



# Chapter 4: Affected Environment

## 4.1 Traffic and Transportation

### 4.1.1 Highway System

Existing US 31 is functionally classified as a principal arterial on the National Highway System (NHS). The NHS consists of about 155,000 miles of Interstate and principal arterial highways nationwide designated by the U.S. Congress as having national significance. US 31 is also designated a Statewide Mobility Corridor and Commerce Corridor in the INDOT 2000-2025 Long Range Plan.

Existing US 31 provides four through lanes in the corridor. There are approximately 480 private driveways, 20 cross road intersections, and 50 “T” road intersections along US 31 from US 30 to US 20. However, the character of the facility varies significantly along the 20-mile corridor with respect to the level of access control (frequency of drives or public road intersections), median width/type and shoulder treatment. The five-mile segment from the US 30 interchange to the Michigan Road interchange (Old US 31) is a four-lane facility (12-foot lanes with a 5-foot left shoulder and a 10-foot right shoulder) with a depressed, 50-foot wide median and access limited to county public crossroads (i.e., partial access control). The remaining 15-mile segment from the Michigan Road interchange to the US 20 Bypass interchange is a four-lane facility with varying median and shoulder widths and access is only controlled to adjacent property through driveway permits (i.e., no access control).

From the Michigan Road interchange to just north of US 6 (south edge of LaPaz), existing US 31 has four lanes (12-foot lanes with no left shoulder and a 10-foot right shoulder), no access control, but has a 16-foot to 24-foot median with few private driveways. From north of US 6 to north of West 1<sup>st</sup> Road (on the north side of LaPaz), existing US 31 is a four-lane undivided facility (12-foot lanes) with a 4-foot flush median, approximately 58 feet of pavement, curb-and-gutter and sidewalks. There are no center left-turn lanes, but there is some on-street parking through LaPaz. From the north side of LaPaz to Quinn Trail (south edge of Lakeville), existing US 31 is a four-lane divided facility (12-foot lanes with a 4-foot left shoulder and 12-foot right shoulder), and has a variable median width ranging from 15 feet to 50 feet. From Quinn Trail, through and to the north side of Lakeville, existing US 31 is a four-lane undivided facility with a pavement width of 58 to 66 feet with curb-and-gutter and sidewalks. (The lone exception is from Patterson Street to Rush Street on the north side of Lakeville, where the pavement narrows to 51 feet.) There is on-street parking through Lakeville, but no center left-turn lanes. From the north edge of Lakeville to the US 20 Bypass interchange, US 31 is a four-lane undivided facility with 12-foot lanes and 9-foot to 12-foot unpaved, stone outside shoulders. Opposite directions of traffic flow are occasionally separated by a 4-foot flush median strip. This narrow median width is inadequate to accommodate left-turn lanes.

Four traffic signals exist on the 15-mile stretch of US 31 from the Michigan Road interchange to the US 20 Bypass interchange. They are located at US 6, SR 4, Kern Road and Johnson Road. A fifth traffic signal is programmed for installation at New Road on US 31. On-street parking is permitted along some portions of US 31 through LaPaz and Lakeville. Through the towns of LaPaz and Lakeville and the south side of South Bend, the land uses along existing US 31 include churches, cemeteries, historic structures, businesses, and homes.

Level of service (LOS) provides a measure of congestion on roadways (See Chapter 2 for a further explanation of LOS rating). Traffic flow conditions are rated LOS A to F, with LOS A indicating the least traffic congestion and LOS F reflecting the most traffic congestion. In the case of signalized and unsignalized intersections, the LOS is based on average delay per vehicle at the intersection. Based on INDOT reconstruction (4R) standards outlined in the Indiana Design Manual, the minimum acceptable LOS is C in rural and suburban areas (i.e., US 30 to Miller Road in the case of US 31) and D in urban intermediate and built-up areas (i.e., Miller Road to US 20 Bypass in the case of US 31).



