Environmental Constraints Report

ATTACHMENT I. NOISE SENSITIVE AREAS MEMO



Noise-Sensitive Areas Identification Report

01/19/2024



Noise-Sensitive Areas Identification Report



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NOISE-SENSITIVE AREAS IDENTIFICATION REPORT

I. Introduction

I.I Purpose of This Report

The Indiana Department of Transportation (INDOT) is initiating 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 interstates. This process will inform the next 20 years of investment in our interstates as INDOT identifies ways to modernize these roads and improve the region's overall mobility, equity, economic opportunity, and quality of life. The goal of ProPEL Indy is to identify transportation needs and community goals along I-65 and I-70 inside I-465. ProPEL Indy will develop a set of options to be considered that meet transportation needs and community goals. This will set the long-term vision for investment in the interstates.

This technical report identifies noise-sensitive areas along I-65 and I-70 inside the I-465 loop in Indianapolis, including those with sufficient density such that noise abatement could potentially be determined reasonable and feasible in future studies per INDOT's *Traffic Noise Analysis Procedure* (Noise Policy), which was last updated in 2022. The examination of potential noise impacts and abatement measures for federal-aid highway projects is required by NEPA. These potentially noisesensitive areas are identified to evaluate how they may influence future projects for these corridors. Formal noise analysis will not be completed during the ProPEL Indy study, but will occur, if required, during subsequent NEPA analysis.

I.2 Study Limits

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 4 "spokes" as an organizational tool (see **Figure 1**):

- **65 Spoke** From the I-465/I-65 interchange on the northwest side to the 21st Street interchange.
- 65/70 Downtown Spoke I-65 from the 21st Street interchange south to Alabama Street (west end of North Split project), I-65/I-70 from Washington Street (south end of INDOT's 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's study area 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 Ave 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 limits and spokes are shown on Figure 1.



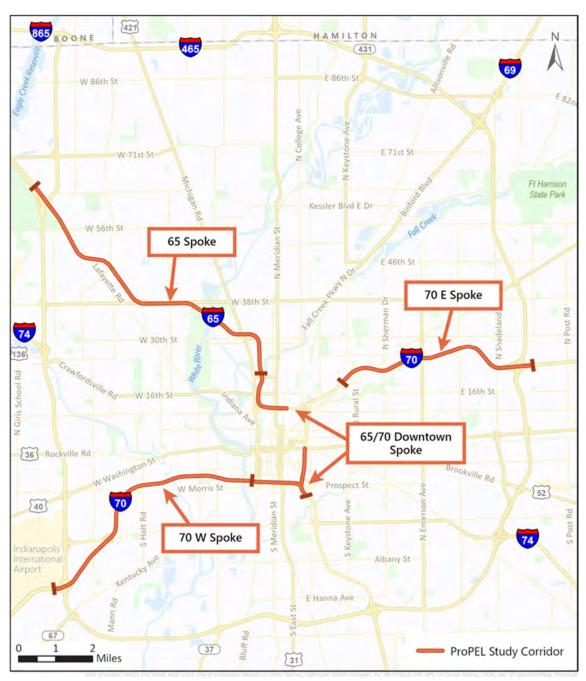


Figure I. ProPEL Indy Study Spokes

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2. Legislation and Noise Fundamentals

2.1 Regulatory Requirements

INDOT is conducting the ProPEL Indy study in coordination with the Federal Highway Administration (FHWA). FHWA regulations for highway traffic noise for federal-aid highway projects are contained in in *Procedures for Abatement of Highway Traffic Noise and Construction Noise* as presented in Title 23 Part 772 (23 CFR 772). The INDOT *Traffic Noise Analysis Procedure* (Noise Policy) sets forth INDOT's procedures to comply with the requirements of 23 CFR 772. Compliance with 23 CFR 772 is typically achieved during the NEPA review process. PEL studies, however, are planning (i.e., pre-NEPA) activities, and as part of the ProPEL Indy study, INDOT plans to evaluate baseline environmental conditions, such as potential noise-sensitive areas, to help inform activities such as alternatives development and analysis.

To accomplish this objective, INDOT identified a two-step process to consider traffic noise during the ProPEL Indy study:

- 1. Identify noise-sensitive areas using Common Noise Environments (CNEs).
- 2. Identify areas with potentially sufficient density for further investigation.

This two-step process is documented in this memorandum.

It is important to note that the analysis completed during the PEL study is not intended to meet the requirements of 23 CFR 772. Type I projects, such as the construction of a highway on new location or the physical alteration of an existing highway which significantly changes the horizontal or vertical alignment or increases the number of through-traffic lanes, require traffic noise analysis. For any Type I projects identified during the ProPEL Indy study, a traffic noise analysis will be completed during the NEPA process in accordance with the most current version of the INDOT Noise Policy.

The INDOT Noise Policy has adopted the Noise Abatement Criteria (NAC) that have been established by FHWA (23 CFR Part 772) for determining noise impacts for a variety of land uses. The land-use Activity Categories along with the criteria are presented in **Table 1**. The NAC sound levels are only to be used to determine a roadway noise impact. These are the absolute values where abatement must be considered.

For the purposes of the PEL study, noise-sensitive land uses and potential noise receptors have been identified along the corridors. Where sufficient density exists such that noise abatement could

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potentially be feasible and reasonable in future studies, those areas have been identified as **Areas for Further Investigation**.

The analysis conducted as part of the PEL study will not be used to determine noise impacts or noise abatement locations in accordance with 23 CFR 772. Those activities would occur as part of the NEPA analysis associated with any future Type I projects in the ProPEL Indy study area.

Activity Category	Criteria ¹ L _{eq(h)}	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ²	67	Exterior	Residential.
C ²	67	Exterior	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E ²	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	-	-	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards utilities (water resources, water treatment, electrical), and warehousing.
G	-	-	Undeveloped lands that are not permitted.

Table I. FHWA Noise Abatement Criteria

¹ L_{eq(h)} Activity Criteria are only for impact determination and are not design standards for noise abatement measures.

² Includes undeveloped lands permitted for this activity category.

Source: Federal Highway Administration (23 CFR Part 772, Table 1).

2.2 Traffic Noise

Noise is generally defined as unwanted sound. Airborne sound is what we hear when there are rapid fluctuations (or variations) in air pressure above and below atmospheric pressure. The ear is sensitive to these pressure variations and perceives them as sound. The intensity of these pressure variations causes the ear to discern different levels of loudness.

Sound pressure levels are measured and expressed in decibels (dB). The dB scale is logarithmic and expresses the ratio of the sound pressure level being measured to a standard reference level.

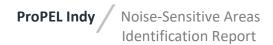


Most sounds occurring in the environment do not consist of a single frequency, but rather a broadband of differing frequencies. Because the human ear does not respond to all frequencies equally, weighting scales are used to define the relative loudness of different frequencies. The "A" weighting scale is widely used in environmental work because it closely resembles the non-linearity of human hearing. The A-weighted sound level in decibels is identified as dB(A).

A noise receptor is a discrete or representative location placed at a noise-sensitive area for any of the land uses listed in **Table 1**, generally in an area of active human use, to determine traffic-generated noise levels. Traffic noise at a receptor is influenced by the following major factors:

- Distance from the traffic to the receptor,
- Volume of traffic,
- Speed of traffic,
- Vehicle mix, and
- Acoustical shielding.

Tire sound levels increase with vehicle speed but also depend upon road surface, vehicle weight, tread design and wear. Change in any of these factors can vary noise levels. At lower speeds, especially in trucks and buses, the dominant noise source is the engine and related accessories. **Figure 2** provides sound levels of typical noise sources.



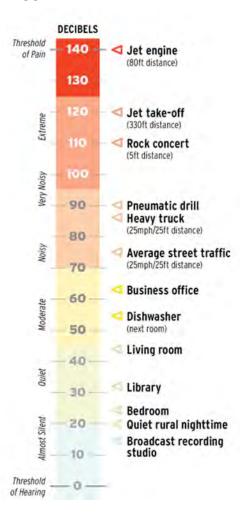


Figure 2. Sound Levels of Typical Noise Sources

3. Noise Study Methodology

3.1 PEL Noise Methodology

As part of the ProPEL Indy study, INDOT is evaluating potential baseline environmental conditions that could inform alternatives development and analysis. For the purposes of the PEL study, noise-sensitive land uses have been identified along the I-70 and I-65 corridors within I-465 in Indianapolis. Land uses along the ProPEL Indy corridors have been categorized using the typologies contained in the NAC found in 23 CFR 772 (shown in **Table 1**). Noise-sensitive areas for further investigation have been identified based on the presence of noise-sensitive land uses, as well as the density of receptors

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(determined by professional judgement). These areas have been identified as **Areas for Further Investigation** on the noise maps in **Appendix A**.

3.2 Identification of Land Uses

The noise study area for the project is shown on the maps in **Appendix A** and includes the area within 500 feet from I-65 and I-70 (edge of outside travel lane and project termini). The maximum noise study area per INDOT Noise Policy is 800 feet; however, because noise impact and significant reduction in noise level from noise barriers is typically limited to 500 feet, that limit has been utilized for this initial investigation.

Available aerial imagery was used to identify noise-sensitive land use in the study area, which consists primarily of single-family and multi-family residences (NAC B), institutional or recreational outdoor uses (NAC C), places of worship, hospitals, a television studio, and schools (NAC D), and locations with outdoor use at restaurants, hotels or business properties (NAC E).

The noise study area also includes non-sensitive industrial and commercial land uses (NAC F) and vacant, undeveloped land (NAC G). The NAC D interior use receptors are identified because for Activity Category C land uses that do not have an exterior area of frequent human use or have exterior use that is far from or physically shielded from the roadway, noise studies shall use Activity Category D as the basis for determining noise impact (23 CFR 772).

Receptors may represent multiple receptors or units. Under most situations, a single structure is considered a single receptor. Structures that contain multiple residential units (e.g., apartments) are considered to have one receptor per residential unit. Since specific information on number of units in multi-family buildings is not available for all properties, the number of receptor units may be estimated. For certain land uses (parks, trails, etc.), a separate algorithm is used to translate usage data into an appropriate number of receptor units, based on converting total usage to equivalent residential units. For the purposes of the ProPEL Indy study, equivalent residential units have not yet been assigned to non-residential receptors. Instead, either one receptor or an estimate of several receptors, based on number of uses or area of the property, have been assigned based on professional judgement.

Per INDOT Noise Policy, coordination with local governments is necessary to determine if there are any new permitted land uses within the study area for inclusion in the noise analysis. HNTB initiated a request to the city of Indianapolis to obtain proposed or permitted development plans within the project area. Upon review of documents obtained, the only planned or permitted noise-sensitive property within the study area limits that was identified is a multi-family apartment complex at the Nouveau in Old Northside between Alabama and Hudson Street.



3.3 Existing Noise Barriers

Eight existing noise barriers are located in the study area. These noise barriers are identified on the maps in **Appendix A**.

Along the 65 Spoke, existing noise barriers are located along I-65 southbound from approximately 600 feet north of Cedar Lake Drive to W 52nd Street (CNE 5), from W 52nd Street to approximately 800 feet south of Moller Road (CNE 7), along the I-65 northbound offramp to Lafayette Road from approximately 700 feet south of Pike Creek Boulevard to Lafayette Road (CNE 8), and along I-65 northbound from approximately Trace Wood Court to 540 feet south of Georgetown Road (CNE 10). Along the 70 E Spoke, existing noise barriers are located along I-70 westbound from approximately Valley Avenue to Roosevelt/Commerce Avenue (CNE 33), along the southbound ramp to I-465 from approximately 1,100 feet east of Shadeland Road to E 21st Street (CNE 44), along I-70 westbound from approximately Franklin Way to Brennan Road (CNE 45), which veers north and outside of the study area, and along I-70 eastbound from approximately 450 feet west of Courtney Road to Franklin Way (CNE 46).

3.4 Common Noise Environments

Based on a combination of land use, location of cross streets and residential density, land uses in the study area have been grouped into a series of numbered Common Noise Environments (CNE) that are identified on the maps in **Appendix A**. Fifty-nine (59) CNEs were identified. The CNE boundaries and land use within each are described below.

65 Spoke - Appendix A Pages 4-24

CNE 1 is located on the southbound side of I-65 from approximately 660 feet north of Shanghai Road to the I-65/I-465 interchange. CNE 1 contains no noise-sensitive receptors.

CNE 2 is located on the northbound side of I-65 from approximately 660 feet north of Shanghai Road to the I-65/I-465 interchange. CNE 2 contains single-family residences (NAC B). **This CNE contains an Area for Further Investigation.**

CNE 3 is located on the southbound side of I-65 from the I-65/I-465 interchange to W 56th Street. CNE 3 contains three outdoor use areas of Eagle Creek Park, including the Eagle Creek Trail (NAC C).

CNE 4 is located on the northbound side of I-65 between the I-65/I-465 interchange and W 56th Street. CNE 4 contains single-family residences (NAC B), multi-family residences at Creekside Square Apartments and Lafayette Villas (NAC B), the Eagle Creek Trail, the Eagle Creek Community Church,



and the Life Church Eagle Creek Campus (NAC C). Creekside Square Apartments also contains playgrounds (NAC C). This CNE contains an Area for Further Investigation.

CNE 5 is located on the southbound side of I-65 between W 56th Street and W 52nd Street. CNE 5 contains single-family residences (NAC B) and outdoor use at Corinthian Baptist Church (NAC C). CNE 5 contains an **existing noise barrier** that runs from just north of W 52nd Street north to approximately 600 feet past Cedar Lake Drive.

CNE 6 is located on the northbound side of I-65 between W 56th Street and W 52nd Street. CNE 6 contains a multi-family complex and a single-family home (NAC B), outdoor use at RCCG Covenant House Indianapolis (NAC C), and outdoor seating at Starbucks (NAC E).

CNE 7 is located on the southbound side of I-65 between W 52nd Street and Georgetown Road. CNE 7 contains single-family residences (NAC B) and outdoor use at the Community of Christ Church (NAC C). CNE 7 contains an **existing noise barrier** that runs from the middle of the southbound I-65 offramp to Lafayette Road and runs north just prior to W 52nd Street.

CNE 8 is located on the northbound side of I-65 between W 52nd Street and Georgetown Road. CNE 8 contains single-family residences and multi-family residences at Cambridge Commons (NAC B). CNE 8 contains an **existing noise barrier** that extends along the northbound I-65 offramp to Lafayette Road.

CNE 9 is located on the southbound side of I-65 between Georgetown Road and Guion Road. CNE 9 contains no noise-sensitive receptors.

CNE 10 is located on the northbound side of I-65 between Georgetown Road and Guion Road. CNE 10 contains single-family residences and multi-family residences at The Life at Creekside Reserve and Abington Apartments (NAC B). Abington Apartments also includes a tennis court for residents (NAC C). CNE 10 contains an **existing noise barrier** from approximately 540 feet south of Georgetown Road to Trace Wood Court. **This CNE contains two Areas for Further Investigation.**

CNE 11 is located on the southbound side of I-65 between Guion Road and W Kessler Boulevard N Drive. CNE 11 contains multi-family residences at Abeny Lakes Apartments and the Woods Apartments (NAC B). **This CNE contains an Area for Further Investigation.**

CNE 12 is located on the northbound side of I-65 between Guion Road and W Kessler Boulevard N Drive. CNE 12 contains single-family residences (NAC B). **This CNE contains an Area for Further Investigation.**

CNE 13 is located on the southbound side of I-65 between W Kessler Boulevard N Drive and N White River Pkwy E Drive. CNE 13 contains the Cold Spring School, as well as a skatepark and bike park at Major Taylor Velodrome (NAC C).



CNE 14 is located on the northbound side of I-65 between W Kessler Boulevard N Drive and N White River Pkwy E Drive. CNE 16 contains single-family residences (NAC B), multi-family residences at the Aura Apartments and Knoll Condominiums (NAC B), and outdoor use at the Riverside Golf Academy (NAC C). **This CNE contains two Areas for Further Investigation.**

CNE 15 is located on the southbound side of I-65 between N White River Pkwy E Drive and Dr. Martin Luther King, Jr. Street. CNE 15 contains single-family and multi-family residences, including the Pilgrim Heritage (NAC B). The Central Canal Connector Trail runs along the White River, and an outdoor use area is located at the Sunrise Christian Academy Daycare and Preschool (NAC C). The Barnes United Methodist Church is on the southern end of CNE 15 and does not have an outdoor use area (NAC D). CNE 15 also has the Public Library Branch No.1, which is a historical building with no outdoor use area (NAC D). **This CNE contains an Area for Further Investigation.**

CNE 16 is located on the northbound side of I-65 between N White River Pkwy E Drive and Dr. Martin Luther King, Jr. Street. CNE 16 contains single-family and multi-family residences (NAC B). The Central Canal Connector Trail runs along the White River, and a neighborhood basketball court and playground are located at the south end of Rader Street (NAC C). **This CNE contains an Area for Further Investigation.**

CNE 17 is located on the southbound side of I-65 between Dr. Martin Luther King, Jr. Street and Fall Creek Boulevard. CNE 17 contains single and multi-family residences (NAC B). There are two schools with outdoor uses, Christ Temple Christian Academy and IPS George Washington Carver Montessori No.87, and a playground and basketball court at the Charlie Wiggins Park (NAC C). The New Era Church and Student Ministry have no outdoor use (NAC D). **This CNE contains an Area for Further Investigation.**

CNE 18 is located on the northbound side of I-65 between Dr. Martin Luther King, Jr. Street and Fall Creek Boulevard. CNE 18 contains single and multi-family residences (NAC B). There is no outdoor use at Pathway Missionary Church, Faith Church of God in Christ, Twenty Eighth Street Church of God in Christ, and Fall Creek Parkway Church of Christ (NAC D). **This CNE contains an Area for Further Investigation.**

70 W Spoke - Appendix A Pages 25-40

CNE 19 is located on the westbound side of I-70 from approximately 415 feet west of Old High School Road to South Lynhurst Drive. CNE 19 contains no noise-sensitive receptors.

CNE 20 is located on the eastbound side of I-70 from approximately 415 feet west of Old High School Road to South Lynhurst Drive. CNE 20 contains single-family residences at the Windsong Mobile Home Complex. **This CNE contains an Area for Further Investigation.**



CNE 21 is located on the westbound side of I-70 between South Lynhurst Drive and the Sam Jones Expressway interchange. CNE 21 contains single-family residences and multi-family residences at Hidden Oak Estates (NAC B). Hidden Oak Estates also includes two playgrounds and a basketball court (NAC C). **This CNE contains an Area for Further Investigation.**

CNE 22 is located on the eastbound side of I-70 between South Lynhurst Drive and the Sam Jones Expressway interchange. CNE 22 contains single-family and multi-family residences (NAC B). There are two schools, Lynhurst 7th and 8th Grade Center and Sanders School, both of which have outdoor use areas (NAC C). **This CNE contains an Area for Further Investigation.**

CNE 23 is located on the westbound side of I-70 between the Sam Jones Expressway interchange and West Minnesota Street. CNE 23 contains single-family residences (NAC B). **This CNE contains an Area for Further Investigation.**

CNE 24 is located on the eastbound side of I-70 between the Sam Jones Expressway interchange and West Minnesota Street. CNE 24 contains single-family and multi-family residences (NAC B). **This CNE contains an Area for Further Investigation.**

CNE 25 is located on the westbound side of I-70 between West Minnesota Street and Holt Road. CNE 25 contains single-family residences (NAC B).

CNE 26 is located on the eastbound side of I-70 between West Minnesota Street and Holt Road. CNE 26 contains single-family residences (NAC B). **This CNE contains an Area for Further Investigation.**

CNE 27 is located on the westbound side of I-70 between Holt Road and Eagle Creek. CNE 27 contains no noise-sensitive receptors.

CNE 28 is located on the eastbound side of I-70 between Holt Road and Eagle Creek. CNE 28 contains no noise-sensitive receptors.

CNE 29 is located on the westbound side of I-70 between Eagle Creek and South Harding Street. CNE 29 contains single-family residences (NAC B). On the west end of CNE 29, there is the Eagle Creek Greenway trail (NAC C). **This CNE contains an Area for Further Investigation.**

CNE 30 is located on the eastbound side of I-70 between Eagle Creek and South Harding Street. CNE 30 contains single-family residences (NAC B). On the west end of CNE 30, there is the Eagle Creek Greenway trail, outdoor use at William Penn School 49, and Rhodius Park, which has a trail, tennis courts, baseball field and basketball courts (NAC C). No outdoor use was identified at Church of the Nazarene, Iglesia Fuente de Vida, D.G. Kidane Mhret Eritrean Orthodox Cathedral Church, and Beulah Lighthouse Church (NAC D). **This CNE contains an Area for Further Investigation.**



CNE 31 is located on the westbound side of I-70 between South Harding Street and White River Parkway Drive. CNE 31 contains single-family and multi-family residences (NAC B). No outdoor use was identified at Debere Selam Kidus Michael Ethiopian Orthodox Tewahido Church (NAC D). This **CNE contains an Area for Further Investigation.**

CNE 32 is located on the eastbound side of I-70 between South Harding Street and White River Parkway Drive. CNE 32 contains no noise-sensitive receptors.

70 E Spoke - Appendix A Pages 41-55

CNE 33 is located on the westbound side of I-70 from approximately 430 feet southwest of Valley Avenue to North Rural Street. CNE 33 contains single-family and multi-family residences (NAC B). Three parks are located on the south end of CNE 33, John Ed Park, Unity Park, and one with an unknown name (NAC C). No outdoor use was identified at Hope Christian Community Center, New Hope Missionary Baptist Church, and Greater Love Temple (NAC D). CNE 33 contains an **existing noise barrier** that runs along I-70 westbound from approximately Valley Avenue to Roosevelt/Commerce Avenue. **This CNE contains an Area for Further Investigation.**

CNE 34 is located on the eastbound side of I-70 from approximately 430 feet southwest of Valley Avenue to North Rural Street. CNE 34 contains single-family residences (NAC B). **This CNE contains an Area for Further Investigation.**

CNE 35 is located on the westbound side of I-70 between North Rural Street and North Sherman Drive. CNE 35 contains single-family and multi-family residences (NAC B). No outdoor use was identified at Mt Pisgah Baptist Church, Martin University, and The Lodge Recording Studio (NAC D). **This CNE contains an Area for Further Investigation.**

CNE 36 is located on the eastbound side of I-70 between North Rural Street and North Sherman Drive. CNE 36 contains no noise-sensitive receptors.

CNE 37 is located on the westbound side of I-70 between North Sherman Drive and Emerson Avenue. CNE 37 contains single-family residences on the east end of the CNE (NAC B).

CNE 38 is located on the eastbound side of I-70 between North Sherman Drive and Emerson Avenue. CNE 38 contains single-family residences (NAC B), the Pogues Run Trail, and the Pogues Run Art and Nature Park (NAC C). **This CNE contains an Area for Further Investigation.**

CNE 39 is located on the westbound side of I-70 between Emerson Avenue and North Arlington Avenue. CNE 39 contains single-family residences (NAC B), Safecare Development Childcare Center, and Small Events event center (NAC C). No apparent outdoor use was identified at Pentecostal Apostolic Church (NAC D). **This CNE contains two Areas for Further Investigation.**



CNE 40 is located on the eastbound side of I-70 between Emerson Avenue and North Arlington Avenue. CNE 40 contains single-family residences (NAC B), outdoor use at Bible Study Chapel (NAC C), and no outdoor use at Solid Rock Missionary Baptist (NAC D). **This CNE contains an Area for Further Investigation.**

CNE 41 is located on the westbound side of I-70 between North Arlington Avenue and Shadeland Avenue. CNE 41 contains no noise-sensitive receptors.

CNE 42 is located on the eastbound side of I-70 between North Arlington Avenue and Shadeland Avenue. CNE 42 contains single-family residences (NAC B). There is a playground, basketball court, trail, and splashpad at the Windsor Village Park (NAC C). The Rodeway Inn hotel has an outdoor patio area on the north side of the building (NAC E). **This CNE contains an Area for Further Investigation.**

CNE 43 is located on the westbound side of I-70 between Shadeland Avenue and I-465. CNE 43 contains two hotels with outdoor use, Comfort Inn East and Holiday Inn Express & Suites Indianapolis – East (NAC E).

CNE 44 is located on the eastbound side of I-70 between Shadeland Avenue and I-465. CNE 44 contains six hotels with outdoor use, Candlewood Suites Indianapolis East, Quality Inn East, Fairfield Inn & Suites by Marriott Indianapolis East, Indianapolis Marriott East, Delta Hotels by Marriott Indianapolis East, and the Red Roof Inn Indianapolis East (NAC E). CNE 44 contains an **existing noise barrier** that extends from approximately 1,100 feet east of Shadeland Road to E 21st Street.

