

APPENDIX F-1

Visual Impact Assessment Technical Report

Clarification Note for Central Alternative 1:

Central Alternatives 1A and 1B as described in the DEIS/FEIS are physically the same alternative. The only difference between them is that Central Alternative 1A would include tolls on both the new I-69 bridge and on the US 41 bridge. Central Alternative 1B would only include tolls on the new I-69 bridge. Any reference in this document to Central Alternative 1 applies to both Central Alternative 1A and Central Alternative 1B.

This document was completed before the development of Central Alternative 1B Modified (Selected); therefore, the alternative is not included in the document. Applicable information regarding Central Alternative 1B Modified (Selected) is provided in the FEIS.



October 15, 2018

VISUAL IMPACT ANALYSIS REPORT

I-69 OHIO RIVER CROSSING PROJECT
Evansville, IN and Henderson, KY





OHIO RIVER CROSSING

Visual Impact Assessment

I-69 Ohio River Crossing Project
Evansville, IN and Henderson, KY

Prepared by:
TAYLOR SIEFKER WILLIAMS DESIGN GROUP
10 South New Jersey Street, Suite 220
Indianapolis, IN 46204

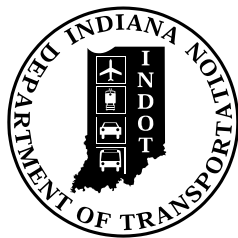


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CHAPTER 1 – PROJECT INTRODUCTION

This Visual Impact Assessment (VIA) was prepared by a team of urban designers and landscape architects and examines the potential impacts to community visual resources associated with the proposed transportation bridge crossing project. It is consistent with the policies and methodology outlined in the Federal Highway Administration's *Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA 2015) and other relevant and established materials.

1.1 PROJECT DESCRIPTION

On February 13, 2017, the Federal Highway Administration (FHWA), Indiana Department of Transportation (INDOT), and Kentucky Transportation Cabinet (KYTC) issued a revised Notice of Intent (NOI) in the *Federal Register* for the preparation of an Environmental Impact Statement (EIS) for the I-69 Ohio River Crossing (ORX) project in the Evansville, IN and Henderson, KY area, which is part of the national I-69 corridor that extends from Mexico to Canada. An NOI was previously issued for the project on May 10, 2001. Under that NOI, a Draft Environmental Impact Statement (EIS) was completed in 2004, but the project was subsequently suspended in 2005.

For the new DEIS that is being prepared for the I-69 ORX project, the project area extends from I-69 (formerly I-164) in Indiana on the south side of Evansville (i.e., northern terminus) across the Ohio River to I-69 (formerly Edward T. Breathitt Pennyryle Parkway) at the KY 425 interchange southeast of Henderson, KY (i.e., southern terminus) (Figure 1.1-1). The section of Edward T. Breathitt Pennyryle Parkway between KY 351 and KY 425 that was not redesignated as I-69, was recently redesignated as US 41. The western limit of the project area is parallel to and extends a maximum of about 2,000 feet west of US 41. The eastern limit of the project area extends about 1,500 feet to 3.4 miles east of US 41. Currently, I-69 does not cross the Ohio River and the only cross-river access between Evansville and Henderson is via US 41, which is classified as a principal arterial and does not meet current interstate design standards.

One of the first steps in the EIS process for the I-69 ORX project was the scoping phase that included the development of the project's purpose and need. As a result of this analysis, the following project needs have been identified:

- Lack of national I-69 corridor system linkage
- High cost of maintaining cross-river mobility on existing facilities
- Unacceptable levels of service for cross-river traffic
- High-crash locations in the I-69/US 41 corridor

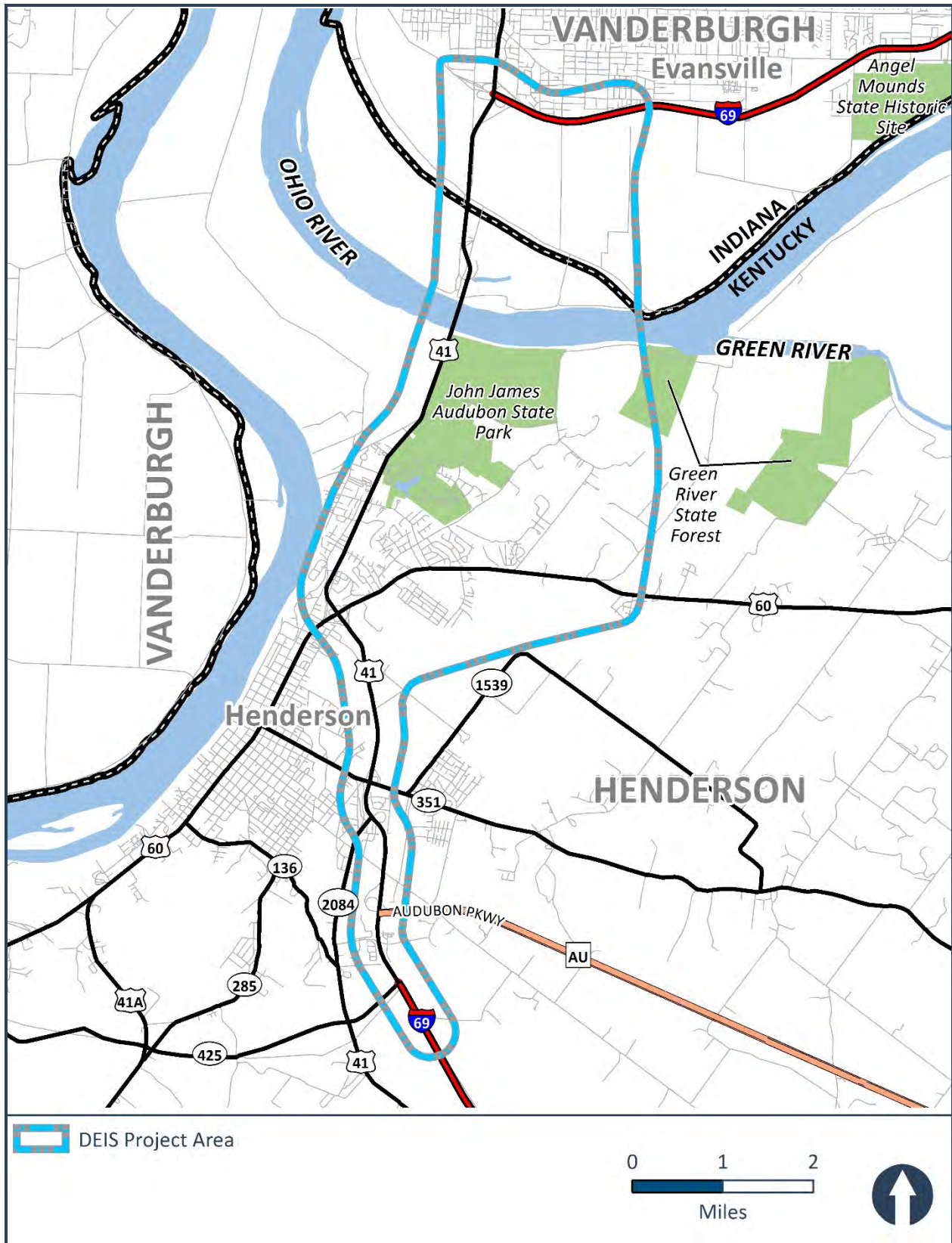


Figure 1.1-1. DEIS Project Area

Based on these needs, the project's purpose is :

- Provide cross-river system linkage and connectivity between I-69 in Indiana and I-69 in Kentucky that is compatible with the national I-69 corridor
- Develop a solution to address long-term cross-river mobility
- Provide a cross-river connection that reduces traffic congestion and delay
- Improve safety for cross-river traffic

Based on the project's purpose and need, an initial range of alternatives was developed, evaluated, and screened using secondary source and windshield survey data, as well as input from the public and from federal, state, and local agencies. Because the range of alternatives was developed based on conceptual designs, they were referred to as corridors. Each corridor was evaluated on the degree to which it meets the purpose and need; its potential social, environmental, and economic impacts; and its conceptual cost. In addition to the No Build Alternative, the following five corridors were developed based on alternatives previously presented in the 2004 *Interstate 69 Henderson, Kentucky to Evansville, Indiana Draft Environmental Impact Statement* (INDOT, and KYTC 2004) and the 2014 *I-69 Feasibility Study, Henderson, Kentucky, SIU #4, Final* (KYTC 2014).

- West Corridor 1 (based on Alternative 7 from the 2014 Feasibility Study)
- West Corridor 2 (based on Corridors F and G from the 2004 DEIS and Alternatives 5 and 6 from the 2014 Feasibility Study)
- Central Corridor 1 (based on Alternative 1a from the 2014 Feasibility Study)
- Central Corridor 2 (based on the Preferred Alternative 2 from the 2004 DEIS)
- East Corridor (based on Alternative 3 from the 2004 DEIS)

The results of the evaluation of these corridors were presented in a *Screening Report* (INDOT and KYTC 2017) completed on July 28, 2017. The report recommended that three corridors—West Corridor 1, West Corridor 2, and Central Corridor 1—be carried forward for more detailed evaluation in the DEIS, in addition to the No Build Alternative. In the *Screening Report*, for West Corridors 1 and 2, it was assumed that both US 41 bridges would be taken out of service for vehicular use and the new I-69 bridge would have six lanes. For Central Corridor 1, it was assumed that both US 41 bridges would remain open and the new I-69 bridge would have four lanes. However, the report stated that the future use of the existing US 41 bridges and corresponding number of lanes on the new I-69 bridge for each corridor would be subject to further evaluation.

Following the *Screening Report*, preliminary designs were then developed within these corridors based on public and agency input, assessment of potential environmental and right-of-way impacts, and results of a traffic analysis. Follow-on studies were conducted regarding the location and configuration of interchanges, the disposition of and long-term maintenance costs for the existing US 41 bridges, and tolling scenarios with resulting traffic patterns. This included the

development, evaluation, and screening of the following three US 41 and I-69 bridge scenarios for each of the three corridors.

- Build a six-lane I-69 bridge for all cross-river traffic and remove both US 41 bridges from vehicular use.
- Build a four-lane I-69 bridge and retain one US 41 bridge for local traffic.
- Build a four-lane I-69 bridge and retain both US 41 bridges for local traffic

The results from this next level of evaluation of the project corridors were presented in a *Screening Report Supplement* (INDOT and KYTC 2018), dated January 2018. The *Screening Report Supplement* identified the best bridge scenario for each corridor and the following alternatives to be carried forward for detailed evaluation in the DEIS and this VIA.

- No Build Alternative: required by the *National Environmental Protection Act of 1969* (NEPA) to serve as a baseline for comparison
- West Alternative 1: four lanes on the new I-69 bridge and retain one of the existing US 41 bridges
- West Alternative 2: six lanes on the new I-69 bridge and take both existing US 41 bridges out of service
- Central Alternative 1: four lanes on the new I-69 bridge and retain one of the existing US 41 bridges

Following the *Screening Report Supplement*, it was determined that the northbound US 41 bridge would be retained and the southbound US 41 bridge would be removed for West Alternative 1 and Central Alternative 1 and both bridges would be removed for West Alternative 2. The three recommended DEIS build alternatives are shown in Figure 1.1-2 and described in greater detail in the following sections.

Consistent with the Evansville Metropolitan Planning Organization's fiscally constrained Metropolitan Transportation Plan, tolling I-69 will be a key part of the financing for this project. The toll policy will define toll rates for the various vehicle types and will be developed with the federally required financial plan prior to construction. The NEPA process will not determine the toll policy but will evaluate, and document in the DEIS, the environmental consequences associated with tolling being a part of the project.

The DEIS will evaluate potential impacts that would result from the placement of tolls on both the I-69 bridge and the remaining northbound US 41 bridge. This would provide a "reasonable worst case" in terms of potential impacts associated with increased traffic volumes on I-69. For purposes of evaluation, it was assumed that toll rates would be similar to the Louisville, KY metropolitan area bridges for the I-65 and KY 841/SR 265 Ohio River Crossings (i.e., \$2.00 for cars, \$5.00 for medium trucks, and \$10.00 for large trucks). Both projects are in metropolitan areas within the same geographical region and have comparable total costs.

