



# DRAFT Purpose and Need Report

5/16/2024



Prepared By:



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# I.0 What is ProPEL Indy?

The Indiana Department of Transportation (INDOT) has initiated ProPEL Indy, a Planning and Environment Linkages (PEL) study on I-65 and I-70 within I-465 in Indianapolis, Indiana. Analysis and planning activities will be conducted in coordination with resource agencies, stakeholders, and the public. Transportation planning documents from the PEL study will shape and inform subsequent project-specific environmental reviews conducted in accordance with the National Environmental Policy Act (NEPA).

ProPEL Indy is a unique opportunity for Indianapolis residents to envision the future of the urban interstate system. The goal of ProPEL Indy is to identify transportation needs and community goals along I-65 and I-70 inside I-465. This process will inform the next 20 years of investment as INDOT identifies ways to modernize these interstates and improve the region's overall mobility, equity, economic opportunity, and quality of life. ProPEL Indy will develop a set of alternatives to be considered that meet transportation needs and community goals. This will guide the long-term vision for investment in the interstates.

The ProPEL Indy study limits include approximately 11 miles of I-65, 14 miles of I-70, and 1 mile where I-65 and I-70 overlap. The study limits are broken into the following four “spokes” as an organizational tool (see **Figure 1**):

- **65 Spoke** – From the I-465/I-65 interchange on the northwest side to the 21<sup>st</sup> Street interchange.
- **65/70 Downtown Spoke** – I-65 from the 21<sup>st</sup> Street interchange south to Alabama Street (west end of North Split project), I-65/I-70 from Washington Street (south end of North Split project) south to the South Split interchange, and I-70 from just west of West Street interchange east to the South Split interchange.
- **70 West (W) Spoke** – From the I-465/I-70 interchange on the west side to just west of the West Street interchange.
- **70 East (E) Spoke** – From just west of the Keystone Avenue/Rural Street interchange (east end of North Split project) to the I-465/I-70 interchange on the east side.

The study limits extend slightly beyond I-465 and the I-65/I-70 South Split interchange to consider the potential influence of those system interchanges. Two active federally funded projects under construction (I-65/I-70 North Split) or in NEPA (I-65 Safety and Efficiency) are largely excluded from the study limits. ProPEL Indy does overlap with the I-65 Safety and Efficiency project on the southeast side of Indianapolis. The overlap with I-65 Safety and Efficiency extends from north of Fletcher Avenue on I-65/I-70 to the South Split interchange ending south of Morris Street along I-65. The

remainder of the I-65 Safety and Efficiency project area, which extends south on I-65 to I-465, is excluded from the study limits.

The *study area* includes I-65 and I-70 within the study limits described above and local road intersections that influence or are influenced by the interstates.

**Figure 1. ProPEL Indy Study Spokes**



## 2.0. What is a Planning and Environment Linkage (PEL)?

The “PEL” in ProPEL Indy stands for Planning and Environment Linkages. A PEL study is a federal process that transportation agencies, such as INDOT, use to make and document planning decisions.

- A PEL study occurs early and precedes any construction decisions – no potential projects or solutions have been identified.
- A PEL study is multidisciplinary – bringing planning, engineering, and environmental experts together to consider all of those factors.
- A PEL study is collaborative – public and agency feedback is received throughout the study to help identify community needs and ideas for improvement. It provides the opportunity to identify resources and reduce impacts early in the planning process.
- A PEL study is efficient – planning documents and analysis from the study can be used in the federal environmental review process (NEPA) for future improvements.
- By following the PEL process, residents and other study stakeholders are engaged early in planning, and with their input, ProPEL Indy will work to identify infrastructure solutions that better serve our communities.

An overview of the ProPEL Indy process steps and schedule is shown in **Figure 2**.

**Figure 2. ProPEL Indy Process Steps and Schedule**



# 3.0. How has the Study Engaged the Public and Stakeholders?

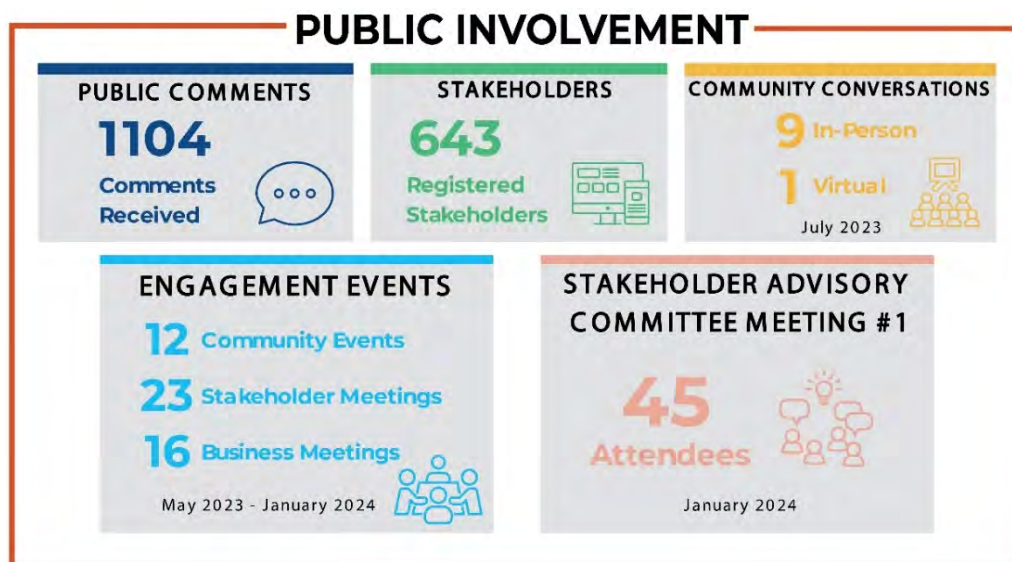
## 3.1. Input Gathering

Data to inform this Purpose and Need Report was obtained from ongoing public involvement and stakeholder coordination during the Visioning Phase of the study. Outreach efforts have included study launch events, community outreach events, stakeholder meetings, community conversations (public involvement meetings), business meetings, a Stakeholder Advisory Committee meeting, study website, and social media. **Figure 3** summarizes total engagement results from June 2023 through January 2024. A full summary of involvement and outreach efforts for the Visioning Phase of the study is provided in the *Resource Agency, Stakeholder & Public Involvement Summary (RASPI) #1*, available on the ProPEL Indy website. Comments and responses to the comments are included in RASPI #1 and were used in the development of the purpose and need.

The purpose of the Visioning Phase engagement was to:

- Introduce ProPEL Indy.
- Identify big and small ideas for the urban interstate improvements.
- Introduce the four pillars, the cornerstones of ProPEL Indy: quality of life and livability, economic growth and opportunity, transportation and mobility, and equity.
- Help people understand how to participate in ProPEL Indy.
- Solicit comments and suggestions from the community to inform future phases of the study.

**Figure 3: Public and Stakeholder Involvement Summary**





## 3.2. What We Heard

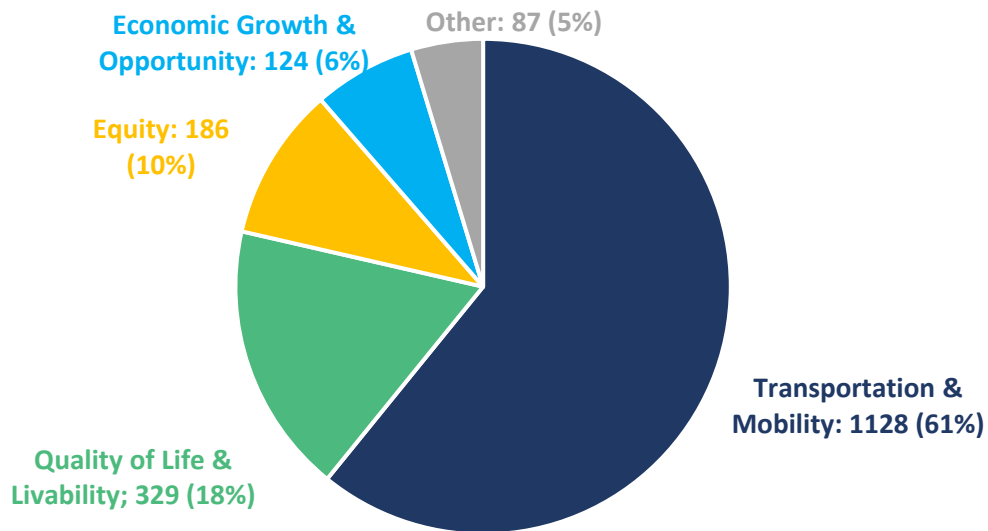
The study team received more than 1,100 comments during the Visioning Phase of the study. The comments included a variety of ideas, transportation challenges, and community concerns. The study team identified key themes within the content of the comments and aligned them with the study’s four pillars: quality of life and livability, economic growth and opportunity, transportation and mobility, and equity. Key themes from the comments were aligned as shown in **Table 1**, **Figure 4**, and **Figure 5**:

**Table 1: Public Comment Key Theme Pillar Alignment**

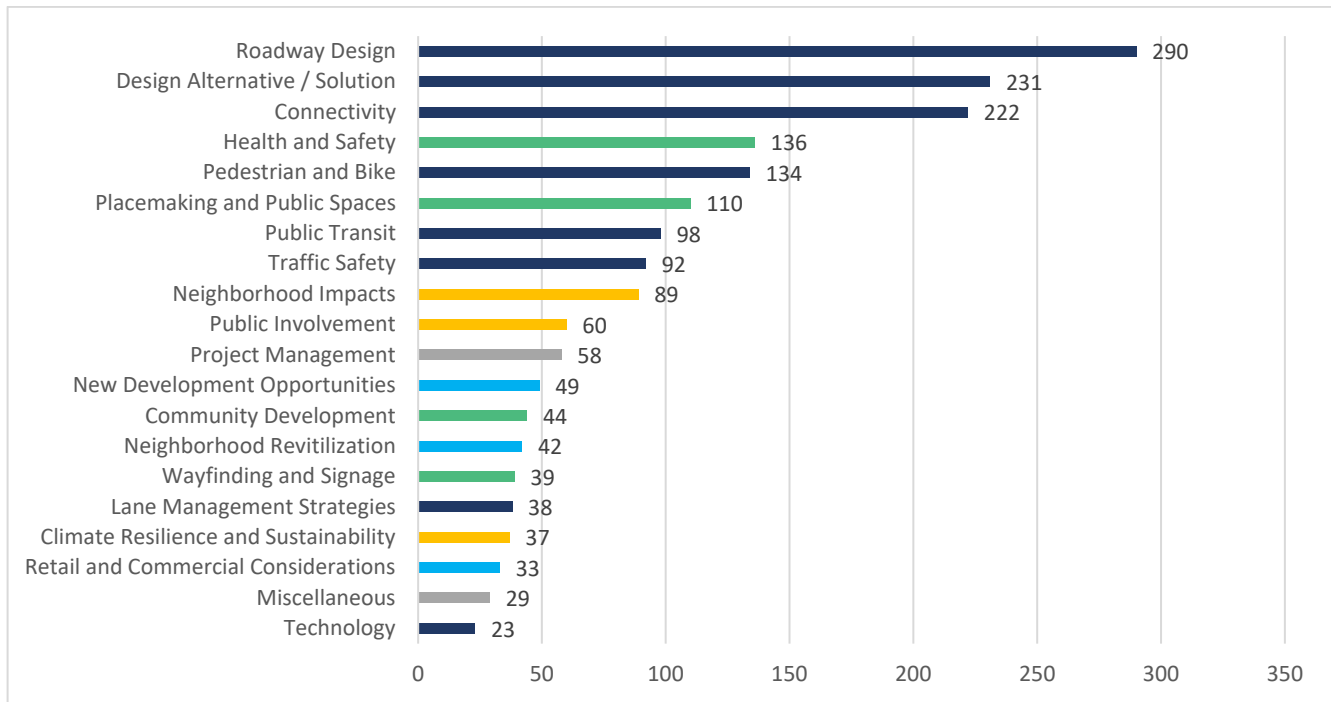
Pillar	Key Themes
Quality of Life and Livability	<b>Community Development:</b> Considerations for overall quality of life and livability, improved walkability, safety, and connectivity.
	<b>Health and Safety:</b> Improve or add lighting, reduce the negative visual, noise, and air pollution impacts from the high volume of traffic, consider impacts of interstates on public health.
	<b>Placemaking &amp; Public Spaces:</b> Improve interstate aesthetics with the addition of landscaping, greenspace, and public art. Improve visual appeal of the interstate to welcome people to Indianapolis, specifically between the airport and I-70.
	<b>Wayfinding &amp; Signage:</b> Improve signage throughout the corridor to provide drivers clear wayfinding, signage for historic neighborhoods or points of interest in downtown.
Economic Growth and Opportunity	<b>Neighborhood Revitalization:</b> Provide better connections for neighborhood vitality, reconnect neighborhoods, and increase multimodal options that support community and business needs.
	<b>New Development Opportunities:</b> Support current development momentum and stimulate redevelopment in under-developed areas. Identify opportunities to reconfigure or repurpose surplus right-of-way for development.
	<b>Retail &amp; Commercial Considerations:</b> Support business growth through better connections, improve walkability for residents and visitors, maintain or create appropriate access for commuters, event attendees, emergency needs, etc.
Transportation and Mobility	<b>Connectivity:</b> Restore connectivity to neighborhoods currently divided by the interstate, add or improve sidewalks, walkways, bike crossings along the corridor, consider regional mobility suggestions such as rerouting through traffic to I-465, and/or adding tolls for through traffic downtown.
	<b>Design Alternative / Solution:</b> Recess all or portions of the interstate, building caps over sections to reconnect neighborhoods currently divided by the interstate, remove portions of the interstates within I-465 loop.
	<b>Lane Management Strategies:</b> Reduce traffic congestion through lane management strategies (such as HOV / Express / Carpool / Freight lanes, etc.), and efficient traffic routing.
	<b>Pedestrian &amp; Bike:</b> Increase walkability and connectivity with the addition or improvement of sidewalks, walkways, bike crossings along the corridor.
	<b>Public Transit:</b> Prioritize the addition of mass transit, such as light rail along the corridor between key locations like downtown and the airport.
	<b>Roadway Design:</b> Make improvements to specific interchanges, add express lanes to reduce the amount of merging required, evaluate number and location of access points along the corridor, make improvements to address congestion concerns and roadway capacity.

	<b>Technology:</b> Consider emerging technologies such as EVs and autonomous vehicles, and consider the role technology could play in incident management, speed enforcement, and emergency response.
	<b>Traffic Safety:</b> Improve traffic safety by providing more efficient roadway design (such as by addressing merging issues at specific entry and exit points), better road maintenance, reducing speeds, and more reliable traffic enforcement.
Equity	<b>Climate Resilience &amp; Sustainability:</b> Consider green infrastructure solutions, such as solar powered lights and water reclamation, identify actions to mitigate air, noise, and water pollution.
	<b>Neighborhood Impacts:</b> Consider negative impacts of interstates on local neighborhoods, both when they were constructed and present day. Consider improvements that connect adjacent areas and neighborhoods.
	<b>Public Involvement:</b> Ensure that all stakeholders are engaged in the design and decision-making processes to facilitate the needs of all surrounding organizations, communities, and institutions.
Other	Topics unrelated to purpose and need or options such as project management, cost considerations, and schedule.

**Figure 4: Summary of Public Comment Key Theme Pillar Alignment**



**Figure 5: Summary of Public Comment Key Themes**



Many of the comments received touched on multiple key themes, therefore the sum of comments in each categorization is greater than the total number of comments received. As shown, the largest percentage of key themes mentioned aligned with the transportation and mobility pillar (61%).

Through the process of aligning the key themes with individual pillars it became apparent to the study team that many themes could fall into two or more pillars. Therefore, the exercise was reversed, and key themes were assigned relevant pillars. As shown in **Table 2**, more than half of the identified key themes align with three or more of the study pillars. A complete listing of the public comments received and responses can be found in RASPI #1, available on the study website.

**Table 2: Public Comment Key Theme Multiple Pillar Alignment**

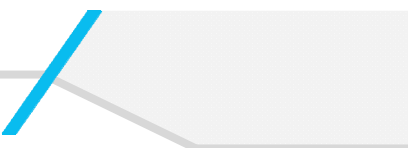
Key Theme	Quality of Life and Livability	Economic Growth and Opportunity	Transportation and Mobility	Equity	Other
<b>Climate Resilience and Sustainability</b>	X	X	X	X	
<b>Community Development</b>	X	X		X	
<b>Connectivity</b>	X	X	X	X	
<b>Design Alternative / Solution</b>			X	X	
<b>Health and Safety</b>	X			X	
<b>Lane Management Strategies</b>			X		

Key Theme	Quality of Life and Livability	Economic Growth and Opportunity	Transportation and Mobility	Equity	Other
Neighborhood Impacts	X	X	X	X	
Neighborhood Revitalization	X	X		X	
Neighborhood Development Opportunities	X	X		X	
Pedestrian & Bike	X		X	X	
Placemaking & Public Spaces	X	X		X	
Project Management	X	X	X	X	X
Public Involvement	X	X	X	X	X
Public Transit	X	X	X	X	
Retail and Commercial Considerations	X	X		X	
Roadway Design	X	X	X		
Technology	X	X	X	X	
Traffic Safety			X		
Wayfinding and Signage	X		X		

## 4.0. What is the Purpose and Need?

A purpose and need statement is a requirement of the federal environmental review process (NEPA). The purpose and need statement identifies “why” a study or project is being conducted and sets the foundation for the development and screening of alternatives. The statement identifies specific transportation problems (needs) to be addressed and describes specific desired outcomes (purposes). Potential alternatives that do not meet the purpose and need are eliminated from further consideration. Additionally, community goals that are desirable, but not required outcomes, can guide the development and screening of potential alternatives along with other factors, such as transportation performance, environmental impacts, benefits, and cost.

As a PEL, ProPEL Indy will connect the planning process and the NEPA environmental review process, which occurs during INDOT’s traditional project development process for projects using federal funds or requiring federal approvals. The purpose and need statement is a core element of the NEPA environmental review process, and INDOT intends to use the purpose and need statement developed



during ProPEL Indy as the foundation of the subsequent NEPA reviews for any projects that develop as a result of the ProPEL Indy study.

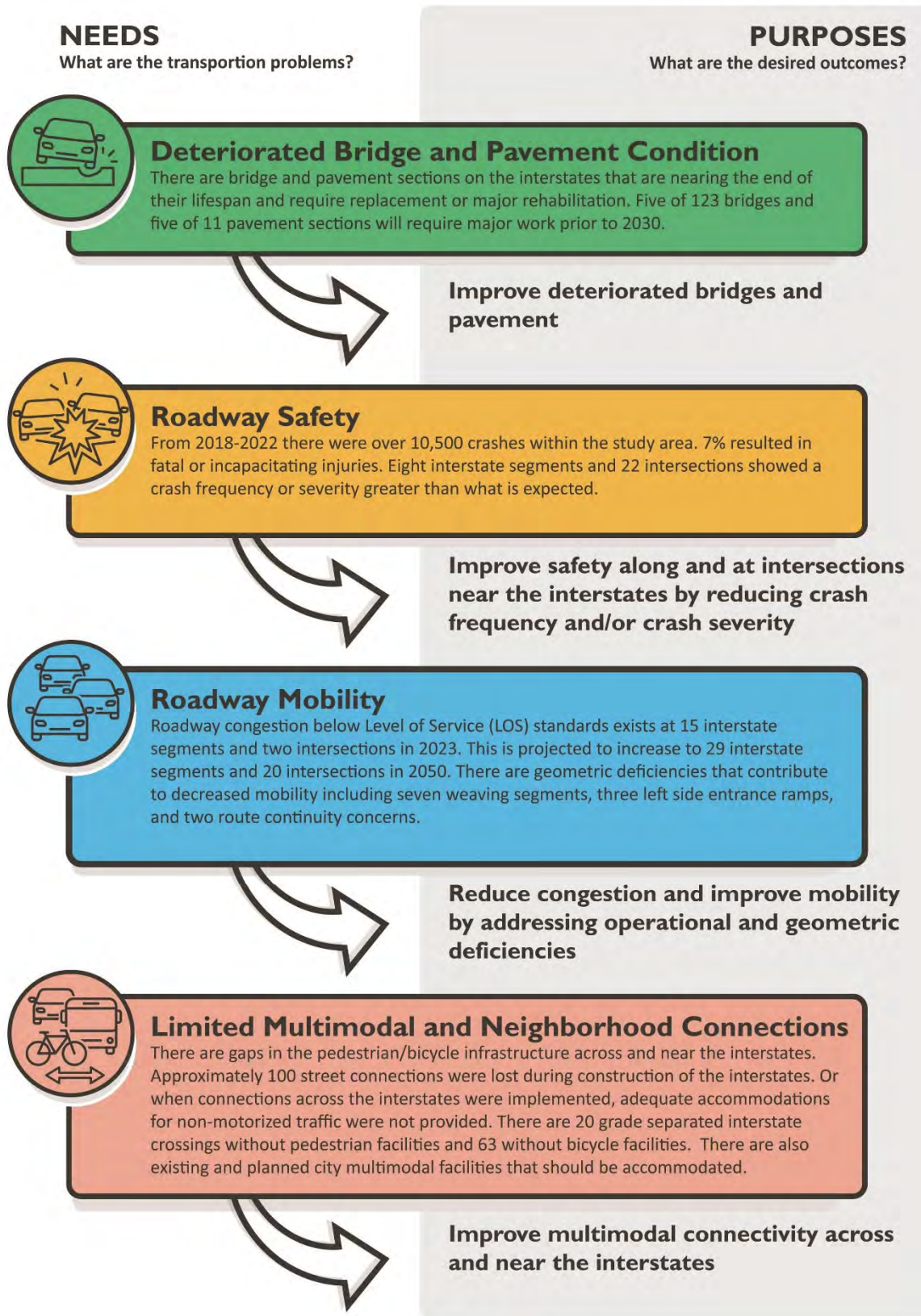
The ProPEL Indy purpose and need is primarily based on data from the *Existing Transportation Conditions Report* available on the ProPEL Indy website, as well as ongoing stakeholder coordination and public involvement completed during the study. Data from the evaluation of existing safety and connectivity and projected asset and traffic conditions in the study area was analyzed with stakeholder engagement and is summarized in this report to assist in defining the purpose and need statement.

Coordination will continue throughout the study, and the purpose and need statement may be revised based upon agency coordination, public comments, or new information as it is developed.

## 4.1 ProPEL Indy Purpose and Need

A summary of the ProPEL Indy needs and purposes is shown in **Figure 6**. These needs are transportation data-driven. The needs include: deteriorated bridge and pavement condition, roadway safety, roadway mobility, and limited multimodal and neighborhood connections across and near the interstates. Additional detail on the needs is included in **Section 6.0**.

**Figure 6: Purpose and Need Summary**



## 4.2 Purpose

The purpose of ProPEL Indy is to identify transportation alternatives that improve deteriorated bridge and pavement condition, improve safety, reduce congestion and improve mobility, and improve multimodal connectivity within the study area.

Performance measures are criteria used to measure how well an alternative functions with respect to addressing the study purposes. As alternatives are developed in this study, the performance measures shown in **Table 3** will be used to evaluate whether they satisfy the study's purpose and need.

**Table 3: Study Performance Measures**

Study Purpose	Performance Measure
Improve bridge and pavement condition	Improve deficient pavement condition
	Improve deficient bridges condition
Improve safety along the interstates by reducing the number and severity of crashes within the study area	Reduce potential for crashes by reducing conflict points
	Eliminate geometric deficiencies contributing to higher crash rates
Improve mobility by reducing congestion or eliminating geometric deficiencies that contribute to congestion	Improve interstate level of service (LOS) over no build condition
	Eliminate geometric deficiencies contributing to congestion
Improve multimodal connectivity across and near the interstates	Improve existing pedestrian/bicycle connectivity across or near the interstates
	Accommodate future planned pedestrian/bicycle connection
	Provide new pedestrian/bicycle connectivity across or near the interstates

## 5.0 What are the Community Goals?

### 5.1 Community Goals

Community goals represent overarching outcomes that are desirable, but not specifically required outcomes of a study or project. The term “needs” has special meaning in the NEPA process, referring to conditions that must be addressed for a project to be considered successful. Needs must be met for an alternative to be carried forward in the NEPA process. Community goals are typically more difficult to measure but will be important to optimize the benefits of a study or project. Ultimately, the needs, purpose, and goals identified in this document will all influence future transportation planning decisions. Community goals were identified primarily through public and stakeholder feedback and are grouped with four study pillars: quality of life and livability, economic growth and

opportunity, transportation and mobility, and equity. Ultimately the needs, purpose, and goals identified in this document will influence future transportation-planning decisions. Community goals are shown in **Table 4**.

**Table 4: Community Goals by Study Pillar**

Pillar	Community Goal
Quality of Life and Livability	Identify community enhancements that improve the quality of life of adjacent neighborhoods. This could include improving or adding lighting; reducing visual, noise, and air pollution impacts; providing wayfinding and points of interest signage; landscaping; and considering placemaking opportunities.
	Avoid and/or minimize impacts to the natural and human environment.
Economic Growth and Opportunity	Provide transportation infrastructure to support local, regional, and statewide economic development goals.
	Ensure efficient and reliable transportation to support the visitor experience, enhancing Indianapolis as a world-class destination for economic and cultural activities.
Transportation and Mobility	Support emerging technologies and related infrastructure, such as electric and autonomous vehicles, and consider the role technology could play in incident management, speed enforcement, and emergency response.
	Consider INDOT’s Carbon Reduction Strategy, National Electric Vehicle Infrastructure (NEVI) Plan, and future Resilience Plan (if available) during alternative development.
Equity	Actively engage stakeholders who use, cross, work, or live near the interstates throughout the study to provide input into decision-making.
	Provide accessible, fair, safe, affordable, reliable, and sustainable mobility along and across the interstates for community members based on identified needs and input received. This includes consideration of pedestrian, bicycle, transit, ride-hailing apps, or other modes of transportation.

## 6.0. What are the Needs?

### 6.1 Deteriorated Bridge and Pavement Condition

Data regarding the pavement and bridges within the study area was obtained from INDOT and evaluated to identify locations where rehabilitation or replacement are likely to be needed prior to the ProPEL Indy horizon year of 2050.

#### 6.1.1 Bridge Condition

There are 123 bridges in the study area that are owned and maintained by INDOT. The INDOT Greenfield District Asset Team, which is responsible for maintaining these bridges, provided insight



regarding the next expected major work activity for each bridge and the approximate timing of said activities. Major work activities consist of major rehabilitation efforts or full replacement.

Bridge information is summarized in **Table 5**, which lists the number of bridges per spoke with expected major bridge work in each decade. All but 15 of the bridges in the study area are expected to require major work prior to the horizon year of 2050. **Figure 7** through **Figure 10** show the decade in which major work is expected to occur on each bridge within the study area.

**Table 5: Expected Major Bridge Work by Decade**

Spoke	Number of Bridges	Decade of Work			
		2020 - 2029	2030 – 2039	2040 - 2049	2050 or Beyond
65	31	0	19	10	2
65/70 Downtown	30	4	21	5	1
70 W	26	1	14	3	7
70 E	36	0	27	4	5
<b>Totals</b>	<b>123</b>	<b>5</b>	<b>81</b>	<b>22</b>	<b>15</b>

Five bridges are expected to need major work in prior to 2030. These bridges are:

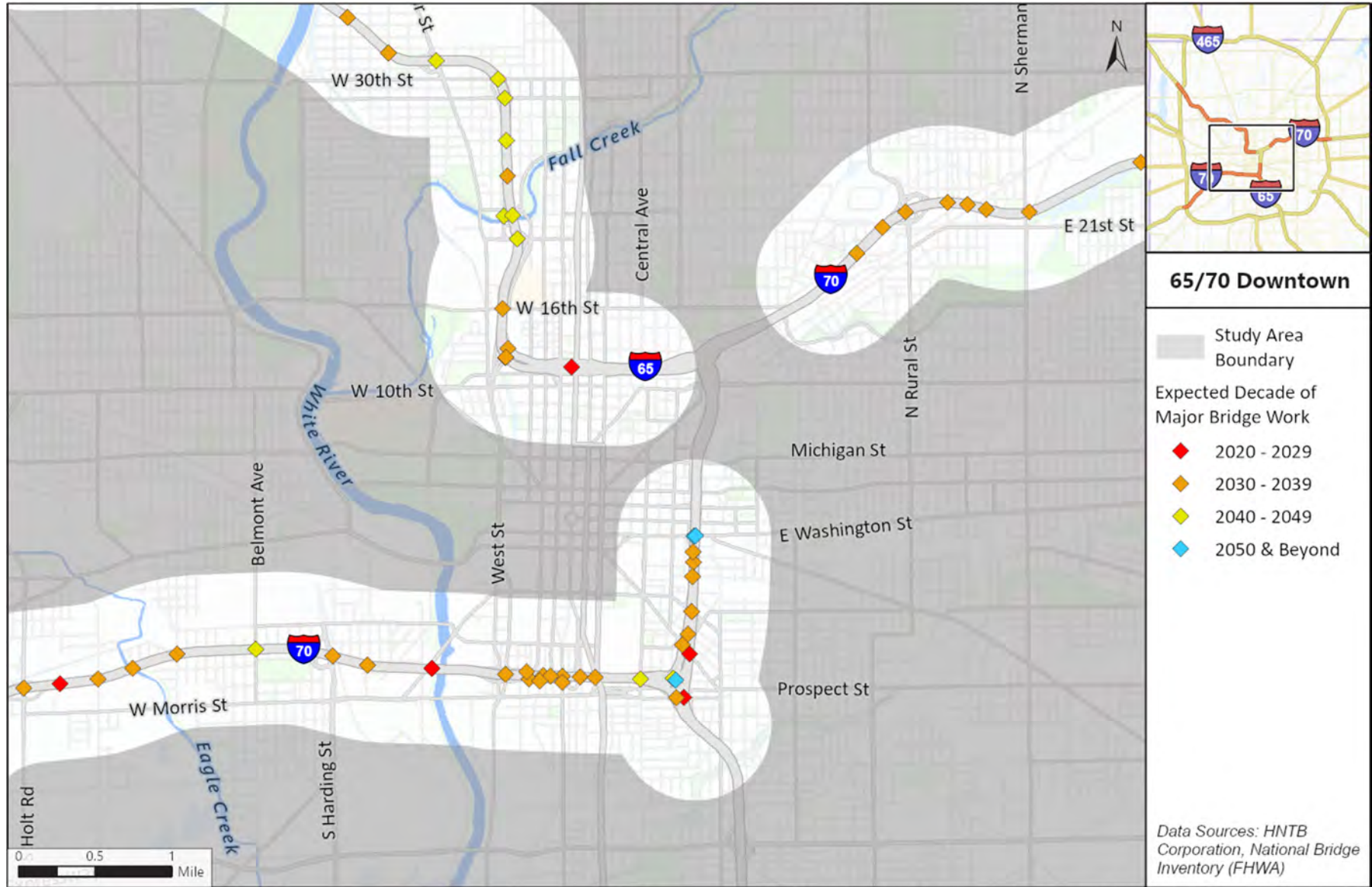
- Bridge # 036660: I-65 bridge over Senate Avenue, Capitol Avenue, Illinois Street, Meridian Street, Pennsylvania Street, and Delaware Street (65/70 Downtown Spoke)
- Bridge # 036340: Virginia Avenue over I-65/I-70 (65/70 Downtown Spoke)
- Bridge # 036320: I-65 northbound over Morris Street (65/70 Downtown Spoke)
- Bridge # 042190: I-70 over Kentucky Avenue and the White River (65/70 Downtown Spoke)
- Bridge # 042110: I-70 over railroad (east of Holt Road) (70 W Spoke)

Additional details for bridge condition are included in Appendix A of this report and Section 2 of the *Existing Transportation Conditions Report* available on the ProPEL Indy website.

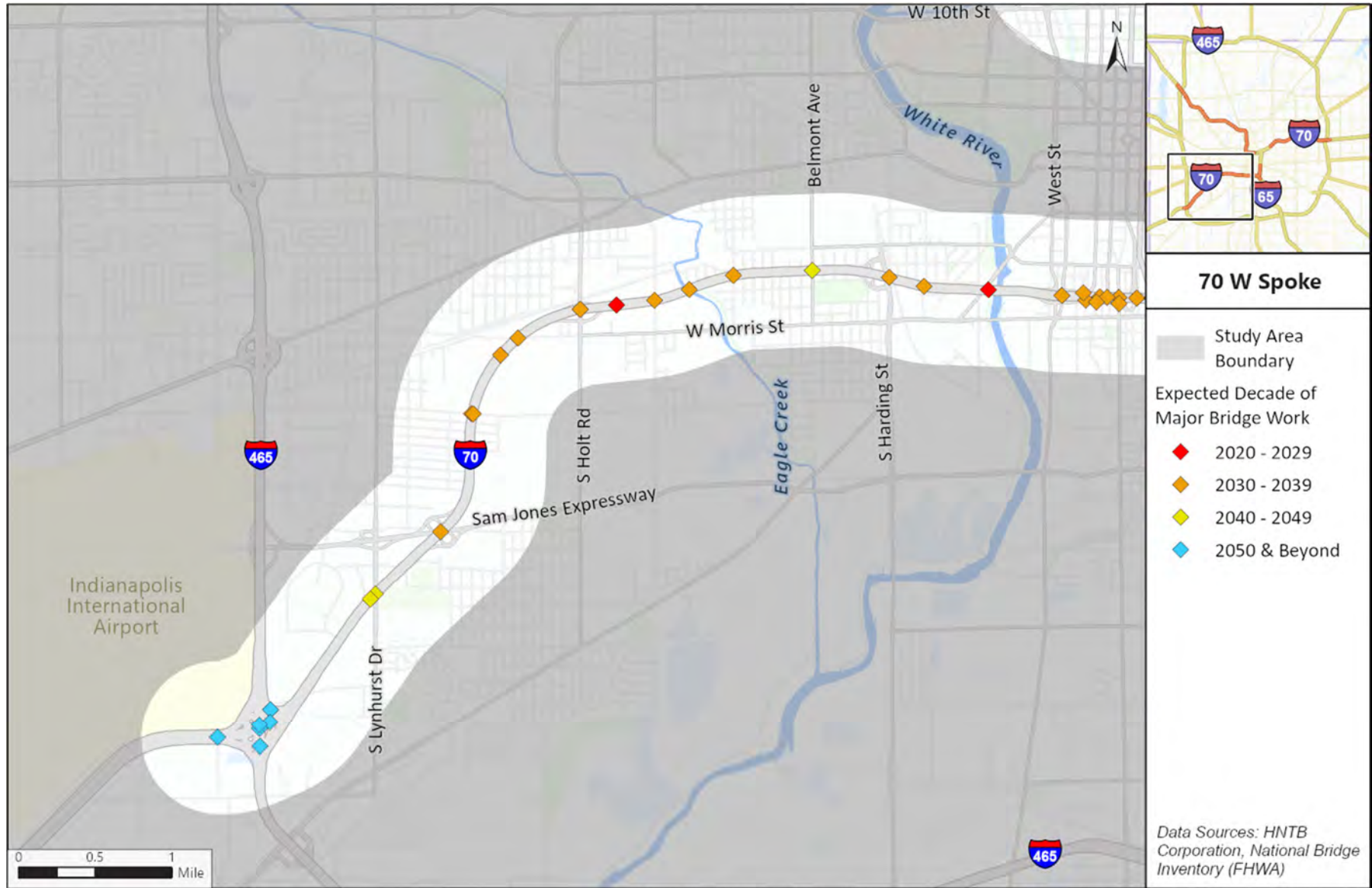
**Figure 7: 65 Spoke Expected Major Bridge Work by Decade**



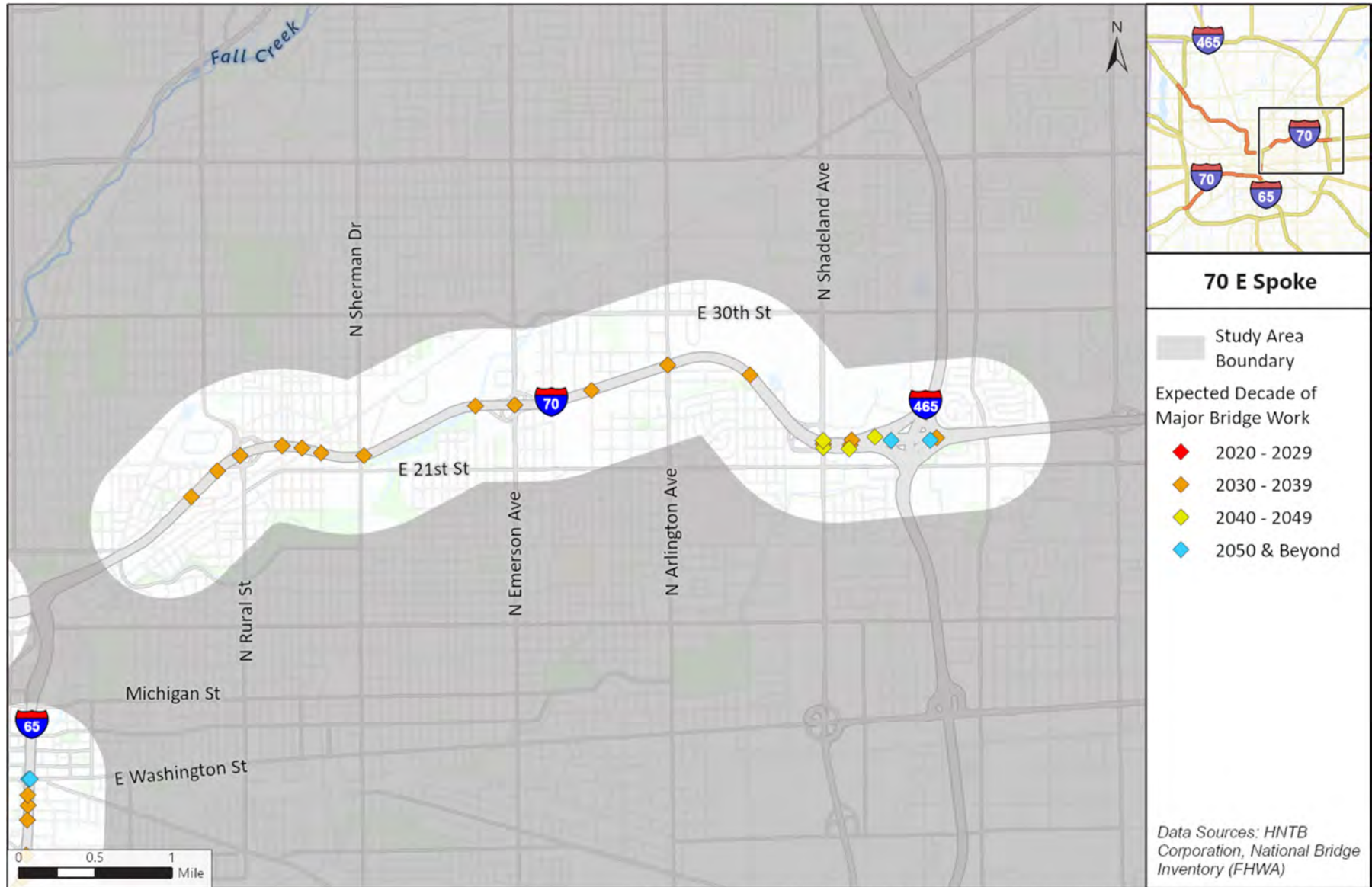
**Figure 8: 65/70 Downtown Spoke Expected Major Bridge Work by Decade**



**Figure 9: 70 W Spoke Expected Major Bridge Work by Decade**



**Figure 10: 70 E Spoke Expected Major Bridge Work by Decade**



## 6.1.2 Pavement Condition

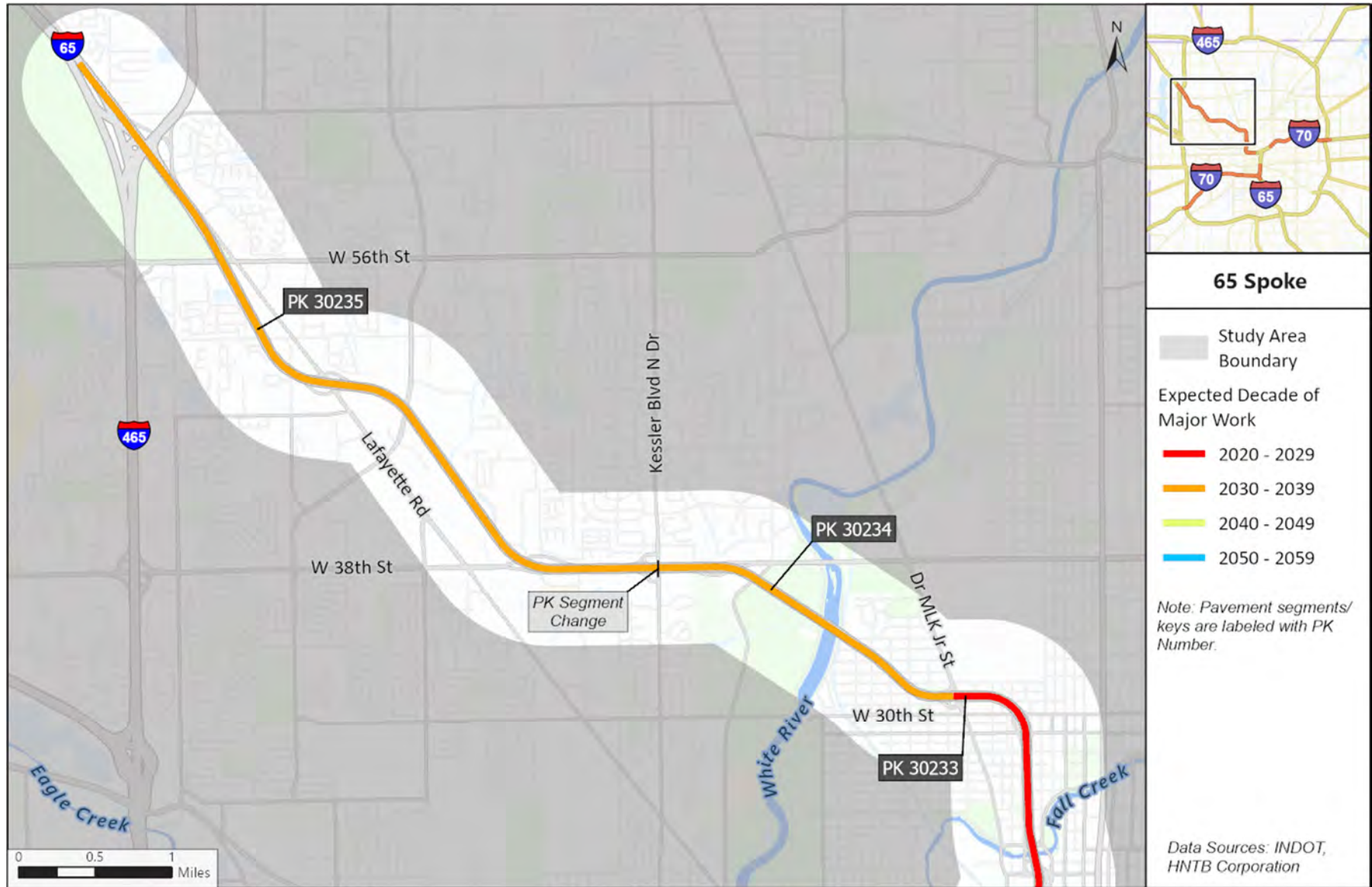
INDOT divides pavement of its roadways into pavement keys or segments of roadway where pavement types and rehabilitation schedules are consistent. The limits of these pavement keys (PKs) within the study area were provided by INDOT, along with insight regarding the next expected major work activity for each pavement key and the approximate timing of said activities. Like completing maintenance work on a car, INDOT must replace or rehabilitate the pavement to keep the interstate system in operation. Major work activities consist of major rehabilitation efforts or full replacement. This information is shown in **Figure 11** through **Figure 14**.

All portions of the study area are expected to require major work prior to the horizon year (2050). The five segments where replacement is expected prior to 2030 are:

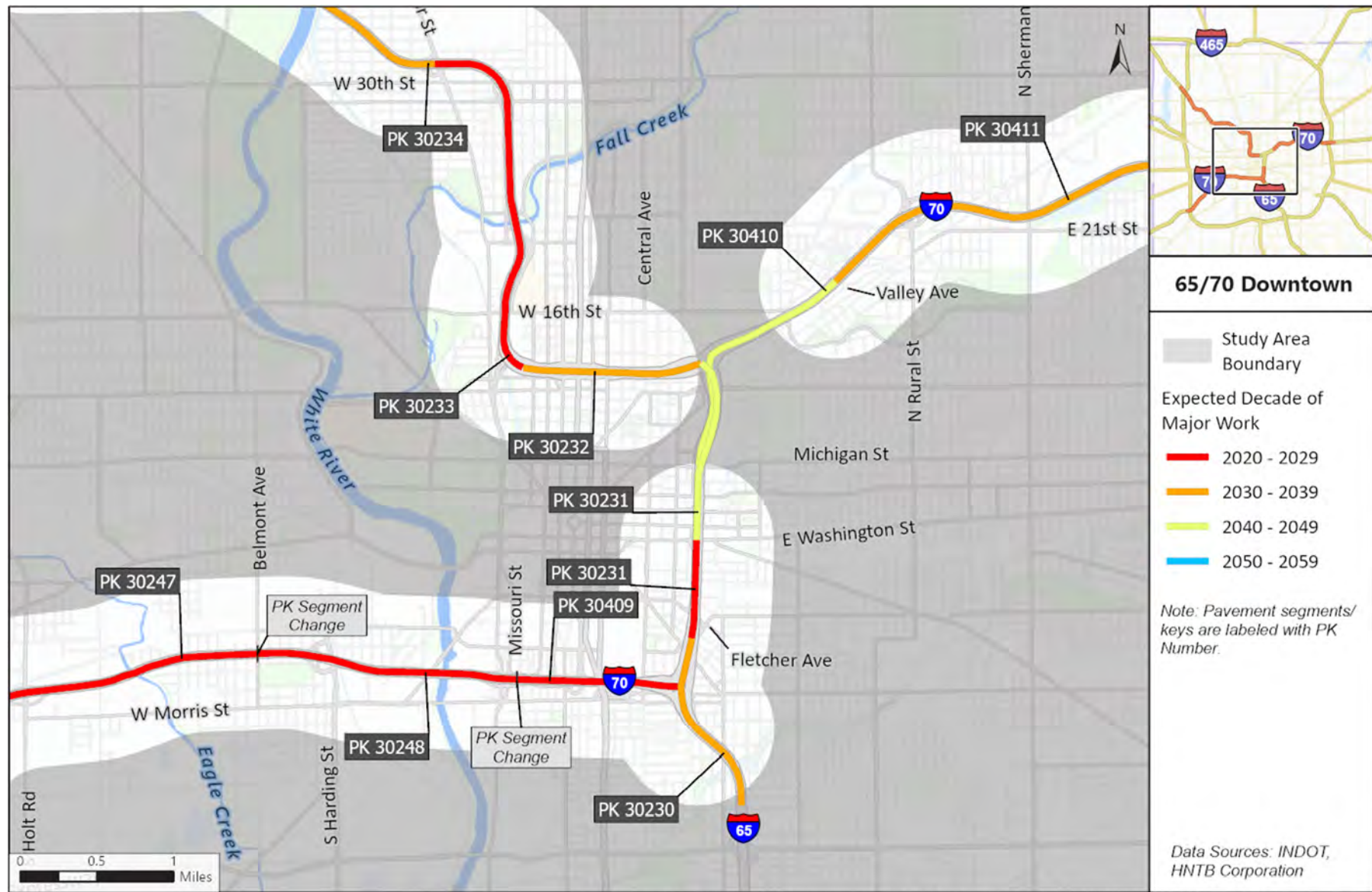
- PK 30233: I-65 from Dr. Martin Luther King Jr. Street to West Street (65 and 65/70 Downtown Spokes)
- PK 30409: I-70 from Missouri Street to the South Split (65/70 Downtown Spoke)
- PK 30231: I-65/70 from Washington Street to Fletcher Avenue (65/70 Downtown Spoke)
- PK 30247: I-70 from I-465 to Belmont Avenue (70 W Spoke)
- PK 30248: I-70 from Belmont Avenue to Missouri Street (65/70 Downtown and 70 W Spokes)

Additional details for pavement condition are included in Appendix A of this report and Section 2 of the *Existing Transportation Conditions Report* available on the ProPEL Indy website.