CNE 45 is located on the westbound side of I-70 between I-465 and Franklin Way. CNE 45 contains single-family residences (NAC B). CNE 45 contains an **existing noise barrier** that extends from just west of Franklin Way to just north of Brennan Rd.

CNE 46 is located on the eastbound side of I-70 between I-465 and Franklin Way. CNE 46 contains single-family residences (NAC B) as well as outdoor use at Happy Kids Learning Center (NAC C). CNE 46 contains an **existing noise barrier** that extends approximately 450 feet west of Courtney Rd and runs eastward until it reaches Franklin Way.

65/70 Downtown Spoke - Appendix A Pages 56-67

CNE 47 is located on the southbound side of I-65 between Fall Creek Boulevard and W 16th Street. CNE 47 contains one multi-family residential building (NAC B) and the Fall Creek Trail (NAC C).

CNE 48 is located on the northbound side of I-65 between Fall Creek Boulevard and W 16th Street. CNE 48 contains a multi-family residential building, the St. George Apartments (NAC B), the IU Health Day Early Learning daycare, the Fall Creek Trail (NAC C), and one school with no outdoor use, the Ruth Lily Health Education Center (NAC D).



CNE 49 is located on the southbound side of I-65 between W 16th Street and North Senate Avenue. CNE 49 contains single-family residences and multi-family residences at the Canal Gardens Apartments and Indiana Townhomes (NAC B). CNE 49 also contains outdoor use at the Indiana University School of Medicine and the Firefly Children and Family Alliance – Gene Glick Family Support Center (NAC C). No outdoor use was identified at New Baptist Church in Indianapolis, Church of God In Christ, the Greater Progressive Baptist, and the IU Health Pathology Laboratory (NAC D). **This CNE contains an Area for Further Investigation.**

CNE 50 is located on the northbound side of I-65 between W 16th Street and North Senate Avenue. CNE 50 contains a school, the Indiana University School of Medicine Department of Neurology, and a hospital, the IU Health Neuroscience Center (NAC D).

CNE 51 is located on the southbound side of I-65 between North Senate Avenue and approximately 220 feet west of Central Avenue. CNE 51 contains single-family residences and multi-family residences at the Delaware Court Apartments, Apollo & Aurora Apartments, and the Wyndham on Delaware (NAC B). The WTHR-NBC 13 television studio is located at the intersection of 11th Street and North Meridian Street (NAC D). There is one large office building with an outdoor use space (NAC E). **This CNE contains an Area for Further Investigation.**

CNE 52 is located on the northbound side of I-65 between North Senate Avenue and approximately 220 feet west of Central Avenue. CNE 52 contains several single-family residences and multi-family residences at The Madison, The Barbee, The Van Dike Circle City Apartments, Stonegate Apartments, and a new permitted multi-family complex, the Nouveau in Old Northside (NAC B). There is a museum with outdoor use at the Benjamin Harrison Presidential Site, which is a historical site (NAC C). No outdoor use was identified at Traders Point Christian Church Downtown (NAC D). Patio seating was identified at Legal Beans Coffee Roasters and Starbucks (NAC E). **This CNE contains an Area for Further Investigation.**

CNE 53 is located on the westbound side of I-70 between White River Parkway Drive and South East Street. CNE 53 contains single-family and multi-family residences (NAC B). There are several outdoor use areas; a basketball court at Riley Park, the Central White River trail, a trail around Eli Lily and Company Corporate center, and an outdoor memorial at the Indianapolis Fire Department Station 19 (NAC C). No outdoor use was identified at Bethesda Baptist Church (NAC D), and a patio was identified at Iozzo's Garden of Italy (NAC E).

CNE 54 is located on the eastbound side of I-70 between White River Parkway Drive and South East Street. CNE 54 contains single-family and multi-family residences (NAC B). Outdoor use areas at the Central White River Trail and the Dog Park at Immanuel were identified (NAC C). No outdoor use was identified at Sacred Heart Parish Hall, Immanuel United Church-Christ, and South Calvary Baptist



Church (NAC D). The New AJ's Lounge has an outdoor patio (NAC E). This CNE contains two Areas for Further Investigation.

CNE 55 is located on the westbound side of I-70/Southbound side of I-65 between South East Street and Virginia Avenue. CNE 55 contains single-family and multi-family residences, one of which is the Horrace Mann Condominiums (NAC B). CNE 55 also contains outdoor use at Fletcher Woods (NAC C), and restaurants with patios at Chilly Water, Amelia's, Chilly Water Brewing Company, Bosphorus Istanbul Café, and Mr. Tequilas Cantina & Grill (NAC E). **This CNE contains an Area for Further Investigation.**

CNE 56 is located on the eastbound side of I-70/Southbound side of I-65 between South East Street and approximately 200 feet south of Cottage Avenue. CNE 56 contains single-family and multi-family residences (NAC B). CNE 56 also contains outdoor use at Ringgold Park and Coburn Park (NAC C). **This CNE contains an Area for Further Investigation.**

CNE 57 is located on the northbound side of I-65 between the south end of Barth Avenue and Virginia Avenue. CNE 57 contains single-family and multi-family residences (NAC B). CNE 57 also contains Idle Park, a community garden, and the Indianapolis Cultural Trail (NAC C). No outdoor use was identified at St. Patrick Catholic Church (NAC D). **This CNE contains an Area for Further Investigation.**

CNE 58 is located on the southbound side of I-65 between Virginia Avenue and East Market Street. CNE 58 contains single-family and multi-family residences, including the Union Laundry Lofts and the Vue Luxury Apartments (NAC B). The Brekston School has no apparent outdoor use (NAC D). There is also an outdoor patio at the Hotel Tango Distillery (NAC E). **This CNE contains an Area for Further Investigation.**

CNE 59 is located on the northbound side of I-65 between Virginia Avenue and East Market Street. CNE 59 contains single-family and multi-family residences (NAC B), no outdoor use at El Calvario/Calvary Tabernacle (NAC D), and one restaurant with a patio, Three Carrots Fountain Square (NAC E). **This CNE contains an Area for Further Investigation.**

4. Areas for Further Investigation

Areas for Further Investigation have been identified in CNEs 2, 4, 10 through 12, and 14 through 18 in the 65 Spoke, CNEs 20 through 24, 26, and 29 through 31 in the 70 W Spoke, CNEs 33 through 35, 38 through 40, and 42 in the 70 E Spoke, and CNEs 49, 51, 52, and 54 through 59 in the 65/70 Downtown Spoke.



Table 2 below includes a list of the identified CNEs, the potential number of receptors within each, and whether the CNE contains an **Area for Further Investigation**. Note that some receptors on the figures in **Appendix A** may represent multiple receptors or units. As such, the potential number of receptors identified in **Table 2** may be greater than the number of receptor locations shown on the figures.

While various methods to mitigate noise impact are discussed in 23 CFR 772 and the INDOT Noise Policy, installation of noise barriers (a wall located between the highway and receptors) is the most common form of abatement that is investigated. Alternative forms of abatement listed in 23 CFR 772 include traffic management measures, horizontal or vertical alteration of alignments, acquisition of real property, and noise insulation of Activity Category D land use facilities.



CNE	POTENTIAL	AREA FOR	CNE	POTENTIAL	AREA FOR
	# OF	FURTHER		# OF	FURTHER
	RECEPTORS¹	INVESTIGATION?		RECEPTORS¹	INVESTIGATION?
CNE 1	0	No	CNE 31	117	Yes
CNE 2	28	Yes	CNE 32	0	No
CNE 3	3	No	CNE 33	59	Yes
CNE 4	210	Yes	CNE 34	12	Yes
CNE 5	65	No	CNE 35	76	Yes
CNE 6 ²	22	No	CNE 36	0	No
CNE 7	36	No	CNE 37	6	No
CNE 8	78	No	CNE 38	11	Yes
CNE 9	0	No	CNE 39	22	Yes
CNE 10	199	Yes	CNE 40	17	Yes
CNE 11	199	Yes	CNE 41	0	No
CNE 12	53	Yes	CNE 42	64	Yes
CNE 13	3	No	CNE 43	2	No
CNE 14	86	Yes	CNE 44	6	No
CNE 15²	198	Yes	CNE 45	35	No
CNE 16	175	Yes	CNE 46	22	No
CNE 17	213	Yes	CNE 47	3	No
CNE 18	298	Yes	CNE 48²	34	No
CNE 19	0	Νο	CNE 49	35	Yes
CNE 20	49	Yes	CNE 50	2	No
CNE 21	190	Yes	CNE 51²	131	Yes
CNE 22	35	Yes	CNE 52²	260	Yes
CNE 23	75	Yes	CNE 53	16	No
CNE 24	39	Yes	CNE 54²	134	Yes
CNE 25	6	No	CNE 55²	60	Yes
CNE 26	12	Yes	CNE 56	164	Yes
CNE 27	0	No	CNE 57²	140	Yes
CNE 28	1	No	CNE 58²	219	Yes
CNE 29	168	Yes	CNE 59	97	Yes
CNE 30	186	Yes			
¹ POTENTIAL NUMBER OF RECEPTORS ARE BASED ON THE INFORMATION AVAILABLE AT THE TIME					
OF THIS STUDY AND ARE SUBJECT TO CHANGE.					

Table 2. Identified CNEs, Receptors and Areas for Further Investigation

² THE CNE CONATINS ONE OR MORE MULTI-FAMILY RESIDENCES THAT HAS AN UNKNOWN NUMBER OF DWELLING UNITS.

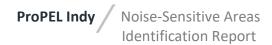


5. Conclusion

For this PEL study, INDOT has identified noise-sensitive land uses along the corridor. Fifty-nine (59) CNEs were identified, with thirty-five (35) including **Areas for Further Investigation** in the next phases of study. Note that there are thirty-nine (39) total **Areas for Further Investigation** that have been identified, as four of the CNEs (CNEs 10, 14, 39, and 54) contain two of these areas.

To help inform activities such as alternatives development and analysis, these areas have been identified where sufficient density exists such that noise abatement could potentially be determined reasonable and feasible in future studies.

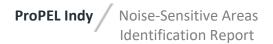
The analysis conducted as part of the PEL study will not be used to determine noise impact or noise abatement locations in accordance with 23 CFR 772. Those activities would occur as part of the NEPA analysis associated with any future Type I projects in the ProPEL Indy study area.



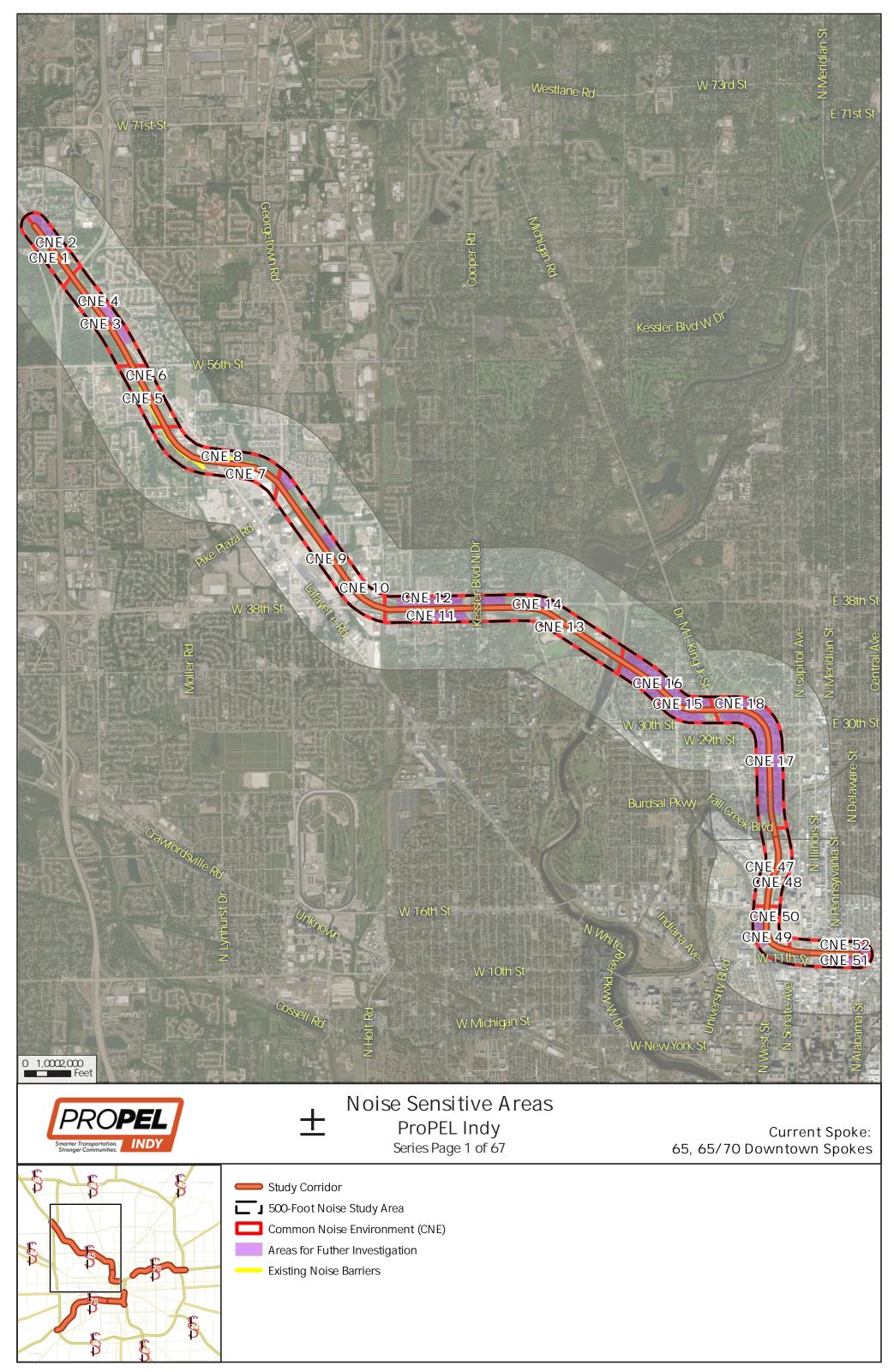


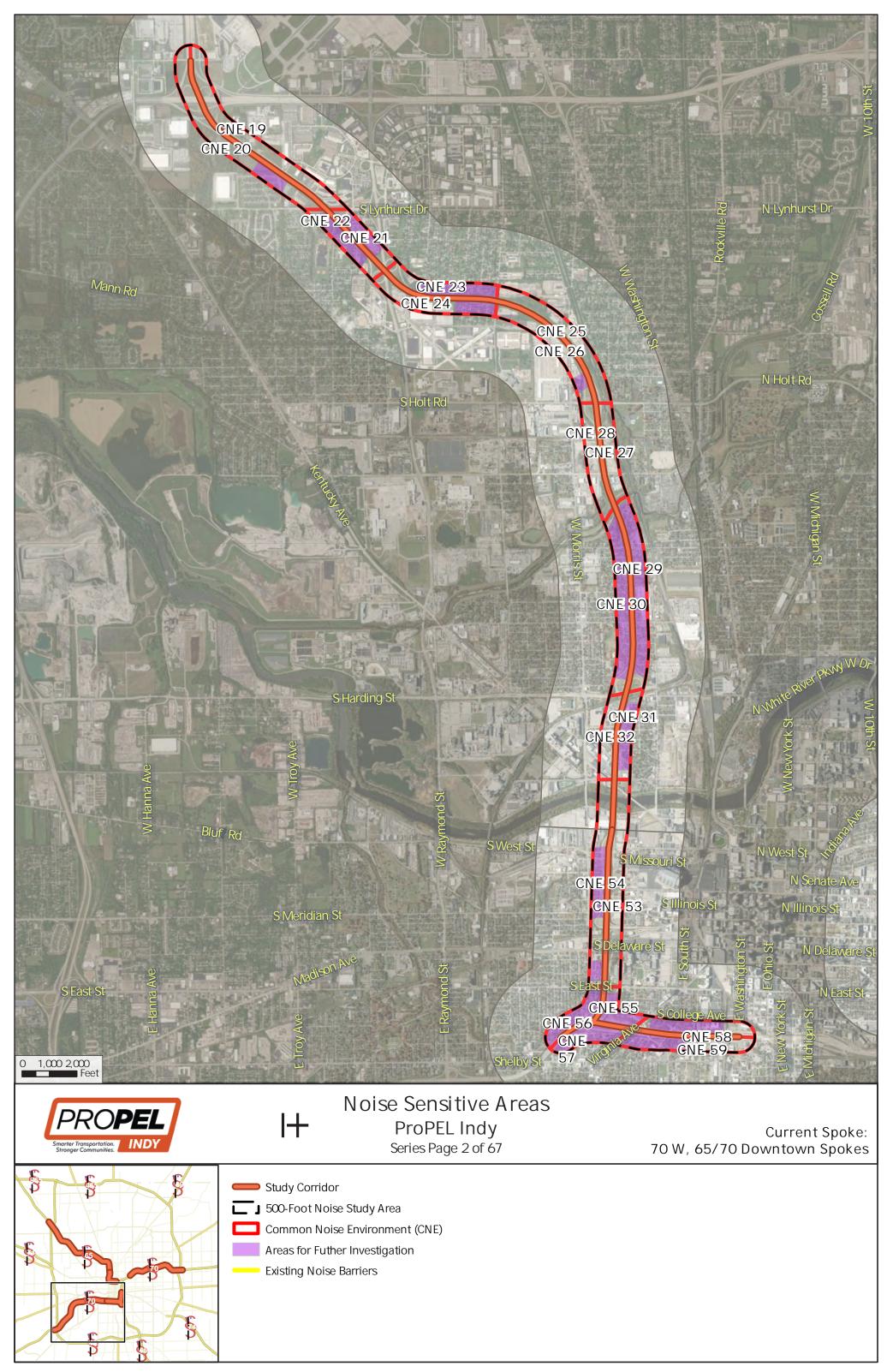
6. References

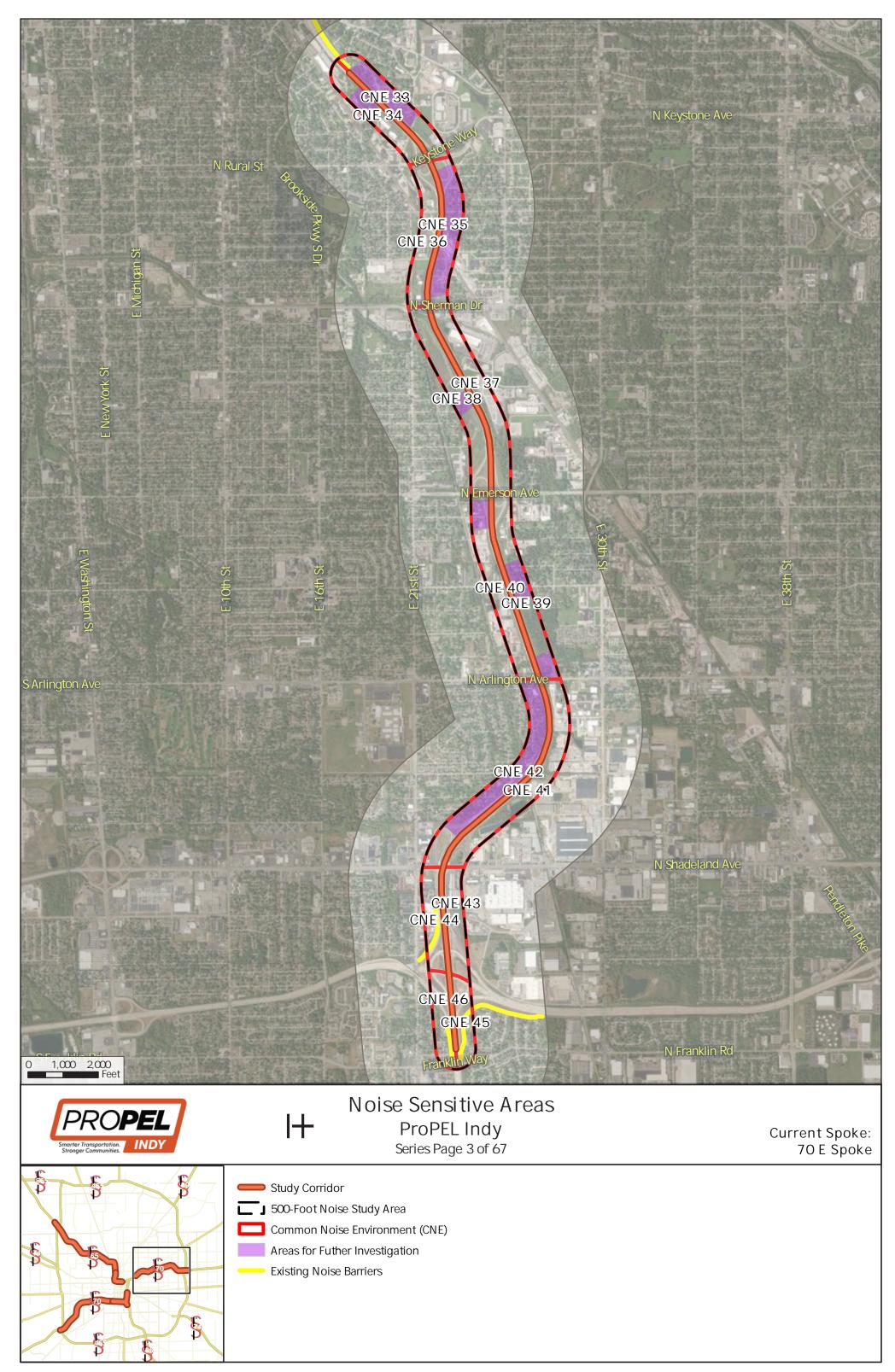
- FHWA, "Highway Traffic Noise: Analysis and Abatement Guidance", FHWA-HEP-10-025, https://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/analysis_and_abat ement_guidance/revguidance.pdf, December 2011.
- FHWA, Noise Policy FAQs Frequently Asked Questions, https://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/faq_nois.cfm#D4e.
- FHWA, "Procedures for Abatement of Highway Traffic Noise and Construction Noise", Code of Federal Regulations, Title 23 Part 772 (23 CFR 722), July 13, 2010.
- INDOT, "Traffic Noise Analysis Procedure", https://www.in.gov/indot/engineering/files/2022-INDOT-Noise-Policy-Signed-Final-101222.pdf, October 12, 2022.

