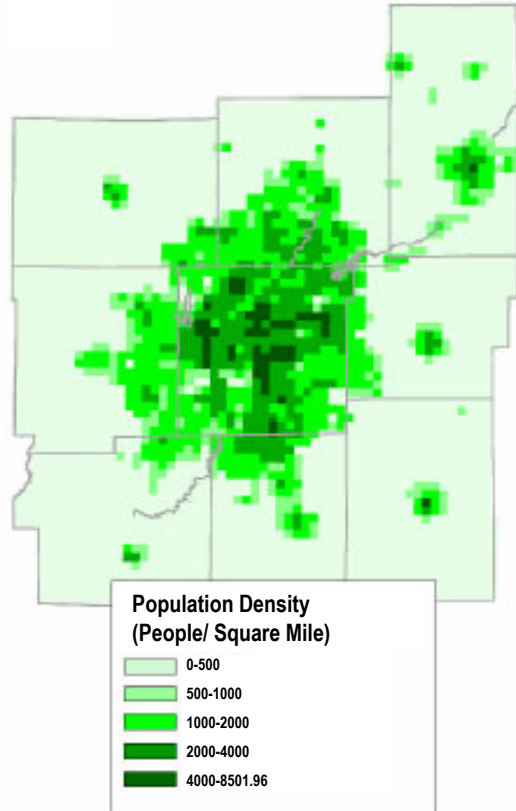


Figure 4: 2025 Urbanization – Current Plan Alternative



OUTER BELT IN OUR FUTURE?

CISTMS modeling to date indicates that even at interstate standards, an outer belt would not attract traffic at the level of other regional interstate highways. With one exception, an outer belt would not greatly reduce traffic volumes on any other roadway. This applies to parallel state highways through the counties served, as well as to I-465 in Marion County. The exception is I-69/I-465 south of Anderson, where the outer belt segment linking I-69 to I-70 would provide a new option for accessing downtown Indianapolis.

Likewise, an outer belt would apparently have little effect on the location and intensity of regional urbanization (land use). The conclusion that the Outer Belt Alternative would have only minor impacts on land use development patterns was duplicated when a longer-term analysis (to the year 2040) was conducted.

The relatively low traffic forecasts and the lack of associated land use impact may be surprising, given the “build it and they will come” view shared by many people with respect to new roadways. However, there are some reasons as to why the roadway’s usage and its impacts on urban growth may indeed be relatively small:

- The outer belt would be located relatively far from the center of the Indianapolis region and would remain well beyond the edge of the urbanized area even in 2040.
- With one or two possible exceptions, it would provide little accessibility benefit to existing employment centers, such as downtown Indianapolis, the airport and Hamilton County near I-465, U.S. 31 and SR 431.
- There is a significant amount of land available for development closer to the urban core. These areas will continue to have a higher accessibility to employment, even with the proposed transportation improvements.

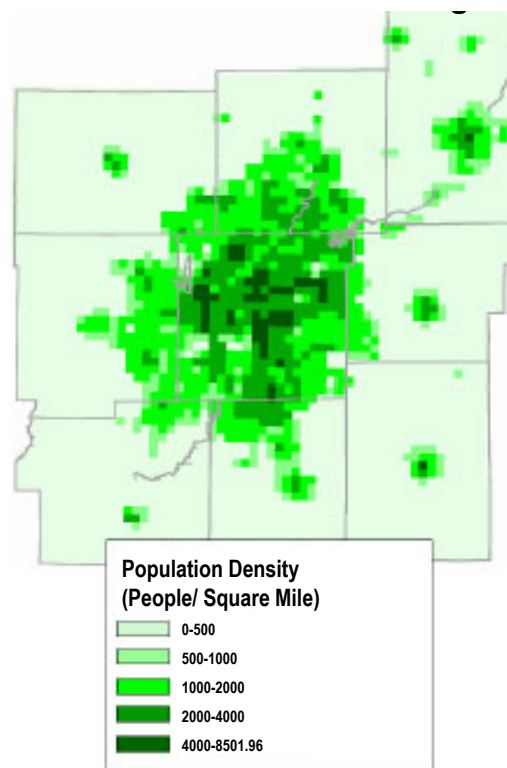
These results should not diminish the importance of sound local planning in advance of any highway or other transportation investment. Land use planning can help ensure that future development, when it does occur, will be located for optimum transportation access and designed to create minimum demands on the transportation system. It can also ensure fiscal prudence through the timing of other infrastructure investment and provision of appropriate utilities.