Referring to Table 4.1.1, from US 30 to the south side of Lakeville, the average daily traffic (ADT) volumes on US 31 in the year 2000 range from 17,000 to 25,000 vehicles per day (vpd) with an LOS B or C in undeveloped areas, but an LOS E through LaPaz. From the south side of Lakeville to US 20, the ADT volumes in the year 2000 on US 31 range from 24,000 to 32,000 vpd with an LOS E in undeveloped areas and an LOS F in others areas (the developed segments along US 31 through Lakeville and from Roosevelt Road to US 20).

With historical traffic growth to the year 2030, daily traffic volumes will increase in the range of 40% to 50% over the year 2000. Future daily traffic volumes on US 31 will range from 23,500 at US 30 to 29,300 vpd on the south side of Lakeville, and will range from 34,400 to 46,000 vpd from the south side of Lakeville to the US 20 Bypass. This will result in an unacceptable LOS on US 31 for 15 miles of the US 31 corridor from the Michigan Road interchange to the US 20 Bypass interchange.

Table 4.1.1 also records the existing posted speed limits along the US 31 corridor. As US 31 passes through the small communities of LaPaz and Lakeville, the posted speed limits are reduced to 35 mph due to more frequent private driveways and cross streets, on-street parking, and sidewalks used by pedestrians entering shops in the commercial areas. It is anticipated that the speed limit may be reduced on US 31 from Roosevelt Road to Miller Road as urbanization extends southward along US 31.

Table 4.1.1: Present and Future Levels-Of-Service of US 31 Segments<sup>1</sup>

Segments	Area Type	2000 Base Year			2030 Future Year		
		Daily Traffic	LOS	Posted Speed	Daily Traffic	LOS	Posted Speed
US 30 - Michigan Road	Rural	16,989	B	55 mph	23,500	C	60 mph
Michigan Road - US 6	Rural	24,232	C	55 mph	35,200	E	60 mph
US 6 - Tyler Road	Rural	19,845	E	35 mph	28,200	F	35 mph
Tyler Road - Lake Trail	Rural	21,400	C	55 mph	29,300	D	55 mph
Lake Trail - SR 4	Rural	27,217	F	35 mph	40,300	F	35 mph
SR 4 - Miller Road	Rural	24,240	E	55 mph	34,400	F	50 mph
Miller Road - Roosevelt Road	Urban	26,419	E	55 mph	37,500	F	50 mph
Roosevelt Road - US 20	Urban	31,526	F	45 mph	46,000	F	50 mph

Note: Shading denotes failure to meet INDOT minimum design standards for LOS of C in rural areas and D in urban areas.

As shown in Table 4.1.2, three of the four signalized intersections along the existing US 31 currently operate at an LOS E or F. For traffic entering US 31 at two-way stops, three of the six crossroads experienced an LOS below C, an indication of a lack of adequate gaps in the mainline traffic stream. With the historical growth in traffic to the year 2030, all presently signalized intersections will operate at an unacceptable LOS. For the six major two-way stop crossroads examined, five of the six crossroads will operate at an unacceptable LOS.

The origin and destination of traffic using the US 31 corridor also demonstrates that it handles traffic characteristic of a Statewide Mobility Corridor (e.g., long distance trips and longer distant commuter trips). Both at present and in the year 2030, the primary destination of trips at the north end of the corridor remains Michigan Street (Business US 31) for traffic entering South Bend. Figures 4.1.1 and 4.1.2 show traffic patterns on US 31 in the year 2000 at the US 30 interchange and US 20 Bypass interchange, respectively. Currently, traffic volumes to and from the west on the US 20 Bypass from US 31 are greater than the traffic volumes to and from the east. However, significant growth in eastern

<sup>1</sup> 2000 AADT generated by factoring 1998 INDOT counts by historic growth factors; Daily Vehicle Capacity developed from *Highway Capacity Manual, Special Report 209*; 2030 AADT produced by applying historic growth factors to 1998 counts.