**Figure 11: 65 Spoke Expected Major Pavement Work by Decade**



**Figure 12: 65/70 Downtown Spoke Expected Major Pavement Work by Decade**

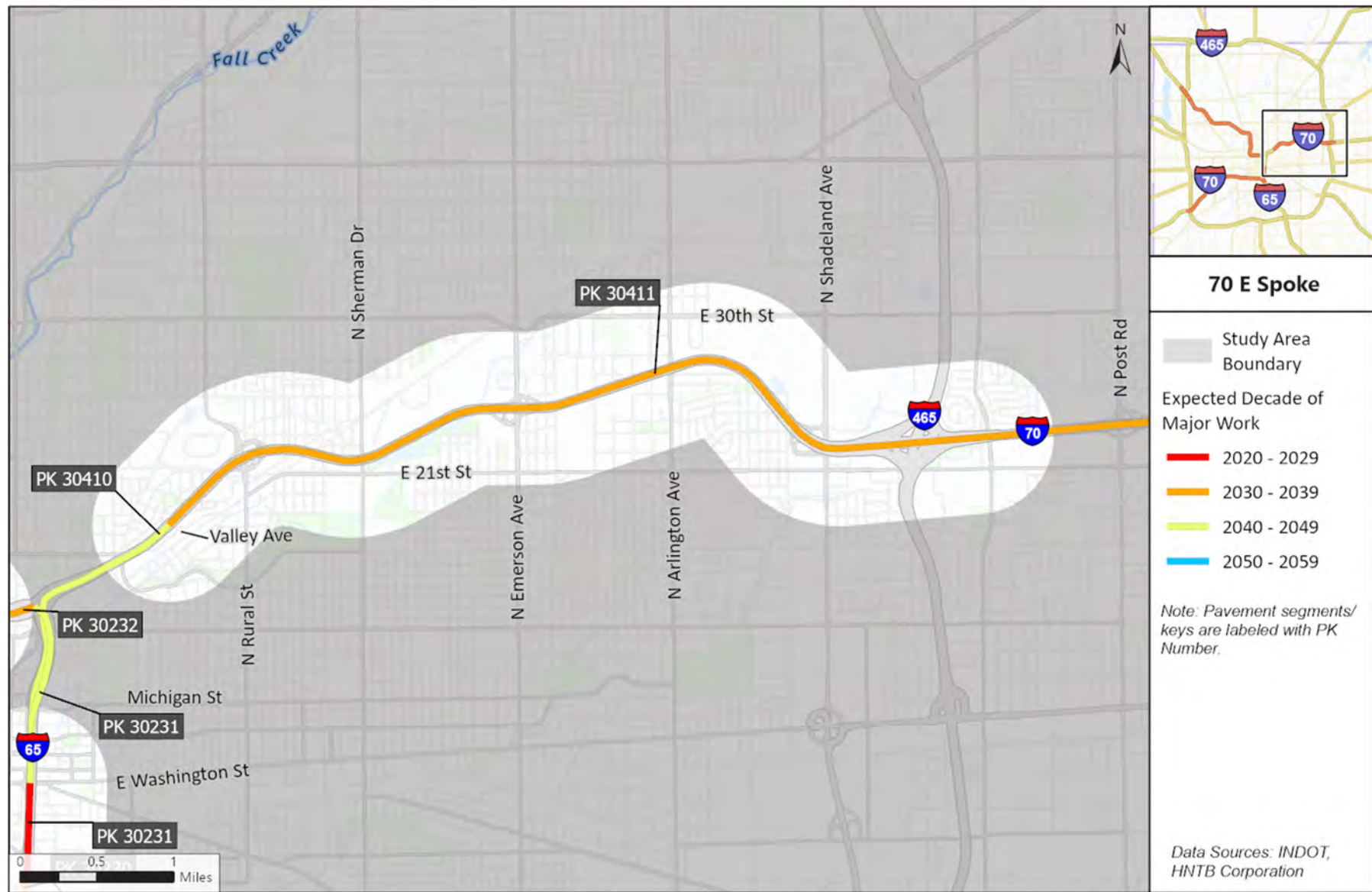




**Figure 13: 70 W Spoke Expected Major Pavement Work by Decade**



**Figure 14: 70 E Spoke Expected Major Pavement Work by Decade**



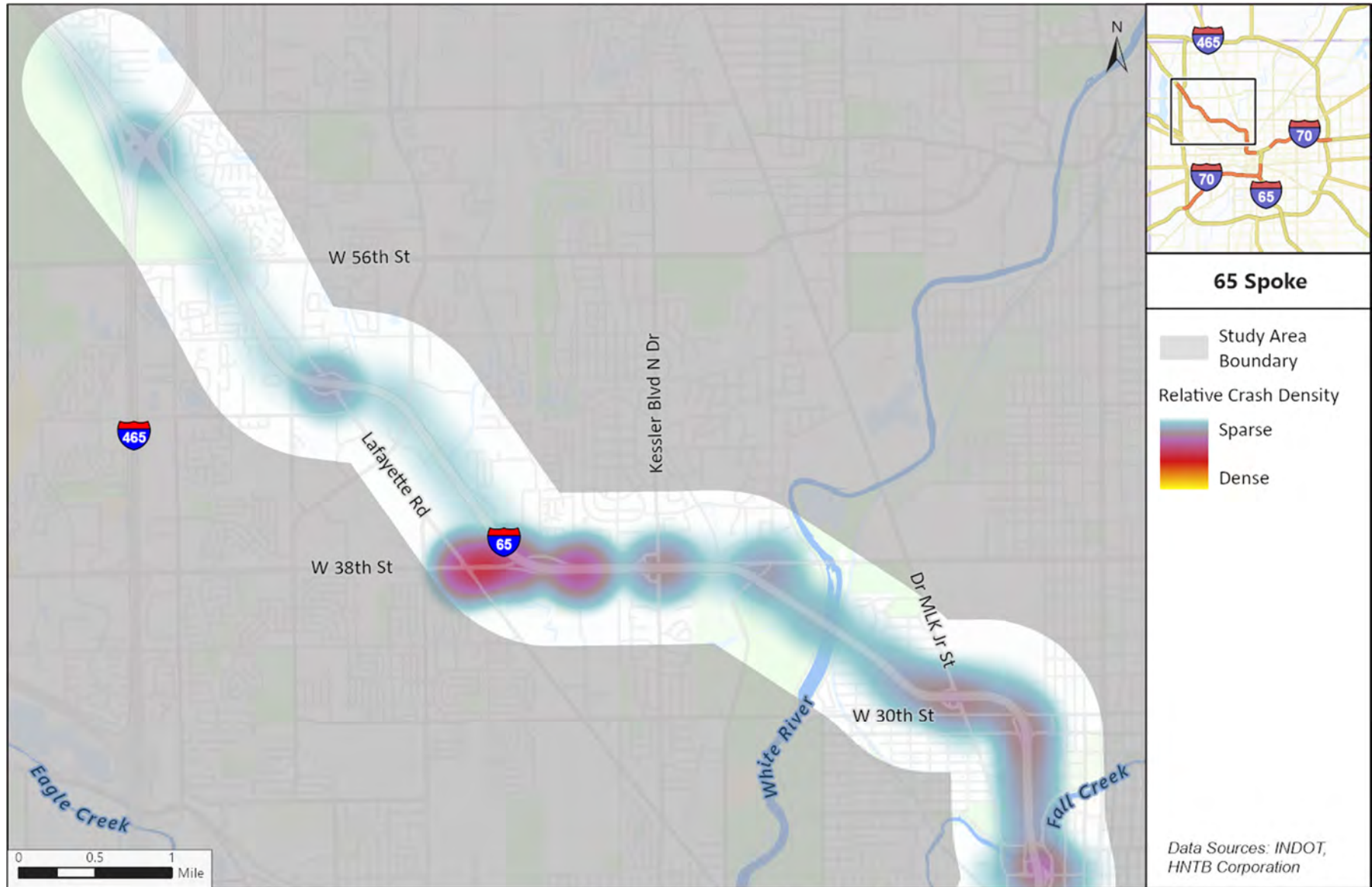
State of Indiana, INDOT, EPA, NASA, NOAA, USGS, City of Indianapolis Marion Co., HERE, Garmin, SafeGraph, GeoTechnology, Inc., HERE/USA, EPA, US Census Bureau, USGS, F4G, OpenStreetMap, Microsoft

## 6.2 Roadway Safety

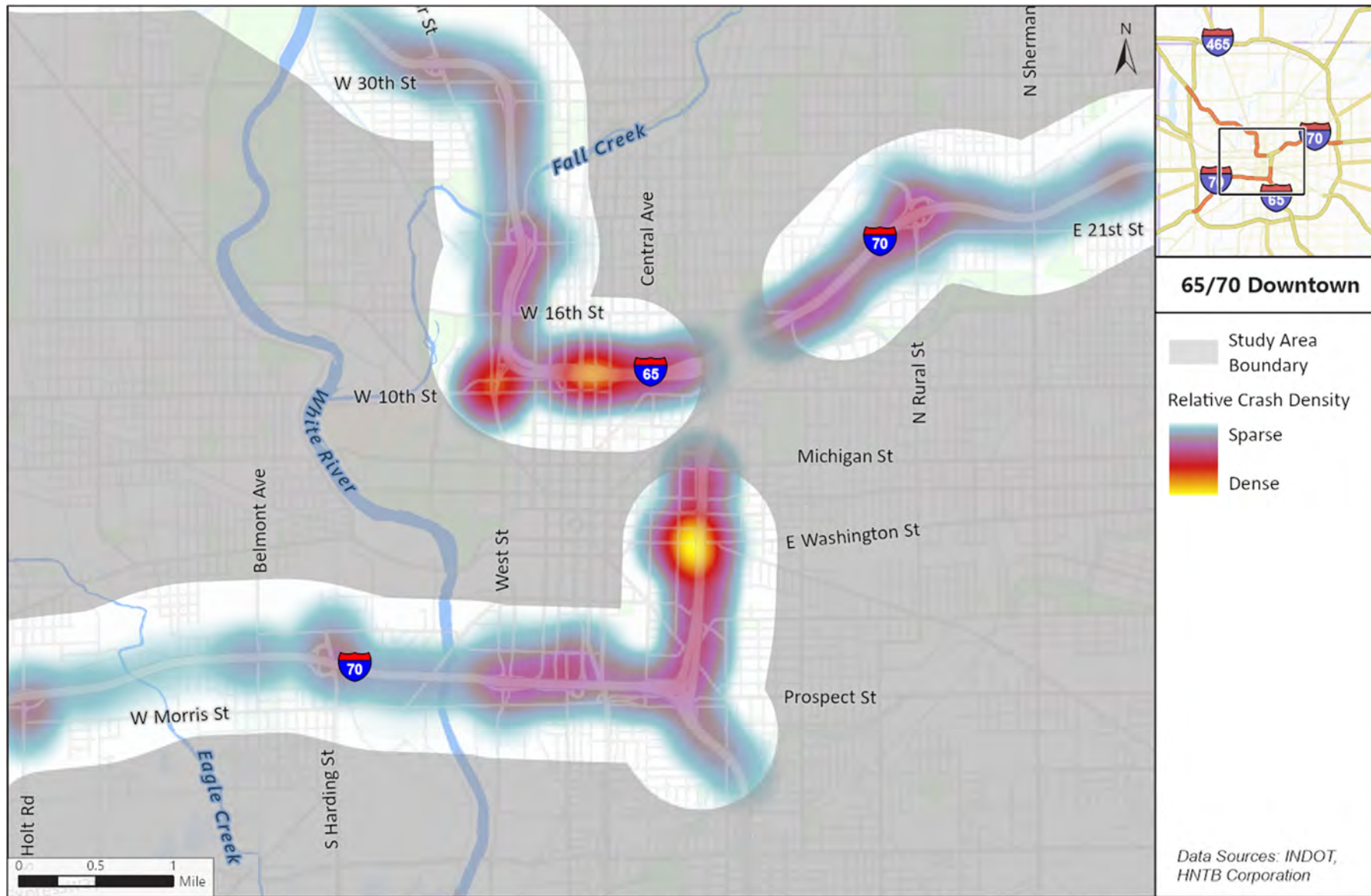
Safe and secure travel is identified as a policy priority goal in the *INDOT Long-Range Transportation Plan 2018-2045*. Safety was evaluated for the study area using crash data over a five-year period from 2018 to 2022. There were 10,541 total crashes in the study area during the five-year timeframe. Of these crashes, 15% resulted in injuries and 7% resulted in fatal or incapacitating injuries. **Figure 15** through **Figure 18** show locations within the study area with the highest concentration of crashes based on the crash data analysis. The color “yellow” represents high density crash locations.

Based on a comparison of crashes during construction of the North Split project and pre-construction, construction activities associated with the North Split project had no significant impact on crashes occurring in the interstate segments adjacent to construction.

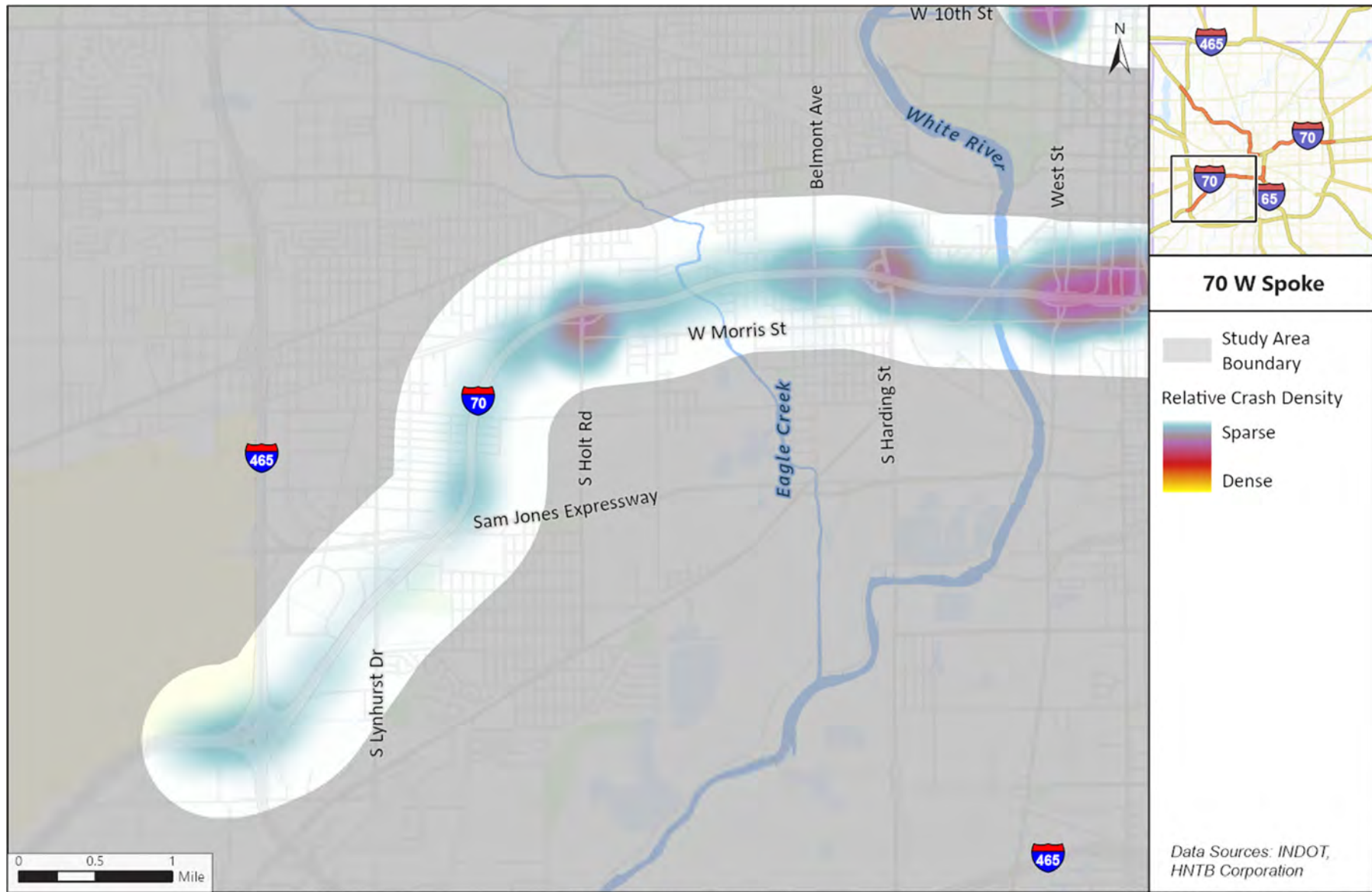
**Figure 15: 65 Spoke Relative Crash Density**



**Figure 16: 65/70 Downtown Spoke Relative Crash Density**



**Figure 17: 70 W Spoke Relative Crash Density**



**Figure 18: 70 E Spoke Relative Crash Density**



Analysis of the historic crash data was performed using the RoadHAT crash analysis software. This software compares the crash history of a roadway segment or intersection to comparable locations within Indiana. The software outputs two indices: the Index of Crash Frequency (ICF) and the Index of Crash Cost (ICC). The ICF value indicates how much the reported number of crashes deviates from what is expected. The ICC value indicates how much the crash severity deviates from what is expected. The ICF and ICC values indicate standard deviations from the expected value. Values greater than zero indicate crash frequency or severity greater than expected, while values less than zero indicate crash frequency or severity less than expected.

A total of 97 locations (29 interstate segments and 68 intersections) within the study area were analyzed using RoadHAT. Based this analysis, eight interstate segments and 22 intersections produced an ICF and/or ICC value greater than or equal to 1.0, as highlighted in. Values of 1.0 or greater are at least one standard deviation of what we would expect at that location. **Table 6** and **Table 7** and **Figure 19** through **Figure 22** show these locations. Additional details regarding crash types, and tables and more detailed maps showing ICF and ICC values for all locations analyzed per spoke are included in Appendix B of this report and Section 4 of the *Existing Transportation Conditions Report* available on the ProPEL Indy website.

**Table 6. Interstate Segments with ICF/ICC Values of 1.0 or Greater**

LOCATION	FATAL AND INCAPACITATING INJURY	NON- INCAPACITATING INJURY	PROPERTY DAMAGE ONLY	ICF*	ICC*
<b>65 Spoke</b>					
I-65, at 38th St	14	17	174	1.37	-0.02
38th St Frontage	20	26	261	1.71	2.47
I-65 at 30th St and 29th St	24	22	198	0.49	1.23
<b>65/70 Downtown Spoke</b>					
I-65 at 21st St	21	35	326	1.13	0.92
I-65, Illinois St to Park Ave	25	46	488	2.81	1.90
I-65/I-70 at Ohio St	11	5	145	1.09	0.37
I-65/I-70 at Fletcher Ave and Calvary St	19	13	292	1.64	0.77
I-70, Kentucky Ave to Madison Ave	34	35	438	1.15	1.51
<b>TOTAL</b>	<b>168</b>	<b>199</b>	<b>2322</b>	<b>-</b>	<b>-</b>

\*Note: ICF = Index of Crash Frequency, ICC = Index of Crash Cost; Analysis period = 2018 to 2022

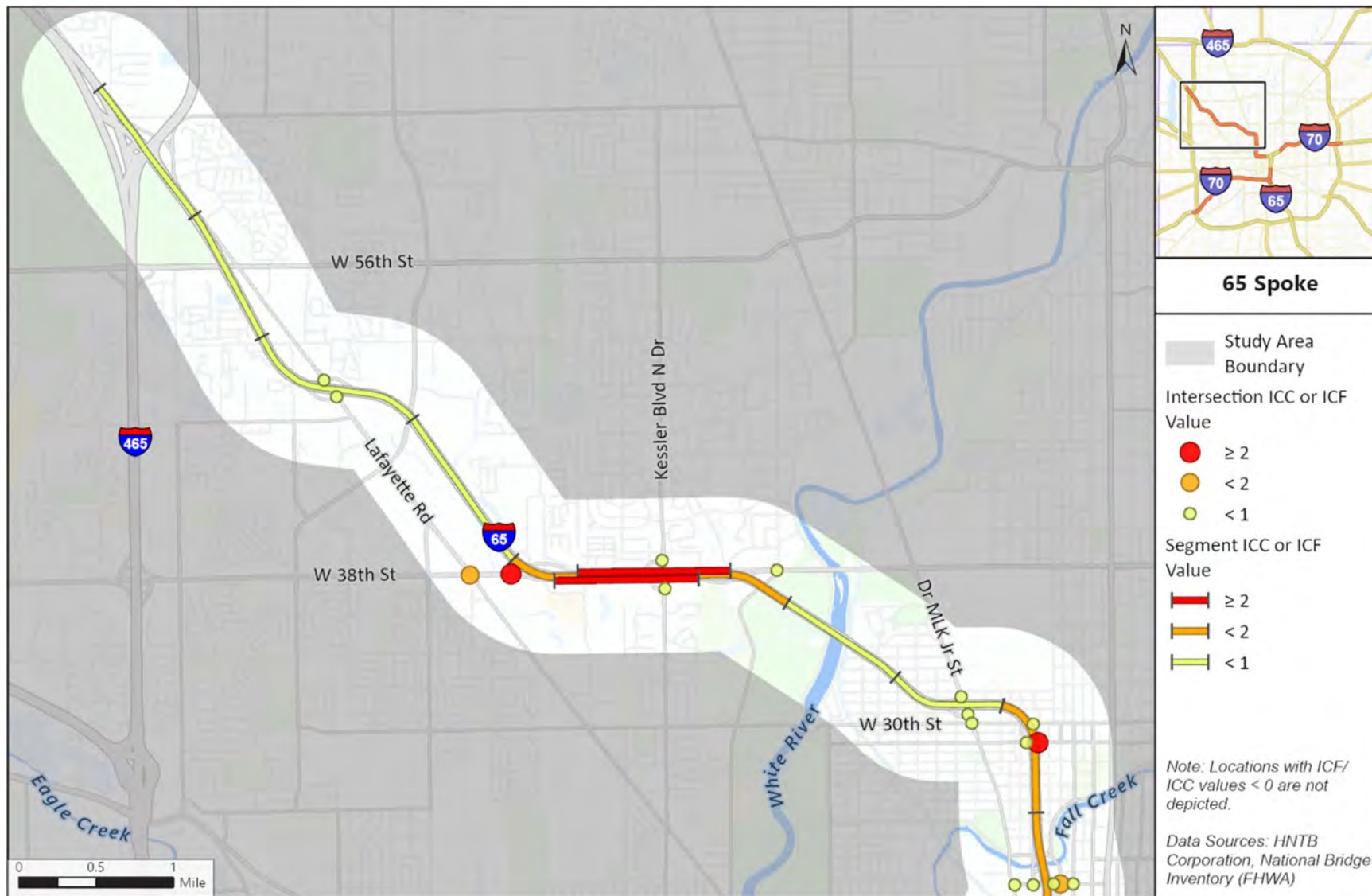


**Table 7. Intersections with ICF/ICC Values of 1.0 or Greater**

LOCATION	FATAL AND INCAPACITATING INJURY	NON- INCAPACITATING INJURY	PROPERTY DAMAGE ONLY	ICF	ICC
<b>65 Spoke</b>					
38th St at Industrial Blvd / Commercial Dr	18	18	144	3.68	3.37
38th St at Lafayette Rd	7	18	251	1.17	0.01
29th St at NB I-65 off-ramp	3	4	58	2.11	0.76
<b>65/70 Downtown Spoke</b>					
21st St at Senate Ave / Boulevard Place	3	8	41	1.06	0.69
SB I-65 and NB I-65 off-ramps at West St	0	2	53	1.20	-0.70
11th St at West Street / I-65 & Oscar Robertson Blvd at Dr MLK Jr St	8	17	220	1.05	0.12
10th St at Dr MLK Jr St and West St	5	9	182	1.66	0.13
12th St at Pennsylvania St	1	10	75	1.86	0.17
Michigan St at Davidson St	3	5	68	3.78	1.31
Michigan St at Pine St	2	5	52	2.02	0.55
Ohio St at College Ave	0	11	43	3.82	1.21
Washington St at College Ave	10	26	198	6.68	3.50
McCarty St at Capitol Ave / WB I-70 on-ramp	2	3	14	1.60	1.02
McCarty St at Illinois St / EB I-70 off-ramp	0	7	20	2.24	0.52
McCarty St at Meridian St / Russell Ave	1	5	28	1.64	0.41
McCarty St at I-70 ramps / Madison Ave	7	9	77	2.00	1.52
McCarty St at Pennsylvania St	4	3	6	-0.26	1.00
Morris St at West St / Missouri St	11	12	98	2.64	2.35
<b>70 W Spoke</b>					
Morris St at Holt Rd	5	9	72	1.12	0.69
Oliver Ave at Harding St	0	9	67	1.84	-0.09
<b>70 E Spoke</b>					
Rural St at Bloyd Ave / Roosevelt Ave	6	5	55	1.48	1.23
21st St at Shadeland Ave	14	19	197	1.34	1.08
<b>TOTAL</b>	<b>110</b>	<b>214</b>	<b>2019</b>	<b>-</b>	<b>-</b>

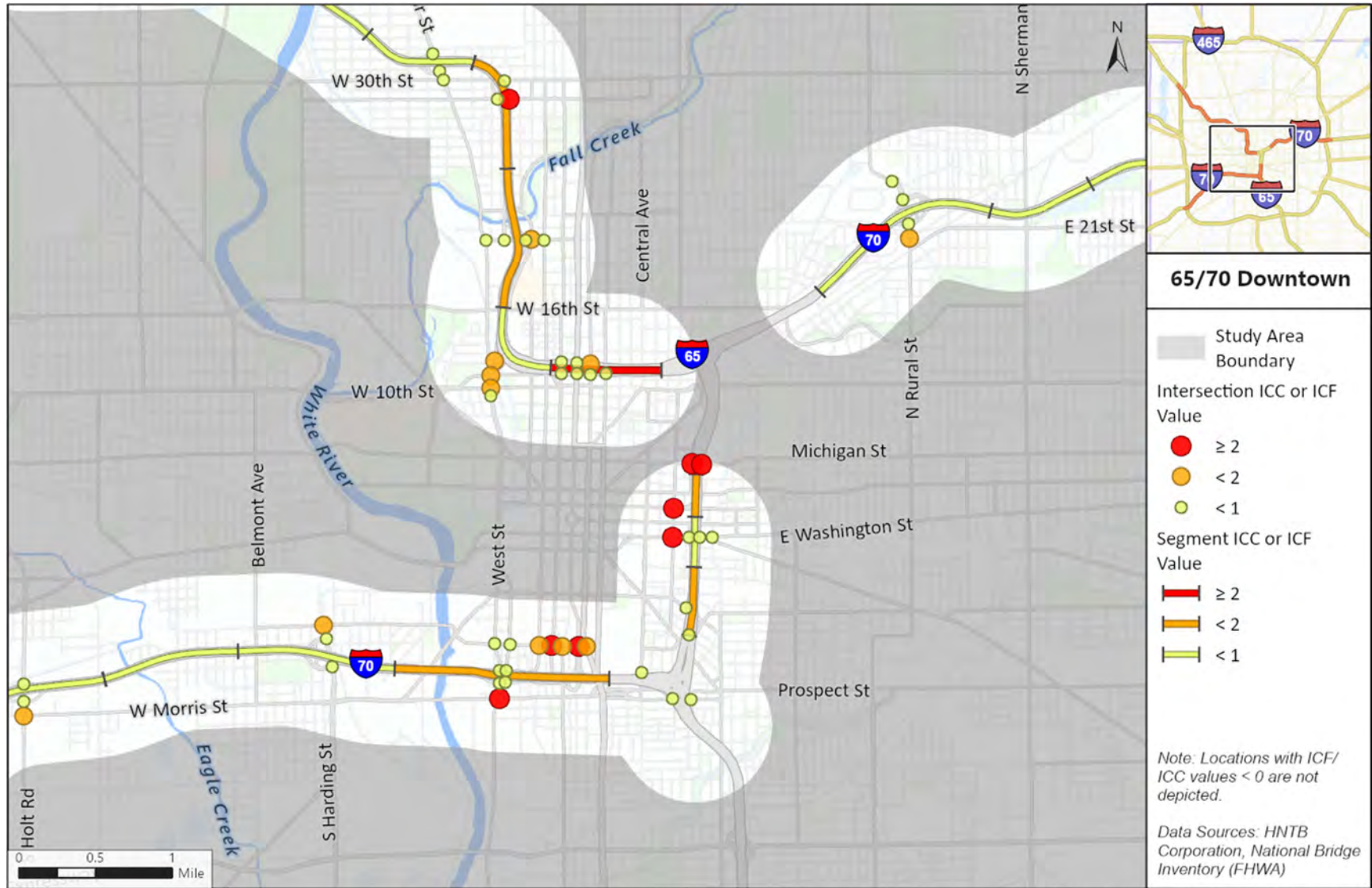
\*Note: ICF = Index of Crash Frequency, ICC = Index of Crash Cost; Analysis period = 2018 to 2022

**Figure 19: 65 Spoke Interstate Segment and Intersection Crash Summary**

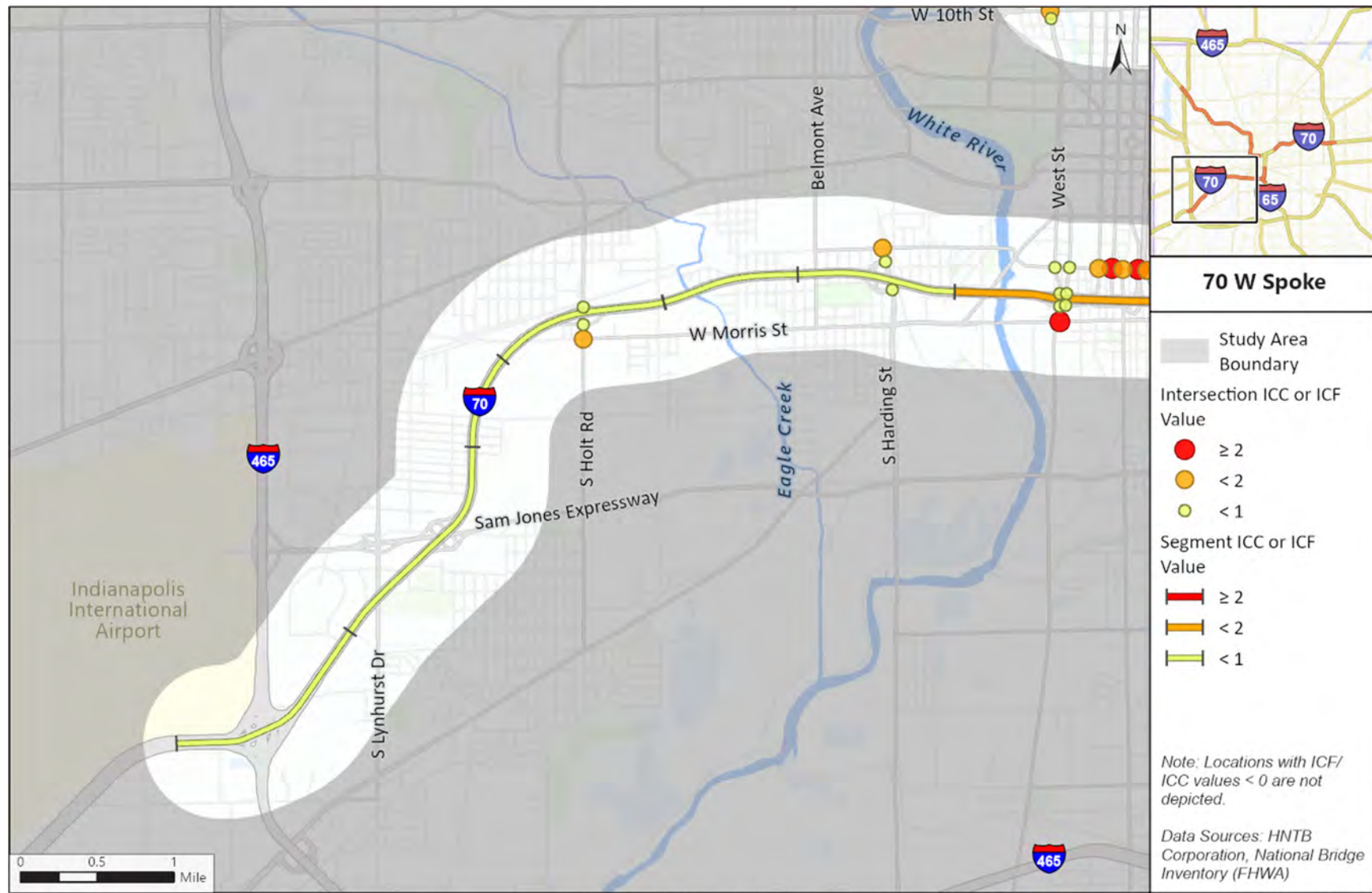


HNTB, State of Indiana, INDOT, Esri, NASA, NOAA, USGS, City of Indianapolis/Monroe Co., HERE, Garmin, SwgEdragon, GeoTechnologies, Inc., METI/NASA, ERA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

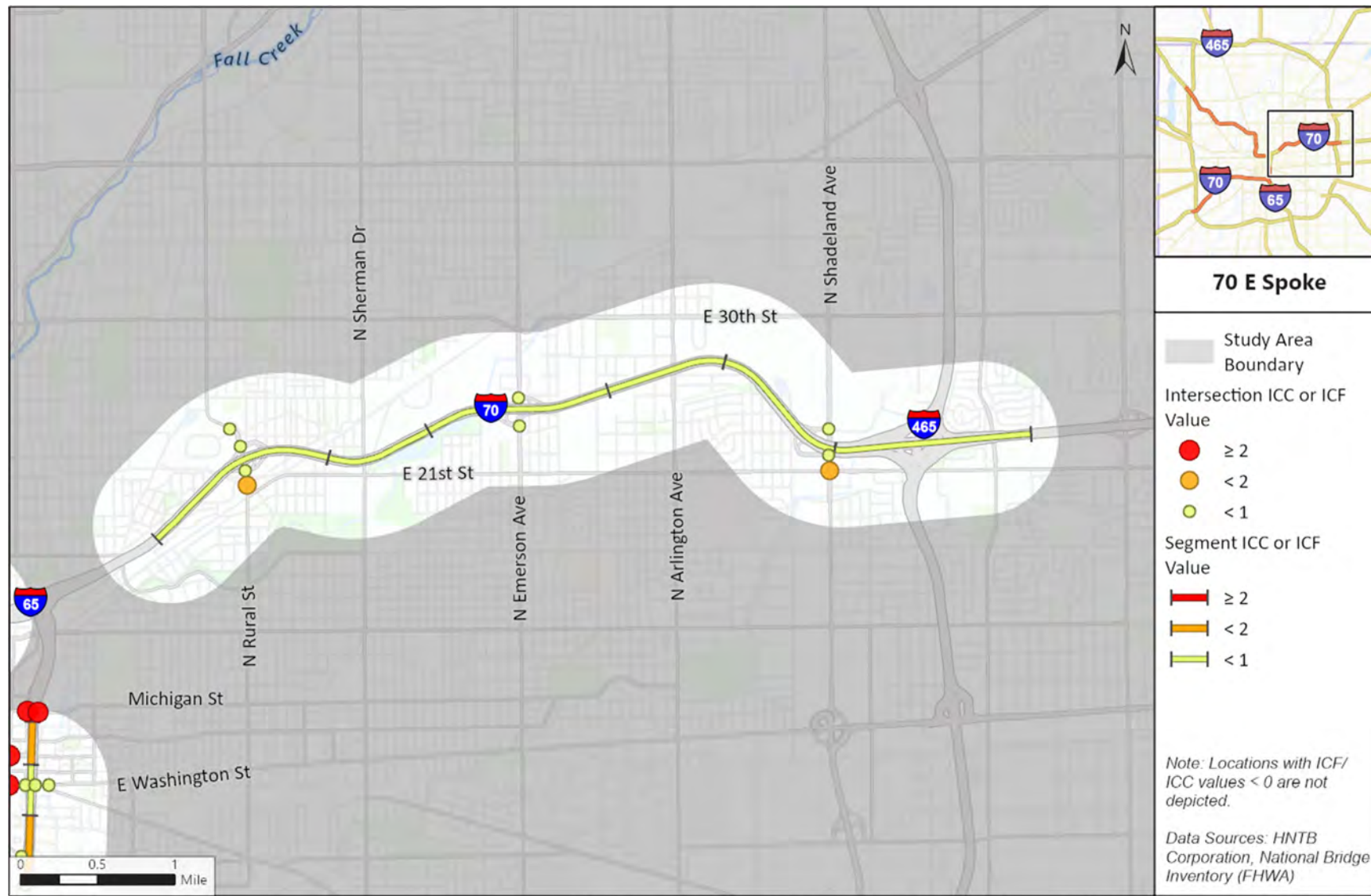
**Figure 20: 65/70 Downton Spoke Interstate Segment and Intersection Crash Summary**



**Figure 21: 70 W Spoke Interstate Segment and Intersection Crash Summary**



**Figure 22: 70 E Spoke Interstate Segment and Intersection Crash Summary**



## 6.3 Roadway Mobility

### 6.3.1 Congestion

#### Interstate Operations

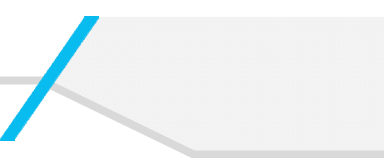
Traffic operations were evaluated for interstate segments within the study area to identify locations of traffic congestion. Highway Capacity Software (HCS7) was used for the analysis of the interstate segments in the existing (2023) and planning horizon (2050) years.

Traffic volume is an aggregate measure of travel demand over a roadway. Existing traffic volumes are based on traffic counts collected over the spring of 2023 at various locations around Indianapolis. All traffic counts were adjusted using INDOT Adjustment Factors to represent peak season volumes. The peak hours used were 7:00 – 8:00 AM and 4:00 – 5:00 PM. Peak hour volumes were obtained from the adjusted counts for use in the existing conditions peak hour capacity analysis that is discussed in Section 5 of the *Existing Transportation Conditions Report*.

Estimates of future traffic volumes were developed for the planning horizon (future) year (2050) and are based on the Indianapolis Metropolitan Planning Organization’s (IMPO’s) travel demand model. The IMPO model includes a nine-county region centered on Marion County and considers historic growth trends and anticipated changes in travel patterns.

Traffic operations for roadway performance are typically represented as Level of Service (LOS). As shown in the figure to the right, LOS is a common way of describing traffic congestion on roadways, using “grades” on a letter scale from LOS A (best) to LOS F (worst). LOS A represents near ideal traffic flow, while LOS F represents a breakdown of traffic flow. LOS relates to operations, not the physical condition of the roadway. LOS D represents the conditions when traffic flow is stable, but freedom to maneuver is more noticeably restricted. LOS D is the minimum acceptable LOS design standard for interstates. Deviations from this standard sometimes occur when achievement is not feasible and practical due to the restrictive environment in urban areas.





There are 15 interstate segments that do not meet the LOS D standard in the existing (2023) conditions and 29 interstate segments that do not meet the LOS D standard in the future (2050) conditions. The interstate segments that operate at unacceptable conditions (LOS E and LOS F) are depicted in orange and red in **Figure 23** through **Figure 38**.

A table showing existing (2023) and future (2050) peak hour traffic volumes and a list of interstate segments that do not meet LOS D in the existing (2023) and future (2050) conditions are included in Appendix C. Additional information is included in Sections 5, 6, and 7 of the *Existing Transportation Conditions Report* available on the ProPEL Indy website.

**Figure 23: 65 Spoke Existing (2023) Interstate Operations (AM Peak Hour)**



**Figure 24: 65 Spoke Future (2050) Interstate Operations (AM Peak Hour)**

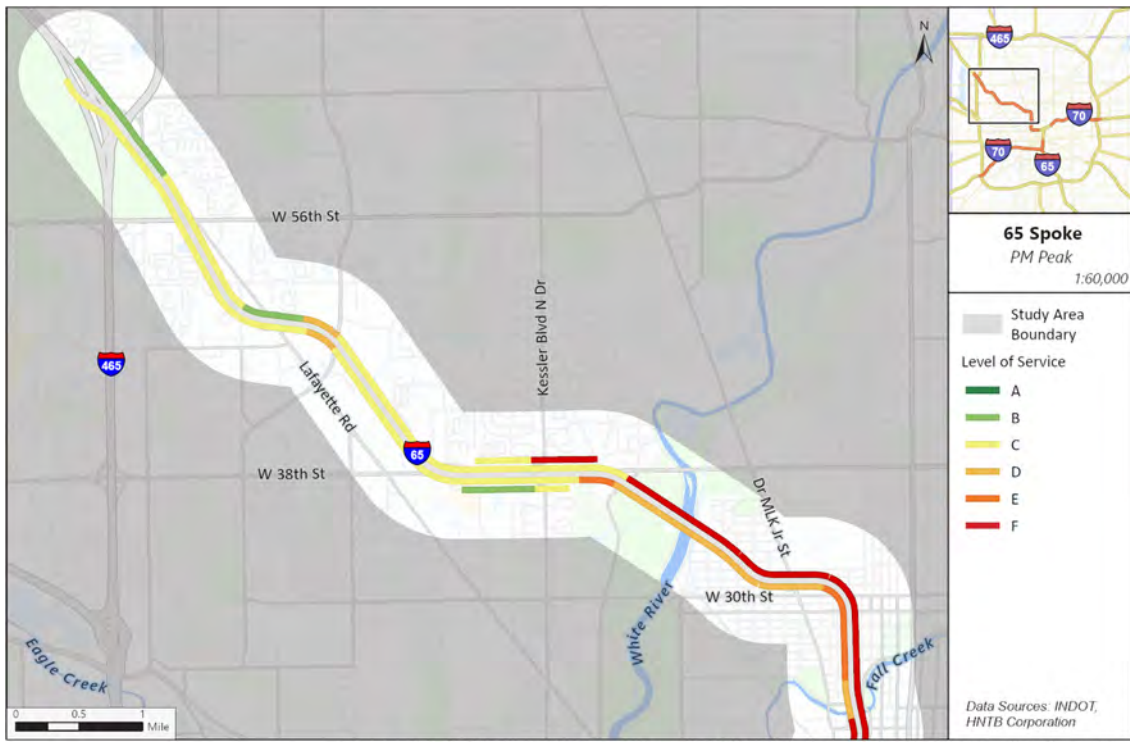




**Figure 25: 65 Spoke Existing (2023) Interstate Operations (PM Peak Hour)**



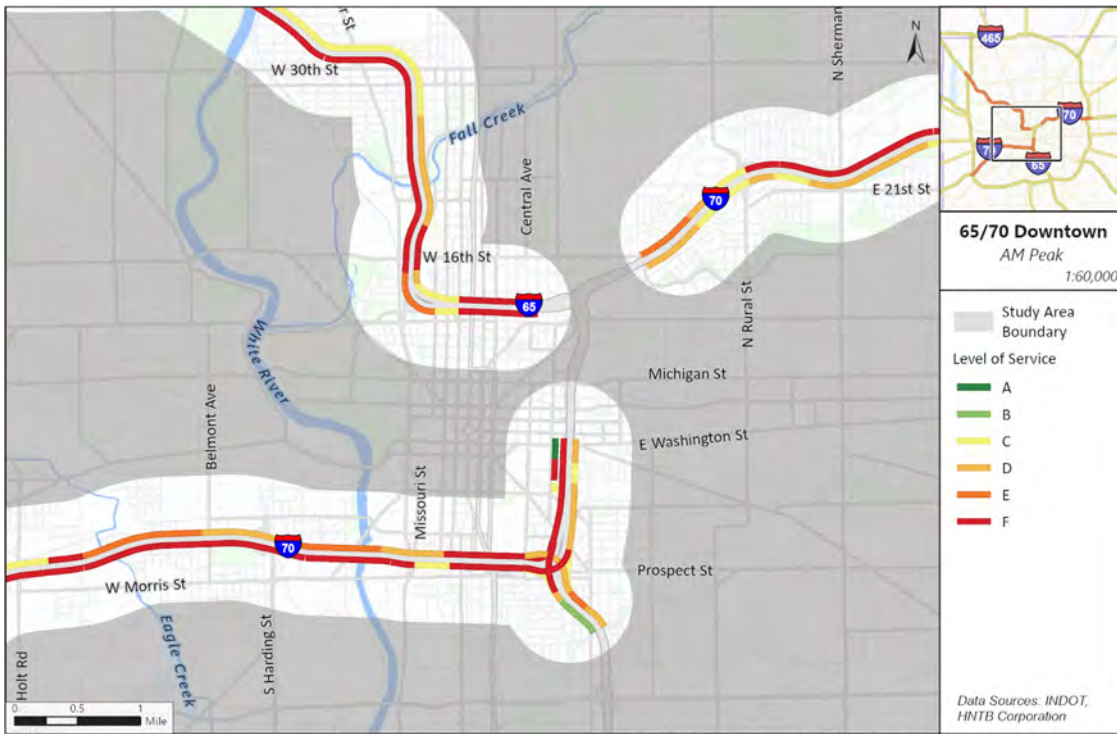
**Figure 26: 65 Spoke Future (2050) Interstate Operations (PM Peak Hour)**



**Figure 27: 65/70 Downtown Spoke Existing (2023) Interstate Operations (AM Peak Hour)**



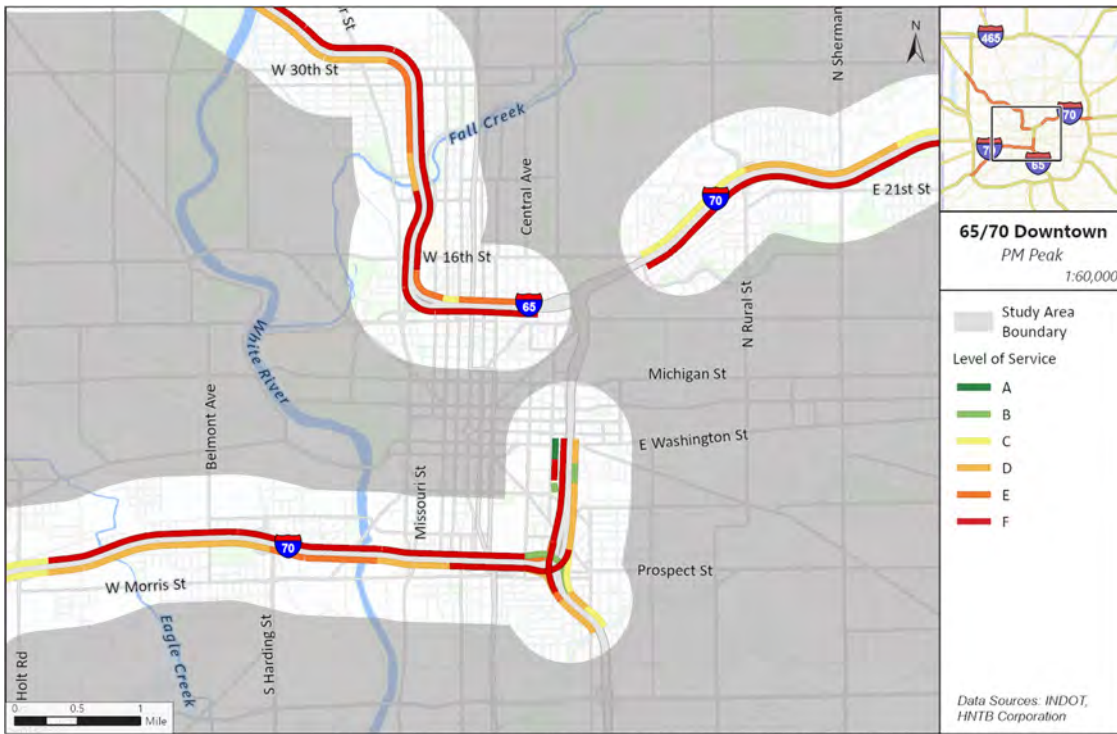
**Figure 28: 65/70 Downtown Spoke Future (2050) Interstate Operations (AM Peak Hour)**



**Figure 29: 65/70 Downtown Spoke Existing (2023) Interstate Operations (PM Peak Hour)**



**Figure 30: 65/70 Downtown Spoke Future (2050) Interstate Operations (PM Peak Hour)**



**Figure 31: 70 W Spoke Existing (2023) Interstate Operations (AM Peak Hour)**



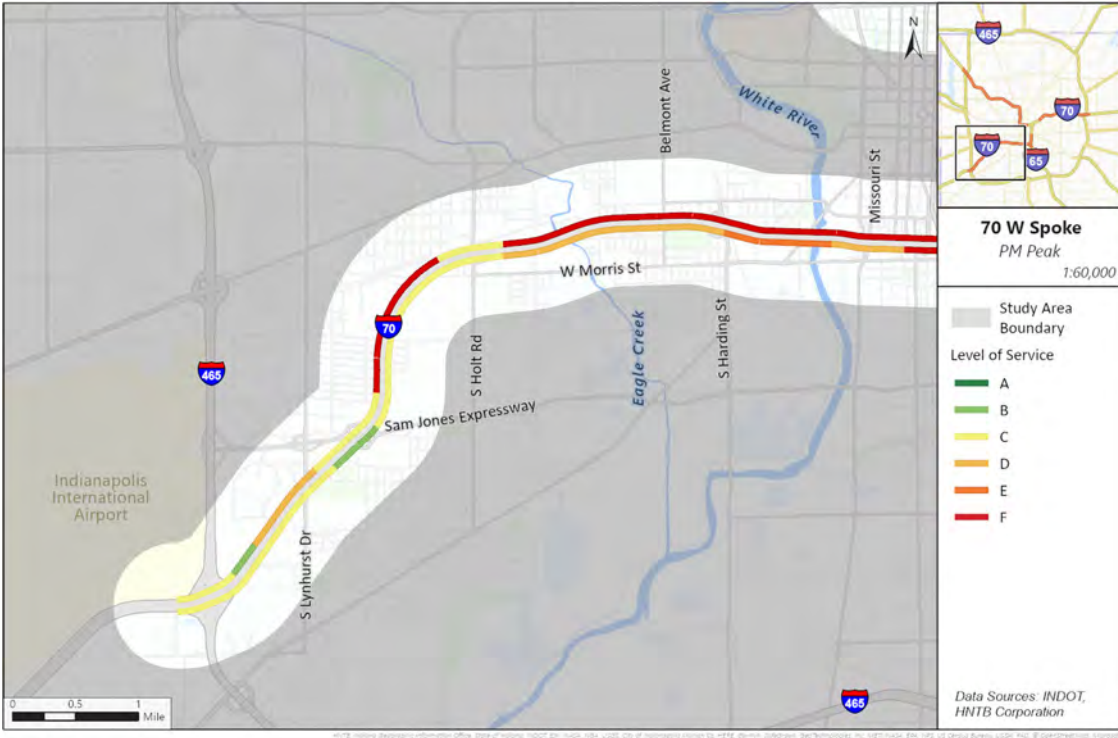
**Figure 32: 70 W Spoke Future (2050) Interstate Operations (AM Peak Hour)**



**Figure 33: 70 W Spoke Existing (2023) Interstate Operations (PM Peak Hour)**



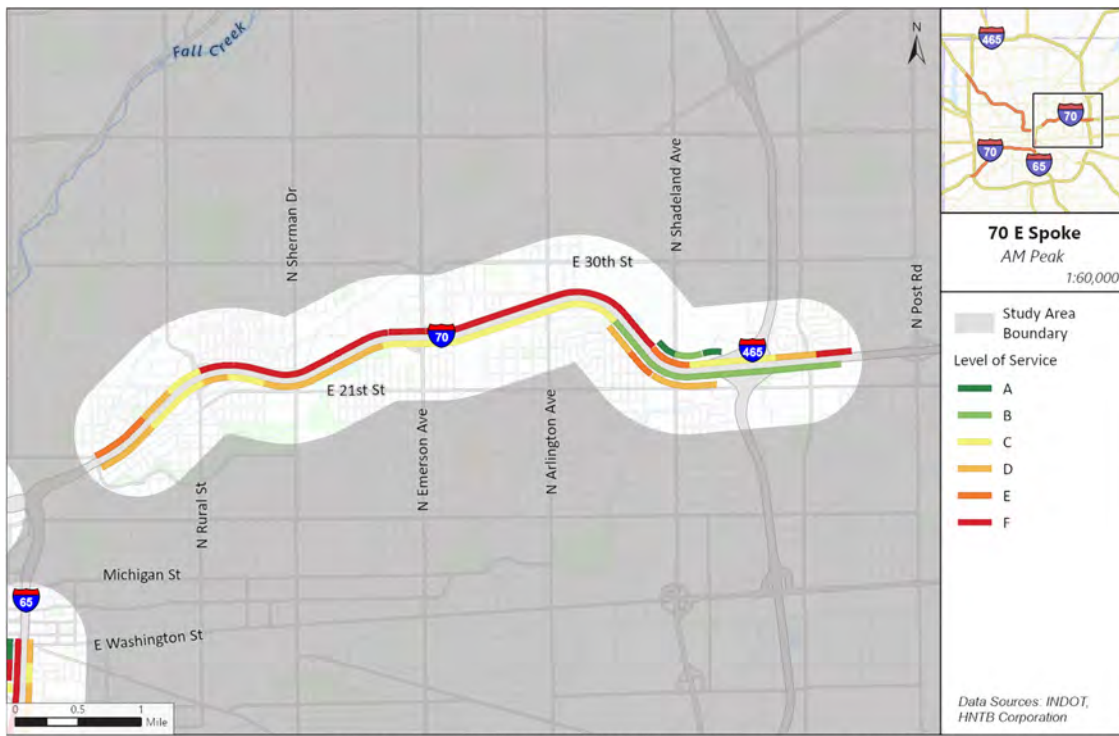
**Figure 34: 70 W Spoke Future (2050) Interstate Operations (PM Peak Hour)**



**Figure 35: 70 E Spoke Existing (2023) Interstate Operations (AM Peak Hour)**



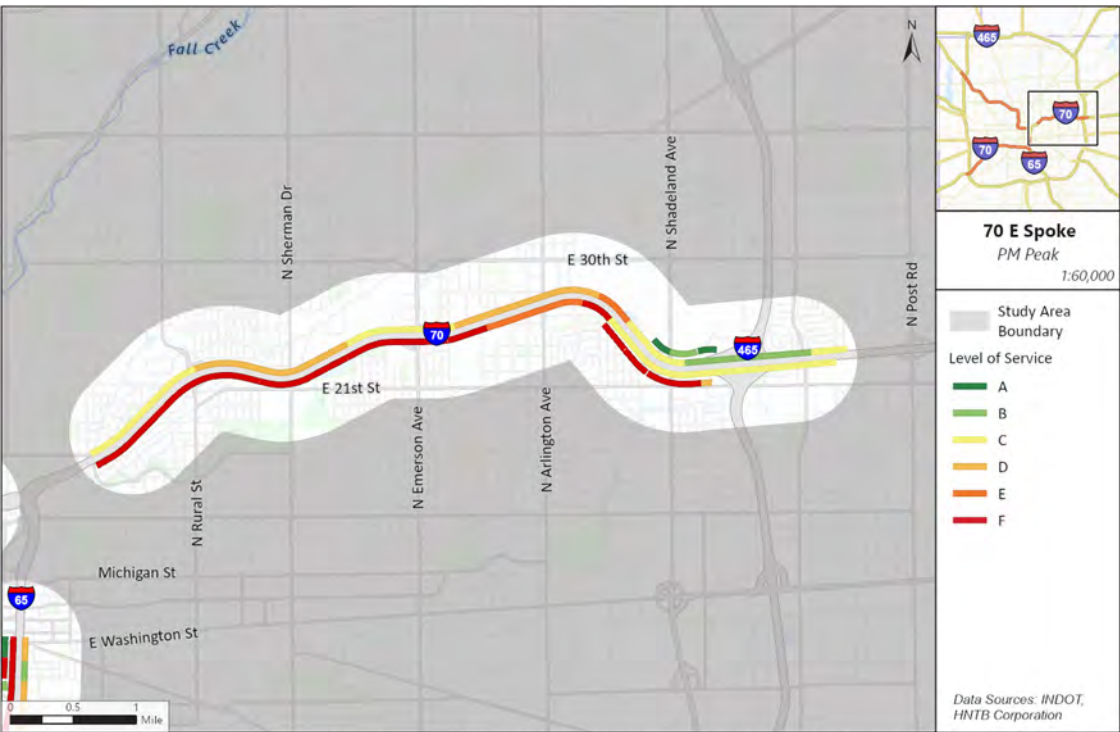
**Figure 36: 70 E Spoke Future (2050) Interstate Operations (AM Peak Hour)**



**Figure 37: 70 E Spoke Existing (2023) Interstate Operations (PM Peak Hour)**



**Figure 38: 70 E Spoke Future (2050) Interstate Operations (PM Peak Hour)**



## Intersection Operations

Operations of all intersections influencing or influenced by the interstates within the study area were analyzed for operations in the existing (2023) and planning horizon (future) (2050) years using Synchro 11 software. LOS is also used to describe the operating conditions of intersections and is measured based on the average delay per vehicle. LOS D is the minimal acceptable LOS for an intersection, which equates to a 55-second delay for signalized intersections and 35-second delay at two-way stop-controlled intersections.

