ENVIRONMENTAL ASSESSMENT

APPENDIX L: INDIRECT AND CUMULATIVE EFFECTS ANALYSIS TECHNICAL MEMORANDUM

I-65/I-70 North Split Project
Indianapolis, Indiana

Des. Nos. 1592385 and 1600808

INDIRECT AND CUMULATIVE EFFECTS ASSESSMENT

TECHNICAL MEMORANDUM

June 5, 2020

CONTENTS

FIGURES

TABLES

APPENDICES

Appendices have been removed to reduce file size. The Red Flag Investigation can be found in Appendix E, mapping of historic resources can be found in Appendix D, and mapping of low-income and minority populations can be found in Appendix K of this Environmental Assessment.

1 INTRODUCTION

The Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508) define indirect and cumulative effects[1] as follows:

- Indirect effects are "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to the induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." (40 CFR § 1508.8)
- Cumulative effects are "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR § 1508.7)

The Federal Highway Administration (FHWA) implements NEPA and the CEQ guidelines with its environmental regulations at 23 CFR 771 and supports its environmental regulation with Technical Advisory 6640.8A: Guidance for Preparing and Processing Environmental and Section 4(f) Documents.

The American Association of State Highway and Transportation Officials (AASHTO) *Practitioner's Handbook for Assessing Indirect Effects and Cumulative Impacts under NEPA* (AASHTO Handbook) states indirect effects can result from the following:

- Induced-Growth Effects: Changes in the location, magnitude, or pace of future development that result from changes in accessibility caused by the project.
- Encroachment-Alteration Effects: Physical, chemical, or biological changes in the environment that occur as a result of the project, but are removed in time or distance from the direct effects.

The AASHTO Handbook states that cumulative effects occur when the project's direct and indirect effects are added to the effects of other major activities, regardless of what agency or person undertakes them. Activities that contribute to cumulative effects can occur in the past, at the time of project construction, or in the reasonably foreseeable future.

This analysis considers indirect and cumulative effects in accordance with the AASHTO Handbook and the CEQ regulations.

[1] *For simplicity, this analysis uses the terms "indirect effects" and "cumulative effects," except when directly quoting a regulation or guidance document that uses a different term. The CEQ regulations use the terms "indirect effects" (40 CFR § 1508.8) and "cumulative impacts (40 CFR § 1508.7). This terminology is a matter of convention and does not reflect a substantive distinction between the meaning of "effects" and "impacts," which are described as synonymous in the CEQ regulations (40 CFR § 1508.8). The CEQ itself has not been consistent in its use of these terms: while the regulations refer to cumulative impacts, several CEQ guidance documents refer to "cumulative effects," including the CEQ's handbook on this topic. In practice, it is acceptable to refer to effects or impacts, as long as the terms are used consistently. (AASHTO Handbook)*