In summary, forecasts indicate that it will literally be decades before growth and development pushes the urban fringe to the CISTMS study corridors. Even then, there is no indication that an outer belt will be needed.

NEXT STEPS

Now that the results are in on the “bookend” alternatives, the next steps in the CISTMS study will be to continue modeling and testing to identify anticipated future problems, and to develop year 2025 recommendations for the four corridors under study. Those will be the primary topics of the next issue of the CISTMS newsletter.

Figure 5: 2025 Urbanization – Outer Belt Alternative



CISTMS

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BACKGROUND

The Indiana Department of Transportation (INDOT) is currently conducting the Central Indiana Suburban Transportation and Mobility Study (CISTMS – pronounced “systems”). The main purpose of the study is to identify key issues and problems pertaining to suburb-to-suburb mobility in the nine-county Central Indiana region and to determine how those can best be addressed from a transportation planning perspective. The study area includes Marion County but is focused on the 8 surrounding counties: Boone, Hamilton, Madison, Hancock, Shelby, Johnson, Morgan and Hendricks. The following state route corridors are being examined in CISTMS: SR 32/38 on the north, SR 9 on the east, SR 44/144 on the south and SR 267/39 on the west. (See Figure 1 below.) Parallel routes (such as 146th Street in Hamilton County, the proposed North-South (Ronald Reagan Parkway) Corridor in Hendricks County and the proposed East-West Corridor in Johnson County will also be examined as appropriate. The study will evaluate a broad range of options for meeting existing and future transportation needs in the study area.

TRANSPORTATION & LAND USE

One goal of CISTMS is to examine the inter-relationship between transportation and land use in Central Indiana. One aspect of the analysis included a review by a panel of regional experts in the areas of economic development and land use planning. These panel members were asked to consider the impact of minimum or maximum changes to roadways in each study corridor and relate them to potential development patterns of the future. Those findings were factored into a quantitative review using specialized computer models that analyze land use and traffic impacts. The results of those analyses are discussed in this newsletter.



Figure 1: Major Transportation Corridors in the Study Area

ALTERNATIVES DEFINITION

Two initial alternatives were evaluated to represent the potential minimum and maximum solutions to addressing suburban roadway congestion, as follows:

Current Plan Alternative: Also known as the “Minimum Change” alternative, this option includes all improvements included in the current 2025 Regional Plan with only minor improvements within the four corridor areas. This alternative adds no through travel lanes and includes only relatively small projects within the study corridors, many of which are already listed in local transportation improvement programs. Therefore, this alternative is identified as the “Current Plan” Alternative for the purposes of this analysis.

Outer Belt Alternative: This alternative, also known as the “Maximum Change” alternative, assumes that in addition to system improvements already included in the Regional Plan, roadways are built or upgraded to interstate standards within each of the study corridors. Linking these roadways would provide a new circumferential freeway or “outer belt” similar to I-465. It would be located along or generally parallel with the blue arrows shown in Figure 1, between five to fifteen miles outside of I-465. This is the most extensive improvement option being evaluated as a part of CISTMS.

“BOOKEND” APPROACH

For purposes of study, the “Current Plan” and “Outer Belt” alternatives are intended as “bookends” to compare the “least” and “most” improvements that may occur in these corridors. Within this range, the type of improvements proposed for each of the four corridor areas (north, south, east and west) could be different. For example, a new terrain freeway could be located parallel to SR 9 on the east side of the study area, while other corridors receive smaller scale improvements to existing facilities.

HOW CAN YOU PARTICIPATE?

Contact Lori Miser of HNTB at 317/636-4682 or via e-mail at lmiser@hntb.com to be added to the mailing list or to provide comments. Fax or mail comments to: 317-917-5211, 111 Monument Circle, Suite 1200 Indianapolis, IN 46204. Logon to the following websites for upcoming meetings and additional information. INDOT: www.in.gov/dot/projects MPO: www.indygov.org/indympo (click on Documents)

ALTERNATIVES EVALUATION

In this study, a year 2000 baseline scenario was developed for comparison with year 2025 projections. Table 1 illustrates some key statistics that illustrate changes forecasted between 2000 and 2025 if only minimal changes are made to study corridor routes (Current Plan Alternative).