The two intersections that do not meet the LOS D standard in the existing (2023) conditions are described below:

- 38<sup>th</sup> Street at Knollton Road/Cold Springs Road (signalized) (65 Spoke)
- 21<sup>st</sup> Street at northbound I-65 ramps (unsignalized) (65/70 Downtown Spoke)

The 20 intersections that do not meet the LOS D standard in the future (2050) conditions are described below:

### 65 Spoke

- 38<sup>th</sup> Street at Industrial Boulevard/Commercial Drive (signalized)
- 38<sup>th</sup> Street at Knollton Road/Cold Springs Road (signalized)
- 38<sup>th</sup> Street at Lafayette Road (signalized)
- Dr. Martin Luther King Jr. Street at northbound I-65 ramps (unsignalized)
- Dr. Martin Luther King Jr. Street at southbound I-65 ramps (unsignalized)
- Dr. Martin Luther King Jr. Street at 30<sup>th</sup> Street (signalized)

### 65/70 Downtown Spoke

- 21<sup>st</sup> Street at northbound I-65 ramps (unsignalized)
- 21<sup>st</sup> Street at Capitol Avenue (signalized)
- Southbound I-65 off-ramp at northbound I-65 off-ramp (to 11<sup>th</sup> Street) (signalized)
- Michigan Street at Davidson Street (signalized)
- Ohio Street at College Avenue (signalized)
- Washington Street at College Avenue (signalized)
- East Street at southbound I-65 and I-70 off-ramp (signalized)
- Westbound I-70 ramps at West Street (signalized)
- West Street at Morris Street (signalized)

### 70 W Spoke

- I-70 westbound ramps at Holt Road (signalized)
- I-70 eastbound ramps at Holt Road (signalized)
- Morris Street at Holt Road (signalized)



- I-70 westbound ramps at Harding Street (signalized)

#### 70 E Spoke

- Eastbound I-70 ramps at Keystone Avenue/Rural Street (unsignalized)

Tables of intersection operations for each spoke for the existing (2023) and future (2050) conditions are included in Appendix C. Additional information is included in Sections 5, 6, and 7 of the *Existing Transportation Conditions Report* available on the ProPEL Indy website.

### 6.3.2 Geometric Deficiencies

Geometric deficiencies that may result in interstate mobility concerns include horizontal stopping sight distance, substandard shoulder widths, weaving segments, left side entrance/exit ramps, and route continuity as described below.

#### Horizontal Stopping Sight Distance

There are five locations where horizontal stopping sight distance does not meet current design criteria. Deficient sight distance can lead to safety issues because it prevents motorists from seeing around curves and can result in crashes. These are listed in **Table 8**.

**Table 8: Horizontal Stopping Sight Distance (HSSD) Deficiencies**

Spoke	Location	Shoulder Width (ft)	Required HSSD <sup>1</sup>	Required Shoulder Width (ft.)
65/70 Downtown	N of 16 <sup>th</sup> St/S of 21 <sup>st</sup> St	8.0	570	11.59
65/70 Downtown	At 21 <sup>st</sup> St Interchange	8.0	570	21.99
65	N of 30 <sup>th</sup> St	8.0	570	21.99
65	W of MLK Jr St	8.0	570	21.99
65	At EB 38 <sup>th</sup> St Bridge	8.0	570	11.59

Notes:

1. For 60 mph Design Speed

#### Substandard Shoulder Widths

Interstates with three or more lanes per direction are required to provide 10 feet (minimum) inside and outside shoulders. Substandard shoulder widths hinder capacity and the use of the inside shoulder for stalled vehicles. The following is a list of locations where the inside shoulder does not meet a required minimum width of 10 feet:

- I-65 from the eastbound 38<sup>th</sup> Street bridge over I-65 to east of Alabama Street (4.73 miles)

- I-70 from the Holt Road interchange to the I-65 S Junction (4.1 miles)

## Weaving Segments

Weaving segments are locations where two traffic streams moving in the same direction must cross so motorists can reach their desired end points. This forced changing of lanes and crossing traffic pattern can negatively affect the operating speed of traffic and may increase the likelihood for crashes.

INDOT’s design criteria require a minimum ramp spacing of 2,000 feet between system and service interchange ramps and a minimum of 1,600 feet between service interchange ramps to ensure adequate distance is provided for weaving movements. Per **Table 9**, six of the existing weaving segments do not satisfy the distance criteria.

**Table 9: Weaving Segments**

Spoke	Location	Actual Weaving Distance (ft)	Required Minimum Weaving Distance (ft)	Number of Lane Changes
65	I-65 Southbound from Kessler Blvd to 38th St (Collector-Distributor (C-D) Lanes)	850	1,000	2
65	I-65 Northbound from 21 <sup>st</sup> St to 29 <sup>th</sup> St	2,500	1,600	1
65	I-65 Southbound from 29 <sup>th</sup> St to 21 <sup>st</sup> St	990	1,600	1
65/70 Downtown	I-70 Eastbound from Madison Ave to I-65 S Jct	1,900	2,000	2
65/70 Downtown	I-70 Westbound from Madison Ave to West St	300	1,600	1
65/70 Downtown	I-70 Westbound from I-65 S Jct to Madison Ave	900	2,000	2
65/70 Downtown	I-70 Eastbound from I-65 S Jct to Washington St	2,300	2,000	3
65/70 Downtown	I-70 Southbound from Southbound C-D to I-65 S Jct	1,900	2,000	2
70 E	I-70 Eastbound from I-65 N Jct to Rural St / Keystone Ave	5,900	2,000	2
70E	I-70 Westbound from Rural St / Keystone Ave to I-65 N Jct	5,200	2,000	3

Spoke	Location	Actual Weaving Distance (ft)	Required Minimum Weaving Distance (ft)	Number of Lane Changes
70E	I-70 Eastbound from Shadeland Ave to I-70 Eastbound (C-D Lanes)	1,500	1,000	2

### Left Side Entrance and Exit Ramps

Left side entrance and exit ramps are undesirable from an operational and safety perspective. This is because vehicles are forced to merge through traffic traveling at high speeds in the left lane, rather than the lower volume right lane. Three such ramps exist in the study area. They are:

- I-65 northbound entrance ramp from Calvary Street (Exit 110)
- I-65 northbound exit ramp to West Street (Exit 114)
- I-65 southbound entrance ramp from West Street (Exit 114).

### Route Continuity

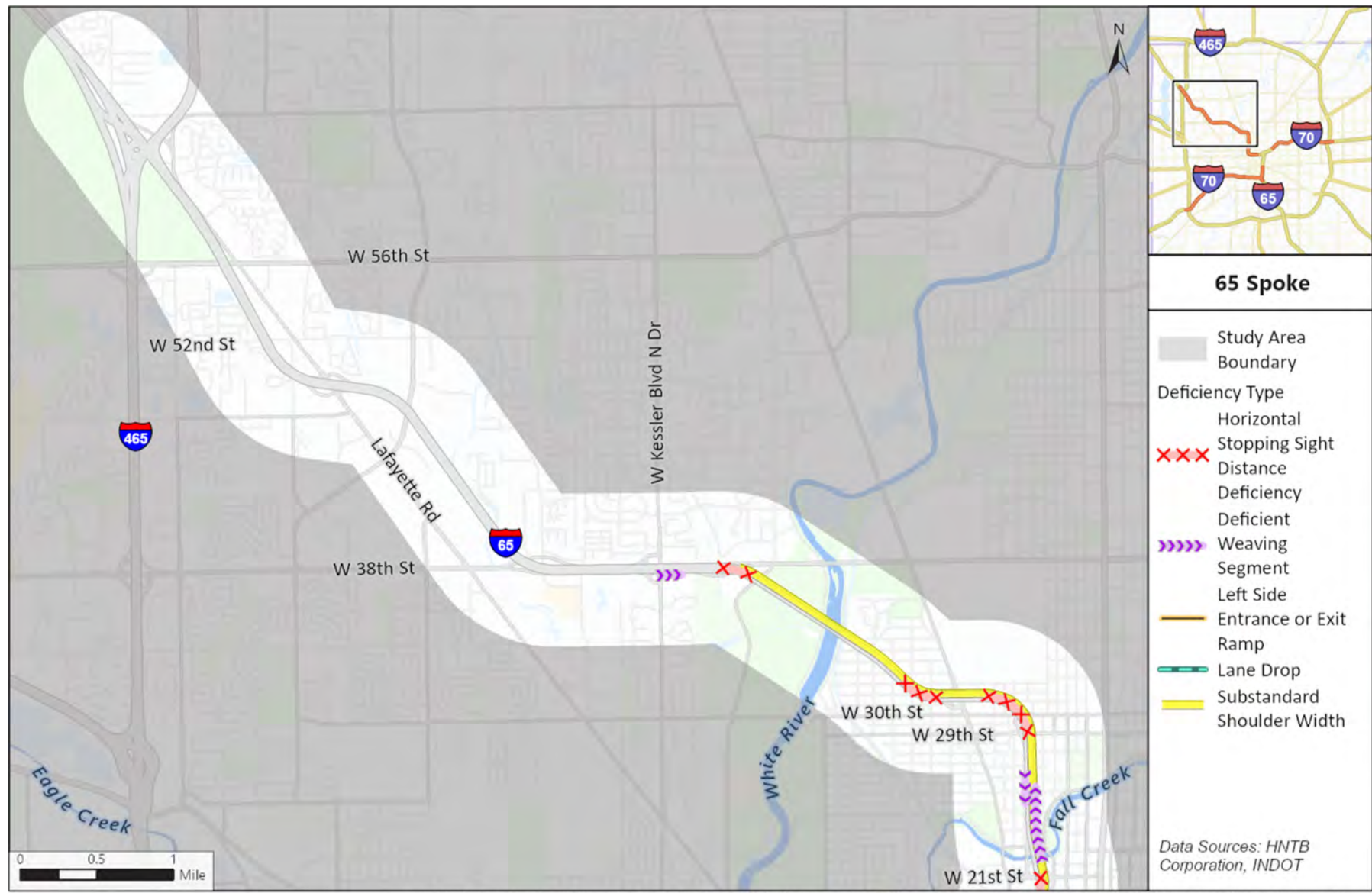
Route continuity is the concept in which changing lanes is not necessary to continue on the through route. A lack of route continuity creates a need for a decision point for drivers regarding which lane they should be in, and requires additional lane changes and additional signing, which can result in underutilization of the lane(s) that drop. There are three locations where route continuity is not provided within the study area. These are described as follows:

- I-65 northbound west of the North Split: The rightmost lane of the 2-lane ramp carrying I-65 through the interchange terminates or drops immediately west of the interchange. This results in northbound I-65 having only one continuous lane through downtown Indianapolis.
- I-65 southbound south of the North Split: The leftmost lane of the 2-lane ramp carrying I-65 through the interchange terminates or drops immediately south of the interchange. This effectively results in southbound I-65 having one continuous lane through downtown Indianapolis.
- I-65 southbound east of the North Split: The leftmost lane of the 2-lane ramp carrying the I-65 southbound to I-70 eastbound movement through the interchange drops immediately east of the interchange.

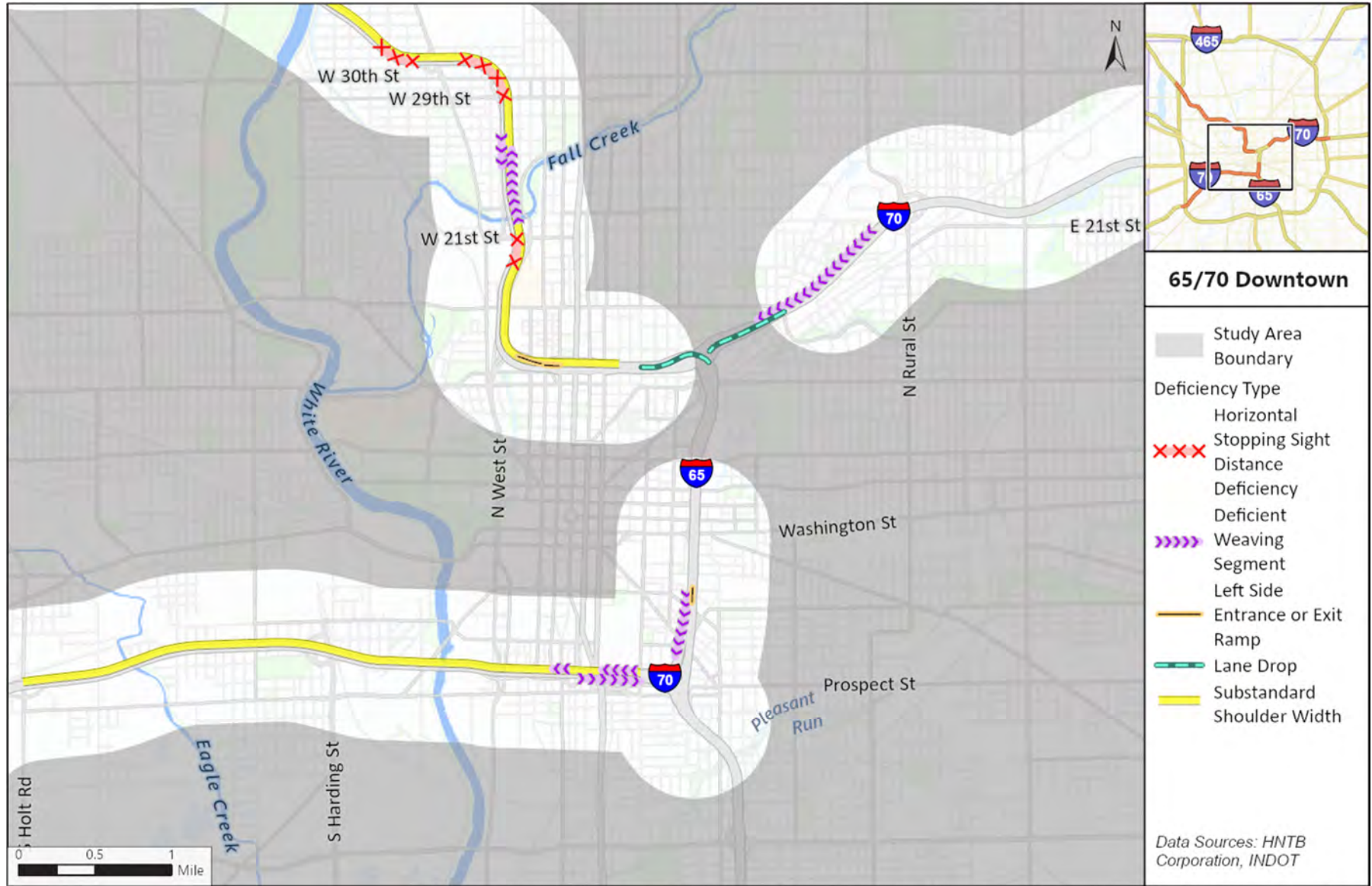
**Figure 39** through **Figure 42** show the locations of geometric deficiencies.

Additional details for geometric deficiencies are included in Section 2.6 of the *Existing Transportation Conditions Report* available on the ProPEL Indy website.

**Figure 39: 65 Spoke Geometric Deficiencies**

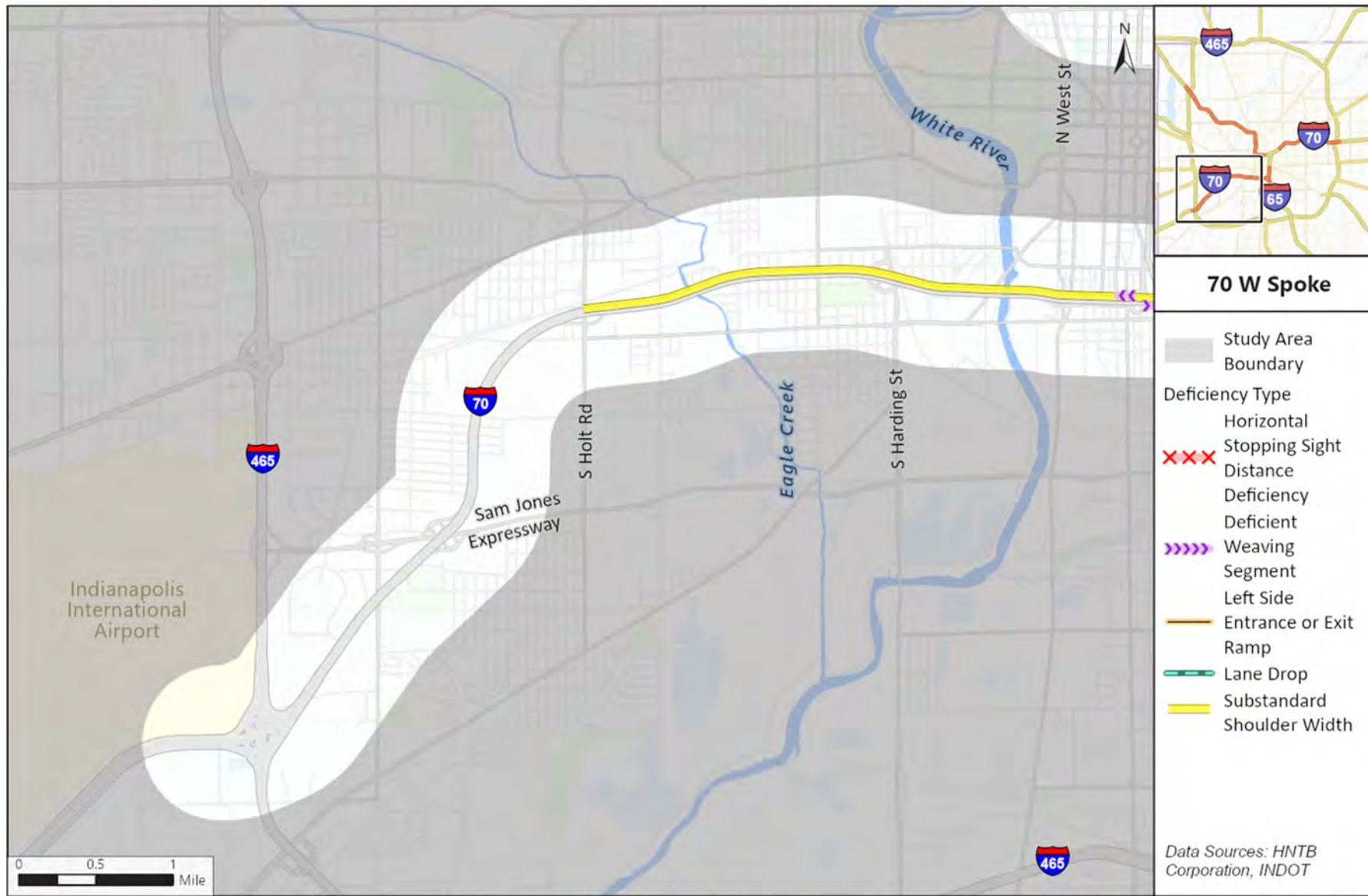


**Figure 40: 65/70 Downtown Spoke Geometric Deficiencies**

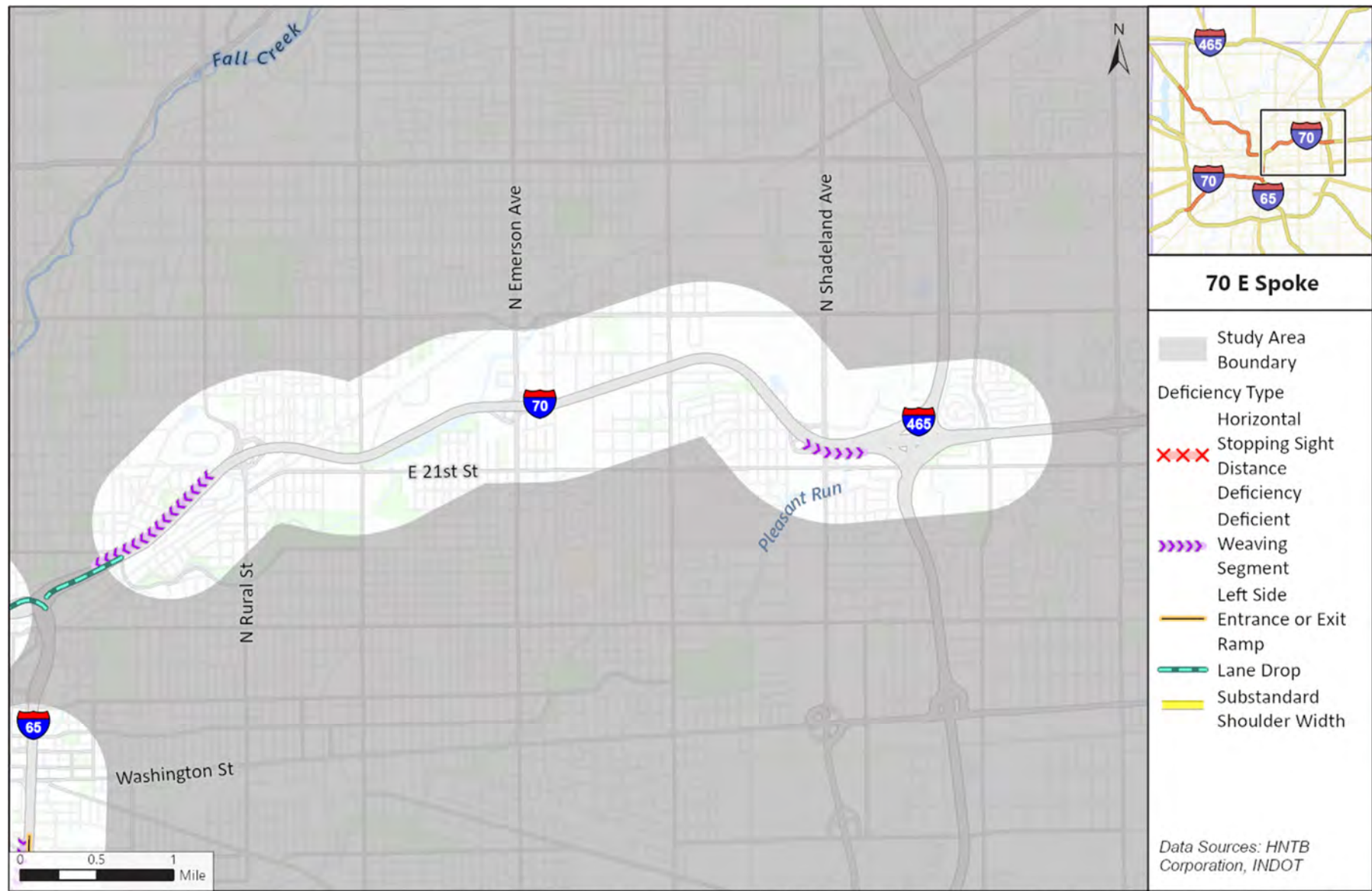


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**Figure 4I: 70 W Spoke Geometric Deficiencies**



**Figure 42: 70 E Spoke Geometric Deficiencies**



## 6.4 Limited Multimodal and Neighborhood Connections

Multimodal connectivity and linkages between neighborhood communities were identified as important concerns by the public and stakeholders. Existing physical conditions were evaluated to understand the impacts of interstate construction on neighborhood access and cross-corridor mobility for non-motorized travel options.

### 6.4.1 Neighborhood Connections Across I-65 and I-70

Construction of I-65 and I-70 in the study area severed multiple roadways that connected adjacent neighborhoods. The number of connections prior to interstate construction was determined from historic maps and aerial images. These figures are compared to the current (2023) number of neighborhood connections in **Figure 43**. This information is provided to help understand the impact interstate construction had on neighborhood connections. This data is not intended to suggest that all pre-interstate connections should be restored, but instead to illustrate which neighborhoods were most impacted. As this study advances, this data will be used to evaluate where additional or improved connections may be considered based on community and stakeholder input and qualitative assessments.

The locations of these lost connections are shown on historic aerial photographs in Appendix D.

### 6.4.2 Planned Multimodal Facilities

The City of Indianapolis Indy Moves Plan (2018), IMPO Central Indiana 2050 Metropolitan Transportation Plan, IMPO Safe Streets for All Safety Action Plan, and IndyGo Future Services Plan (2023-2027) have identified the need to increase multimodal access and options for current and future residents, employees, and visitors to promote a more equitable, efficient, and sustainable transportation system. This would translate to greater economic opportunity through more connected transportation systems.

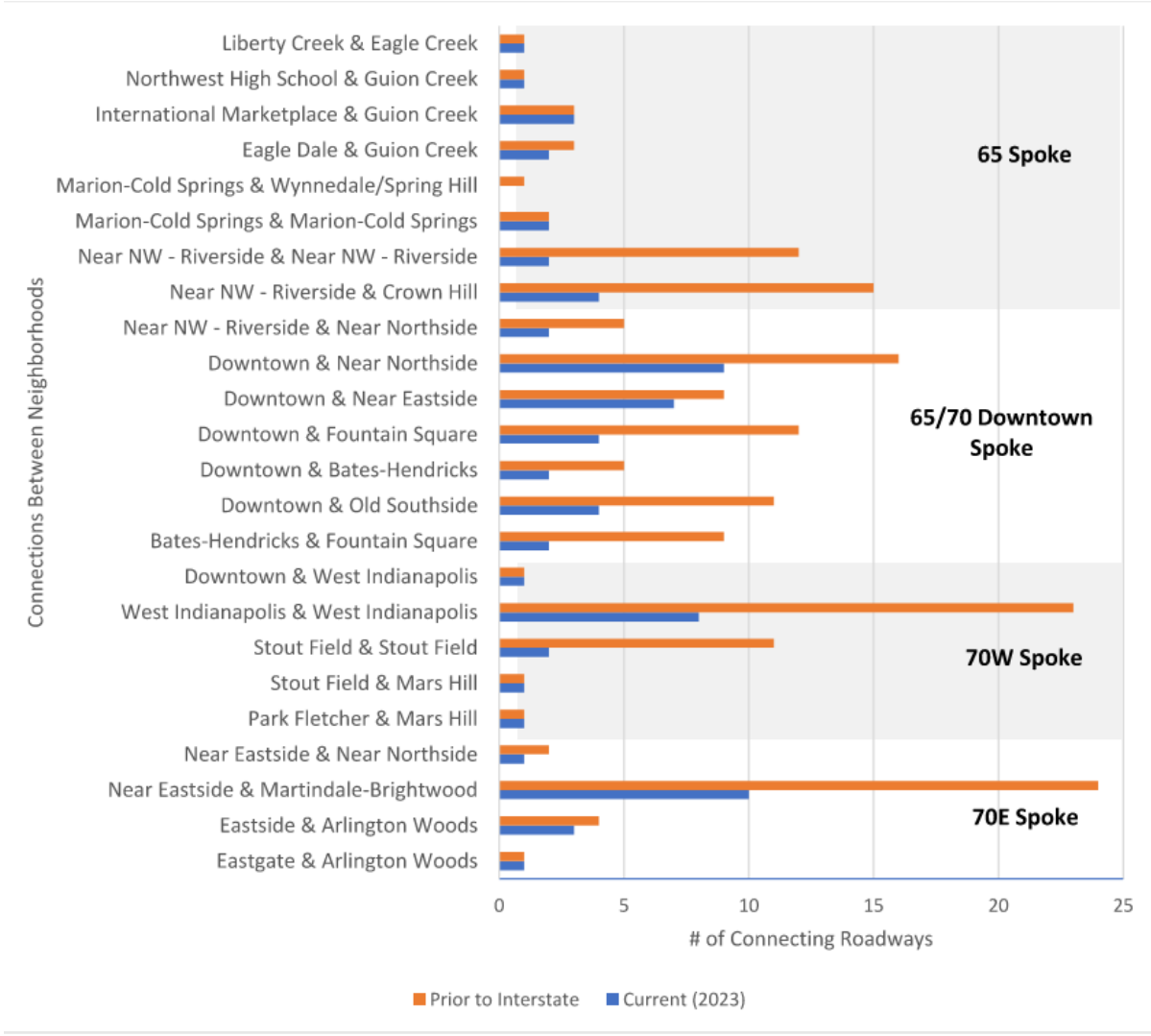
Planned multi-use paths, greenways, and complete streets from the City of Indianapolis Indy Moves Plan (2018) were digitized and are shown in **Figure 44** through **Figure 47** and in greater detail in Appendix D. These locations are approximate.

There are 22 bus routes operating within the study area providing medium frequency service (15-30 minutes between buses). Currently no IndyGo bus routes operate on I-65 or I-70 within the study area. IndyGo has publicly acknowledged a plan to route the Blue Line Bus Rapid Transit (BRT) along I-70, between Holt Road and the Indianapolis International Airport. The Blue Line will use Washington Street to cross under I-65/70 within the 65/70 Downtown Spoke. IndyGo BRT Red and Purple Lines both use Capitol Avenue to cross under I-65. The Red Line also uses Virginia Avenue to cross over I-65/70 within the 65/70 Downtown Spoke and Shelby Street to cross under I-65 outside of the study area.



Coordination will continue with the City of Indianapolis DPW and IndyGo to accommodate these planned facilities in this study.

**Figure 43: Neighborhood Connections across I-65 and I-70**



### 6.4.3 Pedestrian/Bicycle Infrastructure Gaps

Barriers to multimodal connectivity exist at numerous interstate crossings. These include gaps in pedestrian/bicycle infrastructure as well as existing infrastructure where the design could be improved.

The interchanges and grade-separated crossings within the study area were examined to identify locations where pedestrian facilities are not located within INDOT right-of-way. These locations are shown in **Table 10**. Pedestrian facilities are not present at 20 of 76 (26%) grade-separated interstate crossings.

**Table 10: Grade-Separated Crossings Without Pedestrian Facilities**

Spoke	Cross Street	Street Classification
65	52 <sup>nd</sup> St	Minor Collector
65	Lafayette Rd	Principal Arterial – Other
65	38 <sup>th</sup> St	Principal Arterial – Other
65	Guion Rd	Major Collector
65	White River Pkwy W Dr	Minor Collector
65	White River Pkwy E Dr	Local
65/70 Downtown	West St / Missouri St	Principal Arterial – Other
70 W	White River Pkwy E Dr	Local
70 W	Drover St	Major Collector
70 W	Harding St	Principal Arterial – Other
70 W	Warman Ave	Minor Arterial
70 W	Holt Rd	Principal Arterial - Other
70 W	Morris St	Minor Arterial
70 W	Minnesota St	Major Collector
70 W	Sam Jones Expressway	Principal Arterial – Other Freeway
70 E	Keystone Ave /Rural St	Principal Arterial – Other
70 E	Massachusetts Ave	Major Collector
70 E	Emerson Ave	Principal Arterial – Other
70E	Ritter Ave	Major Collector
70E	Shadeland Ave	Principal Arterial – Other

Designated bike facilities exist at only 13 of 76 (17%) grade-separated crossings within the study area, which are listed in **Table 11**. They are not present at 63 of 76 (83%) grade-separated crossings.

**Table 11: Grade-Separated Crossings With Bike Facilities**

Study Spoke	Cross Street	Street Classification	Bike Facility
65	56th St.	Principal Arterial	Trail
65	Lafayette Rd.	Principal Arterial	Bike Lanes
65	Georgetown Rd.	Minor Arterial	Path
65	30th St.	Minor Arterial	Shared Lane
65	29th St.	Minor Arterial	Shared Lane
65	21st St.	Minor Arterial	Trail
65	Illinois St.	Minor Arterial	Cycle Track
65	Pennsylvania St.	Minor Arterial	Bike Lanes
65	Alabama St.	Minor Arterial	Sharrow
65/70 Downtown	Michigan St.	Minor Arterial	Bike Lanes
65/70 Downtown	New York St.	Principal Arterial	Bike Lanes
65/70 Downtown	Virginia Ave.	Major Collector	Trail
65/70 Downtown	East St.	Principal Arterial	Bike Lanes

**Table 12: Interstate Segments with Insufficient Pedestrian Crossings**

Spoke	Total Length (mi)	Pedestrian Crossing Deficiency	
		Miles	% of Spoke
65	8.85	5.74	65%
65/70 Downtown	4.25	2.67	63%
70 W	6.91	2.16	31%
70 E	5.57	1.25	22%
<b>Totals</b>	<b>25.58</b>	<b>11.82</b>	<b>46%</b>

In addition, the concept of a walkshed, or the distance a pedestrian can be expected to travel, was applied to the interstate crossings in the study area. A walkshed of half a mile was assumed to be a reasonable distance a pedestrian should be expected to traverse to reach a grade-separated crossing

of the interstate in the urbanized area of Indianapolis. This distance was selected from literature reviews of various transit studies and in consultation with the Indianapolis DPW. At an expected pace of 2.5 miles per hour, this means an average walker might need 12 minutes to get from the edge of the walkshed to the grade-separated crossing. Walkshed distances were identified for each grade separated crossing where sidewalk is currently provided and the areas outside of these walksheds are considered to be deficient areas where grade-separated crossings with pedestrian features should be considered. The portion of each study spoke with insufficient pedestrian crossings was calculated from the total length of the deficient areas. These portions are provided in **Table 12**. Locations of deficient pedestrian facilities crossing the interstate, along with the existing and proposed pedestrian and bicycle facilities, are shown in Appendix D.

The following statistics summarize existing pedestrian/bicycle facility conditions in the study area:

- **Pedestrian network.** Pedestrian facilities are not present at 20 of 76 (26%) grade-separated interstate crossings. Approximately 46% of the total study area was found to have insufficient opportunities for pedestrians to cross the interstates.
- **Bike facilities.** Designated bike facilities are not present at 63 of 76 (83%) grade-separated crossings.

#### 6.4.4 IMPO High Injury Network

The IMPO developed a High Injury Network (HIN) to identify local corridors with the highest frequencies of crashes resulting in incapacitating and fatal injuries. Roadway segments are added to the HIN based on (1) crashes involving only motor vehicles or (2) crashes involving pedestrians or bicyclists. Any study intersections that overlap with motor vehicle related HIN segments were evaluated through the analysis of the preceding sections. HIN segments in the second category were further investigated to identify locations within the study area. The IMPO identified the following five corridors as having a high number of crashes involving pedestrians and bicyclists:

##### 65/70 Downtown Spoke

- Illinois Street from 10<sup>th</sup> St to 30<sup>th</sup> Street
- Michigan Street from west of I-65/70 to Highland Street

##### 70 E Spoke

- Rural Street from Washington Street to I-70
- Arlington Avenue from Brooksville Road to 56<sup>th</sup> Street
- Shadeland Avenue from Washington Street to I-465

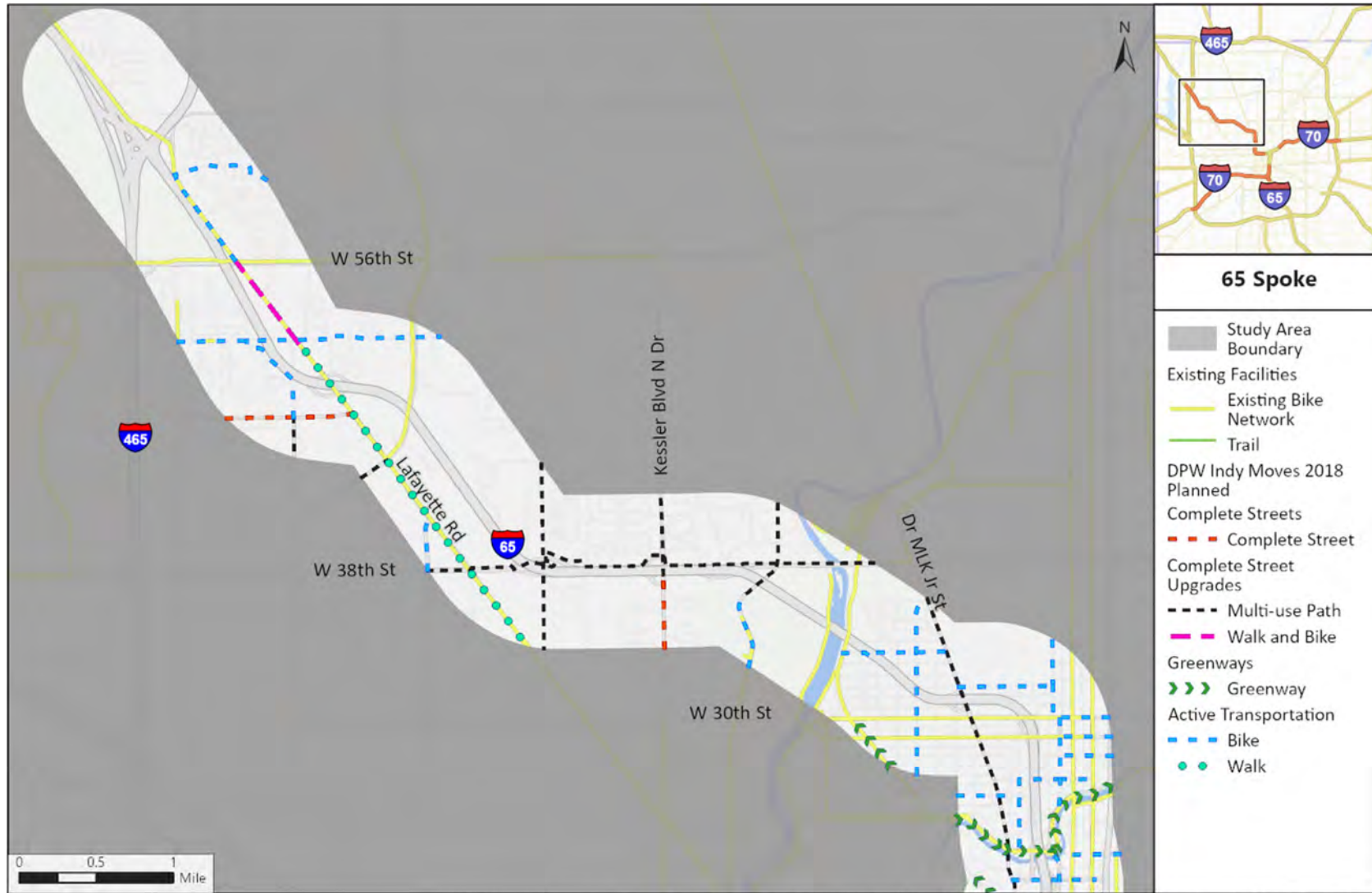
Study intersections along these corridors were investigated to identify incapacitating or fatal crashes involving pedestrians and bicyclists. In the 2018-2022 analysis period, eight crashes of this type were identified and are listed in **Table 13**. A review of these locations indicates the following:

- Illinois Street: Crosswalks at both intersections are properly marked. Right turns on red are not prohibited.
- Shadeland Avenue and 21<sup>st</sup> Street: Crosswalk markings are poor or non-existent. The distance to cross Shadeland Avenue is substantial, which results in lengthy crossing times and greater potential for conflict with vehicles.

**Table 13: High Injury Network Pedestrian and Bicycle Crashes**

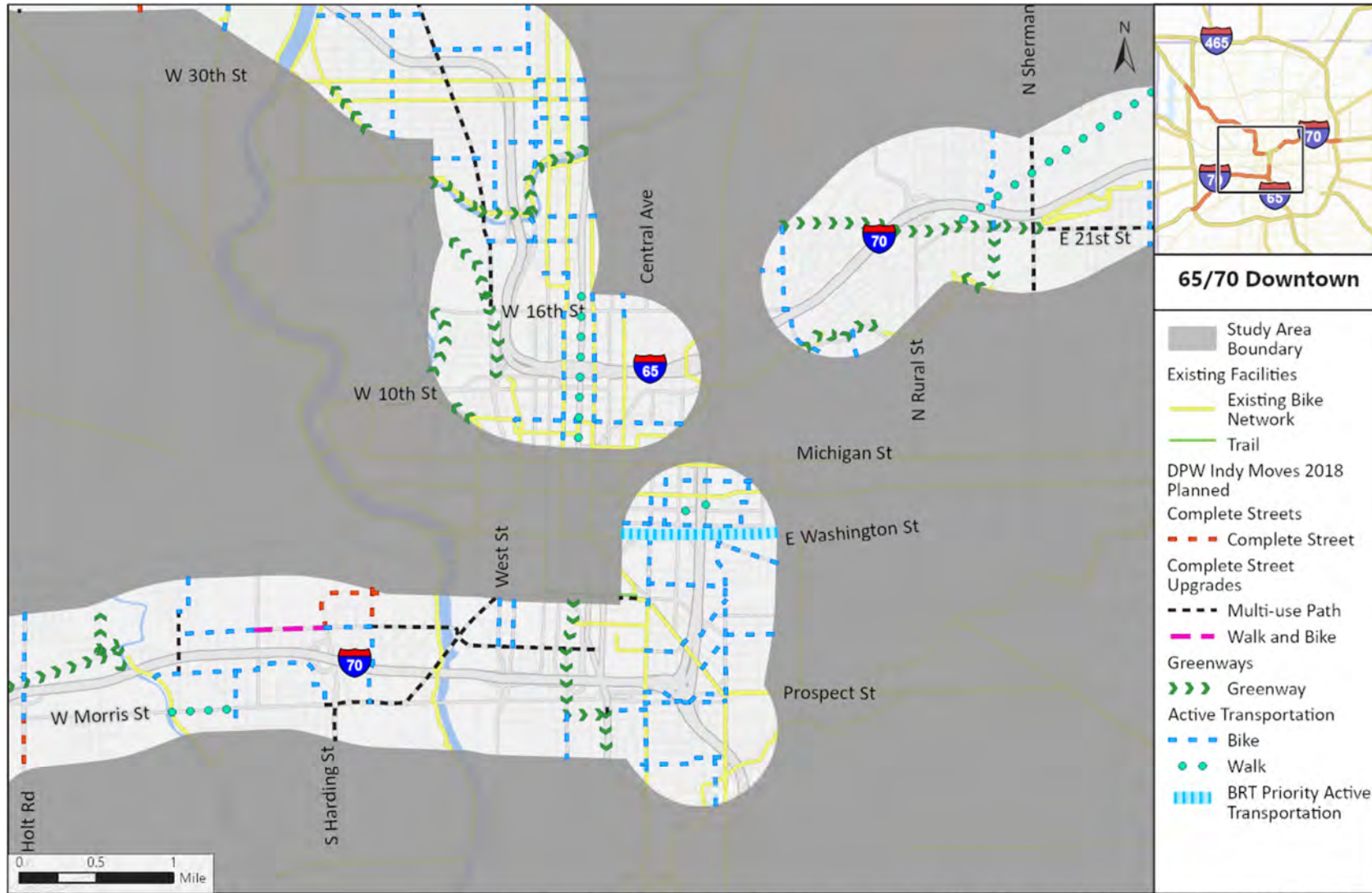
Intersection	Crash Summary
12 <sup>th</sup> St at Illinois St	Right-turn Pedestrian Crash
11 <sup>th</sup> St at Illinois St	Right-turn Pedestrian Crash
Michigan St at Davidson St	Bicycle struck riding wrong direction (roadway is 1-way).
Shadeland Ave at 21 <sup>st</sup> St	Pedestrian crash was secondary. Possibly in the crosswalk.
	Pedestrian running through stopped traffic.
	Pedestrian ran into roadway.
	Pedestrian crossing roadway, not in a crosswalk.
	Pedestrian struck while crossing in the crosswalk.

**Figure 44: 65 Spoke Planned Bicycle/Pedestrian Facilities**



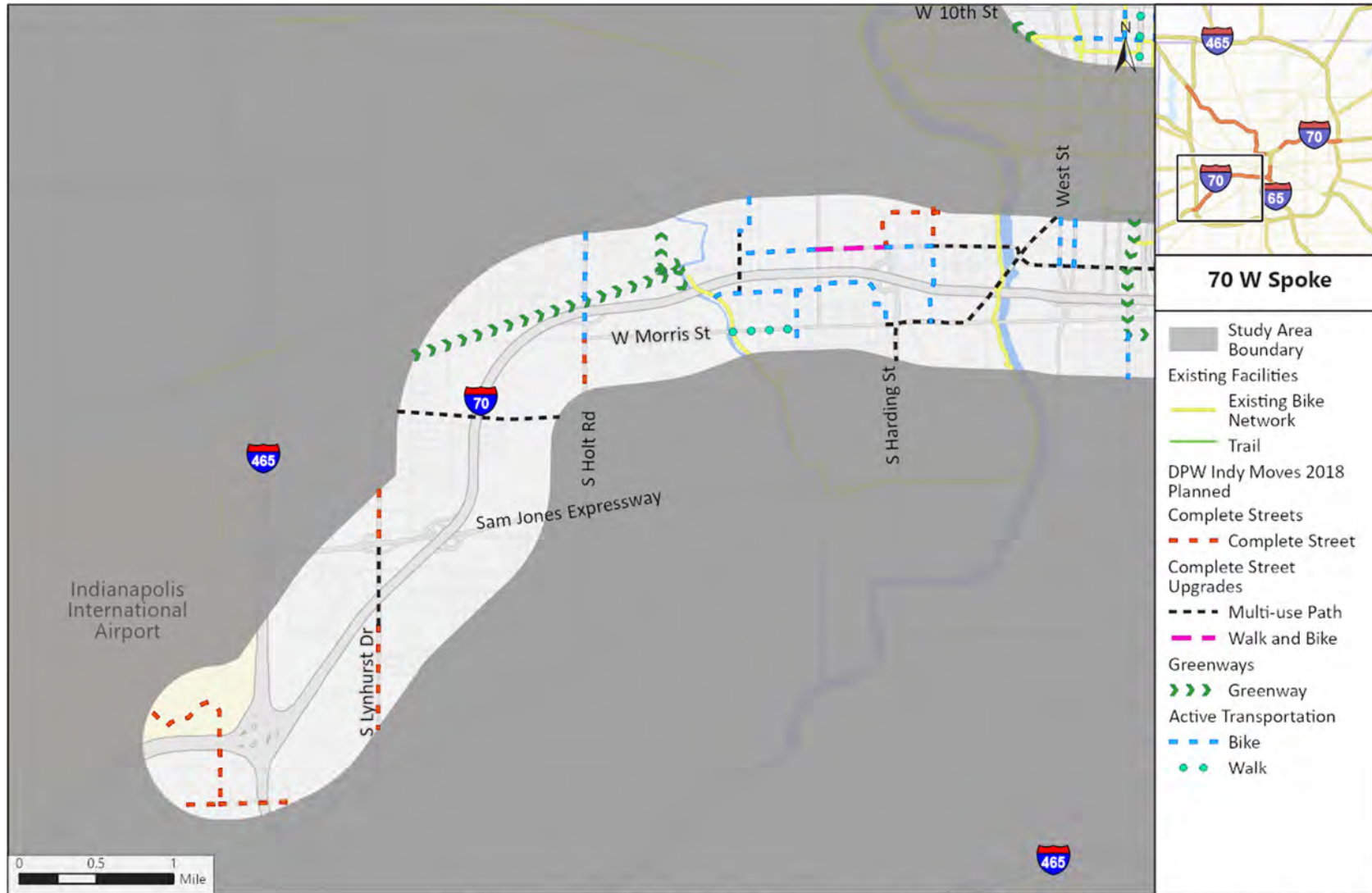
Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), DPW Indy Moves 2018 Planned (Indy Moves 2018, PlanIndy - DMD)

**Figure 45: 65/70 Downtown Spoke Planned Bicycle/Pedestrian Facilities**



Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), DPW Indy Moves 2018 Planned (Indy Moves 2018, PlanIndy - DMD)

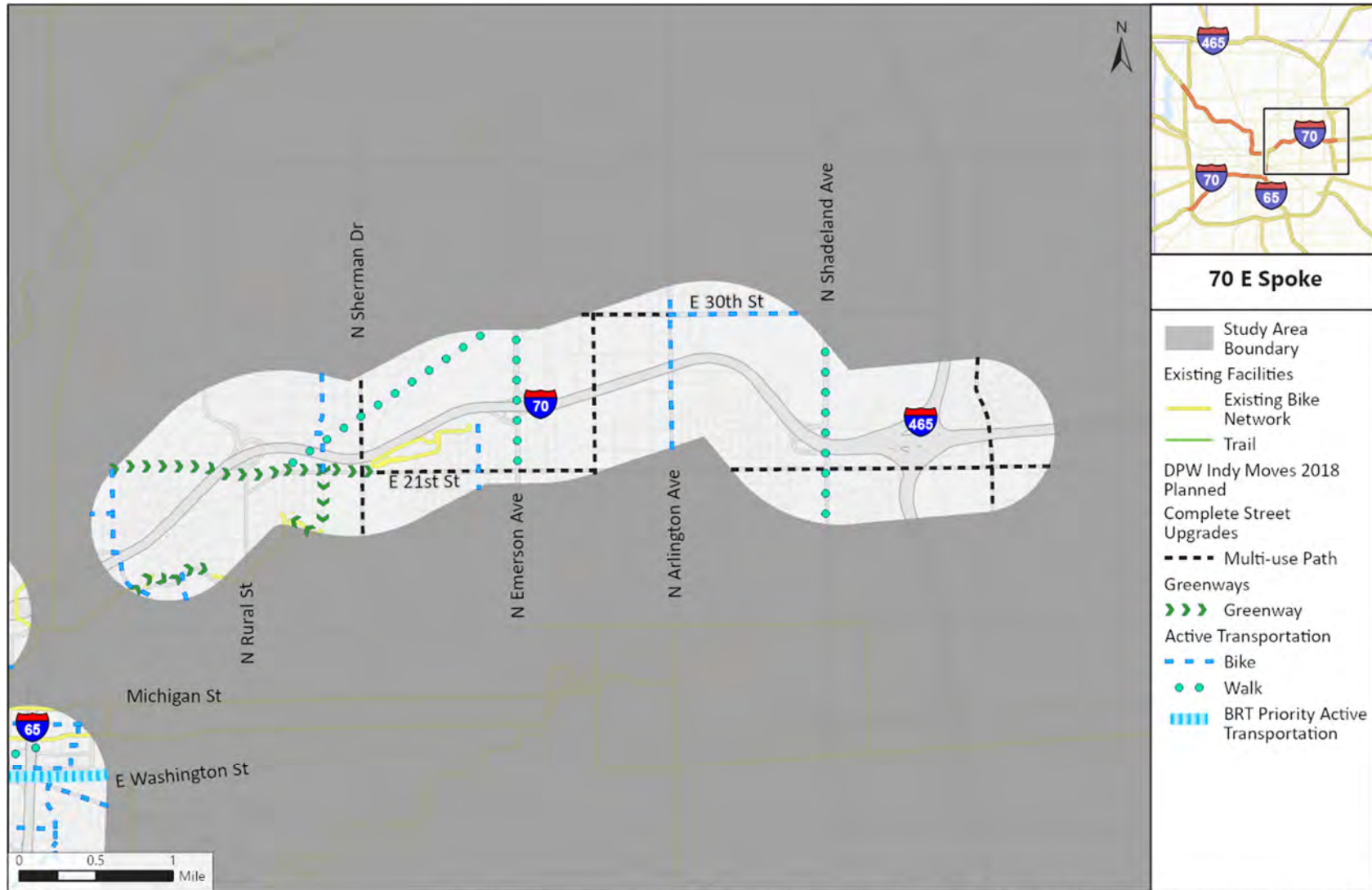
**Figure 46: 70 W Spoke Planned Bicycle/Pedestrian Facilities**



Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), DPW Indy Moves 2018 Planned (Indy Moves 2018, PlanIndy - DMD)



**Figure 47: 70 E Spoke Planned Bicycle/Pedestrian Facilities**



Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), DPW Indy Moves 2018 Planned (Indy Moves 2018, PlanIndy - DMD)

## 7.0 What are the Next Steps?

This *Draft Purpose and Need Report* will be provided for public, stakeholder, and agency review and comment. All comments will be considered, and the report will be revised based on input received. The *Final Purpose and Need Report* will be posted to the ProPEL Indy website. Following the purpose and need step, a universe of alternative concepts will be developed and evaluated based on the needs, purposes, and community goals identified in this report. The universe of alternatives development and evaluation will also be provided for public, stakeholder, and agency review.