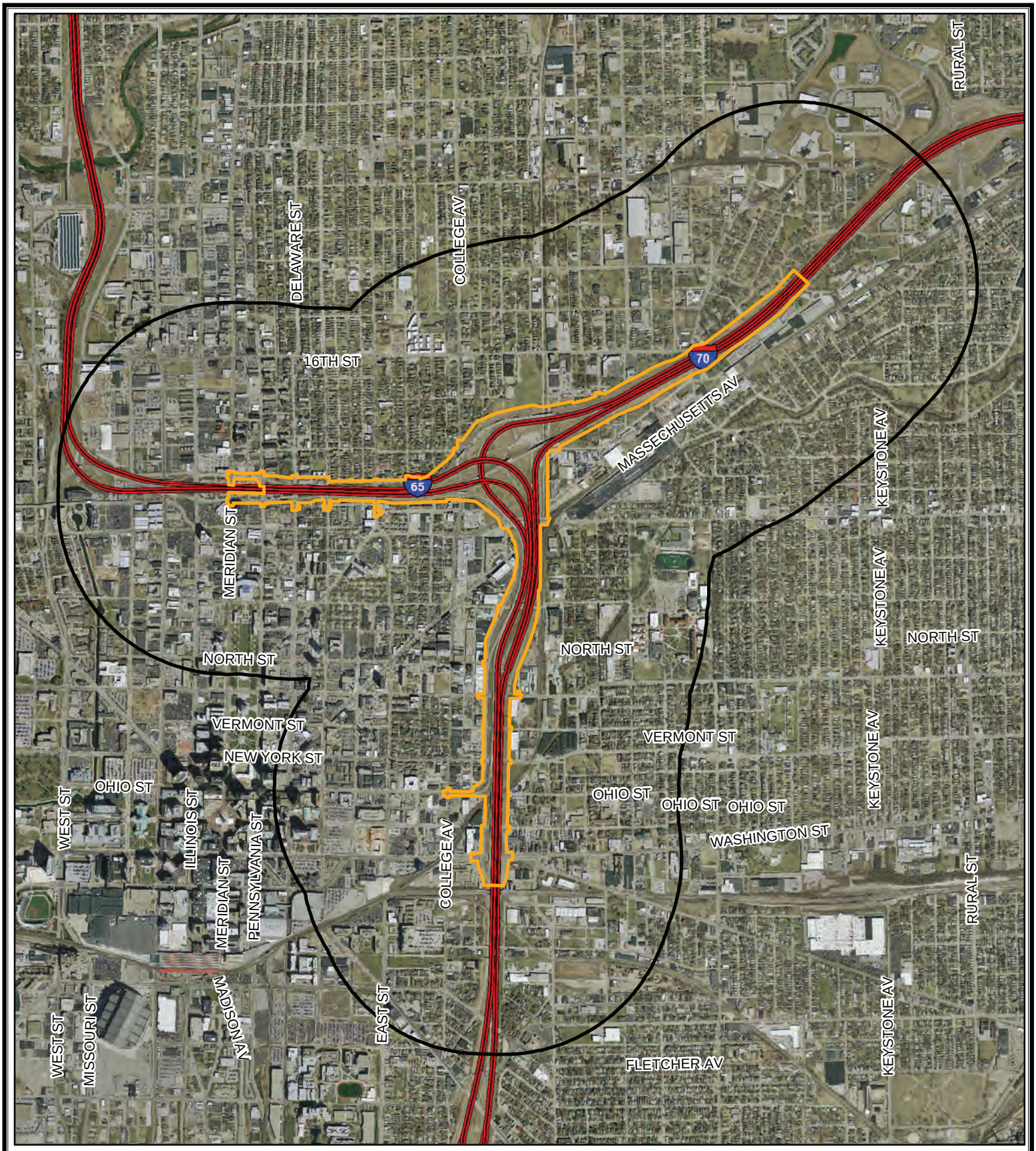


Figure 1: ICEA Study Area Map

Des No: 1592385 & 1600808

Project: North Split Project

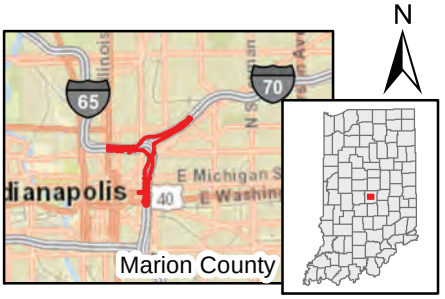
Feet

0 1,250 2,500

HNTB

Legend

- ICEA Study Area
- North Split Project Area



2 STUDY AREA AND METHODOLOGY

The study area for the indirect and cumulative effects assessment (ICEA) includes a 0.5-mile buffer around I-65 and I-70 along the project limits. The ICEA study area (**Figure 1**) was established based on the scope of the proposed improvements, the existing transportation infrastructure, land availability, and regional economic development conditions. I-65 and I-70 within downtown Indianapolis were constructed over 40 years ago, and the areas near the downtown interchanges are heavily urbanized with little remaining undeveloped land. Additionally, the proposed transportation improvements will occur within existing transportation right-of-way. Therefore, the greatest potential for indirect effects would be associated with infill development in areas close to the existing interstates and their access points. The greatest potential for cumulative effects would be associated with on-going private investment in the City of Indianapolis and other major transportation and utility projects in and around the study area.

The ICEA for the North Split Project relies on secondary source information, such as geographic information system (GIS) databases, U.S. Census data, previous project reports, City of Indianapolis studies and planning documents, and other studies and initiatives.

3 TIME HORIZON

The time horizon for the ICEA is 2041, which is consistent with the design year for the project. It is also within the planning horizon (2045) for the Indianapolis Metropolitan Planning Organization's (MPO's) *2045 Long Range Transportation Plan* (LRTP). This timeframe is also consistent with the City of Indianapolis' efforts to steer the city into a future that meshes community vision, values and strategy across various policy initiatives, including transportation and land use. These efforts are detailed within the *Comprehensive Plan for Indianapolis and Marion County* (Comprehensive Plan). The plan is required by state statute as a basis for zoning. It is made up of over 100 plans, each separately adopted by the Metropolitan Development Commission, and includes objectives and policies to guide future land use development. The land use element of the Comprehensive Plan was recently updated as part of the broader Plan 2020 initiative and is guided by the Plan 2020 Bicentennial Agenda (Metropolitan Development Commission, March 2016).

4 NOTABLE FEATURES

A *Red Flag Investigation* (RFI) was completed to identify resources of concern within a 0.5-mile buffer around the project limits (**Appendix A**), which is the same extent as the ICEA study area. The RFI maps were created using existing local, state, and federal GIS databases and documentation. The RFI identifies the following notable features within the ICEA study area:

- Community facilities (e.g., schools, parks, trails, religious facilities, police/fire/medical facilities);
- Other infrastructure facilities (e.g., freight railroads, public and private airports, pipelines)
- Water resources (e.g., streams, wetlands, lakes, floodplains); and
- Hazardous materials sites.

