



April 2, 2019

Re: Notice of Survey and Environmental Study

Dear Property Owner:

Our firm, American Structurepoint, Inc., has been retained by the Indiana Department of Transportation to perform an environmental study and to prepare a field survey for a transportation project along Interstate 65 from the approximate intersection of State Road 32 (Center Township, Boone County, Indiana) and heading northerly to approximately three fourths of a mile north of State Road 47 (Washington Township, Boone County, Indiana).

Our information indicates you either own or occupy property near this proposed improvement project. Our employees will begin conducting environmental and topographic surveys of the project area in the near future and may continue for several months. It may be necessary for us to enter upon your property to complete this work. This is permitted by Indiana Code (IC) 8-23-7-26 (www.in.gov/legislative/ic/code). Our employees have been instructed to identify themselves to you, if you are available, before they enter your property. If you no longer own this property, or it is currently occupied by someone other than yourself, please let us know the name and address of the new owner or occupant so we may contact them about the survey and environmental study.

The work may include, but is not limited to: archaeological investigation; assessment of structures for architectural or historic significance; identification and mapping of wetlands and waterways; geotechnical investigation; topographic survey (including mapping the location of features, such as buildings, trees, fences, drives and obtaining ground elevations); and evaluation of land use for completion of environmental documentation. The information we obtain from the above-mentioned work is necessary for the design of this project.

Please be assured of our sincere desire to cause you as little inconvenience as possible during this survey. If any issues do occur, please contact me at (317) 547-5580.

Very truly yours,
American Structurepoint, Inc.

Mike Maurovich, PE
Project Development Director

Indiana Department of Transportation (INDOT)
 State Preservation and Local Initiated Projects FY 2018 - 2021

SPONSOR	CONTR ACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2018	2019	2020	2021
Indiana Department of Transportation	41231 / 1800734	A 33	I 65	ITS Communications Systems	Fiber from 1.1 miles south of I-865 at CDP-N5 to 1.4 miles south of SR 267	Greenfield	2.294	NHPP	\$1,268,595.00	Statewide Consulting	PE	\$99,000.00	\$11,000.00		\$110,000.00		
Comments:Approved Q3 IRTIP amendment																	
Indiana Department of Transportation	41412 / 1801334	A 24	SR 39	Bridge Maintenance And Repair	over Prairie Creek, 0.51 mi N of SR 32	Crawfordsville		0 STP	\$124,724.00	Bridge Construction	CN	\$83,779.20	\$20,944.80			\$104,724.00	
										Bridge Consulting	PE	\$16,000.00	\$4,000.00		\$20,000.00		
Comments:No MPO; Add FY19 \$20,000; Add FY20 \$104,724																	
Indiana Department of Transportation	41610 / 1800188	A 35	SR 75	HMA Overlay Minor Structural	From 0.43 mi S of SR 47 to SR 47	Crawfordsville	.439	STPBG	\$702,265.20	Road Consulting	PE	\$86,435.36	\$21,608.84		\$108,044.20		
										Road ROW	RW	\$43,200.00	\$10,800.00				\$54,000.00
Comments:PE Phase \$108,044.20 FY19, ROW Phase \$54,000 FY21. NO MPO																	
Indiana Department of Transportation	41611 / 1800195	A 35	SR 75	HMA Overlay Minor Structural	From SR 234 to 0.34 mi N of US 136	Crawfordsville	.784	STPBG	\$1,354,297.00	Bridge ROW	RW	\$80,000.00	\$20,000.00				\$100,000.00
										Road Consulting	PE	\$91,221.60	\$22,805.40		\$114,027.00		
Comments:PE phase \$114,027.00 FY19, ROW phase \$100,000 FY21. No MPO																	
Indiana Department of Transportation	41627 / 1800069	A 37	US 52	Bridge Deck Replacement	over I-65 SB/NB; 01.89 mi N of SR 32	Crawfordsville		0 STPBG	\$1,752,089.30	Bridge Consulting	PE	\$127,985.04	\$31,996.26		\$159,981.30		
Comments:PE Phase for \$159,981.30 FY19; No MPO																	
Indiana Department of Transportation	41841 / 1802967	A 35	I 65	Added Travel Lanes	from 0.84 mi N of SR 32 (RP 141+00) to 0.80 mi N or SR 47 (RP 146+70) in Boone County.	Crawfordsville	5.71	NHPP	\$49,000,000.00	Demonstration Fund Program	PE	\$3,600,000.00	\$400,000.00		\$4,000,000.00		
Comments:PE phase for \$4,000,000 FY19, CN phase for \$45,000,000 FY21, No MPO																	
Indiana Department of Transportation	41841 / 1802967	A 36	I 65	Added Travel Lanes	from 0.84 mi N of SR 32 (RP 141+00) to 0.80 mi N or SR 47 (RP 146+70) in Boone County.	Crawfordsville	5.71	NHPP	\$49,000,000.00	Major New - Construction	CN	\$7,425,000.00	\$825,000.00				\$8,250,000.00
										Demonstration Fund Program	CN	\$18,000,000.00	\$2,000,000.00				\$20,000,000.00
										Road Construction	CN	\$15,075,000.00	\$1,675,000.00				\$16,750,000.00
Comments:PE phase for \$4,000,000 FY19, CN phase for \$45,000,000 FY21, BUILD grant. No MPO																	
Indiana Department of Transportation	41980 / 1900524	A 39	I 74	PCCP Patching	3.0 mi W of SR 75 at Big Raccoon Creek Br.	Crawfordsville		0 NHPP	\$200,000.00	Road Construction	CN	\$180,000.00	\$20,000.00		\$200,000.00		
Comments:CN Phase for \$200,000 FY19; No MPO																	

Boone County Total
 Federal: \$163,984,829.16 Match :\$21,447,896.19 2018: \$20,658,943.19 2019: \$68,957,693.31 2020: \$44,049,992.84 2021: \$51,766,096.04

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

Indiana Department of Transportation (INDOT)
 State Preservation and Local Initiated Projects FY 2020 - 2024

SPONSOR	CONTRACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2020	2021	2022	2023	2024
Indiana Department of Transportation	41611 / 1800195	Init.	SR 75	HMA Overlay Minor Structural	From SR 234 to 0.34 mi N of US 136	Crawfordsville	.784	STPBG		Road Construction	CN	\$912,721.60	\$228,180.40				\$1,140,902.00	
Indiana Department of Transportation	41627 / 1800069	Init.	US 52	Bridge Deck Replacement	over I-65 SB/NB; 01.89 mi N of SR 32	Crawfordsville	0	STPBG		Bridge Construction	CN	\$1,273,686.40	\$318,421.60				\$1,592,108.00	
Indiana Department of Transportation	41691 / 1701403	Init.	SR 47	HMA Overlay, Preventive Maintenance	From .49 mi W of SR 75 to US 52	Crawfordsville	3.044	STPBG		Road Construction	CN	\$1,366,293.60	\$341,573.40	\$1,707,867.00				
Indiana Department of Transportation	41841 / 1802967	Init.	I 65	Added Travel Lanes	from 0.84 mi N of SR 32 (RP 141+00) to 0.80 mi N of SR 47 (RP 146+70) in Boone County.	Crawfordsville	5.71	NHPP		Major New - Construction	CN	\$7,425,000.00	\$825,000.00		\$8,250,000.00			
										Demonstration Fund Program	CN	\$18,000,000.00	\$2,000,000.00		\$20,000,000.00			
										Road Construction	CN	\$15,075,000.00	\$1,675,000.00		\$16,750,000.00			

Boone County Total
 Federal: \$100,427,770.54 Match :\$14,593,708.14 2020: \$49,044,532.14 2021: \$53,779,895.54 2022: \$5,285,262.00 2023: \$6,911,789.00 2024:

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

NOISE ANALYSIS REPORT

INTERSTATE 65 ADDED TRAVEL LANES - FROM SR 32 TO SR 47
BOONE COUNTY, INDIANA

DES. NO. 1802967



Prepared for:

INDIANA DEPARTMENT OF TRANSPORTATION

Prepared by:

AMERICAN STRUCTUREPOINT, INC.
9025 RIVER ROAD, SUITE 200
INDIANAPOLIS, INDIANA 46240

MONICA DEL REAL, ENVIRONMENTAL SPECIALIST

JANUARY 13, 2020



AMERICAN
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INC.

7260 SHADELAND STATION
INDIANAPOLIS, INDIANA 46256
317.547.5580

www.structurepoint.com



Executive Summary

This analysis was developed to determine the traffic noise levels and traffic noise impacts associated with the proposed construction of additional travel lanes along Interstate 65 (I-65) from State Road (SR) 32 to SR 47 and the reconfiguration of the I-65 and US 52/Lafayette Avenue interchange, north of the City of Lebanon, Boone County. The proposed project occurs along the existing I-65 roadway and extends east and west beyond the existing right-of-way on new alignment for the proposed reconfiguration of the I-65 and US 52/Lafayette Avenue interchange. The proposed project begins approximately 3,500 feet north of the SR 32 overpass and continues north to approximately 2,000 feet north of the SR 47 northern ramp terminus. The total length of the project is approximately 6 miles.

The proposed project is considered a Type I Project as it involves the addition of through lanes and the reconfiguration of interchange ramps. This noise analysis was prepared in accordance with the Federal Highway Administration's (FHWA's) *Highway Traffic Noise: Analysis and Abatement Guidance (December 2011)*, and the Indiana Department of Transportation's (INDOT's) *Traffic Noise Analysis Procedure (July 1, 2017)*.

The existing year (2020) noise levels, as well as the design year (2043) noise levels were predicted using FHWA'S approved noise predicting program, *Traffic Noise Model, Version 2.5 (TNM 2.5)*. To validate the model, short-term (15 minute) field measurements were taken at 10 sites within the analysis area; all applicable sites were validated.

A total of 308 receptors were identified within the noise analysis area, representing two different noise abatement criteria (NAC) land use activity categories, Activity Categories B and C. Of the 308 receptors analyzed, 304 are classified as single family residential units (Activity Category B), two receptors are associated with the recreational amenities of Kise Estate Apartments (Activity Category C), and two receptors are associated with Trophy Club Golf Course (Activity Category C). The analysis area also includes agricultural, industrial, and undeveloped land that, at the time of this analysis, was not permitted for future development (i.e., new subdivision or commercial building that has been platted). These areas are considered to be Activity Category F and Activity Category G land use types for which there is no NAC criteria. While receptors were not placed in these areas, an approximate contour representing the area likely to experience noise exposure levels of 66 dBA has been defined (Appendix A, Page A-8 to A-21). This will assist City planning officials responsible for the permitting of future development in ensuring incompatible land use types do not encroach upon this contour.

The results of this analysis identified 72 receptors as approaching/exceeding the NAC in the design year (2043). Six noise barrier locations were modeled within the analysis area. Based on the studies completed to date, it has been determined that noise abatement is likely, but not guaranteed, at one of these locations; east of I-65 northbound lanes and south of the Lafayette Avenue exit ramp. A re-evaluation of the noise analysis will occur during final design. If during final design it is determined that conditions have changed such that noise abatement is not feasible and reasonable, the abatement measures might not be provided. The final decision on the installation of noise abatement measures will be made after completion of the project's final design and the public involvement process. The views of the benefited property owners will be considered in determining the reasonableness of noise abatement measures for this project.

TABLE 5.1 – Noise Barrier Analysis Summary

Proposed Barrier	CNE	Length (feet)	Average Height (feet)	Benefitted Receptors	Feasibility Criteria Met	Design Goal Met	Cost of Barrier (assuming \$30/sq ft)	Cost per Benefitted Receptor	Cost Effective Threshold	Cost Reasonable Criteria Met
NB 1	2	2,076	14.12	116	Yes	Yes	\$879,363.00	\$7,580.72	\$30,000*	Yes
NB 2	5	1,140	15.65	4	Yes	Yes	\$535,114.00	\$133,778.50	\$30,000	No
NB 3	4	1,000	15.40	1	Yes	Yes	\$462,000.00	\$462,000.00	\$30,000	No
NB 4	8	1,483	21.37	0	No	No	\$948,318.00	N/A	\$30,000	No
NB 5	6	800	15.5	1	Yes	Yes	\$371,997.00	\$371,997.00	\$30,000	No
NB 6	7	1,106	17.98	1	Yes	Yes	\$596,384.00	\$596,384.00	\$30,000	No

*A cost effective threshold of \$30,000 was utilized as it is anticipated that all currently unoccupied lots within CNE 2 will be constructed by the completion of this project

5.2 Additional Noise Abatement Measures

Additional noise abatement measures considered for this project include the restriction or prohibiting of truck traffic, altering of the horizontal and vertical alignments, acquisition of property for construction of berms, and acquisition of buffer zones to prevent development that could be adversely impacted.

The restriction or prohibiting of trucks traffic along I-65 is beyond the scope of this project and would require changes in legislation. Alteration of the horizontal and vertical alignment within the current right-of-way and design criteria would not provide sufficient changes in the traffic noise levels to the abutting properties. The current project proposes to maintain the existing alignment along I-65 and add the additional travel lanes to the median, away from abutting properties. Acquisition of property for construction of berms or as a buffer zone was not considered reasonable as it would require a substantial amount of additional right-of-way.

6.0 Construction Noise

The identified receptors will be affected by the noise generated from power-operated equipment utilized during construction. This equipment will be operated intermittently and will likely produce noise in the range of 70-98 dBA, with louder experiences occurring at those receptors closest to the construction limits. To minimize these impacts, construction equipment should be operated in compliance with all applicable local noise ordinances and regulations pertaining to construction noise for Boone County and the City of Lebanon. Also, restricting construction activities to daytime working hours may help minimize construction noise impacts during nighttime hours. The project plans and specifications should include provisions requiring the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and maintenance of muffler systems. If such measures are applied, the temporary effects to the nearby receptors should be minimized.

7.0 Coordination with Local Officials

Conflicts with future development along the proposed corridor are able to be minimized with appropriate noise compatible planning. This effort starts with knowledge about a project's specific noise impacts being shared with those local officials having the decision-making authority over the planning and zoning status of land within the analysis area. In accordance with the *INDOT Traffic Noise Analysis Procedure (July 1, 2017) and 23 CFR 772.15* this report will be provided to the City of Lebanon's Area Planning Organization following the completion of the environmental document. This is typically done to allow the local government planning branches to protect incompatible land use types, such as Activity Categories B and C, from developing within the approximate 66 dBA contour.

The 66 dBA contour is an estimation of the future receptor impact zone following construction of the project. The 66 dBA contour for the proposed project is estimated to occur 500 feet from the I-65 edge of pavement, varying slightly depending on topography (Appendix A, Page A-8 to A-21).

8.0 Public Involvement

As stated in the *INDOT Traffic Noise Analysis Procedure*, INDOT is required to seek the input of owners and residents of all benefited properties. The concerns and opinions of the property owners and the unit occupants will be taken into consideration in determining whether a barrier is appropriate for a given location. This information will be gathered during the public involvement process that will commence following the approval of this *Noise Analysis Report* and the results of this process will be detailed in a *Final Noise Analysis Report*.