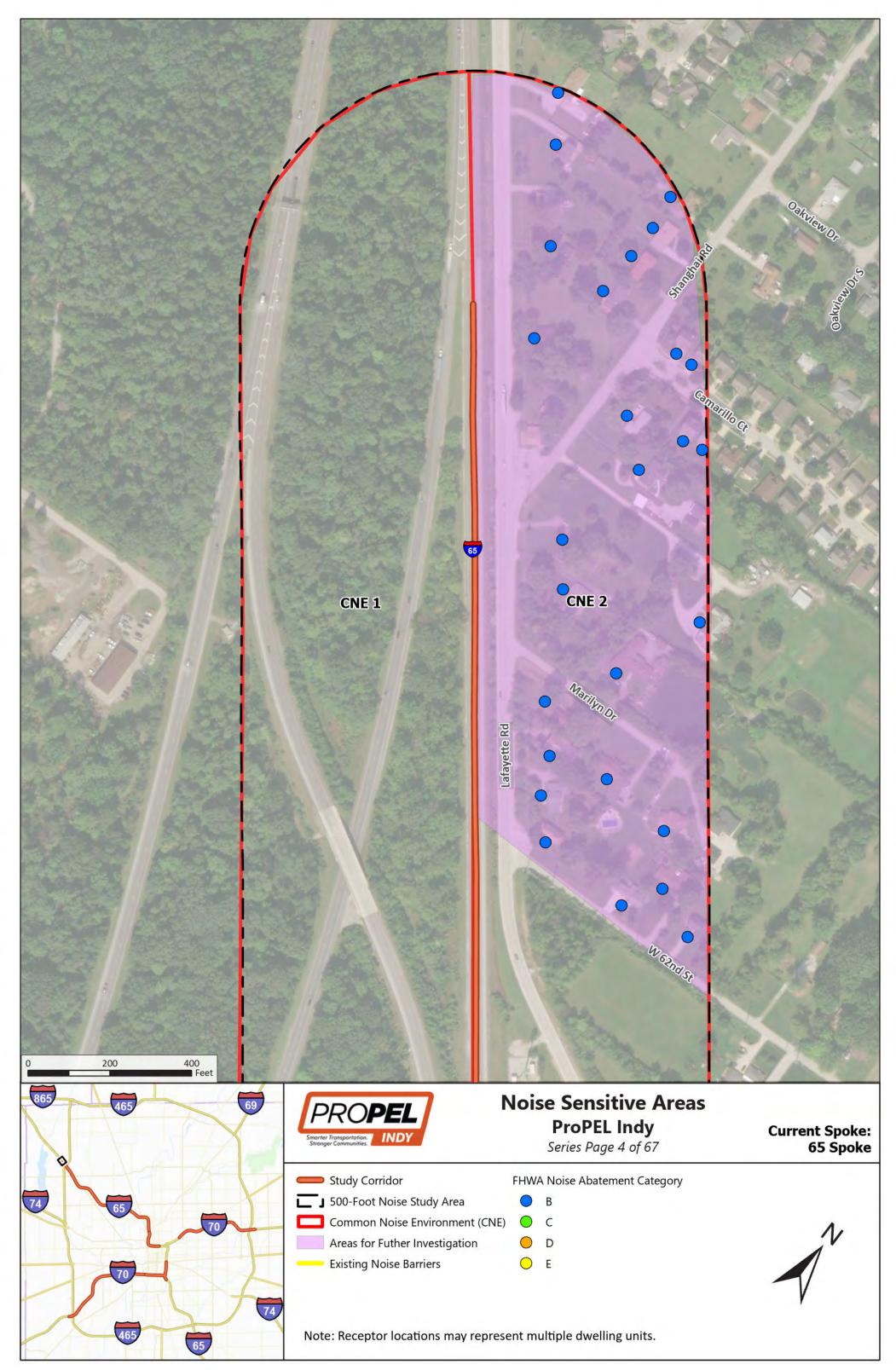


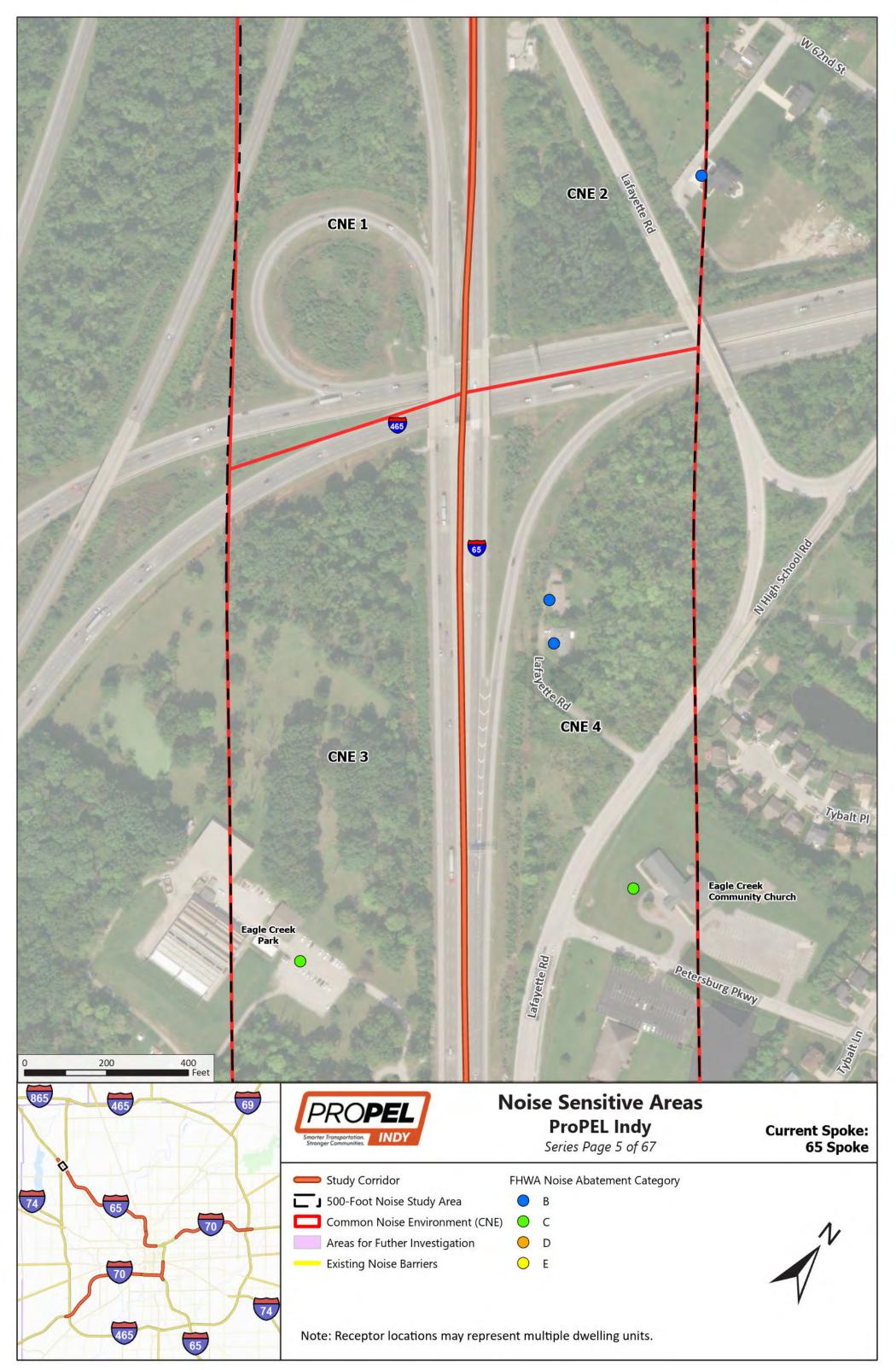
Appendix A- Noise-Sensitive Area Maps

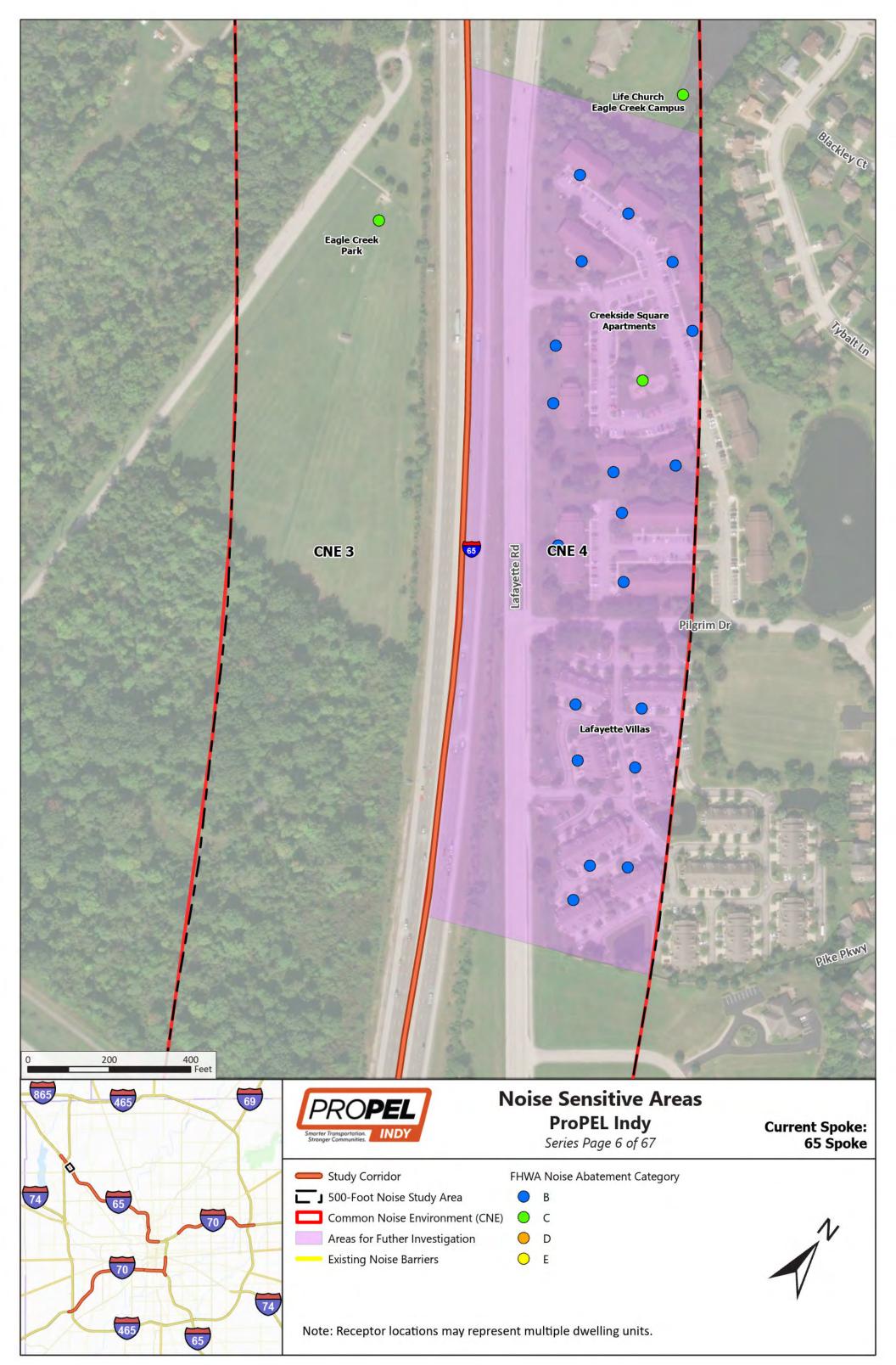


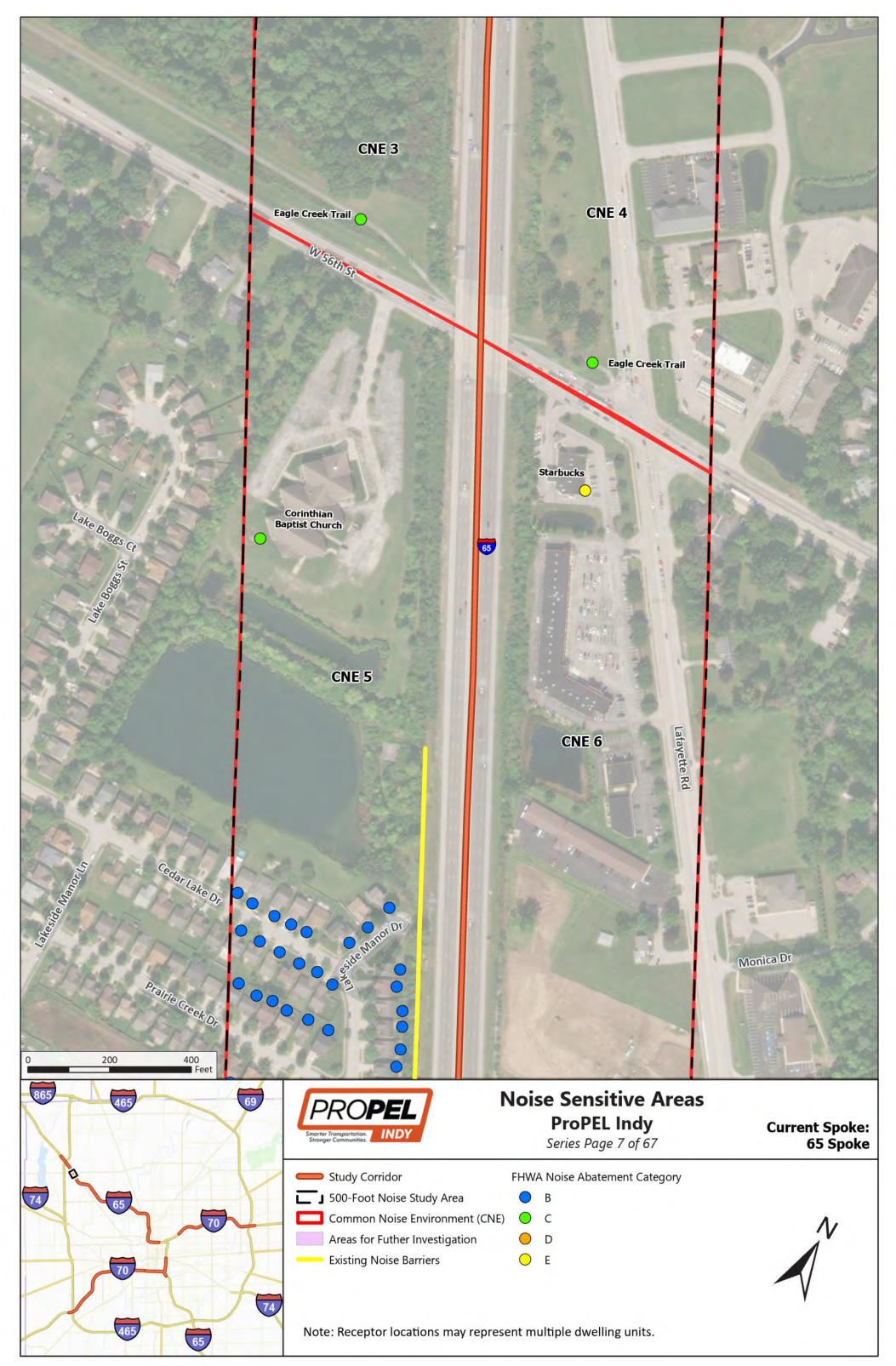


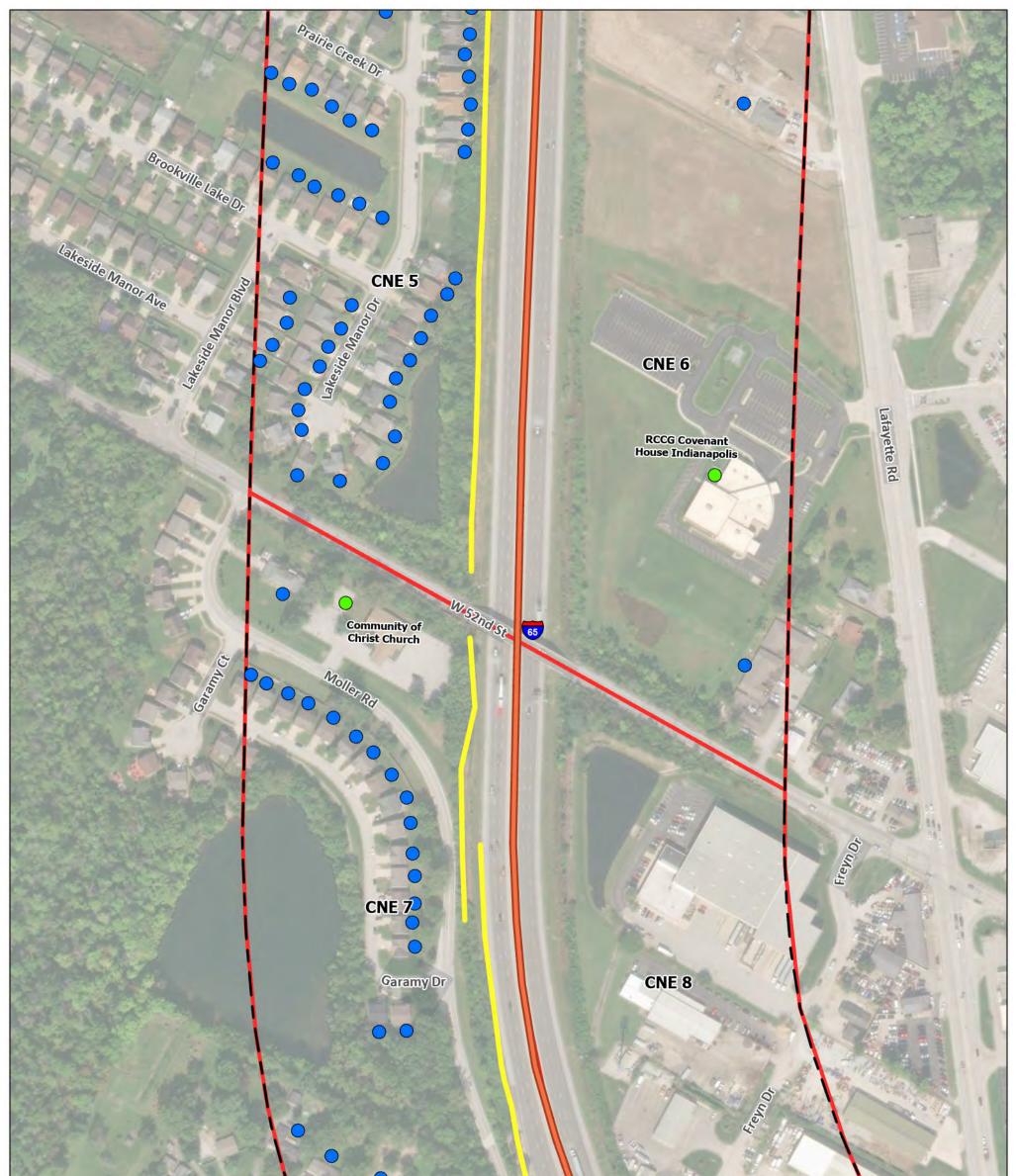




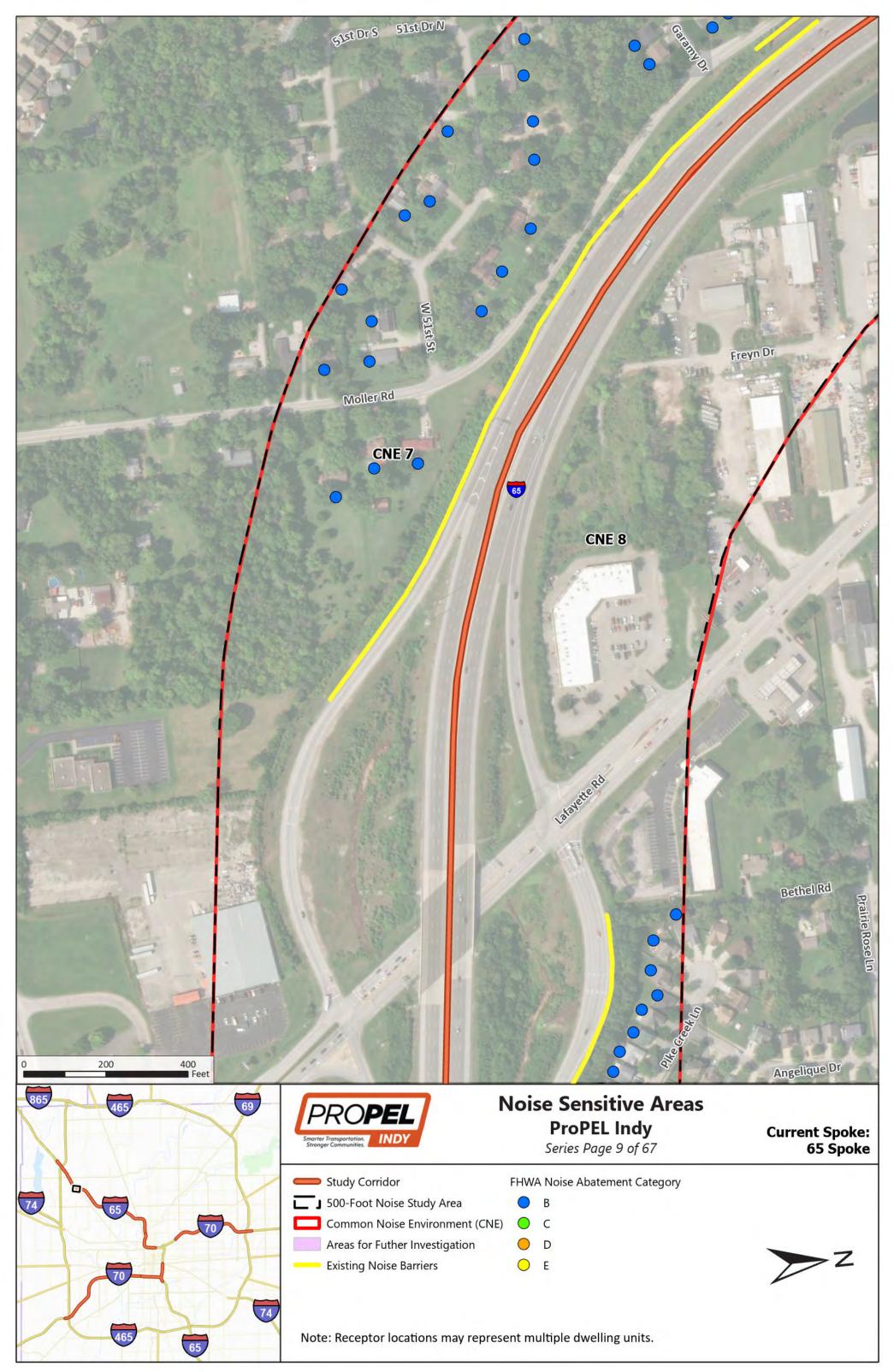


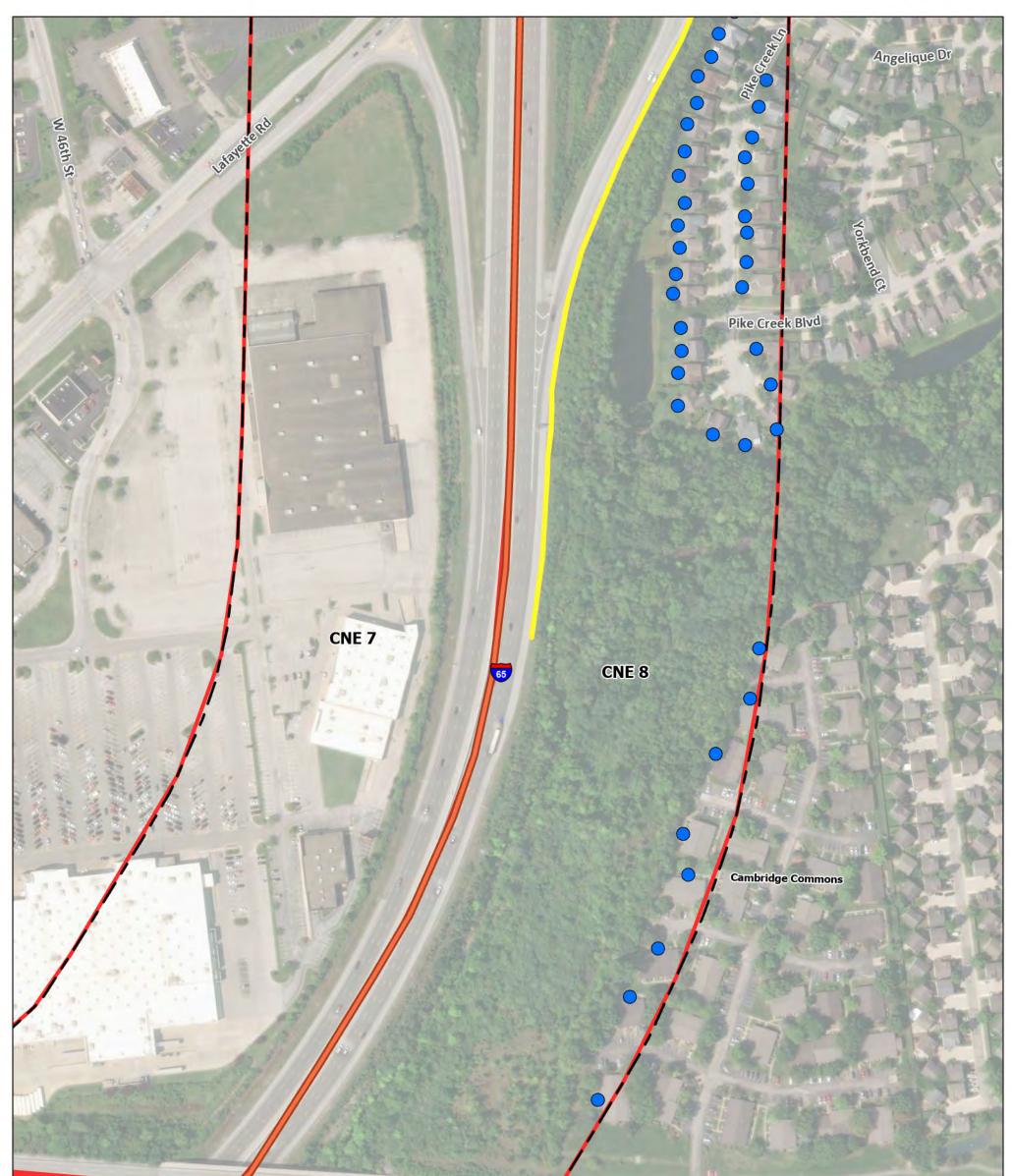




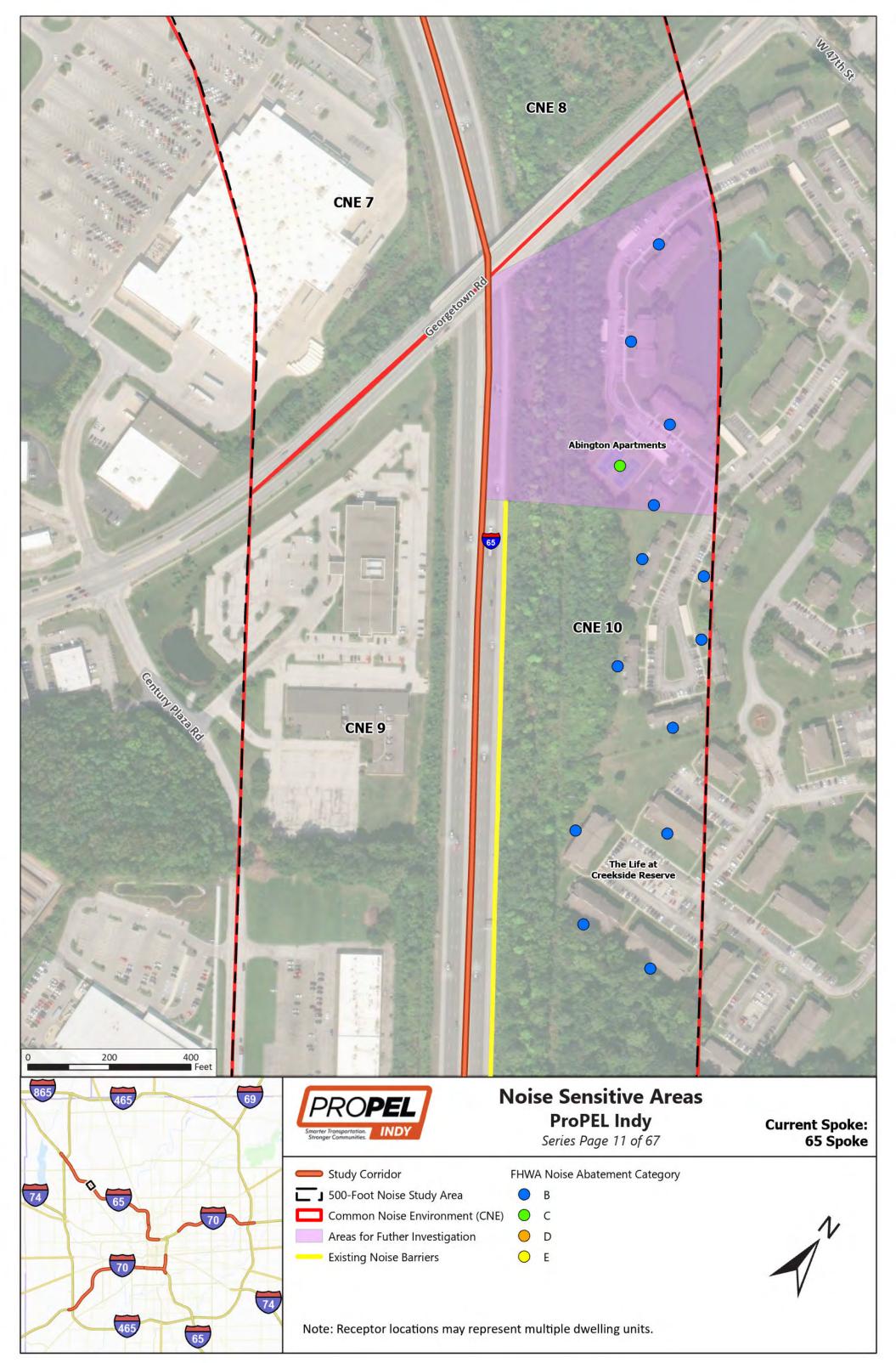


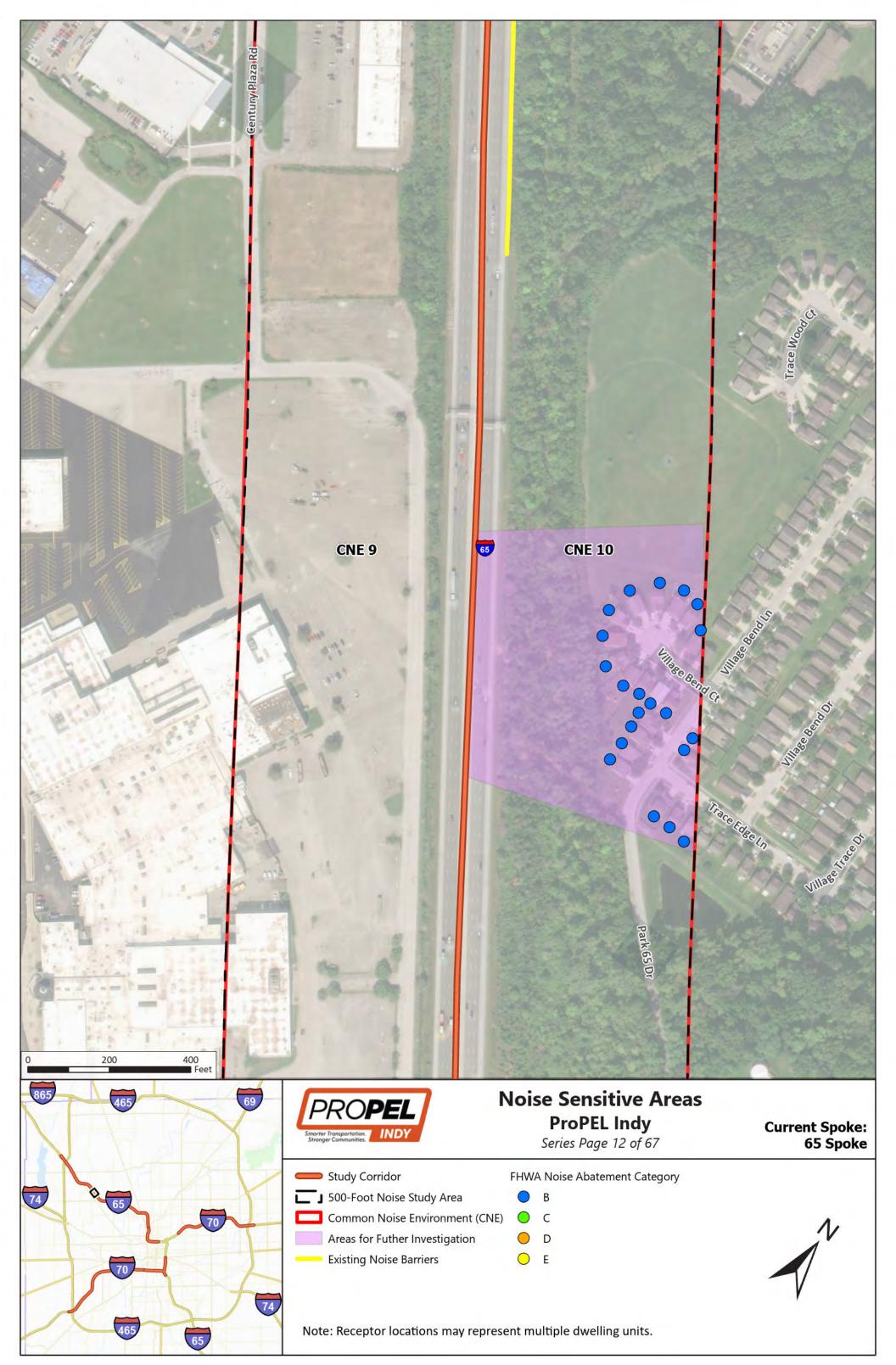
865 465 69	PROPEL Stronger Communities.	oise Sensitive Areas ProPEL Indy Series Page 8 of 67	Current Spoke: 65 Spoke
	Study Corridor	HWA Noise Abatement Category	