Historic resources were identified using the *Historic Property Report* (HPR) and the *Addendum to the HPR* for the North Split Project.[2] Maps from the HPR and the Addendum show several historic properties and districts listed in or eligible for the National Register of Historic Places within the ICEA study area (**Appendix B**).

[2] *A Phase Ib Archaeological Records Check and Reconnaissance Survey Report and three Phase Ia Archaeological Records Check and Reconnaissance Survey Reports were also completed for the North Split Project. These efforts did not identify any additional resources eligible for the National Register of Historic Places and no further work was recommended.*

The ICEA study area also includes concentrations of low-income and minority populations. Maps from the *Environmental Justice (EJ) Technical Memorandum* (**Appendix C**) identify the locations of the low-income and minority populations using the latest available data from the U.S. Census. The demographic data includes census blocks within and immediately adjacent to the traffic study area, which is approximately six miles by six miles. This area extends east-west from the White River on the west to Emerson Avenue on the east. The north-south limits extend from 38th Street on the north to Raymond Street on the south.

The ICEA focused on potential indirect and cumulative effects to these notable resources.

5 INDIRECT EFFECTS

The indirect effects assessment for the North Split Project considers six contributing factors that could cause indirect effects associated with the project. These six factors and the assessment of indirect effects are discussed in the following sections.

5.1 Purpose and Need

The purpose of the North Split Project is to rehabilitate and improve the existing interstate facilities leading to and through the North Split interchange. The project must meet the following transportation needs:

- Correct deteriorated bridge conditions;
- Correct deteriorated pavement conditions;
- Improve safety by reducing or eliminating conditions that result in crashes; and
- Improve interchange operations and reduce congestion by removing weaving sections and improving level of service.

There is no specific economic development component of the purpose and need.

5.2 Design Concept and Scope

The proposed improvements will occur within the existing right-of-way. The preferred alternative will not provide additional through travel lanes or alter regional travel times. Traffic is not anticipated to increase substantially as a result of the project. **Table 1** shows the modeled 2041 No Build traffic and the 2041 Build traffic on the interstates. The change between the 2041 No Build and Build ranged from -1.6 percent to 2.3 percent.

Table 1: 2041 No Build and Build Traffic Comparison

North Split Interchange Interstate Section[1]	2041 No Build AADT	2041 Build AADT	2041 Build % Change from 2041 No Build
I-65 (west of interchange)	144,423	142,117	-1.6%
I-70 (east of interchange)	187,153	187,808	0.4%
I-65/I-70 (south of interchange)	133,093	136,173	2.3%

1. Collector-distributor (C-D) road volumes are not included.

The preferred alternative will not provide new access points to or from the interstates. The top two safety concerns – traffic weaving at the Pennsylvania Street exit ramp and the Delaware Street entrance ramp – will be eliminated. Travel patterns will change at the following locations:

- Westbound traffic from I-70 will no longer be able to exit at the Pennsylvania Street ramp on the north side of downtown; and
- Traffic entering the interstate at Delaware Street will no longer have access to I-65 southbound or the collector-distributor (C-D) road[3] on the east side of downtown. Southbound I-65 traffic will still be able to access the C-D road.

Together, these access changes are anticipated to alter travel patterns on local streets leading to/from I-65 and I-70. **Table 2** shows the forecasted total vehicles that will be diverted during the peak hours in 2041 due to the change in access with the preferred alternative. Approximately 1,130 vehicles are anticipated to be diverted during the AM peak hour and 440 vehicles are anticipated to be diverted during the PM peak hour. Approximately 16,800 vehicles are forecasted to exit the interstates in the downtown area[4] during the AM peak hour in 2041, and 12,300 vehicles are forecasted to enter the interstates from the downtown area during the PM peak hour in 2041. The total vehicles that will be diverted are approximately 6.7% of the total traffic volume entering downtown in the AM peak hour and 3.6% of the total traffic volume leaving downtown in the PM peak hour.

Table 2: 2041 AM and PM Peak Hour Total Vehicles Diverted

Traffic Movement	Total Vehicles (AM Peak Hour)	Total Vehicles (PM Peak Hour)
I-70 WB to Pennsylvania St.[1]	890	300
Delaware St. to SB C-D[1]	93	113
Delaware St. to SB I-65[1]	147	27
Total Vehicles Diverted Under the Build Condition	1,130	440
Total Vehicles Exiting/Entering Interstates in the Downtown Area	16,800	12,300
% Diversion from Access Changes Under the Build Condition	6.7%	3.6%

1. Traffic volumes reflect the 2041 Build condition compared to the No Build condition.

5.3 Study Area Trends

As shown in **Table 3**, the population growth rate of the City of Indianapolis has, for the most part, been under one percent annually. According to county population projections from STATS Indiana (**Table 4)**, Marion County is projected to grow around 0.3 to 0.4 percent per year between now and 2050.