Table 4.1.2: Present and Future Levels-of-Service for US 31 Intersections					
	Area Type	2002 Base Year		2030 Future Year	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
<b>Signalized Intersections</b>					
US 6	Rural	E	F	F	F
SR 4	Rural	B	B	D	E
Kern Road	Urban	E	D	F	F
Johnson	Urban	E	D	F	F
<b>Major Unsignalized Intersections (two-way stop-controlled)</b>					
Plymouth-Goshen Trail	Rural	C	C	D	E
W 5A Road	Rural	B	C	C	C
Tyler Road	Rural	E	D	F	F
New Road	Rural	E	F	F	F
Madison Road	Urban	C	C	F	F
Roosevelt Road	Urban	D	D	F	F

Note: Shading denotes failure to meet INDOT minimum design standards for LOS of C in rural areas and D in urban areas.

St. Joseph County is expected, and it will result in traffic to and from the east on the US 20 Bypass being slightly higher than to and from the west in the year 2030. Examining the origin and destination of traffic throughout the 20-mile corridor reveals that slightly over half of the traffic in the corridor is through traffic (i.e., with both trips ends outside the corridor) – 10,630 vpd out of 20,850 vpd. Of this through traffic, most continues toward downtown South Bend in the Michigan Street (Business US 31) corridor, and the second greatest through traffic volume heads into Michigan on US 31/US 20. Figures 4.1.3 through 4.1.10 show the origin-destination of traffic for the entire corridor as well as the south end of the corridor, Lakeville and north end of the corridor.

### 4.1.2 Public Transportation

The Chicago, South Bend and South Shore Railroad provides commuter rail service from the Michiana Regional Airport in northwest South Bend to downtown Chicago, but averages only 100 passengers per day at the airport station. Local bus transportation for South Bend and Mishawaka is provided by TRANSPO, the South Bend Public Transportation Corporation. TRANSPO provides a system of 15 fixed routes radiating from downtown South Bend. Although TRANSPO does not provide bus service in the US 31 corridor, it does have two routes that enter the US 31 Study Area. With 30-minute headways (time period between bus arrivals), Route 8 serves the Scottsdale Mall at Ireland Road, on the north side of the US 20 Bypass near Miami Highway, and Route 6 serves the residential area on the east side of Miami Highway immediately south of the US 20 Bypass. In Plymouth, Rock City Riders provides Section 18 transit services; however, such transit service is available to the elderly, handicapped and economically disadvantaged and not to the general public.

The bus ridership is characterized by a transit-dependent population. According to the 2000 Census, public transportation (including taxicab) was the means of transportation to work for only 1.2% of the work trips in St. Joseph County and 0.4% of the work trips in Marshall County. The percent of work trips by public transportation dropped by 29% between 1990 and 2000.