74 65	5 00-Foot Noise Study Area	В	
70	Common Noise Environment (CNE)	● C	Λ,
	Areas for Futher Investigation	O D	, V
	Existing Noise Barriers	E	

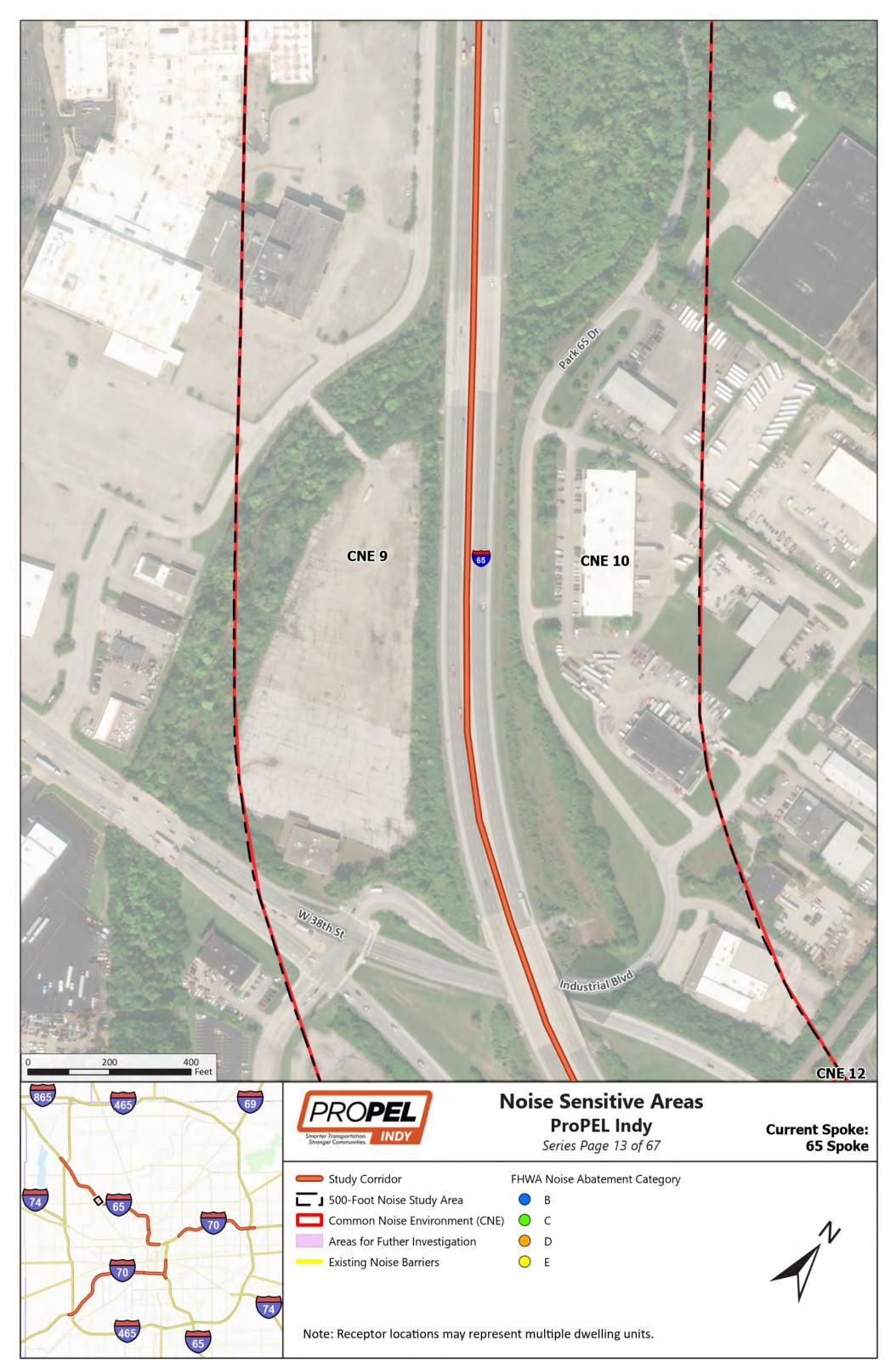




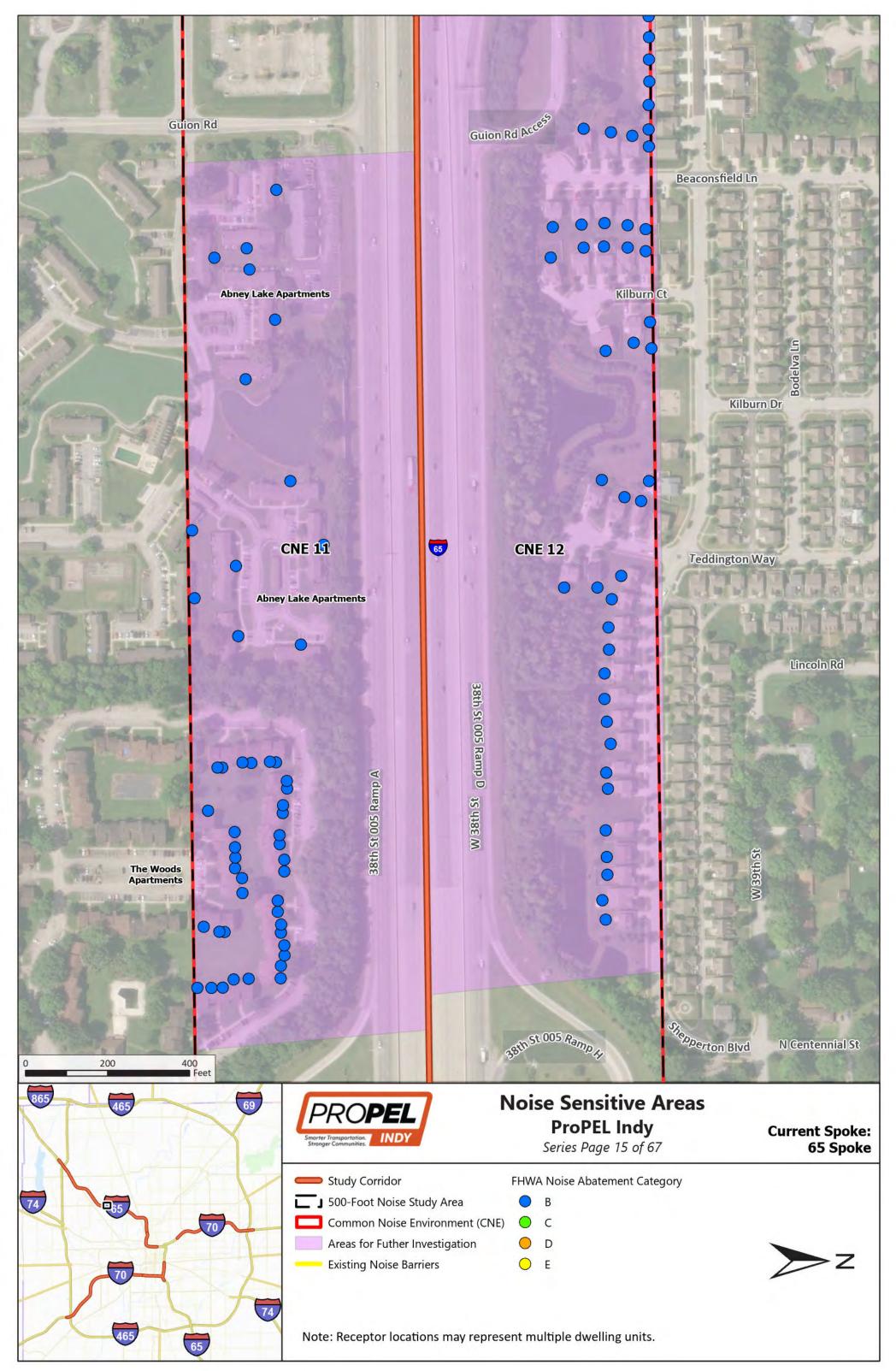
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74 65 70 70 70 70 70 70 70 70 70 70 70 70 70	 Study Corridor 500-Foot Noise Study Area Common Noise Environment (CNE) Areas for Futher Investigation Existing Noise Barriers 	 FHWA Noise Abatement Category B C D E 	Z
465 65 74	Note: Receptor locations may represe	ent multiple dwelling units.	