Within the ICEA study area, which is located within the City of Indianapolis, the growth trend is more pronounced, and the market for development is strong. According to the *2018 Community Report* published by Downtown Indy, Inc., Downtown Indianapolis[5] is the fastest growing neighborhood in Marion County. The report also indicates there are 69 development projects totaling approximately $3.6 billion worth of private investment planned through 2023. In addition to these planned projects, over 150 projects totaling approximately $3.3 billion have been completed in the past five years. Downtown Indy, Inc. estimates these projects have added over 5,000 residential units, over 230,000 square feet of retail space, 300,000 square feet of office space, and more than 300 additional hotel rooms.

[3] *The C-D road provides access to North Street, Michigan Street, Vermont Street, New York Street, Ohio Street, and Fletcher Avenue.*

[4] *The "downtown area" includes the following interchanges: 21st Street, West Street, Illinois/Meridian/Pennsylvania/Delaware Streets, North Street, Michigan Street, Vermont Street, New York Street, Ohio Street, Fletcher Avenue, East Street, Madison Avenue, and Missouri Street.*

[5] *"Downtown Indianapolis" is defined by Downtown Indy, Inc. as the area bounded by 16th Street on the north, I-65/I-70 on the east and south, and the White River and Harding Street on the west.*

Table 3: Historic Population Data for the City of Indianapolis

Year	Population	% Change in Population	Annual % Growth
1950	427,173	10.4%	-
1960	476,258	11.5%	1.1%
1970	746,992	56.8%	5.7%[1]
1980	711,539	-4.7%	-0.5%
1990	741,952	4.3%	0.4%
2000	781,870	5.4%	0.5%
2010	820,445	4.9%	0.5%
2018 (est.)	867,125	5.7%	0.7%

1. Indianapolis boundaries changed to include all of Marion County as part of a consolidated city-county government.

Sources: https://www.stats.indiana.edu/population/PopTotals/historic_counts_cities.asp, accessed November 4, 2019; and http://www.stats.indiana.edu/population/sub_cnty_estimates/2018/e2018_places.asp, accessed November 4, 2019

Table 4: Population Projections for Marion County, Indiana

Year	Population	% Change in Population from Previous Projected Year	Annual % Growth
2015 (est.)	938,058	-	-
2030 (projected)	1,001,231	6.7%	0.4%
2040 (projected)	1,033,719	3.2%	0.3%
2050 (projected)	1,065,757	3.1%	0.3%

Source: http://www.stats.indiana.edu/pop_proj/index.html, accessed March 12, 2019

5.4 Availability of Land for Development/Redevelopment

The ICEA study area consists of approximately 2,100 acres of land. Of this, approximately 233 acres (11.1%) is vacant, and could be available for development/redevelopment.[6] The existing land use including vacant land, is shown in **Figure 2**.

5.5 Availability of Utilities

The ICEA study area is located within a densely developed urban area, which is readily served by sewer and water as well as services required to support businesses, such as high-speed internet access.

[6] *Acreages calculated using parcels designated as "Vacant" in the IndianaMAP 2017 land parcel GIS layer for Marion County.*