9.0 Statement of Likelihood

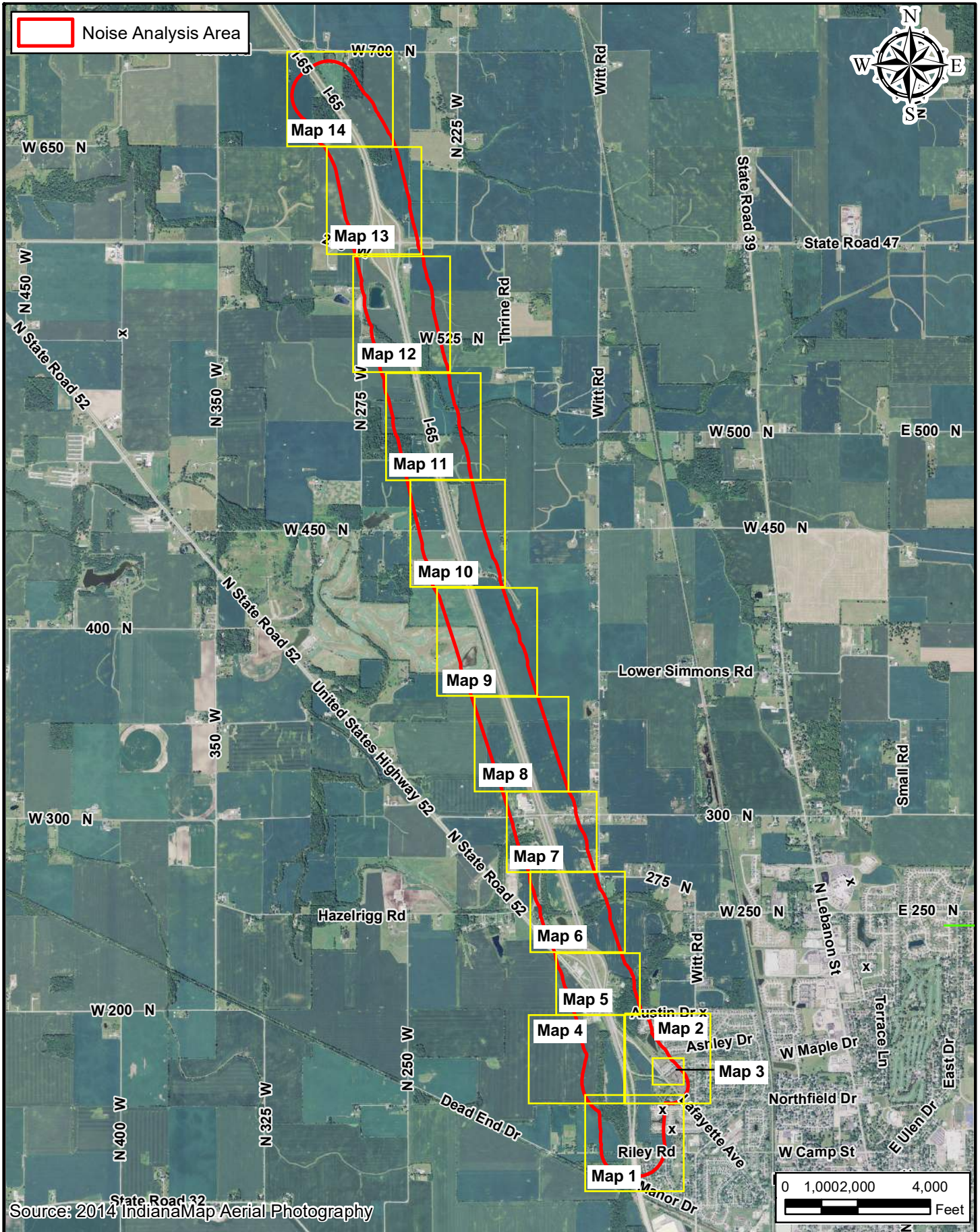
Based upon the analysis completed to date, 72 impacted receptors have been identified and it has been determined that noise abatement is likely, but not guaranteed, at one location. Noise abatement at this location is based on preliminary design costs and criteria. Noise abatement at this location has been estimated at \$879,363. A re-evaluation of the noise analysis will occur during final design. If during final design it is determined the conditions have changed such that noise abatement is not feasible and reasonable, the abatement measures might not be provided.

The final decision on the installation of any abatement measures will be made upon the completion of the project's final design and public involvement process.

10.0 Conclusion

A total of 72 receptors were identified within the noise analysis area as approaching/exceeding the NAC in the 2043 design year. Six noise barrier locations were evaluated within the noise analysis area. One noise barrier location (NB 1) was determined to be feasible and reasonable; east of I-65 northbound lanes, south of the Lafayette Avenue exit ramp. Noise abatement at this location is based upon preliminary estimated costs and design criteria. Noise abatement is likely, but not guaranteed at this location. Additional information regarding the evaluated noise barriers is provided in Appendix E.

 Noise Analysis Area



Source: 2014 IndianaMap Aerial Photography

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Noise Analysis Map - Key

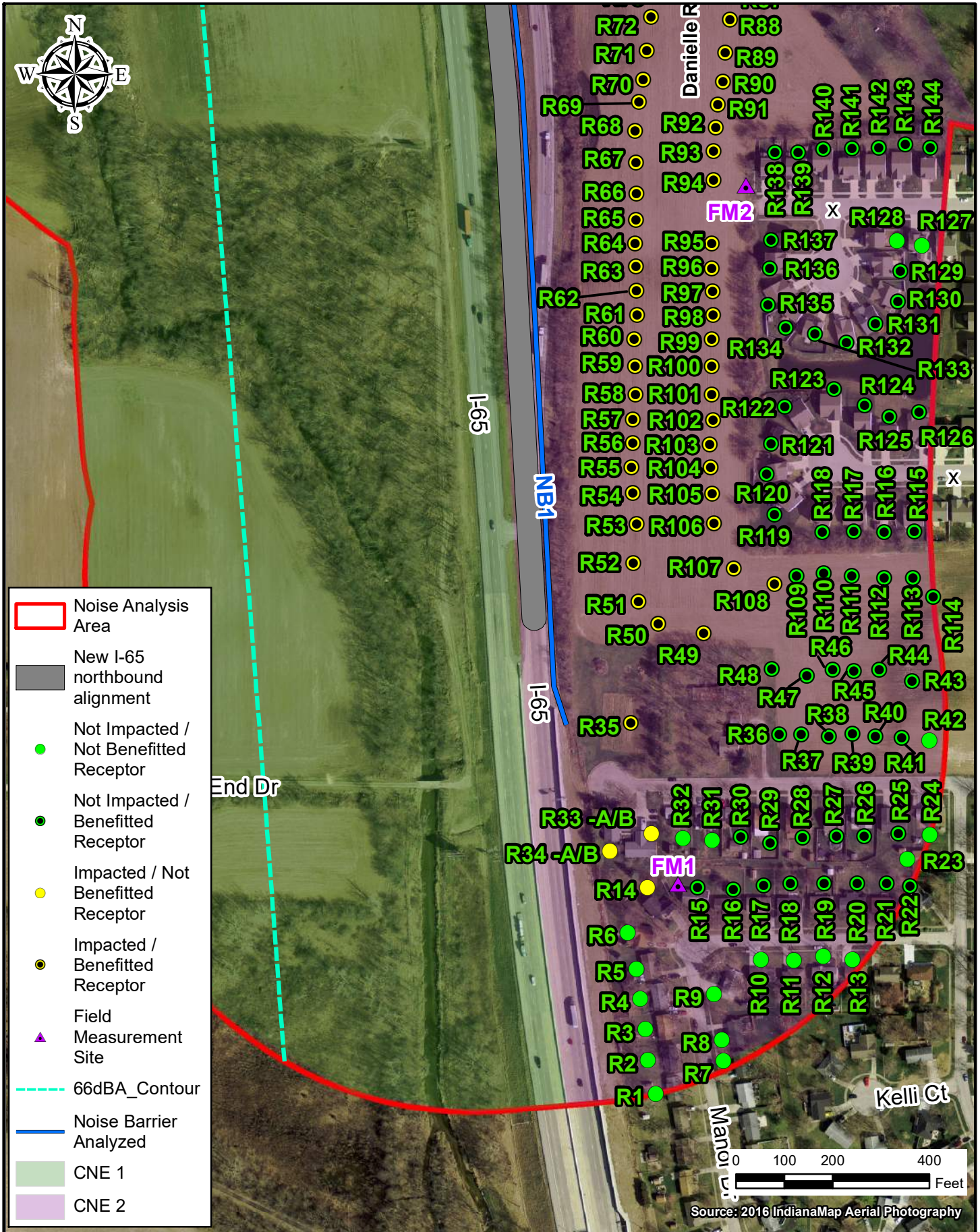
INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

I-65 Added Travel Lanes SR 32 to SR 47
Des. No. 1802967

Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana

Date: 11/14/2019

Appendix I
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- Noise Analysis Area
- New I-65 northbound alignment
- Not Impacted / Not Benefitted Receptor
- Not Impacted / Benefitted Receptor
- Impacted / Not Benefitted Receptor
- Impacted / Benefitted Receptor
- ▲ Field Measurement Site
- 66dBA_Contour
- Noise Barrier Analyzed
- CNE 1
- CNE 2

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Noise Analysis Map - Map 1

INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

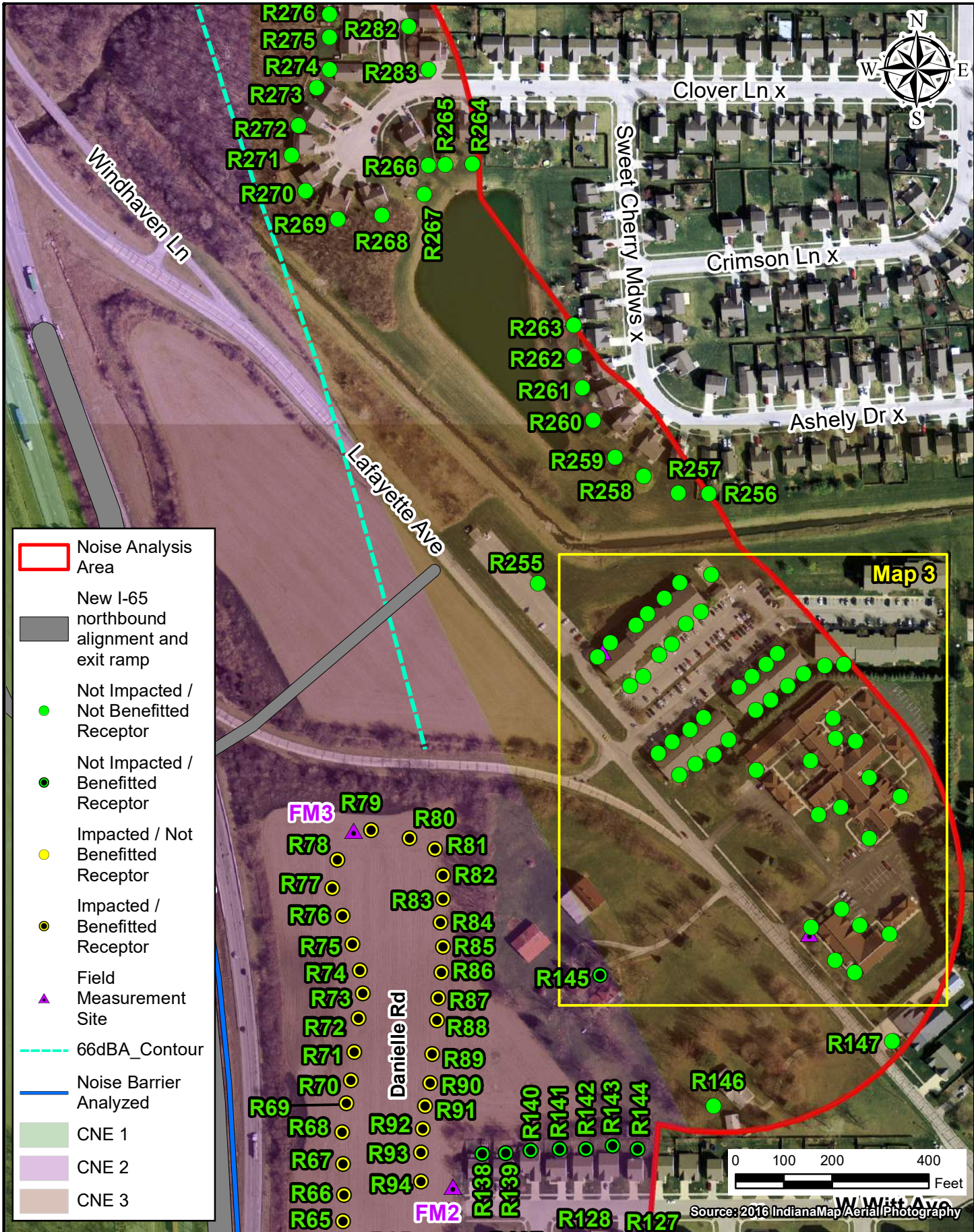
I-65 Added Travel Lanes
Des. No. 1802967

Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana

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Date: 01/08/2020

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- Noise Analysis Area
- New I-65 northbound alignment and exit ramp
- Not Impacted / Not Benefitted Receptor
- Not Impacted / Benefitted Receptor
- Impacted / Not Benefitted Receptor
- Impacted / Benefitted Receptor
- ▲ Field Measurement Site
- 66dBA_Contour
- Noise Barrier Analyzed
- CNE 1
- CNE 2
- CNE 3

Noise Analysis Map - Map 2

INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

Date: 01/08/2020

I-65 Added Travel Lanes
Des. No. 1802967

Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana

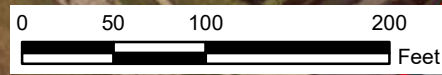
Appendix I
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Source: 2016 IndianaMap Aerial Photography



- Noise Analysis Area
- Not Impacted / Not Benefitted Receptor
- Not Impacted / Benefitted Receptor
- Impacted / Not Benefitted Receptor
- Impacted / Benefitted Receptor
- Field Measurement Site
- Noise Barrier Analyzed
- CNE 3