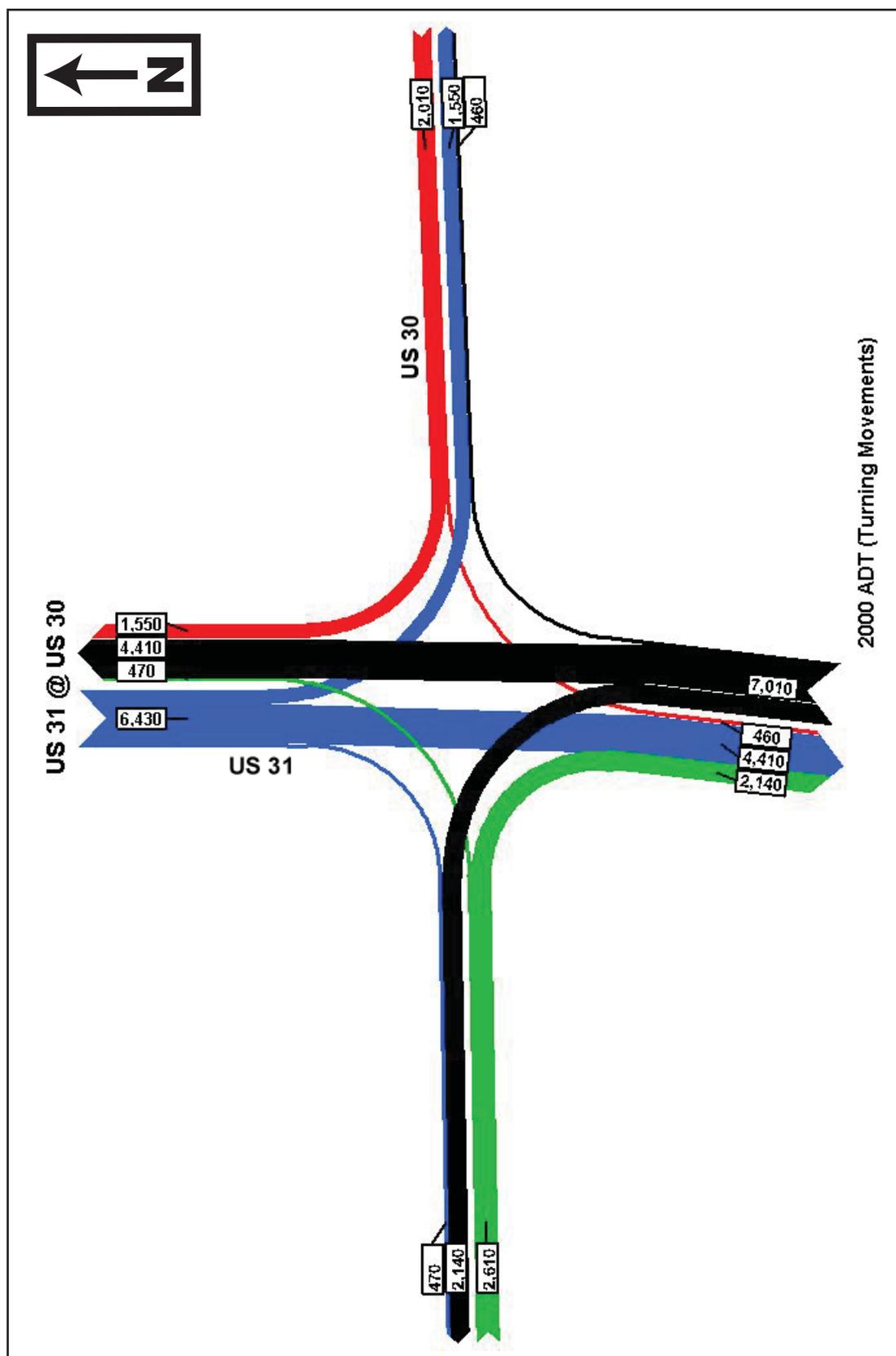


Figure 4.1.1: US 31 at US 30 Interchange Turning Movements (2000)