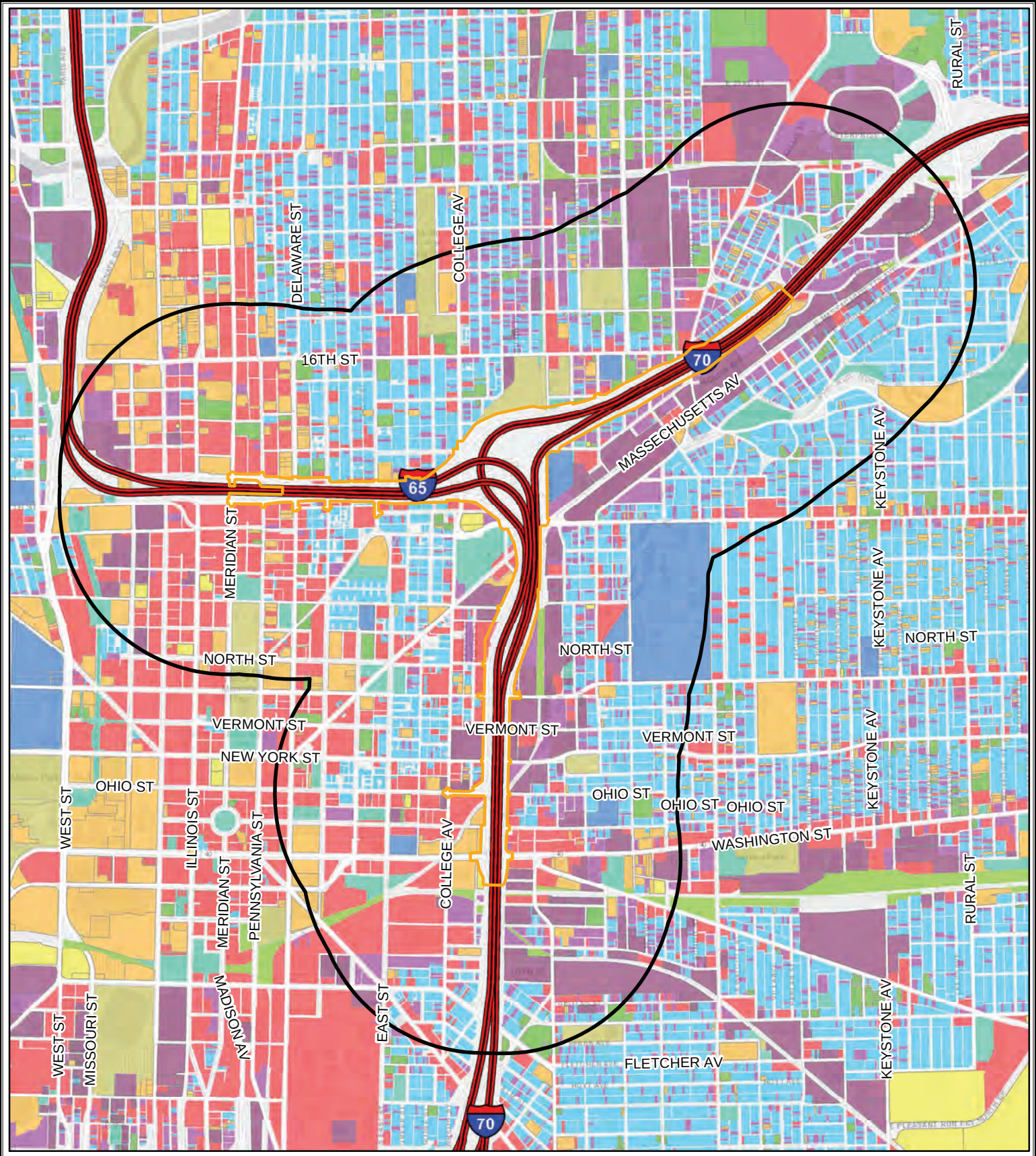


Figure 2: Existing Land Use

Des No:1592385 & 1600808

Project: **North Split Project**

Feet

0 1,500 3,000

HNTB

Legend

- North Split Project Area
- ICEA Study Area

Land Use

- Commerical
- Gov't/Institutional
- Industrial
- Municipal
- Railroad
- Recreational
- Religious
- Residential
- School
- Utilities
- Vacant

N

5.6 Local Land Use Plans and Related Policies

The City of Indianapolis' vision for future land use is contained within the land use element of the city's *Comprehensive Plan*. The *Comprehensive Plan* is a collection of over 100 plans, each separately adopted by the Metropolitan Development Commission as a contributing element. These plans include specific area/neighborhood plans, as well as transit-oriented development strategic plans for the IndyGo Red and Blue Line Bus Rapid Transit projects. The future vision for the ICEA study area includes a mixture of land uses, including residential (traditional and city neighborhood), urban mixed-use, and regional special-use. There are also two transit-oriented development (TOD) districts between 16th Street and Ohio Street. One is located north of I-65 and, one is located south of I-65. Both are generally bounded between Senate Avenue and Capitol Avenue, and they envision dense, mixed-use, infill development in their cores. The TOD district north of I-65, however, also calls for residential development beyond the densely developed core.

In general, the City of Indianapolis' land use policies and regulations are supportive of growth; however, there are specific provisions to manage growth in a manner that is responsive to the community context. In 2015, the City of Indianapolis amended its zoning ordinances to provide a better balance of economic competitiveness, environmental preservation, sustainability, safety, and compatibility with other transportation modes. The following is a partial list of changes associated with the recent zoning ordinance amendments:

- Strengthened the provisions needed to mitigate flooding impacts associated with development/redevelopment;
- Increased requirements associated with stream buffers;
- Introduced low-impact development requirements in new subdivisions;
- Increased protection for wellfield districts; and
- Introduced a Green Factor scoring system into the plan submittal and review process.

The zoning ordinance includes provisions for historic properties and historic preservation districts to manage development and redevelopment activities in accordance with the principles contained within an adopted historic preservation plan. This is accomplished via a Certificate of Appropriateness (COA) issued by the Indianapolis Historic Preservation Commission.