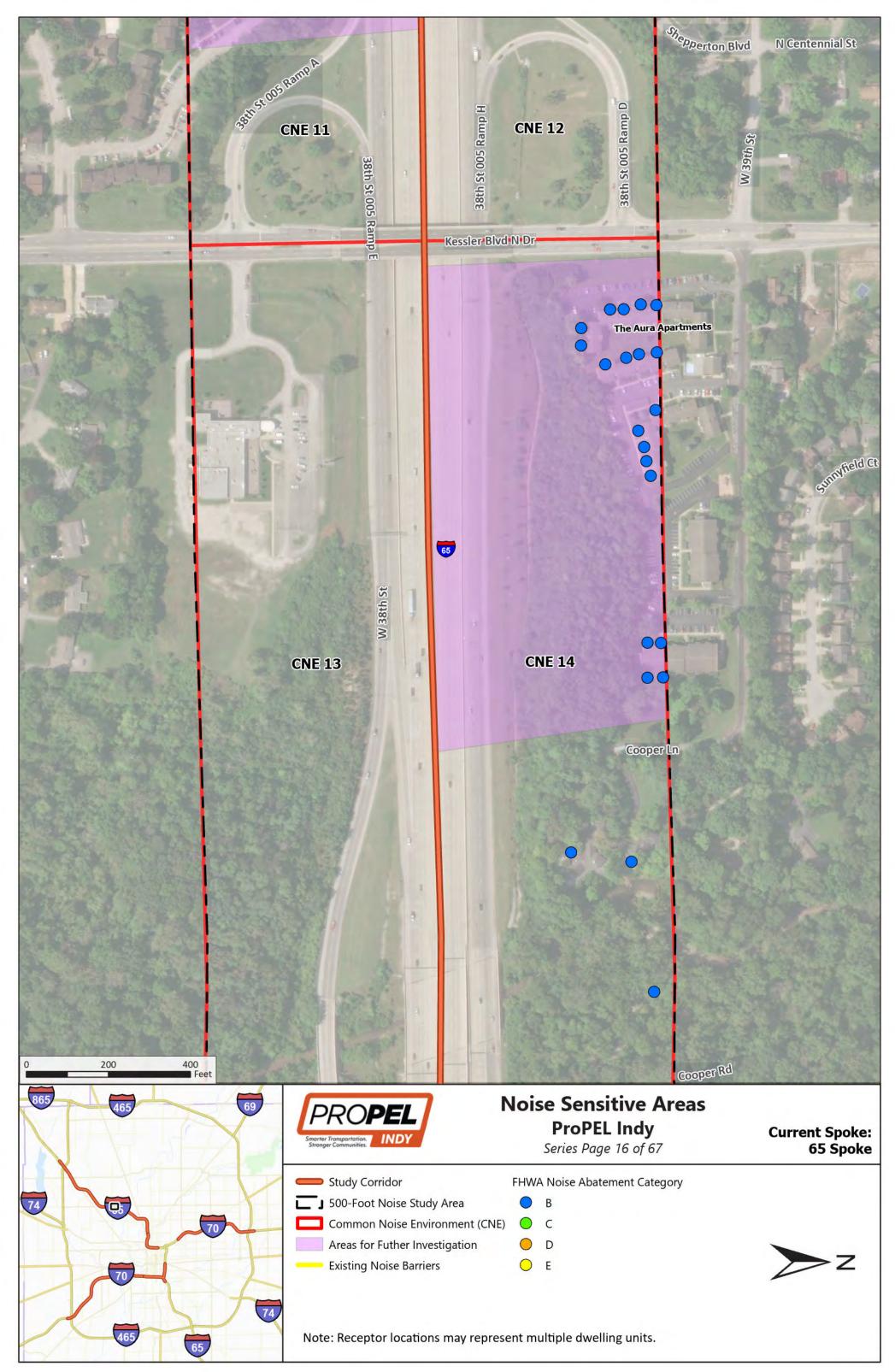


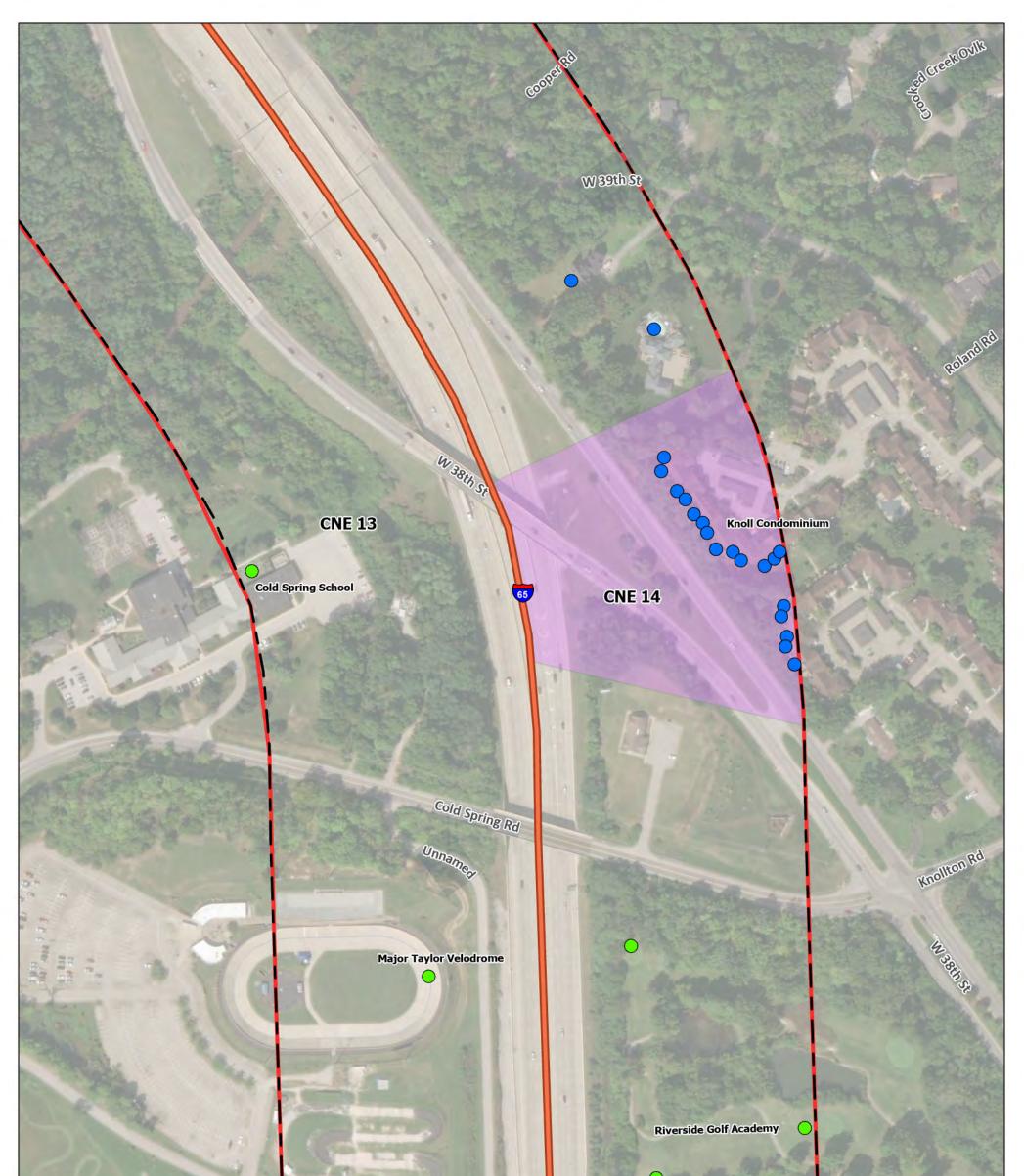


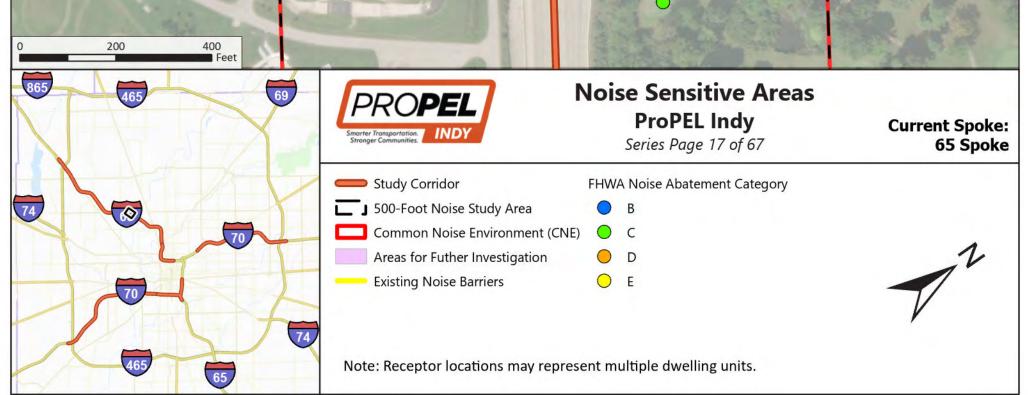


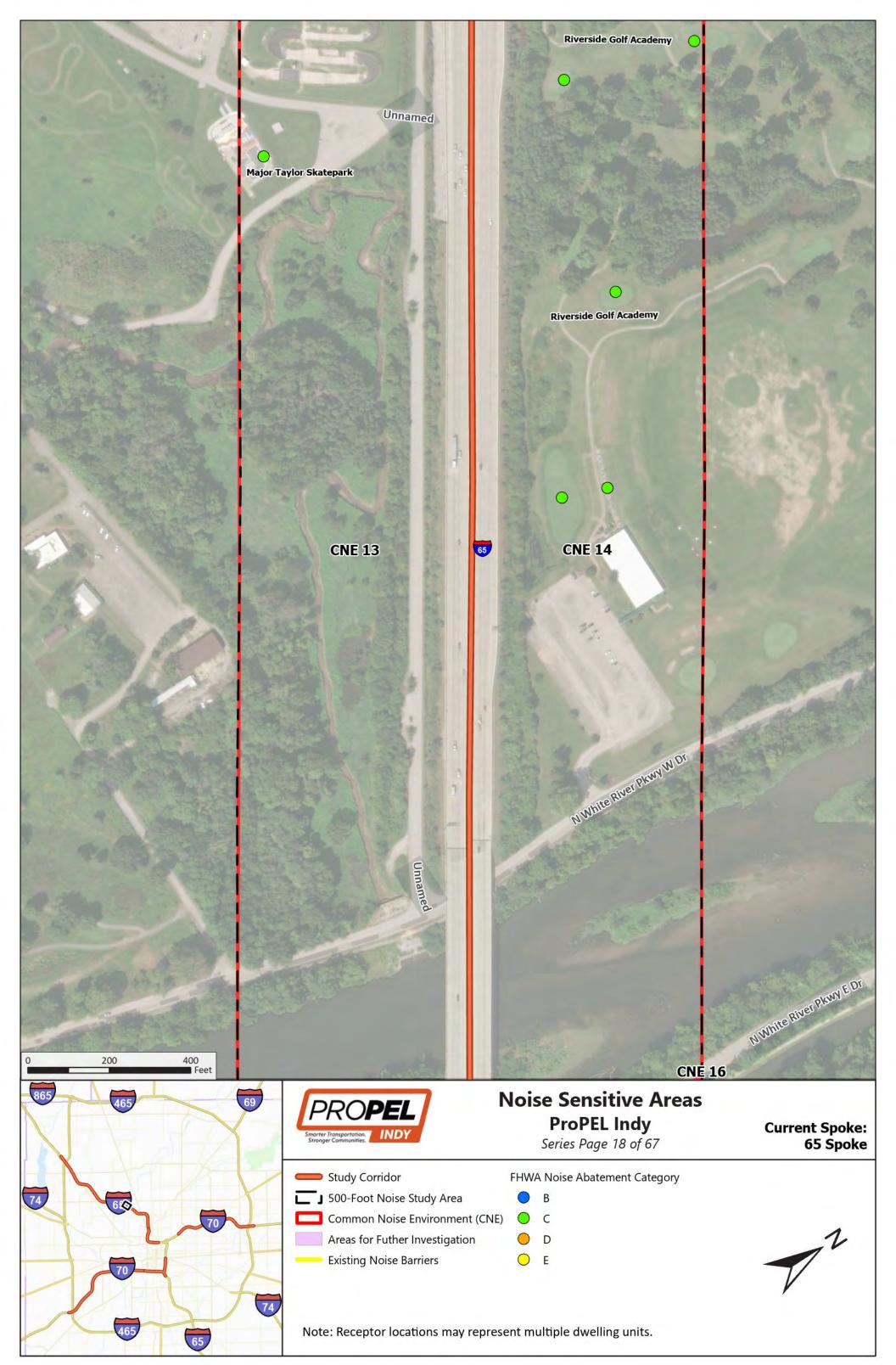


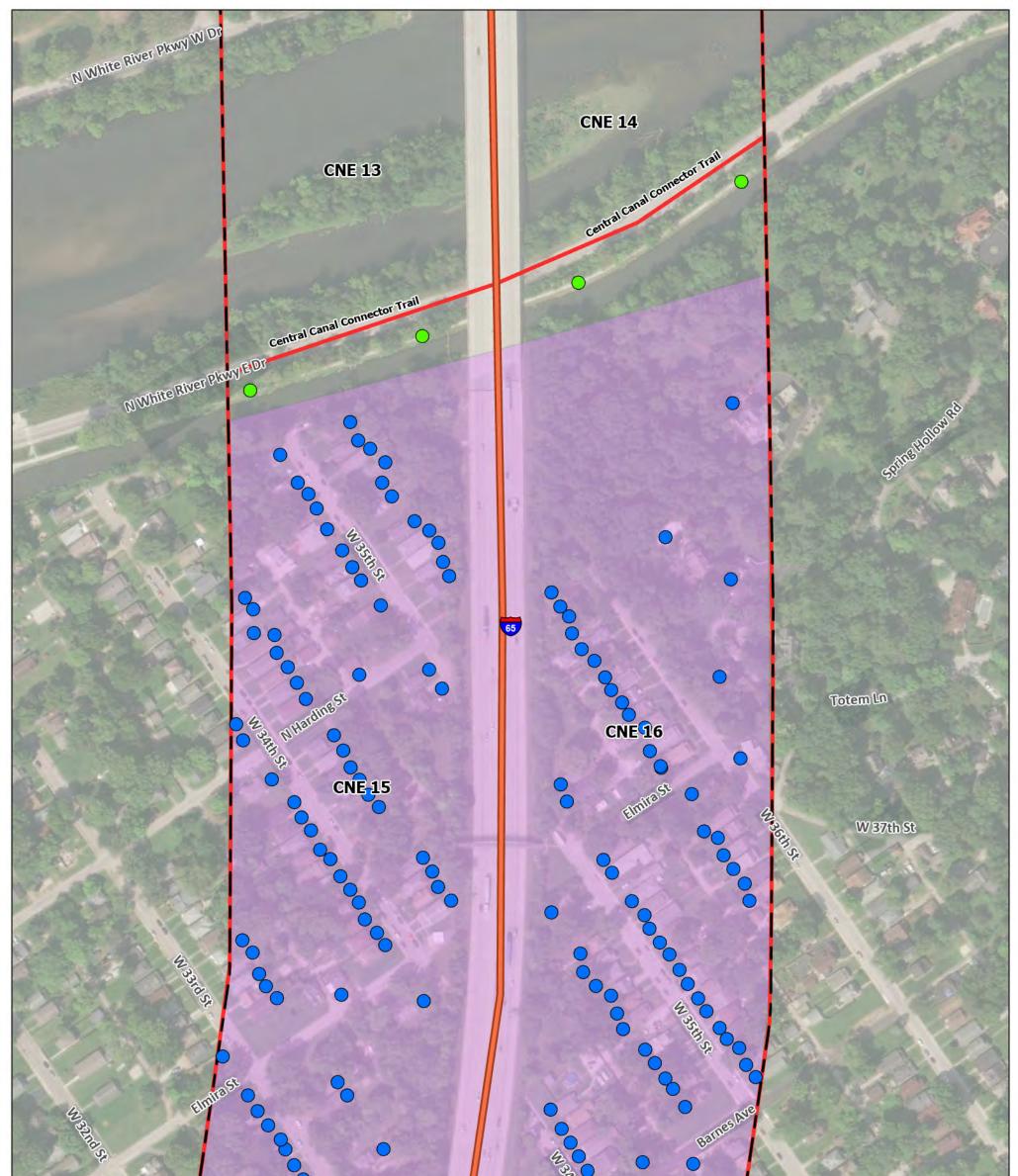




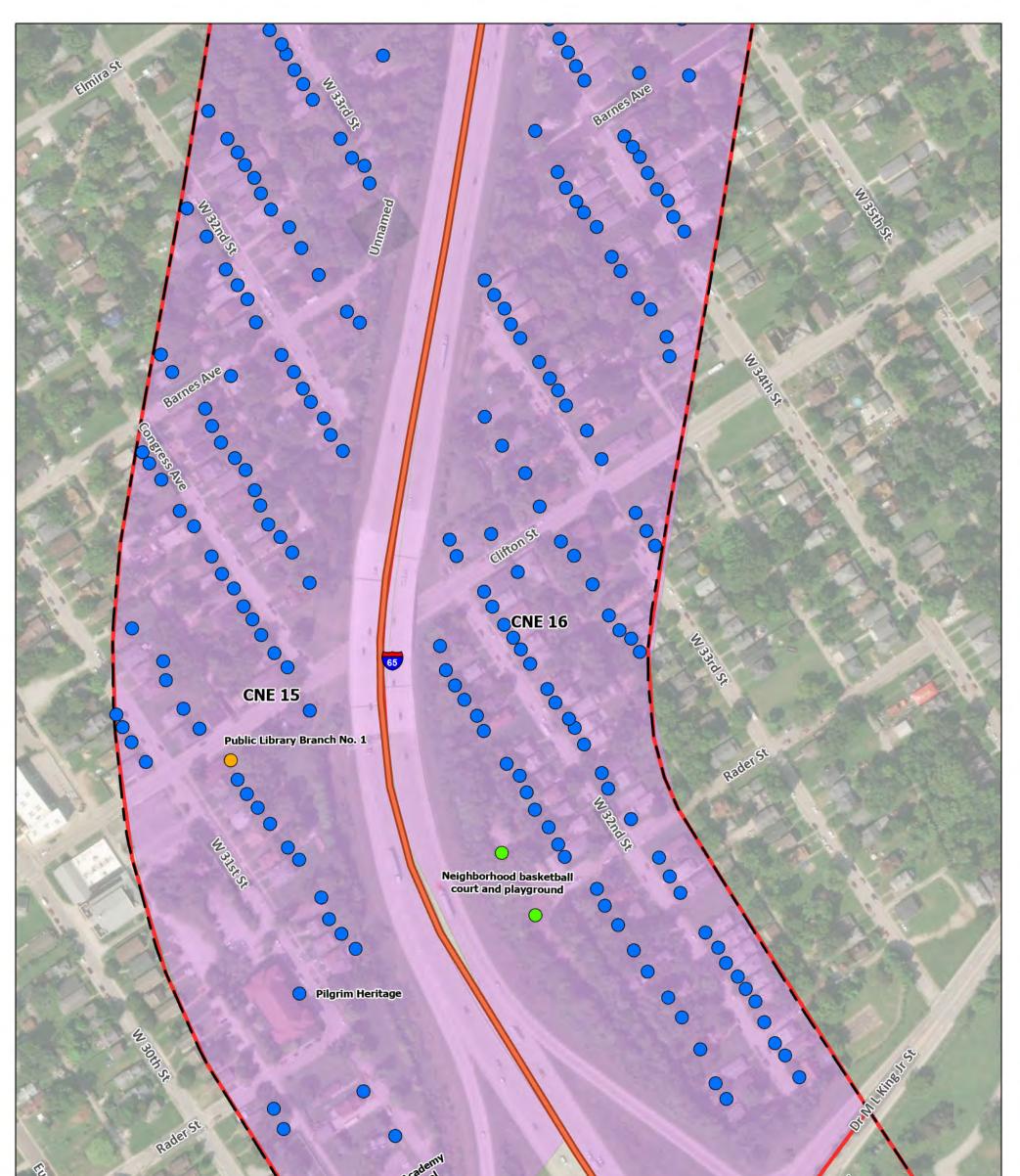




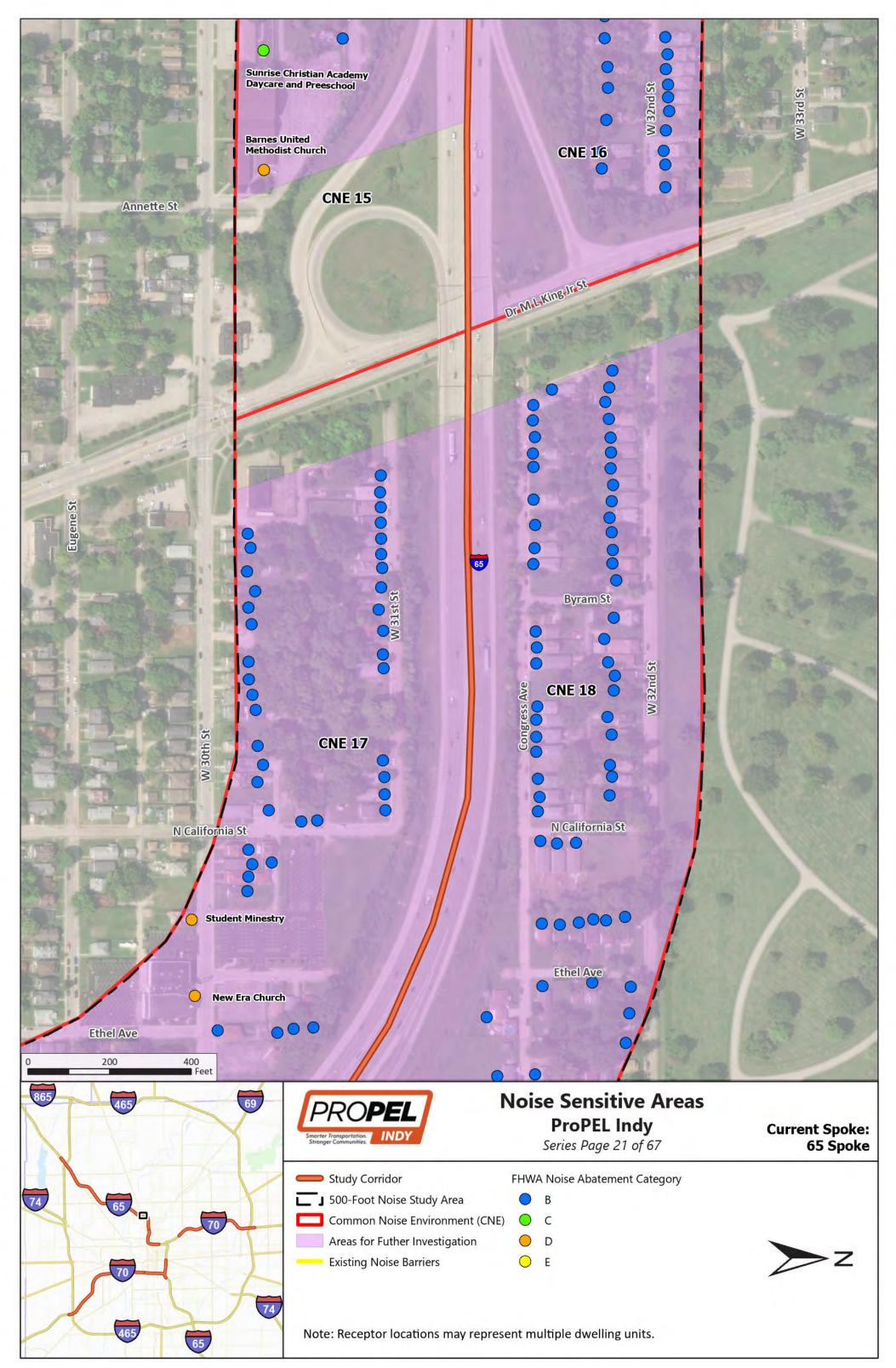


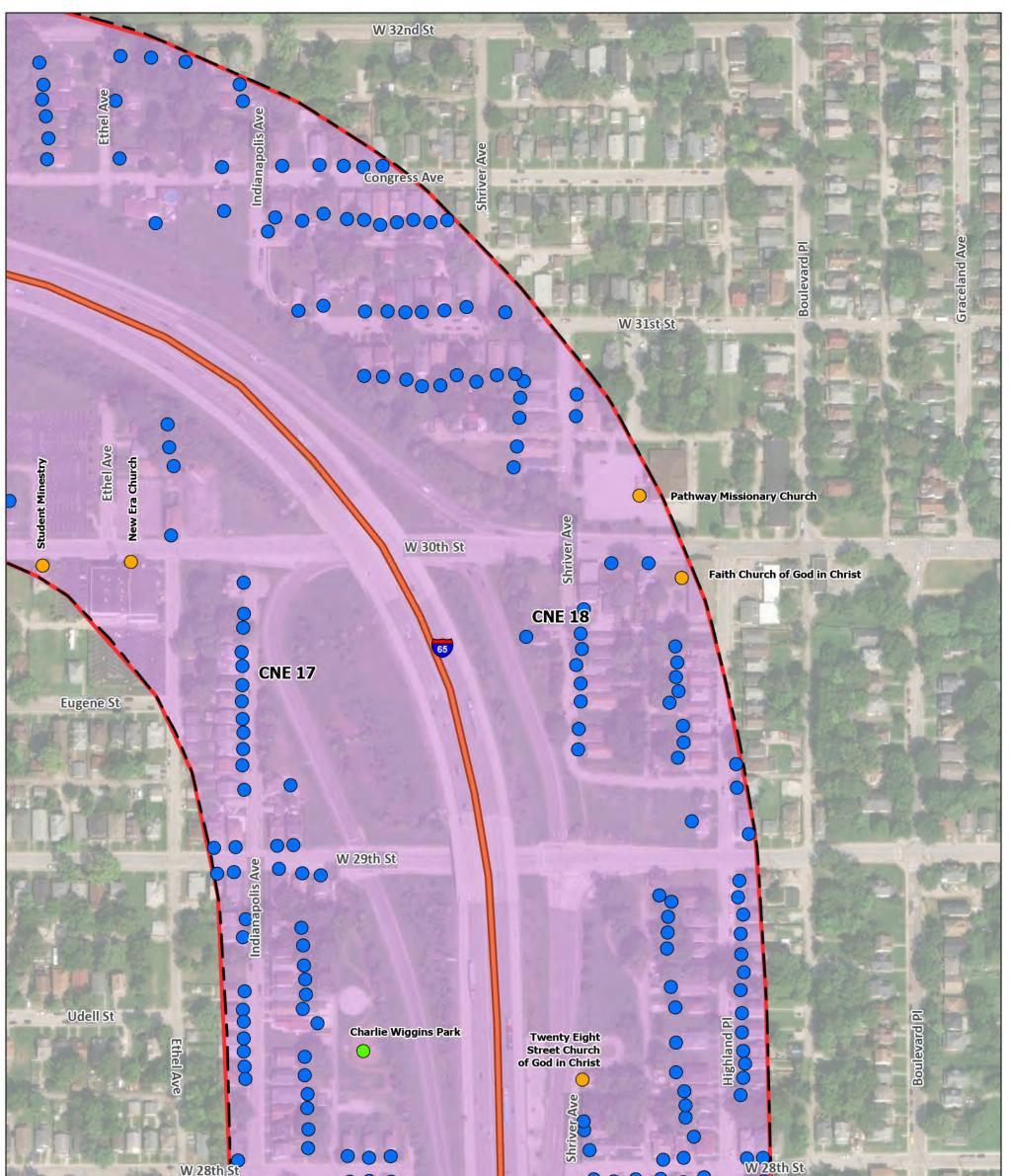


0 200 400 Feet	•		2. 1. 1
865 465 69	PROPEL Smorter Transportation. Stronger Communities.	Noise Sensitive Areas ProPEL Indy Series Page 19 of 67	Current Spoke: 65 Spoke
74 650 70	 Study Corridor 500-Foot Noise Study Area Common Noise Environment (CNE) Areas for Futher Investigation Existing Noise Barriers 	 FHWA Noise Abatement Category B C D E 	2
70 465 65	Note: Receptor locations may represe		$\overline{\mathcal{V}}$

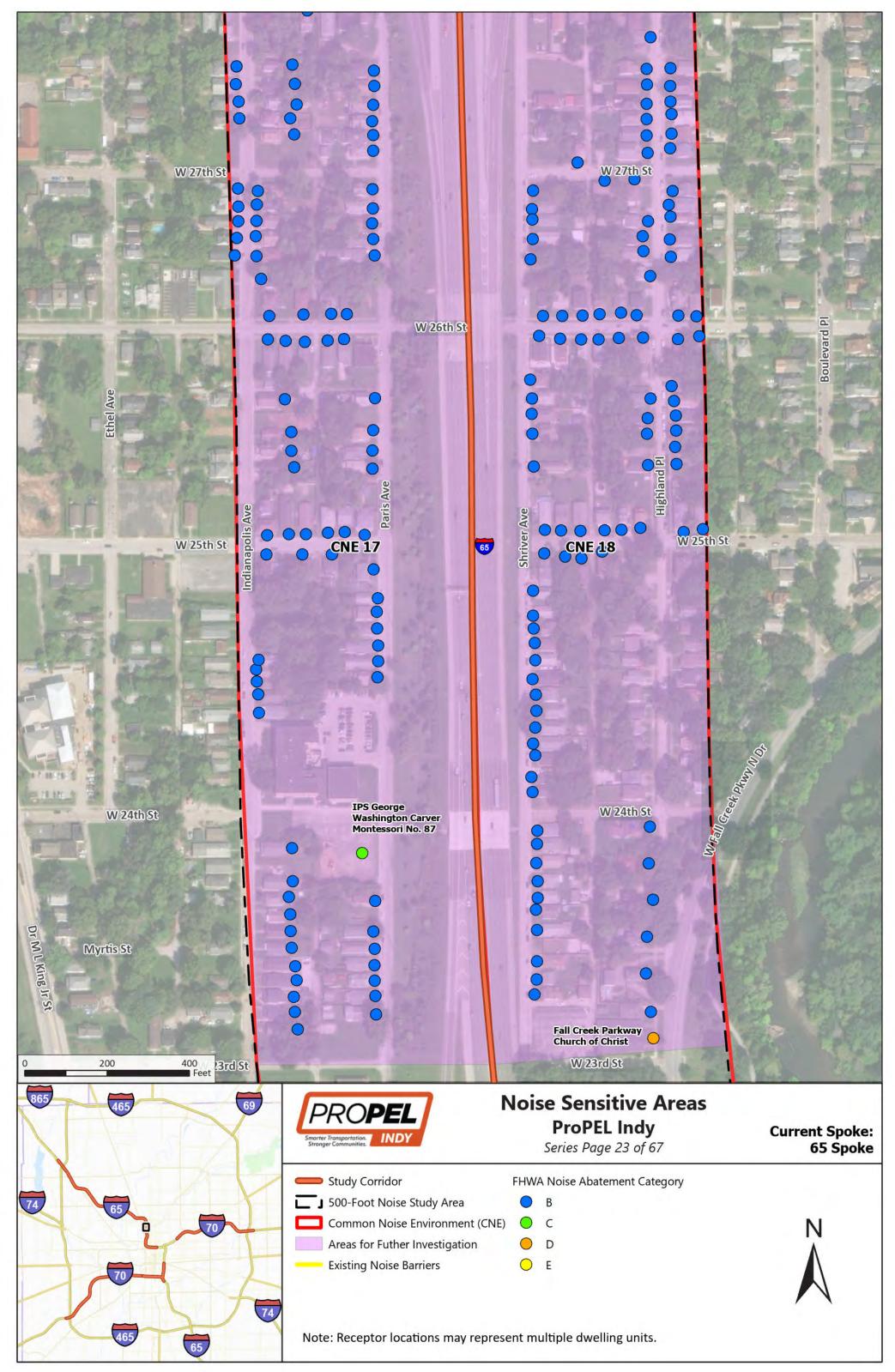


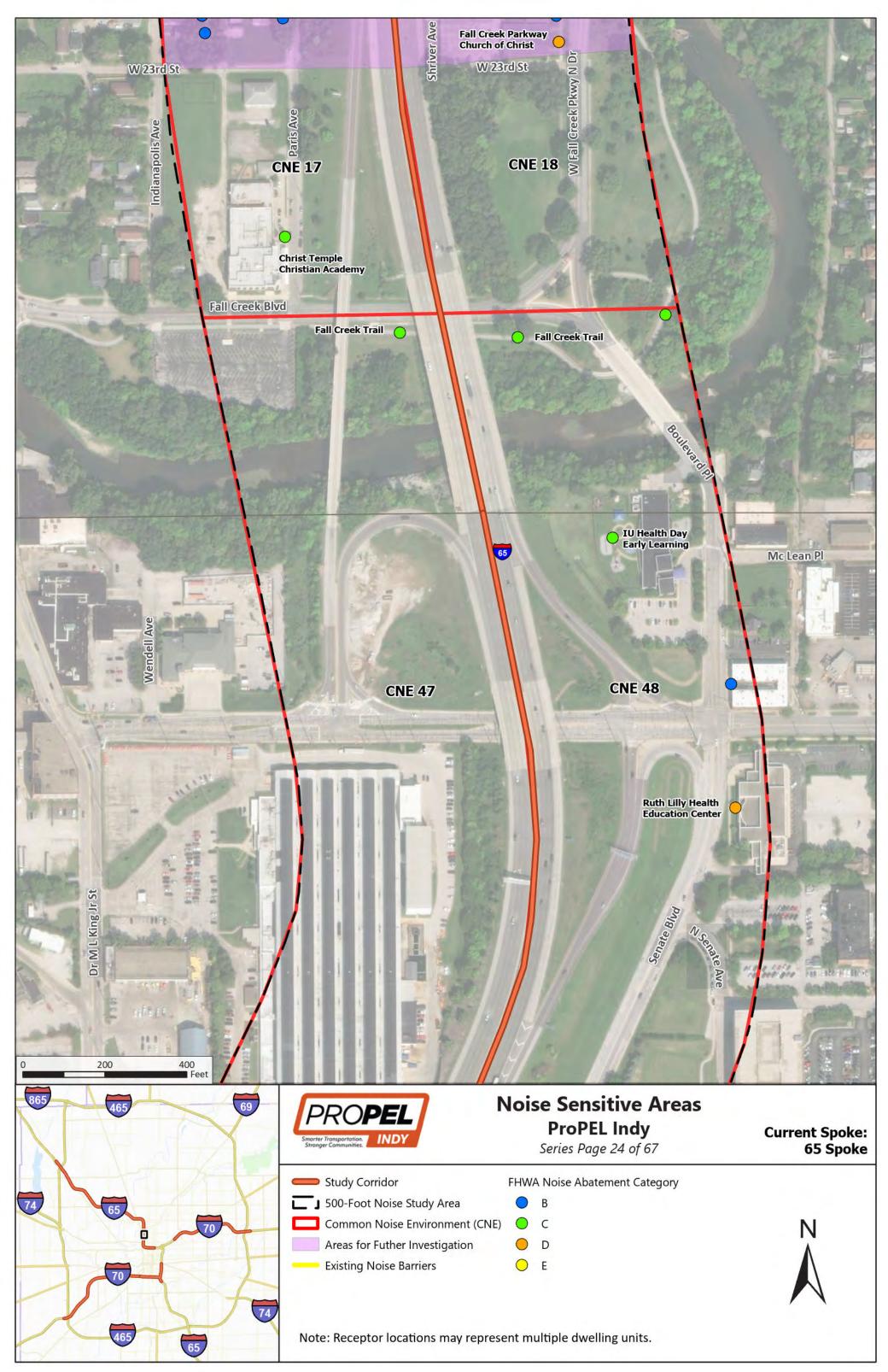
0 200 400 Feet	Suntise Christian Action Suntise Christian Presschoor Daycare and Presschoor	CNE	18 St
865 465 69		Noise Sensitive Areas ProPEL Indy Series Page 20 of 67	Current Spoke: 65 Spoke
74 65 0 70	 Study Corridor 500-Foot Noise Study Area Common Noise Environment (CNE) Areas for Futher Investigation Existing Noise Barriers 	 FHWA Noise Abatement Category B C D E 	2
465 65	Note: Receptor locations may represe	ent multiple dwelling units.	V