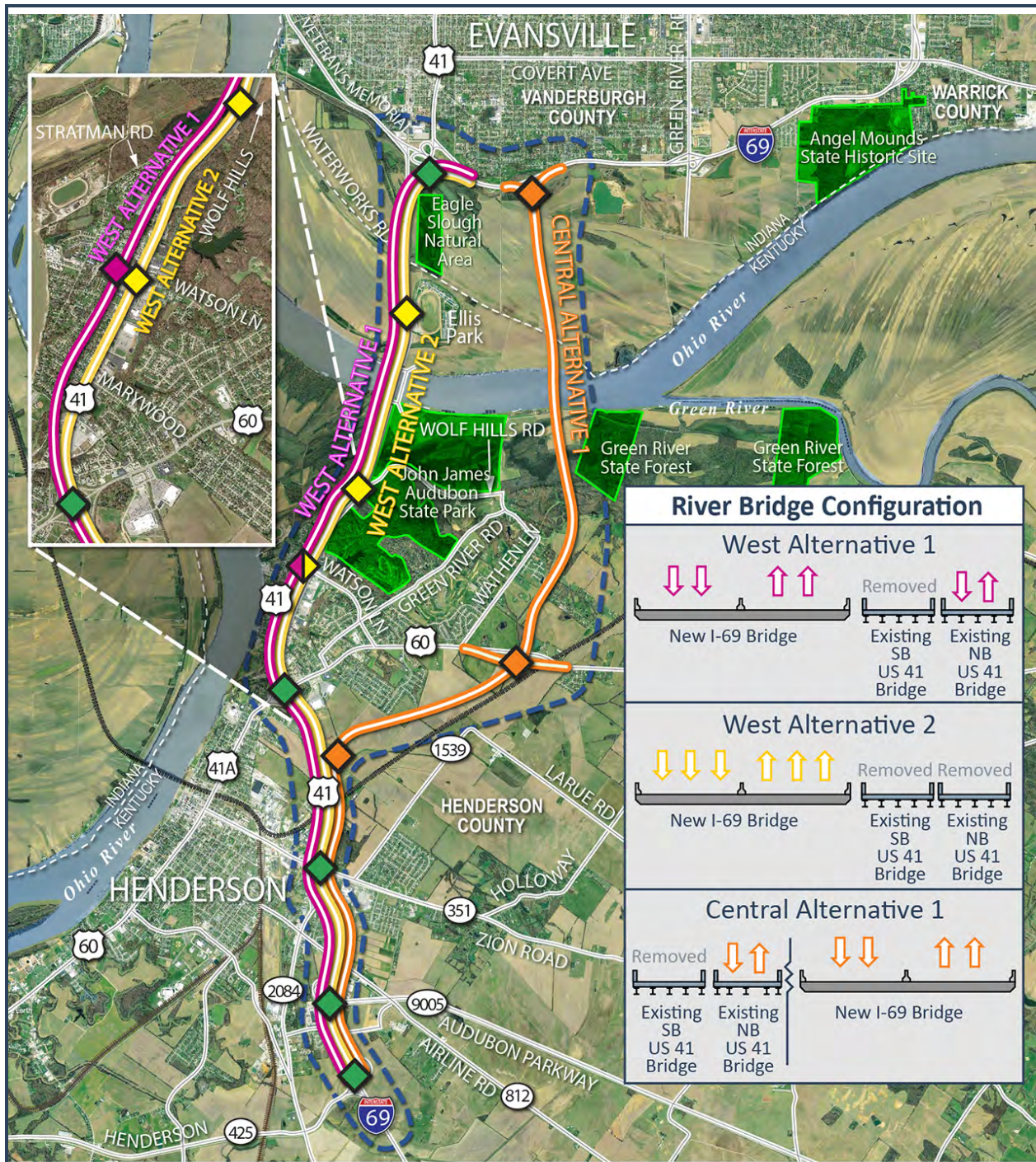


Figure 1.1-2. DEIS Alternatives

WEST ALTERNATIVE 1

West Alternative 1 would include a new I-69 bridge approximately 5,400 feet long over the Ohio River and associated floodway and would be located approximately 70 feet west of the existing southbound US 41 bridge. The new bridge would include four lanes with the capacity to expand to six lanes, if needed, by restriping the lanes on the bridge; therefore, it would not require additional right-of-way or major construction. The rest of the alternative would also include four lanes but without the capacity to expand to six lanes by restriping lanes. The northbound US 41 bridge would be retained and the southbound US 41 bridge would be removed. The northbound US 41 bridge that would be retained, which has two lanes, would be converted from a one-way bridge to a two-way bridge for local traffic. Most of West Alternative 1 would use rural design standards, including a grass median; however, through Henderson, it would use urban design standards and would include a narrower median with a concrete barrier. West Alternative 1 would begin on existing I-69 in Indiana just east of the US 41 interchange and would become the through movement for I-69. Connections to US 41 to the north and Veterans Memorial Parkway to the west would be provided. The alternative would include a bridge to carry I-69 over Waterworks Road and Nugent Drive; local access to Waterworks Road and Ellis Park would be maintained by US 41.

In Kentucky, the alternative would include a bridge to carry I-69 over Stratman Road, with local access to Stratman Road and Wolf Hills Road provided by US 41 and the local bridge. The alternative would continue south and run parallel to and approximately one block west of US 41 and the Henderson commercial strip. There would be no changes to US 41 through this area. An interchange would be constructed at Watson Lane to provide highway access to the commercial strip and adjacent residential areas. An overpass (no interchange) would be provided at Barker Road to maintain connection to residential areas west of the alternative. A local access road with a sidewalk would be provided on the west side of the alternative between Barker Road and Atkinson Park. The alternative would then continue south and tie into the existing four-lane, fully controlled access section of US 41 south of the US 60 interchange. The US 60 interchange would be modified to provide connections to and from existing US 41, US 60, and I-69. US 41 (formerly named the Edward T. Breathitt Pennyryle Parkway) south of US 60 to KY 425, where I-69 in Kentucky currently ends, would be modernized to meet interstate standards through improvements to ramps and merge areas. The total length of West Alternative 1 is 11.1 miles, which includes 2.9 miles of existing US 41.

WEST ALTERNATIVE 2

As with West Alternative 1, West Alternative 2 would include a new I-69 bridge approximately 5,400 feet long over the Ohio River and associated floodway and would be located approximately 70 feet west of the existing southbound US 41 bridge. The new I-69 bridge for West Alternative 2 would include six lanes and both existing US 41 bridges would be removed. The sections of the alternative north of the new bridge to Waterworks Road and south of the new bridge to US 60 would also be six lanes. South of US 60, the alternative would transition from six lanes to the existing four lanes on US 41. Most of West Alternative 2 would use rural design standards, including a grass median; however, through Henderson, it would use urban design standards and would include a narrower median with a concrete barrier. Similar to West Alternative 1, West

Alternative 2 would begin on existing I-69 in Indiana just east of the US 41 interchange and would become the through movement for I-69. Connections would be provided to US 41 to the north and Veterans Memorial Parkway to the west. From the US 41/I-69 interchange to Ellis Park, the alternative would follow the existing US 41 alignment. An overpass bridge would carry Waterworks Road over I-69 and an interchange would be provided at Ellis Park.

In Kentucky, the alternative would follow existing US 41 through the Henderson commercial strip, with local access provided via a reconstructed US 41, which would function as a frontage road adjacent to and east of the alternative. The reconstructed US 41 would include two lanes plus a center, two-way left-turn lane and a new sidewalk on the east side. There are currently no sidewalks along US 41 in this area. An interchange would be provided at Stratman Road/Wolf Hills Road and at Watson Lane. At the Watson Lane interchange, US 41 would be relocated approximately 300 feet to the east to provide adequate spacing between the interchange and the US 41/Watson Lane intersection. An overpass (no interchange) would be provided at Rettig Road to maintain connection to residential areas west of the alternative. A shared-use path would also be provided on the west side of the new interstate. The alternative would continue south within the US 41 corridor to the existing US 60 interchange, which would be modified to provide connections to and from existing US 41, US 60, and I-69. The existing four-lane section of US 41 (formerly named the Edward T. Breathitt Pennyryle Parkway) south of US 60 to KY 425, where I-69 in Kentucky currently ends, would be modernized to meet interstate standards through improvements to ramps and merge areas. The total length of West Alternative 2 is 11.0 miles, which includes 2.9 miles of existing US 41.

CENTRAL ALTERNATIVE 1

Central Alternative 1 would include a new I-69 bridge, approximately 7,600 feet long over the Ohio River and associated floodway, approximately 1.5 miles east of the existing US 41 bridges. The new I-69 bridge would include four lanes, with the capacity to expand to six lanes in the future, if needed, by restriping the lanes on the bridge; therefore, it would not require additional right-of-way or major construction. The rest of the alternative would also include four lanes but without the capacity to expand to six lanes by restriping lanes. The northbound US 41 bridge would be retained and the southbound US 41 bridge would be removed. The northbound US 41 bridge that would be retained, which has two lanes, would be converted from a one-way bridge to a two-way bridge for local traffic. There would be no changes to US 41 through the commercial strip. Central Alternative 1 would use rural design standards and would include a depressed grass median outside the bridge limits.

Central Alternative 1 begins at existing I-69 in Indiana, approximately 1 mile east of the US 41 interchange. The alternative would continue south across the Ohio River just west of a gas transmission line. It would remain just west of the gas transmission line near the Green River State Forest, then turn southwest where an overpass would be provided to carry the access road for the gas transmission line over the alternative. The alternative would continue south to US 60, where an interchange would be provided. As part of the US 60 interchange, US 60 would be relocated approximately 400 feet south, which would require a new bridge over the CSX Railroad east of the interchange. The alternative would continue southwest and connect with US 41 via an

interchange approximately 1 mile south of the US 60 interchange. From the alternative's interchange with US 41 to KY 425, the existing four-lane US 41 would be modernized to meet interstate standards through improvements to ramps and merge areas. The total length of Central Alternative 1 is 11.2 miles, which includes 2.8 miles of existing US 41.

1.2 PRELIMINARY RENDERINGS

1.2.1 WEST ALTERNATIVE 1

A series of preliminary renderings were developed illustrating the typical cross section for West Alternative 1. This alternative uses a design with a narrower median. The roadway will be primarily at grade just west of the US 41 commercial strip. **Figure 1.2-1** illustrates the typical rural cross section for West Alternative 1. The four lanes of travel are separated by a grass median that divides northbound and southbound traffic. A concrete shoulder and grass clear zone have been provided on each side of the interstate.

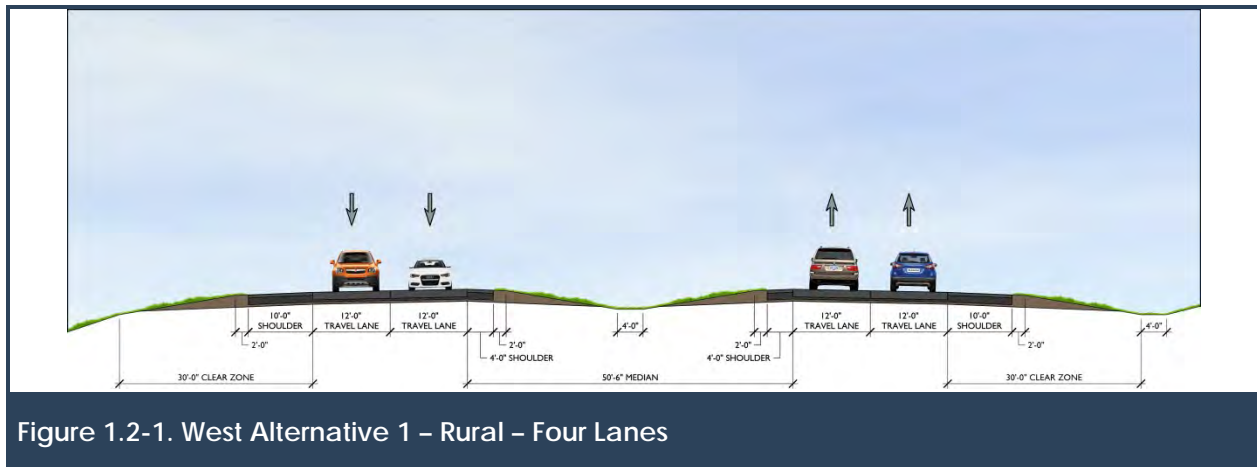


Figure 1.2-2 illustrates the typical urban at-grade scenario for West Alternative 1. The four lanes of travel are separated by a grass median that divides northbound and southbound traffic. A concrete shoulder and jersey barrier have been provided on each side of the interstate.