Table 1:
FORECASTED TRAVEL GROWTH, 2000 – 2025
(Current Plan Alternative)

	2000	2025	Percent Change
Person Trips	6.1 million	8.2 million	35% increase in person trips
Vehicle Trips	5.2 million	7.2 million	36% increase in vehicle trips
Vehicle Miles of Travel (VMT)	46.5 million	71.1 million	53% increase in daily vehicle miles traveled
Average Trip Length (mi)	8.86	9.94	12% increase in trip length
Miles at LOS E or Worse ¹	414	876	111.6% increase in significantly congested roadways

¹ Level of Service E on a multi-lane highway represents conditions that are at or near capacity; an unstable level of traffic flow.

To assess the impact associated with the construction of a freeway option within the study area corridors, an outer belt was formed by upgrading and linking all four corridors within the 2025 travel forecast model network. This roadway was assumed to be an interstate-type facility with four lanes for movement of traffic and grade-separated interchanges at all state highways, interstate highways, and other limited-access highways. Table 2 compares the changes between the Current Plan (Minimum Change) Alternative and the Outer Belt (Maximum Change) Alternative. Figures 2 and 3 illustrate forecasted daily traffic volumes for the Current Plan and Outer Belt alternatives, respectively.

A review of these forecasted traffic levels indicates the following:

- As shown on Figure 3, the highest forecasted traffic levels on an outer belt would be between I-69 and I-70 on the northeast side (74,000 vehicles/day), south of I-70 on the east side (44,000 vehicles/day), and between I-70 and the new I-69 on the west side (48,000 vehicles/day).
- The most significant traffic pattern change would be on I-69 north, where the traffic would use a segment of the outer belt to access I-70 instead of I-69 and I-465. This would reduce the traffic volume on I-69 northeast of I-465 by approximately 28,000 vehicles per day.

- To a lesser extent, the future I-69 south exhibits a similar pattern. Some motorists would use a segment of the outer belt to access I-70 on the southwest side. Traffic on I-69 would be reduced by 23,000 vehicles/day.
- Generally, the outer belt would not greatly affect state highway volumes in the study corridors. The greatest traffic volume reductions would occur in the southwest (Morgan Co.) on SR 67 (12,000 vehicles/day), SR 267 (6,000 vehicles/day), and SR 39 (6,000 vehicles/day)
- Some reduction in traffic volumes would occur on I-465. The greatest reductions would occur on the west and northwest sections (7,000 – 18,000 vehicles/day), and on the east side north of I-70 (13,000 vehicles/day).

Table 2:
FORECASTED 2025 CONDITIONS
(Current Plan and Outer Belt Alternatives)

	Current Plan	Outer Belt	Percent Difference
Vehicle Trips	7.2 million	7.1 million	-0.1% decrease in vehicle trips
Vehicle Miles of Travel (VMT)	71.1 million	72.4 million	1.9% increase in daily vehicle miles traveled
Average Trip Length (mi) ²	9.94	10.13	2% increase in trip length
Miles at LOS E or Worse ¹	876	746	-14.8%

¹ Level of Service E on a multi-lane highway represents conditions that are at or near capacity; an unstable level of traffic flow.

² A detailed analysis of trip lengths based on travel time reveals that all trip lengths for all trip purposes decrease slightly. This means that average travel speeds have increased for the *Maximum Change Alternative* with the availability of the proposed outer belt highway.

LAND USE ANALYSES AND FINDINGS

A regional land use model has been developed by the Center for Urban Policy and the Environment at IUPUI to evaluate the effects of policy alternatives in Central Indiana. The model, titled Land Use in Central Indiana (LUCI), is calibrated based on historical patterns of land conversion to urban areas, and considers factors such as availability of water and sewer and environmental constraints on developable land. A version referred to as LUCI/T incorporating transportation accessibility measures was used to analyze future land use impacts in the CISTMS study.

As a point of reference, the nine-county Indianapolis region included approximately 550 square miles of urbanized land in 2000. Of this total, nearly half (255 square miles) was in Marion County. In the eight surrounding counties, urbanized land ranged from a high of 69 square miles in Hamilton County to a low of 14 square miles in Shelby County.