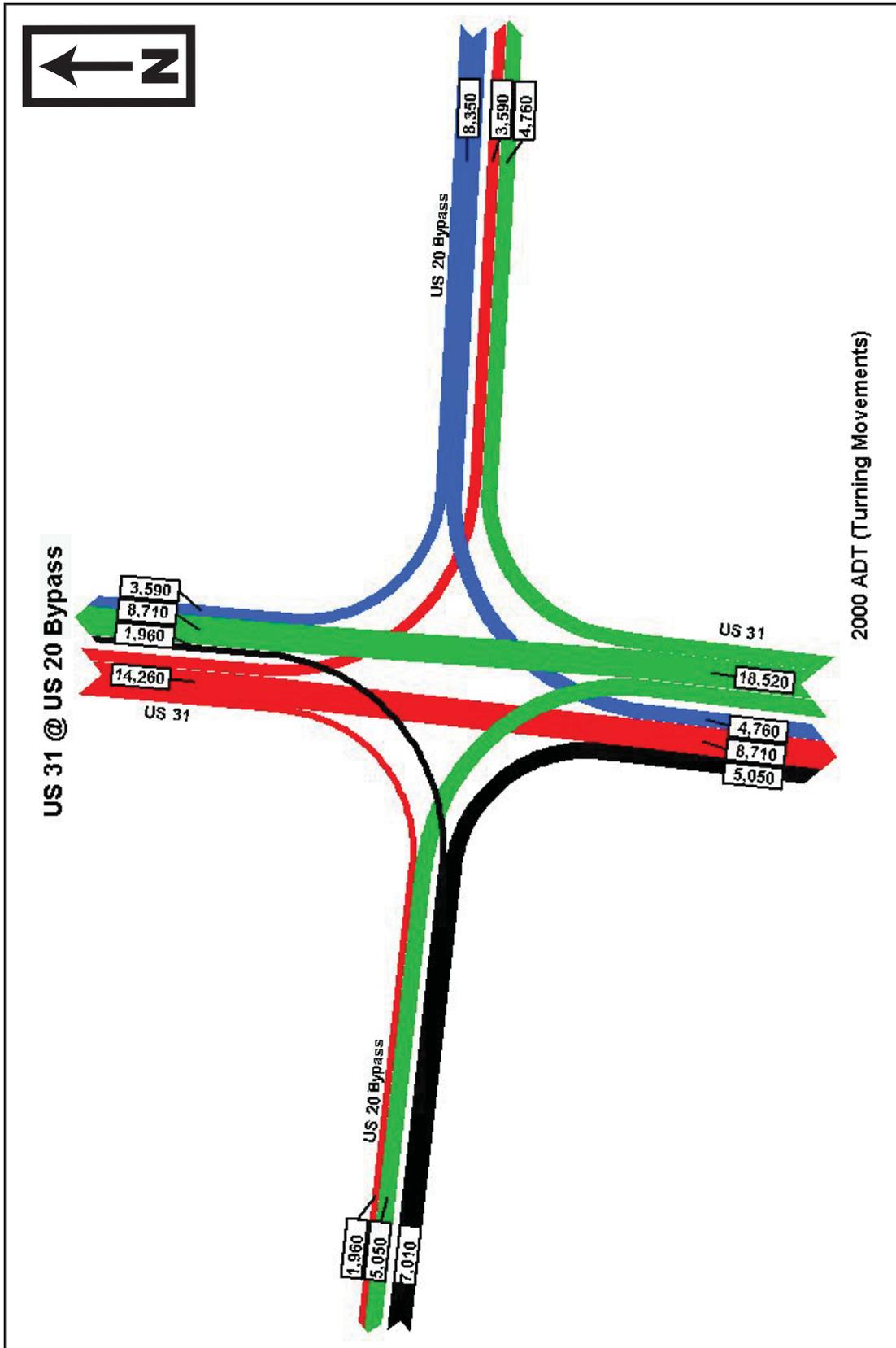


Figure 4.1.2: US 31 at US 20 Bypass Interchange Turning Movements (2000)