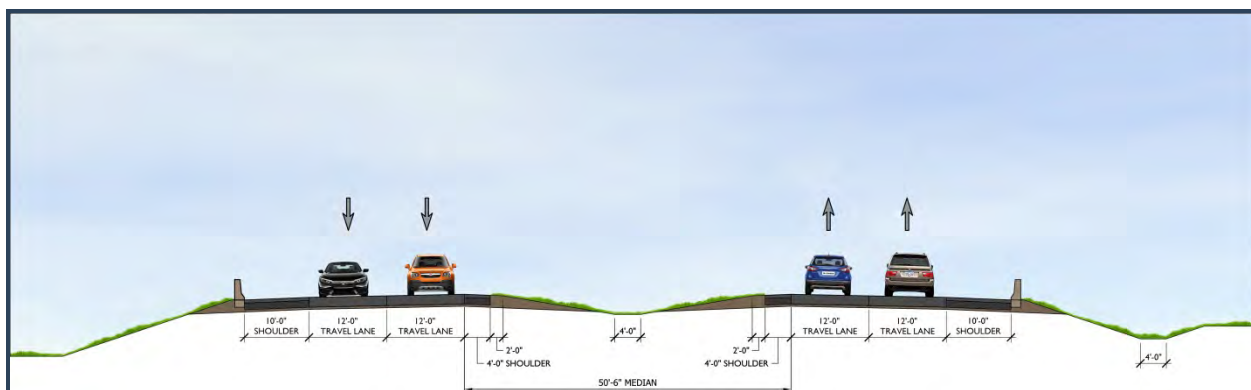


Figure 1.2-2. West Alternative 1 – Urban At Grade – Four Lanes

The roadway will only be elevated where it goes over existing roads. **Figure 1.2-3** illustrates the typical elevated cross section for West Alternative 1 over Watson Lane. Possible use of retaining walls are shown along the shoulders of the interstate.

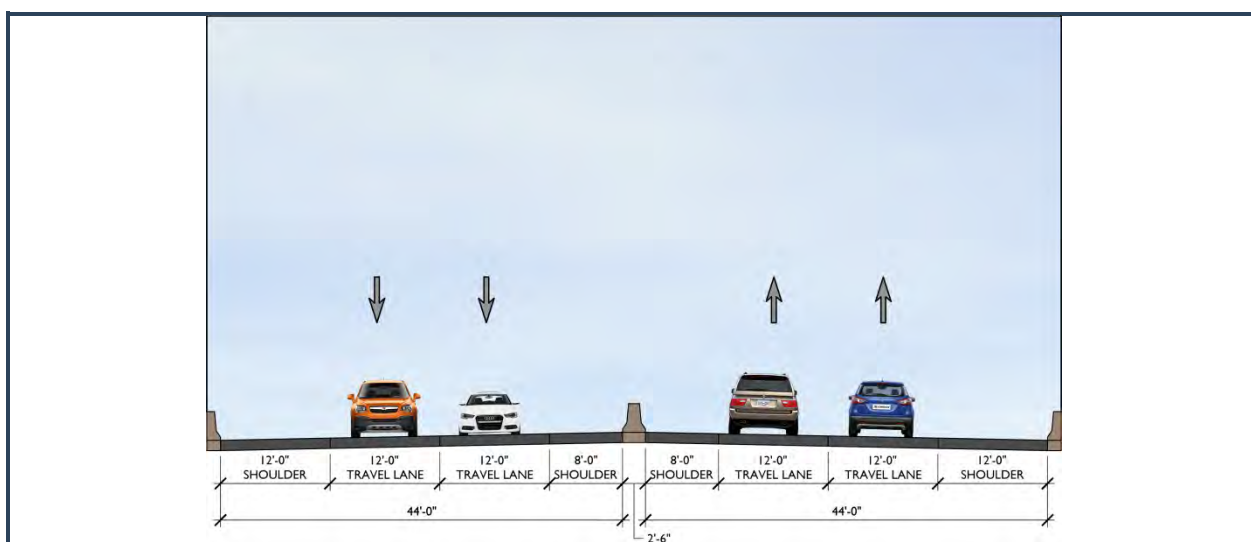


Figure 1.2-3. West Alternative 1 – Elevated near Watson Lane

1.2.2 WEST ALTERNATIVE 2

A series of preliminary renderings were developed illustrating the typical cross section for West Alternative 2, which uses a design standard with a narrower median. West Alternative 2 will be primarily at grade along the US 41 commercial strip.

Figure 1.2-4 illustrates the typical rural cross section for West Alternative 2. The six lanes of travel are separated by a jersey barrier that divides northbound and southbound traffic. A concrete shoulder and grass clear zone are provided on each side of the interstate.

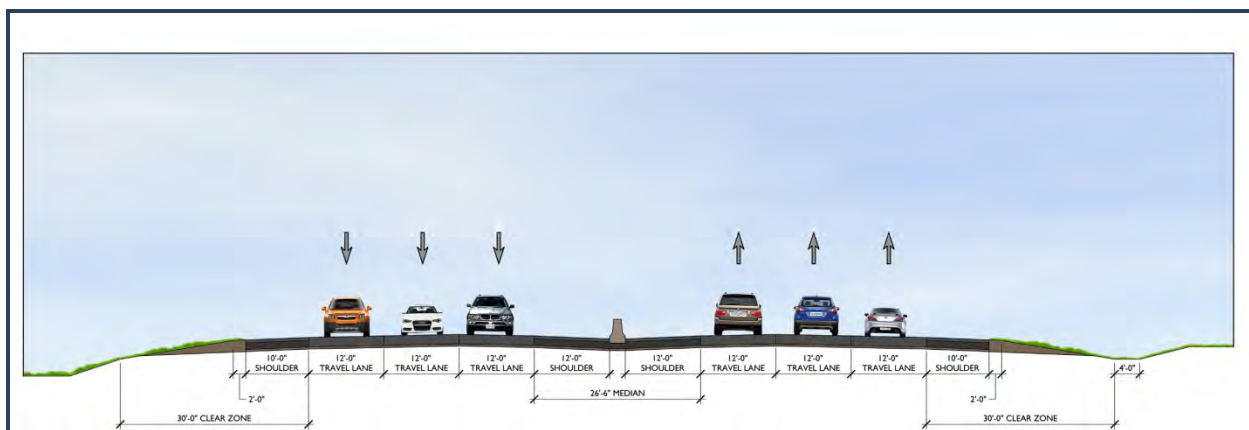


Figure 1.2-4. West Alternative 2 – Rural – Six Lanes

Figure 1.2-5 illustrates the typical urban at-grade cross section for West Alternative 2 with the US 41 frontage road and shared-use paths. Pedestrian improvements, such as a bike/pedestrian trail, may be provided on the east and west sides of the interstate. US 41 has been shown with a road diet type of improvement where the existing six lanes of traffic have been taken down to a two-lane cross section with a left/right-turn lane and bike/pedestrian trail. No improvements have been proposed for the existing commercial development.

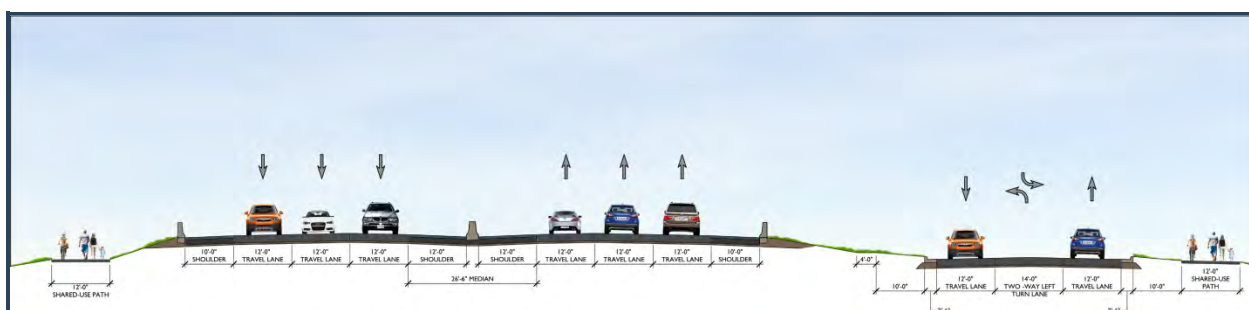


Figure 1.2-5. West Alternative 2 – Urban At Grade – Six Lanes – with US 41 Frontage Road and Shared-Use Paths

1.2.3 CENTRAL ALTERNATIVE 1

A preliminary rendering was developed illustrating the typical rural cross section for Central Alternative 1, which uses a rural design standard with a wider depressed grass median. Central Alternative 1 runs through floodplain and will have to be elevated throughout. **Figure 1.2-6** illustrates the typical four-lane cross section for Central Alternative 1. Clear zones are shown on both sides of the interstate.

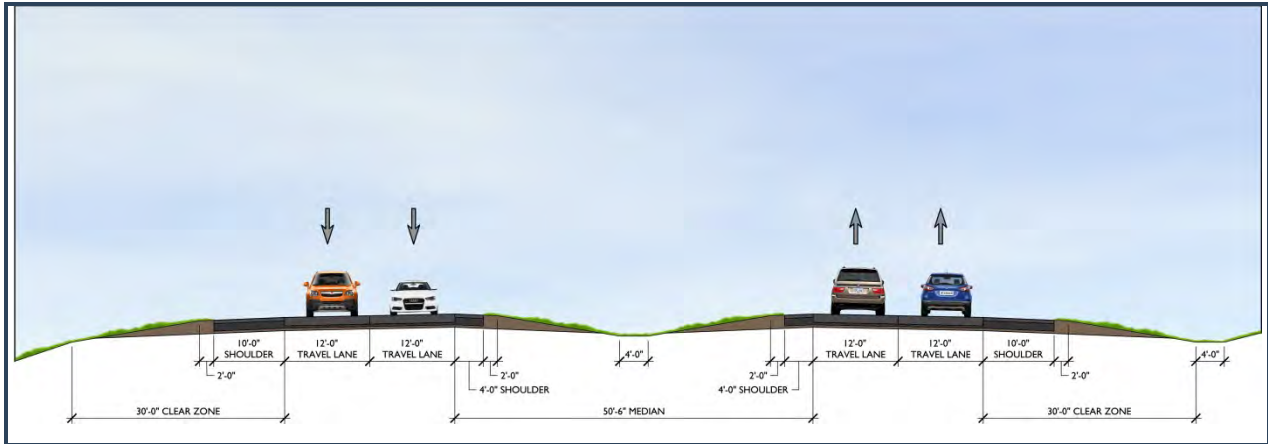


Figure 1.2-6. Central Alternative 1 – Rural – 4 Lanes

1.2.4 NO-BUILD ALTERNATIVE

The No-Build Alternative does not meet the purpose or need for this project, but it serves as a baseline comparison for the build alternatives. Under this alternative, no physical changes are expected to occur in the study area.

CHAPTER 2 – METHODOLOGY AND APPROACH

An assessment of visual impacts associated with interstate projects is required to satisfy the regulations set forth in NEPA, which requires federal agencies to evaluate the reasonably foreseeable environmental effects, including the visual impacts, of their proposed actions prior to making decisions. Using the policies and methodology outlined in *Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA 2015), a VIA analyzes the visual quality associated with project alternatives to determine potential impacts to community visual resources associated with the project.