LAND USE FINDINGS FOR THE CURRENT PLAN ALTERNATIVE

The 2025 Current Plan forecast shows an increase in urbanized land area of 299 square miles (54%), bringing the total urbanized land area in the region to 849 square miles. Marion and Hamilton Counties are forecast to experience the largest magnitude of urbanization, with each developing between 60 and 65 square miles of land or just more than 20 percent of regional new land urbanized. The forecasted growth in urbanized land for each county is listed below:

URBAN GROWTH BY COUNTY, 2000 – 2025 (Current Plan Alternative)

Marion	63 square miles
Hamilton	63 square miles
Hendricks	51 square miles
Johnson	33 square miles
Hancock	28 square miles
Boone	23 square miles
Morgan	15 square miles
Madison	14 square miles
Shelby	9 square miles
TOTAL:	299 square miles urbanized

Figure 4 depicts the location and density of urbanization with the 2025 Current Plan Alternative.

LAND USE FINDINGS FOR THE OUTER BELT ALTERNATIVE

Expressed as population density by location, Figure 5 illustrates forecasted 2025 urbanization with an Outer Belt in place. It assumes that the outer belt is a multi-lane roadway at interstate standards. Forecasts use future employment allocations as projected by the regional panel of experts.

Evaluated at the county level, the land use modeling for the Outer Belt Alternative shows negligible change in total urbanized land area in comparison to the Current Plan Alternative (See Figures 4 and 5). The difference is less than 0.1 square mile per county.

The very small difference in land use patterns suggests that the CISTMS alternatives would have only minor impacts on land use development patterns when viewed from a regional perspective. This conclusion was also reached when a longer-term analysis was conducted, showing little impact on development out to the year 2040, after the outer belt freeway had theoretically been in place for 15 years.

It should be noted that although the regional impact would be limited, an outer belt freeway would affect localized land use patterns. Development would likely occur around major interchanges, especially highway-oriented establishments such as restaurants and gas stations, as well as warehousing and distribution centers. Some smaller office parks may also locate near major interchanges such as a new I-69/outer belt interchange in the northeast.

Figure 2: 2025 Current Plan Traffic Forecast

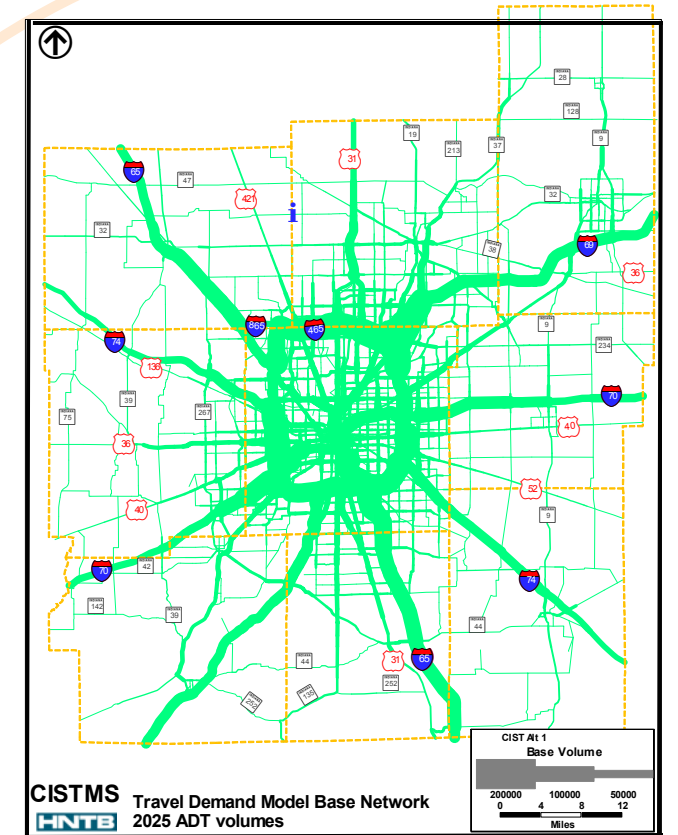


Figure 3: 2025 Outer Belt Traffic Forecast