5.7 Indirect Effects Assessment

The North Split Project will improve road and bridge conditions on I-65 and I-70 within the project limits. It will also improve safety by addressing the four highest crash locations in the project area. The project is located within a densely urbanized area with limited adjacent land that could be available for development/redevelopment. The project will not add additional through travel lanes, will not substantially improve or provide new access, and will not substantially alter regional travel times. Given the scope of the proposed improvements, the existing study area trends, as well as the local land use plans and related policies, the North Split Project is not anticipated to notably influence future land use changes. Any direct impacts to natural resources will be addressed through programmatic agreements with resource agencies and environmental permitting processes. Best management practices will be used during construction activities to minimize potentially negative effects to natural resources, including air and water quality. Private developments will be required to follow applicable local, state and federal laws and permitting requirements.

The proposed access changes for westbound I-70 traffic at the Pennsylvania Street exit ramp and the traffic entering the interstate at Delaware Street will result in permanent travel pattern changes. The total vehicles that will divert

due to changes in access at these two ramps are approximately 6.7% of the total entering in the AM peak hour and 3.6% of the total leaving the downtown in the PM peak hour (**Table 2**). Additionally, the local street network is well developed, and there are multiple routes available to accommodate the diverted traffic.

Although the permanent changes in travel patterns will introduce more traffic in some areas, the total volume of traffic within the ICEA study area is not anticipated to substantially change from the No Build condition. The changes in traffic volumes due to the proposed closures at two interchange ramps are based on a traffic model developed for the North Split project that is based on the Indianapolis MPO regional travel demand model. These models use existing and projected traffic, demographic, and population data to project reasonably foreseeable future traffic volumes for both the No Build and the Build conditions. The traffic modeling data forecasts that the project will increase traffic on some local streets, but will decrease traffic on others. However, traffic increases associated with population and development growth are already occurring within the ICEA study area and are anticipated to continue regardless of the project. As a result, the nature of the permanent traffic changes resulting from the project is not anticipated to induce changes in land use or affect existing growth trends within the ICEA study area.

Most of the local street routes anticipated to experience changed travel patterns are multi-lane arterials, which are designated within the *Indianapolis Thoroughfare Plan* (2016) for carrying high volumes of traffic. Reductions in traffic volumes on some routes could occur, but these changes are not anticipated to affect land use patterns along the affected corridors. In addition, the permanent changes in traffic volumes are not expected to diminish the long-term viability of businesses within the affected corridors. This is primarily because the altered travel patterns in the peak hours will affect a relatively minor amount of traffic when compared to the overall traffic volumes on the local streets in the traffic study area. Additionally, many of the businesses within the corridors are not dependent on drive-by traffic.

Maps from the *Environmental Justice (EJ) Technical Memorandum* (**Appendix C**) indicate that many of the Census block groups in the traffic study area contain relatively higher concentrations of low-income and minority communities. The *EJ Technical Memorandum* assesses the context and intensity of impacts to low-income and minority populations and concludes the temporary and permanent adverse effects to EJ populations are not anticipated to be greater or more severe in magnitude that those borne by non-EJ populations. In addition, EJ communities have been – and will continue to be – provided full and fair participation in the transportation decision-making process.

The increases in traffic on the local street network could result in localized increases in air emissions, but regional air quality is not anticipated to be negatively affected with the construction of the project. Similarly, the changes in traffic volumes could increase noise on some local streets, but could decrease noise on others. In general, it requires a doubling of the noise source (i.e., the traffic volumes) to produce a 3 decibel increase in the noise level – which is the level of noise increase that is detectable by the human ear (FHWA, 2011).

Noise impacts along the interstates resulting from the project will be mitigated in accordance with the INDOT *Traffic Noise Analysis Procedure* (2017).

Given the above, the North Split Project will have minimal indirect effects to the ICEA study area resources.

6 CUMULATIVE EFFECTS

As discussed in Section 1, cumulative effects occur when the project's direct and indirect effects are added to the effects of other major activities, regardless of what agency or person undertakes them. The following sections summarize the other reasonably foreseeable major actions within the ICEA study area and provide an assessment of the project's cumulative effects.

6.1 Other Major Actions

Table 5 lists major transportation projects planned in the Indianapolis MPO LRTP in the ICEA study area. In addition to the planned transportation projects listed in **Table 5**, IndyGo recently completed construction of Phase 1 of the Red Line Bus Rapid Transit Line. The Red Line is a 13-mile bus rapid transit line extending from 66th Street in Broad Ripple to the University of Indianapolis via the Downtown Transit Center. The Red Line provides bus rapid transit service to 28 stations on intervals ranging from ten to twenty minutes.

Citizens Energy Group is currently implementing a 28-mile long network of 18-foot diameter deep rock tunnels, which will be 250 feet below ground. The tunnel system, which is referred to as the DigIndy Tunnel System, is intended to store more than 250 million gallons of combined sewer during and after wet weather events. When completed, combined sewage overflows into Indiana waterways will be reduced by approximately 97 percent, and water quality will be greatly improved. The program, which is intended to keep the utility provider in compliance with a Consent Decree with the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management, is estimated to cost $2 billion and will be completed by 2025 (Citizens Energy Group, 2019).