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# APPENDIX A: DETERIORATED BRIDGE AND PAVEMENT CONDITION

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Table A-1: Pavement Asset Data

PK	Route	Pvmt Area (sys)	Lanes	PM Count	Functional Age	Structural Age	Overall PQI	HMA PQI	Concrete PQI	HMA IRI	HMA Cracking	HMA Rut	Concrete IRI	Concrete Cracking	Concrete Faulting	Planned Treatment	Planned Decade
30411	I-70	645,240	8	1	2	14	83.9	71.1	84.2	128	0%	0.08	97	1%	0.00	PM	2030 - 2039
30410	I-70	63,350	5	0	26	26	86.1	98.2	68.7	67	3%	0.06	98	10%	0.02	PM	2040 - 2049
30409	I-70	33,400	4	1	3	26	98.9	99.7	59.1	63	1%	0.06	151	0%	0.00	PM	2020 - 2029
30248	I-70	138,521	6	3	2	26	74.7	-	74.7	-	-	-	120	0%	0.00	PM	2020 - 2029
30247	I-70	320,313	6	2	2	28	98.2	72.2	99.9	125	0%	0.08	55	0%	0.00	PM	2020 - 2029
30235	I-65	362,251	6	0	3	21	98.1	98.9	86.3	43	2%	0.06	84	6%	0.00	PM	2030 - 2039
30234	I-65	167,806	6	2	3	51	65.2	-	65.2	-	-	-	116	7%	0.02	PM	2030 - 2039
30233	I-65	158,700	6	1	5	27	93.4	96.4	81.6	70	6%	0.08	97	4%	0.00	-	2020 - 2029
30232	I-65	111,817	6	1	6	30	54.3	56.5	50	130	23%	0.09	161	4%	0.00	-	2030 - 2039
30231	I-65	77,113	7	2	3	48	41.9	-	41.9	-	-	-	41.9	14%	0.04	PM	2020 - 2029
30230	I-65	85,664	7	1	3	8	91.2	98.3	84.2	73	1%	0.09	94	3%	0.00	PM	2030 - 2039

Table A-2: Bridge Asset Data

NBI No.	Bridge File No.	Asset Type	Location	Spoke	Year Built	Condition Ratings			Forecasted Work									Next Major Forecasted Work	
						Super	Deck	Sub.	1st Thin Overlay	Rigid Overlay	Deck Replacement	2nd Thin Overlay	Super. Replacement	3rd Thin Overlay	Bridge Replacement	Deck Replacement	Super. Replacement	Year	Scope
036310	I65-110-05714 ASBL	Bridge		65/70 Dtnw	1973	7	6	6	1978	1988	-	-	-	-	2030	-	-	2030	Bridge Replacement
036320	I65-110-05713 ANBL	Bridge	I-65 NB over Morris & Prospect St	65/70 Dtnw	1973	5	6	6	1978	1988	-	-	-	-	2030	-	-	2026	Bridge Replacement
036330	I65-110-05715 B	Bridge	00.13 S I-70	65/70 Dtnw	1973	7	7	6	1978	1988	2015	2030	-	-	2055	2015	-	2055	Bridge Replacement
036340	I65-110-05719 ENBL	Bridge	Virginia Ave. over I-65	65/70 Dtnw	1973	6	6	6	1978	1988	-	-	-	-	2030	-	-	2026	Bridge Replacement
036350	I65-110-05720 DSBL	Bridge	I-65 SB Ramp 7 N-W, 00.18 N I-70	65/70 Dtnw	1973	6	5	6	1978	1988	-	-	-	-	2030	-	-	2030	Bridge Replacement
036360	I65-110-05722 BNBL	Bridge	I-65 NB , 00.29 N I-70	65/70 Dtnw	1973	6	6	6	1978	1988	-	-	-	-	2030	-	-	2030	Bridge Replacement
036370	I65-110-05721 BSBL	Bridge	I-65 SB, 00.29 N I-70	65/70 Dtnw	1973	6	6	6	1978	1988	-	-	-	-	2030	-	-	2030	Bridge Replacement
036380	I65-110-05723 A	Bridge	Fletcher Ave. over I-65	65/70 Dtnw	1973	7	5	6	1978	1988	-	-	-	-	2030	-	-	2030	Bridge Replacement
036390	I65-110-02427	Bridge		65/70 Dtnw	1973	N/A	N/A	N/A	1978	1988	-	-	2030	2040	2054	-	2030	2030	Super. Replacement
036400	I65-111-05724 A	Bridge	I-65 NB SB & SB CD, 00.66 N I-70	65/70 Dtnw	1973	7	6	6	1978	1988	-	-	-	-	2030	-	-	2030	Bridge Replacement
036410	I65-111-02428	Bridge		65/70 Dtnw	1973	N/A	N/A	N/A	1978	1988	-	-	2030	2040	2054	-	2030	2030	Super. Replacement
036420	I65-111-02429	Bridge		65/70 Dtnw	1973	N/A	N/A	N/A	1978	1988	-	-	2030	2040	2054	-	2030	2030	Super. Replacement
036660	I65-112-02419 C	Bridge	Bridge over 7 streets, Access road, Monorail from 6.88 miles to 7.46 miles west of I-70 and I-465	65/70 Dtnw	1972	6	5	6	1977	1987	-	-	-	-	2030	-	-	2026	Bridge Replacement
036670	I65-113-05669 BSBL	Bridge	I-65 Ramps (5670), 03.61 N I-70	65/70 Dtnw	1970	7	5	7	1975	1985	2030	2040	2050	2060	2070	2030	2050	2030	Deck Replacement
036680	I65-113-05670 B	Bridge	West St on Ramp to I-65 N, 03.61 N I-70	65/70 Dtnw	1970	7	6	7	1975	1985	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
036690	I65-113-05671 BNBL	Bridge	West St on Ramp, 03.65 N I-70	65/70 Dtnw	1970	7	5	7	1975	1985	2030	2040	2050	2060	2070	2030	2050	2030	Deck Replacement
036700	I65-113-05673 D	Bridge	16th Street, 03.69 N I-70	65/70 Dtnw	1969	7	6	7	1974	1984	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
036720	I65-114-05367 C	Bridge	21st Street, 04.16 N I-70	65/70 Dtnw	1968	7	7	7	1973	1983	2005	2030	2040	2050	2060	2005	2040	2040	Super. Replacement
036730	I65-114-05368 D	Bridge	Fall Cr, Parkway N, 04.33 N I-70	I-65	1968	6	7	6	1973	1983	2005	2030	-	-	2045	2005	-	2045	Bridge Replacement



NBI No.	Bridge File No.	Asset Type	Location	Spoke	Year Built	Condition Ratings			Forecasted Work									Next Major Forecasted Work	
						Super	Deck	Sub.	1st Thin Overlay	Rigid Overlay	Deck Replacement	2nd Thin Overlay	Super. Replacement	3rd Thin Overlay	Bridge Replacement	Deck Replacement	Super. Replacement	Year	Scope
036740	I65-114-05368 DRC	Bridge		I-65	1968	7	7	7	1973	1983	2005	2030	2040	2050	2060	2005	2040	2040	Super. Replacement
036750	I65-114-05974 D	Bridge	Pedestrian Walk, 04.59 N I-70	I-65	1969	6	6	7	1974	1984	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
036760	I65-114-05369 C	Bridge	26th Street, 04.78 N I-70	I-65	1968	7	7	7	1973	1983	2005	2030	2040	2050	2060	2005	2040	2040	Super. Replacement
036770	I65-115-05370 C	Bridge	29th Street, 05.09 N I-70	I-65	1968	7	7	7	1973	1983	2005	2030	2040	2050	2060	2005	2040	2040	Super. Replacement
036780	I65-115-05371 C	Bridge	West 30th Street, 05.22 N I-70	I-65	1968	7	7	6	1973	1983	2005	2030	-	-	2045	2005	-	2045	Bridge Replacement
036790	I65-115-04913 C	Bridge	Dr ML King Drive, 05.69 N I-70	I-65	1968	7	7	7	1973	1983	1996	2030	2040	2050	2060	1996	2040	2040	Super. Replacement
036800	I65-116-04914 D	Bridge	Clifton Street, 06.00 N I-70	I-65	1968	6	7	6	1973	1983	-	-	-	-	2030	-	-	2030	Bridge Replacement
036810	PI65-116-05940 A	Bridge	I-65 NB/SB, 06.23 S I-465	I-65	1969	7	7	6	1974	1984	-	-	-	-	2030	-	-	2030	Bridge Replacement
036820	I65-116-04915 D	Bridge	Bridge over White River, Canal, PKWYS, 5.94 mi S of I-465	I-65	1966	6	7	7	1971	1981	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
036830	I65-117-08314 A	Bridge	I-65, 05.36 S I-465	I-65	2000	7	7	8	2005	2030	-	-	2055	2065	2075	-	2055	2055	Super. Replacement
036840	I65-117-08315	Bridge		I-65	2000	7	8	8	2005	2030	-	-	2055	2065	2075	-	2055	2055	Super. Replacement
036850	I65-117-04838 CNBL	Bridge	Bridge over Crooked Creek, 5.05 mi S of I-465	I-65	1964	7	7	7	1969	1979	1996	2030	-	-	2039	1996	-	2039	Bridge Replacement
036860	I65-117-04838 JDSB	Bridge	Crooked Creek, 05.05 S I-465	I-65	1964	6	7	7	1969	1979	1996	2030	-	-	2039	1996	-	2039	Bridge Replacement
036870	I65-118-04839 D	Bridge	I-65 NB/SB 38th Str E/W, 04.70 S I-465	I-65	1964	6	6	5	1969	1979	-	-	-	-	2030	-	-	2030	Bridge Replacement
036880	I65-118-02313 CNBL	Bridge	CSX RR, Guion Road, 03.93 S I-465	I-65	1964	7	7	7	1969	1979	2000	2030	2040	2050	2060	2000	2040	2040	Super. Replacement
036890	I65-118-02313 JCSB	Bridge	CSX RR, Guion Road, 03.93 S I-465	I-65	1964	7	6	7	1969	1979	2000	2030	2040	2050	2060	2000	2040	2040	Super. Replacement
036900	I65-118-04840 BNBL	Bridge	38th St Industr Blvd, 03.80 S I-465	I-65	1964	7	7	7	1969	1979	2000	2030	2040	2050	2060	2000	2040	2040	Super. Replacement
036910	I65-118-04840 JBSB	Bridge	38th St Industr Blvd, 03.80 S I-465	I-65	1964	7	7	7	1969	1979	2000	2030	2040	2050	2060	2000	2040	2040	Super. Replacement
036920	I65-119-04841 CNBL	Bridge	Little Eagle Creek, 03.49 S I-465	I-65	1963	7	7	7	1968	1978	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
036930	I65-119-04841 CSBL	Bridge	Little Eagle Creek, 03.49 S I-465	I-65	1963	7	7	7	1968	1978	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
036940	I65-120-06016 B	Bridge	I-65 Little Eagle Creek, 02.56 S I-465	I-65	1969	8	7	7	1974	1984	-	-	2030	2040	2050	-	2030	2030	Super. Replacement



NBI No.	Bridge File No.	Asset Type	Location	Spoke	Year Built	Condition Ratings			Forecasted Work									Next Major Forecasted Work	
						Super	Deck	Sub.	1st Thin Overlay	Rigid Overlay	Deck Replacement	2nd Thin Overlay	Super. Replacement	3rd Thin Overlay	Bridge Replacement	Deck Replacement	Super. Replacement	Year	Scope
036950	I65-120-04842 CNBL	Bridge	Lafayette Road, 02.00 S I-465	I-65	1963	7	7	7	1968	1978	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
036960	I65-120-04842 CSBL	Bridge	Lafayette Road, 02.00 S I-465	I-65	1963	7	7	7	1968	1978	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
036970	I65-121-04843 D	Bridge	I-65, 01.47 S I-465	I-65	1962	7	7	7	1967	1977	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
036980	I65-122-04844 BNBL	Bridge	West 56th Street, 00.91 S I-465	I-65	1963	7	7	7	1968	1978	2000	2030	-	-	2040	2000	-	2040	Bridge Replacement
036990	I65-122-04844 BSBL	Bridge	West 56th Street, 00.91 S I-465	I-65	1963	7	7	7	1968	1978	2000	2030	-	-	2040	2000	-	2040	Bridge Replacement
037000	I65-122-04569 DNBL	Bridge	I-465, 07.16 S SR 334	I-65	1959	7	7	7	1964	1974	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
037010	I65-122-04569 JDSB	Bridge	I-465, 07.16 S SR 334	I-65	1959	7	7	7	1964	1974	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
037020	(I65)I465-145-04567 DSBL	Bridge	I-65 NB Connector, 00.26 N I-465	I-65	1959	7	7	7	1964	1974	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
041980	I70-072-08533 A	Bridge		I-70 W	2004	8	8	7	2009	2030	-	-	2059	2069	2079	-	2059	2059	Super. Replacement
042018	I70-074-08458	Bridge	Mars Ditch, 01.08 E I-465	I-70 W	1994	N/A	N/A	N/A	1999	2009	-	-	2049	2059	2069	-	2049	2049	Super. Replacement
042020	I70-074-05231 B	Bridge	Bridge over I-70, 01.18 E I-465	I-70 W	1967	7	7	7	1972	1982	2017	2030	2040	2050	2060	2017	2040	2040	Super. Replacement
042030	I70-074-05232 C	Bridge		I-70 W	1967	7	7	6	1972	1982	-	-	-	-	2030	-	-	2030	Bridge Replacement
042040	I70-075-05233 DEBL	Bridge	I-70 EB Minnesota St, 02.62 E I-465	I-70 W	1967	7	7	6	1972	1982	-	-	-	-	2030	-	-	2030	Bridge Replacement
042050	I70-075-05233 CWBL	Bridge	I-70 WB Minnesota St, 02.62 E I-465	I-70 W	1967	7	7	7	1972	1982	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042060	I70-075-02374 CEBL	Bridge	I 70 EB over CSX RR Spur 2.84 mi E of I-465	I-70 W	1967	7	7	7	1972	1982	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042070	I70-075-02374 CWBL	Bridge	I 70 WB over CSX RR Spur 2.84 mi E of I-465	I-70 W	1967	7	7	7	1972	1982	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042080	I70-076-05234 CEBL	Bridge	I 70 EB over Morris Street 3.21 miles E of I-465	I-70 W	1967	7	7	7	1972	1982	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042090	I70-076-05234 JCWB	Bridge	I 70 WB over Morris Street 3.21 mi E of I-465	I-70 W	1967	7	7	7	1972	1982	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042100	I70-076-05235 C	Bridge	I 70 HOLT ROAD, I-70 EB/WB, 3.63 MI E I-465	I-70 W	1967	6	6	7	1972	1982	-	-	2030	2040	2050	-	2030	2030	Super. Replacement



NBI No.	Bridge File No.	Asset Type	Location	Spoke	Year Built	Condition Ratings			Forecasted Work									Next Major Forecasted Work	
						Super	Deck	Sub.	1st Thin Overlay	Rigid Overlay	Deck Replacement	2nd Thin Overlay	Super. Replacement	3rd Thin Overlay	Bridge Replacement	Deck Replacement	Super. Replacement	Year	Scope
042110	I70-076-02376 C	Bridge	I 70 Over CSX Wye Tracks, 3.88 miles E of I-465	I-70 W	1967	7	7	6	1972	1982	-	-	-	-	2030	-	-	2026	Bridge Replacement
042120	I70-077-05391 C	Bridge	I 70 4.10 mi E of I-465 over Tibbs Avenue	I-70 W	1967	7	6	7	1972	1982	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042130	I70-077-05392 C	Bridge	I 70 Over Big Eagle Creek, 3.67 miles W of I-65	I-70 W	1967	7	7	7	1972	1982	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042140	I70-077-05393 BEBL	Bridge	I 70 EB over Warman Avenue, 4.63 mi E of I-465	I-70 W	1967	6	7	7	1972	1982	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042150	I70-077-05393 BWBL	Bridge	I 70 WB over Warman Avenue 4.63 mi E of I-465	I-70 W	1967	6	7	7	1972	1982	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042160	I70-078-05394 B	Bridge	I 70 I-70, BELMONT AVENUE 2.87 MI W I-65	I-70 W	1967	6	7	7	1972	1982	1995	2030	2040	2050	2060	1995	2040	2040	Super. Replacement
042170	I70-078-02385 B	Bridge	I 70 I-70, HARDING STREET, CSX RR, 2.36 MI W I-65	I-70 W	1975	5	7	6	1980	1990	-	-	-	-	2030	-	-	2030	Bridge Replacement
042180	I70-078-05395 A	Bridge	I 70 BRIDGE OVER DIVISION STREET, 2.13 MI W I-65	I-70 W	1973	6	6	6	1978	1988	-	-	-	-	2030	-	-	2030	Bridge Replacement
042190	I70-079-02420 F	Bridge	I 70 01.72 W I-65	I-70 W	1972	6	6	6	1977	1987	-	-	-	-	2030	-	-	2026	Bridge Replacement
042210	I70-079-02416 B	Bridge	I 70 I-70, WEST, MISSOURI STS, 1.31 MI W I-65	I-65/I-70 Downtown	1973	7	6	6	1978	1988	-	-	-	-	2030	-	-	2030	Bridge Replacement
042215	I70-079-06580 C	Bridge	I 70 00.97 W I-65	I-65/I-70 Downtown	1975	6	6	6	1980	1990	-	-	-	-	2030	-	-	2030	Bridge Replacement
042220	I70-079-06581 B	Bridge	I 70 01.16 W I-65	I-65/I-70 Downtown	1975	6	7	7	1980	1990	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042230	I70-079-05643 A	Bridge	I 70 I-70 WB ON RAMP, I-70 WB EXIT RAMP 1.25 MI W I-65	I-65/I-70 Downtown	1973	7	6	6	1978	1988	-	-	-	-	2030	-	-	2030	Bridge Replacement
042240	I70-079-05644 A	Bridge	I 70 01.24 W I-65	I-65/I-70 Downtown	1973	7	6	7	1978	1988	-	-	-	-	2039	-	-	2039	Bridge Replacement
042250	I70-080-05645 B	Bridge	I 70 00.93 W I-65	I-65/I-70 Downtown	1968	6	6	6	1973	1983	-	-	-	-	2030	-	-	2030	Bridge Replacement
042260	I70-080-05646 E	Bridge	I 70 00.88 W I-65	I-65/I-70 Downtown	1973	5	7	7	1978	1988	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042270	I70-080-05647 A	Bridge	I 70 I-70 EXIT RAMP, MERIDIAN STREET 0.83 MI W I-65	I-65/I-70 Downtown	1970	7	6	7	1975	1985	-	-	-	-	2039	-	-	2039	Bridge Replacement





NBI No.	Bridge File No.	Asset Type	Location	Spoke	Year Built	Condition Ratings			Forecasted Work									Next Major Forecasted Work	
						Super	Deck	Sub.	1st Thin Overlay	Rigid Overlay	Deck Replacement	2nd Thin Overlay	Super. Replacement	3rd Thin Overlay	Bridge Replacement	Deck Replacement	Super. Replacement	Year	Scope
042280	170-080-05648 B	Bridge	I 70 I-70, OFF/ON RAMPS, 0.77 MI W I-65	I-65/I-70 Downtown	1973	6	5	6	1978	1988	-	-	-	-	2030	-	-	2030	Bridge Replacement
042290	170-080-02417 C	Bridge	I 70 00.65 W I-65	I-65/I-70 Downtown	1973	6	6	6	1978	1988	-	-	-	-	2030	-	-	2030	Bridge Replacement
042300	170-080-05650 C	Bridge	East St. over I-70, 0.38 mi. W of I-65	I-65/I-70 Downtown	1973	8	7	7	1978	1988	2014	2030	2040	2050	2060	2014	2040	2040	Super. Replacement
042310	170-080-05716 DEBL	Bridge	I 70 Bridge OVER I-65 SB, 00.15 miles W of I-65	I-65/I-70 Downtown	1973	6	9	6	1978	1988	2020	2030	-	-	2060	2020	-	2060	Bridge Replacement
042320	170-080-05717 B	Bridge	I 65 Bridge OVER I-70 EB I-65 TRI-LEVEL, 00.00 JCT I-70	I-65/I-70 Downtown	1973	7	8	7	1978	1988	2015	2030	2040	2050	2060	2015	2040	2040	Super. Replacement
042450	170-084-05703 EEBL	Bridge	Roosevelt Av @ Winter Av, 05.12 W I-465	I-70 E	1974	7	8	7	1979	1989	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042460	170-084-05703 JDWB	Bridge	Roosevelt Av @ Winter Av, 05.12 W I-465	I-70 E	1974	7	8	7	1979	1989	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042470	170-084-02423 EEBL	Bridge	Bloyd Avenue, CSX RR, 04.89 W I-465	I-70 E	1974	7	7	7	1979	1989	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042480	170-084-02423 JDWB	Bridge	Bloyd Avenue, CSX RR, 04.89 W I-465	I-70 E	1974	7	8	7	1979	1989	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042490	170-084-05704 CEBL	Bridge	Rural Street, 04.71 W I-465	I-70 E	1974	7	8	6	1979	1989	-	-	-	-	2030	-	-	2030	Bridge Replacement
042500	170-084-05704 CWBL	Bridge	Rural Street, 04.71 W I-465	I-70 E	1974	7	8	6	1979	1989	-	-	-	-	2030	-	-	2030	Bridge Replacement
042510	170-085-05705 CEBL	Bridge	Dearborn Street, 04.35 W I-465	I-70 E	1974	7	8	7	1979	1989	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042520	170-085-05705 JCWB	Bridge	Dearborn Street, 04.35 W I-465	I-70 E	1974	7	7	7	1979	1989	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042530	170-085-02424 DEBL	Bridge	2 City Streets, CSX RR, 04.25 W I-465	I-70 E	1974	7	7	7	1979	1989	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042540	170-085-02424 JDWB	Bridge	2 City Streets, CSX RR, 04.25 W I-465	I-70 E	1974	7	7	7	1979	1989	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042550	170-085-05706 CEBL	Bridge	Olney Street, 04.17 W I-465	I-70 E	1974	8	8	7	1979	1989	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042560	170-085-05706 CWBL	Bridge	Olney Street, 04.17 W I-465	I-70 E	1974	7	8	7	1979	1989	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042570	170-082-05773 A	Bridge	I-70, 03.93 W I-465	I-70 E	1973	6	6	5	1978	1988	-	-	-	-	2030	-	-	2030	Bridge Replacement

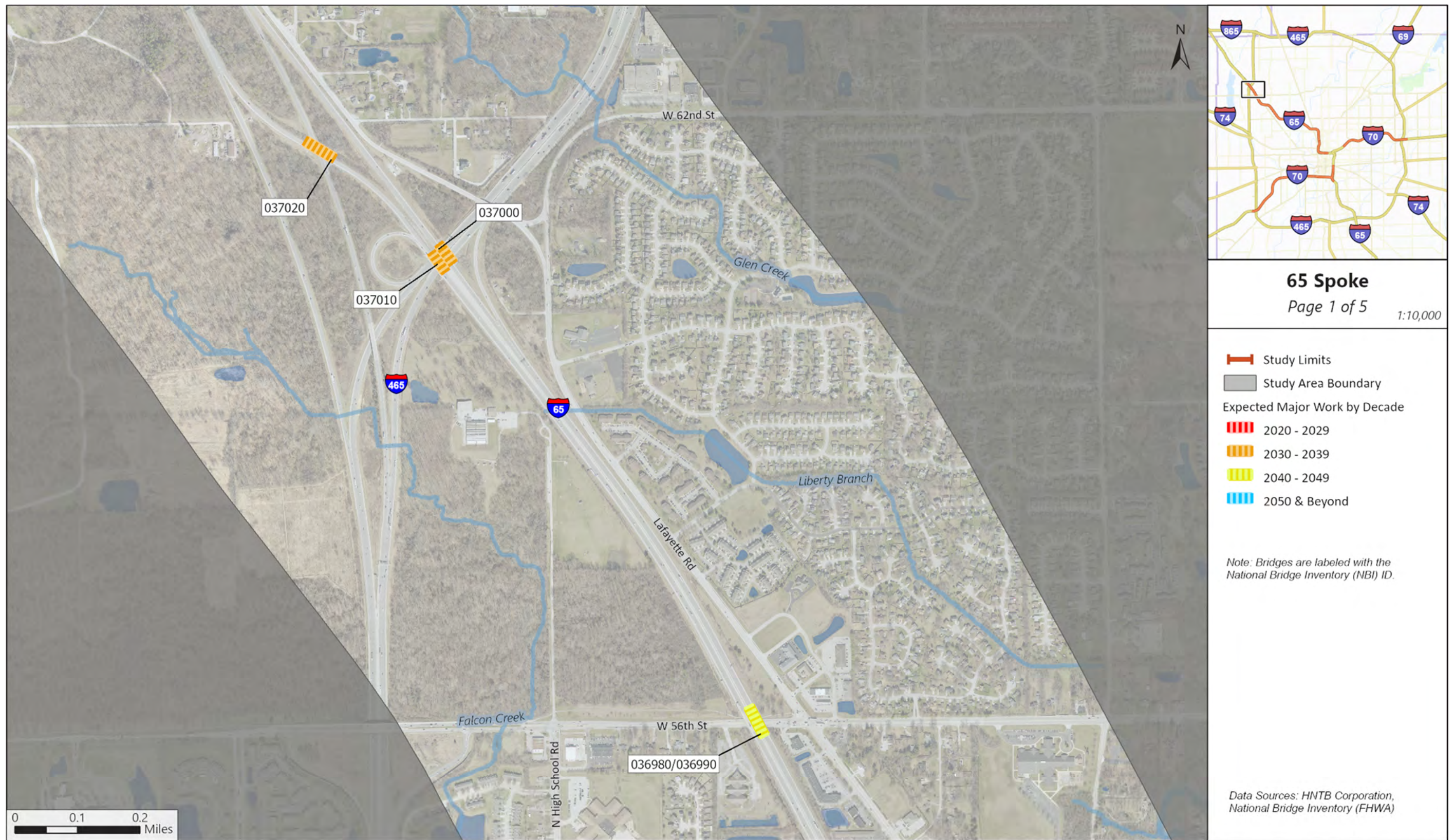


NBI No.	Bridge File No.	Asset Type	Location	Spoke	Year Built	Condition Ratings			Forecasted Work									Next Major Forecasted Work	
						Super	Deck	Sub.	1st Thin Overlay	Rigid Overlay	Deck Replacement	2nd Thin Overlay	Super. Replacement	3rd Thin Overlay	Bridge Replacement	Deck Replacement	Super. Replacement	Year	Scope
042590	170-086-05707 DEBL	Bridge	Pogues Run, 03.10 W I-465	I-70 E	1969	8	8	7	1974	1984	-	-	2007	2020	2039	-	2007	2039	Bridge Replacement
042600	170-086-05707 JDWB	Bridge	Pogues Run, 03.10 W I-465	I-70 E	1969	7	8	7	1974	1984	-	-	2007	2020	2039	-	2007	2039	Bridge Replacement
042610	170-086-05708 B	Bridge	I-70 EB/WB 02.84 W I-465	I-70 E	1969	6	7	6	1974	1984	-	-	-	-	2030	-	-	2030	Bridge Replacement
042620	170-087-05709 DEBL	Bridge	Ritter Avenue, 02.33 W I-465	I-70 E	1969	7	8	7	1974	1984	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042625	170-087-05709 DWBL	Bridge	Ritter Avenue, 02.33 W I-465	I-70 E	1969	7	8	7	1974	1984	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042630	170-087-05710 DEBL	Bridge	Arlington Avenue, 01.81 W I-465	I-70 E	1969	7	7	7	1974	1984	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042640	170-087-05710 JDWB	Bridge	Arlington Avenue, 01.81 W I-465	I-70 E	1969	7	7	7	1974	1984	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042650	170-088-02426 DEBL	Bridge	CSX RR, 01.25 W I-465	I-70 E	1969	7	7	7	1974	1984	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042660	170-088-02426 JDWB	Bridge	CSX RR, 01.25 W I-465	I-70 E	1969	7	7	7	1974	1984	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042665	170-088-05711 CDW	Bridge	Shadeland Ave & Rd, 00.57 W I-465	I-70 E	1990	7	7	7	1995	2005	-	-	2045	2055	2065	-	2045	2045	Super. Replacement
042670	170-088-05711 DEBL	Bridge	Shadeland Ave & Rd, 00.57 W I-465	I-70 E	1967	7	7	7	1972	1982	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042680	170-088-05711 JDWB	Bridge	Shadeland Ave & Rd, 00.57 W I-465	I-70 E	1967	7	8	7	1972	1982	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
042684	170-088-05711 CDEA	Bridge	Shadeland Ave & Rd, 00.57 W I-465	I-70 E	1989	7	7	7	1994	2004	-	-	2044	2054	2064	-	2044	2044	Super. Replacement
042685	170-088-05712 CDW	Bridge	Pleasant Run, 00.42 W I-465	I-70 E	1990	6	6	6	1995	2005	-	-	-	-	2030	-	-	2030	Bridge Replacement
042690	170-088-05712 JDEB	Bridge	Pleasant Run, 00.42 W I-465	I-70 E	1967	8	8	7	1972	1982	-	-	2007	2020	2039	-	2007	2039	Bridge Replacement
042700	170-088-05712 DWBL	Bridge	Pleasant Run, 00.42 W I-465	I-70 E	1967	8	8	7	1972	1982	-	-	2007	2020	2039	-	2007	2039	Bridge Replacement
042704	170-088-05712 CDE	Bridge	Pleasant Run, 00.42 W I-465	I-70 E	1990	7	7	7	1995	2005	-	-	2045	2055	2065	-	2045	2045	Super. Replacement
042705	170-088-07260 ADJ	Bridge	I-70 WB CD, 00.29 W I-465	I-70 E	1990	8	6	7	1995	2005	-	-	2045	2055	2065	-	2045	2045	Super. Replacement
042707	(170)I465-117-08279 B	Bridge	I-70, I-70 WB CD, 00.13 W I-465	I-70 E	2002	7	7	7	2007	2031	-	-	2057	2067	2077	-	2057	2057	Super. Replacement



NBI No.	Bridge File No.	Asset Type	Location	Spoke	Year Built	Condition Ratings			Forecasted Work									Next Major Forecasted Work	
						Super	Deck	Sub.	1st Thin Overlay	Rigid Overlay	Deck Replacement	2nd Thin Overlay	Super. Replacement	3rd Thin Overlay	Bridge Replacement	Deck Replacement	Super. Replacement	Year	Scope
042710	(I465)I70-086-08278 AADJ	Bridge	I-70, 00.14 E I-465	I-70 E	2002	7	7	7	2007	2030	-	-	2057	2067	2077	-	2057	2057	Super. Replacement
042715	I70-089-06462 D	Bridge	I-70, 00.16 E I-465	I-70 E	1977	5	6	6	1982	1992	-	-	-	-	2030	-	-	2030	Bridge Replacement
050000	(I465)I70-086-08277 A	Bridge	I-465 NB/SB, 00.12 S of I-70	I-70 E	2002	8	7	8	2007	2030	-	-	2057	2067	2077	-	2057	2057	Super. Replacement
050010	I465-117-05552 JDNB	Bridge	I-70, WB Ramp, 02.39 S US 36 / SR 67	I-70 E	1966	7	8	7	1971	1981	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
050020	I465-117-05552 DSBL	Bridge	I-70, WB Ramp, 02.39 S US 36 / SR 67	I-70 E	1966	7	8	7	1971	1981	-	-	2030	2040	2050	-	2030	2030	Super. Replacement
050720	(I65)I465-145-04566 B	Bridge		I-65	1959	7	7	6	1964	1974	1994	2030	-	-	2034	1994	-	2034	Bridge Replacement
076620	I70-085-08773 A	Bridge	Sherman Drive, CSX, 03.91 W I-465	I-70 E	2007	8	8	7	2012	2030	-	-	2062	2072	2082	-	2062	2062	Super. Replacement
079628	I70-072-08323 A	Bridge	I-465 NB to I-70 WB, I-70 EB/WB I-465, 00.13 E I-465	I-70 W	2011	7	7	8	2016	2030	-	-	2066	2076	2086	-	2066	2066	Super. Replacement
079630	(I465)I70-073-08324 A	Bridge	Ramp I-70 EB to I-465 NB, I-465 NB/SB, Ramp, 00.13 S I-70	I-70 W	2011	8	8	8	2016	2030	-	-	2066	2076	2086	-	2066	2066	Super. Replacement
079634	I70-072-09219 AEBL	Bridge	I-70 EB I-465, Seerley Creek, 06.53 E SR 267	I-70 W	2011	8	8	8	2016	2030	-	-	2066	2076	2086	-	2066	2066	Super. Replacement
079636	I70-072-08851 AWBL	Bridge	I-70 WB I-465, Seerley Creek, 06.53 E SR 267	I-70 W	2011	8	8	8	2016	2030	-	-	2066	2076	2086	-	2066	2066	Super. Replacement
079648	I70-072-08852 AEBL	Bridge	Ramp I-70 EB to I-465, 00.08 E I-465	I-70 W	2011	8	8	8	2016	2030	-	-	2066	2076	2086	-	2066	2066	Super. Replacement
079650	I70-072-08853 AWBL	Bridge	Ramp I-70 EB to I-465, 00.08 E I-465	I-70 W	2011	8	8	8	2016	2030	-	-	2066	2076	2086	-	2066	2066	Super. Replacement

Figure A-1: Expected Major Bridge Work, 65 Spoke



HTNB, Indiana Geographic Information Office, FHWA, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure A-2: Expected Major Bridge Work, 65 Spoke (cont.)



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Figure A-3: Expected Major Bridge Work, 65 Spoke (cont.)



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Figure A-4: Expected Major Bridge Work, 65 Spoke (cont.)



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Figure A-5: Expected Major Bridge Work, 65 Spoke (cont.)

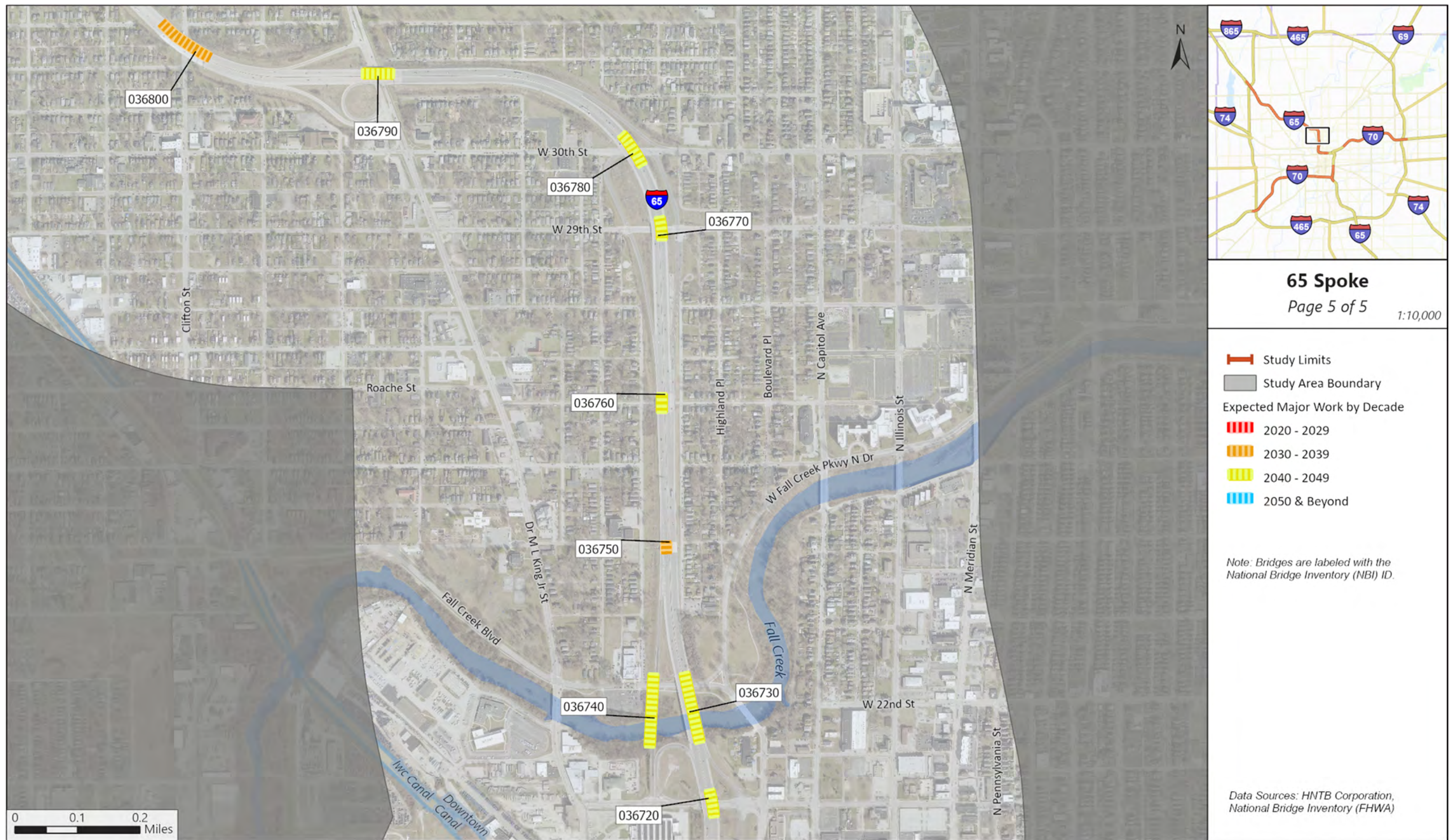


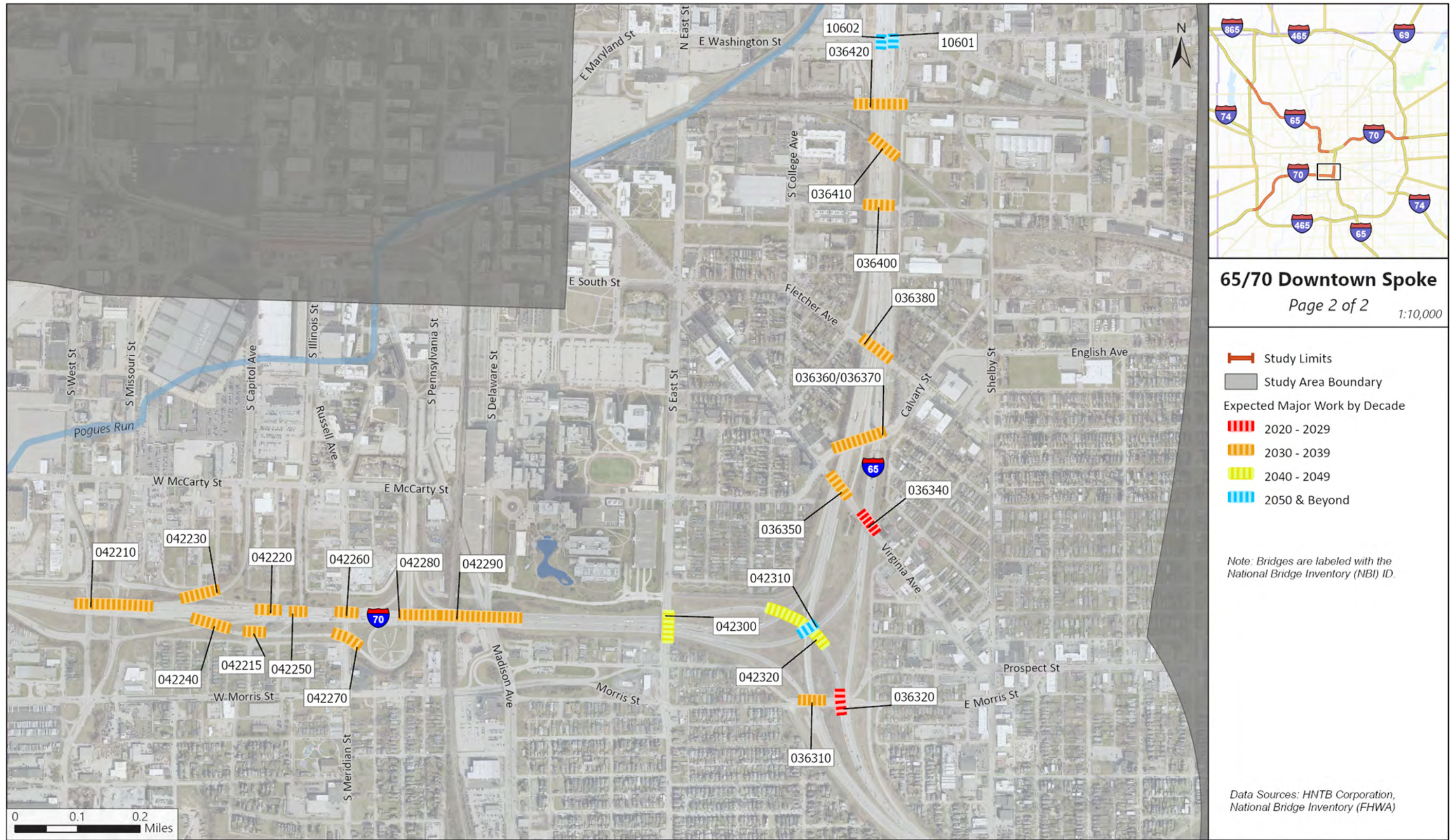


Figure A-6: Expected Major Bridge Work, 65/70 Downtown Spoke



HTNB, Indiana Geographic Information Office, FHWA, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure A-7: Expected Major Bridge Work, 65/70 Downtown Spoke (cont.)



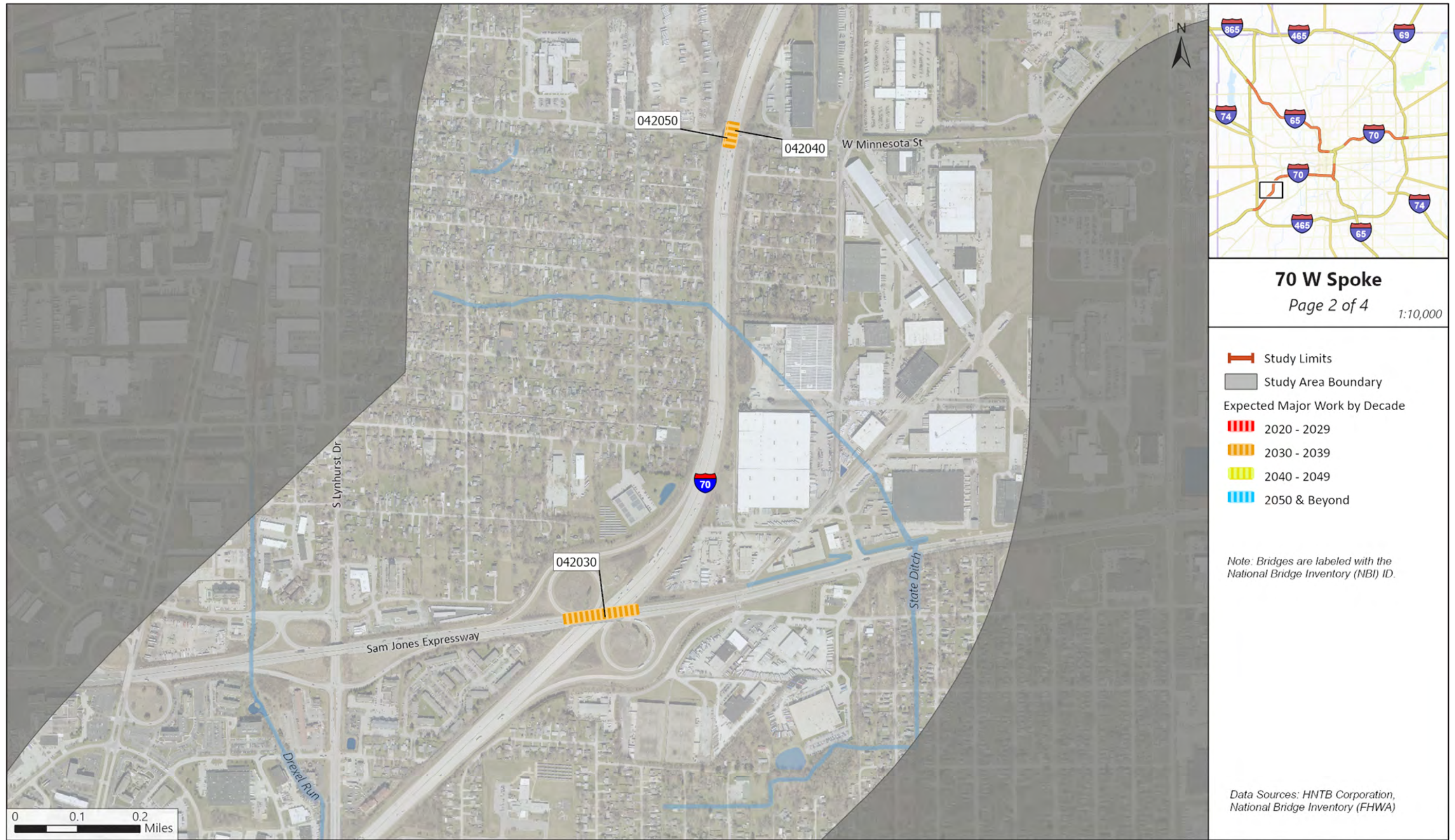
HTNB, Indiana Geographic Information Office, FHWA, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure A-8: Expected Major Bridge Work, 70 W Spoke



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Figure A-9: Expected Major Bridge Work, 70 W Spoke (cont.)



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Figure A-10: Expected Major Bridge Work, 70 W Spoke (cont.)



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Figure A-11: Expected Major Bridge Work, 70 W Spoke (cont.)



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Figure A-12: Expected Major Bridge Work, 70 E Spoke

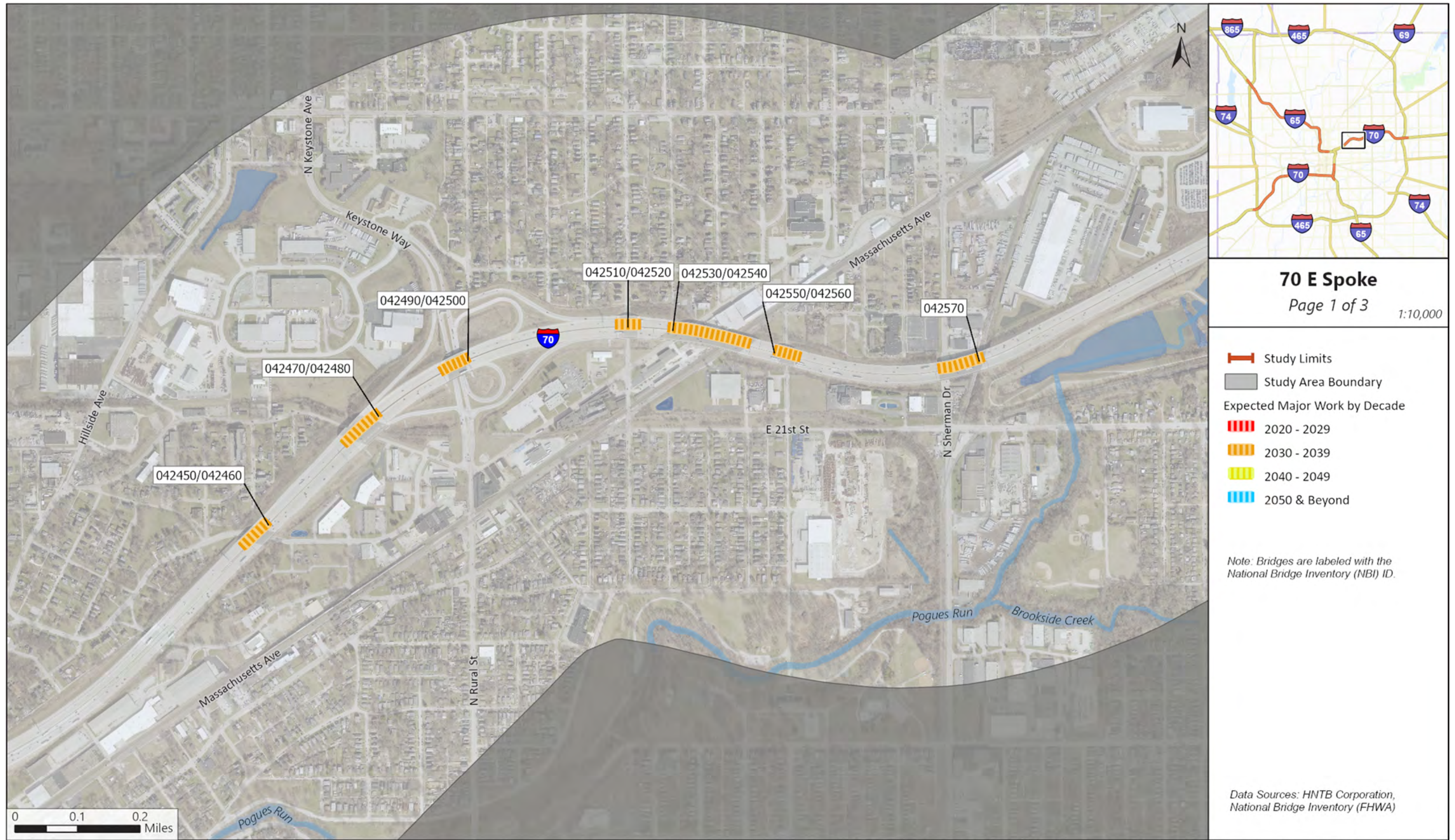
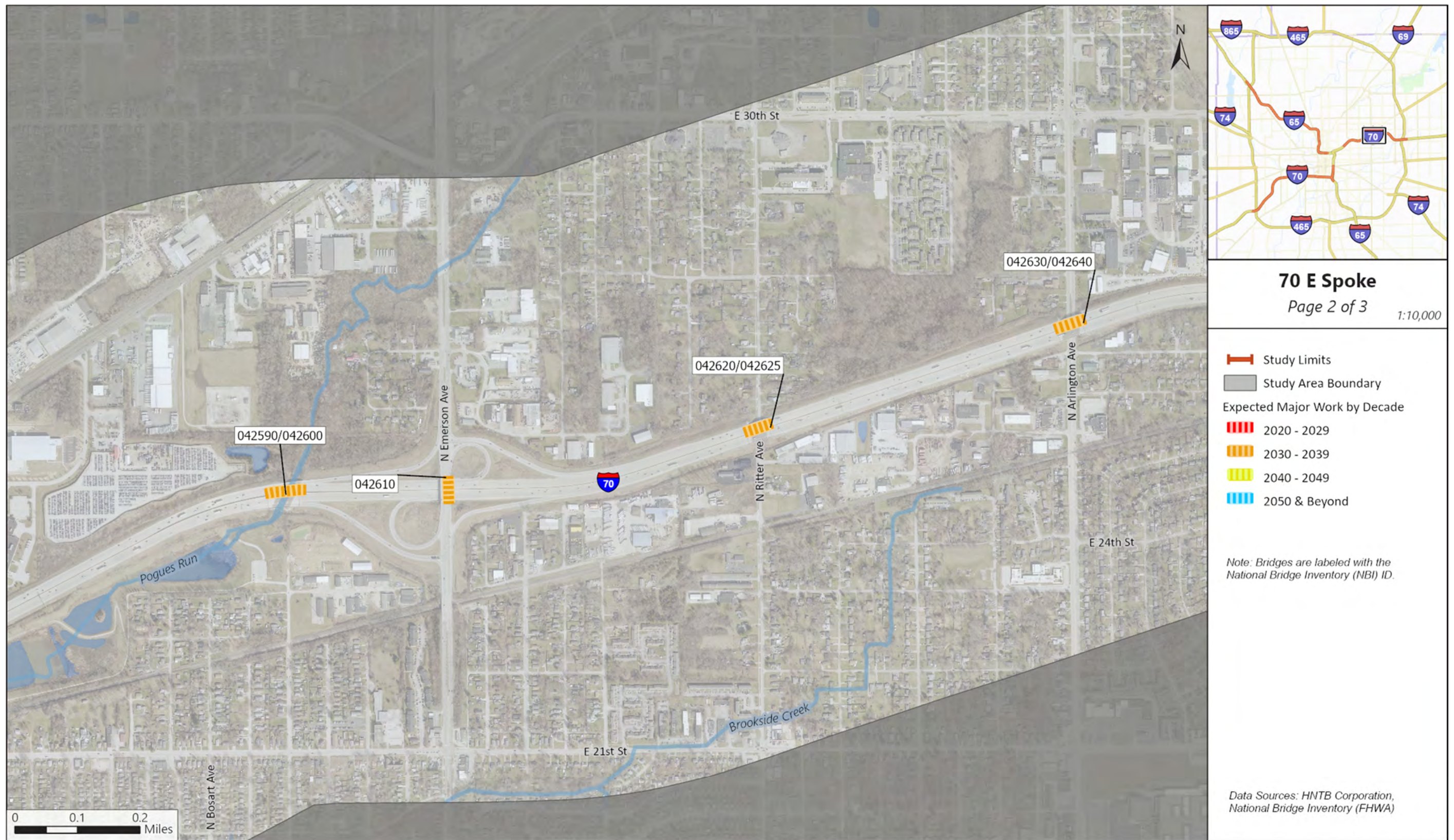


Figure A-13: Expected Major Bridge Work, 70 E Spoke (cont.)