The VIA establishes the visual environment for each alternative and how it is affected. It assesses the visual resources of the project area and identifies viewer response to those resources from both resource and user perspectives. Most importantly, it analyzes the visual impacts to the environment resulting from proposed development and investigates the means available to mitigate the effects of such proposals prior to implementation. The VIA process is conducted in four phases:

- Establishment
- Inventory
- Analysis
- Mitigation

Figure 2.0-1 (FHWA 2015) shows the work flow of the FHWA VIA process. This process begins with the Establishment phase, followed by the Inventory and Analysis phases, and concludes with the Mitigation phase. Each phase is based on the relationship between people and their environment. The left side of the diagram represents the affected environment (or visual resources); the right side represents the affected population (or viewers). The center of the diagram represents the intersection between people and their environment. The process assumes that it is possible to determine what viewers like and dislike about their environment and anticipate their reactions to the changes a project may have on those relationships. The following VIA is classified as a Standard VIA and follows a professional observational approach, which, according to the *Guidelines for the Visual Impact Assessment of Highway Projects*, “Makes assumptions about the visual preferences of viewers based on why people have chosen to occupy a certain location,” (FHWA 2015 page 5-12).

The Visual Impact Assessment was presented at a meeting of the project’s River City Advisory Committee (RCAC) on June 26, 2018. During the meeting, the process and methodology was introduced to the RCAC, followed by a group discussion where we received feedback. Broader public feedback will be gathered during the public review of the DEIS.

Visual Impact Assessment Process

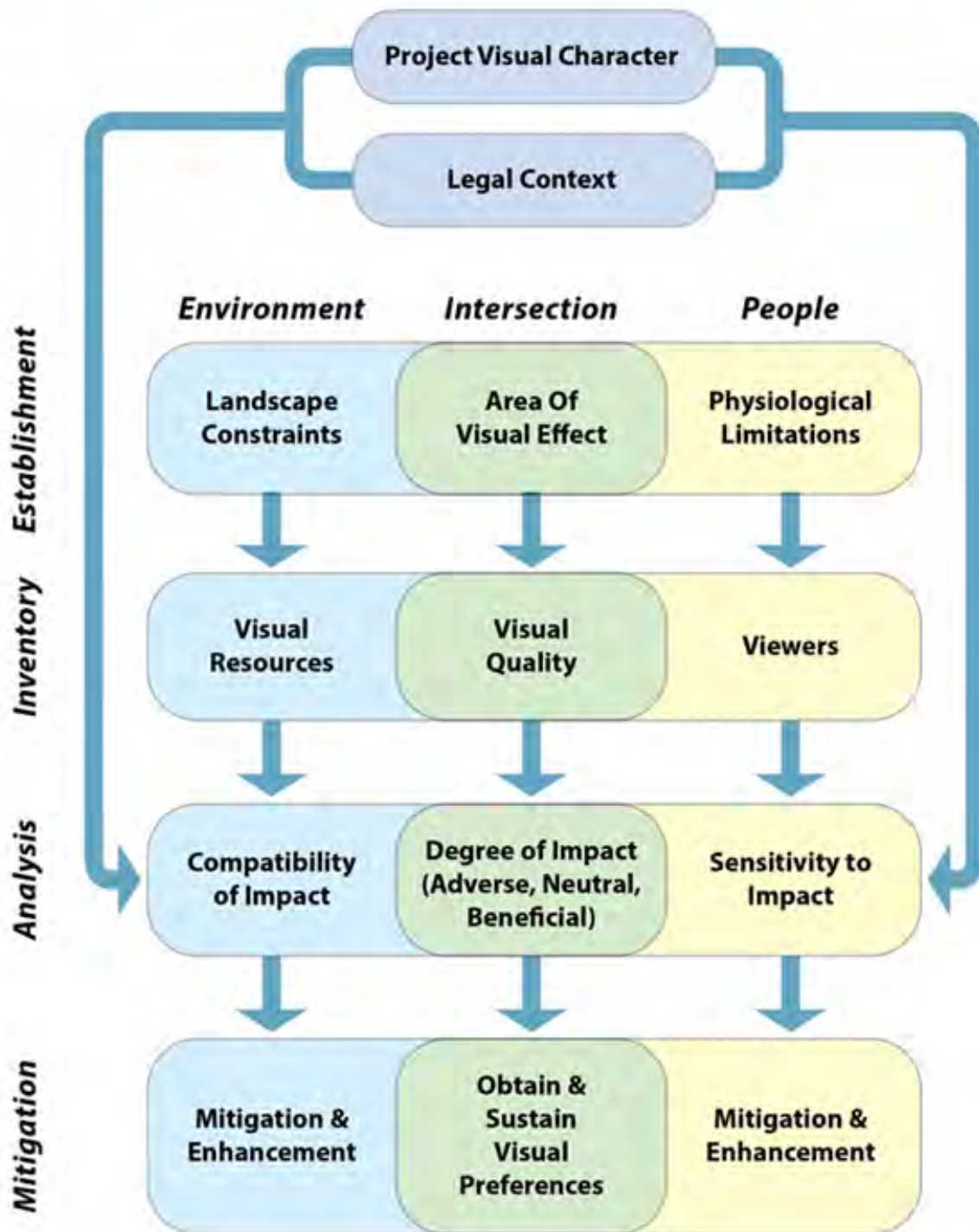


Figure 2.0-1. FHWA VIA Process Flow Diagram

2.1 ESTABLISHMENT

The Establishment phase is the first phase of the VIA process. Its purpose is to identify the baseline conditions of the project area. The establishment phase determines the following:

- Visual character of the proposed project
- Regulatory context
- Area of visual effect (AVE)

2.1.1 VISUAL CHARACTER OF THE PROPOSED PROJECT

The visual character of the proposed project focuses on its physical attributes. It is documented using the project's description, location, purpose and need, and alternatives.

2.1.2 REGULATORY CONTEXT

Community goals and objectives for visual quality are part of the regulatory context that applies to the area affected by the proposed project. These regulations offer valuable insight into the visual preferences of the community. They include plans and policies regarding resources that may be visually impacted by the proposed project (see [Section 3.1](#)).

2.1.3 AREA OF VISUAL EFFECT

The AVE is the area of project visibility and is determined by taking into account the physical constraints of the landscape and the physiological limits of human sight.

The physical constraints of the landscape include landform and land cover. Landform describes the topographic relief of the earth's surface devoid of any vegetation or structures; land cover describes the patterns and characteristics of the physical material covering the earth's surface. Land cover includes elements such as vegetation and structures that may expand or obscure views.

The physiological limits of human sight are restricted by location, proximity, and light. Location is the position selected as a key view (see [Section 2.2.3](#)). Proximity is the distance between a viewer and an object and is defined using distance zones (foreground, middle ground, and background). Light affects our perception of color and definition. In light, we are able to identify objects as having distinct colors, forms, lines, and textures. Darkness reduces our ability to see color and delineate between objects.

The AVE is defined using two types of viewsheds:

- Static viewsheds are what neighbors of the proposed project can see in 360 degrees from a stationary location; and
- Dynamic viewsheds are what travelers of the proposed project can see while moving.

The AVE is described using landscape units. Landscape units are geographic units defined by viewsheds and landscape types. Landscape types are described according to geography, ecology, and land use patterns.

2.2 INVENTORY

The inventory phase is the second phase of the VIA process. Its purpose is to identify the current status of the affected environment and population and the existing visual quality of the AVE. The inventory phase provides the visual baseline (existing conditions) to which the proposed alternatives will be assessed. To create the baseline, the following existing conditions are evaluated:

- Affected environment
- Affected population
- Visual quality

2.2.1 AFFECTED ENVIRONMENT

The visual resources of an AVE define its visual character. The visual resource components of each landscape type combine to form a composite. The visual character of natural environments may be described by their land, water, vegetation, animal life, and atmospheric conditions; the visual character of cultural environments may be described by their buildings, infrastructure, structures, artifacts, and art. The visual character of project environments may be described by their highway geometrics, grading, constructed elements, vegetative cover, and ancillary visual elements (FHWA 2015 Guidelines page 5-5).

2.2.2 AFFECTED POPULATION

The affected population is the population whose views are affected by the proposed project. Viewers are defined by their relationship to the proposed project and their visual preferences; they are either neighbors or travelers. Neighbors are people who are adjacent to and have views of the proposed project; travelers are people who are traveling on and have views from the proposed project. For this report, these viewer groups have been further subdivided based on their visual preferences for natural harmony, cultural order, and project coherence (see [Section 4.3](#)). The subdivisions are concurrent to the 2015 FHWA VIA Guidelines.

2.2.3 VISUAL QUALITY

The visual quality of the AVE describes what people feel positively or negatively about the visual character of their environment. Although visual quality may be perceived as having subjective components, the method of establishing the visual quality of a landscape does have an objective basis. Specific resource indicators of visual quality are natural harmony, cultural order, and project coherence. These indicators were used to evaluate the level of visual resources.

Natural harmony is the memorability of the landscape and the associated distinctiveness and diversity of its visual patterns. It addresses the relationship between viewers and the AVE's natural visual resources. It is judged based on whether the natural harmony of the view's landscape components—including manmade development, vegetation, water, and landform—are perceived as being harmonious or inharmonious.

Cultural order is the integrity of the natural or man-made landscape and its freedom from non-typical visual intrusions. Non-typical visual intrusions include visual elements that would not be

considered part of, or that encroach upon, the typical landscape. Cultural order addresses the relationship between viewers and the AVE's cultural visual resources. It is judged based on whether the cultural order of the view is perceived as being orderly or disorderly.

Project coherence is the extent to which visual intrusions are sensitive to, and integrated with, the surrounding landscape. It addresses the relationship between viewers and the project's visual resources. It is judged based on whether the project view is perceived as coherent or incoherent.

The National Cooperative Highway Research Program's (NCHRP) Report 741: *Evaluation Methodologies for Visual Impact Assessment* examines VIA methodologies, procedures, and practices and offers valuable insight on evaluating viewers' judgment of visual quality (NCHRP 2013). According to the NCHRP Report 741,

[i]f the existing scene is judged to match viewer expectations and needs, the scene is characterized as being a positive visual experience, with the elements that compose the existing scene appearing harmonious, orderly, and coherent. If the existing scene is judged not to fulfill viewer expectations or needs, it is seen as being a negative visual experience, with disharmonious, disorderly, and incoherent elements composing the scene. (NCHRP 2013)

Table 2.2-1 lists the criteria for defining the level of visual quality associated with natural harmony, cultural order, and project coherence. All three criteria must be high in order to have views of high visual quality.

Table 2.2-1. Visual Quality Evaluation

CRITERION	HIGH QUALITY	MODERATE/AVERAGE QUALITY	LOW QUALITY
Natural Harmony	Highly Memorable Elements form distinct and/or diverse visual patterns	Somewhat Memorable Elements form somewhat distinct and/or diverse visual patterns	Not Memorable Elements lack distinct and/or diverse visual patterns
Cultural Order	Minimal to no non-typical visual intrusions	Some non-typical visual intrusions	Many non-typical visual intrusions; encroaching elements are an "eyesore" to viewers
Project Coherence	Visual intrusions are sensitive to and integrated with the surrounding landscape	Visual intrusions are somewhat sensitive to and integrated with the surrounding landscape	Visual intrusions lack sensitivity to and integration with the surrounding landscape

According to the *Guidelines for the Visual Impact Assessment of Highway Projects*, judgement of each criterion is based on how changes in exposure and awareness to introduced elements affected the experience of each impact to visual compatibility (FHWA 2015 page 6-8). Each of the three elements associated with determining visual quality is evaluated separately on a scale of 1 to 7, as shown in the following rating system:

- 0 to 1.5 Very Low

- 1.5 to 2.5 Low
- 2.5 to 3.5 Moderately Low
- 3.5 to 4.5 Moderate/Average
- 4.5 to 5.5 Moderately High
- 5.5 to 6.5 High
- 6.5 to 7.0 Very High

Visual quality may be determined by finding the sum of natural harmony, cultural order, and project coherence and dividing it by three, as summarized by the following equation:

$$\text{Visual Quality} = (\text{Natural Harmony} + \text{Cultural Order} + \text{Project Coherence}) / 3$$

For the I-69 ORX project, a series of key views were selected and assessed to catalogue baseline conditions to be analyzed for potential visual impacts. They represent views to and from the proposed project and represent the existing character and visual quality that may be visually altered by the proposed build alternatives. They include views that are most representative of the landscape, as well as those considered most sensitive to change due to the high anticipated visual impacts to specific user groups. They may include high population areas, critical views, landscape transition zones, and/or critical visual resources.