Source: 2016 IndianaMap Aerial Photography

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Noise Analysis Map - Map 3

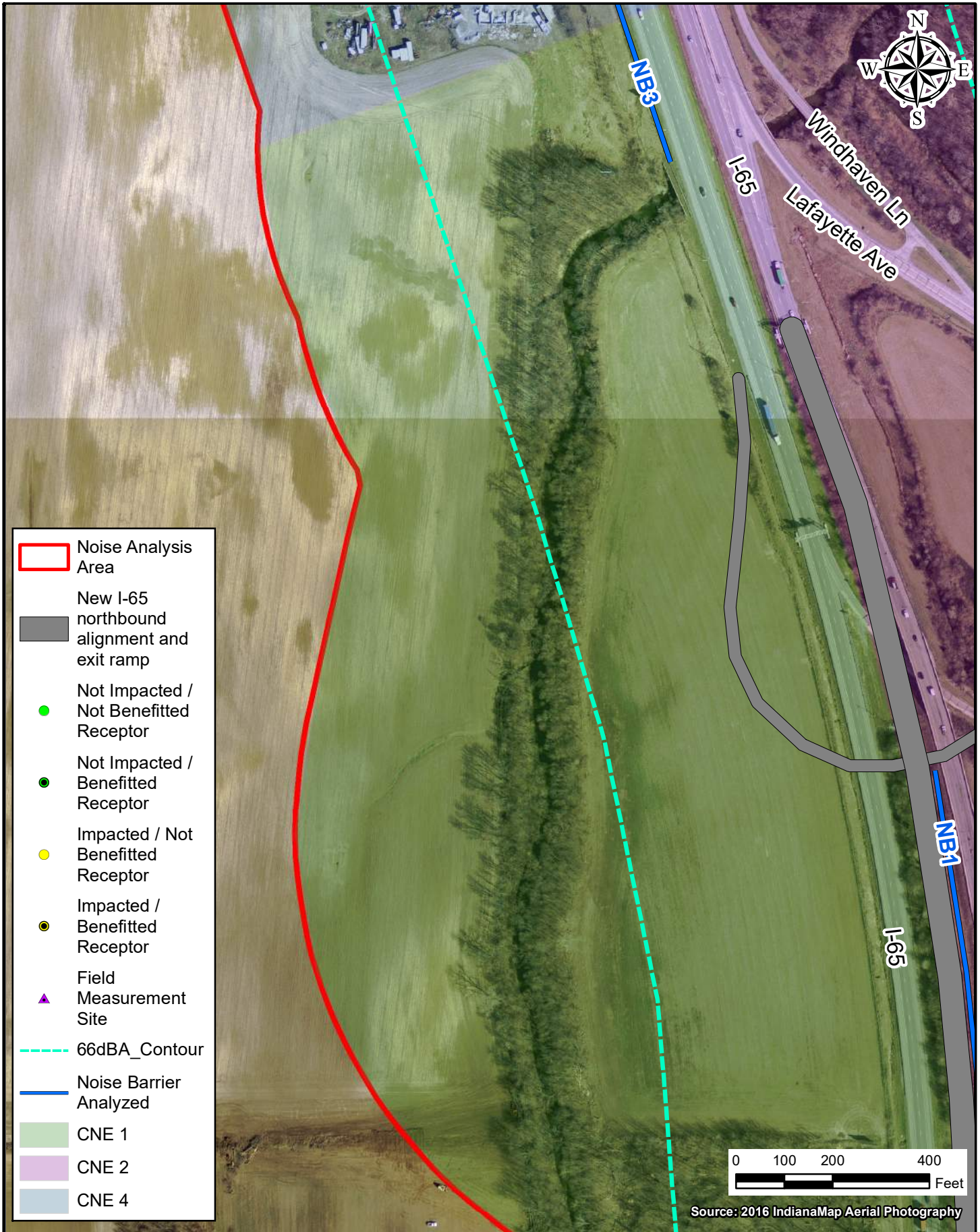
INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

I-65 Added Travel Lanes
Des. No. 1802967
Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana

Date: 01/08/2020

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- Noise Analysis Area
- New I-65 northbound alignment and exit ramp
- Not Impacted / Not Benefitted Receptor
- Not Impacted / Benefitted Receptor
- Impacted / Not Benefitted Receptor
- Impacted / Benefitted Receptor
- ▲ Field Measurement Site
- 66dBA_Contour
- Noise Barrier Analyzed
- CNE 1
- CNE 2
- CNE 4

Source: 2016 IndianaMap Aerial Photography



AMERICAN
STRUCTUREPOINT
INC.

Noise Analysis Map - Map 4

INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

I-65 Added Travel Lanes
Des. No. 1802967

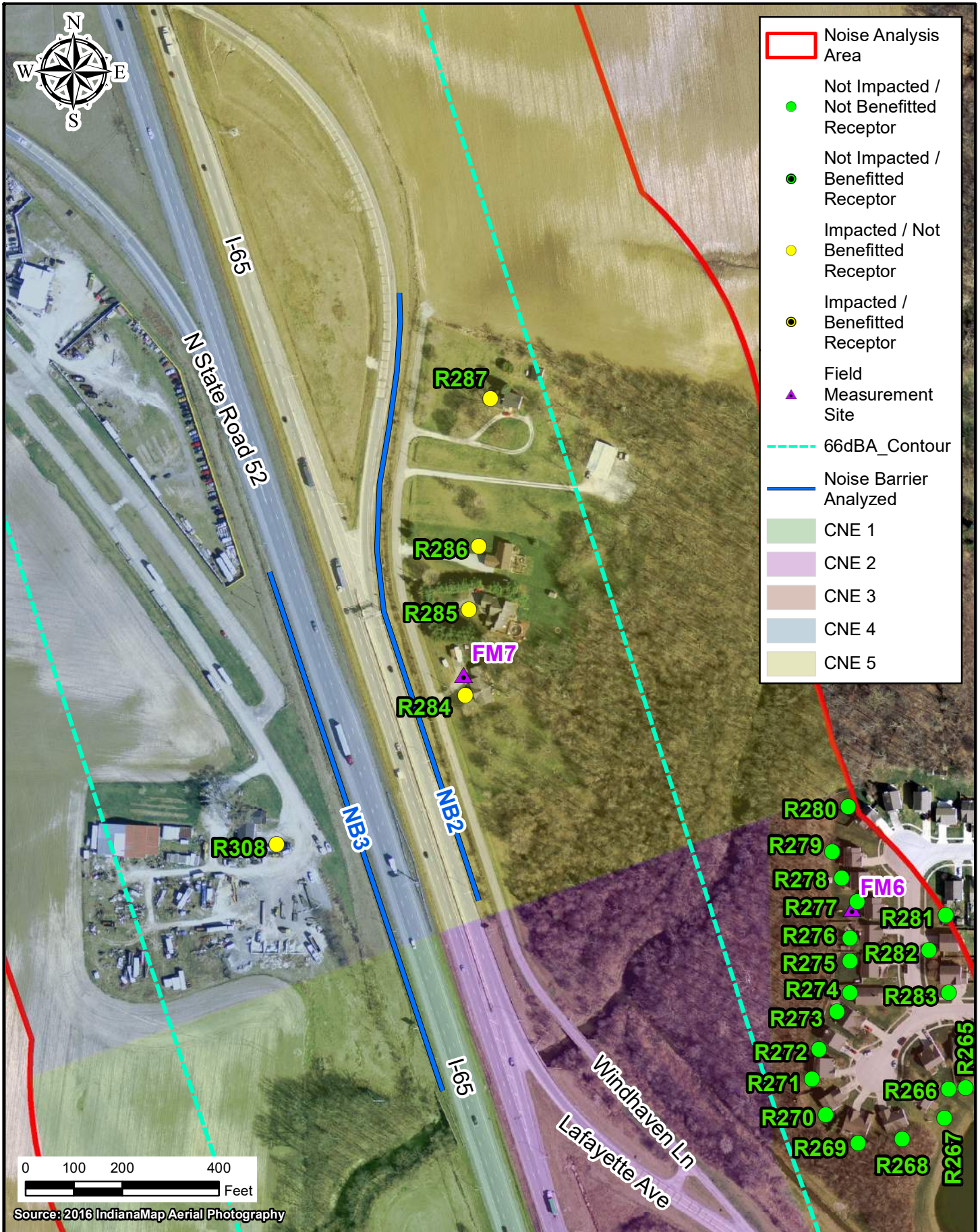
Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana

Date: 01/08/2020

Appendix I
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- Noise Analysis Area
- Not Impacted / Not Benefitted Receptor
- Not Impacted / Benefitted Receptor
- Impacted / Not Benefitted Receptor
- Impacted / Benefitted Receptor
- ▲ Field Measurement Site
- 66dBA_Contour
- Noise Barrier Analyzed
- CNE 1
- CNE 2
- CNE 3
- CNE 4
- CNE 5



Source: 2016 IndianaMap Aerial Photography

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Noise Analysis Map - Map 5

INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

I-65 Added Travel Lanes
Des. No. 1802967

Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana

Appendix I
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Date: 01/08/2020



R288

R305

R306

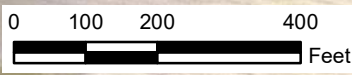
R307

FM8

N State Road 52

I-65

N State Road 52



Source: 2016 IndianaMap Aerial Photography

	Noise Analysis Area
	Not Impacted / Not Benefitted Receptor
	Not Impacted / Benefitted Receptor
	Impacted / Not Benefitted Receptor
	Impacted / Benefitted Receptor
	Field Measurement Site
	66dBA Contour
	Noise Barrier Analyzed
	CNE 4
	CNE 5
	CNE 6
	CNE 7

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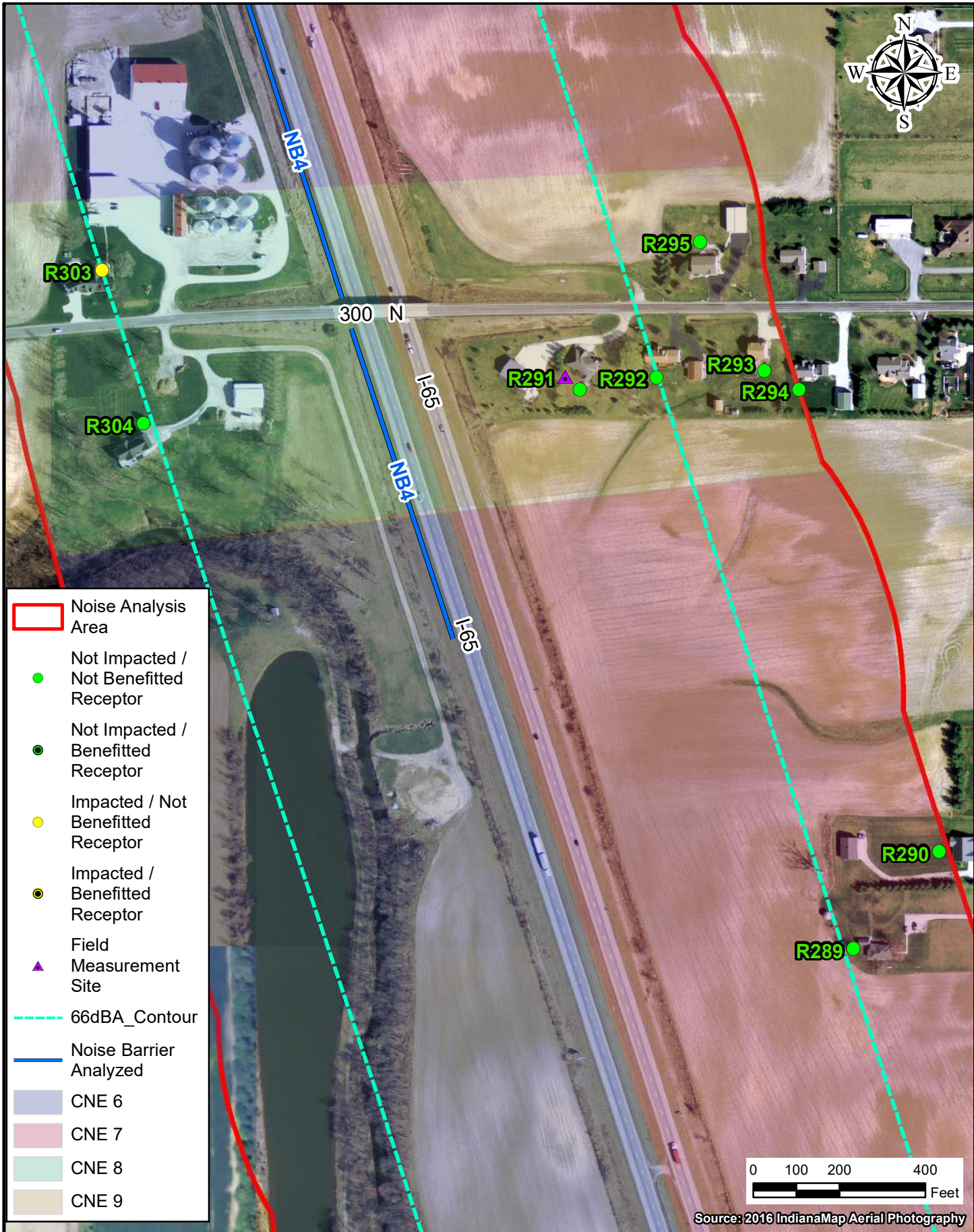
Noise Analysis Map - Map 6

INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

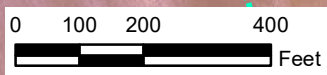
I-65 Added Travel Lanes
Des. No. 1802967
Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana

Date: 01/08/2020

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- Noise Analysis Area
- Not Impacted / Not Benefitted Receptor
- Not Impacted / Benefitted Receptor
- Impacted / Not Benefitted Receptor
- Impacted / Benefitted Receptor
- Field Measurement Site
- 66dBA_Contour
- Noise Barrier Analyzed
- CNE 6
- CNE 7
- CNE 8
- CNE 9



Source: 2016 IndianaMap Aerial Photography

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Noise Analysis Map - Map 7

INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

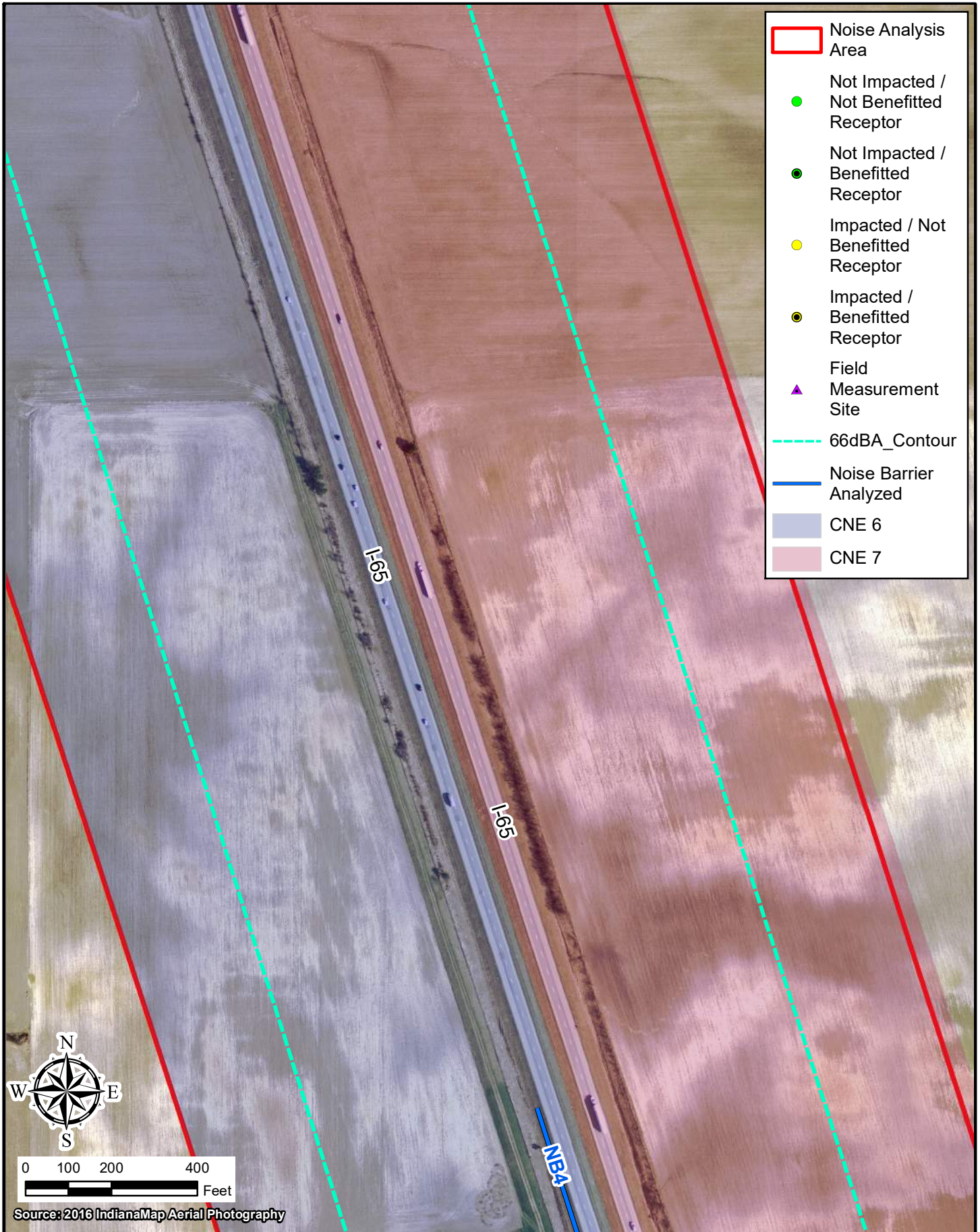
I-65 Added Travel Lanes
Des. No. 1802967











Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana

Date: 01/08/2020

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-  Noise Analysis Area
-  Not Impacted / Not Benefitted Receptor
-  Not Impacted / Benefitted Receptor
-  Impacted / Not Benefitted Receptor
-  Impacted / Benefitted Receptor
-  Field Measurement Site
-  66dBA_Contour
-  Noise Barrier Analyzed
-  CNE 6
-  CNE 7



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Feet

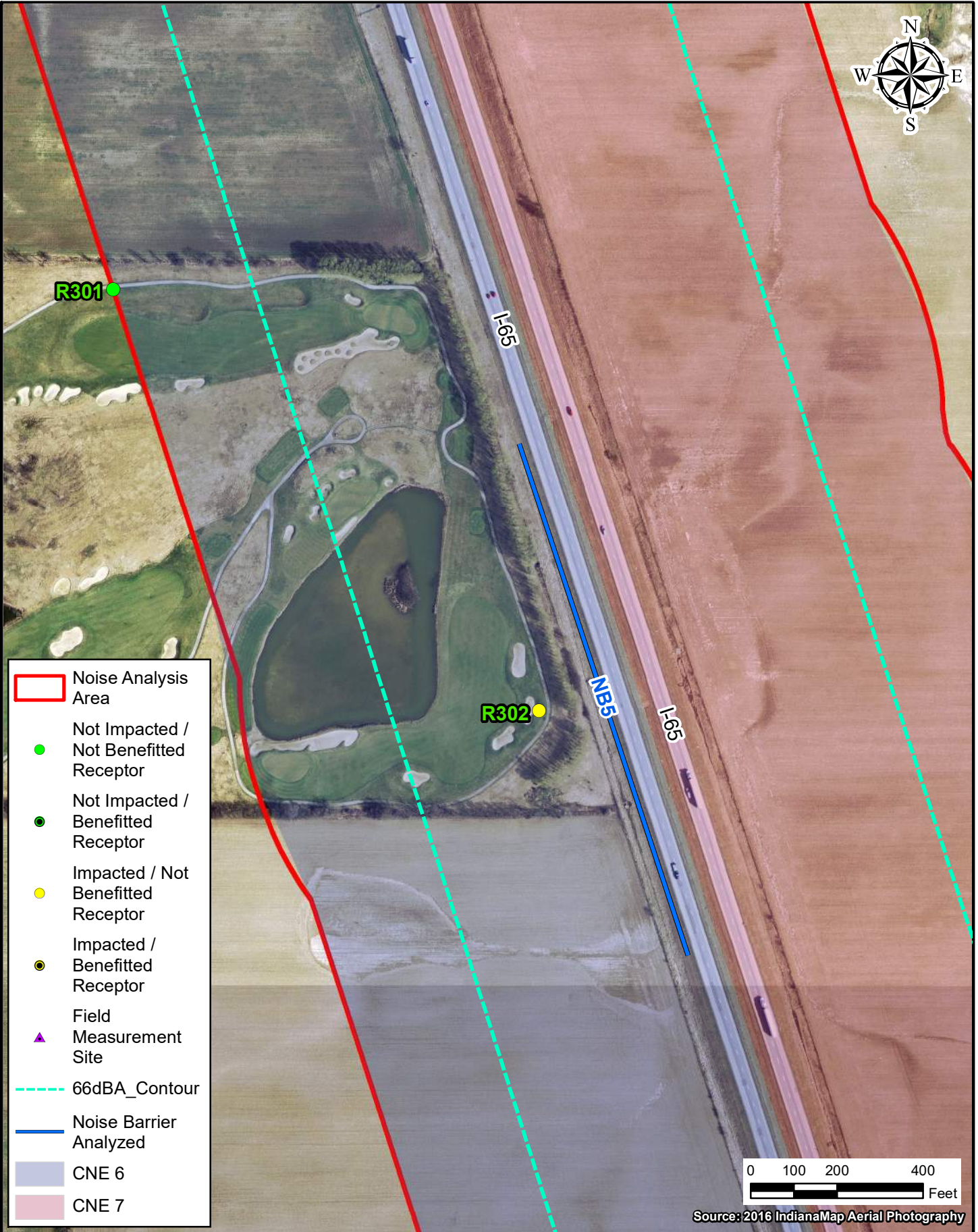
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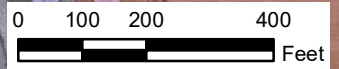
Noise Analysis Map - Map 8

INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

I-65 Added Travel Lanes
Des. No. 1802967
Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana
Date: 01/08/2020
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-  Noise Analysis Area
-  Not Impacted / Not Benefitted Receptor
-  Not Impacted / Benefitted Receptor
-  Impacted / Not Benefitted Receptor
-  Impacted / Benefitted Receptor
-  Field Measurement Site
-  66dBA_Contour
-  Noise Barrier Analyzed
-  CNE 6
-  CNE 7



Source: 2016 IndianaMap Aerial Photography

Path: P:\2018\02792\Drawings\Environmental\Arc View\I-65 ATL\Exhibits\Noise\2018.02792.EV\2019-05-14-I-65ATL_Map_Map12.mxd Date: 1/9/2020 User: mdl/real



Noise Analysis Map - Map 9

INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

I-65 Added Travel Lanes
Des. No. 1802967

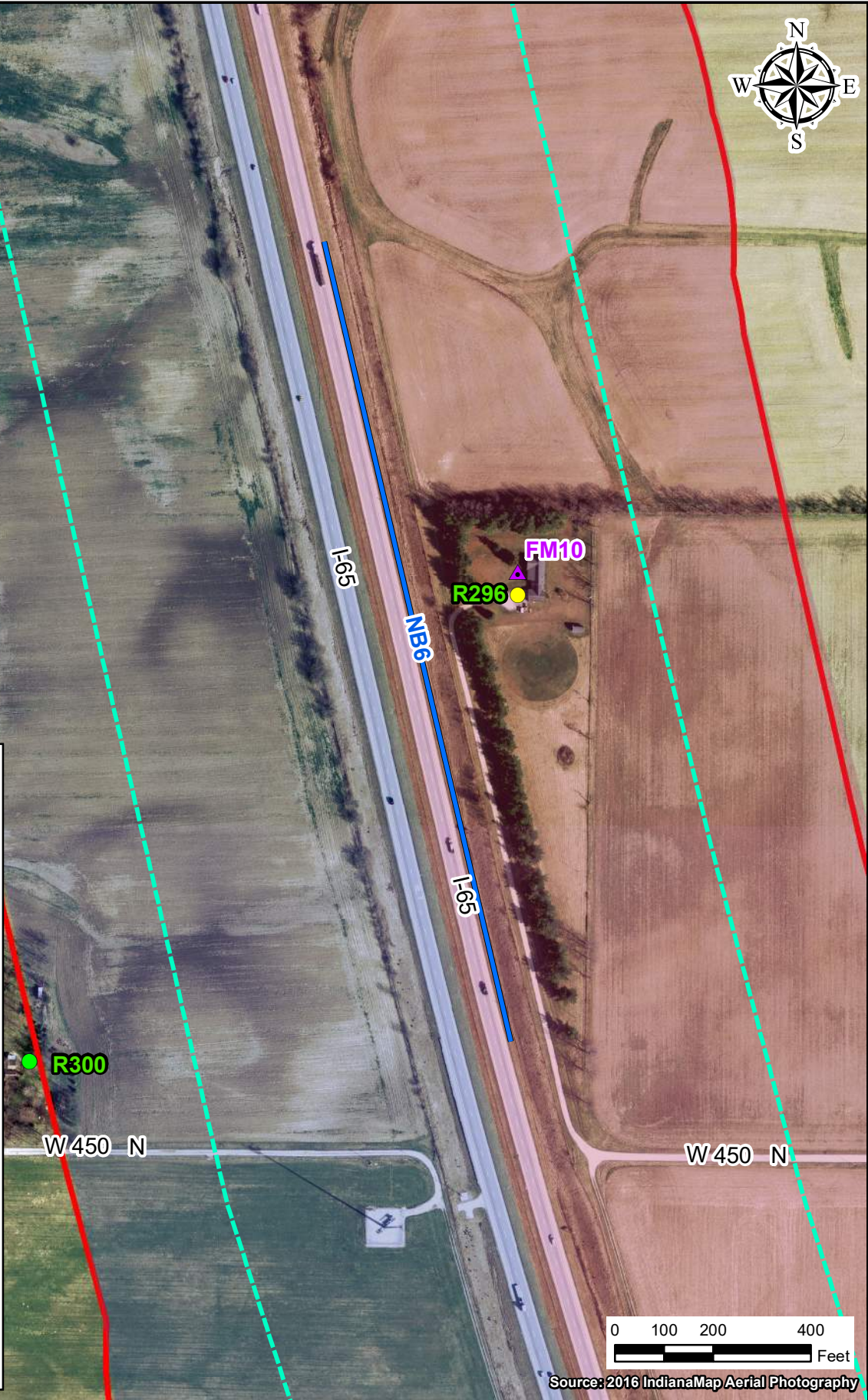
Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana

Date: 01/08/2020

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	Noise Analysis Area
	Not Impacted / Not Benefitted Receptor
	Not Impacted / Benefitted Receptor
	Impacted / Not Benefitted Receptor
	Impacted / Benefitted Receptor
	Field Measurement Site
	66dBA_Contour
	Noise Barrier Analyzed
	CNE 6
	CNE 7



Source: 2016 IndianaMap Aerial Photography

Path: P:\2018\02792\I.D. Drawings\Environmental\Arc View\I-65 ATL\Exhibits\Noise\2018.02792.EV\2019-05-14-I-65ATL_Map9.mxd Date: 1/9/2020 User: modelreal



Noise Analysis Map - Map 10

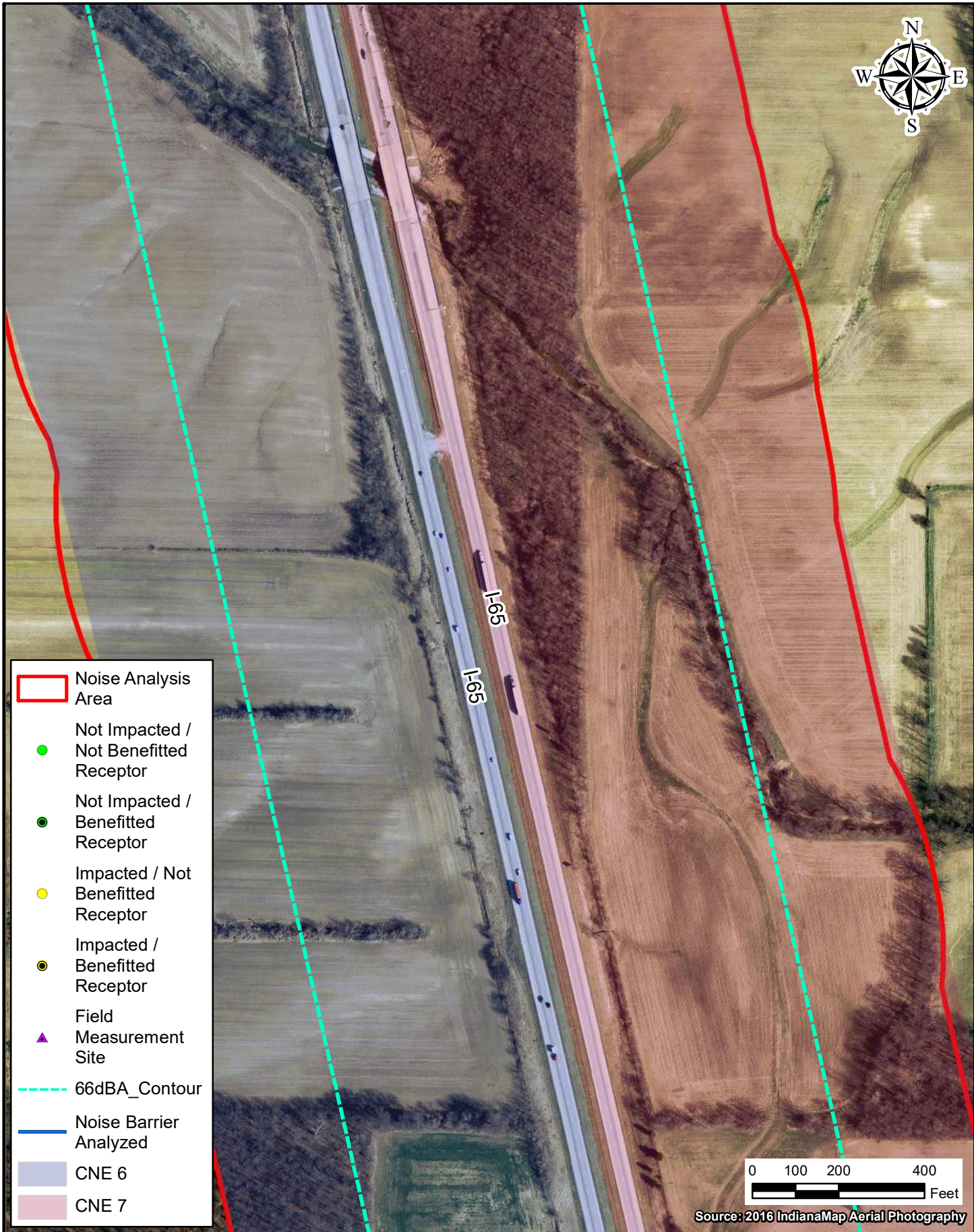
INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

I-65 Added Travel Lanes
Des. No. 1802967

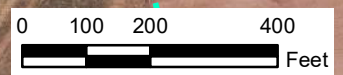
Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana

Date: 01/08/2020

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- Noise Analysis Area
- Not Impacted / Not Benefitted Receptor
- Not Impacted / Benefitted Receptor
- Impacted / Not Benefitted Receptor
- Impacted / Benefitted Receptor
- ▲ Field Measurement Site
- 66dBA_Contour
- Noise Barrier Analyzed
- CNE 6
- CNE 7



