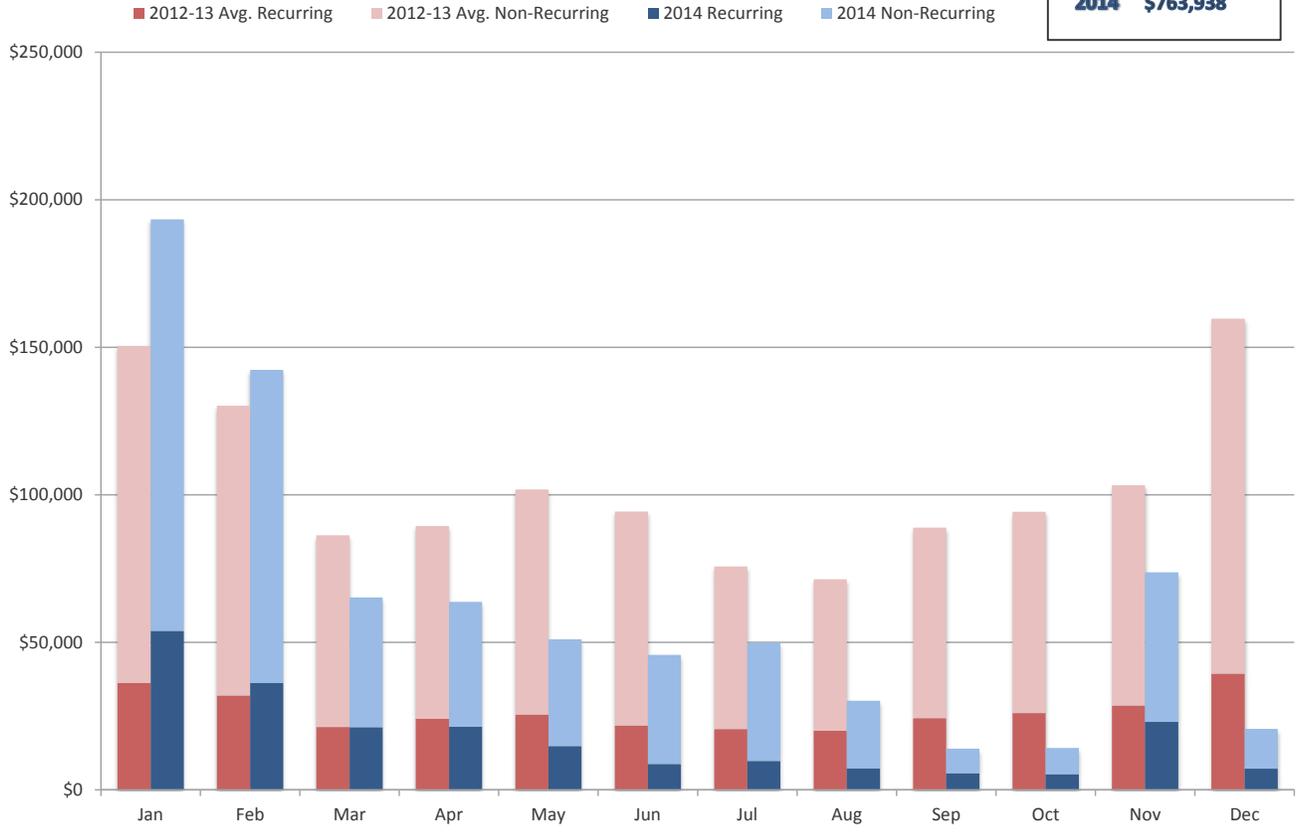
US-131: **Cadillac TSC**

Figure 8. Cadillac TSC US-131 Corridor total user delay cost



**Cadillac TSC US-131 Corridor
Total User Delay Cost**

User Delay Cost	
Avg.	\$1,245,263
2014	\$763,938





*Providing the highest quality
integrated transportation services for
economic benefit and improved quality of life.*