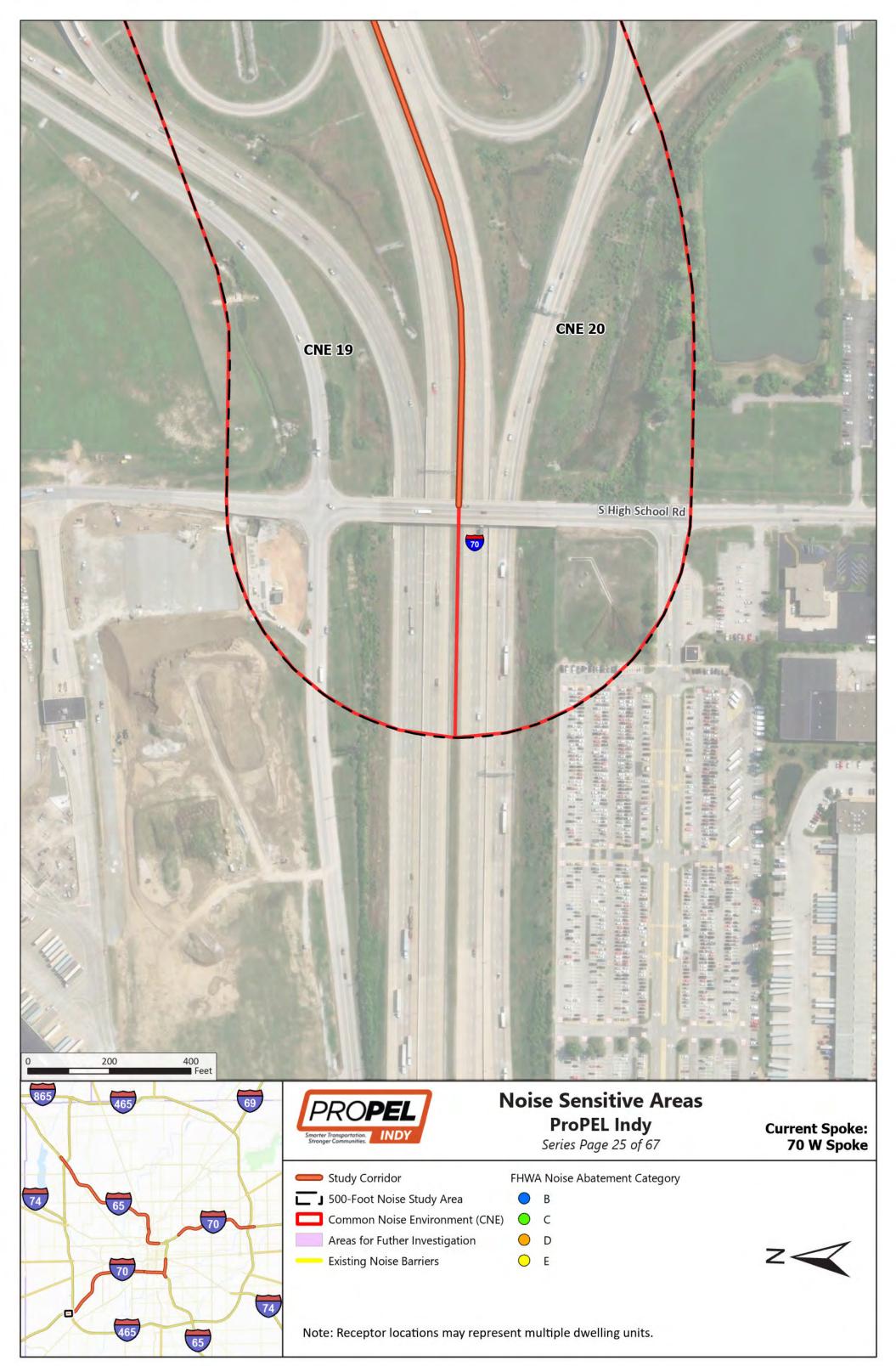


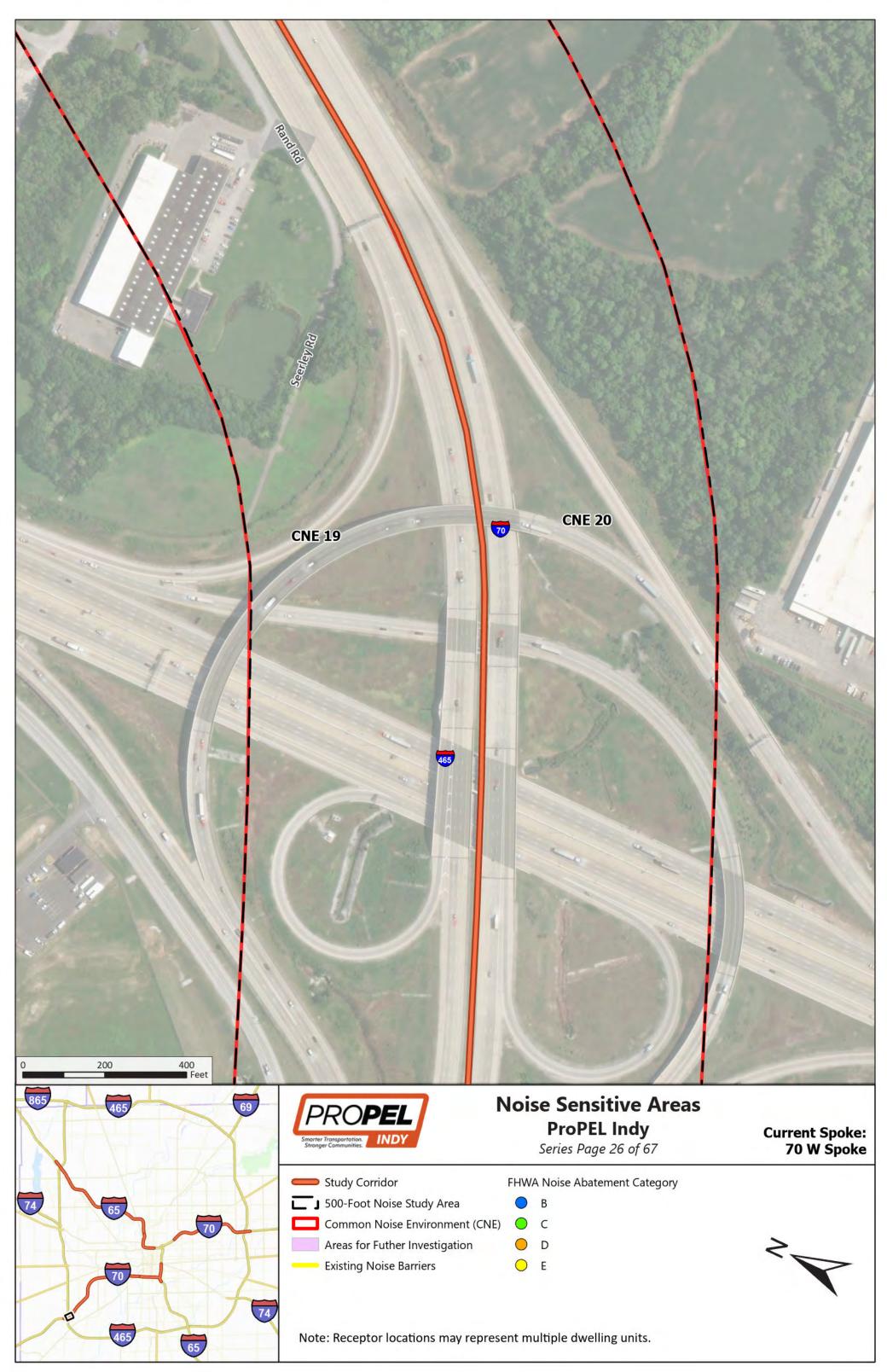


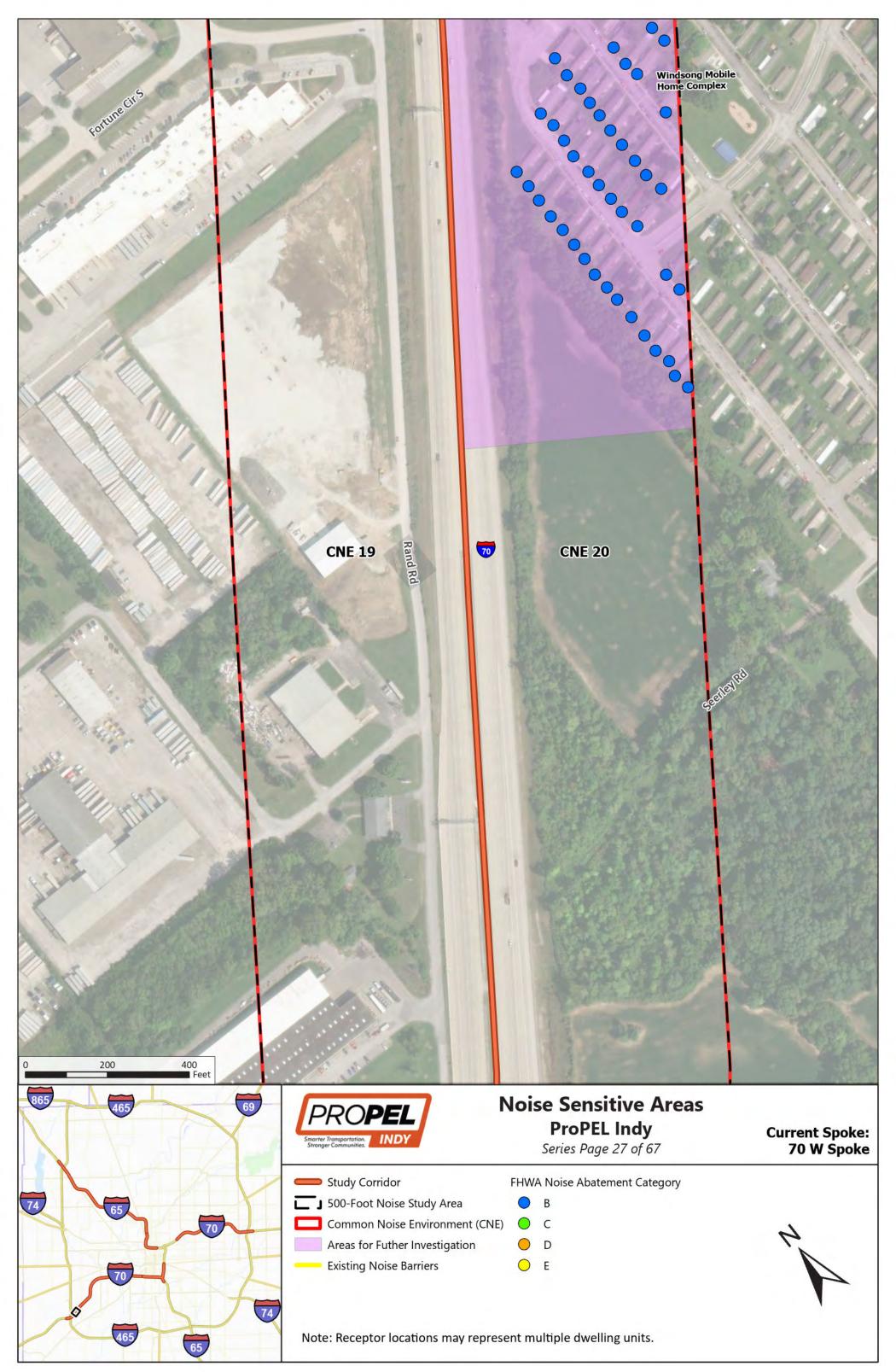
0 200 400 Feet	Paris Ave		
865 465 69	PROPEL Smorter Transportation. Stronger Communities.	Noise Sensitive Areas ProPEL Indy Series Page 22 of 67	Current Spoke: 65 Spoke
74 65 70 70 70 70 70 70 70 70 70 70 70 70 70	 Study Corridor 500-Foot Noise Study Area Common Noise Environment (CNE) Areas for Futher Investigation Existing Noise Barriers 	 FHWA Noise Abatement Category B C D E 	N
465 65 74	Note: Receptor locations may repres	ent multiple dwelling units.	