Source: 2016 IndianaMap Aerial Photography

Path: P:\2018\02792\Drawings\Environmental\Arc View\I-65 ATL\Exhibits\Noise\2018.02792.EV2019-05-14.I-65ATL_Map_Map12.mxd Date: 1/9/2020 User: mdelreal



Noise Analysis Map - Map 11

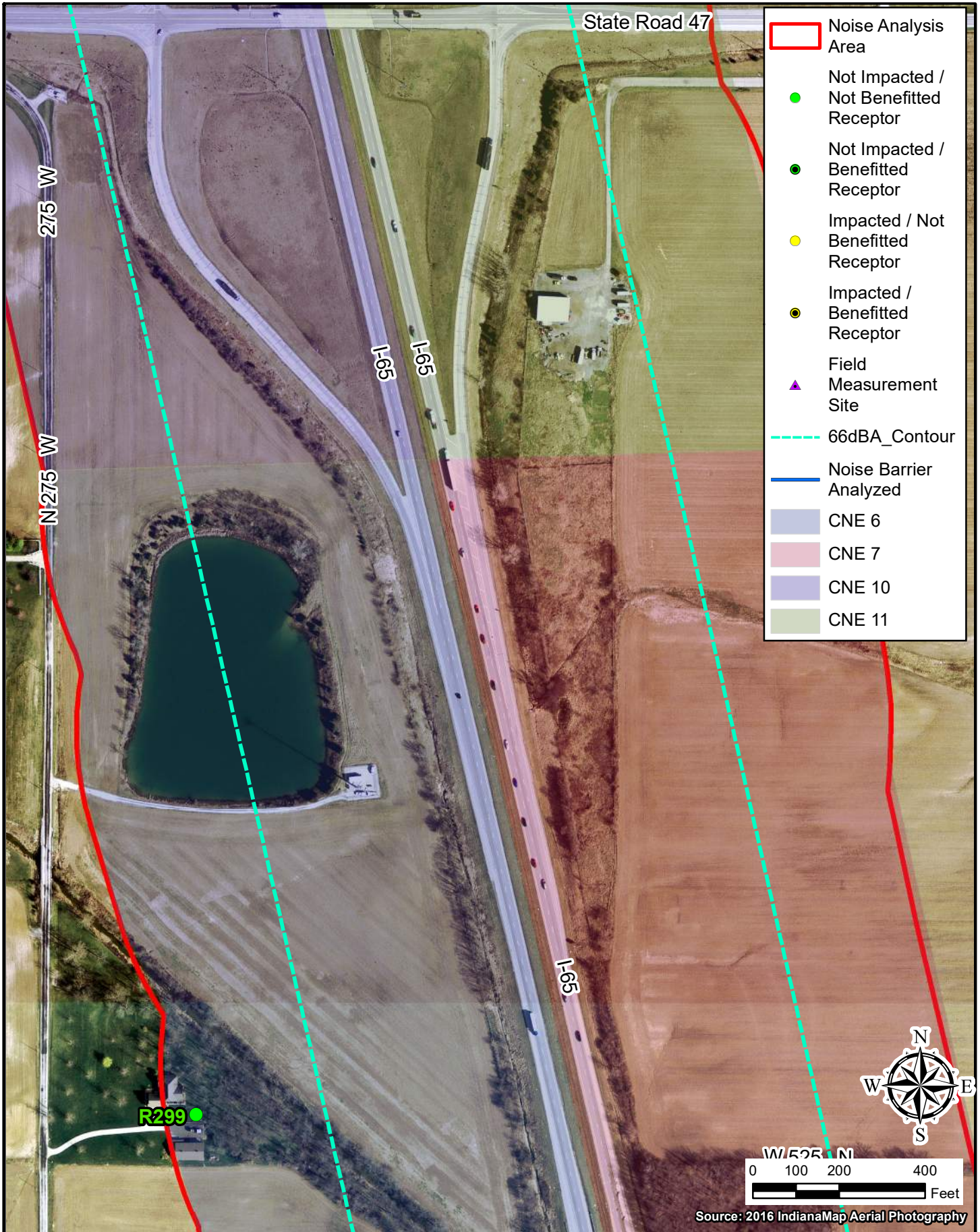
INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

I-65 Added Travel Lanes
Des. No. 1802967
Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana

Date: 01/08/2020

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Path: P:\2018\02792\Drawings\Environmental\Arc View\I-65 ATL\Exhibits\Noise\2018.02792.EV2019-05-14.I-65ATL_Map12.mxd Date: 1/9/2020 User: mdelreal

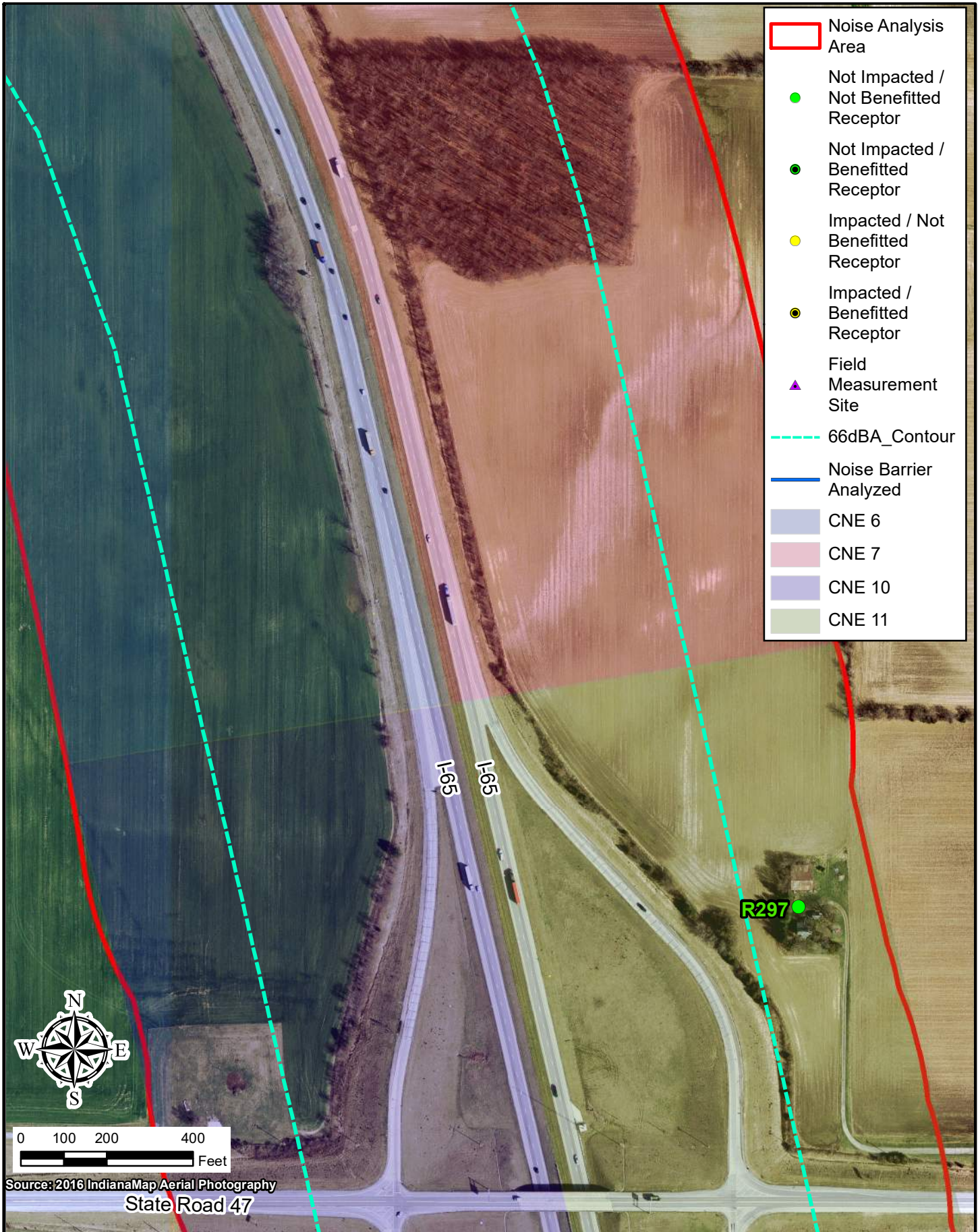


Noise Analysis Map - Map 12

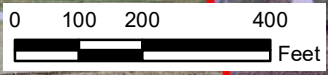
INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

I-65 Added Travel Lanes
Des. No. 1802967
Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana
Date: 01/08/2020

Path: P:\2018\02792\Drawings\Environmental\Arc View\I-65 ATL\Exhibits\Noise\2018.02792.EV\2019-05-14.I-65ATL_Map_Map12.mxd Date: 1/9/2020 User: mdelreal



- Noise Analysis Area
- Not Impacted / Not Benefitted Receptor
- Not Impacted / Benefitted Receptor
- Impacted / Not Benefitted Receptor
- Impacted / Benefitted Receptor
- ▲ Field Measurement Site
- 66dBA_Contour
- Noise Barrier Analyzed
- CNE 6
- CNE 7
- CNE 10
- CNE 11



Source: 2016 IndianaMap Aerial Photography
State Road 47



Noise Analysis Map - Map 13











INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

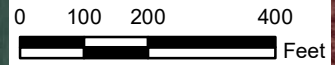
I-65 Added Travel Lanes
Des. No. 1802967
Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana
Date: 01/08/2020
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R298

I-65 I-65

-  Noise Analysis Area
-  Not Impacted / Not Benefitted Receptor
-  Not Impacted / Benefitted Receptor
-  Impacted / Not Benefitted Receptor
-  Impacted / Benefitted Receptor
-  Field Measurement Site
-  66dBA_Contour
-  Noise Barrier Analyzed
-  CNE 6
-  CNE 7



Source: 2016 IndianaMap Aerial Photography

Path: P:\2018\02792\Drawings\Environmental\Arc View\I-65 ATL\Exhibits\Noise\2018.02792.EV\2019-05-14.I-65ATL_Map12.mxd Date: 1/9/2020 User: mdelreal



Noise Analysis Map - Map 14

INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

I-65 Added Travel Lanes
Des. No. 1802967
Location: Lebanon
Townships: Center and Washington
County: Boone
State: Indiana
Date: 01/08/2020
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Del Real, Monica

From: Miller, Brandon <BraMiller1@indot.IN.gov>
Sent: Wednesday, January 29, 2020 9:36 AM
To: Del Real, Monica
Cc: Bales, Ronald; Patton, Melissa
Subject: I-65 Added Travel Lanes from SR 32 to SR 47, Boone County, Indiana, Des No 1802967

The draft noise report for the I-65 added travel lanes project in Boone County, Indiana is technically sufficient and can continue with seeking public input on the one noise barrier that was determined to be feasible and reasonable that met INDOT Design Goal, Cost Effectiveness. The public input criterion for reasonableness will need to be completed before the noise report can be finalized. The finalized report will then be updated to reflect public input and the recommended barrier that met all of the feasible and reasonable criterion. An approval of the noise study will be provided at that time. Thank you.

Brandon Miller

NEPA Team Lead

INDOT Environmental Services Division

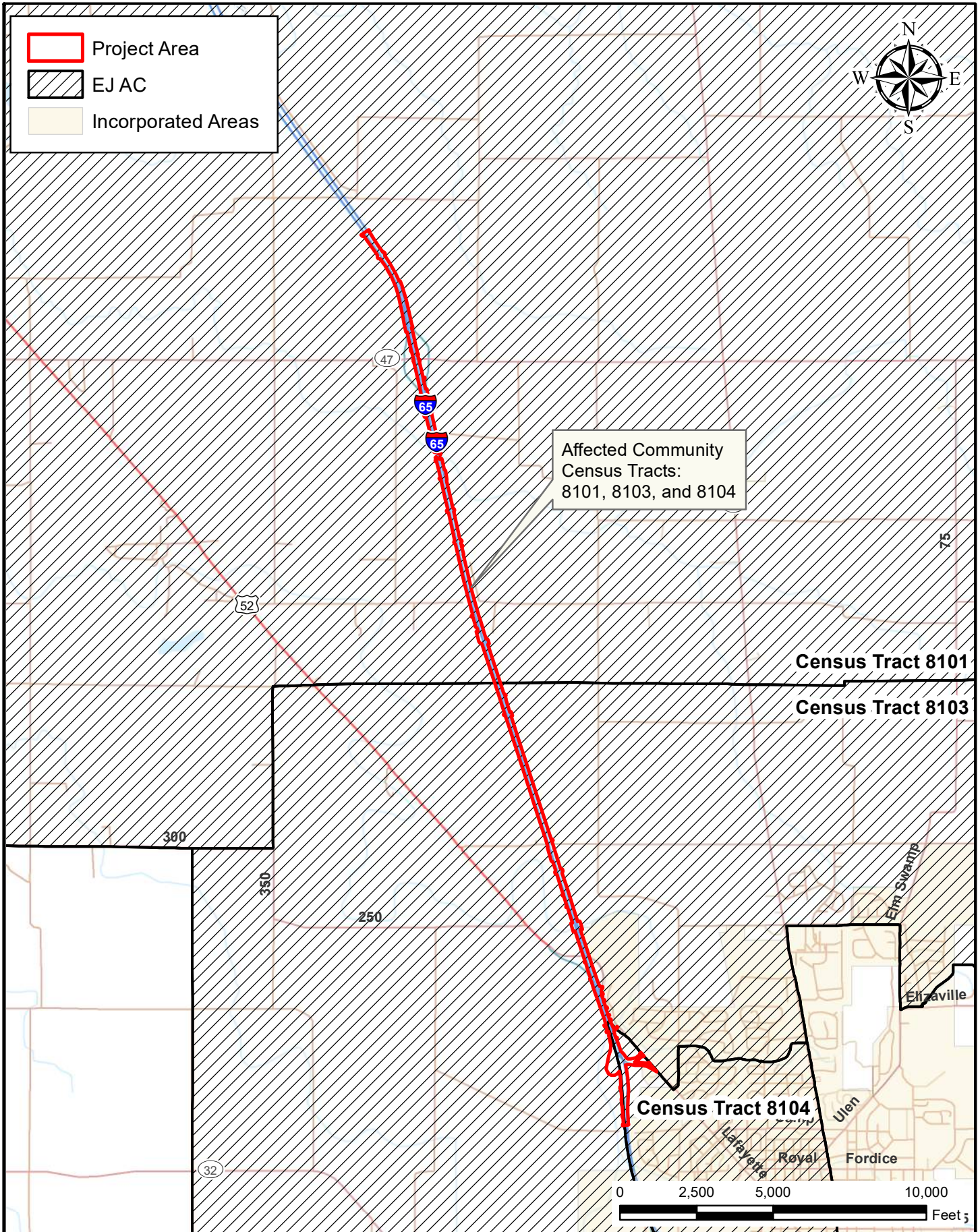
100 N. Senate Ave., Rm. N642-ES

Indianapolis, IN 46204

Office: (317) 234-5108



Path: \\indySANP\Projects\2018\02792\E_Reports_Specs\Environmental\E_Analysis\2018.02792_EV\2019-12-09_Map\E_J.mxd Date: 1/8/2020 User: mdelreal



Environmental Justice Mapping

INDOT Crawfordsville District
41 West County Road 300 North
Crawfordsville, Indiana 47933