HTNB, Indiana Geographic Information Office, FHWA, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft



Figure A-14: Expected Major Bridge Work, 70 E Spoke (cont.)



HTNB, Indiana Geographic Information Office, FHWA, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

# APPENDIX B: ROADWAY SAFETY

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Table B-1: Summary of Crash Types and Severities, 65 Spoke

CRASH TYPE	SEVERITY			TOTAL	PERCENTAGE
	FATAL AND INCAPACITATING INJURY	NON- INCAPACITATING INJURY	PROPERTY DAMAGE ONLY (PDO)		
Rear End	46	59	672	777	31%
Same Direction Sideswipe	19	29	526	574	23%
Ran Off Road	46	46	338	430	17%
Right Angle	29	34	121	184	7%
Other/Unknown	15	15	133	163	7%
Left Turn	14	18	72	104	4%
Collision With Object in Road	3	2	69	74	3%
Right Turn	1	2	20	23	1%
Backing	0	1	50	51	2%
Head On	6	7	26	39	2%
Non-Collision	4	1	16	21	1%
Left/Right Turn	3	3	15	21	1%
Bike/Ped	3	2	0	5	0%
Opposite Direction Sideswipe	0	0	10	10	0%
Collision with Animal	0	0	12	12	0%
<b>TOTAL</b>	<b>189</b>	<b>219</b>	<b>2,080</b>	<b>2,488</b>	<b>100%</b>

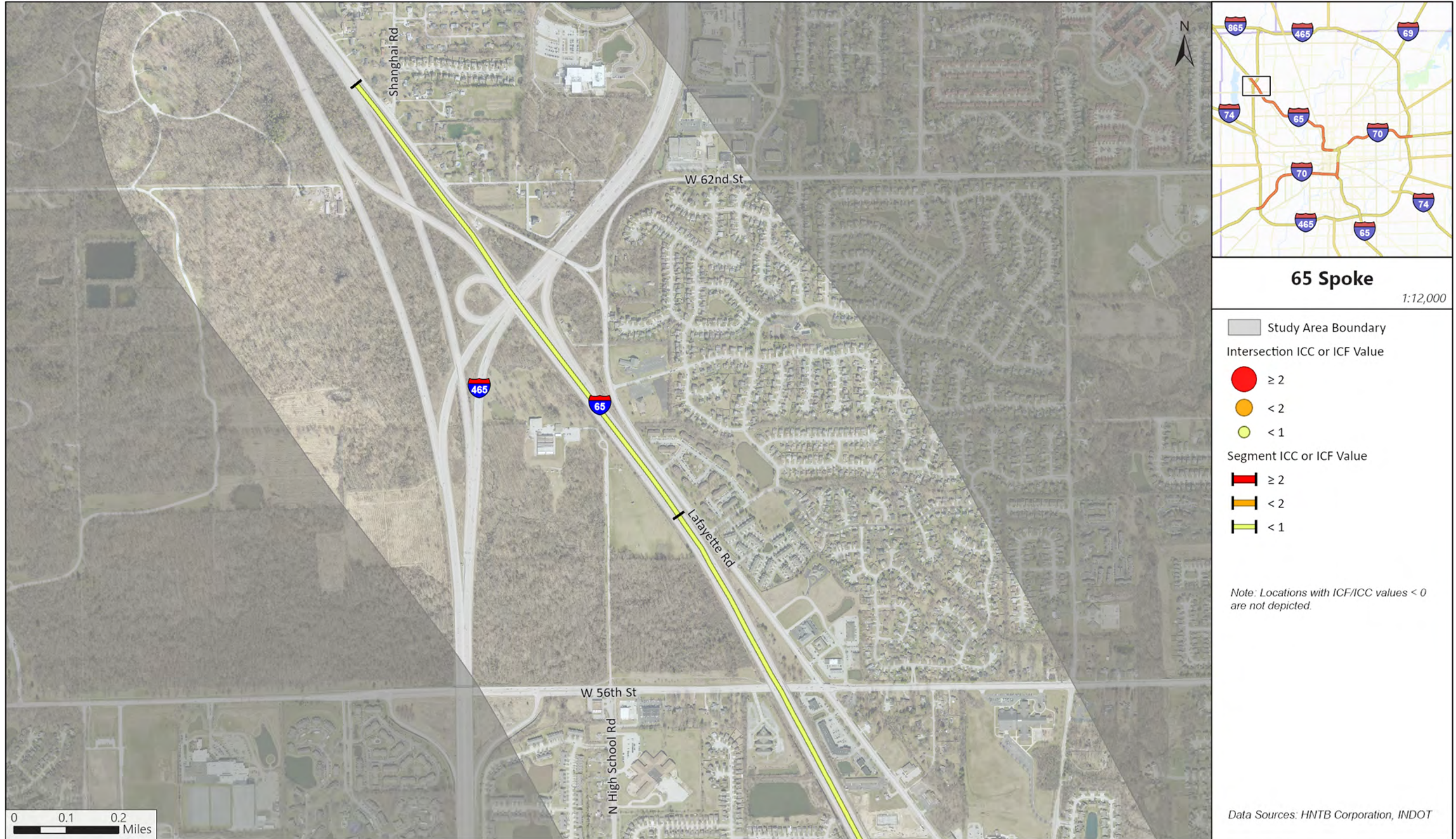
Table B-2: Intersection Analysis Summary, 65 Spoke

LOCATION	FATAL AND INCAPACITATING INJURY	NON- INCAPACITATING INJURY	PROPERTY DAMAGE ONLY	ICF	ICC
I-65 NB Ramp at Lafayette Rd	3	9	41	-0.06	-0.15
I-65 SB Ramp at Lafayette Rd	7	5	63	0.45	0.58
38th St at Industrial Blvd / Commercial Dr	18	18	144	3.68	3.37
Kessler Blvd at 38th St / NB I-65 Ramps	3	3	17	-0.56	-0.10
Kessler Blvd at 38th St / SB I-65 Ramps	4	7	41	0.53	0.62
38th St at Knollton Rd / Cold Springs Rd	8	11	67	0.43	0.77
38th St at Lafayette Rd	7	18	251	1.17	0.01
NB I-65 On Ramp at Dr MLK Jr St	1	2	9	0.15	0.20
Dr MLK Jr St at SB I-65 Ramps	0	1	14	0.32	-0.55
Dr MLK Jr St at 30th St	3	8	41	0.38	0.20
30th St at NB I-65 Ramps	1	4	26	0.54	-0.06
29th St at SB I-65 On-Ramp	3	3	16	0.06	0.51
29th St at NB I-65 Off-Ramp	3	4	58	2.11	0.76
<b>TOTAL</b>	<b>61</b>	<b>93</b>	<b>788</b>	<b>-</b>	<b>-</b>

Table B-3: Interstate Segment Analysis Summary, 65 Spoke

LOCATION	FATAL AND INCAPACITATING INJURY	NON- INCAPACITATING INJURY	PROPERTY DAMAGE ONLY	ICF	ICC
I-65 at I-465	17	15	141	-0.66	-0.42
I-65, I-465 to Lafayette Rd	6	2	59	0.01	-0.27
I-65 at Lafayette Rd	11	6	67	-0.85	-0.61
I-65, Lafayette Rd to 38th St	14	11	65	0.05	0.71
I-65, at 38th St	14	17	174	1.37	-0.02
38th St Frontage	20	26	261	1.71	2.47
I-65, 38th St to Doctor MLK Jr St	9	13	128	0.73	-0.02
I-65 at Doctor MLK Jr St	13	14	199	0.43	0.18
I-65 at 30th St and 29th St	24	22	198	0.49	1.23
<b>TOTAL</b>	<b>128</b>	<b>126</b>	<b>1292</b>	<b>-</b>	<b>-</b>

Figure B-1: Crash Analysis Summary, 65 Spoke



HNTB, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure B-2: Crash Analysis Summary, 65 Spoke (cont.)

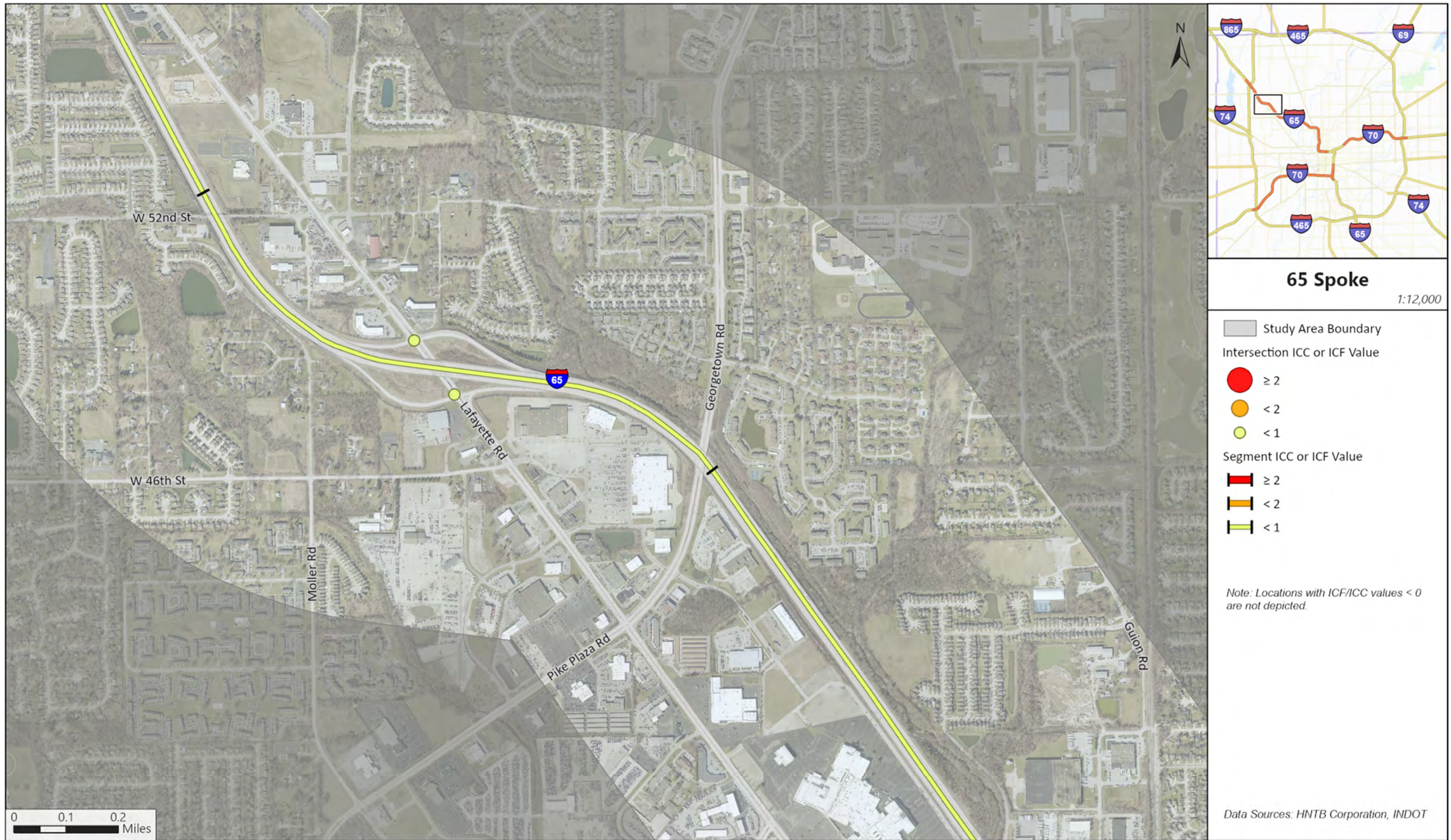
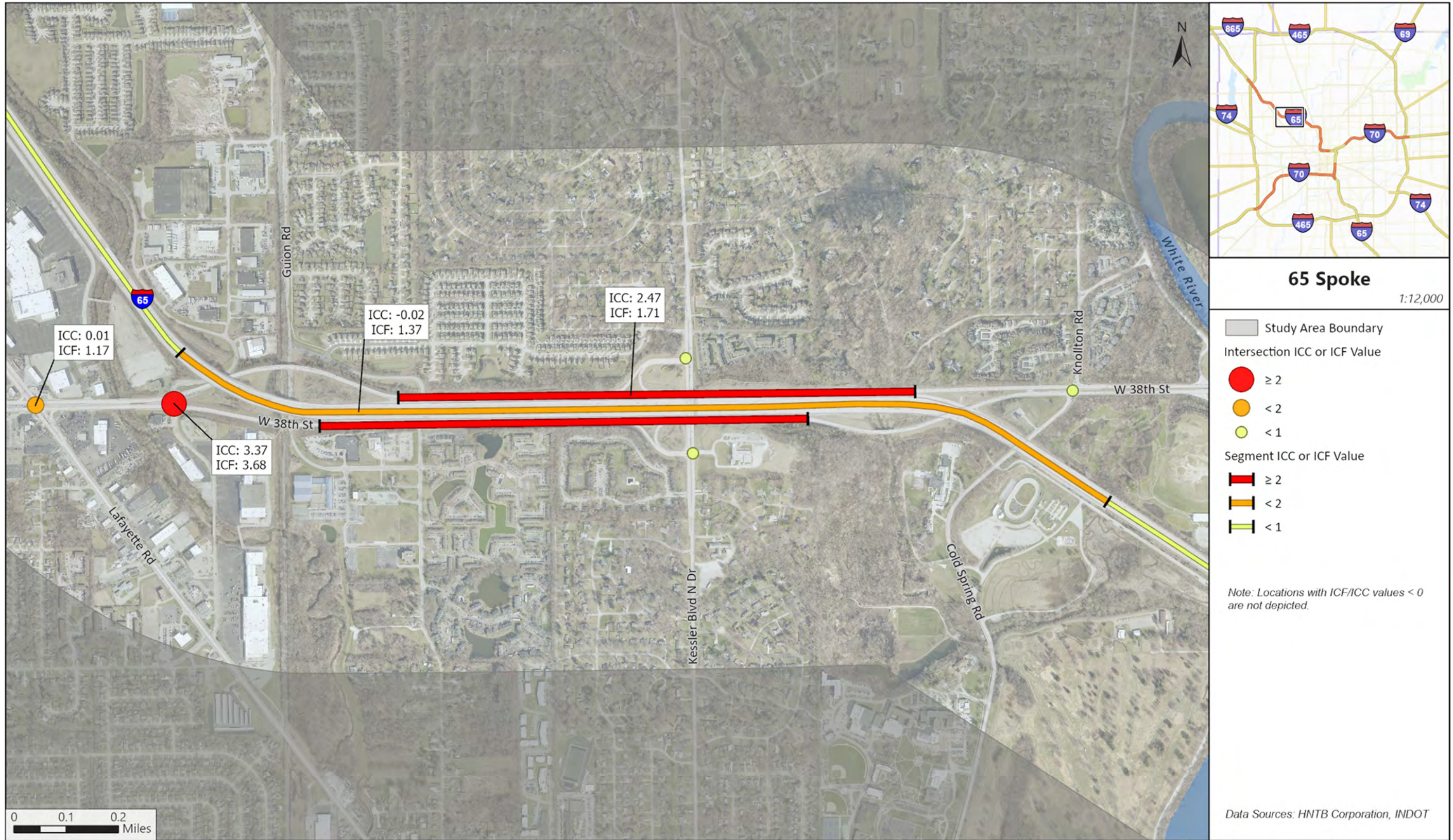
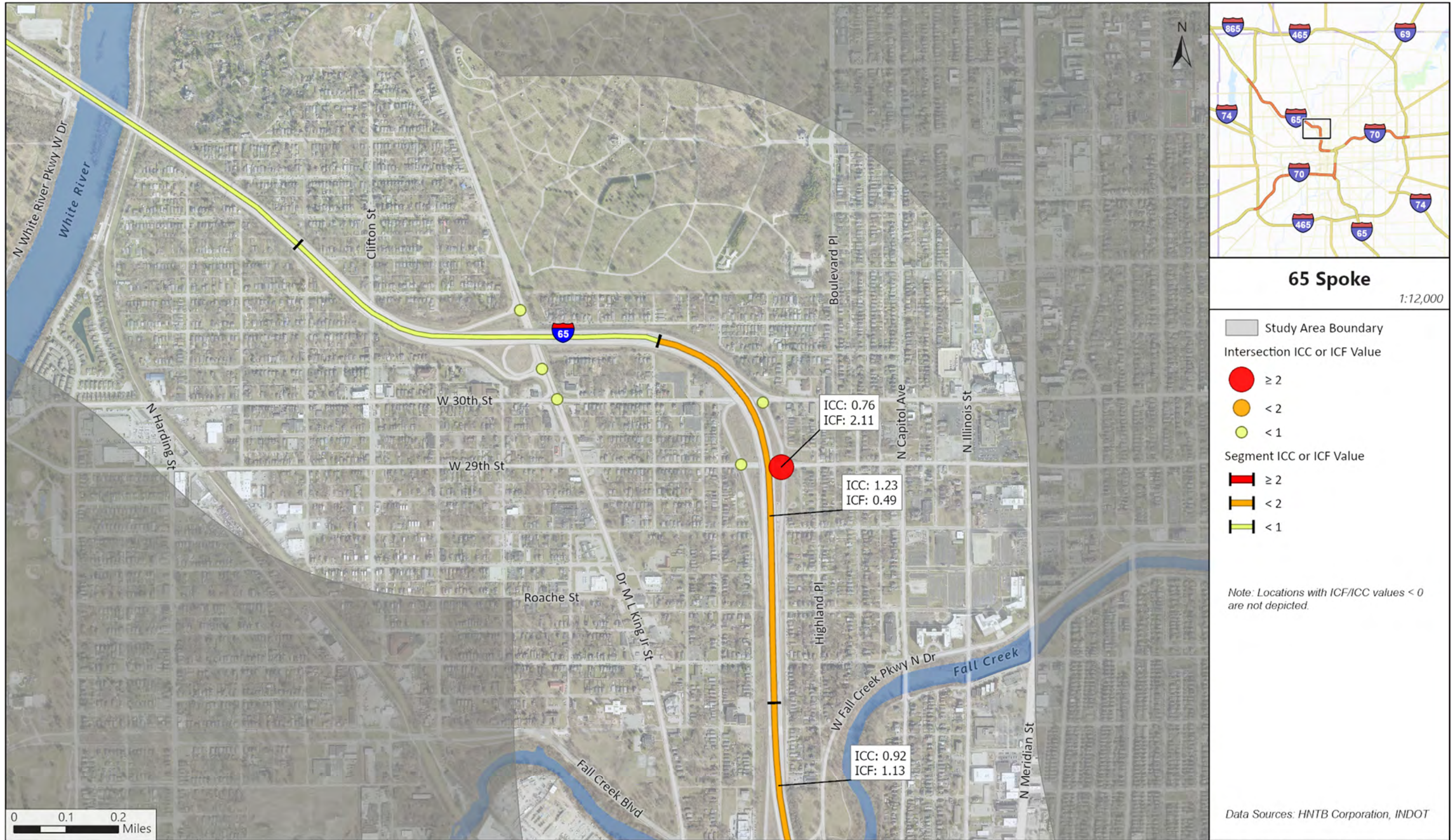


Figure B-3: Crash Analysis Summary, 65 Spoke (cont.)



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Figure B-4: Crash Analysis Summary, 65 Spoke (cont.)



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Table B-4: Summary of Crash Types and Severities, 65/70 Downtown Spoke

CRASH TYPE	SEVERITY			TOTAL	PERCENTAGE
	FATAL AND INCAPACITATING INJURY	NON-INCAPACITATING INJURY	PROPERTY DAMAGE ONLY (PDO)		
Rear End	102	184	2,188	2,474	37%
Same Direction Sideswipe	61	59	1,736	1,856	28%
Ran Off Road	109	78	470	657	10%
Right Angle	65	123	470	658	10%
Other/Unknown	25	34	253	312	5%
Left Turn	13	23	205	241	4%
Collision With Object in Road	3	3	103	109	2%
Right Turn	3	3	124	130	2%
Backing	0	2	49	51	1%
Head On	6	8	28	42	1%
Non-Collision	4	1	44	49	1%
Left/Right Turn	1	1	35	37	1%
Bike/Ped	8	12	6	26	0%
Opposite Direction Sideswipe	0	1	10	11	0%
Collision with Animal	0	0	3	3	0%
<b>TOTAL</b>	<b>400</b>	<b>532</b>	<b>5,724</b>	<b>6,656</b>	<b>100%</b>

Table B-5: Intersection Analysis Summary, 65/70 Downtown Spoke

LOCATION	FATAL AND INCAPACITATING INJURY	NON- INCAPACITATING INJURY	PROPERTY DAMAGE ONLY	ICF	ICC
Dr MLK Jr St at 21st St	5	4	44	0.37	0.58
21st St at SB I-65 Ramps	5	1	14	-0.15	0.97
21st St at NB I-65 Ramps	2	1	10	-0.51	-0.20
21st St at Senate Blvd / Boulevard Place	3	8	41	1.06	0.69
21st St at Capitol Ave	3	5	38	0.41	0.20
SB I-65 and NB I-65 Off-Ramps at West St	0	2	53	1.20	-0.70
11th St at West Street / I-65 & Oscar Robertson Blvd at Dr MLK Jr St	8	17	220	1.05	0.12
10th at Dr MLK Jr St and West St	5	9	182	1.66	0.13
West St at Dr MLK St	0	0	7	-1.28	-1.58
12th St at Illinois St	1	3	22	-0.47	-0.74
12th St at Meridian St	3	4	30	-0.69	-0.74
12th St at Pennsylvania St	1	10	75	1.86	0.17
11th St at Illinois St	1	10	31	0.34	-0.10
11th St at Meridian St	4	6	44	0.64	0.57
11th St at Pennsylvania St	1	8	54	0.99	-0.13
11th St at Delaware St	1	4	23	-0.59	-0.86
Michigan St at Davidson St	3	5	68	3.78	1.31
Michigan St at Pine St	2	5	52	2.02	0.55
Ohio St at College Ave	0	11	43	3.82	1.21
Washington St at College Ave	10	26	198	6.68	3.50
Washington St at SB I-65 & I-70 On-Ramp	3	13	95	0.26	-0.39
Washington St at NB I-65 & I-70 Off-Ramp	4	7	117	0.66	-0.26
Washington St at Southeastern Ave	3	7	52	-0.43	-0.68
Fletcher Ave at SB I-65 & I-70 Off-Ramp	0	1	11	-0.29	-0.89
Calvary St at NB I-65 & I-70 On-Ramp	0	1	5	-0.71	-0.80
East St at Commons Dr	0	2	4	-1.04	-1.12
Prospect St / Morris St at I-65 SB On Ramp	0	0	3	-0.71	-0.73
Morris St at I-65 NB Off-Ramp / Leonard St	1	0	7	-0.19	-0.06
McCarty St at West St	2	0	21	-0.22	-0.31
McCarty St at Missouri St	2	7	29	0.70	0.38
McCarty St at Capitol Ave / WB I-70 On-Ramp	2	3	14	1.60	1.02
McCarty St at Illinois St / EB I-70 Off-Ramp	0	7	20	2.24	0.52
McCarty St at Meridian St / Russell Ave	1	5	28	1.64	0.41

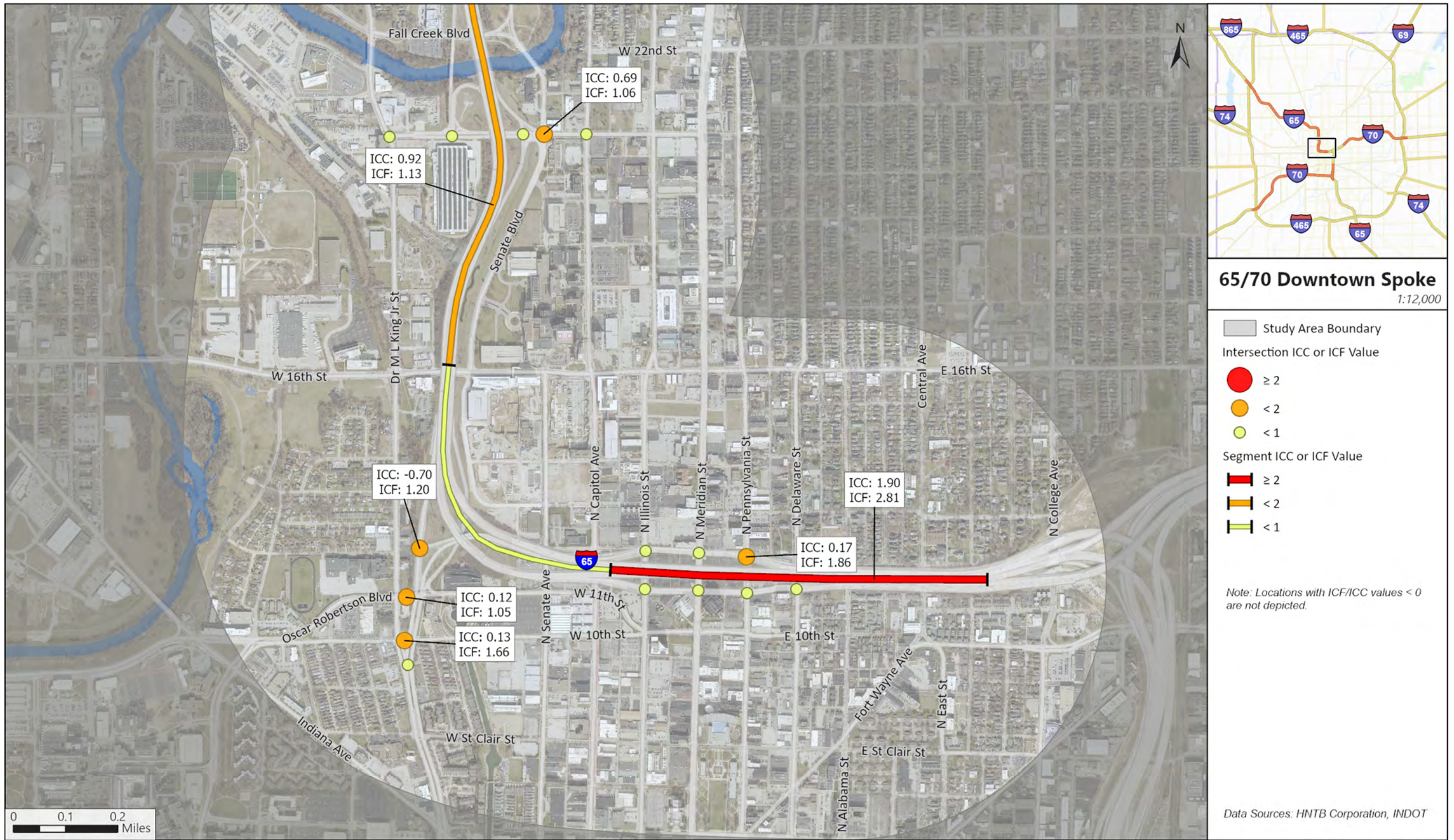


LOCATION	FATAL AND INCAPACITATING INJURY	NON- INCAPACITATING INJURY	PROPERTY DAMAGE ONLY	ICF	ICC
McCarty St at I-70 Ramps / Madison Ave	7	9	77	2.00	1.52
McCarty St at Pennsylvania St	4	3	6	-0.26	1.00
WB I-70 Ramps at West St	5	4	34	0.46	0.77
WB I-70 Ramps at Missouri St	3	1	28	-0.24	-0.21
EB I-70 Ramps at West St	4	2	24	-0.09	0.32
EB I-70 Ramps at Missouri St	1	4	17	-0.31	-0.46
Morris St at West St / Missouri St	11	12	98	2.64	2.35
<b>TOTAL</b>	<b>111</b>	<b>227</b>	<b>1939</b>	<b>-</b>	<b>-</b>

Table B-6: Interstate Segment Analysis Summary, 65/70 Downtown Spoke

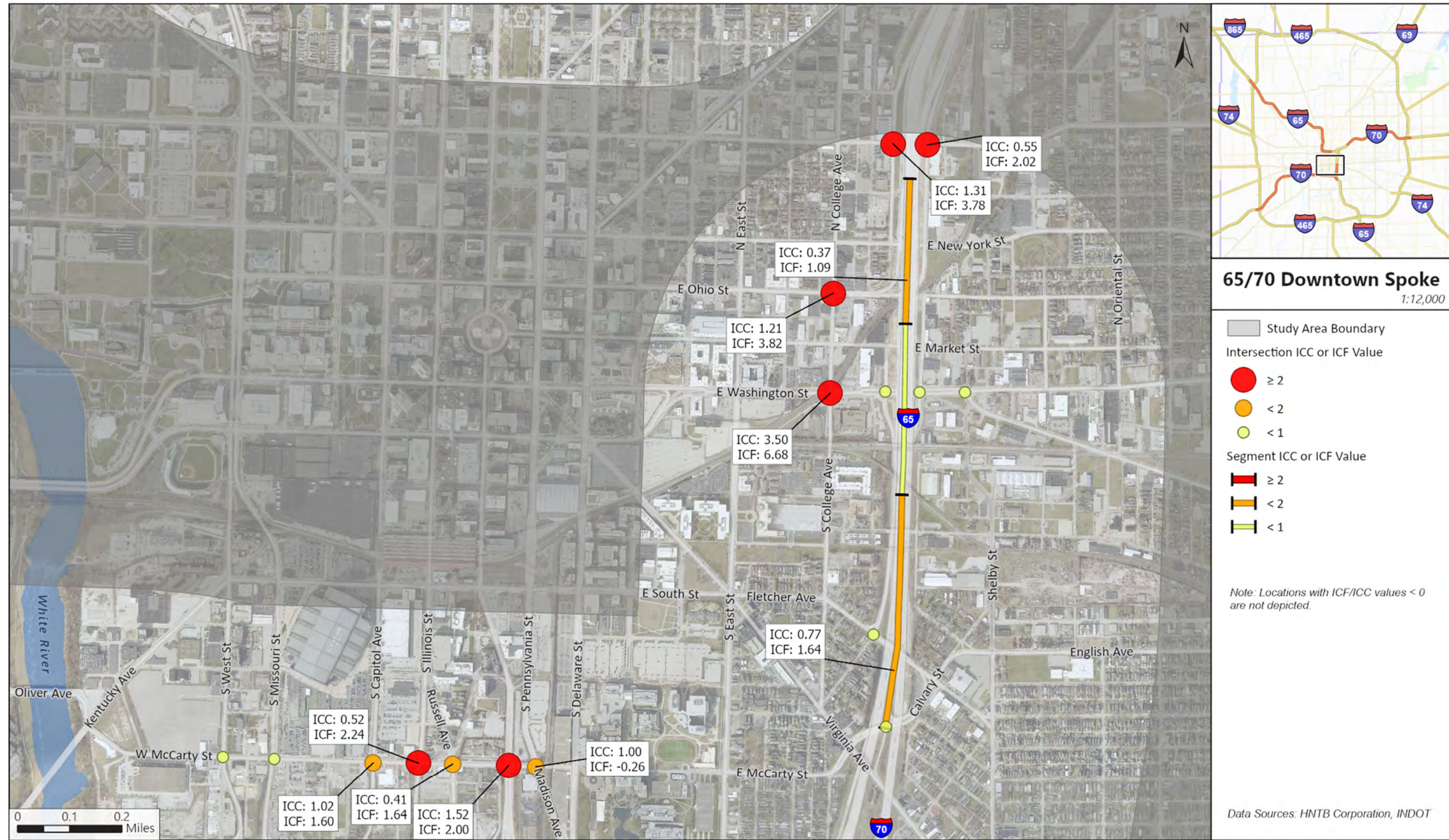
LOCATION	FATAL AND INCAPACITATING INJURY	NON- INCAPACITATING INJURY	PROPERTY DAMAGE ONLY	ICF	ICC
I-65 at 21st St	21	35	326	1.13	0.92
I-65 at West St	11	17	145	-0.26	-0.64
I-65, Illinois St to Park Ave	25	46	488	2.81	1.90
I-70 at Ohio St	11	5	145	1.09	0.37
I-70 at Washington St	9	6	104	0.06	-0.31
I-70 at Fletcher Ave and Calvary St	19	13	292	1.64	0.77
I-65 and I-70 South Split	58	49	584	0.16	0.30
I-70, Kentucky Ave to Madison Ave	34	35	438	1.15	1.51
<b>TOTAL</b>	<b>188</b>	<b>206</b>	<b>2522</b>	<b>-</b>	<b>-</b>

Figure B-5: Crash Analysis Summary, 65/70 Downtown Spoke



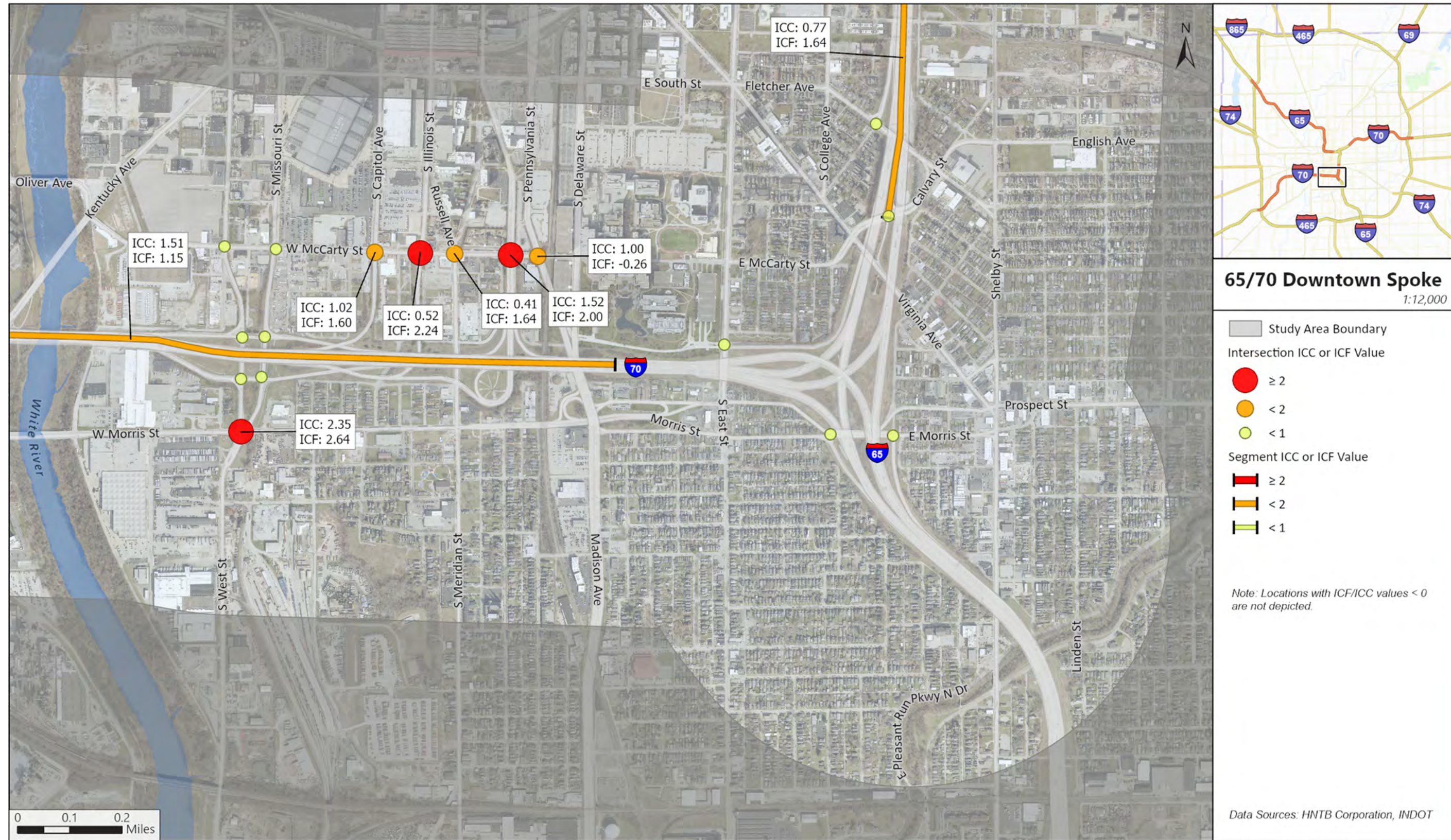
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Figure B-6: Crash Analysis Summary, 65/70 Downtown Spoke (cont.)



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Figure B-7: Crash Analysis Summary, 65/70 Downtown Spoke (cont.)



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Table B-7: Summary of Crash Types and Severities, 70 W Spoke

CRASH TYPE	SEVERITY			TOTAL	PERCENTAGE
	FATAL AND INCAPACITATING INJURY	NON-INCAPACITATING INJURY	PROPERTY DAMAGE ONLY (PDO)		
Rear End	27	24	296	347	32%
Same Direction Sideswipe	15	11	251	277	25%
Ran Off Road	34	20	145	199	18%
Right Angle	7	7	46	60	6%
Other/Unknown	3	7	48	58	5%
Left Turn	4	7	32	43	4%
Collision With Object in Road	1	0	35	36	3%
Right Turn	0	0	6	6	1%
Backing	0	0	16	16	1%
Head On	5	2	9	16	1%
Non-Collision	1	1	8	10	1%
Left/Right Turn	0	0	3	3	0%
Bike/Ped	6	0	0	6	1%
Opposite Direction Sideswipe	1	0	4	5	0%
Collision with Animal	0	0	6	6	1%
<b>TOTAL</b>	<b>104</b>	<b>79</b>	<b>905</b>	<b>1,088</b>	<b>100%</b>

Table B-8: Intersection Analysis Summary, 70 W Spoke

LOCATION	FATAL AND INCAPACITATING INJURY	NON- INCAPACITATING INJURY	PROPERTY DAMAGE ONLY	ICF	ICC
I-70 WB Ramps at Holt Rd	6	3	31	-0.39	0.18
I-70 EB Ramps at Holt Rd	1	3	39	-0.34	-0.93
Morris St at Holt Rd	5	9	72	1.12	0.69
Oliver Ave at Harding St	0	9	67	1.84	-0.09
I-70 WB Ramps at Harding St	3	1	16	-0.69	-0.26
I-70 EB Ramps at Harding St	3	4	37	-0.32	-0.42
<b>TOTAL</b>	<b>18</b>	<b>29</b>	<b>262</b>	<b>-</b>	<b>-</b>

Table B-9: Interstate Segment Analysis Summary, 70 W Spoke

LOCATION	FATAL AND INCAPACITATING INJURY	NON- INCAPACITATING INJURY	PROPERTY DAMAGE ONLY	ICF	ICC
I-70 West at I-465	18	13	163	-0.51	-0.29
I-70 at Sam Jones Expressway	18	5	84	-0.85	-0.30
I-70, Sam Jones Expressway to Holt Rd	10	3	38	-0.73	0.10
I-70 at Holt Rd	13	7	112	-0.60	-0.53
I-70, Holt Rd to Harding St	14	6	76	-0.20	0.26
I-70 at Harding St	13	16	170	-0.15	-0.30
<b>TOTAL</b>	<b>86</b>	<b>50</b>	<b>643</b>	<b>-</b>	<b>-</b>

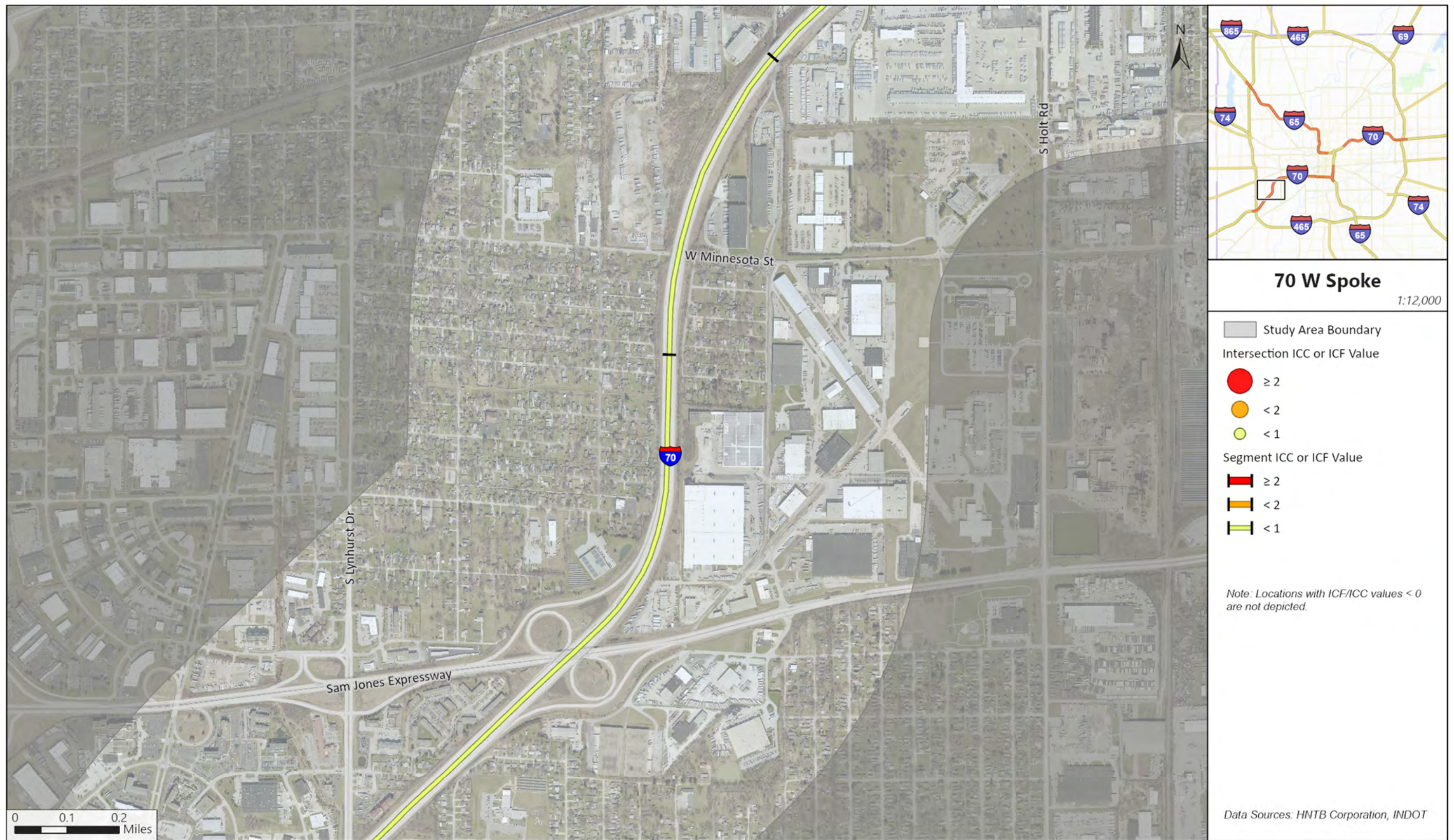


Figure B-8: Crash Analysis Summary, 70 W Spoke



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Figure B-9: Crash Analysis Summary, 70 W Spoke (cont.)



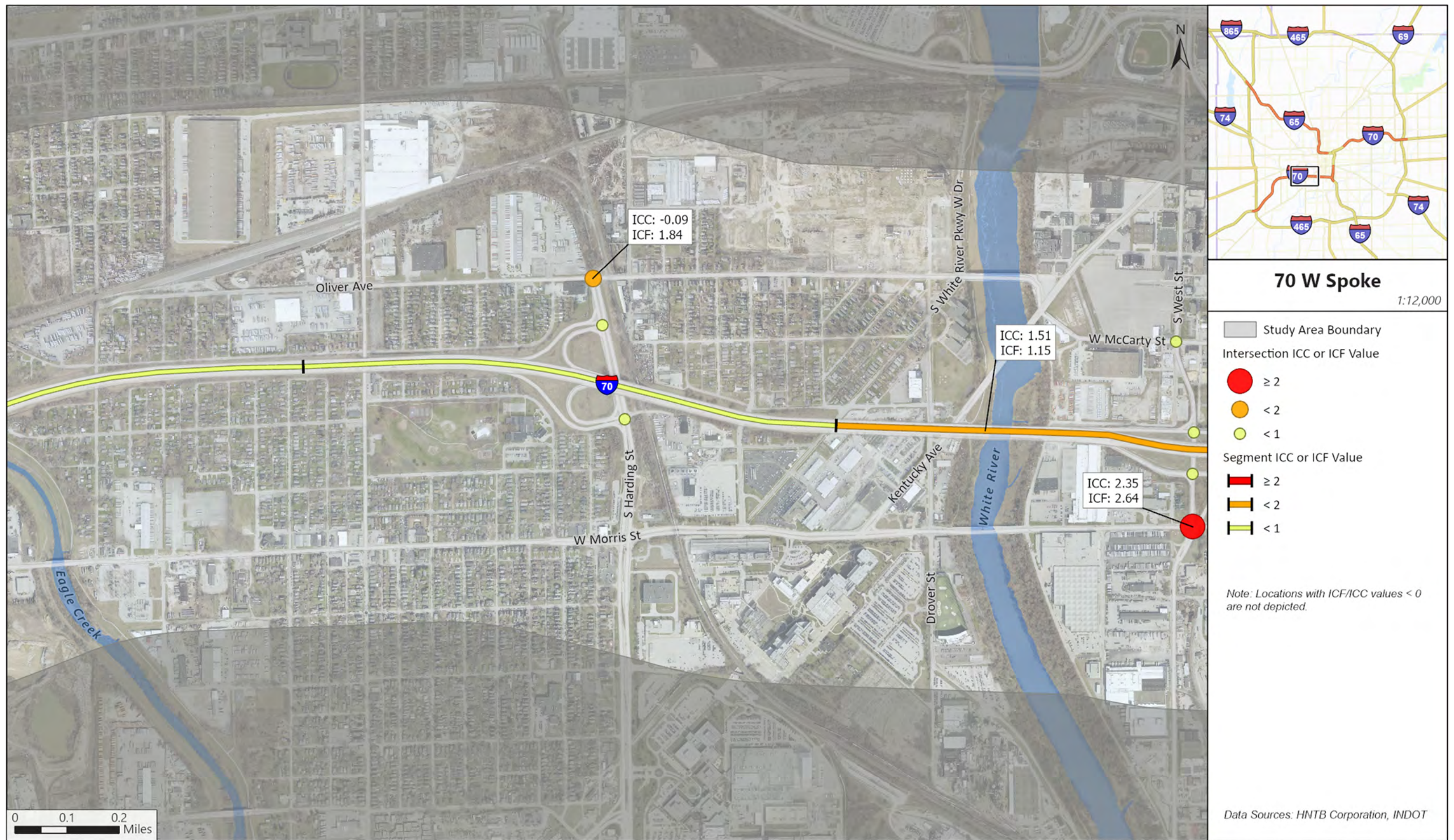
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Figure B-10: Crash Analysis Summary, 70 W Spoke (cont.)



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Figure B-11: Crash Analysis Summary, 70 W Spoke (cont.)