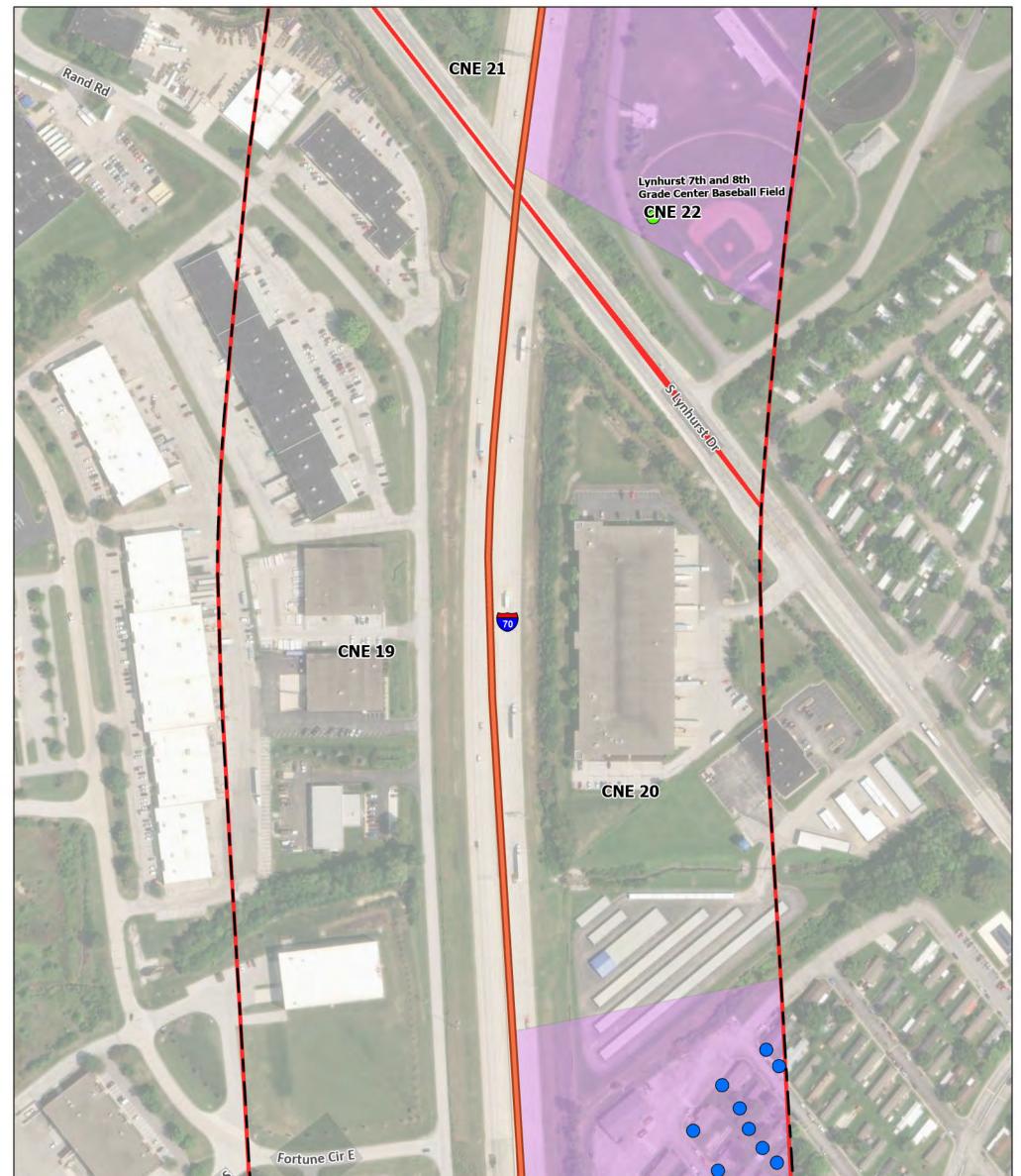




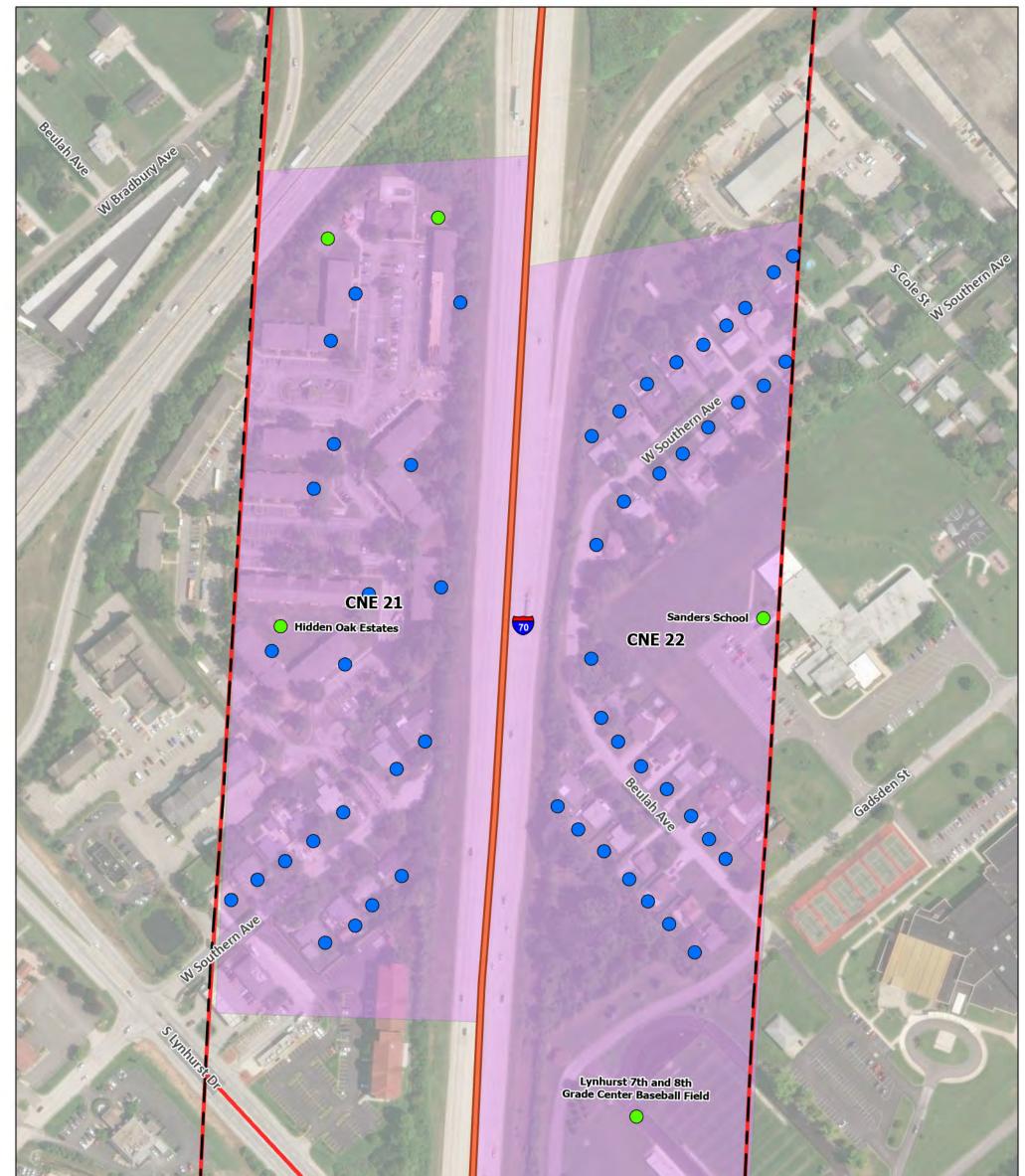




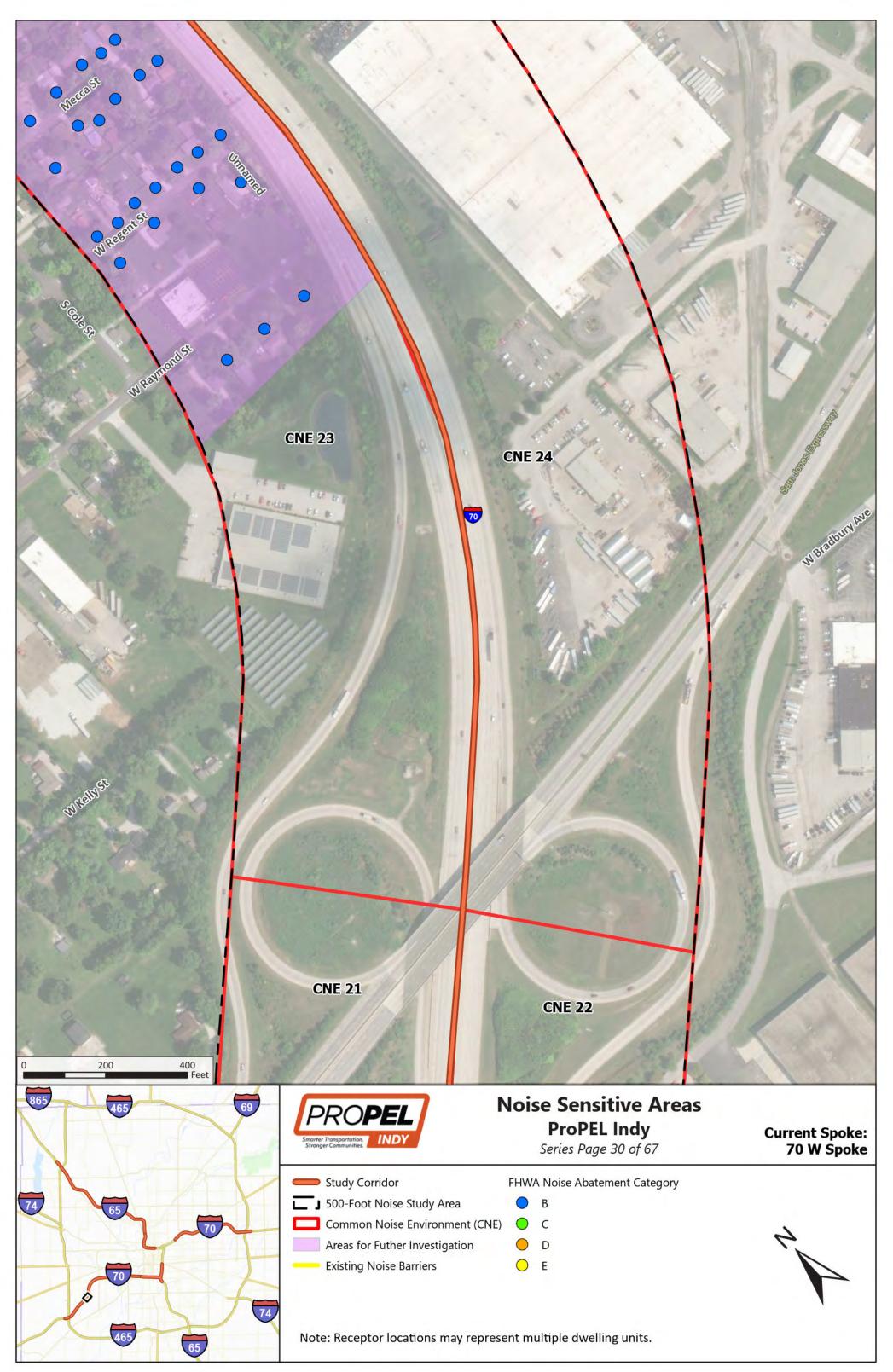


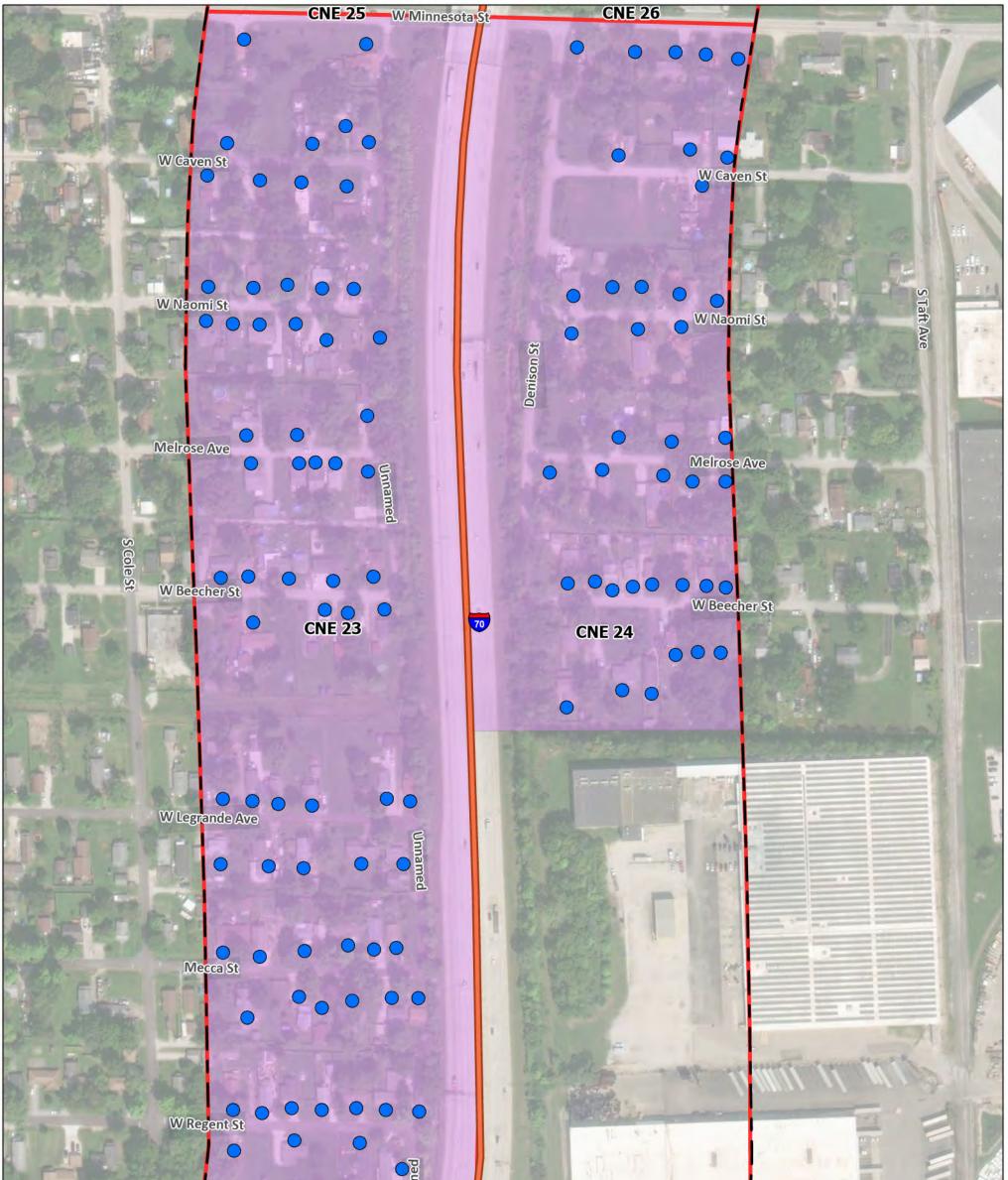


0 200 400 Feet	and the second s	Windsong Mob Home Complex	vile K
865 465 69	PROPEL Smorter Transportation. Stronger Communities.	Noise Sensitive Areas ProPEL Indy Series Page 28 of 67	Current Spoke: 70 W Spoke
	 Study Corridor 500-Foot Noise Study Area Common Noise Environment (CNE) Areas for Futher Investigation Existing Noise Barriers 	 FHWA Noise Abatement Category B C D E 	4
465 65	Note: Receptor locations may represe	ent multiple dwelling units.	

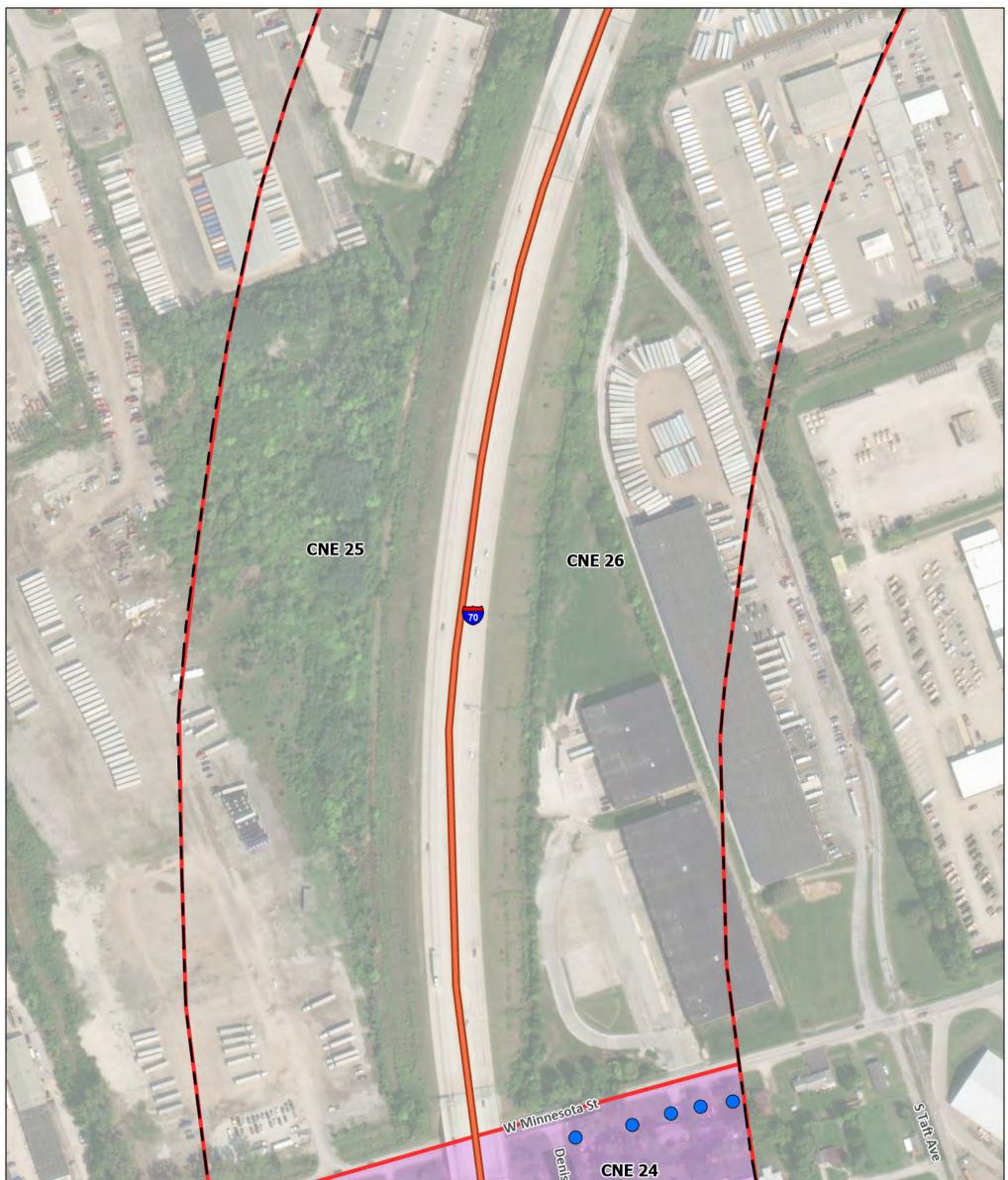


CNE 19			V.
865 465 69	PROPEL Stronger Communities	Noise Sensitive Areas ProPEL Indy Series Page 29 of 67	Current Spoke: 70 W Spoke
	 Study Corridor 500-Foot Noise Study Area Common Noise Environment (CNE) Areas for Futher Investigation Existing Noise Barriers 	 FHWA Noise Abatement Category B C D E 	4
465 65	Note: Receptor locations may represe	ent multiple dwelling units.	

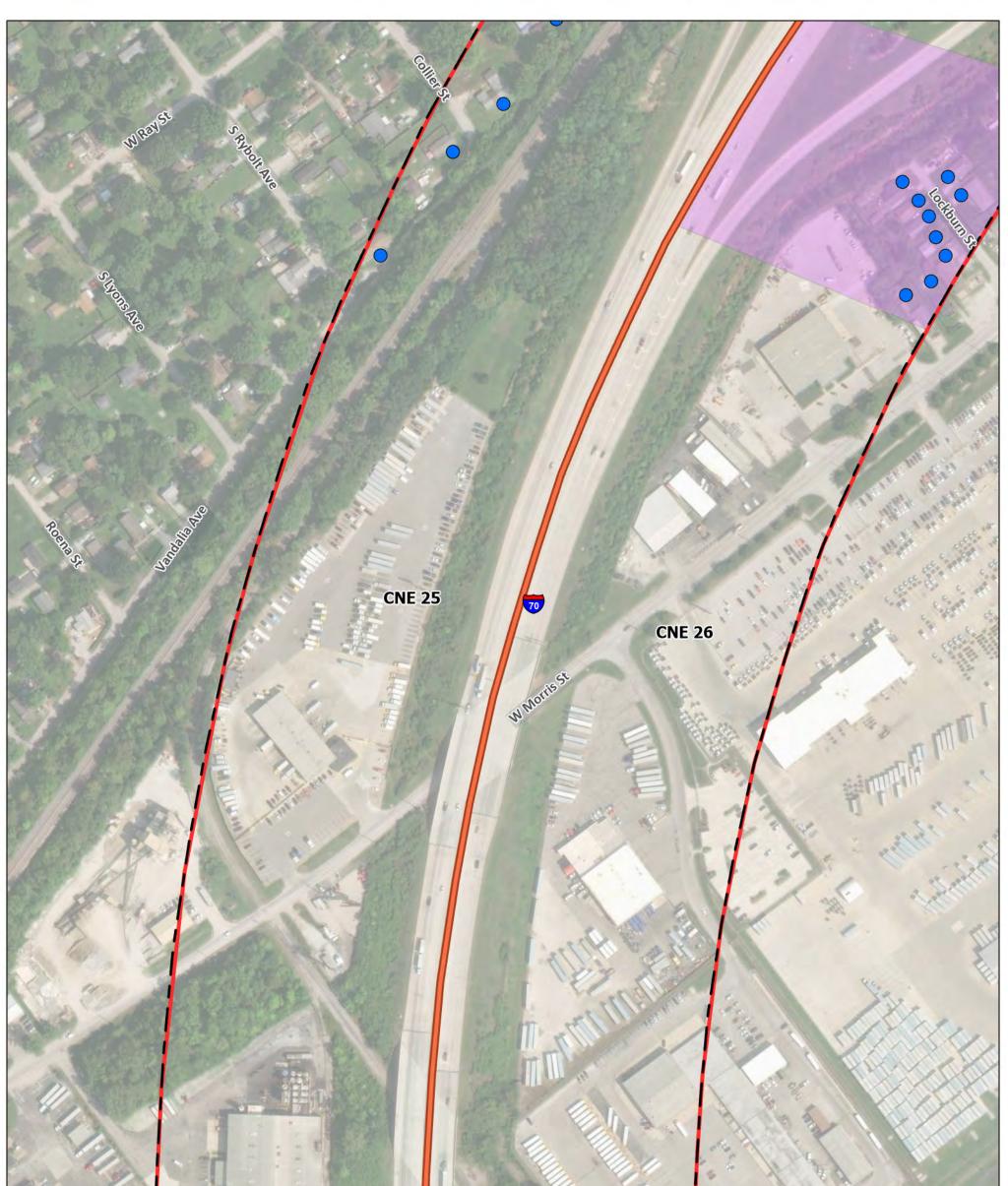




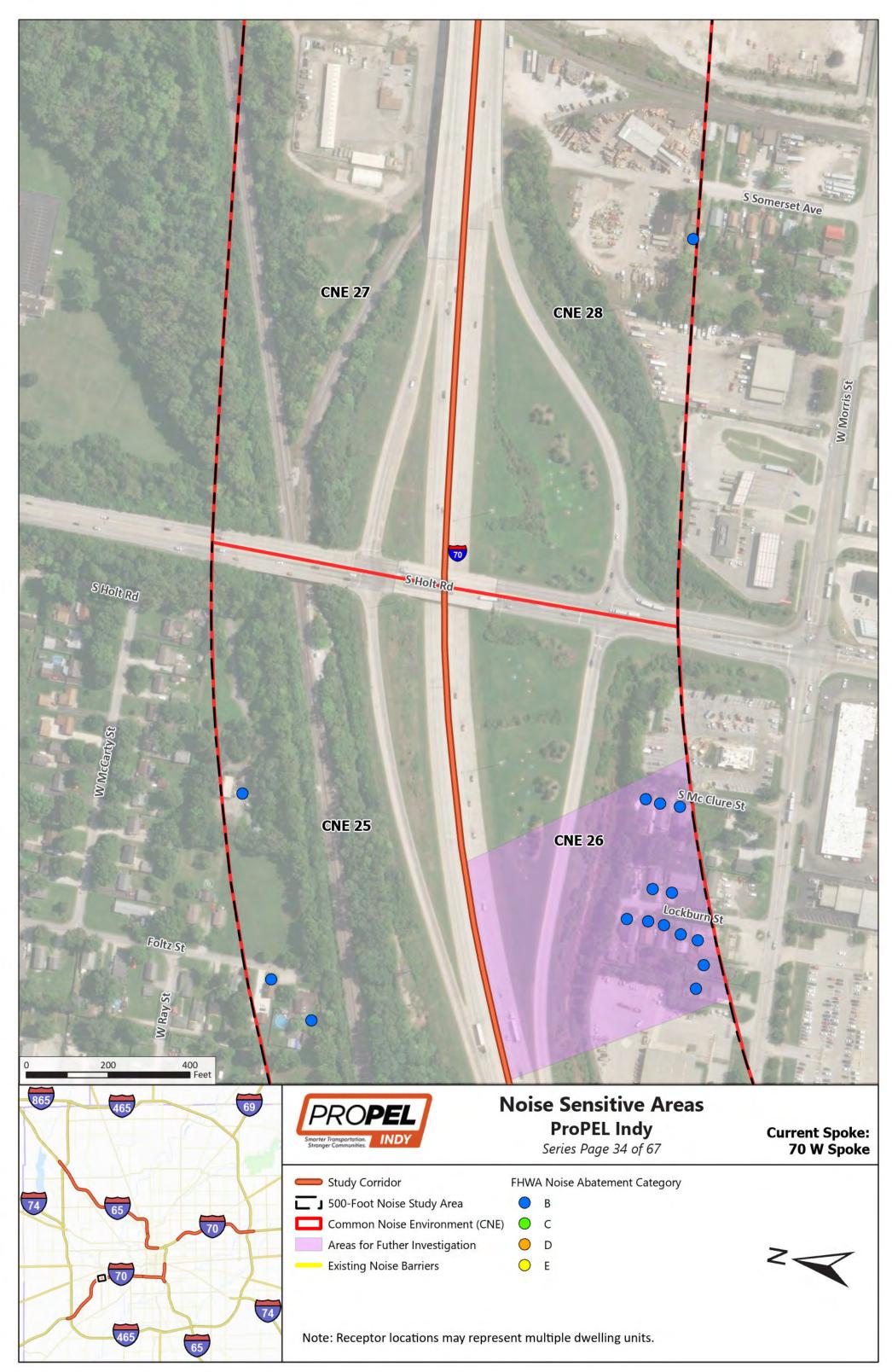
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74 65 70	 Study Corridor 500-Foot Noise Study Area Common Noise Environment (CNE) Areas for Futher Investigation 	 FHWA Noise Abatement Category B C D 	N
10 10 10 10 14	Existing Noise Barriers Note: Receptor locations may represe	 E ent multiple dwelling units. 	

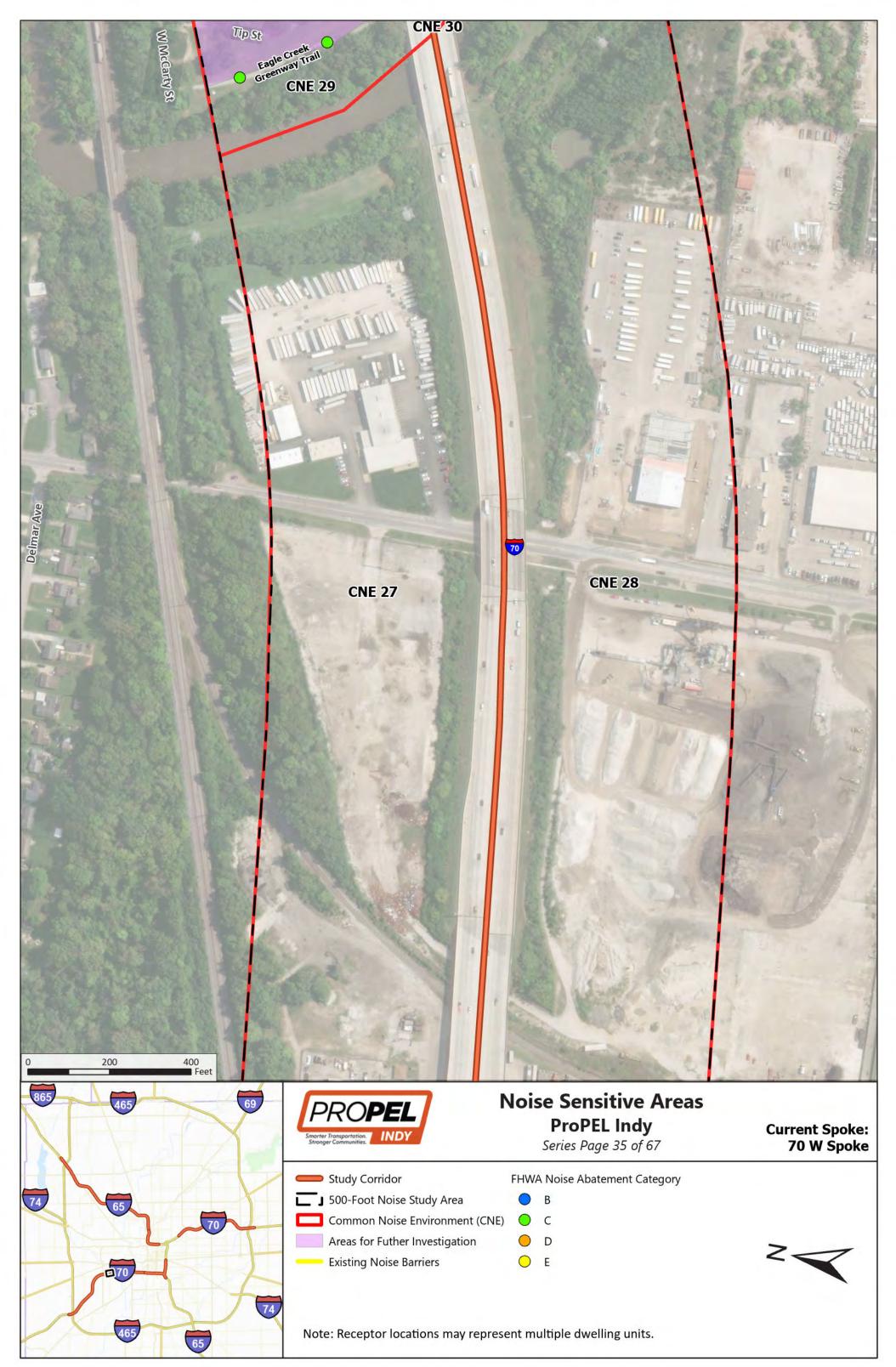


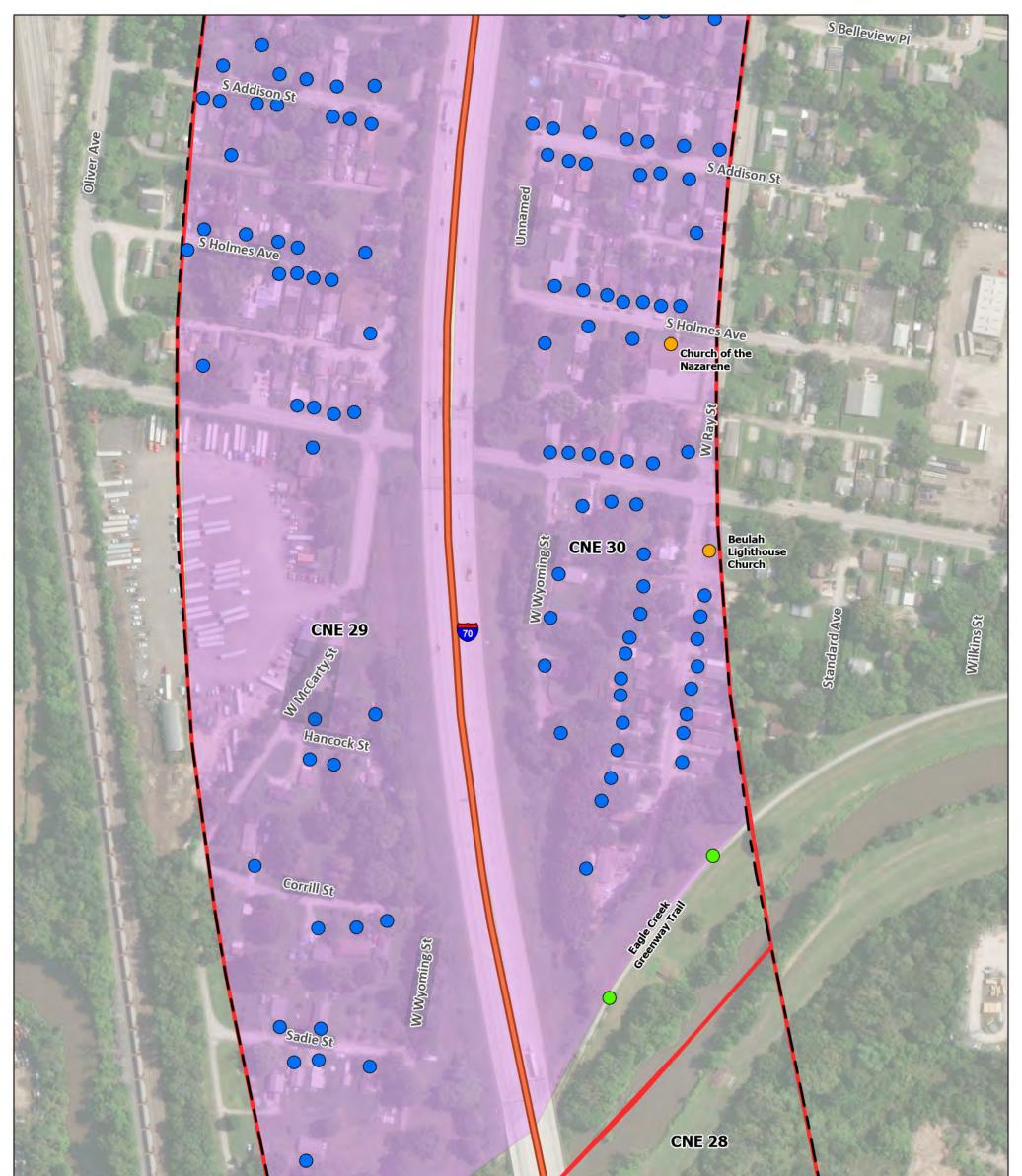
0 200 400 Feet	CNE 23	A Vy Caven St	
865 465 69	PROPEL Stronger Communities.	Noise Sensitive Areas ProPEL Indy Series Page 32 of 67	Current Spoke: 70 W Spoke
74 65 70 g 70	 Study Corridor 500-Foot Noise Study Area Common Noise Environment (CNE) Areas for Futher Investigation Existing Noise Barriers 	 FHWA Noise Abatement Category B C D E 	2
465 65 74	Note: Receptor locations may repres	ent multiple dwelling units.	,