For each landscape unit, a minimum of two views have been provided: one view of the interstate as seen by neighbors, and one view from the interstate as seen by travelers. For the inventory phase, each key view has been described per its existing visual character and visual quality.

2.3 ANALYSIS

The analysis phase is the third phase of the VIA process. Its purpose is to assess impacts on visual quality by evaluating the compatibility of the impacts, viewer sensitivity to the impacts, and the degree of the impacts, as described in **Sections 2.3.1 through 2.3.3.**

2.3.1 COMPATIBILITY OF THE IMPACTS

The visual compatibility of the project with the existing environment describes the visual impacts to natural harmony, cultural order, and project coherence. It is assessed for each landscape unit by comparing the visual quality of key views before the resource change to the visual quality of key views after the resource change, as summarized by the following equation:

$$\text{Visual Resource Change} = \text{Proposed Visual Quality Score} - \text{Existing Visual Quality Score}$$

According to this assessment, the views can be considered either compatible with (not contrasting) the existing landscape or incompatible with (contrasting) the existing landscape. Additional components to consider when evaluating visual character compatibility include the project's scale, form, materials, and visual character.

2.3.2 SENSITIVITY OF THE IMPACTS

The visual sensitivity of the impacts of the project is evaluated by assessing the viewers' overall sensitivity to changes (defined in [Section 2.2.2](#)). Viewers are either sensitive or insensitive to visual impacts, depending on their levels of exposure and awareness.

The three levels of exposure are as follows:

- Proximity is the viewer's distance from the proposed project. Close distances means greater exposure; shorter distances means less exposure.
- Extent is the number of people who will be viewing the project. More people mean greater exposure; fewer people mean less exposure.
- Duration is the amount of time that viewers are exposed to the proposed project. Slower travel and wider views means more exposure; faster travel and narrower views means less exposure.

The three levels of viewer awareness are as follows:

- Attention is related to routine, or the frequency of exposure the viewer has to the view. Greater frequency means less sensitivity; lower frequency means higher sensitivity.
- Focus is based on the details of the view. High focus and sensitivity is associated with specific focal points and large amounts of detail; low focus and sensitivity is associated with a lack of focal points and small amounts of detail.
- Protection is the visual regulations placed on views, both legal and social. Protected views mean high sensitivity; unprotected views mean low sensitivity.

2.3.3 DEGREE OF THE IMPACTS

Visual impacts can be positive (beneficial), negative (adverse), or neutral:

- Beneficial impacts are those that are favorable or advantageous to the visual quality associated with an alternative. A positive score indicates a beneficial impact.
- Adverse impacts are those that prevent success or development, or are harmful or unfavorable. A negative score indicates an adverse impact.
- Neutral impacts are those that have no change on the visual quality. A score of zero indicates a neutral impact.

2.4 MITIGATION

Mitigation is the fourth phase of the VIA process. It involves the enhancement of beneficial impacts and the avoidance, minimization, or compensation of adverse impacts. Mitigation techniques address the specific impacts created by the alternatives. They may be applied at different stages of the project's lifespan, including construction and completion. The mitigation phase determines the following:

- Mitigation types

- Mitigation techniques

2.4.1 MITIGATION TYPES

According to FHWA, “[t]he goal of the VIA guidelines is to maintain or enhance existing visual quality” (FHWA 2015). Mitigation or enhancement techniques act on the natural harmony, cultural order, or project coherence of visual resources or the experience of viewers. The three methods for mitigating adverse visual impacts are avoidance, minimization, and compensation.

- Avoidance is the preferred method of mitigation. This means selecting the alternative that maintains the quantity and quality of visual resources and/or maintaining existing views. In conditions where avoidance is not viable, minimization or compensation approaches should be considered.
- Minimization means selecting the alternative that does the least harm to visual resources and/or existing views.
- Compensation techniques are used where avoidance and minimization are not possible. Compensation means offsetting adverse visual impacts by replacing or substituting visual resources and/or views.

Enhancement is used to increase beneficial visual impacts. It means improving the visual quality of a resource by removing or rehabilitating degenerated visual resources or adding desirable ones and/or screening undesirable views or adding desirable ones.

2.4.2 MITIGATION TECHNIQUES

Mitigation or enhancement techniques may include design elements from the following categories.

ACCESS AND CIRCULATION

- Reconsider the vertical/horizontal alignment of the interstate.
- Provide consistent sidewalk infrastructure on one or both sides of the local street.
- Provide a multiuse path on one or both sides of the local street.
- Enhance intersections at interchanges and impacted local streets with pedestrian and vehicular navigation elements.

LIGHTING AND STRUCTURAL ELEMENTS

- Provide appropriately scaled lighting elements (both interstate and local streets).
- Provide sound walls to limit noise and visibility of the interstate from adjacent land use areas.
- Provide fences between the interstate and adjacent land use areas to increase physical and visual perceptions of safety.

WAYFINDING

- Provide gateway signage at key locations such as bridges, local intersections, and major interchanges.

- Provide identity signage at key destinations, neighborhoods, and commercial developments.
- Provide wayfinding signage at consistent locations along the alternative.
- Increase/decrease the scale of existing signage elements.

LANDSCAPING

- Provide a vegetation buffer with shade trees, ornamental trees, shrubs, and perennials between the interstate and adjacent land use areas.
- Provide street trees along local roads.
- Landscape the medians of local roads.

FUNCTIONAL TREATMENTS AND PUBLIC ART

- Integrate the visual pattern elements of functional treatments with those of adjacent land uses.
- Provide public art at key locations, such as identified gateway areas, along the project alternative.

CHAPTER 3 – ESTABLISHMENT PHASE

A comprehensive understanding of the affected environment begins by describing the project's visual character, followed by documenting the community goals and objectives for visual quality. It is followed by the identification and mapping of the AVE. The AVE is described using the characteristics of the regional landscape. To provide a framework for comparing and contrasting its visual resources, the regional landscape is further subdivided into a series of landscape units. These processes are described in **Sections 3.1** through **3.3**.

3.1 PROJECT'S VISUAL CHARACTER

The visual character of the proposed project describes its physical characteristics. This project's visual character is described in **Section 1.1**.

3.2 COMMUNITY GOALS AND OBJECTIVES FOR VISUAL QUALITY

Sensitivity to the visual quality of the affected environment is evident from the general planning guidance set forth in the *Evansville-Vanderburgh County Comprehensive Plan* (Evansville 2016) and *Henderson City-County Comprehensive Plan* (Henderson 2015). **Table 3.2-1** and **3.2-2** outline the goals, objectives, and policies specific to the visual resources of the Evansville and Henderson communities.

Table 3.2-1. Goals, Objectives, and Policies in the Evansville-Vanderburgh County Comprehensive Plan

OBJECTIVES	POLICIES
Rural Action Plan	
N/A	Growth and development in the rural area must not detract significantly from continuing the primary agricultural activities while protecting their rural identity and character.
	Rural character should be maintained or achieved through density and design.
Environmental Quality Action Plan	
Preserve natural physical features and open space in both urban and rural areas that are important for maintaining environmental quality.	Acquire scenic or conservation easements to protect natural and man-made environmental resources.
Provide an environment with minimal adverse visual and health effects from air, land, light, noise, and water pollution.	Require additional buffering by both distance and landscaping between residential areas and any new uses expected to generate nuisance and pollution.
Transportation Action Plan	
Advance the interstate system within the region with an I-69 bridge across the Ohio River between Evansville and Henderson, Kentucky.	N/A

Table 3.2-2. Goals, Objectives, and Policies in the Henderson City-County Comprehensive Plan

GOAL	OBJECTIVE
Wisely plan for land uses in appropriate locations to maximize quality design and minimize the adverse impacts of development.	Encourage appropriate uses near the proposed I-69 corridor, including interchanges and gateways into the city.
	Preserve agricultural land while protecting the economy and heritage of rural areas of the county.
Protect and enhance the quality of the natural environment while permitting appropriate development on suitable lands.	Encourage innovative design on sites with constraints based on the presence of natural systems and incentivize the protection of quality open space.
	Preserve significant natural features and enhance existing green areas.
Continue to provide signs that orient and direct visitors to destinations throughout the community.	Continue to provide signs that orient and direct visitors to destinations throughout the community.
	Guide design and improvements of development along major traffic corridors to maintain the community character and create gateways.
Maintain a positive image and identity for the community that is distinct and reflective of its unique character and assets to distinguish Henderson from nearby communities.	Promote streetscape elements that strengthen the unified theme of the community such as benches, bus shelters, trash cans, streetlights, wayfinding signage and other amenities.
Support and encourage the expansion of I-69.	Encourage the construction of a new I-69 bridge over the Ohio River to improve mobility and the economy of the community.
	Encourage the creation of new gateway zones and districts for future I-69 interchanges.
	Support a bridge option that provides the best connectivity and convenience to the community.
	Support a bridge option that improves the economic vitality of Henderson and respects the importance of prime agricultural land, existing businesses and homes, and the environment.

3.3 IDENTIFICATION OF THE AREA OF VISUAL EFFECT

The AVE is limited by the physical constraints of the environment and the physiological limits of human sight (see **Section 2.1.3**). The methodology and approach of identifying the AVE is identical to the process of defining the area of potential effect (APE); that is, the area within which a project may directly, indirectly, or cumulatively affect historic properties.

The static and dynamic viewsheds of the AVE were established using ArcGIS Spatial Analyst's Viewshed tool. This tool generated a raster layer of visible and non-visible areas based on the National Elevation Dataset (NED) 1/3 arc-second Digital Elevation Model (DEM), a 3D representation of the earth's terrain, and a series of observer viewpoints placed at 1,000-foot intervals along the centerlines of the locations where new roads would be constructed. The viewshed results were clipped to a 1-mile radius buffer around the project alternatives, and a polygon buffer was created and combined with the visible areas to ensure that the AVE included

a minimum of 1,000 feet on either side of the interstate. The area of the Ohio River open water was subtracted from the view. Field observations were made to account for visual obstructions such as vegetation and man-made structures, and the map was adjusted accordingly (**Figure 3.3-1**).

3.3.1 REGIONAL LANDSCAPE

The project area encompasses the southern portion of Evansville, IN and large areas of Henderson, KY. The natural environment found within Vanderburgh and Henderson counties in which the proposed project is located is described in the following subsections:

LANDFORM

Vanderburgh and Henderson counties are located on the southern edge of the Eastern Interior Basin, which has been a major producer of oil for more than 60 years. South Vanderburgh County is part of the Southern Bottomlands Physiographic Natural Region; Henderson County is part of the Western Kentucky Coalfield Physiographic Natural Region, also known as the Shawnee Hills Region (Henderson 2015).

The topography of Vanderburgh and Henderson counties within the project area is characterized by flat lowlands and rolling uplands (**Plates 3.3-1 and 3.3-2**).

Flat lowlands are associated with the Ohio and Green River floodplains. These areas contain significant sediment deposits and organic matter, a good source of energy and nutrients. Although seasonal flooding limits land use in these areas, the fertility of floodplain soils makes them ideal for agricultural use. Rolling uplands are associated with agricultural, residential, and commercial development. Man-made landforms, such as roadway and bridge embankments, are located throughout the AVE and may be used for the layout of project alternatives (Henderson 2015).

At 981 miles long, the Ohio River is one of the most unique and prominent features of the area. It begins in Pittsburgh, PA and travels through Huntington, WV, Cincinnati, OH, Louisville, KY, Evansville, IN, Henderson, KY and ends in Cairo, IL. It is primarily viewed from the US 41 Twin Bridges.