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Table B-10: Summary of Crash Types and Severities, 70 E Spoke

CRASH TYPE	SEVERITY			TOTAL	PERCENTAGE
	FATAL AND INCAPACITATING INJURY	NON-INCAPACITATING INJURY	PROPERTY DAMAGE ONLY (PDO)		
Rear End	46	75	728	849	32%
Same Direction Sideswipe	33	29	668	730	28%
Ran Off Road	68	53	345	466	18%
Right Angle	9	29	102	140	5%
Other/Unknown	19	15	134	168	6%
Left Turn	4	2	43	49	2%
Collision With Object in Road	2	2	107	111	4%
Right Turn	0	0	8	8	0%
Backing	0	0	32	32	1%
Head On	6	0	12	18	1%
Non-Collision	3	3	27	33	1%
Left/Right Turn	1	2	21	24	1%
Bike/Ped	7	3	3	13	0%
Opposite Direction Sideswipe	1	1	6	8	0%
Collision with Animal	0	0	1	1	0%
<b>TOTAL</b>	<b>199</b>	<b>214</b>	<b>2,237</b>	<b>2,650</b>	<b>100%</b>

Table B-11: Intersection Analysis Summary, 70 E Spoke

LOCATION	FATAL AND INCAPACITATING INJURY	NON- INCAPACITATING INJURY	PROPERTY DAMAGE ONLY	ICF	ICC
Keystone Ave at Enterprise Park Pl / 23rd St	2	9	65	0.84	-0.06
WB I-70 Ramps at Keystone Ave	3	7	69	0.28	-0.26
EB I-70 Ramps at Keystone Ave / Rural St	3	2	30	-0.53	-0.54
Rural St at Bloyd Ave / Roosevelt Ave	6	5	55	1.48	1.23
WB I-70 Ramps at Emerson Ave	5	3	41	-0.25	0.00
EB I-70 Ramps at Emerson Ave	5	4	65	0.06	-0.07
WB I-70 Ramps at Shadeland Ave	3	10	74	-0.21	-0.64
EB I-70 Ramps at Shadeland Ave	3	2	53	-0.55	-0.88
21st St at Shadeland Ave	14	19	197	1.34	1.08
<b>TOTAL</b>	<b>44</b>	<b>61</b>	<b>649</b>	<b>-</b>	<b>-</b>

Table B-12: Interstate Segment Analysis Summary, 70 E Spoke

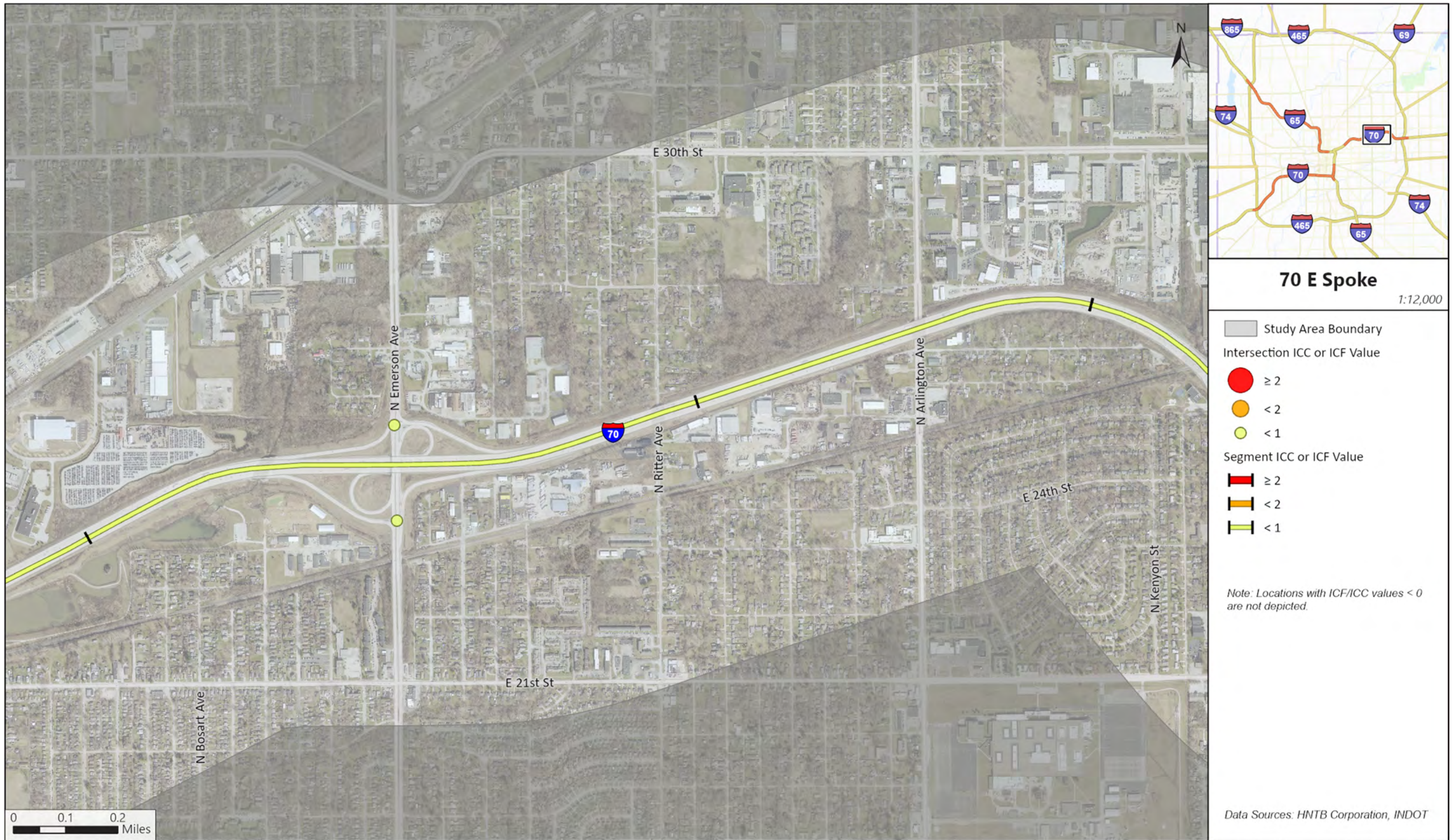
LOCATION	FATAL AND INCAPACITATING INJURY	NON- INCAPACITATING INJURY	PROPERTY DAMAGE ONLY	ICF	ICC
I-70 at Keystone Way	36	34	476	0.97	0.85
I-70, Keystone Way to Emerson Ave	13	14	131	-0.40	-0.82
I-70 at Emerson Ave	33	29	288	0.17	0.56
I-70, Emerson Ave to Shadeland Ave	14	15	130	-0.03	-0.29
I-70 at Shadeland Ave	25	22	237	0.29	0.56
I-70 East at I-465	34	39	326	-0.12	0.07
<b>TOTAL</b>	<b>155</b>	<b>153</b>	<b>1588</b>	<b>-</b>	<b>-</b>

Figure B-12: Crash Analysis Summary, 70 E Spoke



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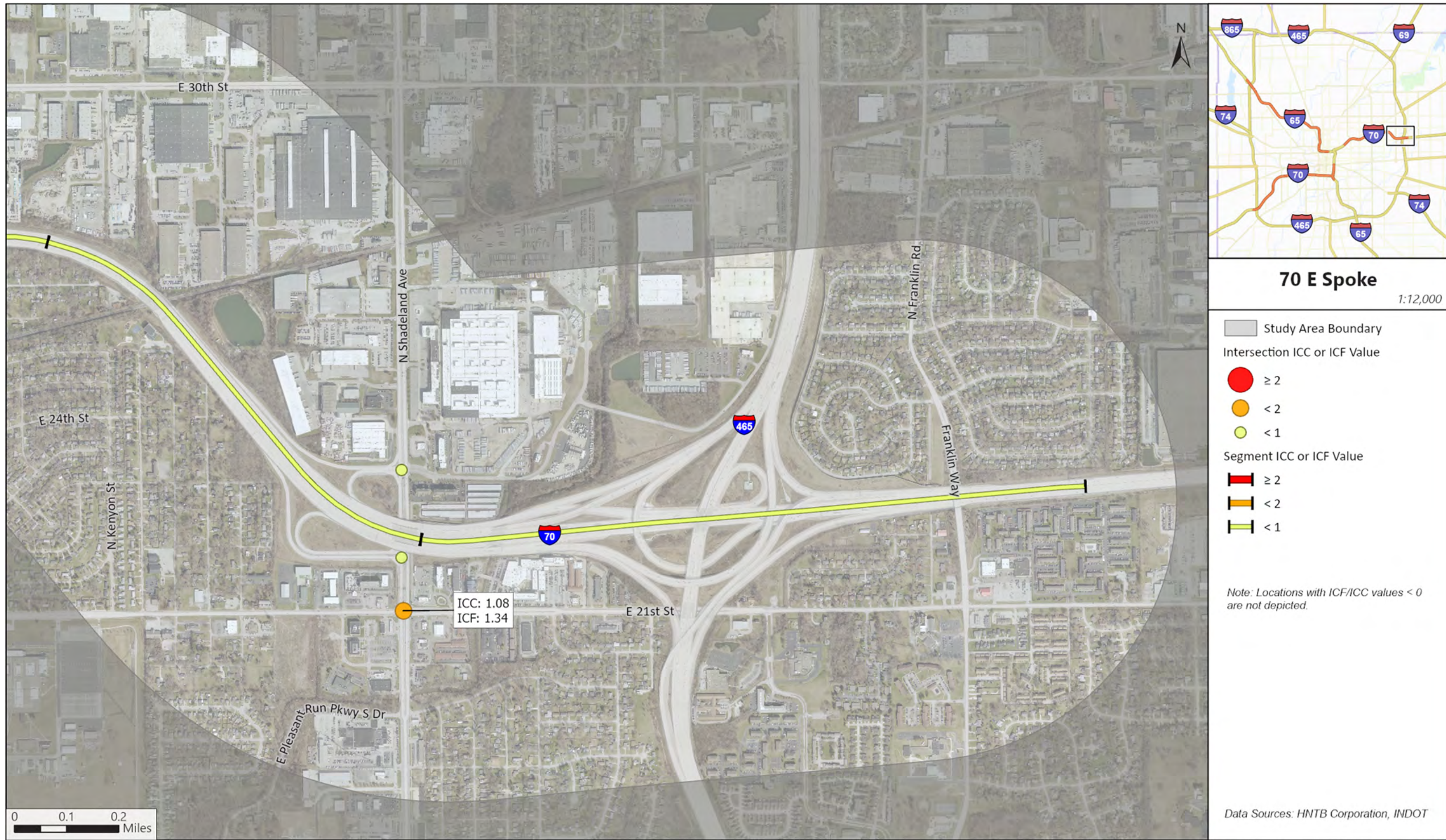
Figure B-13: Crash Analysis Summary, 70 E Spoke (cont.)



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Figure B-14: Crash Analysis Summary, 70 E Spoke (cont.)



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# APPENDIX C: ROADWAY MOBILITY

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Table C-1: Peak Hour Volumes

Spoke	From	To	Peak Hour Volumes (2023 / 2050)			
			Southbound or Westbound		Northbound or Eastbound	
			AM Peak	PM Peak	AM Peak	PM Peak
65	I-465 N Jct	Lafayette Rd	3,100 / 4,000	2,900 / 3,600	3,000 / 3,100	3,400 / 4,300
	Lafayette Rd	38th St	3,800 / 5,100	3,200 / 4,100	3,000 / 3,200	4,100 / 5,300
	38th St	Dr MLK Jr St	4,700 / 6,300	3,700 / 4,800	3,600 / 4,000	5,200 / 6,800
	Dr MLK Jr St	29th & 30th St	5,200 / 7,000	3,900 / 5,200	3,500 / 3,900	5,000 / 6,600
	29th & 30th St	21st St	5,800 / 7,800	4,300 / 5,700	4,200 / 4,800	6,100 / 8,100
65/70 Downtown	21st St	West St	5,700 / 7,600	4,300 / 5,800	5,200 / 6,400	6,000 / 8,000
	West St	Illinois St	3,900 / 4,900	3,700 / 4,700	4,500 / 5,400	4,500 / 5,800
	Illinois St	North Split	3,800 / 4,700	4,000 / 5,200	5,700 / 7,300	4,400 / 5,600
	North Split	Washington St	5,600 / 7,100	6,100 / 7,900	5,100 / 6,200	5,100 / 6,400
	Washington St	South Split	4,800 / 5,900	5,600 / 7,200	6,400 / 8,300	6,200 / 8,000
	South Split	Madison Ave	5,900 / 7,500	4,200 / 5,300	4,000 / 6,300	5,200 / 7,800
	Madison Ave	West St	5,400 / 6,700	4,600 / 5,900	3,900 / 6,200	4,200 / 6,400
70W	I-465 W Jct	Sam Jones Pkwy	2,600 / 2,100	3,700 / 4,500	3,200 / 4,900	2,300 / 3,300
	Sam Jones Pkwy	Holt Rd	3,600 / 3,800	4,900 / 6,300	4,200 / 6,600	2,600 / 3,800
	Holt Rd	Harding St	4,400 / 5,100	5,400 / 7,200	4,800 / 7,500	3,300 / 4,900
	Harding St	West St	4,800 / 5,700	5,300 / 7,000	4,700 / 7,300	3,700 / 5,500
70E	North Split	Keystone Ave	8,400 / 10,200	5,700 / 7,400	5,300 / 7,000	8,200 / 10,600
	Keystone Ave	Emerson Ave	8,200 / 9,900	5,200 / 6,700	4,600 / 6,100	8,000 / 10,400
	Emerson Ave	Shadeland Ave	7,600 / 9,300	5,200 / 6,800	4,300 / 5,800	7,700 / 9,900
	Shadeland Ave	I-465 E Jct	3,600 / 4,300	2,200 / 2,400	1,700 / 2,100	3,200 / 4,200

## Existing (2023) Interstate Operations

The 15 interstate segments that do not meet the LOS D standard in the existing (2023) conditions are generally described below:

### 65 Spoke

- AM Peak Hour: I-65 southbound, between Doctor Martin Luther King Jr. Street and the West Street off-ramp (overlaps with the 65/70 Downtown Spoke)
- PM Peak Hour: I-65 northbound, between the 21<sup>st</sup> Street on-ramp and the 29<sup>th</sup> Street off-ramp

### 65/70 Downtown Spoke

- AM Peak Hour:
  - I-65 southbound, between Doctor Martin Luther King Jr. Street and the West Street off-ramp (overlaps with the 65 Spoke)
  - I-65 northbound, between the North Split and the West Street off-ramp
  - I-70 westbound, between the South Split and the Madison Avenue off-ramp
  - I-65 northbound, south of the South Split
  - I-65 northbound, Washington Street off-ramp
  - I-65 southbound, East Street off-ramp
- PM Peak Hour:
  - I-65 northbound, between West Street on-ramp and 21<sup>st</sup> Street off-ramp
  - I-70 eastbound, between Missouri Street on-ramp and the South Split

### 70 W Spoke

- PM Peak Hour: I-70 westbound, between the Harding Street on-ramp and the Holt Road off-ramp

### 70 E Spoke

- AM Peak Hour:
  - I-70 westbound, between the Shadeland Avenue on-ramp and the Emerson Avenue off-ramp
  - I-70 westbound, between the Emerson Avenue on-ramp and the northbound Rural Street on-ramp
- PM Peak Hour:
  - I-70 eastbound, from east of Rural Street to west of Emerson Avenue
  - I-70 eastbound collector-distributor roadway at Shadeland Avenue

## Future (2050) Interstate Operations

The 29 interstate segments that do not meet the LOS D standard in the future (2050) conditions are generally described below:

### 65 Spoke

- AM Peak Hour:
  - I-65 southbound, from the Lafayette Road on-ramp to north of 38<sup>th</sup> Street
  - I-65 southbound, between the 38<sup>th</sup> Street on-ramp and the North Split (overlaps with the 65/70 Downtown Spoke)
- PM Peak Hour:
  - I-65 southbound, at 38<sup>th</sup> Street on-ramp
  - I-65 southbound, between Dr. Martin Luther King Jr. Street and the North Split (overlaps with the 65/70 Downtown Spoke)
  - Westbound 38<sup>th</sup> Street collector-distributor roadway, between northbound I-65 off-ramp and Kessler Boulevard off-ramp

- I-65 northbound, between the North Split and the 38<sup>th</sup> Street off-ramp (overlaps with the 65/70 Downtown Spoke)

### 65/70 Downtown Spoke

- AM Peak Hour:
  - I-65 southbound, between the 38th Street on-ramp and the North Split (overlaps with the 65 Spoke)
  - I-65 northbound, between the North Split and the West Street off-ramp
  - I-65 northbound, between the West Street on-ramp and the 21<sup>st</sup> St off-ramp
  - I-70 westbound, between the South Split and the Holt Road off-ramp (overlaps with the 70 W Spoke)
  - I-70 eastbound, from the Sam Jones Expressway on-ramp through the South Split (overlaps with the 70 W Spoke)
  - I-65 northbound, diverge segment to westbound I-70
  - I-65 southbound mainline and collector-distributor, from Washington Street through the South Split
- PM Peak Hour:
  - I-65 northbound, between the North Split and the 38<sup>th</sup> Street off-ramp (overlaps with the 65 Spoke)
  - I-65 southbound, between Dr. Martin Luther King Jr. Street and the North Split (overlaps with the 65/70 Downtown Spoke)
  - I-70 westbound, between the South Split and the Sam Jones Expressway off-ramp (overlaps with the 70 W Spoke)
  - I-70 eastbound, from the Missouri Street on-ramp through the South Split
  - I-65 southbound mainline and collector-distributor, from Washington Street through the South Split

### 70 W Spoke

- AM Peak Hour:
  - I-70 westbound, between the South Split and the Holt Road off-ramp (overlaps with the 65/70 Downtown Spoke)
  - I-70 westbound, at the Sam Jones Expressway off-ramp
  - I-70 eastbound, from the Sam Jones Expressway on-ramp through the South Split (overlaps with the 65/70 Downtown Spoke)
- PM Peak Hour:
  - I-70 westbound, between the South Split and the Sam Jones Expressway off-ramp (overlaps with the 65/70 Downtown Spoke)
  - I-70 eastbound, between Harding Street on-ramp and West Street off-ramp

### 70 E Spoke

- AM Peak Hour:
  - I-70 westbound, at the I-465 off-ramp
  - I-70 westbound, between the southbound I-465 on-ramp and the North Split
  - I-70 eastbound collector-distributor roadway, between the Shadeland Avenue off-ramp and the Shadeland Avenue on-ramp
- PM Peak Hour:
  - I-70 westbound, at the Shadeland Ave on-ramp
  - I-70 eastbound, between the North Split and the off-ramp to the collector-distributor roadway at Shadeland Avenue
  - I-70 eastbound collector-distributor roadway at Shadeland Avenue

Table C-2: Existing (2023) Intersection Operations for 65 Spoke

Intersection	Approach	Existing Year (2023)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Lafayette Rd at I-65 NB Ramp (Signalized)	Westbound	D	43.8	D	46.1
	Northbound	A	3.5	A	4.8
	Southbound	A	6.3	A	8.8
	<b>Overall</b>	<b>A</b>	<b>9.1</b>	<b>B</b>	<b>16.8</b>
Lafayette Rd at I-65 SB Ramp (Signalized)	Eastbound	D	52.7	D	52.9
	Northbound	A	8.2	A	7.6
	Southbound	A	4.2	A	4.1
	<b>Overall</b>	<b>A</b>	<b>7.4</b>	<b>A</b>	<b>9.5</b>
38th St at Industrial Blvd / Commercial Dr (Signalized)	Eastbound	A	1.2	C	27.8
	Westbound	C	33.6	C	32.7
	Northbound	D	50.6	D	53.0
	Southbound	D	51.8	E	57.9
	<b>Overall</b>	<b>B</b>	<b>18.1</b>	<b>C</b>	<b>31.5</b>
Kessler Blvd at 38th St / NB I-65 Ramps (Signalized)	Eastbound	B	19.4	B	19.4
	Northbound	A	4.3	A	7.7
	Southbound	A	8.9	B	13.5
	<b>Overall</b>	<b>A</b>	<b>8.0</b>	<b>B</b>	<b>12.1</b>
Kessler Blvd at 38th St / SB I-65 Ramps (Signalized)	Eastbound	B	15.8	B	19.4
	Westbound	B	14.2	B	13.0
	Northbound	A	6.5	B	11.7
	Southbound	A	8.5	B	14.3
	<b>Overall</b>	<b>A</b>	<b>8.6</b>	<b>B</b>	<b>13.9</b>
38th St at Knollton Rd / Cold Springs Rd (Signalized)	Eastbound	C	33.4	D	51.7
	Westbound	C	20.9	D	41.7
	Northbound	D	49.7	F	91.1
	Southbound	C	30.4	C	29.2
	<b>Overall</b>	<b>C</b>	<b>29.8</b>	<b>D</b>	<b>53.5</b>
38th St at Lafayette Rd (Signalized)	Eastbound	D	38.2	D	50.2
	Westbound	B	15.5	A	9.5
	Northbound	D	53.7	E	56.9
	Southbound	D	43.2	E	56.0
	<b>Overall</b>	<b>C</b>	<b>32.9</b>	<b>D</b>	<b>37.4</b>
Dr MLK Jr St at NB I-65 Ramps (Unsignalized)	Northbound Left	C	19.5	C	22.8
Dr MLK Jr St at SB I-65 Ramps (Unsignalized)	Eastbound Left	C	15.2	C	24.2
	Eastbound Right	B	13.8	B	14.7

Intersection	Approach	Existing Year (2023)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Dr MLK Jr St at 30th St (Signalized)	Westbound	C	27.1	C	31.1
	Northbound	A	4.6	B	19.2
	Southbound	A	5.2	B	19.8
	<b>Overall</b>	<b>B</b>	<b>11.1</b>	<b>C</b>	<b>24.5</b>
30th St at NB I-65 Ramps (Signalized)	Westbound	A	6.0	A	5.5
	Northbound	D	48.4	C	34.2
	<b>Overall</b>	<b>B</b>	<b>19.5</b>	<b>B</b>	<b>17.9</b>
29th St at NB I-65 Ramps (Signalized)	Eastbound	C	28.9	C	27.8
	Southbound	A	4.7	A	4.4
	<b>Overall</b>	<b>B</b>	<b>12.6</b>	<b>B</b>	<b>17.3</b>
29th St at SB I-65 Ramps (Signalized)	Eastbound	A	5.6	A	7.6
	Northbound	C	25.0	C	23.9
	<b>Overall</b>	<b>B</b>	<b>19.1</b>	<b>B</b>	<b>19.8</b>

Table C-3: Existing (2023) Intersection Operations, 65/70 Downtown Spoke

Intersection	Approach	Existing Year (2023)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Dr MLK Jr St at 21st St (Signalized)	Westbound	D	35.7	C	33.9
	Northbound	A	8.7	A	8.3
	Southbound	A	5.7	A	4.6
	<b>Overall</b>	<b>B</b>	<b>12.1</b>	<b>A</b>	<b>9.6</b>
21st St at SB I-65 ramps (Signalized)	Eastbound	A	9.1	A	9.7
	Westbound	B	14.6	B	15.6
	Southbound	D	41.5	D	41.7
	<b>Overall</b>	<b>C</b>	<b>24.2</b>	<b>C</b>	<b>23.5</b>
21st St at NB I-65 ramps (Unsignalized)	Eastbound Left	A	8.3	A	8.3
	Northbound Thru/Left	D	31.6	<b>F</b>	<b>52.4</b>
	Northbound Right	B	12.6	B	12.2
21st St at Senate Blvd / Boulevard Place (Signalized)	Eastbound	A	6.5	B	11.9
	Westbound	A	0.4	A	0.6
	Northbound	D	35.3	C	29.1
	Southbound	C	31.3	C	24.2
	<b>Overall</b>	<b>B</b>	<b>13.4</b>	<b>B</b>	<b>15.2</b>
21st St at Capitol Ave (Signalized)	Eastbound	D	38.7	D	39.0
	Westbound	C	32.2	C	26.1
	Southbound	A	8.0	B	10.0
	<b>Overall</b>	<b>B</b>	<b>18.7</b>	<b>C</b>	<b>25.5</b>
SB I-65 Off-ramp at NB I-65 Off-ramp (to 11th St) (Signalized)	Westbound	D	35.3	D	36.6
	Southbound	C	30.5	B	14.3
	<b>Overall</b>	<b>C</b>	<b>32.8</b>	<b>C</b>	<b>27.2</b>
11th St / Oscar Robertson Blvd at Dr MLK Jr St (Signalized)	Westbound	D	41.4	D	46.5
	Northbound	B	17.3	B	10.0
	Southbound	C	20.0	B	10.8
	<b>Overall</b>	<b>C</b>	<b>34.3</b>	<b>C</b>	<b>28.4</b>
11th St at West Street / I-65 (Signalized)	Westbound	D	40.0	D	40.8
	Northbound	A	0.2	A	1.3
	Southbound	A	9.4	A	5.9
	<b>Overall</b>	<b>A</b>	<b>8.1</b>	<b>A</b>	<b>5.4</b>



Intersection	Approach	Existing Year (2023)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
10th St at Dr MLK Jr St (Signalized)	Eastbound	D	44.0	C	32.5
	Northbound	D	40.9	D	39.0
	Southbound	D	49.0	D	47.9
	<b>Overall</b>	<b>D</b>	<b>44.9</b>	<b>D</b>	<b>36.1</b>
10th St at N West St (Signalized)	Eastbound	D	43.1	C	32.4
	Northbound	A	3.9	D	42.0
	Southbound	A	4.8	A	9.9
	<b>Overall</b>	<b>B</b>	<b>13.9</b>	<b>C</b>	<b>29.4</b>
West St at Dr MLK St (Signalized)	Northbound Left	D	51.9	D	47.5
	Southbound	A	7.1	B	11.4
	<b>Overall</b>	<b>B</b>	<b>10.9</b>	<b>B</b>	<b>19.0</b>
12th St at Illinois St (Signalized)	Westbound	B	19.9	C	34.9
	Northbound	A	4.6	A	7.7
	<b>Overall</b>	<b>A</b>	<b>7.7</b>	<b>B</b>	<b>13.0</b>
12th St at Meridian St (Signalized)	Westbound	D	37.2	D	37.1
	Northbound	A	0.9	A	2.1
	Southbound	A	6.5	A	9.1
	<b>Overall</b>	<b>B</b>	<b>10.3</b>	<b>A</b>	<b>7.6</b>
12th St at Pennsylvania St (Signalized)	Westbound	C	33.0	C	32.7
	Southbound	A	6.9	A	5.3
	<b>Overall</b>	<b>B</b>	<b>10.9</b>	<b>A</b>	<b>9.1</b>
11th St at Illinois St (Signalized)	Eastbound	C	26.4	D	38.5
	Northbound	B	12.6	A	5.2
	<b>Overall</b>	<b>C</b>	<b>20.2</b>	<b>A</b>	<b>9.9</b>
11th St at Meridian St (Signalized)	Eastbound	C	34.2	D	36.5
	Northbound	A	9.3	B	11.4
	Southbound	A	1.0	A	1.6
	<b>Overall</b>	<b>B</b>	<b>18.9</b>	<b>B</b>	<b>16.4</b>
11th St at Pennsylvania St (Signalized)	Eastbound	D	37.1	D	39.5
	Southbound	B	14.8	B	15.1
	<b>Overall</b>	<b>C</b>	<b>21.5</b>	<b>C</b>	<b>25.3</b>
11th St at Delaware St (Signalized)	Eastbound	D	37.1	D	38.3
	Northbound	A	4.2	A	7.9

Intersection	Approach	Existing Year (2023)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
	<b>Overall</b>	<b>B</b>	<b>12.7</b>	<b>B</b>	<b>16.2</b>
Michigan St at Davidson St (Signalized)	Westbound	C	24.4	C	23.4
	Southbound	B	11.2	A	6.5
	<b>Overall</b>	<b>B</b>	<b>16.2</b>	<b>B</b>	<b>14.2</b>
Michigan St at Pine St (Signalized)	Westbound	D	37.1	C	33.7
	Northbound	A	3.8	A	6.8
	<b>Overall</b>	<b>C</b>	<b>23.4</b>	<b>B</b>	<b>15.4</b>
Ohio St at College Ave (Signalized)	Eastbound	A	6.8	B	12.6
	Westbound	B	10.2	A	8.7
	Northbound	C	32.2	C	32.9
	<b>Overall</b>	<b>B</b>	<b>18.6</b>	<b>C</b>	<b>21.1</b>
Washington St at College Ave (Signalized)	Eastbound	B	17.0	A	7.9
	Westbound	B	17.7	A	0.6
	Northbound	D	38.8	D	35.3
	<b>Overall</b>	<b>C</b>	<b>20.5</b>	<b>B</b>	<b>11.3</b>
Washington St at SB I-65 & I-70 On-ramp / Davidson St (Signalized)	Eastbound	A	0.2	A	9.4
	Westbound	B	10.6	B	14.4
	<b>Overall</b>	<b>A</b>	<b>8.3</b>	<b>B</b>	<b>12.0</b>
Washington St at NB I-65 & I-70 Off-ramp / Pine St (Signalized)	Eastbound	B	15.6	C	20.1
	Westbound	A	8.6	A	8.4
	Northbound	C	32.6	C	32.2
	<b>Overall</b>	<b>B</b>	<b>17.3</b>	<b>B</b>	<b>19.1</b>
Washington St at Southeastern Ave (Signalized)	Eastbound	A	0.5	A	0.7
	Westbound	A	9.5	A	6.0
	Northbound	D	35.1	D	38.1
	<b>Overall</b>	<b>B</b>	<b>12.0</b>	<b>A</b>	<b>8.1</b>
Fletcher Ave at SB I-65 & I-70 Off-ramp / Pine St (Signalized)	Eastbound	D	37.4	D	40.3
	Westbound	D	42.1	D	40.2
	Northbound	D	45.3	A	0.0
	Southbound	D	38.3	D	39.6
	<b>Overall</b>	<b>D</b>	<b>39.6</b>	<b>D</b>	<b>40.0</b>
Calvary St at NB I-65 & I-70 On-ramp (Unsignalized)	Eastbound Left	A	8.3	A	9.1

Intersection	Approach	Existing Year (2023)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
St at SB I-65 & I-70 Off-ramp (Signalized)	Westbound	D	35.3	D	38.5
	Northbound	A	7.3	A	4.0
	Southbound	A	6.9	A	4.6
	<b>Overall</b>	<b>B</b>	<b>19.5</b>	<b>B</b>	<b>10.6</b>
Morris St at SB I-65 On-ramp (Unsignalized)	Westbound Left	A	8.0	A	8.9
Morris St at NB I-65 Off-ramp (Signalized)	Eastbound	C	29.3	C	27.2
	Northbound	A	4.4	A	6.0
	<b>Overall</b>	<b>B</b>	<b>15.7</b>	<b>C</b>	<b>21.4</b>
West St at McCarty St (Signalized)	Eastbound	D	46.3	D	44.6
	Westbound	D	47.8	D	47.9
	Southbound	A	2.8	A	6.3
	<b>Overall</b>	<b>B</b>	<b>11.9</b>	<b>B</b>	<b>10.7</b>
McCarty St at Missouri St (Signalized)	Eastbound	D	44.7	D	44.5
	Westbound	D	52.4	D	49.6
	Northbound	C	22.6	B	11.3
	<b>Overall</b>	<b>C</b>	<b>25.4</b>	<b>C</b>	<b>22.2</b>
McCarty St at Capitol Ave / WB I-70 On-ramp (Signalized)	Eastbound	A	3.2	A	6.8
	Westbound	A	3.2	A	6.8
	Southbound	C	27.4	C	23.1
	<b>Overall</b>	<b>B</b>	<b>13.8</b>	<b>B</b>	<b>19.7</b>
McCarty St at Illinois St / EB I-70 Off-ramp (Signalized)	Eastbound	A	3.5	A	3.8
	Westbound	A	3.4	A	3.5
	Northbound	C	29.3	C	26.5
	<b>Overall</b>	<b>B</b>	<b>17.2</b>	<b>A</b>	<b>6.3</b>
McCarty St at Meridian St / Russell Ave (Signalized)	Eastbound	D	38.2	D	35.3
	Westbound	C	34.6	C	33.9
	Northbound	A	3.6	A	5.2
	Southbound	A	3.5	A	5.1
	<b>Overall</b>	<b>C</b>	<b>23.6</b>	<b>C</b>	<b>27.5</b>
McCarty St at I-70 ramps / Madison Ave (Signalized)	Eastbound	D	44.0	D	44.6
	Westbound	D	41.9	D	37.7
	Northbound	A	7.9	B	13.0

Intersection	Approach	Existing Year (2023)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
	Southbound	B	11.3	C	21.7
	<b>Overall</b>	<b>B</b>	<b>18.2</b>	<b>C</b>	<b>28.2</b>
McCarty St at Pennsylvania St (Signalized)	Eastbound	D	41.3	D	38.7
	Westbound	C	31.5	D	36.7
	Southbound	A	6.3	A	6.4
	<b>Overall</b>	<b>C</b>	<b>26.4</b>	<b>B</b>	<b>17.4</b>
WB I-70 ramps at West St (Signalized)	Westbound	A	5.8	B	19.8
	Southbound	C	24.3	C	34.9
	<b>Overall</b>	<b>B</b>	<b>14.4</b>	<b>C</b>	<b>32.3</b>
WB I-70 ramps at Missouri St (Signalized)	Westbound	B	13.7	A	5.0
	Northbound	B	15.7	B	19.9
	<b>Overall</b>	<b>B</b>	<b>14.9</b>	<b>B</b>	<b>16.0</b>
EB I-70 ramps at West St (Signalized)	Eastbound	A	7.1	B	13.3
	Southbound	C	22.7	B	19.3
	<b>Overall</b>	<b>B</b>	<b>17.3</b>	<b>B</b>	<b>19.1</b>
EB I-70 ramps at Missouri St (Signalized)	Eastbound	B	15.9	B	18.5
	Northbound	B	16.3	C	21.2
	<b>Overall</b>	<b>B</b>	<b>16.2</b>	<b>B</b>	<b>19.4</b>
West St at Morris St (Signalized)	Eastbound	D	38.4	D	37.9
	Westbound	D	41.2	D	45.4
	Northbound	C	27.6	C	28.3
	Southbound	D	48.5	C	30.0
	<b>Overall</b>	<b>D</b>	<b>36.9</b>	<b>C</b>	<b>34.5</b>

Table C-4: Existing (2023) Intersection Operations, 70 W Spoke

Intersection	Approach	Existing Year (2023)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
I-70 WB Ramps at Holt Rd (Signalized)	Westbound	C	28.9	C	30.8
	Northbound	C	31.3	C	30.1
	Southbound	C	26.1	C	27.5
	<b>Overall</b>	<b>C</b>	<b>28.5</b>	<b>C</b>	<b>29.4</b>
I-70 EB Ramps at Holt Rd (Signalized)	Eastbound	D	44.4	D	39.0
	Northbound	C	27.8	C	27.0
	Southbound	C	34.8	C	33.6
	<b>Overall</b>	<b>D</b>	<b>35.1</b>	<b>C</b>	<b>32.8</b>
Morris St at Holt Rd (Signalized)	Eastbound	C	34.1	D	37.6
	Westbound	D	54.0	D	39.1
	Northbound	B	17.5	B	17.2
	Southbound	B	16.8	B	18.0
	<b>Overall</b>	<b>C</b>	<b>33.8</b>	<b>C</b>	<b>30.7</b>
Oliver Ave at Harding St (Signalized)	Eastbound	B	10.0	A	4.7
	Westbound	A	5.7	A	6.1
	Northbound	D	46.6	C	30.6
	<b>Overall</b>	<b>C</b>	<b>30.1</b>	<b>B</b>	<b>15.1</b>
I-70 WB Ramps at Harding St (Signalized)	Eastbound	D	38.2	D	44.2
	Northbound	B	14.7	C	33.4
	Southbound	B	12.1	B	12.3
	<b>Overall</b>	<b>B</b>	<b>17.6</b>	<b>C</b>	<b>26.8</b>
I-70 EB Ramps at Harding St (Signalized)	Eastbound	D	36.7	D	44.8
	Westbound	D	35.3	A	0.0
	Northbound	B	18.5	B	17.3
	Southbound	A	7.1	B	18.6
	<b>Overall</b>	<b>B</b>	<b>16.8</b>	<b>B</b>	<b>19.7</b>

Table C-5: Existing (2023) Intersection Operations, 70 E Spoke

Intersection	Approach	Existing Year (2023)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Keystone Way at Enterprise Park Pl / 23rd St (Signalized)	Eastbound	D	36.0	D	36.5
	Westbound	D	36.6	D	37.4
	Northbound	A	9.7	A	7.9
	Southbound	B	10.7	A	8.6
	<b>Overall</b>	<b>B</b>	<b>10.5</b>	<b>A</b>	<b>8.9</b>
WB I-70 ramps at Keystone Way (Signalized)	Westbound	D	41.1	D	42.4
	Northbound	A	9.4	A	6.3
	Southbound	A	6.4	A	5.6
	<b>Overall</b>	<b>B</b>	<b>13.7</b>	<b>B</b>	<b>11.1</b>
EB I-70 ramps at Keystone Way / Rural St (Unsignalized)	Eastbound Right	C	21.1	C	16.0
	Southbound Left	A	9.9	B	12.0
Rural St at Bloyd Ave / Roosevelt Ave (Signalized)	Eastbound	C	31.5	C	26.5
	Westbound	C	27.6	B	15.8
	Northbound	A	4.1	B	13.6
	Southbound	A	4.4	B	13.4
	<b>Overall</b>	<b>A</b>	<b>6.8</b>	<b>B</b>	<b>16.0</b>
WB I-70 ramps at Emerson Ave (Signalized)	Eastbound	D	45.9	D	40.7
	Westbound	A	0.2	C	21.5
	Southbound	A	3.1	A	6.5
	<b>Overall</b>	<b>A</b>	<b>7.6</b>	<b>B</b>	<b>20.0</b>
EB I-70 ramps at Emerson Ave (Signalized)	Eastbound	D	39.2	D	39.5
	Northbound	B	10.2	A	9.4
	Southbound	A	0.2	C	22.8
	<b>Overall</b>	<b>B</b>	<b>15.1</b>	<b>C</b>	<b>21.9</b>
WB I-70 ramps at Shadeland Ave / Western Select Dr (Signalized)	Eastbound	D	52.4	D	37.0
	Westbound	D	37.7	D	36.7
	Northbound	B	12.9	B	10.6
	Southbound	C	22.6	C	20.2
	<b>Overall</b>	<b>C</b>	<b>20.2</b>	<b>B</b>	<b>18.1</b>
EB I-70 ramps at Shadeland Ave (Signalized)	Eastbound	D	36.5	D	41.9
	Northbound	A	4.6	B	10.1
	Southbound	A	0.2	A	0.3

Intersection	Approach	Existing Year (2023)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
	<b>Overall</b>	<b>A</b>	<b>7.1</b>	<b>A</b>	<b>8.5</b>
East 21st St at Shadeland Ave (Signalized)	Eastbound	D	53.3	E	58.1
	Westbound	D	37.3	D	50.8
	Northbound	C	29.9	C	32.6
	Southbound	C	22.7	B	17.6
	<b>Overall</b>	<b>C</b>	<b>31.5</b>	<b>C</b>	<b>33.6</b>

Table C-6: Future No-Build (2050) Intersection Operations, 65 Spoke

Intersection	Approach	Future No Build (2050)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Lafayette Rd at I-65 NB Ramp (Signalized)	Westbound	D	44.1	D	42.7
	Northbound	B	13.5	D	41.4
	Southbound	A	9.4	C	28.6
	<b>Overall</b>	<b>B</b>	<b>14.1</b>	<b>D</b>	<b>37.4</b>
Lafayette Rd at I-65 SB Ramp (Signalized)	Eastbound	D	50.1	D	49.4
	Northbound	C	22.7	C	34.5
	Southbound	C	28.5	D	49.6
	<b>Overall</b>	<b>C</b>	<b>27.9</b>	<b>D</b>	<b>43.3</b>
38th St at Industrial Blvd / Commercial Dr (Signalized)	Eastbound	A	1.4	F	100.0
	Westbound	E	56.9	F	96.6
	Northbound	D	51.5	D	54.1
	Southbound	D	51.4	E	63.6
	<b>Overall</b>	<b>C</b>	<b>28.9</b>	<b>F</b>	<b>96.4</b>
Kessler Blvd at 38th St / NB I-65 Ramps (Signalized)	Eastbound	C	23.8	D	48.8
	Northbound	A	6.4	B	12.7
	Southbound	B	11.4	C	21.2
	<b>Overall</b>	<b>B</b>	<b>10.5</b>	<b>C</b>	<b>23.2</b>
Kessler Blvd at 38th St / SB I-65 Ramps (Signalized)	Eastbound	C	21.6	E	63.1
	Westbound	B	15.9	B	15.5
	Northbound	B	10.4	B	12.4
	Southbound	B	14.0	B	15.6
	<b>Overall</b>	<b>B</b>	<b>13.4</b>	<b>C</b>	<b>21.9</b>
38th St at Knollton Rd / Cold Springs Rd (Signalized)	Eastbound	F	143.5	F	219.7
	Westbound	D	49.0	F	88.4
	Northbound	F	131.4	F	230.0
	Southbound	D	36.5	C	32.1
	<b>Overall</b>	<b>F</b>	<b>97.7</b>	<b>F</b>	<b>168.6</b>
38th St at Lafayette Rd (Signalized)	Eastbound	F	130.7	F	185.1
	Westbound	C	26.1	D	40.8
	Northbound	F	115.3	F	139.9
	Southbound	D	43.6	F	150.0
	<b>Overall</b>	<b>F</b>	<b>84.3</b>	<b>F</b>	<b>120.0</b>



Intersection	Approach	Future No Build (2050)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Dr MLK Jr St at NB I-65 Ramps (Unsignalized)	Northbound Left	E	45.2	F	124.6
Dr MLK Jr St at SB I-65 Ramps (Unsignalized)	Eastbound Left	C	21.2	F	56.0
	Eastbound Right	C	20.8	D	25.7
Dr MLK Jr St at 30th St (Signalized)	Eastbound	C	23.5	F	86.2
	Westbound	B	18.3	E	55.6
	Northbound	B	11.2	C	28.0
	Southbound	B	12.5	C	20.9
	<b>Overall</b>	<b>B</b>	<b>15.0</b>	<b>D</b>	<b>38.3</b>
30th St at NB I-65 Ramps (Signalized)	Eastbound	A	9.8	B	15.3
	Westbound	B	13.9	B	18.8
	Northbound	C	24.9	B	17.0
	<b>Overall</b>	<b>B</b>	<b>17.6</b>	<b>B</b>	<b>17.5</b>
29th St at NB I-65 Ramps (Signalized)	Eastbound	D	47.3	D	38.9
	Westbound	D	37.8	C	26.7
	Southbound	D	47.2	B	11.2
	<b>Overall</b>	<b>D</b>	<b>43.6</b>	<b>C</b>	<b>27.0</b>
29th St at SB I-65 Ramps (Signalized)	Eastbound	B	15.8	D	37.6
	Westbound	C	21.5	C	34.8
	Northbound	C	20.9	C	24.6
	<b>Overall</b>	<b>C</b>	<b>20.3</b>	<b>C</b>	<b>27.4</b>

Table C-7: Future No-Build (2050) Intersection Operations, 65/70 Downtown Spoke

Intersection	Approach	Future No Build (2050)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Dr MLK Jr St at W 21 <sup>st</sup> St (Signalized)	Westbound	D	46.0	D	36.4
	Northbound	B	14.7	B	14.5
	Southbound	B	10.3	A	9.1
	<b>Overall</b>	<b>B</b>	<b>18.2</b>	<b>B</b>	<b>14.4</b>
21 <sup>st</sup> St at SB I-65 ramps (Signalized)	Eastbound	B	17.9	B	17.6
	Westbound	C	29.3	C	28.5
	Southbound	D	49.0	D	49.3
	<b>Overall</b>	<b>C</b>	<b>33.7</b>	<b>C</b>	<b>32.2</b>
21 <sup>st</sup> St at NB I-65 ramps (Unsignalized)	Eastbound Left	A	9.1	A	9.2
	Northbound Thru/Left	F	444.0	F	749.6
	Northbound Right	C	23.9	C	18.4
21 <sup>st</sup> St at Senate Blvd / Boulevard Place (Signalized)	Eastbound	B	15.3	C	22.5
	Westbound	A	2.6	A	5.8
	Northbound	C	29.2	C	34.0
	Southbound	C	23.2	B	19.2
	<b>Overall</b>	<b>B</b>	<b>16.0</b>	<b>C</b>	<b>22.3</b>
21 <sup>st</sup> St at N Capitol Ave (Signalized)	Eastbound	E	57.5	F	92.0
	Westbound	C	26.7	C	25.4
	Southbound	C	23.8	B	15.2
	<b>Overall</b>	<b>C</b>	<b>33.9</b>	<b>D</b>	<b>51.5</b>
SB I-65 Off-ramp at NB I-65 Off-ramp (to 11 <sup>th</sup> St) (Signalized)	Westbound	F	230.7	C	22.4
	Southbound	F	96.1	C	34.8
	<b>Overall</b>	<b>F</b>	<b>161.8</b>	<b>C</b>	<b>27.6</b>
11 <sup>th</sup> St / Oscar Robertson Blvd at Dr MLK Jr St (Signalized)	Westbound	D	41.9	D	41.2
	Northbound	D	38.6	C	32.2
	Southbound	D	42.1	C	26.8
	<b>Overall</b>	<b>D</b>	<b>41.7</b>	<b>D</b>	<b>35.0</b>
11 <sup>th</sup> St at West Street / I-65 (Signalized)	Westbound	D	40.8	D	42.2
	Northbound	A	0.4	A	3.2
	Southbound	D	38.8	A	7.8
	<b>Overall</b>	<b>C</b>	<b>29.1</b>	<b>A</b>	<b>7.3</b>

Intersection	Approach	Future No Build (2050)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
10 <sup>th</sup> St at Dr MLK Jr St (Signalized)	Eastbound	D	54.3	C	32.3
	Northbound	C	31.6	C	30.3
	Southbound	D	36.9	D	45.1
	<b>Overall</b>	<b>D</b>	<b>46.7</b>	<b>C</b>	<b>34.1</b>
10 <sup>th</sup> St at N West St (Signalized)	Eastbound	D	47.2	C	30.9
	Northbound	A	0.6	D	51.0
	Southbound	A	8.2	E	67.9
	<b>Overall</b>	<b>B</b>	<b>16.3</b>	<b>D</b>	<b>47.7</b>
West St at Dr MLK St (Signalized)	Northbound Left	D	52.4	D	42.1
	Southbound	B	15.6	C	34.9
	<b>Overall</b>	<b>B</b>	<b>18.7</b>	<b>D</b>	<b>36.4</b>
12 <sup>th</sup> St at N Illinois St (Signalized)	Westbound	C	20.5	C	30.5
	Northbound	A	5.3	C	33.3
	<b>Overall</b>	<b>A</b>	<b>8.3</b>	<b>C</b>	<b>32.8</b>
12 <sup>th</sup> St at N Meridian St (Signalized)	Westbound	D	38.1	D	37.4
	Northbound	A	1.1	A	6.8
	Southbound	A	7.6	B	10.7
	<b>Overall</b>	<b>B</b>	<b>11.0</b>	<b>B</b>	<b>10.8</b>
12 <sup>th</sup> St at N Pennsylvania St (Signalized)	Westbound	C	34.1	C	33.0
	Southbound	B	12.4	A	7.1
	<b>Overall</b>	<b>B</b>	<b>15.7</b>	<b>B</b>	<b>10.7</b>
11 <sup>th</sup> St at N Illinois St (Signalized)	Eastbound	C	24.5	D	35.4
	Northbound	C	23.7	B	11.5
	<b>Overall</b>	<b>C</b>	<b>24.1</b>	<b>B</b>	<b>14.8</b>
11 <sup>th</sup> St at N Meridian St (Signalized)	Eastbound	C	29.2	C	34.7
	Northbound	B	18.4	C	23.8
	Southbound	A	2.0	A	3.8
	<b>Overall</b>	<b>B</b>	<b>20.0</b>	<b>C</b>	<b>22.1</b>
11 <sup>th</sup> St at N Pennsylvania St (Signalized)	Eastbound	D	42.5	D	37.9
	Southbound	C	26.2	C	21.1
	<b>Overall</b>	<b>C</b>	<b>32.5</b>	<b>C</b>	<b>28.7</b>
11 <sup>th</sup> St at N Delaware St (Signalized)	Eastbound	D	38.1	D	35.5
	Northbound	A	4.6	B	18.9

Intersection	Approach	Future No Build (2050)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
	<b>Overall</b>	<b>B</b>	<b>13.2</b>	<b>C</b>	<b>23.3</b>
Michigan St at Davidson St (Signalized)	Westbound	C	24.6	C	24.5
	Southbound	<b>F</b>	<b>108.4</b>	A	8.4
	<b>Overall</b>	<b>E</b>	<b>78.6</b>	<b>B</b>	<b>15.1</b>
Michigan St at Pine St (Signalized)	Westbound	C	33.3	C	27.6
	Northbound	A	6.0	B	13.2
	<b>Overall</b>	<b>C</b>	<b>22.4</b>	<b>B</b>	<b>17.9</b>
Ohio St at College Ave (Signalized)	Eastbound	B	11.7	B	17.0
	Westbound	<b>E</b>	<b>73.4</b>	B	14.7
	Northbound	<b>E</b>	<b>68.6</b>	C	29.0
	Southbound	<b>E</b>	<b>74.0</b>	D	40.7
	<b>Overall</b>	<b>E</b>	<b>67.1</b>	<b>C</b>	<b>22.1</b>
Washington St at College Ave (Signalized)	Eastbound	A	9.7	<b>F</b>	<b>89.8</b>
	Westbound	B	18.9	A	8.8
	Northbound	<b>F</b>	<b>83.9</b>	<b>F</b>	<b>192.8</b>
	Southbound	C	31.2	<b>E</b>	<b>63.2</b>
	<b>Overall</b>	<b>C</b>	<b>20.8</b>	<b>E</b>	<b>78.8</b>
Washington St at SB I-65 & I-70 On-ramp / Davidson St (Signalized)	Eastbound	A	0.3	B	12.6
	Westbound	E	58.1	E	62.3
	<b>Overall</b>	<b>D</b>	<b>45.9</b>	<b>D</b>	<b>39.0</b>
Washington St at NB I-65 & I-70 Off-ramp / Pine St (Signalized)	Eastbound	C	21.8	C	27.8
	Westbound	B	18.1	B	14.8
	Northbound	C	30.2	D	47.9
	<b>Overall</b>	<b>C</b>	<b>23.1</b>	<b>C</b>	<b>29.3</b>
Washington St at Southeastern Ave(Signalized)	Eastbound	A	1.3	A	3.1
	Westbound	D	35.3	B	11.6
	Northbound	C	33.5	C	34.2
	<b>Overall</b>	<b>C</b>	<b>25.1</b>	<b>B</b>	<b>10.9</b>
Fletcher Ave at SB I-65 & I-70 Off-ramp / Pine St (Signalized)	Eastbound	D	38.2	D	41.8
	Westbound	D	48.1	D	40.8
	Northbound	D	45.3	A	0.0
	Southbound	D	39.9	D	42.7
	<b>Overall</b>	<b>D</b>	<b>42.8</b>	<b>D</b>	<b>42.0</b>

Intersection	Approach	Future No Build (2050)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Calvary St at NB I-65 & I-70 On-ramp (Unsignalized)	Eastbound Left	A	9.4	B	11.8
East St at SB I-65 & I-70 Off-ramp (Signalized)	Westbound	F	188.3	F	93.1
	Northbound	B	10.1	A	5.3
	Southbound	A	8.7	A	6.6
	<b>Overall</b>	<b>F</b>	<b>92.7</b>	<b>C</b>	<b>27.0</b>
Morris St at SB I-65 On-ramp (Unsignalized)	Westbound Left	A	8.7	B	10.5
Morris St at NB I-65 Off-ramp (Signalized)	Eastbound	C	30.6	C	23.4
	Northbound	A	5.9	A	9.7
	<b>Overall</b>	<b>B</b>	<b>17.1</b>	<b>B</b>	<b>19.7</b>
West St at McCarty St (Signalized)	Eastbound	D	46.2	D	38.1
	Westbound	D	43.5	D	43.9
	Southbound	A	3.4	C	21.0
	<b>Overall</b>	<b>B</b>	<b>11.7</b>	<b>C</b>	<b>23.4</b>
McCarty St at Missouri St (Signalized)	Eastbound	D	43.6	D	42.5
	Westbound	D	51.1	D	49.4
	Northbound	D	36.1	B	14.3
	<b>Overall</b>	<b>D</b>	<b>37.4</b>	<b>C</b>	<b>24.5</b>
McCarty St at Capitol Ave / WB I-70 On-ramp (Signalized)	Eastbound	A	3.4	B	11.0
	Westbound	A	0.1	B	11.0
	Southbound	C	28.3	B	19.5
	<b>Overall</b>	<b>B</b>	<b>13.4</b>	<b>B</b>	<b>17.7</b>
McCarty St at Illinois St / EB I-70 Off-ramp (Signalized)	Eastbound	A	0.4	A	4.4
	Westbound	A	5.1	A	3.7
	Northbound	C	26.7	C	26.9
	<b>Overall</b>	<b>B</b>	<b>15.4</b>	<b>A</b>	<b>6.7</b>
McCarty St at Meridian St / Russell Ave (Signalized)	Eastbound	C	33.7	C	28.9
	Westbound	C	27.6	D	36.0
	Northbound	A	6.4	A	9.2
	Southbound	A	6.4	A	9.1
	<b>Overall</b>	<b>C</b>	<b>21.3</b>	<b>C</b>	<b>25.4</b>
	Eastbound	D	41.2	E	77.3
	Westbound	D	42.6	D	36.7

Intersection	Approach	Future No Build (2050)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
McCarty St at I-70 ramps / Madison Ave (Signalized)	Northbound	B	14.7	B	10.6
	Southbound	B	15.7	B	18.1
	<b>Overall</b>	<b>C</b>	<b>22.9</b>	<b>C</b>	<b>33.2</b>
McCarty St at Pennsylvania St (Signalized)	Eastbound	C	28.0	D	36.8
	Westbound	C	23.9	D	45.4
	Southbound	B	12.6	B	13.9
	<b>Overall</b>	<b>C</b>	<b>21.8</b>	<b>C</b>	<b>24.4</b>
WB I-70 ramps at West St (Signalized)	Westbound	B	16.1	C	21.4
	Southbound	C	23.4	F	232.0
	<b>Overall</b>	<b>B</b>	<b>19.5</b>	<b>F</b>	<b>195.5</b>
WB I-70 ramps at Missouri St (Signalized)	Westbound	E	59.2	A	7.4
	Northbound	C	33.5	B	17.3
	<b>Overall</b>	<b>D</b>	<b>43.9</b>	<b>B</b>	<b>14.6</b>
EB I-70 ramps at West St (Signalized)	Eastbound	B	11.0	B	17.1
	Southbound	C	23.0	C	20.3
	<b>Overall</b>	<b>B</b>	<b>18.9</b>	<b>C</b>	<b>20.2</b>
EB I-70 ramps at Missouri St (Signalized)	Eastbound	C	20.6	E	65.3
	Northbound	B	19.1	C	22.4
	<b>Overall</b>	<b>B</b>	<b>19.6</b>	<b>D</b>	<b>49.6</b>
S West St at W Morris St (Signalized)	Eastbound	D	49.1	D	39.6
	Westbound	E	55.2	D	54.5
	Northbound	F	96.3	D	42.0
	Southbound	E	67.4	E	64.8
	<b>Overall</b>	<b>E</b>	<b>75.5</b>	<b>D</b>	<b>52.0</b>