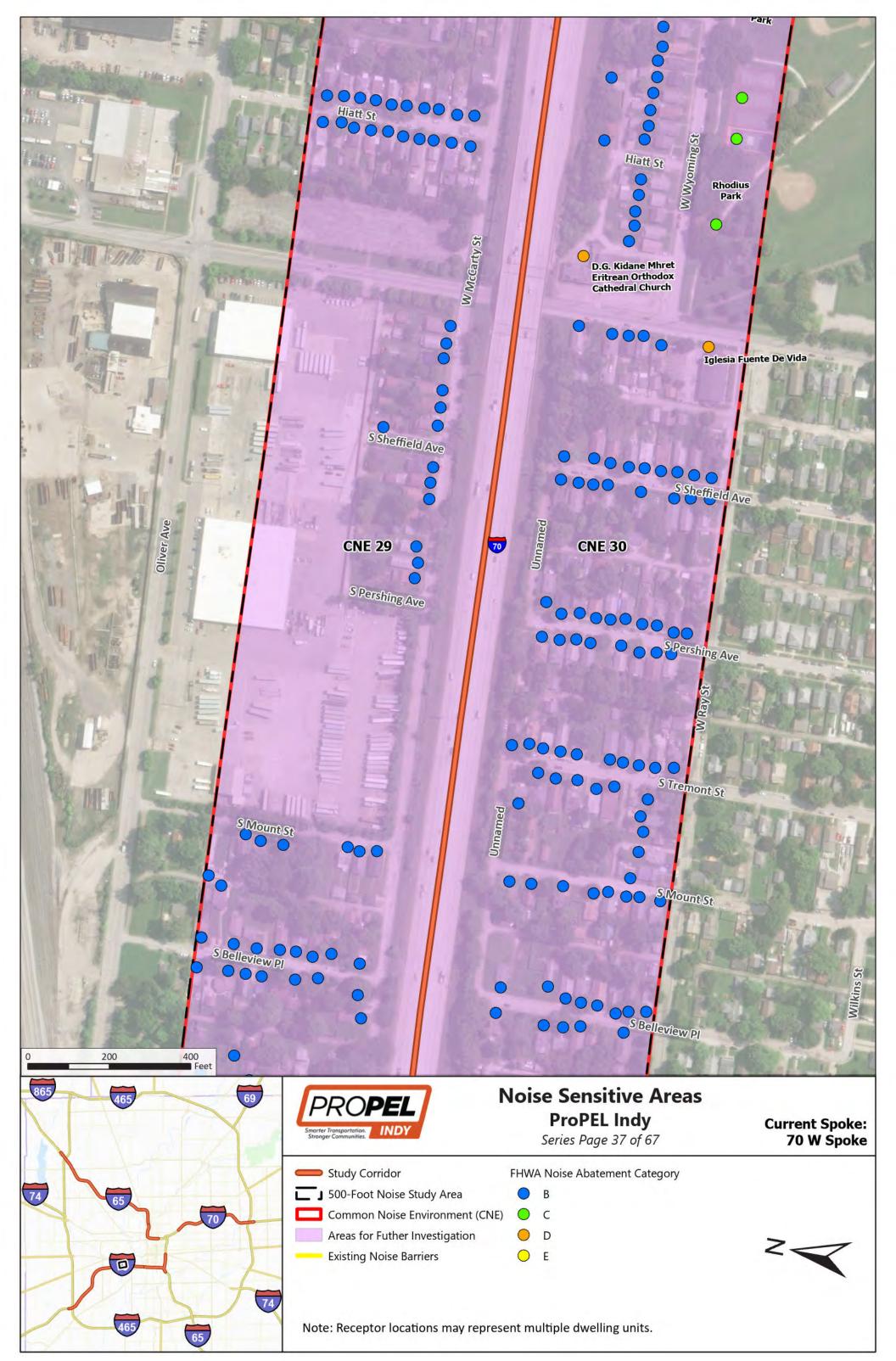
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865 465 69	PROPEL Stronger Communities.	Noise Sensitive Areas ProPEL Indy Series Page 33 of 67	Current Spoke: 70 W Spoke
73 65 70	 Study Corridor 500-Foot Noise Study Area Common Noise Environment (CNE) Areas for Futher Investigation 	FHWA Noise Abatement Category B C D	2
465 65	Existing Noise Barriers Note: Receptor locations may represe	• E ent multiple dwelling units.	

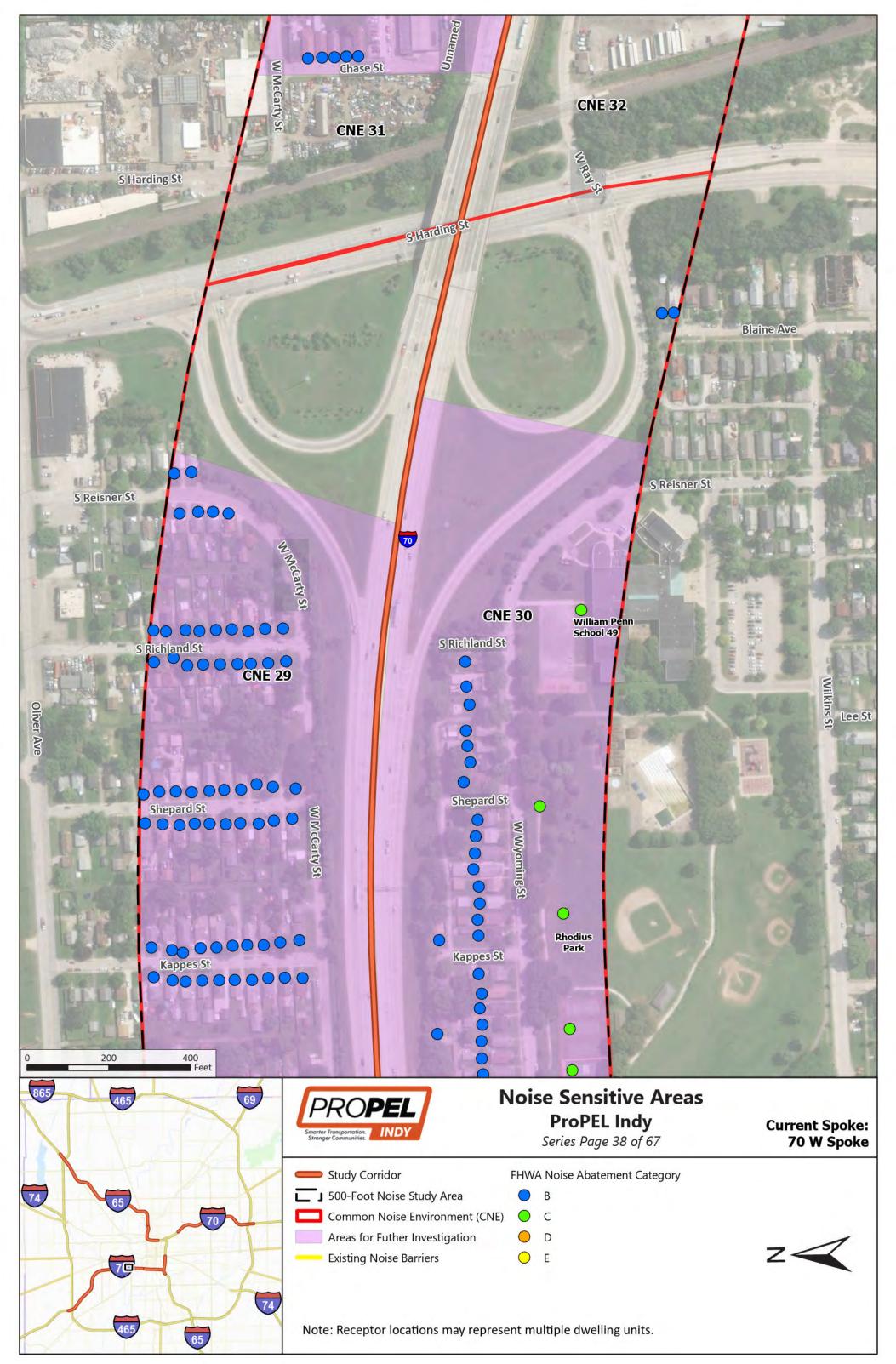


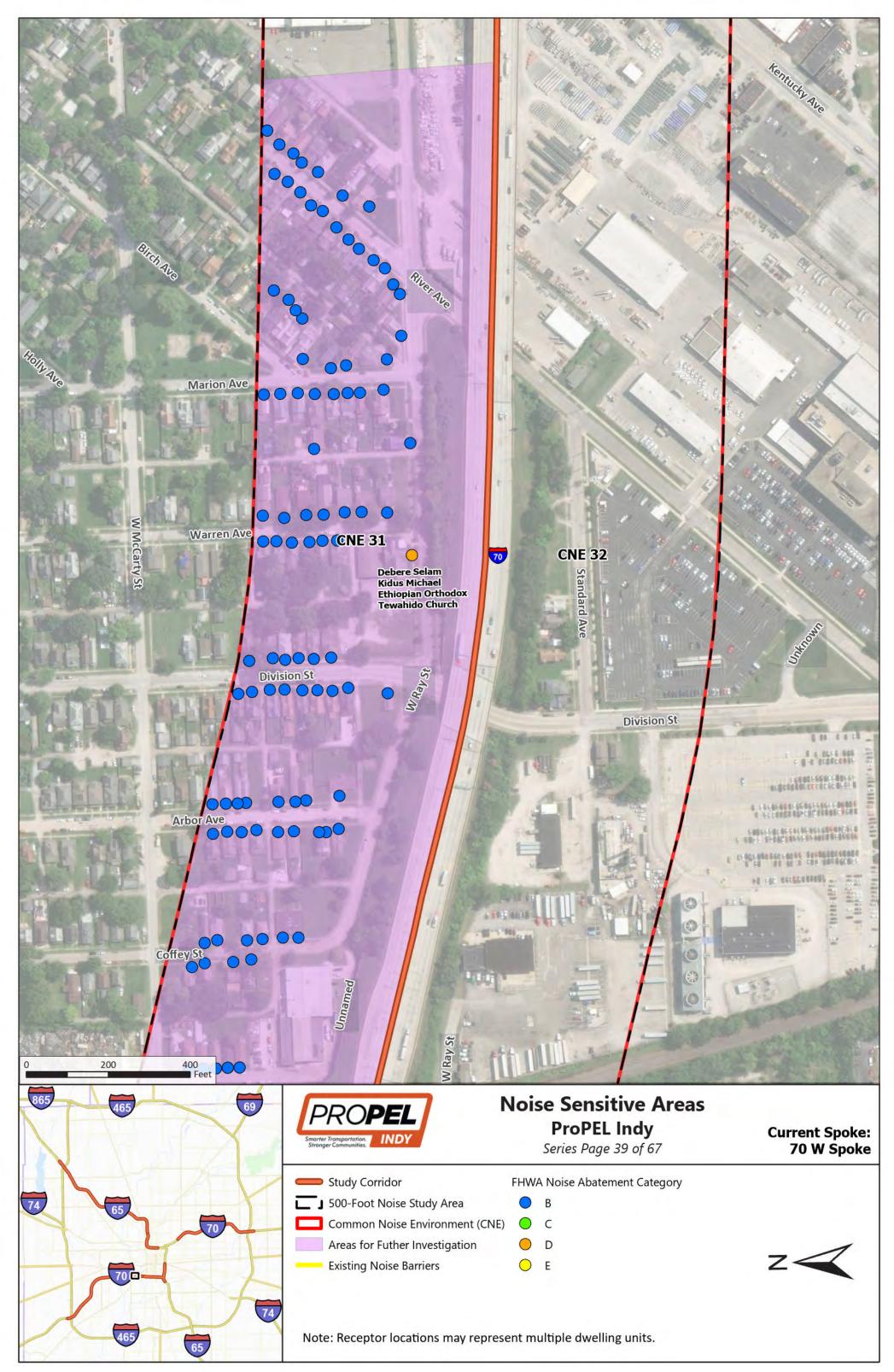


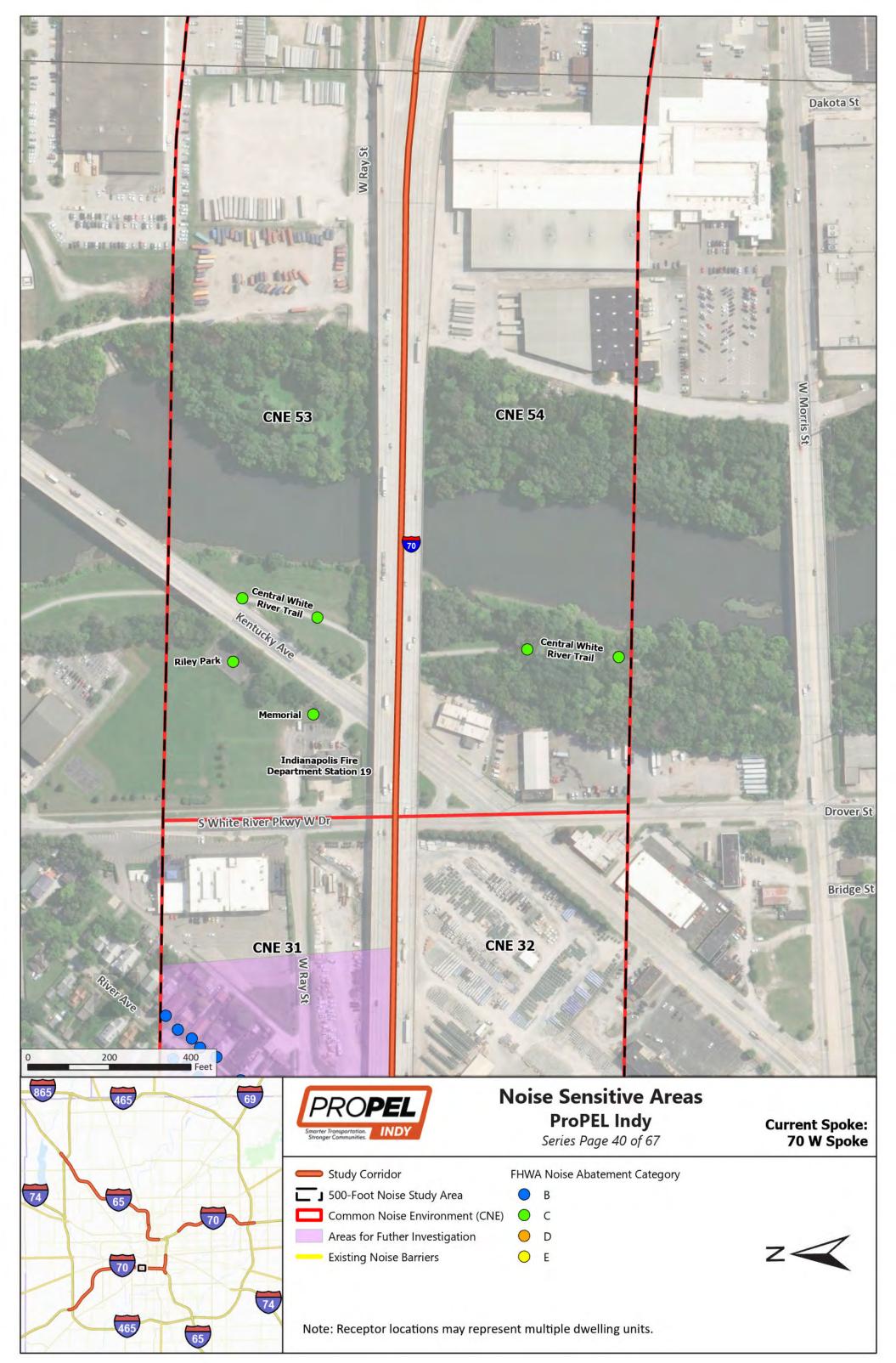


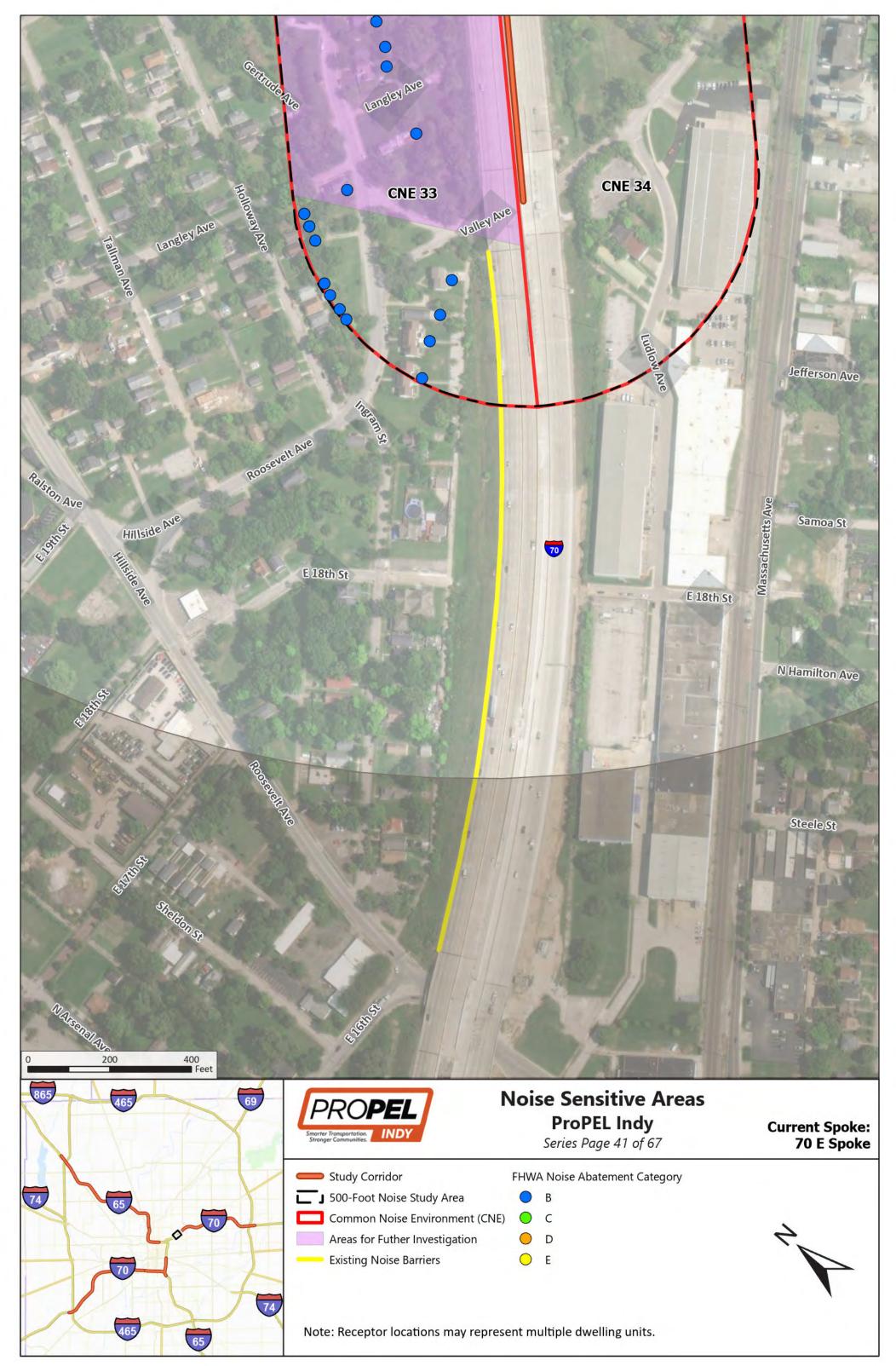
0 200 400 Feet	Eagle Creek Greenway Trail		
865 465 69		Noise Sensitive Areas ProPEL Indy Series Page 36 of 67	Current Spoke: 70 W Spoke
74 65 70	 Study Corridor 500-Foot Noise Study Area Common Noise Environment (CNE) Areas for Futher Investigation Existing Noise Barriers 	 FHWA Noise Abatement Category B C D E 	z
465 65 74	Note: Receptor locations may repres	ent multiple dwelling units.	

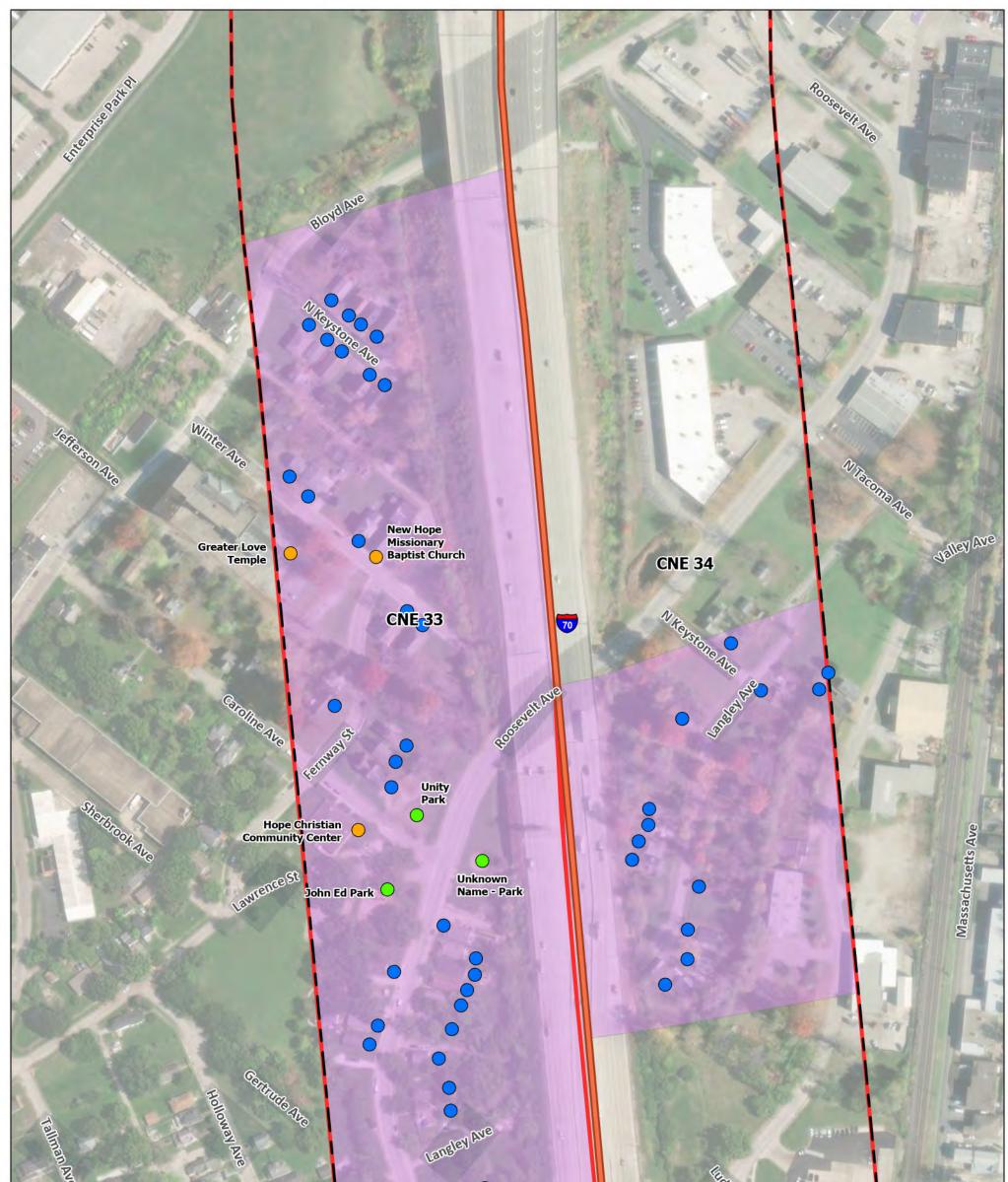












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865 465 69	PROPEL Smarter Transportation. Stronger Communities.	Noise Sensitive Areas ProPEL Indy Series Page 42 of 67	Current Spoke: 70 E Spoke
	 Study Corridor 500-Foot Noise Study Area Common Noise Environment (CNE) Areas for Futher Investigation Existing Noise Barriers 	 FHWA Noise Abatement Category B C D E 	4
465 65 74	Note: Receptor locations may represe	ent multiple dwelling units.	