According to the *2018 Community Report* published by Downtown Indy, Inc., there are 69 development projects totaling approximately $3.6 billion worth of investments planned through 2023 (Downtown Indy, Inc. 2018). These projects include mixed use, residential, commercial, and institutional developments. **Table 6** lists private development projects identified by Downtown Indy, Inc. that are greater than $25 million in estimated cost

Table 5: Indianapolis MPO 2045 Long Range Transportation Plan Projects in ICEA Study Area

Project	Cost	Planning Horizon
IndyGo Purple Line Bus Rapid Transit	$137.6 million	2016-2025
IndyGo Blue Line Bus Rapid Transit	$176 million	2016-2025
INDOT Added Travel Lanes on I-65 from the south split to I-465 (0.20 mile N. of I-465 to 0.05 mile N. of I-70 in Indianapolis)	$2.4 million	2016-2025

Source: Indianapolis MPO 2045 LRTP Recommended Project List

Table 6: Major (Over $25M) Private Developments in Downtown Indianapolis

Name of Development	Amount of Private Investment	Size of Development	Anticipated Open
16 Tech Phase I[1]	$160 million	Sq. Ft.: 240,000 Residential Units: 250	TBD
9 Canal Phase II	$37.25 million	Sq. Ft.: 15,144 Residential Units: 194	Q2 2021
Bethel AME Church Hotel	$36 million	Hotel Rooms: 212	Q4 2020
Bottleworks Phase I	$92.4 million	Sq. Ft.: 246,000 Hotel Rooms: 136	Q3 2019
Bottleworks Phase II	$85 million	Residential Units: 227	Q3 2020
Bottleworks Phase III	$85 million	Sq. Ft.: 175,729	Q4 2021
CityWay Phase II	$135 million	Sq. Ft.: 43,000 Residential Units: 403	Q4 2019
Ford Plant Redevelopment	$36.8 million	Sq. Ft.: 36,000 Residential Units: 132	Q2 2019
GM Stamping Plant Redevelopment Phase I[1]	$92.5 million	Sq. Ft.: 535,000 Residential Units: 250	Q2 2023
Hyatt House and Hyatt Place Hotels	$81.4 million	Sq. Ft.: 237,949 Hotel Rooms: 316	Q1 2019
Indiana University Health Academic Health Center	$1 billion	Unavailable	Q4 2022
Intercontinental Hotel	$41 million	Unavailable	Q3 2020
Kraft Factory Lofts	$40 million	Sq. Ft.: 17,000 Residential Units: 304	Q2 2020
LightBound Expansion	$80 million	Sq. Ft.: 80,000	Q2 2021
Marion County Criminal Justice Center[1]	$571 million	Unavailable	Q4 2022
Penrose on Mass (complete)	$50 million	Sq. Ft.: 38,000 Residential Units: 236	Q1 2019
Riley Hospital for Children Renovation[1]	$142 million	Unavailable	Q4 2020
Riverview Apartments[1]	$26 million	Sq. Ft.: 10,300 Residential Units: 220	Q4 2019
Rolls-Royce Indianapolis Operations Center Modernization[1]	$400 million	Unavailable	Q3 2020
The Ardmore	$41 million	Sq. Ft.: 20,000 Residential Units: 126	Q1 2019
The Whit (complete)	$70 million	Sq. Ft.: 11,600 Residential Units: 334	Q1 2019
Total Investment	$3.6 billion		

1. Indicates projects are located outside the ICEA study area.

Source: https://www.downtownindy.org/reports/projects-pipeline/, accessed March 13, 2019

6.2 Cumulative Effects Assessment

The planning of the interstate system in the Indianapolis area began in approximately 1956. At that time, the Indianapolis interstate system was planned to consist of three parts: the outer belt which was intended to serve as a bypass route for through traffic (i.e., I-465); penetrating radial routes which were intended serve the urban area (i.e., I-69, I-70, and I-65); and the inner belt which would interconnect with the radial routes and be located around the fringe of the central business district (CBD) with the intent to serve as a distribution and collection system for traffic with a trip end on the core urban area (i.e., I-70 and I-65 near downtown Indianapolis) (Ripple, 1975). Prior to this time, Indianapolis did not have an expressway or freeway system. Planning for the radial interstate routes that would connect to the outer belt system (I-465) started before the final location of I-465 was decided. The location of the inner belt route was planned as close as possible to, but not intersecting, the CBD for several reasons, including right-of-way costs, the ability to allow proper transition from high speed travel to low speed travel, and the desire to avoid concentrating traffic in a small area, which would overload the already congested local circulation system (Ripple, 1975). The North Split Project includes portions of I-65/I-70 that were completed around 1974 as part of the last leg of the inner belt.