At 384 miles long, the Green River is a tributary of the Ohio River. It begins in Kings Mountain, KY and empties into the Ohio River just north of Green River State Forest. It is primarily viewed from the US 41 Twin Bridges.

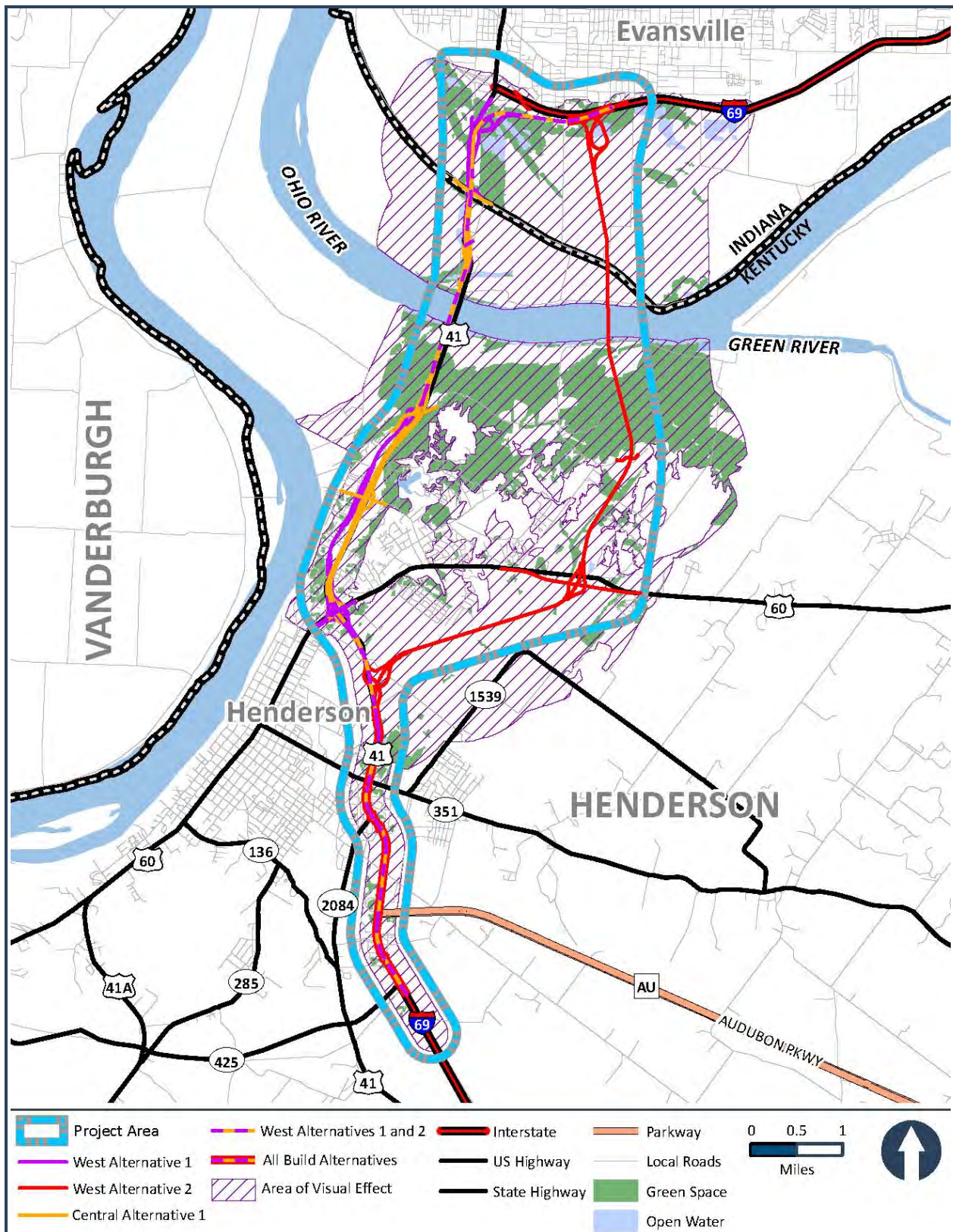


Figure 3.3-1. Area of Visual Effect Map



Plate 3.3-1. Flat Lowlands



Plate 3.3-2. Rolling Uplands

VEGETATION

Major areas of vegetation within the project area are concentrated within regionally recognized natural destinations (**Plate 3.3-3**). Residential areas provide some vegetation (**Plate 3.3-4**); urban areas provide limited vegetation in the form of ornamental landscaping (**Plate 3.3-5**). Rural areas are dominated by monoculture plantings of crops, but may include vegetative windbreaks (**Plate 3.3-6**).



Plate 3.3-3. Vegetation in the Natural Areas



Plate 3.3-4. Vegetation in Residential Areas

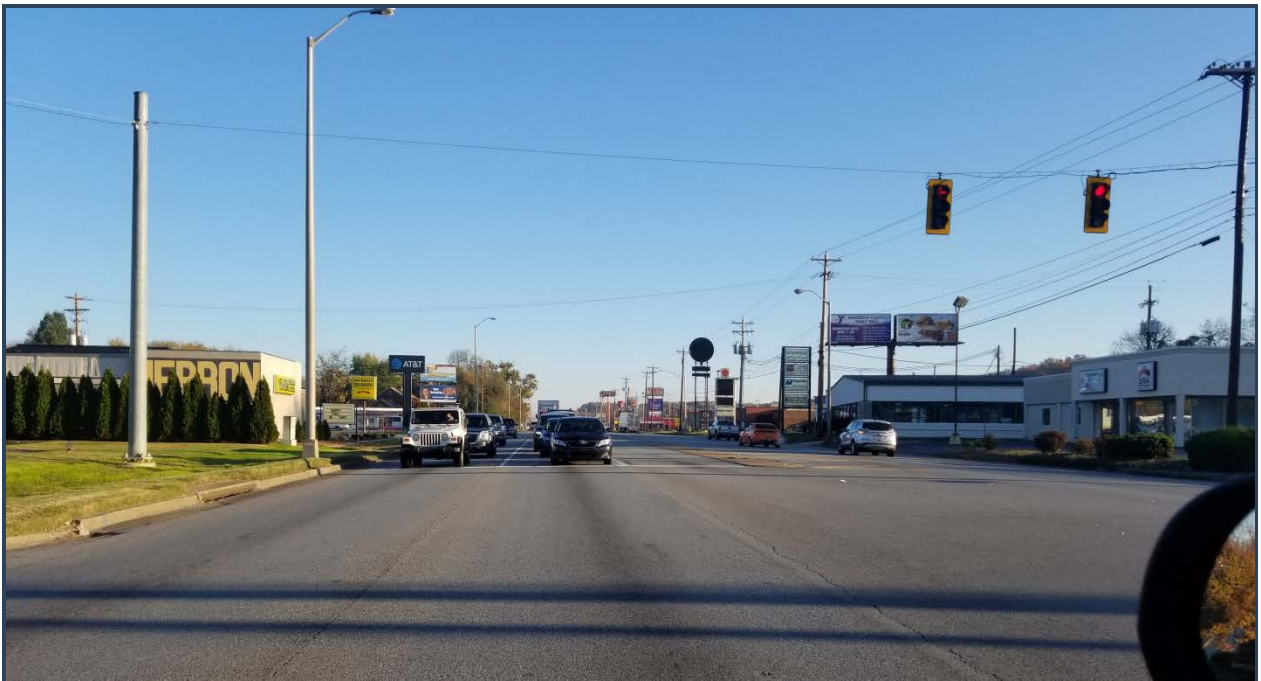


Plate 3.3-5. Vegetation in Urban Areas



Plate 3.3-6. Vegetation in Rural Areas

Vegetation communities within forested areas are dependent on topography. Forest categories are palustrine (wetland) and terrestrial (non-wetland). Palustrine forests are located in lowlands; terrestrial forests are located in uplands. According to the University of Kentucky College of Agriculture, Food and Environment, lowland areas of the Shawnee Hills Region are dominated by bald cypress, poplar, black willow, sweetgum, willow oak, pin oak, and green ash; upland areas are dominated by cherrybark oak, shagbark hickory, bur oak, American elm, butternut, and hawthorne. These forested habitats are characterized by trees with overlapping crowns forming canopy cover. The shrubs within these areas include American snowbell, farkleberry, bladdernut, strawberry bush, and false indigo (University of Kentucky College of Agriculture, Food and Environment 2018).

Vegetation communities within residential and urban areas are somewhat consistent with the vegetation communities within forested areas. Common tree species used in landscaping include maple, ash, and oak. Buffer zones consist of a mix of deciduous and evergreen species to provide year-round screening between land uses.

LAND USE

Land use describes the broad recommendations for the human activities occurring on a certain land cover type. Many land use zones occur within the project area. Within these land uses, zoning regulations determine the architectural vernacular of the buildings and structures, which may vary. These elements help create the existing visual character and are used in determining the visual impacts of the proposed alternatives. Existing land uses are described in the following subsections.

RESIDENTIAL LAND USE

Residential development within the project area occurs to the north near Evansville, along the US 41 and US 60 corridors, and east of the CSX railroad along Zion Road. These areas are dominated by single-family detached housing, but they also include mobile-home parks, multifamily dwelling units, and river camps.

The architectural vernacular of these buildings and structures varies. Single-family ranch-style homes dominate the residential areas immediately adjacent to the Henderson commercial strip and along Central Alternative 1 (**Plate 3.3-7**). Mobile-home parks are located on the north end of the Henderson strip (**Plate 3.3-8**); apartments are located on the south end of the Henderson strip (**Plate 3.3-9**). River camps are located on the north and south banks of the Ohio River and are occupied by stilt homes, elevated to protect against flooding (**Plate 3.3-10**).



Plate 3.3-7. Residential Land Use – Single-Family Ranch-Style Homes



Plate 3.3-8. Residential Land Use – Mobile-Home Park



Plate 3.3-9. Residential Land Use – Apartments



Plate 3.3-10. Residential Land Use – River Camps

COMMERCIAL LAND USE

Commercial development within the project area occurs along US 41 in the Henderson strip. This area is considered to be typical strip highway development and includes gas stations and fast food restaurants (**Plate 3.3-11**) and large strip malls consisting of big box retailers, grocery stores, and shops (**Plate 3.3-12**). It has multiple access points to US 41 but lacks frontage roads. Commercial areas follow the length of West Alternatives 1 and 2 through the Henderson strip.



Plate 3.3-11. Commercial Land Use – Gas Stations and Fast Food Restaurants



Plate 3.3-12. Commercial Land Use – Strip Malls

PUBLIC/SEMI-PUBLIC LAND USE

Public/semi-public developments are located throughout the project area. Examples include institutional and public administration sites such as the Henderson Police Department, the Henderson City Gas Department, Senior Services of Henderson (**Plate 3.3-13**), Bend Gate Elementary School, Covenant Baptist Church, Watson Lane Baptist Church, The Father's House (**Plate 3.3-14**), and Community Baptist Church.