Table C-8: Future No-Build (2050) Intersection Operations, 70 W Spoke

Intersection	Approach	Future No Build (2050)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
I-70 WB Ramps at Holt Rd (Signalized)	Westbound	F	174.9	F	195.7
	Northbound	E	55.2	D	54.9
	Southbound	F	297.6	F	199.9
	<b>Overall</b>	<b>F</b>	<b>185.8</b>	<b>F</b>	<b>162.9</b>
I-70 EB Ramps at Holt Rd (Signalized)	Eastbound	E	76.9	D	42.0
	Northbound	C	31.5	C	30.2
	Southbound	F	172.4	F	136.6
	<b>Overall</b>	<b>F</b>	<b>129.7</b>	<b>F</b>	<b>102.3</b>
Morris St at Holt Rd (Signalized)	Eastbound	D	50.1	E	77.5
	Westbound	F	238.2	F	132.6
	Northbound	C	30.6	C	24.2
	Southbound	E	60.0	C	24.8
	<b>Overall</b>	<b>F</b>	<b>112.9</b>	<b>E</b>	<b>74.8</b>
Oliver Ave at Harding St (Signalized)	Eastbound	B	18.6	A	6.3
	Westbound	B	13.6	B	13.5
	Northbound	E	76.1	C	31.1
	<b>Overall</b>	<b>D</b>	<b>50.5</b>	<b>B</b>	<b>18.3</b>
I-70 WB Ramps at Harding St (Signalized)	Eastbound	D	37.1	D	45.1
	Northbound	F	83.5	F	88.9
	Southbound	C	20.0	B	18.8
	<b>Overall</b>	<b>E</b>	<b>58.9</b>	<b>E</b>	<b>56.2</b>
I-70 EB Ramps at Harding St (Signalized)	Eastbound	D	38.0	D	43.4
	Westbound	D	35.3	A	0.0
	Northbound	C	29.0	B	18.3
	Southbound	E	69.9	C	25.8
	<b>Overall</b>	<b>D</b>	<b>46.3</b>	<b>C</b>	<b>22.7</b>

Table C-9: Future No-Build (2050) Intersection Operations, 70 E Spoke

Intersection	Approach	Future No Build (2050)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Keystone Ave at Enterprise Park Pl / 23rd St (Signalized)	Eastbound	D	36.1	D	36.7
	Westbound	D	36.8	D	38.2
	Northbound	B	10.3	A	9.4
	Southbound	B	14.8	B	15.0
	<b>Overall</b>	<b>B</b>	<b>12.8</b>	<b>B</b>	<b>13.0</b>
WB I-70 ramps at Keystone Ave (Signalized)	Westbound	D	43.7	D	41.5
	Northbound	B	14.3	A	9.7
	Southbound	A	8.2	A	7.9
	<b>Overall</b>	<b>B</b>	<b>17.4</b>	<b>B</b>	<b>13.4</b>
EB I-70 ramps at Keystone Ave / Rural St (Unsignalized)	Eastbound Right	E	45.7	D	28.8
	Southbound Left	B	11.2	C	18.4
Rural St at Bloyd Ave / Roosevelt Ave (Signalized)	Eastbound	C	30.6	D	42.3
	Westbound	C	26.0	B	13.3
	Northbound	A	5.2	C	22.2
	Southbound	A	5.9	C	21.5
	<b>Overall</b>	<b>A</b>	<b>8.0</b>	<b>C</b>	<b>25.1</b>
WB I-70 ramps at Emerson Ave (Signalized)	Eastbound	D	44.7	D	37.6
	Westbound	A	0.3	C	27.8
	Southbound	A	3.8	A	9.7
	<b>Overall</b>	<b>A</b>	<b>7.6</b>	<b>C</b>	<b>23.4</b>
EB I-70 ramps at Emerson Ave (Signalized)	Eastbound	D	36.7	D	36.1
	Northbound	B	14.8	B	15.1
	Southbound	A	0.2	C	29.4
	<b>Overall</b>	<b>B</b>	<b>16.5</b>	<b>C</b>	<b>26.0</b>
WB I-70 ramps at Shadeland Ave / Western Select Dr (Signalized)	Eastbound	F	100.3	D	37.3
	Westbound	D	37.3	D	47.1
	Northbound	C	30.9	B	11.8
	Southbound	C	25.2	C	27.2
	<b>Overall</b>	<b>D</b>	<b>39.0</b>	<b>C</b>	<b>22.3</b>
EB I-70 ramps at Shadeland Ave (Signalized)	Eastbound	D	38.3	D	40.7
	Northbound	A	4.1	A	8.9
	Southbound	A	1.4	A	0.7



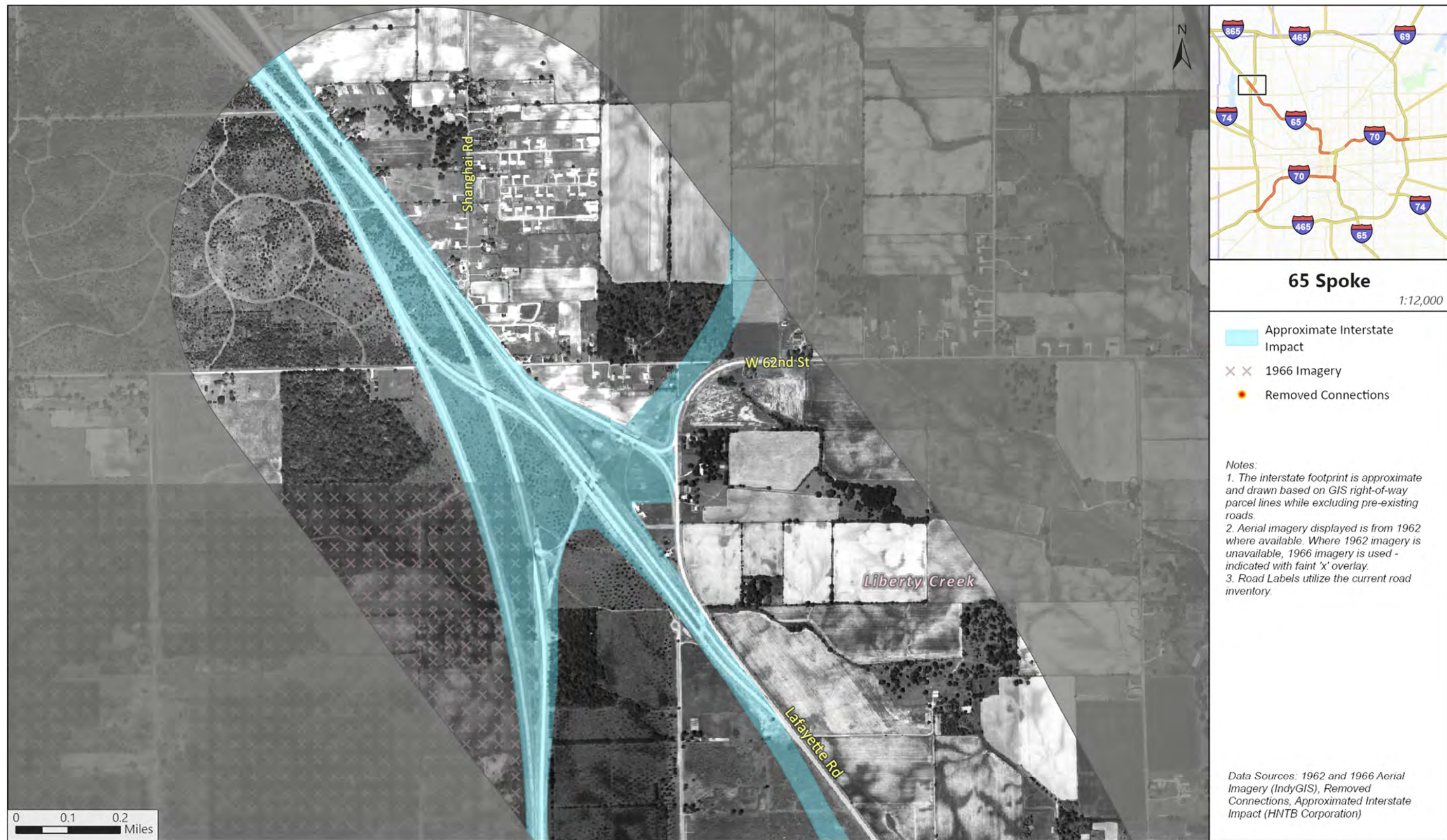
Intersection	Approach	Future No Build (2050)			
		AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
	<b>Overall</b>	<b>A</b>	<b>7.3</b>	<b>A</b>	<b>8.0</b>
East 21st St at Shadeland Ave (Signalized)	Eastbound	<b>F</b>	<b>80.9</b>	<b>F</b>	<b>126.7</b>
	Westbound	D	46.3	<b>E</b>	<b>78.6</b>
	Northbound	D	49.5	D	48.9
	Southbound	C	20.8	D	48.1
	<b>Overall</b>	<b>D</b>	<b>43.7</b>	<b>E</b>	<b>66.7</b>



# APPENDIX D: MULTIMODAL AND NEIGHBORHOOD CONNECTIVITY

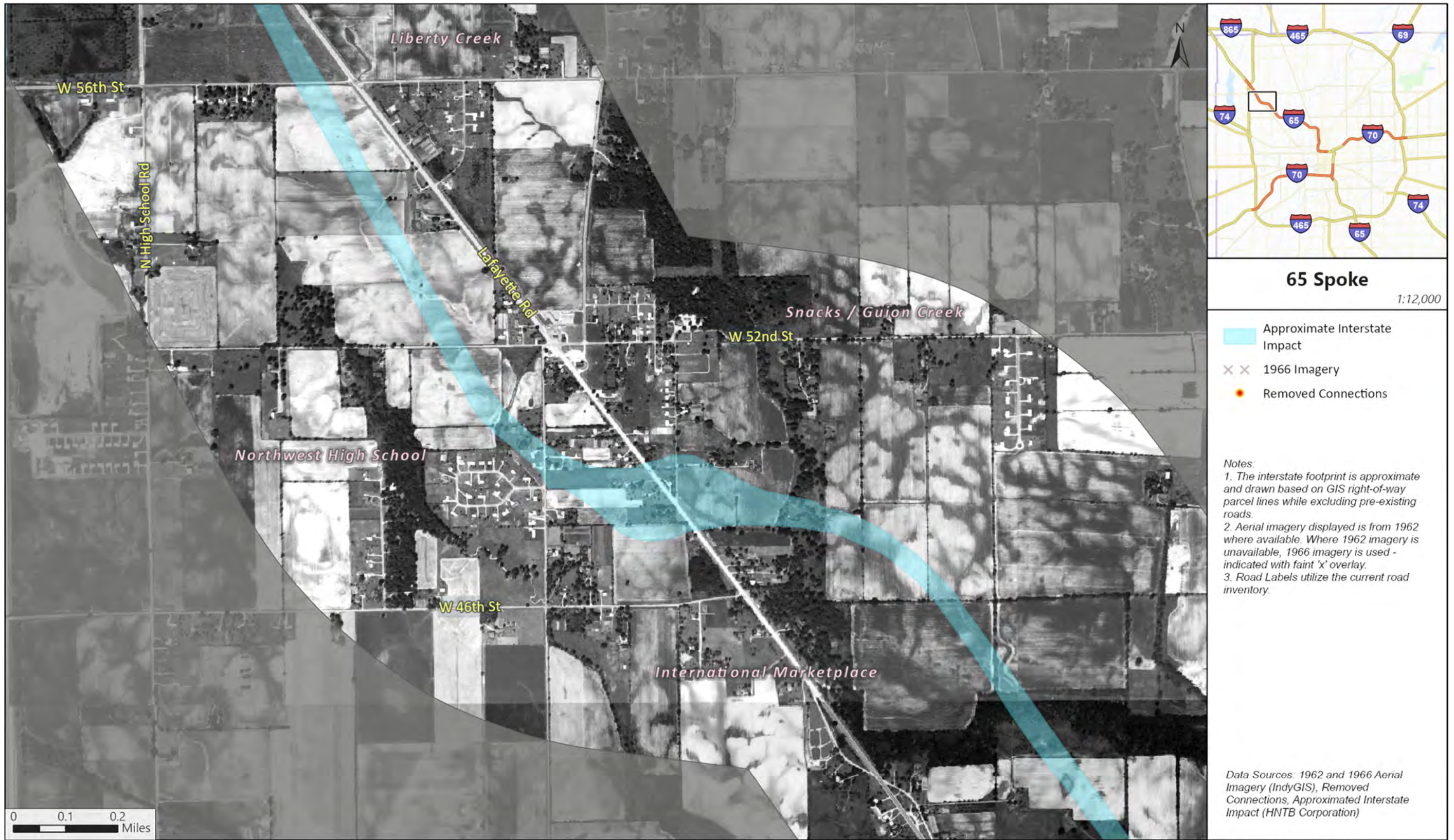
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Figure D-1: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 65 Spoke



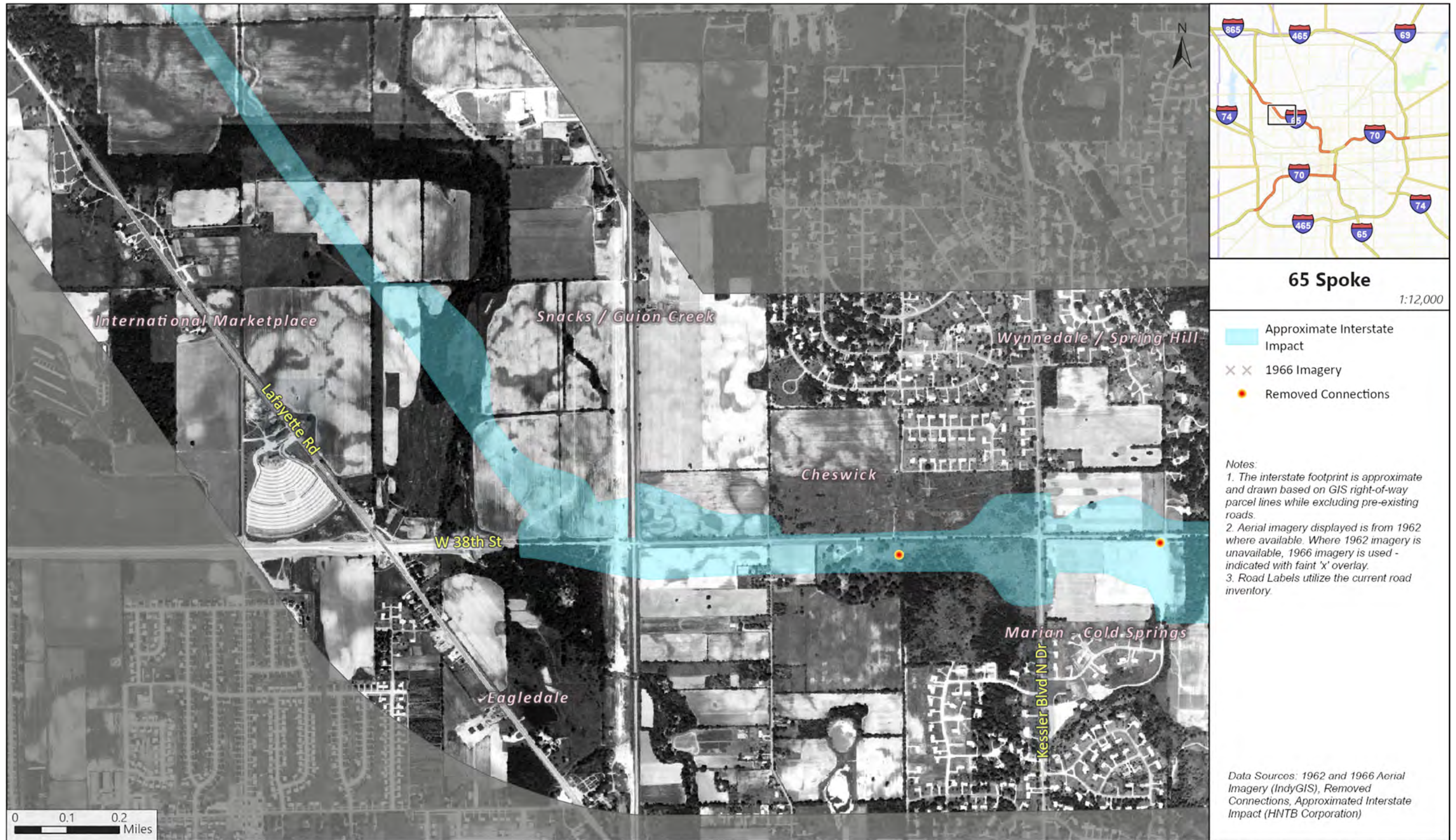
HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METY/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure D-2: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 65 Spoke (cont.)



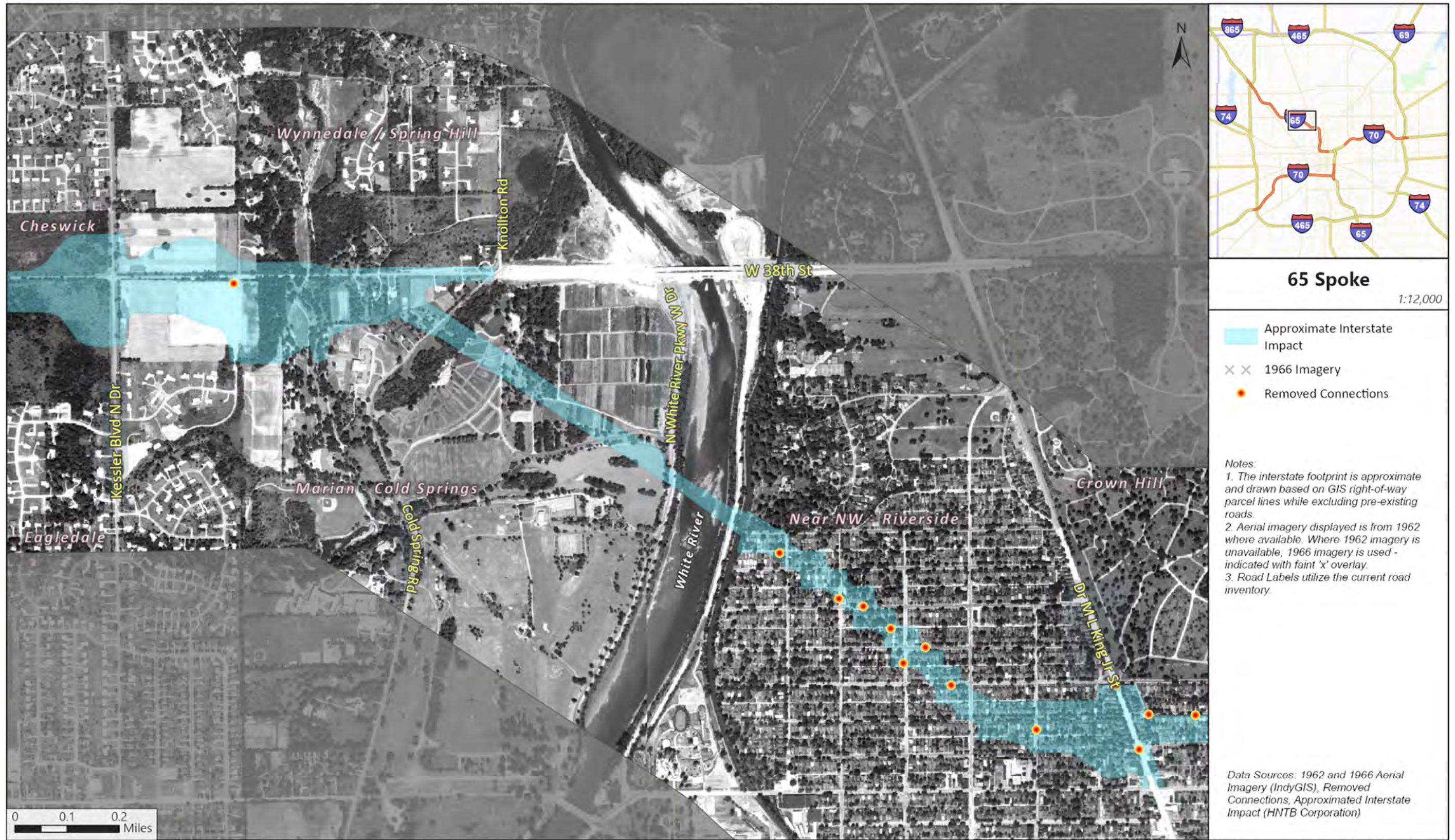
HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure D-3: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 65 Spoke (cont.)



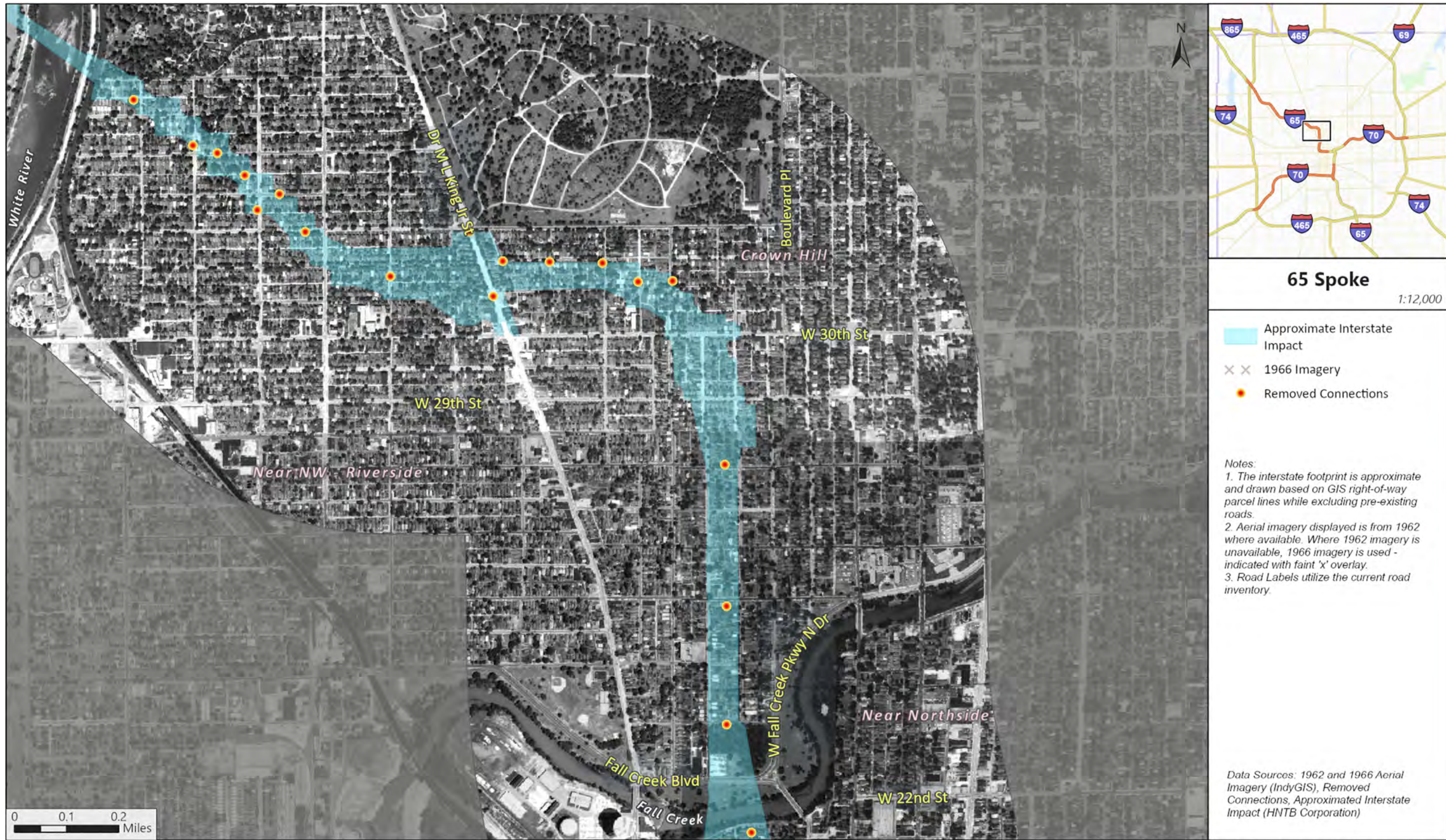
HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METY/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure D-4: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 65 Spoke (cont.)



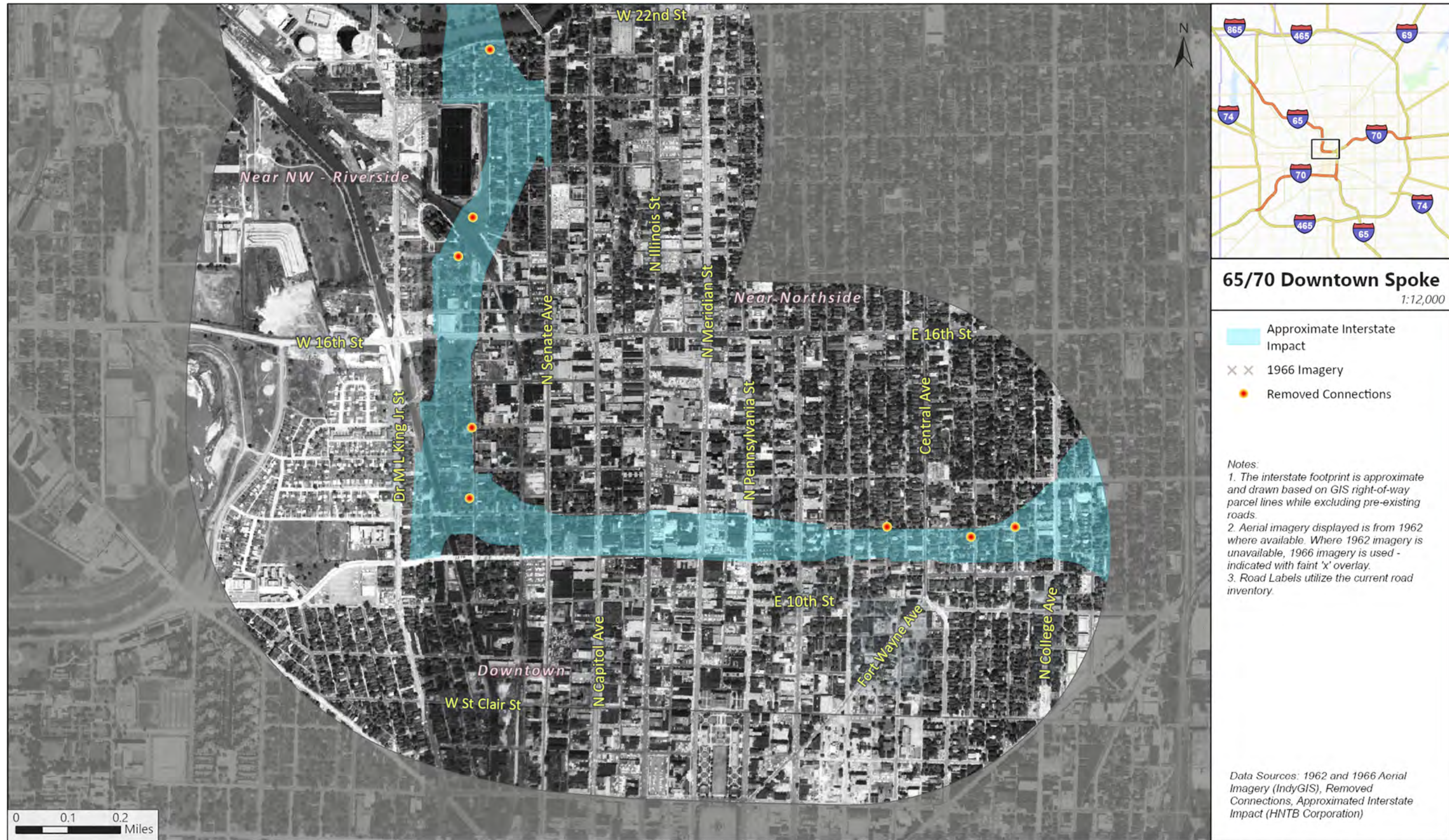
HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METV/NASA, ERA, NPS, US Census Bureau, USDA, FRQ, © OpenStreetMap, Microsoft

Figure D-5: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 65 Spoke (cont.)



HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NOAA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METY/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

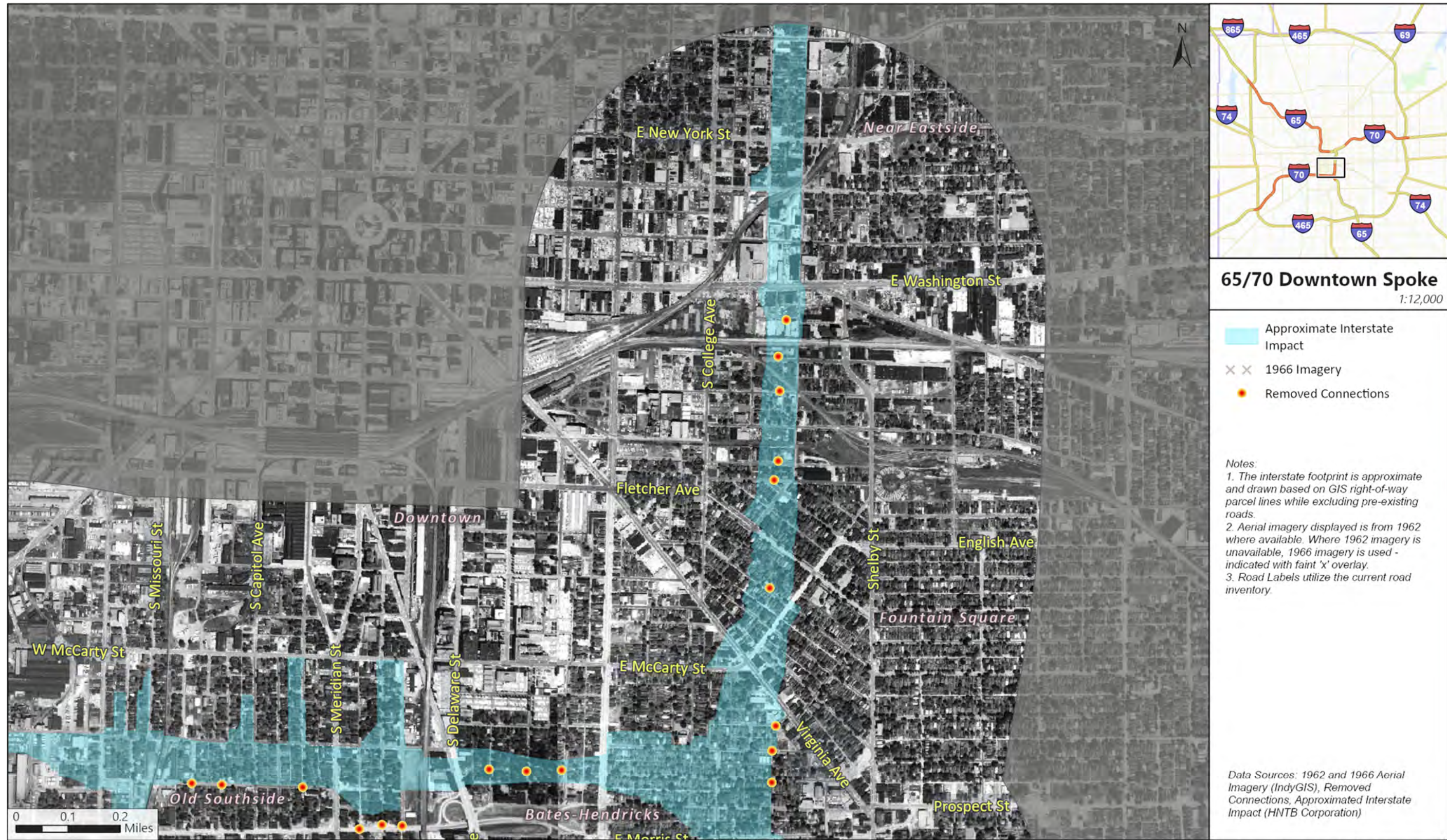
Figure D-6: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 65/70 Downtown Spoke



HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

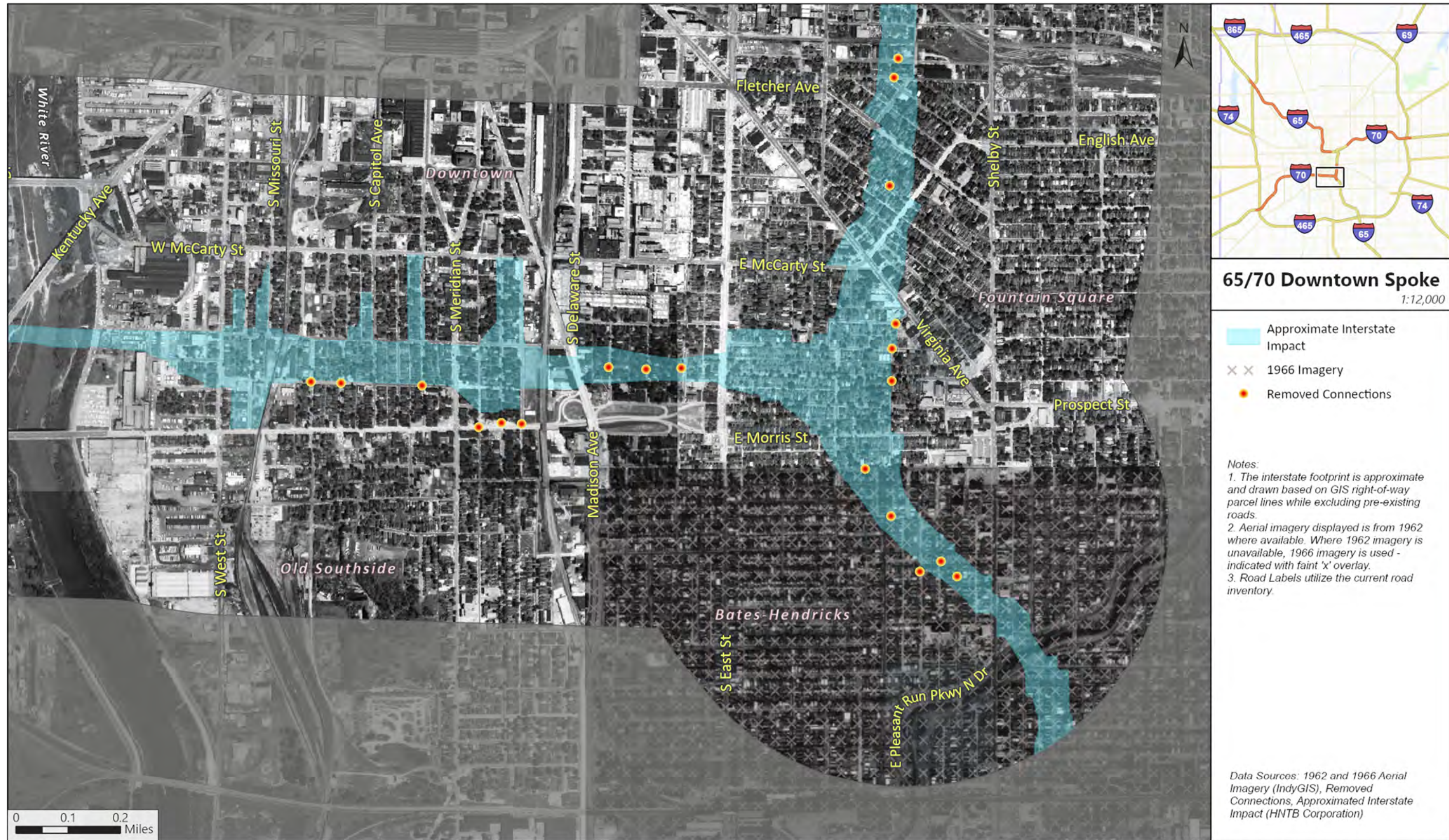


Figure D-7: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 65/70 Downtown Spoke (cont.)



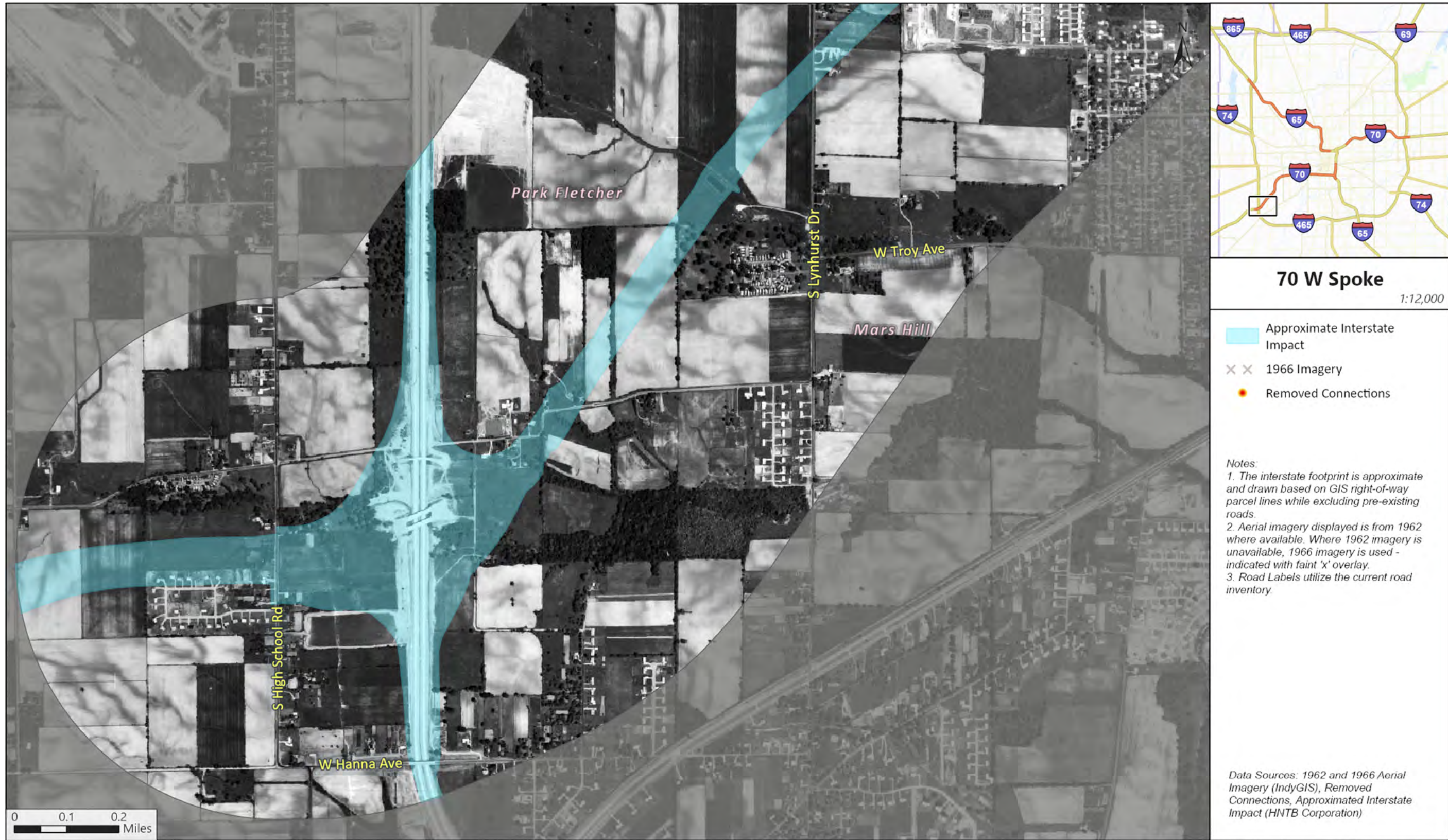
HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METV/NASA, EPA, NPS, US Census Bureau, USDA, FRQ, © OpenStreetMap, Microsoft

Figure D-8: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 65/70 Downtown Spoke (cont.)



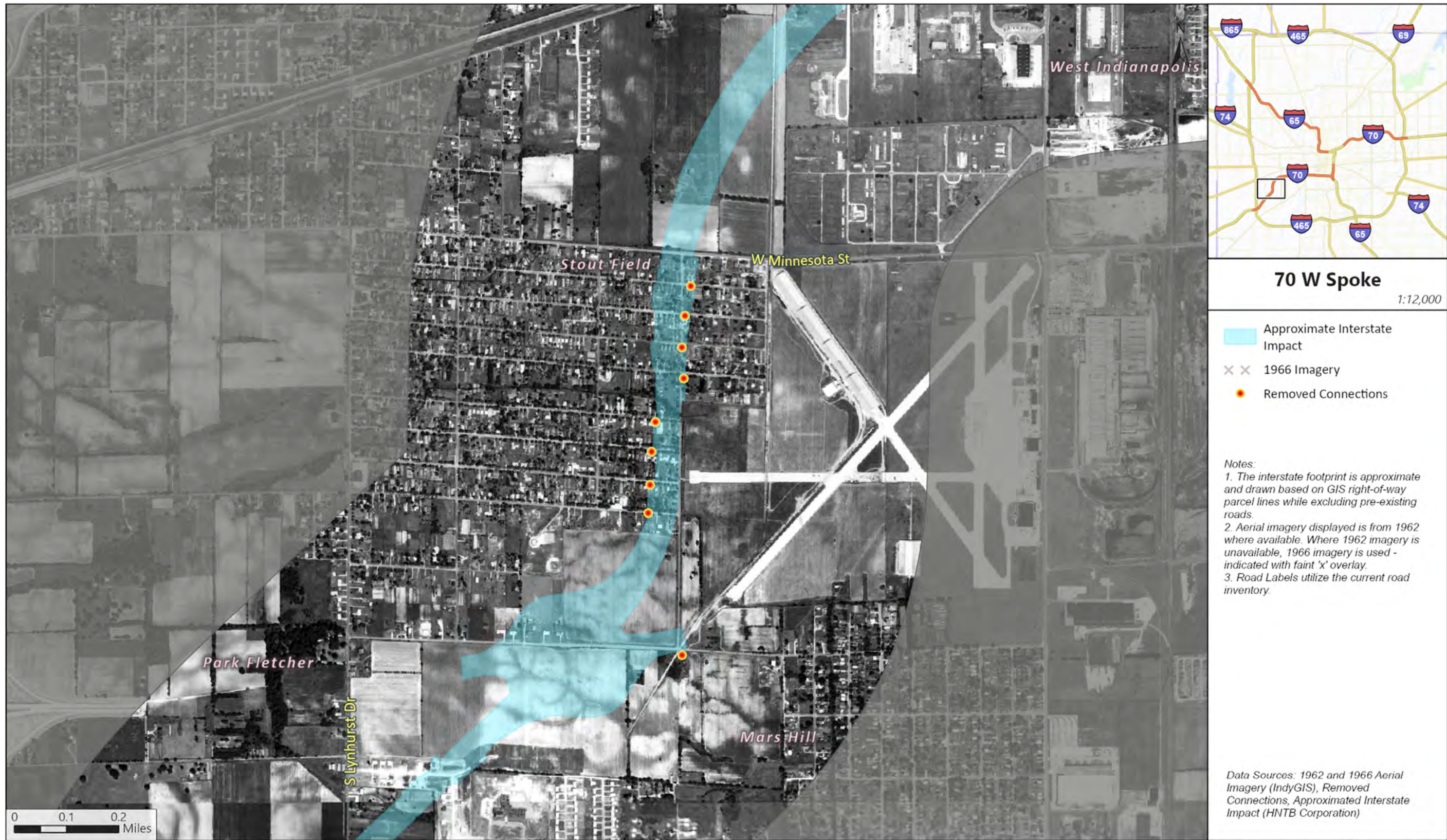
HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure D-9: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 70 W Spoke



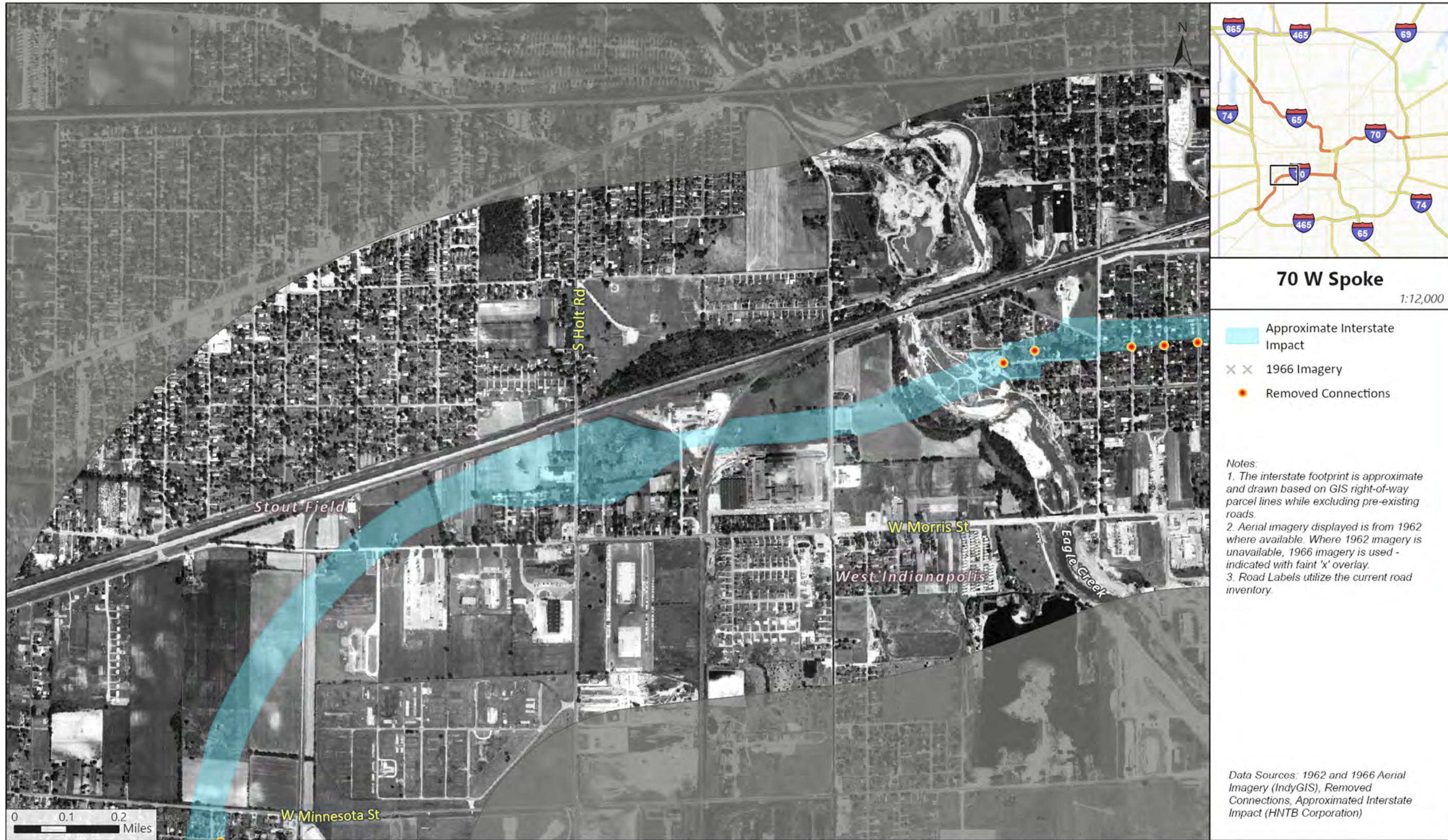
HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure D-10: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 70 W Spoke (cont.)



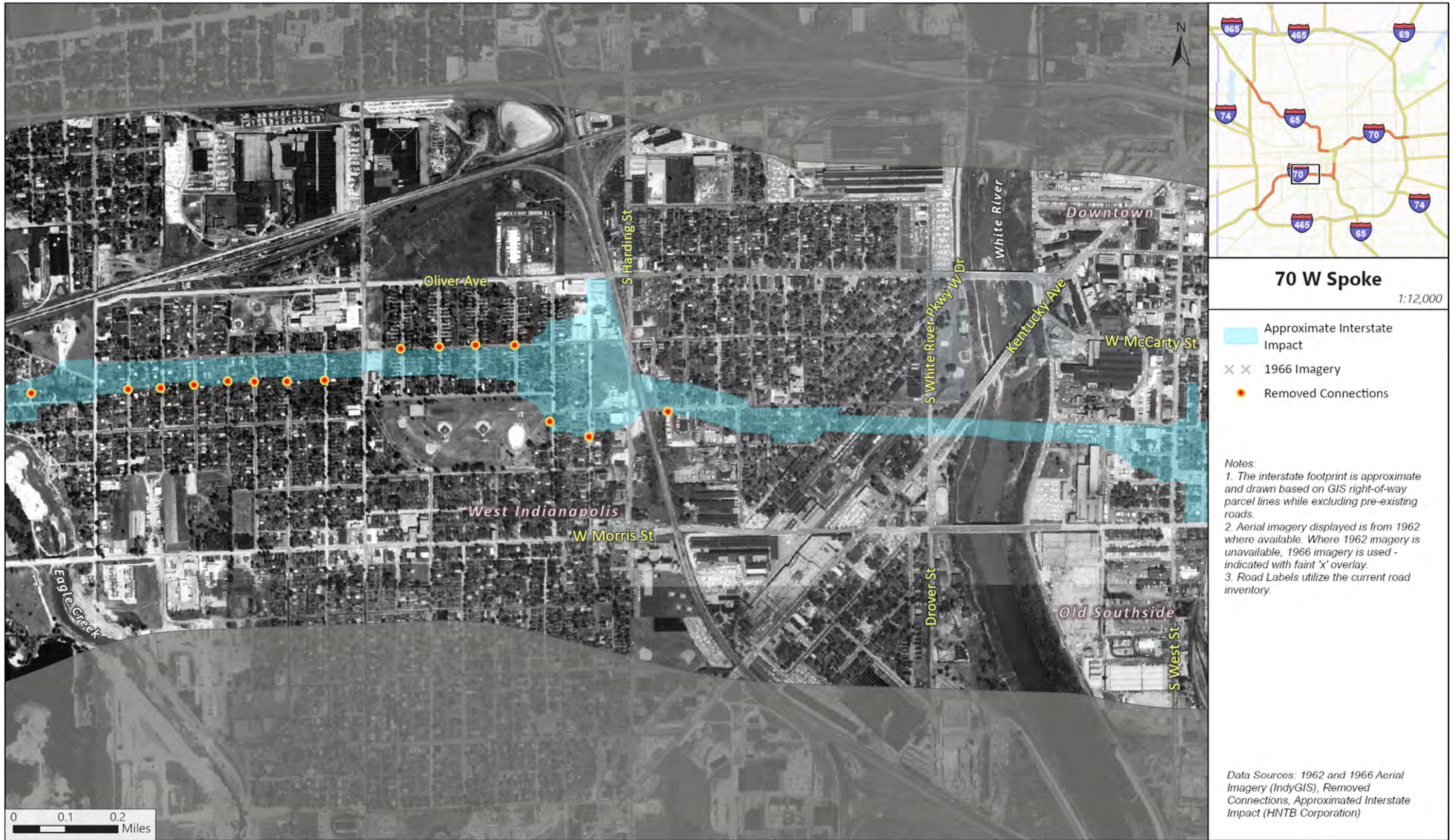
HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METV/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure D-11: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 70 W Spoke (cont.)