I-65 Added Travel Lanes SR 32 to SR 47

Des. No. 1802967
Location: Lebanon
Township: Center and Washington
County: Boone
State: Indiana

Date: 12/10/2019



B17001

POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

Universe: Population for whom poverty status is determined
2013-2017 American Community Survey 5-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

	Boone County, Indiana		Census Tract 8101, Boone County, Indiana		Census Tract 8103, Boone County, Indiana	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Total:	62,293	+/-159	3,625	+/-229	5,745	+/-398
Income in the past 12 months below poverty level:	3,820	+/-706	265	+/-205	574	+/-295
Male:	1,707	+/-354	169	+/-136	239	+/-165
Under 5 years	120	+/-73	0	+/-11	25	+/-36
5 years	0	+/-27	0	+/-11	0	+/-16
6 to 11 years	270	+/-108	35	+/-39	32	+/-45
12 to 14 years	185	+/-101	26	+/-36	0	+/-16
15 years	55	+/-51	24	+/-32	0	+/-16
16 and 17 years	37	+/-38	0	+/-11	0	+/-16
18 to 24 years	124	+/-82	0	+/-11	0	+/-16
25 to 34 years	194	+/-104	8	+/-13	55	+/-61
35 to 44 years	143	+/-95	32	+/-34	0	+/-16
45 to 54 years	298	+/-125	25	+/-35	68	+/-78
55 to 64 years	131	+/-71	13	+/-20	31	+/-44
65 to 74 years	85	+/-48	6	+/-10	5	+/-10
75 years and over	65	+/-47	0	+/-11	23	+/-27
Female:	2,113	+/-420	96	+/-76	335	+/-146
Under 5 years	220	+/-116	0	+/-11	34	+/-51
5 years	67	+/-58	0	+/-11	0	+/-16

	Boone County, Indiana		Census Tract 8101, Boone County, Indiana		Census Tract 8103, Boone County, Indiana	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
6 to 11 years	268	+/-134	0	+/-11	27	+/-40
12 to 14 years	43	+/-32	0	+/-11	0	+/-16
15 years	0	+/-27	0	+/-11	0	+/-16
16 and 17 years	67	+/-55	25	+/-34	0	+/-16
18 to 24 years	274	+/-155	0	+/-11	57	+/-66
25 to 34 years	369	+/-136	8	+/-13	57	+/-59
35 to 44 years	236	+/-99	25	+/-34	53	+/-56
45 to 54 years	181	+/-74	9	+/-14	30	+/-37
55 to 64 years	212	+/-76	29	+/-27	50	+/-46
65 to 74 years	65	+/-40	0	+/-11	0	+/-16
75 years and over	111	+/-63	0	+/-11	27	+/-28
Income in the past 12 months at or above poverty level:	58,473	+/-695	3,360	+/-250	5,171	+/-419
Male:	29,210	+/-387	1,654	+/-160	2,541	+/-245
Under 5 years	2,007	+/-109	65	+/-62	198	+/-142
5 years	520	+/-139	29	+/-34	92	+/-82
6 to 11 years	2,725	+/-297	109	+/-59	90	+/-60
12 to 14 years	1,406	+/-221	74	+/-46	122	+/-81
15 years	479	+/-106	28	+/-30	60	+/-43
16 and 17 years	981	+/-123	78	+/-46	80	+/-79
18 to 24 years	2,265	+/-117	82	+/-60	195	+/-103
25 to 34 years	3,172	+/-122	223	+/-90	194	+/-91
35 to 44 years	4,082	+/-147	215	+/-49	277	+/-80
45 to 54 years	4,553	+/-154	277	+/-81	529	+/-118
55 to 64 years	3,769	+/-117	241	+/-69	280	+/-97
65 to 74 years	2,039	+/-63	157	+/-50	205	+/-87
75 years and over	1,212	+/-54	76	+/-38	219	+/-79
Female:	29,263	+/-411	1,706	+/-193	2,630	+/-282
Under 5 years	1,684	+/-134	106	+/-66	95	+/-75
5 years	448	+/-139	33	+/-32	29	+/-41
6 to 11 years	2,324	+/-265	173	+/-95	126	+/-93
12 to 14 years	1,629	+/-252	82	+/-50	175	+/-115
15 years	457	+/-116	45	+/-40	38	+/-41
16 and 17 years	796	+/-128	20	+/-25	23	+/-37
18 to 24 years	1,926	+/-163	119	+/-69	196	+/-119
25 to 34 years	3,301	+/-172	115	+/-72	199	+/-81
35 to 44 years	4,171	+/-160	214	+/-45	290	+/-98
45 to 54 years	4,769	+/-160	305	+/-78	457	+/-113
55 to 64 years	3,761	+/-96	245	+/-76	302	+/-111
65 to 74 years	2,348	+/-83	149	+/-56	425	+/-107
75 years and over	1,649	+/-123	100	+/-49	275	+/-119

	Census Tract 8104, Boone County, Indiana	
	Estimate	Margin of Error
Total:	5,511	+/-409
Income in the past 12 months below poverty level:	458	+/-229
Male:	191	+/-115
Under 5 years	29	+/-33
5 years	0	+/-16
6 to 11 years	27	+/-32
12 to 14 years	0	+/-16
15 years	0	+/-16
16 and 17 years	0	+/-16
18 to 24 years	0	+/-16
25 to 34 years	36	+/-41
35 to 44 years	42	+/-65
45 to 54 years	24	+/-37
55 to 64 years	0	+/-16
65 to 74 years	33	+/-36
75 years and over	0	+/-16
Female:	267	+/-158
Under 5 years	24	+/-39
5 years	0	+/-16
6 to 11 years	35	+/-41
12 to 14 years	10	+/-19
15 years	0	+/-16
16 and 17 years	0	+/-16
18 to 24 years	60	+/-66
25 to 34 years	25	+/-29
35 to 44 years	10	+/-16
45 to 54 years	62	+/-50
55 to 64 years	13	+/-21
65 to 74 years	28	+/-33
75 years and over	0	+/-16
Income in the past 12 months at or above poverty level:	5,053	+/-428
Male:	2,659	+/-274
Under 5 years	127	+/-78
5 years	35	+/-36
6 to 11 years	221	+/-123
12 to 14 years	31	+/-43
15 years	40	+/-40
16 and 17 years	108	+/-71
18 to 24 years	404	+/-116
25 to 34 years	346	+/-125
35 to 44 years	335	+/-135
45 to 54 years	226	+/-87
55 to 64 years	492	+/-157
65 to 74 years	188	+/-98

	Census Tract 8104, Boone County, Indiana	
	Estimate	Margin of Error
75 years and over	106	+/-78
Female:	2,394	+/-242
Under 5 years	72	+/-69
5 years	8	+/-14
6 to 11 years	181	+/-103
12 to 14 years	80	+/-62
15 years	15	+/-27
16 and 17 years	94	+/-89
18 to 24 years	186	+/-142
25 to 34 years	338	+/-125
35 to 44 years	307	+/-101
45 to 54 years	434	+/-111
55 to 64 years	427	+/-151
65 to 74 years	102	+/-62
75 years and over	150	+/-74

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2013-2017 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:

1. An '***' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '****' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.



B03002

HISPANIC OR LATINO ORIGIN BY RACE
Universe: Total population
2013-2017 American Community Survey 5-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

	Boone County, Indiana		Census Tract 8101, Boone County, Indiana		Census Tract 8103, Boone County, Indiana	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Total:	63,013	*****	3,682	+/-221	6,050	+/-402
Not Hispanic or Latino:	61,284	*****	3,663	+/-223	6,023	+/-406
White alone	57,739	+/-58	3,618	+/-216	5,814	+/-404
Black or African American alone	1,014	+/-171	2	+/-3	112	+/-118
American Indian and Alaska Native alone	115	+/-95	0	+/-11	0	+/-16
Asian alone	1,639	+/-108	0	+/-11	0	+/-16
Native Hawaiian and Other Pacific Islander alone	0	+/-27	0	+/-11	0	+/-16
Some other race alone	74	+/-56	0	+/-11	0	+/-16
Two or more races:	703	+/-222	43	+/-38	97	+/-82
Two races including Some other race	8	+/-15	8	+/-15	0	+/-16
Two races excluding Some other race, and three or more races	695	+/-219	35	+/-35	97	+/-82
Hispanic or Latino:	1,729	*****	19	+/-23	27	+/-28
White alone	1,298	+/-225	13	+/-20	5	+/-9
Black or African American alone	0	+/-27	0	+/-11	0	+/-16
American Indian and Alaska Native alone	0	+/-27	0	+/-11	0	+/-16
Asian alone	0	+/-27	0	+/-11	0	+/-16
Native Hawaiian and Other Pacific Islander alone	0	+/-27	0	+/-11	0	+/-16
Some other race alone	100	+/-79	0	+/-11	22	+/-31
Two or more races:	331	+/-185	6	+/-10	0	+/-16

	Boone County, Indiana		Census Tract 8101, Boone County, Indiana		Census Tract 8103, Boone County, Indiana	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Two races including Some other race	196	+/-150	6	+/-10	0	+/-16
Two races excluding Some other race, and three or more races	135	+/-107	0	+/-11	0	+/-16

	Census Tract 8104, Boone County, Indiana	
	Estimate	Margin of Error
Total:	5,638	+/-423
Not Hispanic or Latino:	5,359	+/-429
White alone	5,232	+/-425
Black or African American alone	56	+/-72
American Indian and Alaska Native alone	0	+/-16
Asian alone	0	+/-16
Native Hawaiian and Other Pacific Islander alone	0	+/-16
Some other race alone	0	+/-16
Two or more races:	71	+/-117
Two races including Some other race	0	+/-16
Two races excluding Some other race, and three or more races	71	+/-117
Hispanic or Latino:	279	+/-172
White alone	234	+/-164
Black or African American alone	0	+/-16
American Indian and Alaska Native alone	0	+/-16
Asian alone	0	+/-16
Native Hawaiian and Other Pacific Islander alone	0	+/-16
Some other race alone	0	+/-16
Two or more races:	45	+/-50
Two races including Some other race	28	+/-40
Two races excluding Some other race, and three or more races	17	+/-27

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

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Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:

1. An '***' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.

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6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.

Land and Water Conservation Fund - Boone County Listings

State	County	Grant ID Element	Type	Grant Element Title	Grant Sponsor	Fiscal Year	Amount
Indiana	Boone	573	C	ZIONSVILLE PARK	ZIONSVILLE PARK BOARD	2011	\$ 200,000.00
Indiana	BOONE	604	D	OVERLY-WORMAN PARK	ZUINSVILLE PARK BOARD	2018	\$ -
Indiana	Boone	607	C	ANSON PARK	WHITESTOWN PARK AUTHORITY	2018	\$ -
Indiana	BOONE	485	C	D/NANCY BURTON MEMORIAL PARK	ZIONSVILLE PARK BOARD	1992	\$ 59,700.00
Indiana	BOONE	520	C	D/ZION PARK NATURE SANCTUARY	ZIONSVILLE PARK BOARD	2000	\$ 200,000.00



PROJECT INTENT REPORT

I-65 from Exit 140 to Exit 178, Boone, Clinton & Tippecanoe Counties
(Revised 6 April 2017) 8 October 2013
Corridor Development Office, Traffic Engineering Division

PURPOSE

To address intent of the project to improve I-65 north of Exit 140 (SR 32 in Lebanon) to Exit 178 (SR 43 in West Lafayette) in Boone, Clinton and Tippecanoe Counties. All relevant background data is included. The report describes the project at a preliminary level and will guide the ongoing phases of project development.

This section of I-65 represents one of the seven corridors, each made up of one or more individual segments, serving as candidates to fill the biennium's 2020 Trust Fund capital program. A separate Project Intent Report accompanies each corridor. INDOT is advancing that special program with the objective of focusing investment on mainline expansion (added travel lanes), extending centerline miles of that product, and to the extent feasible limiting allocation of resources toward other features, including interchanges.

BACKGROUND & EXISTING CONDITIONS

The subject segment of I-65 is the site of pavement projects with designation numbers as shown below:

- 1382656, Functional HMA Overlay, from 4.59 mi S of SR 28 to 3.44 mi S of SR 38 (Active)
- 1005501, Preventive Maintenance HMA Overlay, from 3.44 mi S of SR 38 to 0.37 mi S of SR 26 (Active)
- 1005502, Preventive Maintenance HMA Overlay, from 0.37 mi S of SR 26 to 1.71 mi N of SR 43 (Active)

The existing cross section of I-65 from Exit 140 to Exit 178 is 2 lanes in each direction. The cross section of 3 lanes in each direction ends just north of SR 32; ATL IR-30692, which adds the third lane to I-65, will be completed in 2013.

Cross Section
4 Lanes

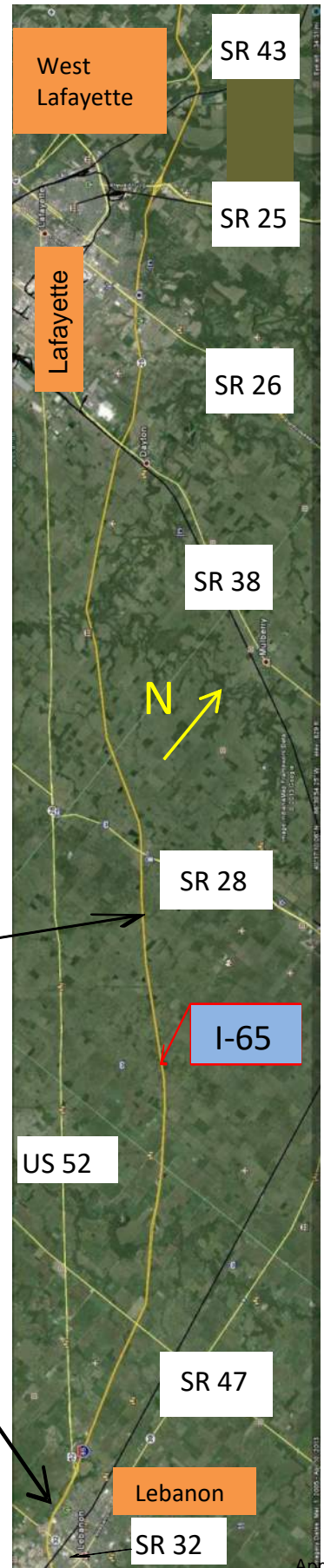
The pavement condition in this area will be determined by INDOT Pavement Design and the ultimate decision on alternatives will rely on the condition of the pavement.

There are 24 s-line bridges and 20 mainline bridges on I-69 from Exit 140 to Exit 178. Pictures of each bridge from south to north are shown in the Appendix.

DEFICIENCIES OBSERVED

As the traffic analysis will show later in the report, there will be traffic congestion issues in 2033 on this segment of I-65 between SR 32 and SR 47 (specifically inside the US 52/Lafayette Ave interchange)—substandard flow (LOS E). From there to SR 38 traffic will be on the

Cross Section
6 Lanes





PROJECT INTENT REPORT

I-65 from Exit 140 to Exit 178, Boone, Clinton & Tippecanoe Counties
 (Revised 6 April 2017) 8 October 2013
 Corridor Development Office, Traffic Engineering Division

threshold of substandard flow in a rural area (LOS C). Within the Lafayette Urban Area, I-65 maintains the same LOS, but will not be deemed “threshold” as the urban threshold is LOS D. Further north of SR 43 into a rural area, I-65 once again operates at the rural threshold of LOS C. Currently the lowest LOS is C at US 52; all else is LOS B or above.