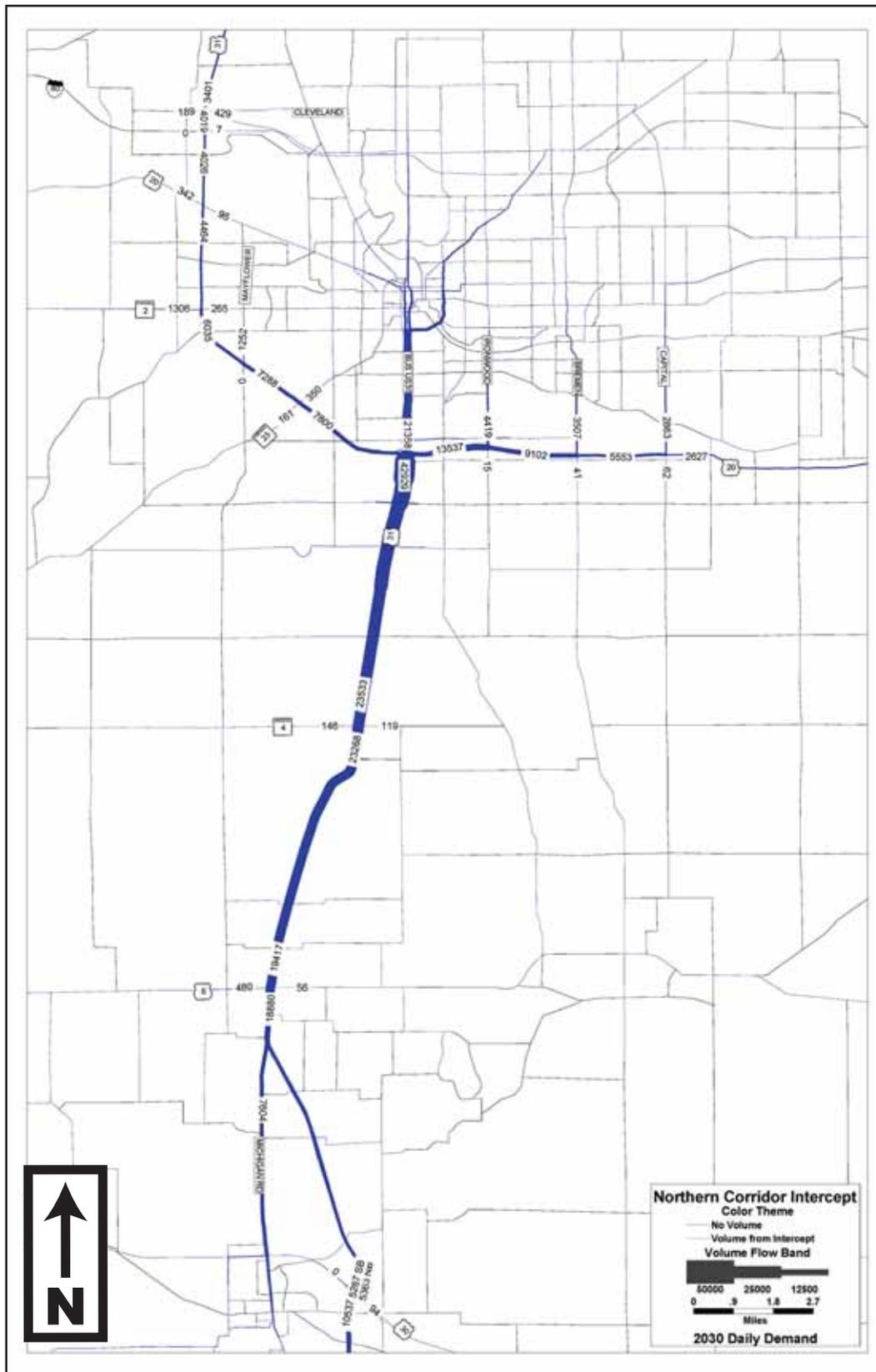


Figure 4.1.3: US 31 Corridor Origin-Destination Daily Traffic Volumes (2030)