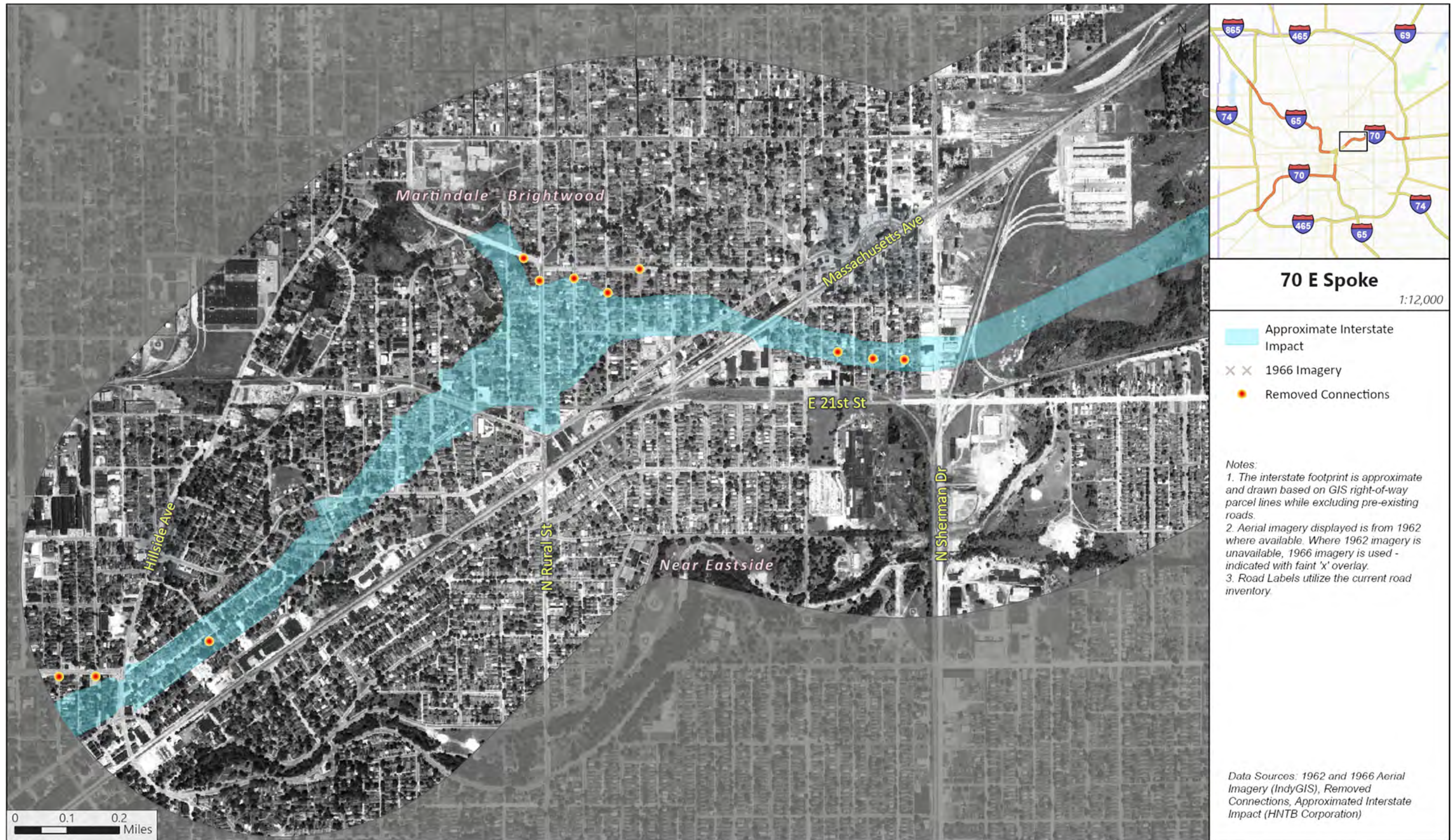
HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure D-12: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 70 W Spoke (cont.)



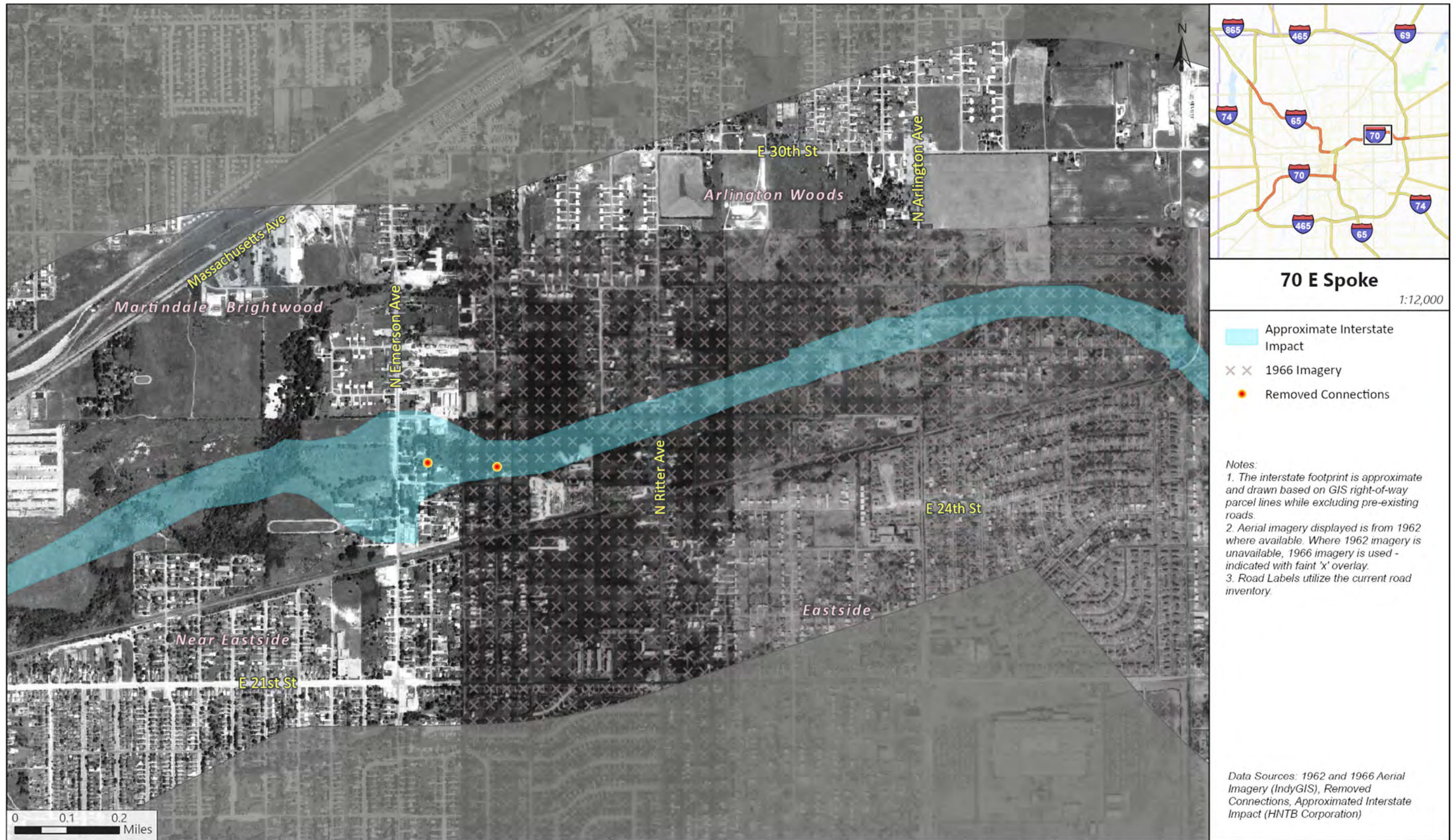
HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure D-13: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 70 E Spoke



HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure D-14: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 70 E Spoke (cont.)



HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

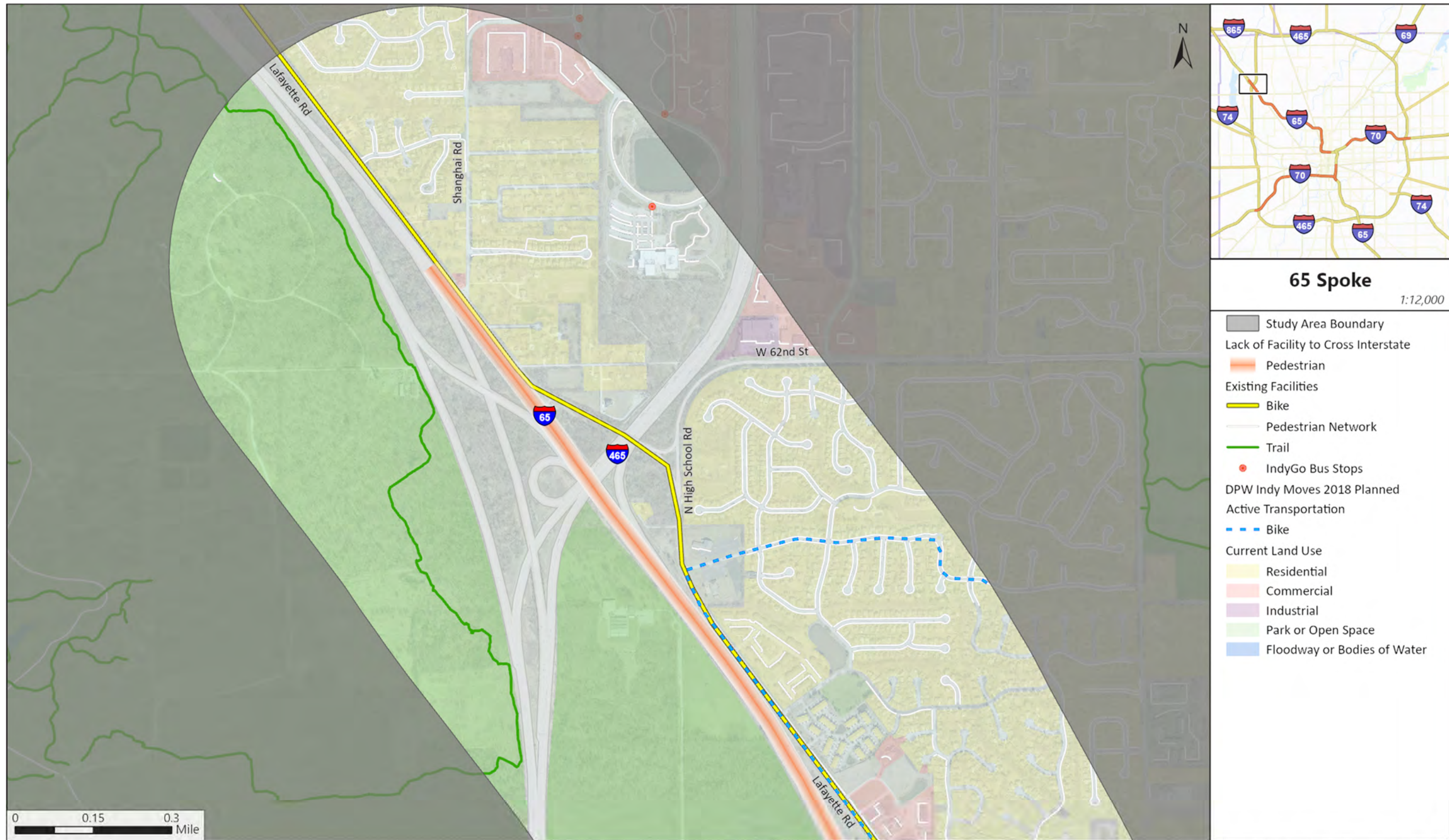


Figure D-15: Approximate Interstate Footprint on Historic Aerial Photos (1962 and 1966), 70 E Spoke



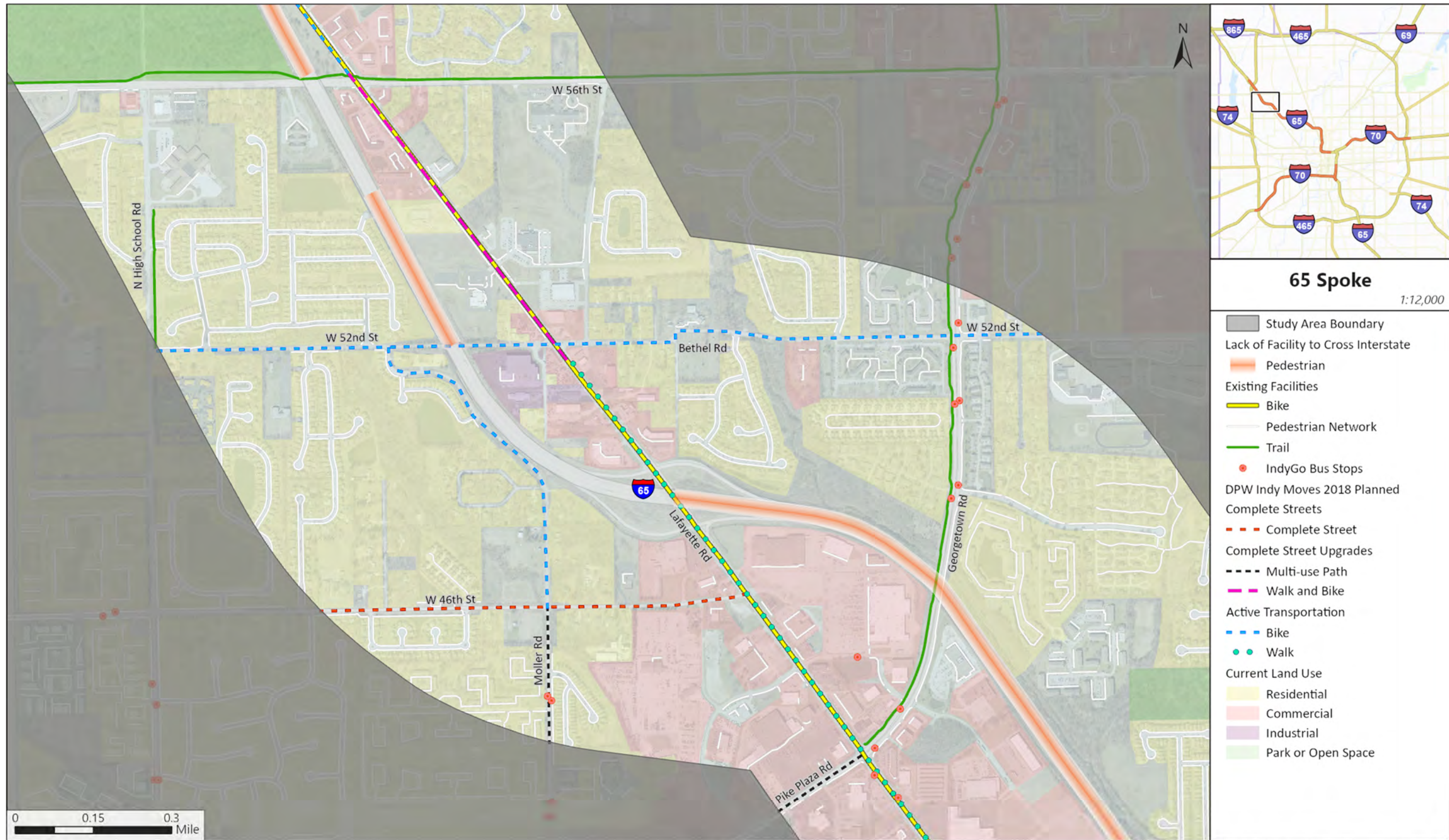
HNTB Corporation, Indiana Geographic Information Office, State of Indiana, INDOT, Esri, NASA, NGA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FAO, © OpenStreetMap, Microsoft

Figure D-16: Existing and Proposed Bicycle and Pedestrian Facilities, 65 Spoke



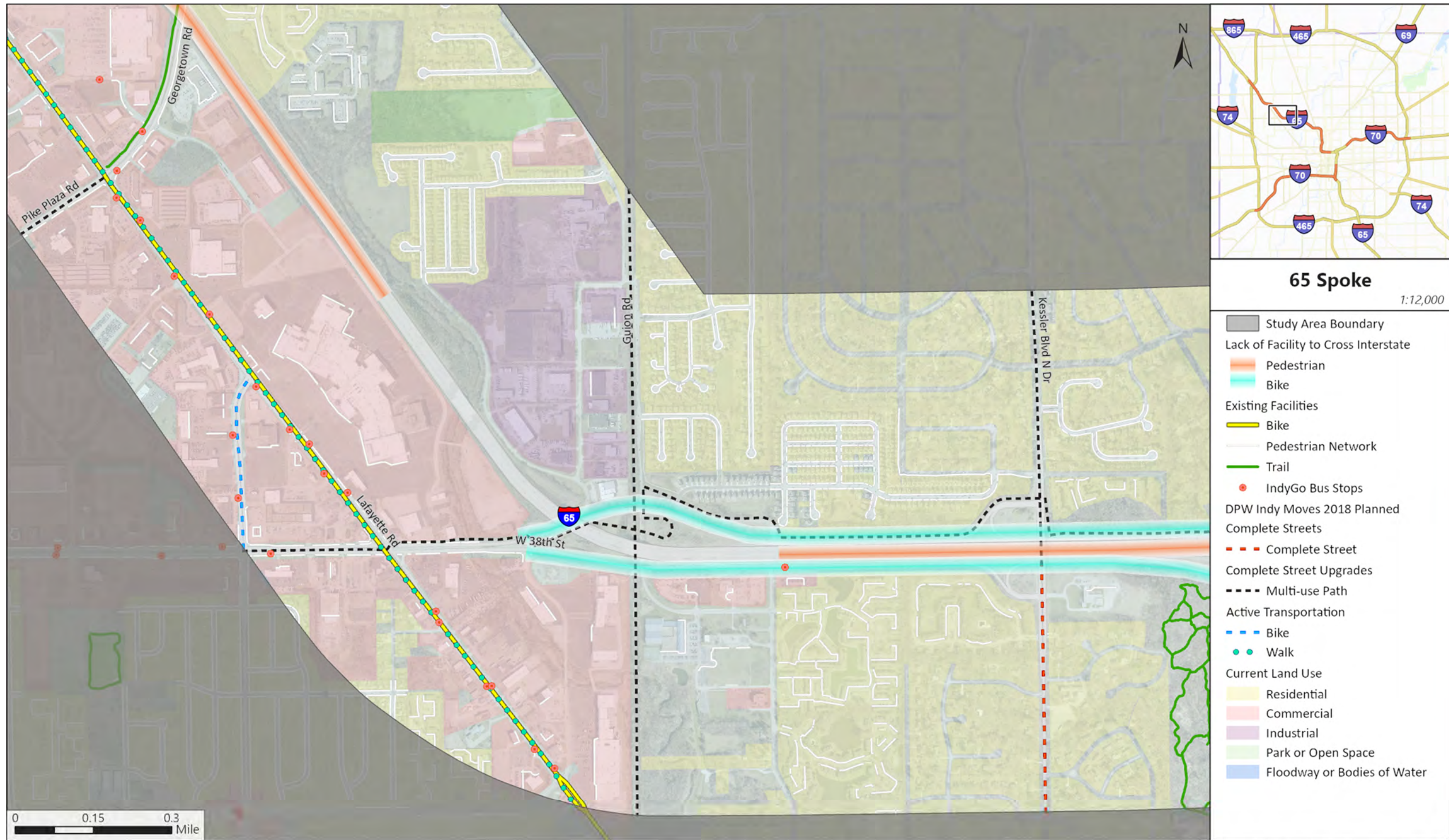
HNTB, IMPO, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)

Figure D-17: Existing and Proposed Bicycle and Pedestrian Facilities, 65 Spoke (cont.)



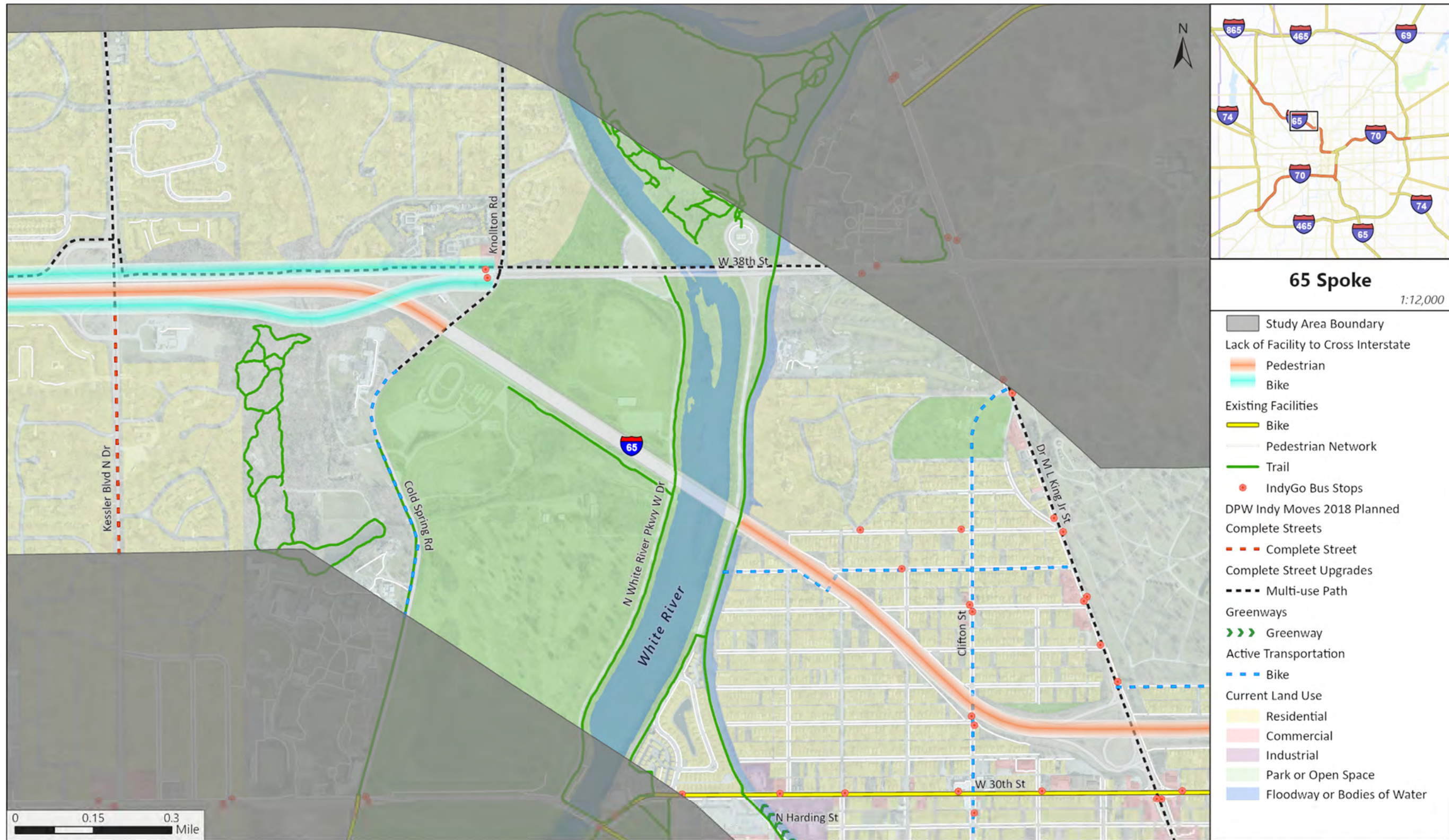
HNTB, IMPO, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis, Marion Co., HERE, Garmin, SafeGraph, GeoTechnologies, Inc., METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)

Figure D-18: Existing and Proposed Bicycle and Pedestrian Facilities, 65 Spoke (cont.)



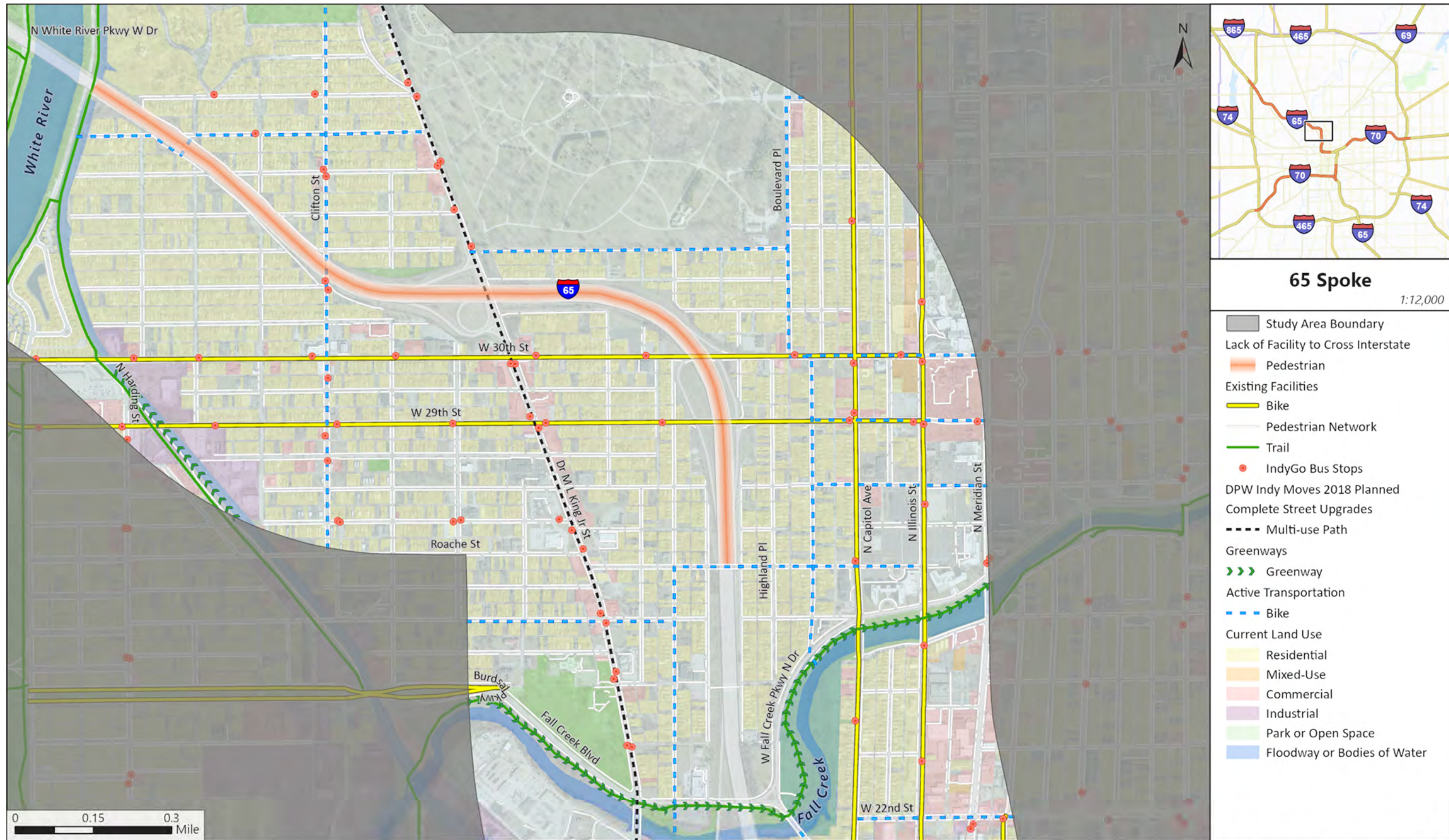
HNTB, INFPQ, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, © OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)

Figure D-19: Existing and Proposed Bicycle and Pedestrian Facilities, 65 Spoke (cont.)



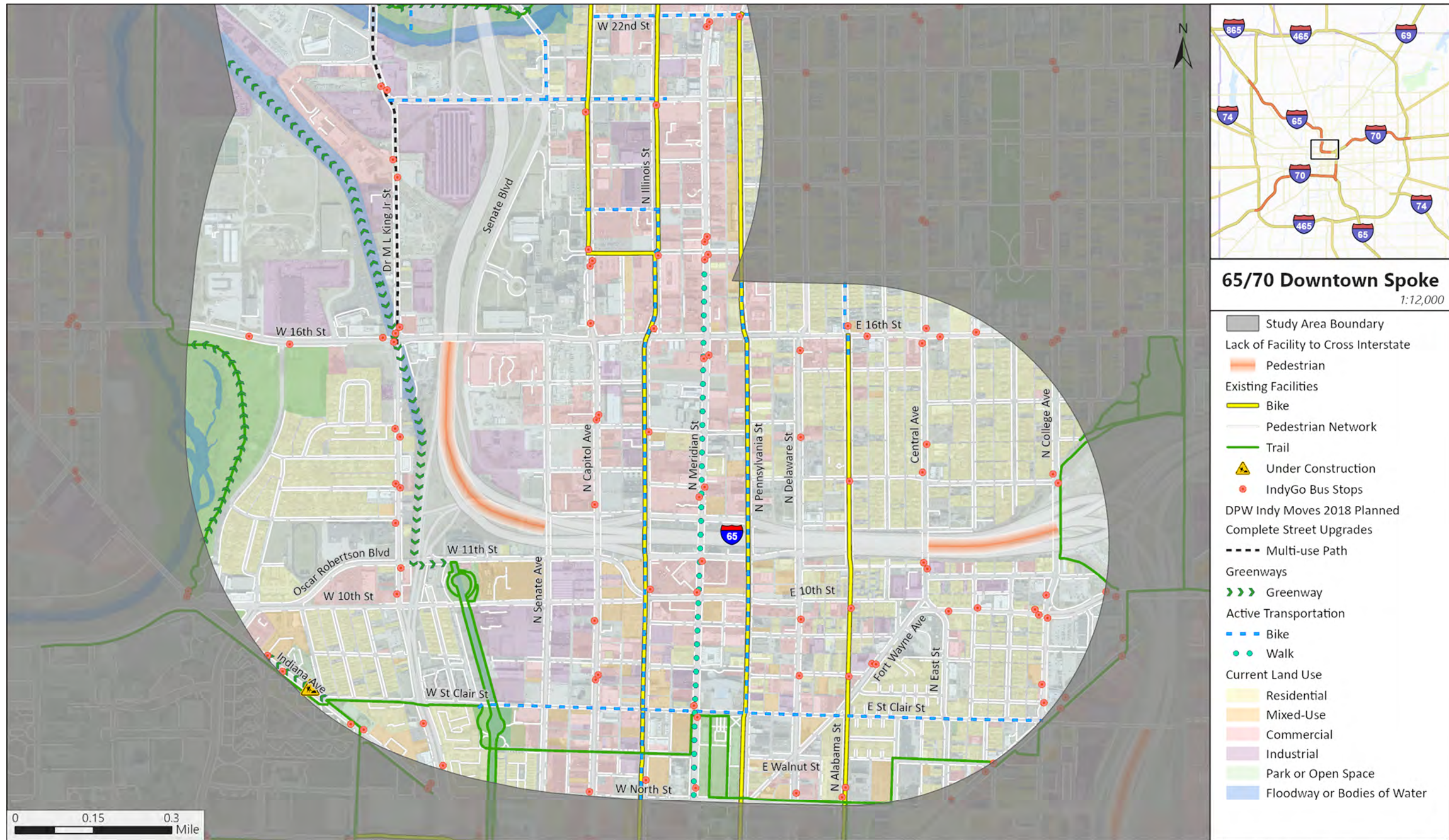
HMFB, IMPO, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)

Figure D-20: Existing and Proposed Bicycle and Pedestrian Facilities, 65 Spoke (cont.)



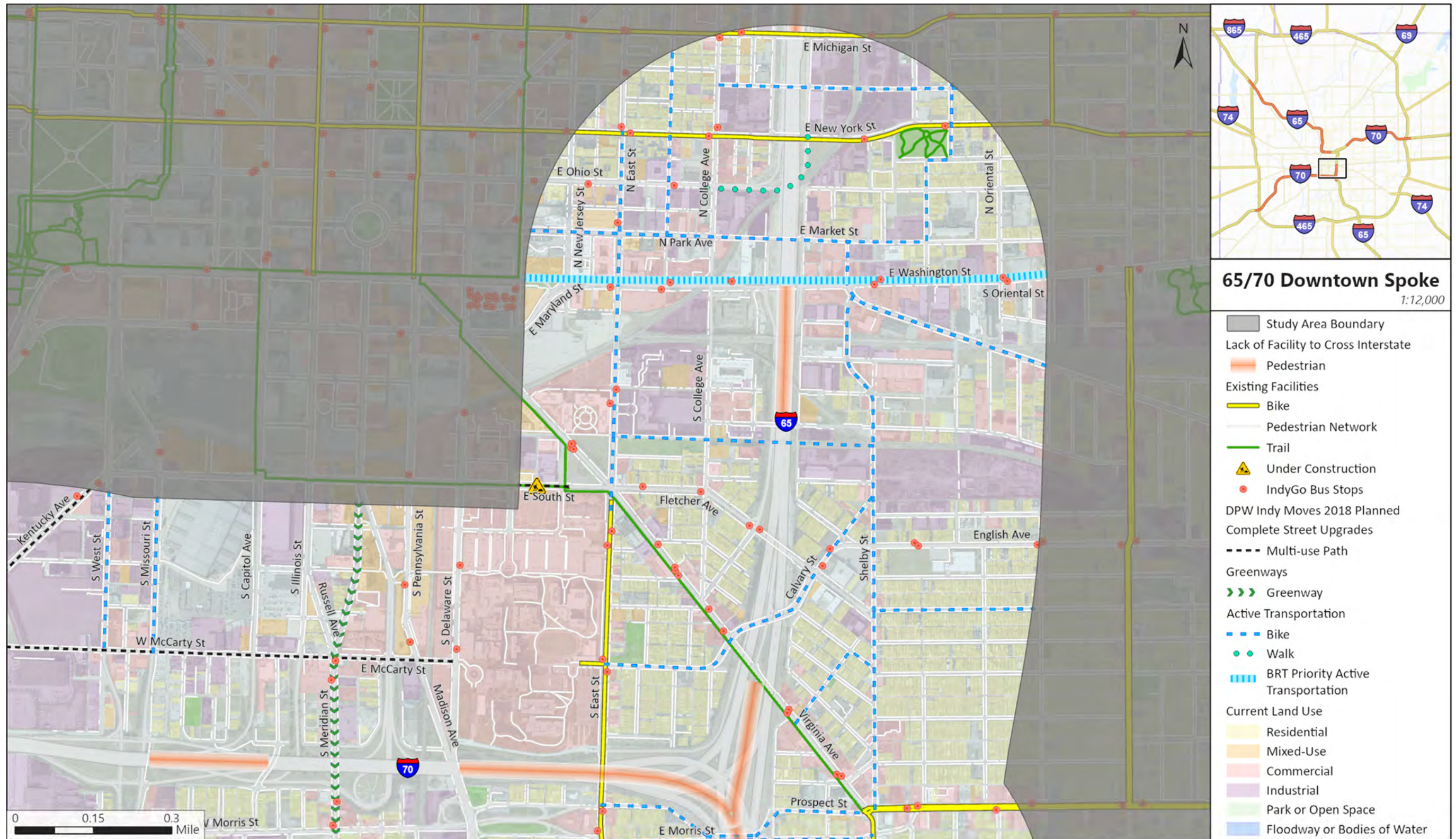
HNTB, IMPO, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis, Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, © OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)

Figure D-21: Existing and Proposed Bicycle and Pedestrian Facilities, 65/70 Downtown Spoke



HNTB, IMPO, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co. HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)

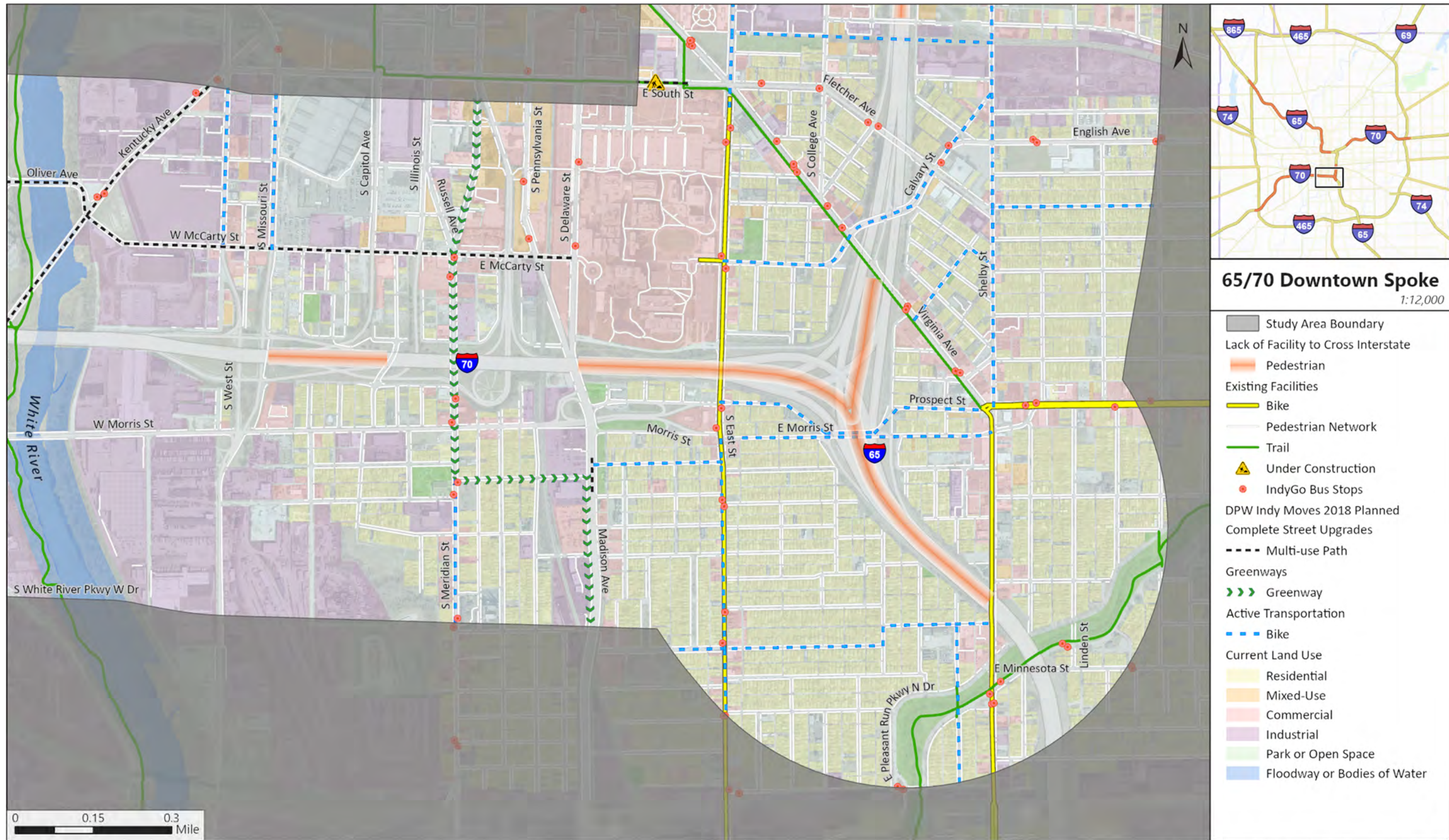
Figure D-22: Existing and Proposed Bicycle and Pedestrian Facilities, 65/70 Downtown Spoke (cont.)



INTE, I/MPO, IDNR, State of Indiana, INDOT, Esri, NASA, NOAA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USDA, FGI, © OpenStreetMap, Microsoft  
Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)



Figure D-23: Existing and Proposed Bicycle and Pedestrian Facilities, 65/70 Downtown Spoke (cont.)



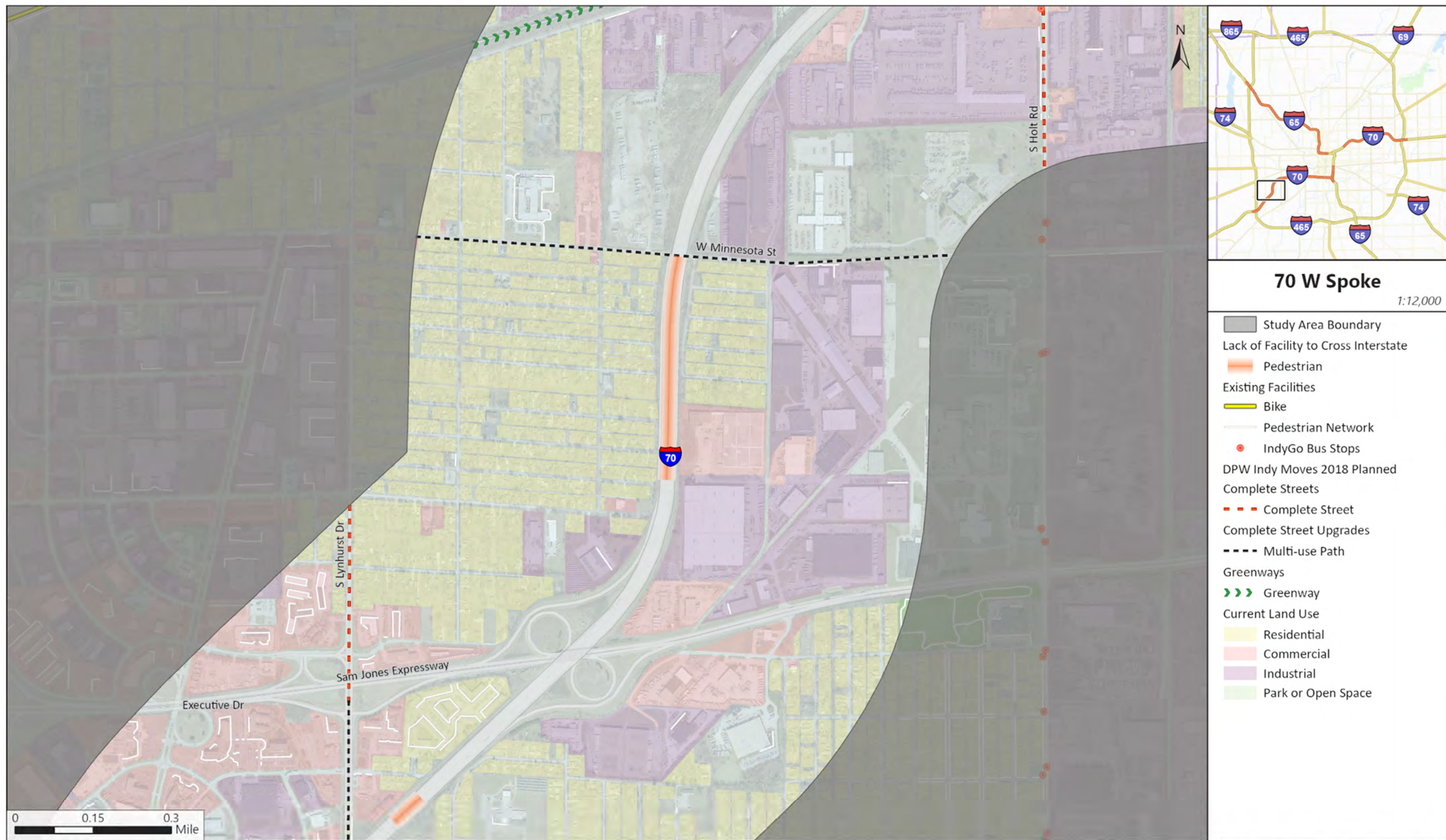
HNTB, IMPO, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, © OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)

Figure D-24: Existing and Proposed Bicycle and Pedestrian Facilities, 70 W Spoke



HNTB, INPD, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co. HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, © OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)

Figure D-25: Existing and Proposed Bicycle and Pedestrian Facilities, 70 W Spoke (cont.)



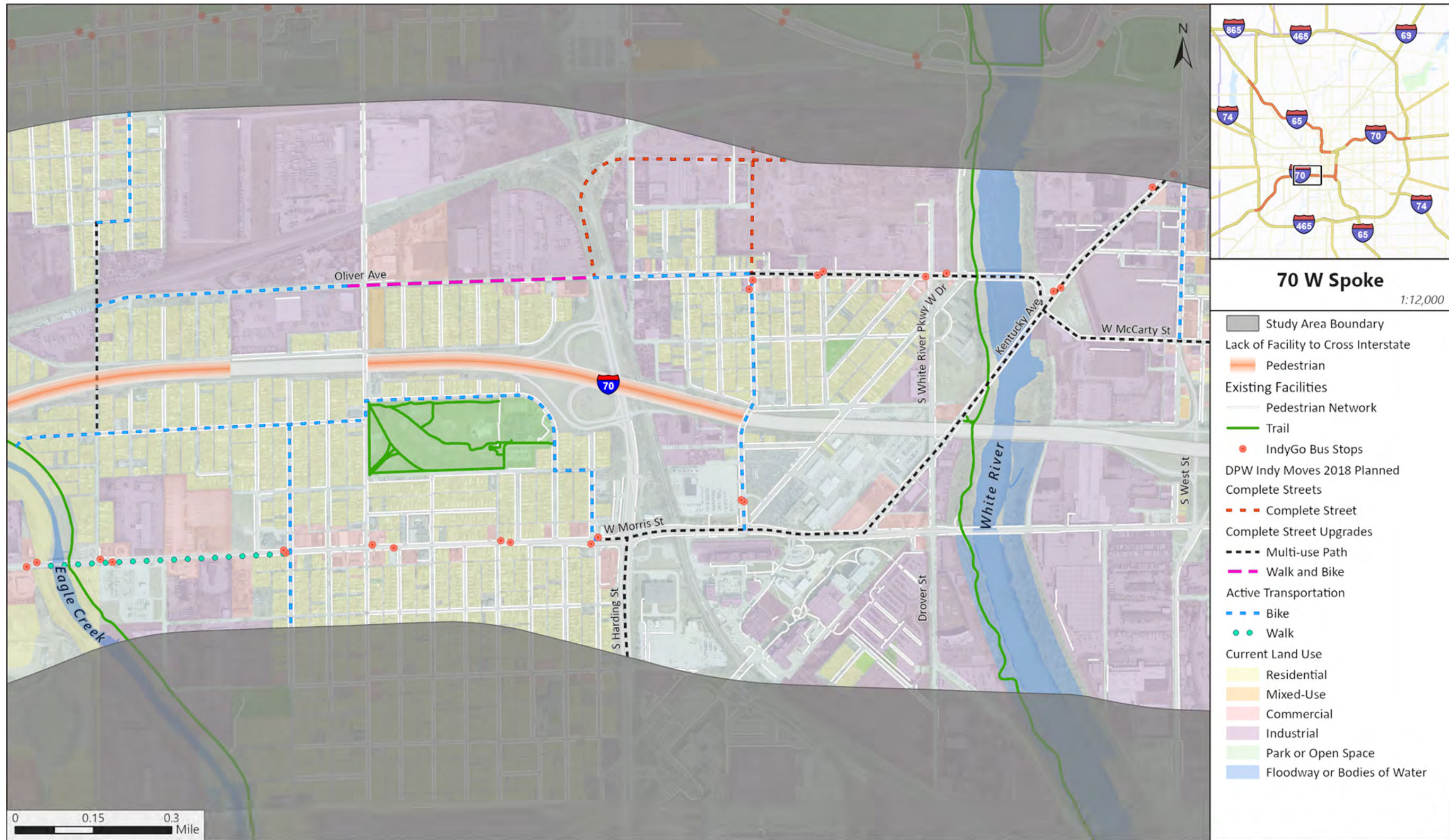
HNTB, IMPO, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, © OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)

Figure D-26: Existing and Proposed Bicycle and Pedestrian Facilities, 70 W Spoke (cont.)



HNTB, I/MPO, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co. HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)

Figure D-27: Existing and Proposed Bicycle and Pedestrian Facilities, 70 W Spoke (cont.)



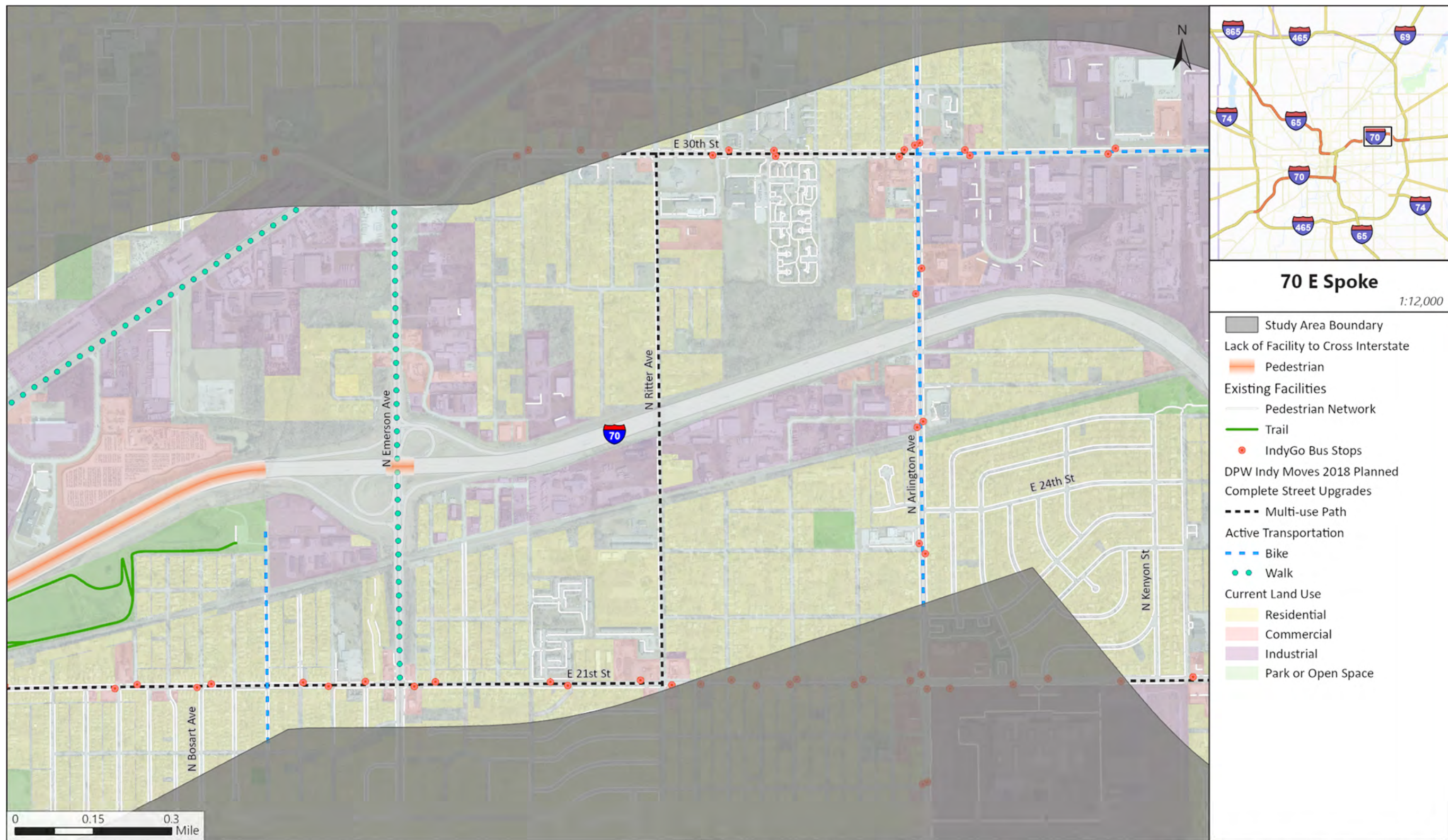
HNTB, INMPO, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, © OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)

Figure D-28: Existing and Proposed Bicycle and Pedestrian Facilities, 70 E Spoke



HNTB, I/MPO, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)

Figure D-29: Existing and Proposed Bicycle and Pedestrian Facilities, 70 E Spoke (cont.)



HNTB, IMPQ, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co., HERE, Garmin, SafeGraph, GeoTechnologies, Inc., METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, © OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)

Figure D-30: Existing and Proposed Bicycle and Pedestrian Facilities, 70 E Spoke (cont.)



HNTB, IMPO, IDNR, State of Indiana, INDOT, Esri, NASA, NSA, USGS, City of Indianapolis Marion Co., HERE, Garmin, SafeGraph, GeoTechnologies, Inc., METI/NASA, EPA, NPS, US Census Bureau, USGS, FAO, © OpenStreetMap, Microsoft  
 Data Sources: Bike Network Existing Facilities (IndyMPO), Trails (IDNR), Pedestrian Network, Current Land Use, IndyGo Bus Stops (IndyGIS), DPW Indy Moves 2018 Planned (Indy Moves 2018 and PlanIndy - DMD), Lack of Facility to Cross Interstate (HNTB Corporation)