PROPOSED WORK / IMPROVEMENTS & ESTIMATED COST

The work shown below is broken up into six sections so segment construction costs can be seen separately. Each section has construction costs shown for HMA Functional or Preventative Maintenance overlays of the existing pavement with the addition of lanes.

Added lanes will involve the new construction of an additional lane in the median as well as the construction of lanes to the outside of the cross section. The cross section will have a 5’ to 6’ paved inside shoulder and a 12’ paved outside shoulder. The outside shoulder may need to be reduced to 10’ depending on the embankment slopes. Also, a guardrail treatment may be necessary in some areas but ideally a retaining wall should be avoided. The pipe lining project included in Section 4 below (0.2 mi S of SR 26) was initially programmed (Des #1298449) by the District for FY 2018. The designer should assess needs for improvement for all small structures in this roadway segment.

Costs shown below are estimated construction costs only in August 2013 dollars.

Section 1: I-65 from SR 32 to SR 47 (5.18 mi) *See attached drawing.*

The proposal is the construction of additional lanes north of SR 32 (Abandoned RR/Prairie Creek) to SR 47 in the form of median travel lanes. Pavement treatment is an HMA preventative maintenance overlay. All mainline bridges should be widened; some of the overhead bridges have variable depth girders (deeper) at and near their center pier(s). Vertical clearance at those points where the new lane would be beneath those girders is to be checked for adequacy. Pavement work is to be included on ramps at the SR 47 interchange.

The US 52/ Lafayette Ave interchange needs to be modified to eliminate the left-hand southbound exit to Lafayette Ave. Southbound I-65 at this ramp would be reconstructed on fill with a mainline structure slightly south of the existing northbound structure and a new northbound structure twinned to southbound. The new Lafayette Ave exit will be constructed underneath these structures in the form a semi-directional ramp. The existing US 52 southbound entrance lane will be tied to the new Lafayette Ave exit with a 1600’ full auxiliary lane (4 lane total southbound on I-65).

Existing pavement needs—HMA Preventative Maintenance Overlay	\$3.90M
ATL Widening	\$27.86M
I-65 Overhead SB Ramp to Lafayette Av (I-65-140-04117) --Total Replace	\$2.47M
I-65 over Prairie Creek (I65-140-03143)--Upgrade & Widen	\$0.54M
I-65 Overhead NB Ramp to US 52 (I65-140-05570)--Deck & Substructure Replace	\$0.60M
I-65 over Prairie Creek (I65-140-05571)--Replace & Widen both Structures	\$1.34M
CR 300N/206 th ST Overhead Structure (I65-141-05572)--Joint Work	\$1.43M
I-65 over Spring Creek (I65-143-05573)--Widen both Structures	\$1.43M
SR 47 Overhead Structure (047-06-05574)--Active Deck Replacement FY 2018	\$1.43M
Interchange Modification—US 52/Lafayette Ave (Exit 141)	\$10.43M
Misc interchange pavement work	\$0.53M
Construction Cost	\$51.96M



PROJECT INTENT REPORT

I-65 from Exit 140 to Exit 178, Boone, Clinton & Tippecanoe Counties
 (Revised 6 April 2017) 8 October 2013
 Corridor Development Office, Traffic Engineering Division

I-65 from SR 32 to SR 43 Traffic Analysis Summary Table (AM / PM)						
Segments (lanes, if different)	2013			2033		
	Traffic (vph)	LOS	Density (pc/mi/ln)	Traffic (vph)	LOS	Density (pc/mi/ln)
2 Lanes in Each Direction						
SR 32 to US 52	1565 / 2416	B / C	15 / 23	2035 / 3140	C / D	19 / 33
Inside US 52 urban	1625 / 2495	B / C	15 / 24	2115 / 3245	C / E	20 / 35
US 52 to SR 47 rural	1015 / 1685	A / B	10 / 16	1320 / 2190	B / C	12 / 21
Inside SR 47	950 / 1640	A / B	9 / 16	1235 / 2130	B / C	12 / 20
SR 47 to SR 28	1055 / 1815	A / B	10 / 17	1370 / 2360	B / C	13 / 23
Inside SR 28	960 / 1685	A / B	10 / 16	1250 / 2190	B / C	12 / 21
SR 28 to SR 38 rural	1150 / 1850	A / B	11 / 17	1495 / 2405	B / C	14 / 23
Inside SR 38 urban	920 / 1570	A / B	10 / 15	1195 / 2040	B / C	11 / 19
SR 38 to SR 26	1125 / 1750	A / B	10 / 16	1465 / 2275	B / C	13 / 22
Inside SR 26	835 / 1210	A / B	8 / 11	1085 / 1575	A / B	10 / 14
SR 26 to SR 25	1485 / 1830	B / B	14 / 17	1930 / 2380	B / C	18 / 22
Inside SR 25	1090 / 1300	A / B	11 / 12	1415 / 1690	B / B	13 / 15
SR 25 to SR 43	1235 / 1470	B / B	11 / 13	1605 / 1910	B / B	15 / 17
Inside SR 43 urban	1155 / 1355	A / B	11 / 13	1500 / 1760	B / B	14 / 16
SR 43 to SR 18 rural	1595 / 1705	B / B	15 / 16	2075 / 2215	C / C	19 / 21
3 Lanes in Each Direction						
SR 32 to US 52	1565 / 2416	A / B	10 / 15	2035 / 3140	B / C	13 / 20
Inside US 52 urban (4)	1625 / 2495	A / B	7 / 11	2115 / 3245	A / B	10 / 15
US 52 to SR 47 rural	1015 / 1685	A / A	6 / 11	1320 / 2190	A / B	8 / 14
Inside SR 47	950 / 1640	A / A	6 / 10	1235 / 2130	A / B	8 / 14
SR 47 to SR 28	1055 / 1815	A / B	7 / 12	1370 / 2360	A / B	9 / 15
Inside SR 28	960 / 1685	A / A	6 / 11	1250 / 2190	A / B	8 / 14
SR 28 to SR 38 rural	1150 / 1850	A / B	7 / 12	1495 / 2405	A / B	9 / 15
Inside SR 38 urban	920 / 1570	A / A	6 / 10	1195 / 2040	A / B	7 / 13
SR 38 to SR 26	1125 / 1750	A / A	7 / 11	1465 / 2275	A / B	9 / 14
Inside SR 26	835 / 1210	A / A	5 / 7	1085 / 1575	A / A	7 / 10
SR 26 to SR 25	1485 / 1830	A / B	9 / 11	1930 / 2380	B / B	12 / 15
Inside SR 25	1090 / 1300	A / A	7 / 8	1415 / 1690	A / A	9 / 10
SR 25 to SR 43	1235 / 1470	A / A	8 / 9	1605 / 1910	A / B	10 / 12
Inside SR 43 urban	1155 / 1355	A / A	7 / 8	1500 / 1760	A / A	9 / 11
SR 43 to SR 18 rural	1595 / 1705	A / A	10 / 11	2075 / 2215	B / B	13 / 14



PROJECT INTENT REPORT

I-65 from Exit 140 to Exit 178, Boone, Clinton & Tippecanoe Counties
 (Revised 6 April 2017) 8 October 2013
 Corridor Development Office, Traffic Engineering Division

I-65 from SR 32 to SR 43 INRIX Speed Data					
Segment	Length (mi)	Posted Speed (mph)	% Time < 45mph	% Time < 55mph	% Time < 65mph
SR 32 to SR 47	5.18	70	0.66	0.98	28.30
SR 47 to SR 28	11.95	70	0.42	0.79	19.38
SR 28 to SR 38	10.60	70	0.35	0.69	21.78
SR 38 to SR 26	3.57	65	0.31	0.56	66.91
SR 26 to SR 25	3.04	65	0.42	0.76	63.70
SR 25 to SR 43	3.63	65	0.47	0.78	63.82

POTENTIAL PROJECT ISSUES

Right of way would be needed west of I-65 at the US 52 interchange in order to construct a right-hand semi-directional ramp to Lafayette Ave. Prairie Creek should not be affected by this ramp work.

RECOMMENDATION

The recommendation for I-65 is to eventually complete all the proposed work outlined in Sections 1 through 6. Priority is given to Lafayette’s urban area and the Wabash River crossing (due to national significance and growth potential). Next is the rural length between SR 47 and SR 38 (no R/W, but section lengths are long). Last is the north side of Lebanon (R/W needed for interchange modification).

Please contact the Division of Corridor Development should you have questions or need additional information.

Attachments: Drawings, INRIX Data, Bridge Photos

Principal Author: Karl Leet

Contributors: Jamie Gallagher, Daniel McCoy, Paul Schmidt, INDOT Modeling Section, INDOT Central Office & District Pavement and Bridge Sections



Alternative Evaluation Report

**Interstate Access Request at I-65 & US 52 / Lafayette Ave
I-65 Added Travel Lanes from SR 32 to SR 47**

Boone County, Indiana

Contract R-41841

DES# 1802967

Prepared for:

Indiana Department of Transportation

Federal Highway Administration

December 10, 2019



Executive Summary

INDOT has initiated an Added Travel Lanes (ATL) project on I-65 from SR 32 to SR 47 in Boone County, IN. The purpose of this project is to add capacity to I-65 by widening from 4-lanes to 6-lanes through that segment. The widening will occur in the median to avoid right-of-way acquisition and keep the project on the FHWA Build Grant schedule.

This I-65 ATL project spans the I-65 & US 52/Lafayette Avenue interchange, which currently utilizes a southbound left-side exit ramp to Lafayette Avenue. Due to the widening of I-65 to the median, the left-hand exit can no longer be accommodated and will be removed as part of this I-65 ATL project. This exit cannot be reconstructed as part of the I-65 ATL project due to the BUILD grant time-limitations. The schedule does not allow for acquisition of right-of-way needed to construct a new right-side exit ramp to Lafayette Avenue. For this reason, INDOT will fund a separate project to construct this new ramp, with construction of the ramp ideally beginning prior to completion of the I-65 ATL project. Three (3) potential locations have been identified for the new exit ramp as listed below.

- Alternative 1 – Loop Ramp
- Alternative 2 – Flyover
- Alternative 3 – Underpass

For each ramp alternative, project impacts on the present conditions were evaluated. **Table ES.1** summarizes the various potential impacts of each alternative.

Table ES.1 – Evaluation Matrix

Evaluation Metrics	Alt 1 (Loop Ramp)	Alt 2 (Flyover)	Alt 3 (Underpass)
Land Acquisition (acres)	10.2	4.5	4.5
Bridge Structures (anticipated approx. sft)	7,100	4,600	6,700
Arch Bridge Widening? (Yes/No)	Yes	Yes	Yes
Wetland Impact (acres)	0.15	0.02	0.02
Stream Impact (acres)	0	0	0
Design Speed (mph)	25	50	50
Superelevation e_{max}	8%	8%	8%
Minimum Curve Radius (ft)	134 ft	314 ft	314 ft
Design Exception Anticipated?	No	No	No
Estimated Project Cost (\$)	\$10.9M	\$8.7M	\$9.6M

Impacts to traffic flow, traffic safety, and utilities were relatively consistent across the three (3) alternatives. Based on having the lowest construction cost and least amount of impact to environmentally sensitive areas, the Flyover alternative was determined to be the recommended option. The Flyover alternative will be evaluated further during the completion of NEPA documentation alongside with an Interstate Access Request at the State and Federal levels.



12.0 Findings and Recommendations

For each alternative, impacts from construction on the present conditions were evaluated. Each conceptual design was developed to minimize the potential impacts to adjacent parcels, environmentally sensitive areas, utilities, and traffic congestion during construction. An evaluation matrix that summarizes these characteristics for each alternative is provided in **Table 12.1**.

Table 12.1 – Evaluation Matrix

Evaluation Metrics	Alternative 1: Loop Ramp	Alternative 2: Flyover	Alternative 3: Underpass
Land Acquisition (acres)	10.2	4.5	4.5
Bridge Structures (anticipated approx. SFT)	7,100	4,600	6,700
Arch Bridge Widening? (Yes/No)	Yes	Yes	Yes
Wetland Impact (acres)	0.15	0.02	0.02
Stream Impact (acres)	0	0	0
Design Speed (mph)	25	50	50
Superelevation e_{max}	8%	8%	8%
Minimum Curve Radius (ft)	134 ft	314 ft	314 ft
Design Exception Anticipated?	No	No	No
Estimated Project Cost (\$)	\$10.9M	\$8.7M	\$9.6M

Impacts to traffic flow, traffic safety, and utilities were relatively consistent across the three (3) alternatives. Based on having the lowest construction cost and least amount of impact to environmentally sensitive areas, the Flyover alternative was determined to be the recommended option. Additionally, the Flyover alternative project cost of \$8.7M is lower than the estimated added travel time cost of \$10.0M for permanent ramp removal. The Flyover alternative will be evaluated further during the completion of NEPA Documentation alongside with an Interstate Access Request at the State and Federal levels.

**WELLHEAD PROTECTION PLAN
PHASE II 5 YEAR UPDATE**

APRIL 2017

CITY OF LEBANON, INDIANA



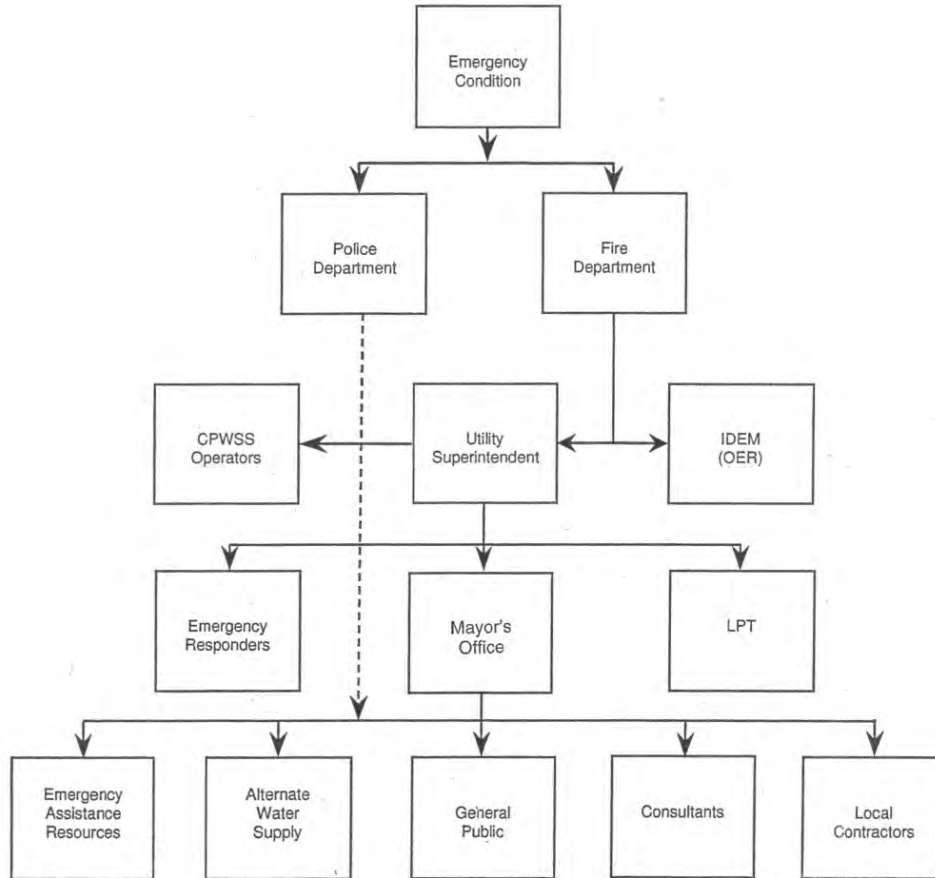
Mishawaka, IN
(574) 254-9050

Ionia, MI
(616) 527-0050

Westfield, IN
(317) 896-2987

Grand Blanc, MI
(248) 996-2721

**Figure 1. City of Lebanon, Indiana
Community Public Water Supply System (CPWSS)
Emergency Condition Flow Chart**



Two specific procedures for local response to potential contamination events within the WHPAs are contained in the Management Plan, and provided below for consistency.