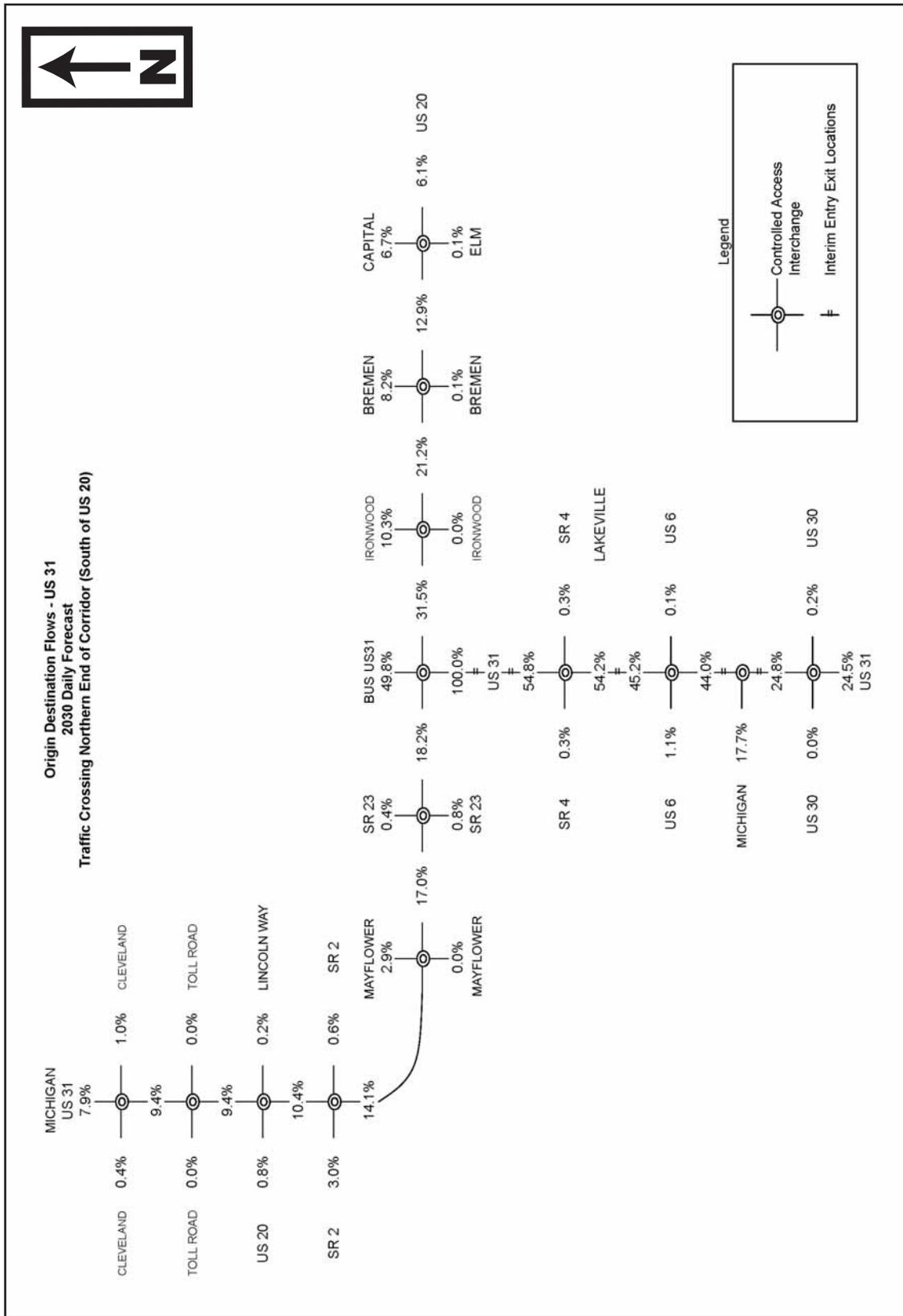


Figure 4.1.4: US 31 Corridor Origin-Destination Percent Daily Traffic Volumes (2030)



Figure 4.1.5: Northern Corridor Intercept Origin-Destination Daily Traffic Volumes (2030)





Figure 4.1.7: Lakeville Intersect Origin-Destination Daily Traffic Volumes (2030)





Figure 4.1.9: Southern Corridor Intercept Origin-Destination Daily Traffic Volumes (2030)