Plate 3.3-13. Public/Semi-Public Land Use – Senior Services of Henderson

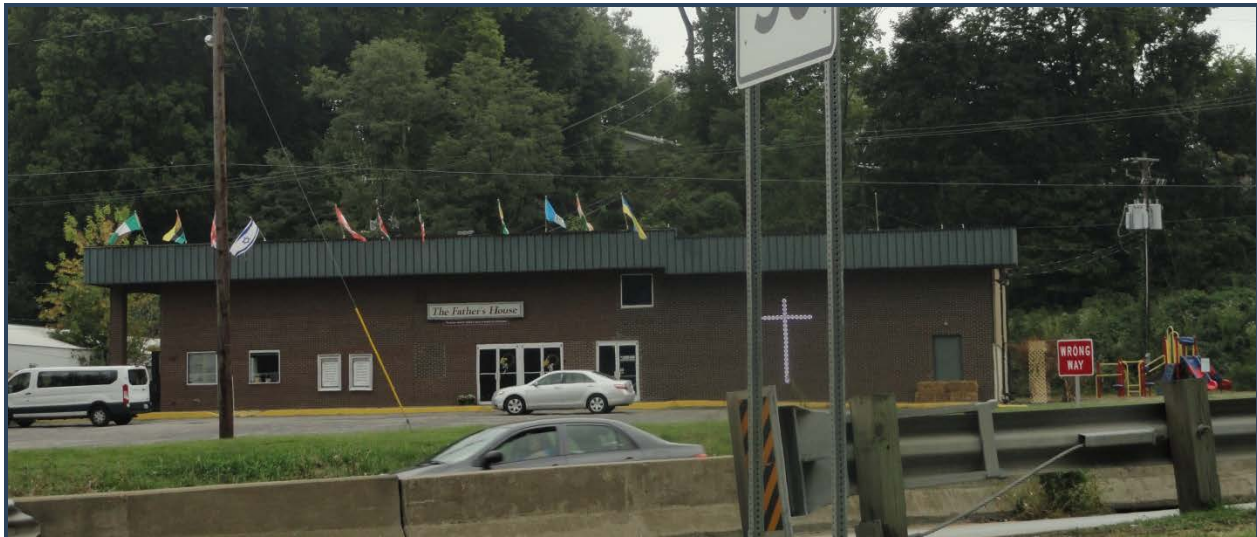


Plate 3.3-14. Public/Semi-Public Land Use – Watson Lane Baptist Church

INDUSTRIAL LAND USE

Two large industrial areas are situated within the project area. The first area of industrial development is Trans Montaigne Terminal Inc., located along the Ohio River to the west of West Alternatives 1 and 2 on Sunset Lane. Trans Montaigne Terminal Inc. is a fuel terminaling, storage, and transportation company of petroleum and other liquid products. The second area of industrial development is adjacent to the CSX Railroad and adjacent to the south terminus of Central Alternative 1 (**Plate 3.3-15**). This area is home to a variety of industrial service industries such as Hercules Manufacturing Co., J. Ron Inc., Bakery Feeds, and Griffin Industries Blending.



Plate 3.3-15. Industrial Land Use

NATURAL AND RECREATIONAL LAND USE

Natural and recreational land uses within the project area are located along the Ohio River. Other pockets of this land use are not along the Ohio River. Examples include Eagle Slough Natural Area, John James Audubon State Park, the Green River State Forest, and Atkinson Park. Eagle Slough Natural Area is located north of the Ohio River in Evansville, IN, just east of US 41 and West Alternatives 1 and 2 (**Plate 3.3-16**). John James Audubon State Park is located north of the Henderson strip, just east of US 41 and West Alternatives 1 and 2 (**Plate 3.3-17**). The Green River State Forest is located south of the Ohio River and east of Audubon State Park, adjacent to Central Alternative 1. Finally, Atkinson Park is located between the Ohio River and US 41, just east of West Alternatives 1 and 2 (**Plate 3.3-18**).



Plate 3.3-16. Natural and Recreational Land Use – Eagle Slough Natural Area



Plate 3.3-17. Natural and Recreational Land Use – Green River State Forest (Photo Credit: Kentucky Division of Forestry)



Plate 3.3-18. Natural and Recreational Land Use – Atkinson Park

FLOODPLAIN LAND USE

Floodplain areas are largely undeveloped and are prone to flooding (**Plate 3.3-19**). Due to their fertility, these areas are ideal for agricultural use.



Plate 3.3-19. Floodplain Land Use – Green River State Forest

AGRICULTURAL LAND USE

Agricultural development within the project area largely occurs in areas that include, but are not limited to, areas within and/or adjacent to the floodplain (**Plate 3.3-20**). These outlying areas are located north and south of the Ohio River and will most likely remain undeveloped if they are within floodplain areas.



Plate 3.3-20. Rural Land Use

3.3.2 LANDSCAPE UNITS

Landscape units provide a framework for evaluating visual resources. The regional landscape has been further subdivided into a series of landscape units. These landscape units were defined and mapped according to landform, vegetation, color, and manmade development (**Figure 3.3-2**). The five landscape units identified in this report are described in the following subsections.

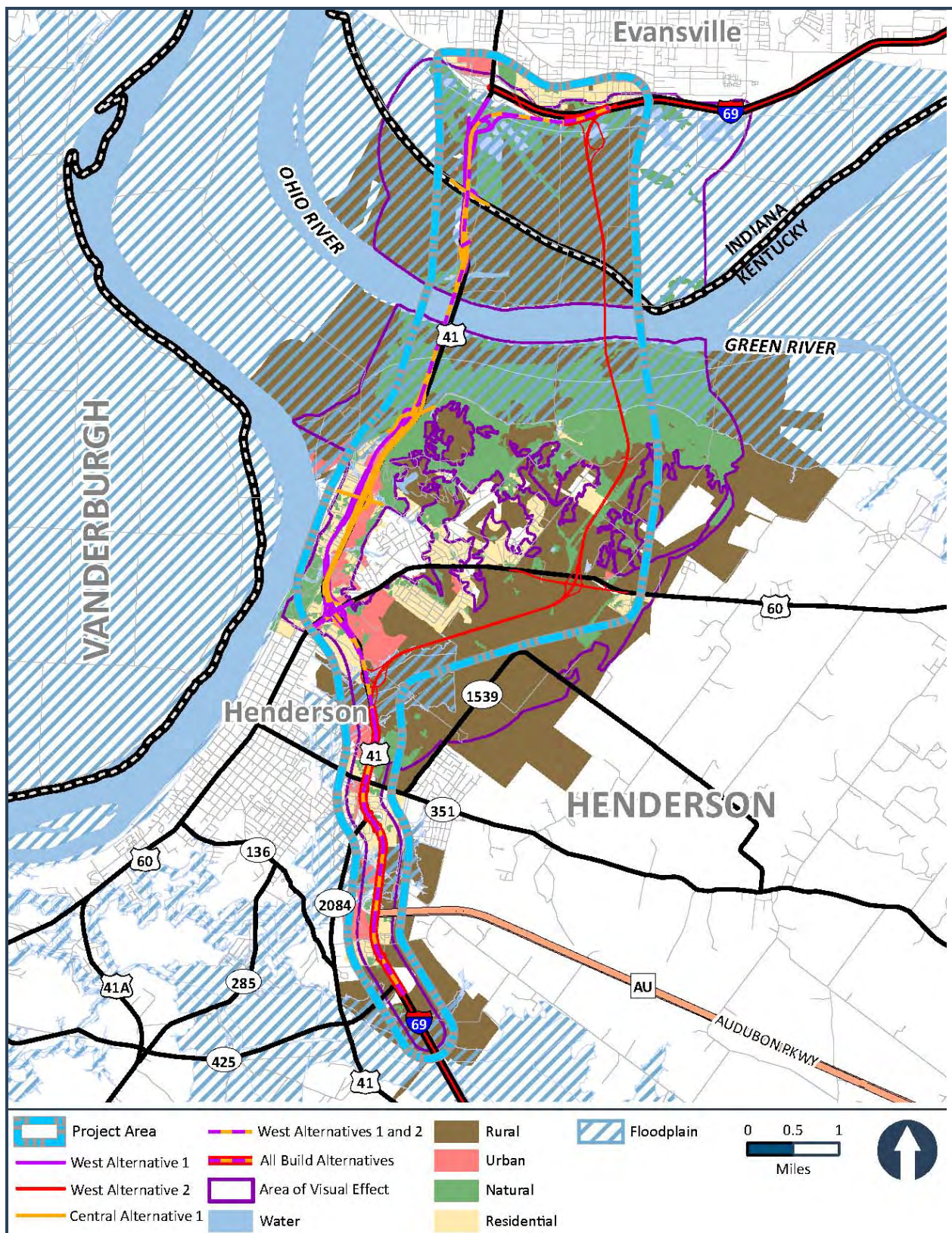


Figure 3.3-2. Landscape Units Map

RESIDENTIAL LANDSCAPE UNIT

The residential landscape unit occupies several areas within the project area (**Plate 3.3-21**). These residential uses are characterized by several features:

- The residential landscape unit consists of visually homogeneous residential structures that possess a high degree of visibility between one another.
- It is defined by housing uses adjacent to the right-of-way.
- Views between the proposed project and adjacent housing uses are typically unobstructed.
- The visual integrity of adjacent housing units is compromised by the proposed project.

These areas are dominated by single-family detached housing, but they also include mobile-home parks and multi-family dwelling units such as apartments, townhomes, condominiums, and mixed-use structures. These buildings are organized into larger groupings of residential infrastructure such as subdivisions and apartment complexes. Residential areas adjacent to urban areas typically exhibit high-density and grid-like patterns of organization. As they move farther from urban areas, these residential areas display low to moderate density and free-flowing patterns of organization.

Ornamental landscaping provides variations of color, texture, and pattern. Amenities within the residential landscape unit may include sidewalks and multiuse paths, neighborhood identity signage/banners, and street lights.



Plate 3.3-21. Example Residential Landscape

NATURAL LANDSCAPE UNIT

The natural landscape unit occupies areas along the Ohio River within the project area (**Plate 3.3-22**). These natural areas are characterized by several features:

- The natural landscape unit consists of natural and recreational landscapes or environments adjacent to the interstate right-of-way.
- Natural areas may limit or obstruct longer views to and from the proposed project.
- Natural areas are masked by vegetation or water and contain variations of color, texture, and pattern associated with the ecosystems they represent.

Natural areas may include forested areas and wetlands. Regionally recognized natural destinations within this unit include Eagle Slough Natural Area, John James Audubon State Park, Green River State Forest, and Atkinson Park. Views of these areas are the primary focus of motorist and recreational users. Amenities within the natural landscape unit may include multiuse trails, wayfinding, and interpretive signage.



Plate 3.3-22. Example Natural Landscape

RURAL LANDSCAPE UNIT

The rural landscape unit occupies agricultural areas that include, but are not limited to, areas within and/or adjacent to the floodplain in the project area (**Plate 3.3-23**). These rural areas are characterized by several features:

- The rural landscape unit consists of large tracts of agricultural croplands and associated structures.
- Rural landscapes typically allow longer views to and from the proposed project, especially during the months of the year when crops are harvested.
- The number and density of man-made structures are minimal.

Rural areas are associated with agriculture and may include croplands, pastures, and structures used in farming operations such as livestock barns and shelters, machinery, and crop storage buildings. These elements lack diversity and provide little color, texture, or pattern. They are located on the outskirts of developed areas and have few people and businesses are spread over large areas. Amenities within the rural landscape unit may include vegetative windbreaks.



Plate 3.3-23. Example Rural Landscape

FLOODPLAIN LANDSCAPE UNIT

The floodplain landscape unit occupies several areas within the project area (**Plate 3.3-24**). These floodplain areas are characterized by several features:

- Floodplains are defined as low-lying areas adjacent to a river or water body that are prone to flooding.
- They are characterized by long, flat views along the river or waterbody and typically allow for longer views to and from the proposed project.
- The interstate is typically elevated in these areas.

Floodplains are subject to flooding and associated damage; however, some portions of the floodplain are only flooded once every 100 years. Although limited land use is permitted in the floodplains, they have historically attracted agricultural use due to the fertility of the soil.

Floodplain areas are largely undisturbed and contain diverse vegetation and water elements that provide variations of color, texture, and pattern. However, elements such as croplands, pastures, and structures used in farming operations lack diversity and provide little color, texture, and pattern where agricultural uses are present.



Plate 3.3-24. Floodplain Landscape Unit

URBAN LANDSCAPE UNIT

The urban landscape unit occupies several areas within the project area (**Plate 3.3-25**). These urban landscapes are characterized by several features:

- The urban character prototype consists of established commercial or business areas, public/semi-public institutional or public administration sites, and industrial areas adjacent to the interstate right-of-way.
- Urban uses are characterized by a large number of structures spaced tightly together.
- A significant amount of built infrastructure is provided to support urban uses.
- Additional vehicular access is provided in urban conditions.

Diverse building architecture and signage and limited ornamental landscaping provides variations of color, texture, and pattern. Amenities within the urban character prototype may include sidewalks and multiuse paths; enhanced intersections; gateway, wayfinding, and commercial signage; and street and pedestrian scale lighting.