Construction of the radial interstates displaced an estimated 17,000 residents (Smith, 2016). Additionally, the interstates created a barrier effect between the adjacent residential neighborhoods and the Indianapolis CBD. The improvements proposed as part of the North Split Project will occur within the existing transportation right-of-way. No residential or business relocations will be required. The North Split Project will not construct additional through lanes. The primary direct effects of the project include widening the interstate within the existing right-of-way and changes in permanent traffic patterns due to access changes at the Pennsylvania Street exit ramp and the Delaware Street entrance ramp. Interstate widening will be a maximum of 26 feet closer to neighborhoods, specifically along I-65 west of the interchange. There could also be direct impacts to low quality wetland features within the existing right-of-way. It is anticipated the construction of the project could take up to two years, and portions of the interstate and the local streets that cross it will be closed for periods during that time. This could create delays and temporarily change access and travel patterns for both weekday commuters, city visitors, and local residents. Impacts will be avoided and minimized to the extent possible. Unavoidable impacts to the human and natural resources will be mitigated under existing FHWA and INDOT policies.

The North Split Project includes an extensive stakeholder engagement program that is intended to proactively educate and solicit feedback that will lead to informed decisions. This process includes several advisory committees, including a Community Advisory Committee, an EJ Working Group, environmental resource agencies, Section 106 consulting parties, and an emergency management services committee. A Context Sensitive Solutions (CSS) resource team has also been formed to identify and evaluate design concepts and treatments for possible incorporation into the project. These efforts will help minimize negative effects by proactively addressing stakeholder concerns as part of the environmental review process.

The construction of the inner belt shaped the historic growth patterns in the downtown area, including the adjacent residential neighborhoods. Over the past few years, downtown Indianapolis has experienced a high level of growth and private investment. Some of the adjacent residential neighborhoods have also experienced growth. The growth in downtown Indianapolis is evidenced by numerous planned private development projects in the ICEA study area, which are responding to market demand. There are also large public infrastructure investments occurring in the ICEA study area, including the IndyGo bus rapid transit projects, as well as the Citizens Energy Group deep tunnel system. It is anticipated these actions will occur regardless of the project. In some cases, notable human and natural resources within the ICEA could be negatively affected by the reasonably foreseeable planned development; however, there are provisions in existing local development policies and regulations that will temper potentially negative effects. These activities will also be subject to state and, in some cases, federal regulations and permitting requirements.

When considering the scope of the proposed improvements in the context of past, present and reasonably foreseeable future actions, the cumulative effect of this project on notable human and natural resources will be minimal.

7 CONCLUSION

The indirect and cumulative effects of the North Split Project were assessed within an area extending 0.5-mile around I-65 and I-70 along the project limits. The time horizon for the ICEA is 2041, which is consistent with the design year for the project. Notable features in the ICEA study area include community facilities, transportation infrastructure, major utilities, water resources, hazardous materials sites, and historic properties and districts. Low-income and minority populations also reside within the ICEA study area. I-65 and I-70 within downtown Indianapolis were constructed over 40 years ago, and the areas near the downtown interchanges are heavily urbanized with little remaining undeveloped land. The proposed improvements will occur within the existing right-of-way. No additional lanes will be added on the interstates, and two existing interstate access points will be removed. Downtown Indianapolis is the fastest growing neighborhood in Marion County. The market for development in Indianapolis is strong, with available vacant land and utilities. In general, the City of Indianapolis' land use policies and regulations are supportive of growth; however, there are specific provisions to manage growth in a manner that is responsive to the community context.

Given the scope of the proposed improvements, the existing study area trends, as well as the local land use plans and related policies, the North Split Project is not anticipated to notably influence future land use changes. Although the permanent changes in travel patterns will introduce more traffic in some areas, the total volume of traffic within the ICEA study area is not anticipated to substantially change from the No Build condition. Indirect effects to natural resources will be minimized through the use of best management practices. Private developments will be required to follow applicable local, state, and federal laws. Given the above, the North Split Project will have minimal indirect effects to the ICEA study area resources.

Other major actions in the ICEA study area include approximately $3.6 billion worth of mixed use, residential, commercial, and institutional developments. In addition, several transportation, transit, and utility projects are planned, under construction, or recently completed within the ICEA study area. It is anticipated these actions will occur regardless of the project. In some cases, notable human and natural resources within the ICEA could be negatively affected by the reasonably foreseeable planned development; however, there are provisions in existing local development policies and regulations that will temper potentially negative effects. These activities will also be subject to state and, in some cases, federal regulations and permitting requirements. The original interstate construction displaced residents and created a barrier effect between the adjacent residential neighborhoods and the Indianapolis CBD. The proposed improvements will occur within the existing transportation right-of-way, and no residential or business relocations will be required. When considering the scope of the proposed improvements in the context of past, present, and reasonably foreseeable future actions, the cumulative effect of this project on notable human and natural resources will be minimal.

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