Transportation Routes - Emergency Response Procedures

The Lebanon Fire Department and CPWSS will develop procedures for responding to leaks, spills, or illegal discharges within the WHPAs involving transportation spills. These procedures will include:

- Use of a vacuum truck to remove/contain spills (refer to Table 1 for contact names and numbers);
- Training of department personnel to record relevant information about spills;

- Provisions to spread absorbent materials on any spills, if feasible;
- Procedures to allow hazardous material fires to burn, if appropriate (contact Bobbie Taylor about booms);
- Dike spill areas to prevent runoff into surface water bodies and wells; and,
- Contact Hazardous Material contractor, if appropriate.

Abandoned Wells - Emergency Response Procedures

The Lebanon Fire Department and CPWSS will develop emergency response procedures for managing leaks, spills, or illegal discharges in areas with abandoned wells. Any abandoned wells within the WHP Areas and in the vicinity of a release will be diked with soil in such a manner to prevent potentially harmful substances from entering the aquifer. This is an interim measure to be applied prior to the identification and proper abandonment of any wells not in compliance with IC 25-39-4-6 and 310 IAC 16-10.

List of Information for Local Responders

At a minimum, local responders will be provided with the following information:

- Location of the WHPA boundaries;
- CPWSS Operators; and,
- 24 hour Emergency Telephone Numbers.

Location of WHP Area Boundaries

The three WHPAs for the Sugar Creek, Chicago Street and Longley Park Well Fields are included in Attachment B of this Contingency Plan as Figures 1, 2 and 3, respectively. Copies of these maps will be distributed to the appropriate local responders.

CPWSS Operators

The CPWSS Operators to be contacted during an emergency are Mr. Ryan Ottinger or in his absence, Mr. Steve Mohringer with Lebanon Utilities. Lebanon Utilities 24 hour contact telephone numbers are provided in Attachment A to this Contingency Plan.

A partial list of other local and regional emergency response personnel is provided below as Table 1. A more complete list of both state and federal numbers as well as a quick reference to spill reporting prepared by IDEM is provided in Attachment C.

**TABLE 1
EMERGENCY TELEPHONE NUMBERS**

-All Emergency Services	911
<u>Local Contacts:</u>	
-Boone County Sheriff Department	765-482-1412
-Boone County Health Department	765-483-4458
-Boone County Highway Department	765-482-4550
-Boone County Emergency Management Agency	765-483-4428
-Sugar Creek Township Volunteer Fire Department	765-436-7788
-Lebanon Fire Department	765-482-8827
-Lebanon Police Department	765-482-8836
-Witham Memorial Hospital	765-485-8000
-Lebanon Mayor's Office	765-482-1201
-Lebanon Parks Department	765-482-8860
-Lebanon Street Department	765-482-8870
-Lebanon Wastewater Treatment	765-482-8843
<u>State Contacts:</u>	
-IDEM Emergency Response, spill reporting (24 hour)	888-233-7745
-IDEM, general information	800-451-6027
-SEMA (State Emergency Management Agency)	800-669-7362
-ISFM (Indiana State Fire Marshall)	800-669-7362
-ISDH (Indiana State Dept. of Health)	317-233-1325
-IDNR NRHQ (Dept. Natural Resources, North Region)	765-473-9722
-OISC (Office of the Indiana State Chemist)	800-893-6637
-IOSHA (Indiana Occupational Safety and Health)	317-232-2693
-INDOT (Indiana Department of Transportation)	1-800-924-6368
<u>Federal Contacts:</u>	
-National Response Center (federal spill reporting)	800-424-8802
-US EPA, Region V (24-hour emergency)	312-353-2318
-Agency for Toxic Substance and Disease Registry	404-639-0615
<u>Other Contacts:</u>	
-Holey Moley (for locating underground utilities)	800-382-5544
-Chemtrec (chemical data information)	800-424-9300
<u>Hazmat Contractors:</u>	
-Heritage Environmental, Indianapolis	317-243-0811
-Specialty Systems, Inc.	317-269-2100
<u>Pump & Well Repair:</u>	
-Peerless-Midwest, Inc.	317-896-2987

**TABLE 1 (continued).
EMERGENCY TELEPHONE NUMBERS**

<u>Media Contacts - Newspaper:</u>	
-Lebanon Reporter	888-663-1063
 <u>Media Contacts - Radio:</u>	
-RadioMom 91.1FM	765-482-4427
-WITT, 91.9, Zionsville, Indpls.	317-251-3851
-WBIC, 93.1, Indianapolis	317-637-6397
 <u>Media Contacts - Television:</u>	
-WISH Indianapolis (CBS)	317-931-2222
-WRTV Indianapolis (ABC)	317-269-1440
-WTHR Indianapolis (NBC)	317-655-5740
-WXIN Indianapolis (FOX)	317-687-6541
 <u>Alternative Sources of Water</u>	
-Culligan Water (bottled water)	877-528-5544
-City of Frankfort/CPWSS contact - Wes Hyden	765-654-5556
-Walmart (Lebanon)	765-482-6070
-Kroger (Lebanon)	765-482-7274
-Meijer (Zionsville)	317-732-9200
 <u>Water Haulers</u>	
-Aqua-Fill Pool Water Delivery (Indpls.)	317-375-8491
-Dan's Pool Water (Lebanon)	317-891-9170

Potential Alternative Sources of Water

Lebanon has 3 well fields that are widely spaced geographically and 2 water treatment plants (Sugar Creek and Chicago Street plants). In the event of a water supply disruption affecting one of the well fields, the short-term alternative source of water will be to shut-down the affected system and rely on the other two well fields for the source of supply. Should it become necessary to transport potable water to users by tanker truck, the following minimum procedures will be observed:

- Notify water users of the emergency through the local news media;
- Contact Lebanon Utilities CPWSS to determine access locations or fire hydrants from which water may be hauled;
- Notify water-hauling services to coordinate loading operations, disinfection and distribution procedures. Contact names and numbers are provided in Table 1 of this Contingency Plan; and;
- Announce distribution procedures to water users.



NORTH CENTRAL INDIANA EXPANSION PROJECT I-65 ADDED TRAVEL LANES

Build 2018 Grant Application

submitted to
United States Department of Transportation

submitted by
Indiana Department of Transportation

July 2018

A.1 Project Background

Interstate 65 is one of the most important passenger and freight corridors in North America connecting the port facilities of the Gulf Coast to Chicago's rail hubs. As a major link in national, statewide, and regional freight networks, I-65 connects suppliers and markets across the nation. This project focuses on I-65 through Lebanon, IN – a rural community north of the growing Indianapolis metropolitan area.

The project is a key element in fulfilling INDOT's mandate to provide a safe and prosperous transportation network for its travelers. Of primary concern is safety. A roadway which does not allow safe traversal incurs both human and economic cost; even collisions that do not result in serious injury or death frequently block highways, impeding the full use of their capacity and contributing to nonrecurring congestion. As previously stated, the project is in Lebanon, IN which is located 28 miles northwest of Indianapolis. Lebanon is the seat of Boone County which is the fastest growing county in the State of Indiana.¹ An INDOT traffic analysis report concluded that by 2033 the segment of I-65 between SR 32 and SR 47 would exhibit substandard traffic flow (LOS E).² Addressing infrastructure concerns now will allow the community to better manage the future growth that is expected.

A.2 Travel Patterns

Interstate 65 provides direct connectivity to major producers and markets across the country. It connects the Gulf Coast to Chicago via Mobile, Birmingham, Nashville, Louisville, and Indianapolis. Traffic volumes along I-65 in the project area can exceed 50,000 vehicles per day. In addition to commuters, the corridor is also critical for freight mobility as it is part of the Primary Highway Freight System (PHFS)³. In fact, over one-third of the traffic observed on I-65 in Lebanon consists of heavy trucks.⁴ There are a significant amount of freight-intensive land uses near the southern terminus of the project limits, near the I-65/SR 32 interchange. These include logistics facilities and distribution centers for major employers such as Conagra, CNH Industrial, and Continental Tires, among several others. In addition, there is also a truck parking facility which provides 165 spaces suitable for overnight parking, positively contributing to the severe shortage of truck parking nationwide.

Changes in the transportation system have direct and indirect impacts on the users as well as the level of economic activity. The potential changes in travel efficiencies and costs will result in both benefits and disbenefits to the economy. Consistent with the INDOT *Project Intent Report*⁵ for the I-65 Added Travel Lanes, this analysis uses a 1.5 percent annual growth to forecast future traffic volumes in order to better gauge how these changes will affect travel activity and the condition and performance of the I-65 corridor. This is a reasonable estimate for traffic growth given the trend in population and employment growth for

¹ News at IU Bloomington, March 22, 2018. "More than half of Indiana communities saw growth in 2017." <https://news.iu.edu/stories/2018/03/iub/releases/22-indiana-communities-saw-population-growth.html>

² Corridor Development Office, Traffic Engineering Division, Indiana Department of Transportation. "Project Intent Report: I-65 from Exit 140 to Exit 178 – Boone, Clinton, and Tippecanoe Counties." October 8, 2013 (Revised April 6, 2017).

³ Federal Highway Administration. "National Highway Freight Network Map and Tables for Indiana." https://ops.fhwa.dot.gov/freight/infrastructure/ismt/state_maps/states/indiana.htm

⁴ Indiana Department of Transportation. "Station 971500 – June 5, 2018 Classification Count," Traffic Count Database System, <http://indot.ms2soft.com/tcds/tsearch.asp?loc=Indot&mod=>.

⁵ Corridor Development Office, Traffic Engineering Division, Indiana Department of Transportation. "Project Intent Report: I-65 from Exit 140 to Exit 178 – Boone, Clinton, and Tippecanoe Counties." October 8, 2013 (Revised April 6, 2017).

Boone County and the City of Lebanon. With this growth rate, three different scenarios were envisioned over a 20-year horizon:

- Base Year 2022;
- No-Build Condition 2042; and
- Build Condition 2042.

To estimate the project benefits or costs, the daily metrics for passenger cars were broken down by commuting and leisure trips, using travel rates by trip purpose data from the statewide travel demand model. Breaking down trip purpose is important for the analysis as personal and business trips are associated with different values of time as outlined in the U.S. DOT Benefit-Cost Analysis Guidance⁶. The benefit-cost analysis for the I-65 Added Travel Lanes was conducted for the 20-year period following the project opening in 2022.

The results provided by the traffic analysis are used to estimate the travel efficiencies associated with the Build alternative (relative to the No-Build alternative). The results for variables of interest, such as VMT, VHT, and volume are processed for the base year (2022) and future year (2042). The variables of interest for intermittent analysis years are interpolated using the cumulative annual growth rate (CAGR) through Equation 1.

Equation (1):

$$CAGR^{No-Build} = \left(\frac{VMT_{2040}^{No-Build}}{VMT_{2020}^{No-Build}} \right)^{\left(\frac{1}{2040-2020} \right)} - 1$$

$$CAGR^{Build} = \left(\frac{VMT_{2040}^{Build}}{VMT_{2020}^{No-Build}} \right)^{\left(\frac{1}{2040-2020} \right)} - 1$$

The CAGR for No-Build and Build is then applied to the base values in 2022, to generate the series of values for the 20-year analysis period as shown in Equation 2 and Equation 3. The changes between Build and No-Build for various variables are the basis for estimating benefits/disbenefits. A similar approach is applied to estimate VHT and volume.

Equation (2):

$$VMT_t^{No-Build} = VMT_{2022}^{No-Build} \times (1 + CAGR^{No-Build})^{(t-2022)} \quad \text{Where: } 2022 \leq t \leq 2042$$

Equation (3):

$$VMT_t^{Build} = VMT_{2022}^{No-Build} \times (1 + CAGR^{Build})^{(t-2022)} \quad \text{Where: } 2022 \leq t \leq 2042$$

⁶ U.S. DOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs, June 2018. <https://www.transportation.gov/sites/dot.gov/files/docs/mission/office-policy/transportation-policy/284031/benefit-cost-analysis-guidance-2018.pdf>

Daily VMT, VHT, and volume in the Build and No-Build alternatives in the project opening year 2022 and the horizon year 2042, are used to estimate the changes between the two scenarios (Table A.2 and Table A.3). As shown in the table, both passenger cars and trucks would save time due to the added capacity provided by the Project. However, the Build alternative is not expected to impact observed levels of VMT relative to the No-Build alternative.

As shown in Table A.2, the No-Build scenario results in an increase in VHT over the 2018 to 2042 time period. Daily VHT for passenger vehicles is expected to increase from 2,124 to 2,983 hours over this time period – over a 40 percent increase. A similar increase is observed in truck VHT.

As shown in Table A.3, the Build alternative (which adds one lane in each direction to I-65) results in a reduction in VHT relative to the No-Build alternative. The daily auto VHT increases by 33 hours (1%). The truck daily VHT increases by 17 hours (1%) within the same period.

Table A.2 Daily VMT, VHT, Volume, and Delay: 2018 and 2042

Scenarios	Passenger Cars			Trucks			All Vehicles	
	VMT	VHT	Volume	VMT	VHT	Volume	Density (pc/mi/ln)	Level of Service
Base	148,163	2,124	28,603	76,327	1,094	14,735	21.5	C
No-Build 2042	205,946	2,983	39,758	106,094	1,537	20,481	34.1	D
Build 2042	205,946	2,950	39,758	106,094	1,520	20,481	19.8	C

Source: VMT, VHT, and volume are estimated based on traffic growth projections from the Indiana Statewide Travel Demand Model, vehicle classification counts from the INDOT Traffic Count Database System, and the traffic analysis.

Table A.3 Daily Changes in VMT, VHT, Volume, and Delay Compared to No-Build

Scenarios	Passenger Cars			Trucks		
	VMT	VHT	Volume	VMT	VHT	Volume
Build 2042 – No-Build 2042		-33 (-1.1%)			-17 (-1.1%)	

Source: VMT, VHT, and volume are estimated based on the outputs from the Indiana Statewide Travel Demand Model and the traffic analysis.

A.3 Proposed Alternative Benefit-Cost Analysis

Changes in VMT, VHT, and volume between the Build and No-Build alternatives are estimated and monetized to determine the travel efficiencies generated by the Build alternative. The following section describes the methodology and the results of the benefit-cost analysis. The base year throughout the BCA is 2017 since values are discounted to 2017 dollars.