Plate 3.3-25. Urban Landscape Unit

CHAPTER 4 – INVENTORY PHASE

The establishment phase is followed by the inventory phase. The inventory phase begins by cataloguing the visual characteristics of the affected environment. It is followed by identifying the neighbors and travelers of the proposed project to determine the visual preferences and sensitivities of the affected population. Finally, the existing visual quality of the project area is assessed to establish a visual baseline. These processes are described in **Sections 4.1** through **4.3**.

4.1 AFFECTED ENVIRONMENT

The AVE is defined by its visual resources. Together, these resources form an environment that is evaluated based on its landform, vegetation, and land uses. These components are part of an overall landscape unit from which a series of key views is selected to represent typical conditions along each alternative within the project environment. The regional landscape and its landscape units are described in **Sections 3.3.1** and **3.3.2**, respectively.

4.2 VIEWER GROUPS

Neighbors and travelers are viewer groups. Viewer groups are part of the population whose views are visually affected by the proposed project. The following describes the viewer groups and their levels of self-interest, sensitivity to visual change, and visual preferences for natural harmony, cultural order, and project coherence.

4.2.1 NEIGHBORS

Neighbors are those who are adjacent to, and have views of, the proposed project (see **Section 2.2.2**). The project area includes residential, recreational, retail, commercial, and agricultural neighbors.

RESIDENTIAL NEIGHBORS

Residential neighbors are those who live within the AVE. They are considered permanent and may include owners or renters of residential infrastructure including single-family homes, condominiums, apartments, and/or other forms of residence. Their visual preferences lean toward maintaining the existing visual quality of their environment. They are typically not interested in change unless they directly participate in defining it, and they are more focused on natural harmony and cultural order than project coherence.

Residential neighbors may be able to view the proposed alternatives from their homes, yards, and local streets at ground level or elevated vantage points. These viewers will typically be stationary and may experience frequent and prolonged exposure to views of the proposed alternatives. However, in some scenarios, the orientation of building structures and vegetation may block extended views to the interstate.

West Alternatives 1 and 2 are in more residential areas and will result in greater effects to residential neighbors than Central Alternative 1, which is located in more rural and natural areas. Because the proposed alternatives will open views to transportation infrastructure that significantly alter their views, residential neighbors' sensitivity to visual quality is high.

RECREATIONAL NEIGHBORS

Recreational neighbors are those who participate in recreation within the AVE. They are considered transitory and may engage in indoor/outdoor leisure activities or cultural events. Although their visual preferences are associated with their leisure activity, they lean toward maintaining the existing visual quality of their environment and are typically not interested in change unless improvements enhance their recreational experiences (FHWA 2015, page 5-8). They are focused on natural harmony and cultural order, but they may be interested in project coherence as it relates to travel to and from their destination.

Like residential neighbors, recreational neighbors are likely to be adversely affected by changes to their surrounding environment. However, their frequency and exposure to views of the proposed alternatives is seasonal due to vegetation. West Alternatives 1 and 2 are adjacent to Eagle Slough Natural Area, John James Audubon State Park, and Atkinson Park, and will result in greater effects to recreational neighbors than will Central Alternative 1, which is adjacent to Green River State Forest.

CIVIC NEIGHBORS

Civic neighbors are retail and commercial individuals within the AVE. They include merchants and shoppers, as well as those who occupy commercial property such as offices and warehouses including workers and customers. Merchants and workers are considered permanent; shoppers and customers are considered transitory. Merchants and workers are concerned with visibility from surrounding areas; shoppers and customers are interested in the visibility of their destination and shopping experience. Retail merchants and commercial property owners are focused on project coherence and cultural order, but they may use natural harmony to help attract shoppers and customers.

The greatest concentration of civic neighbors within the project area is along the Henderson strip; this includes commercial business that are along US 41. While traveling to and from their destinations, civic neighbors will be exposed to views of West Alternatives 1 and 2. Views of the project will be generally limited by a focus on business and/or shopping activities. Views of the interstate will be limited due to development and vegetation. Therefore, civic neighbors' exposure to the visual elements of the project is low. Central Alternative 1 will have no visual impact on civic neighbors within the project area.

AGRICULTURAL NEIGHBORS

Agricultural neighbors are crop or animal farmers within the AVE. They are considered transitory due to the seasonality of their work and are more focused on cultural order and natural harmony than on project coherence.

The greatest concentration of agricultural neighbors within the project area is along Central Alternative 1. Some pockets of agricultural land use are located along US 41 and will be exposed to West Alternatives 1 and 2. Like civic neighbors, views of the project will be generally limited by a focus on agricultural activities. However, these views to the interstate, will be unobstructed

by building structures or vegetation. Due to proximity, Central Alternative 1 will result in greater effects to agricultural neighbors than will West Alternatives 1 and 2.

4.2.2 TRAVELERS

Travelers are those who are traveling on, and have views from, the proposed project (refer to **Section 2.2.2**). Travelers within the project area include commuting, touring, and shipping motorists, as well as pedestrian and bicycling travelers.

MOTORING TRAVELERS

Motoring travelers are those who are traveling by vehicle within the AVE. They have the fastest travel rate compared to other modes of travel. The drivers' views are limited by the directionality of their travel; passengers have more flexibility in that they can turn and look in various directions. Drivers prefer project coherence, but they may also be interested in cultural order and natural harmony as they contribute to wayfinding. On the other hand, passengers are more focused on natural harmony and cultural order than on project coherence.

At fast speeds, motoring travelers have short durations of views and narrow fields of vision. Because they are focused on the roadway and associated signage elements, they will have limited views of their surroundings. However, they are aware of and able to identify landmarks within their visual environment. Therefore, motorists have low sensitivity to their environment. Motoring travelers are described in the following subsections.

COMMUTING TRAVELERS

Commuting travelers are routine travelers of the proposed project. Commuters may be traveling to or from work during peak travel times. Most commuters are typically single drivers with short travel times; other commuters may travel long distances with passengers. They have a preference for project coherence, but they may also be interested in cultural order and natural harmony as they contribute to wayfinding.

TOURING TRAVELERS

Touring travelers are those traveling the proposed project for enjoyment. Most tourists travel in groups over long distances. They have equal interest in natural harmony, cultural order, and project coherence.

SHIPPING TRAVELERS

Shipping travelers are those traveling the proposed project for the sole purpose of moving goods. Although vehicle type and travel distance may vary, the trips are routine. Like commuters, they have a preference for project coherence, but they may also be interested in cultural order and natural harmony as they contribute to wayfinding.

PEDESTRIAN TRAVELERS

Pedestrian travelers are those traveling by foot within the AVE and have the slowest travel rate. They move adjacent to the proposed project using pedestrian amenities such as sidewalks or trails. They have a preference for cultural order, but they are also interested in natural harmony and project coherence (FHWA 2015 Guidelines page 5-10).

The greatest concentration of pedestrian travelers within the project area is along the Henderson strip and collector roads. While traveling to and from their destinations, pedestrian travelers will be exposed to extended views of West Alternatives 1 and 2. In some scenarios, views to the interstate may be unobstructed by building structures or vegetation. Therefore, pedestrian travelers' are highly sensitive their environment. Central Alternative 1 does not intersect with any existing pedestrian infrastructure. Therefore, it will have no effect on pedestrian travelers within the project area.

BICYCLING TRAVELERS

Bicycling travelers are those traveling by bicycle within the AVE. They have a faster travel rate than pedestrian travelers, but a slower travel rate than motoring travelers. They move adjacent to the proposed project using bicyclist amenities such as multiuse trails and designated bike paths. Like pedestrian travelers, they have a preference for cultural order, but they are also interested in natural harmony and project coherence (FHWA 2015 Guidelines page 5-10).

The greatest concentration of bicycling travelers within the project area is along the Henderson strip and collector roads. Like pedestrian travelers, while traveling to and from their destinations, bicycling travelers will be exposed to extended views of West Alternatives 1 and 2. In some scenarios, views to the interstate may be unobstructed by building structures or vegetation. Therefore, bicycling travelers are highly sensitive to their environment. Central Alternative 1 does not intersect with any existing bicycling infrastructure. Therefore, it will have no effect on bicycling travelers within the project area.

4.3 EXISTING VISUAL QUALITY

Viewsheds are used to assess the visual impacts of the interstate improvements (see **Section 2.1.3**). Each key view illustrates the existing visual environment and is defined by what can be seen and valued by viewer groups within the landscape units. The methodology for evaluating (scoring) the visual quality is presented in **Section 2.2.3**.

The selection of singular views to represent each landscape unit within the project area for all alternatives would result in a skewed assessment of the alternatives. Therefore, viewpoints from each prototypical landscape unit were selected for each project alternative to make lateral comparisons. These views represent typical views by neighbors and travelers and were chosen for their effectiveness in depicting the visual impacts of the proposed improvements of the project. They are organized according to landscape unit:

- Residential
- Rural
- Urban
- Natural
- Floodplain

Table 4.3-1 summarizes the viewsheds and their results. It includes their applicable viewer groups, associated landscape units, and existing visual quality.

Table 4.3-1. Existing Viewshed Assessment Summary

VIEWSHED ASSESSMENT SUMMARY			
Key View	Viewer Group	Landscape Unit	Visual Quality
View 1: Springer Road/Springer Drive	Residential Neighbors	Residential	Moderate/Average
View 2: Donna Drive/Johnson Drive	Commuting Travelers Pedestrian Travelers Bicycling Travelers	Residential	Moderately High
View 3: Elm Street/Canary Lane	Residential Neighbors Civic Neighbors	Residential	Moderately Low
View 4: US 41/Harmony Lane	Commuting Travelers Touring Travelers Shipping Travelers Pedestrian Travelers Bicycling Travelers	Residential	High
View 5: Culpepper Court	Residential Neighbors	Residential	Moderate/Average
View 6: US 60/Jackson McClain Property	Commuting Travelers Touring Travelers Shipping Travelers	Residential	Very High
View 7: Elm Street/Atkinson Park Circle	Commuting Travelers Touring Travelers Pedestrian Travelers Bicycling Travelers	Natural	Moderate/Average
View 8: Elm Street/Atkinson Park Road (Shelter)	Recreational Neighbors Civic Neighbors	Natural	Low
View 9: John James Audubon State Park	Recreational Neighbors Civic Neighbors	Natural	Low
View 10: US 41/John James Audubon State Park	Commuting Travelers Touring Travelers Shipping Travelers	Natural	Moderately High
View 11: Green River Road 2/ Green River State Forest	Recreational Neighbors Agricultural Neighbors	Natural	Very High
View 12: US 41/Waterworks Road	Commuting Travelers Touring Travelers Shipping Travelers	Rural	Moderately High
View 13: Weinbach Avenue	Commuting Travelers Touring Travelers Shipping Travelers	Rural	Moderately High
View 14: US 60/CSX Railroad	Agricultural Neighbors	Rural	Moderately High

VIEWSHED ASSESSMENT SUMMARY			
Key View	Viewer Group	Landscape Unit	Visual Quality
View 15: US 41/Borrow Pit Wetlands	Commuting Travelers Touring Travelers Shipping Travelers	Floodplain	Very High
View 16: US 41/Ellis Park	Commuting Travelers Touring Travelers Shipping Travelers	Floodplain	Moderately High
View 17: Shawnee Drive	Agricultural Neighbors	Floodplain	Moderately High
View 18: US 41/Watson Lane	Commuting Travelers Touring Travelers Shipping Travelers	Urban	Moderate/Average
View 19: US 41/Superior Auto	Civic Neighbors	Urban	Moderate/Average
View 20: US 41/Wendy's	Commuting Travelers Touring Travelers Shipping Travelers	Urban	Moderate/Average
View 31: Washington Street/US 41	Residential Neighbors Civic Neighbors	Urban	Low

Figure 4.3-1 and **Figure 4.3-2** illustrate the location of the viewsheds within the AVE. Viewsheds are numbered by the order in which they appear in the text, and arrows point in the direction in which each viewshed is looking. For example, View 18: US 41/Watson Lane is looking east.

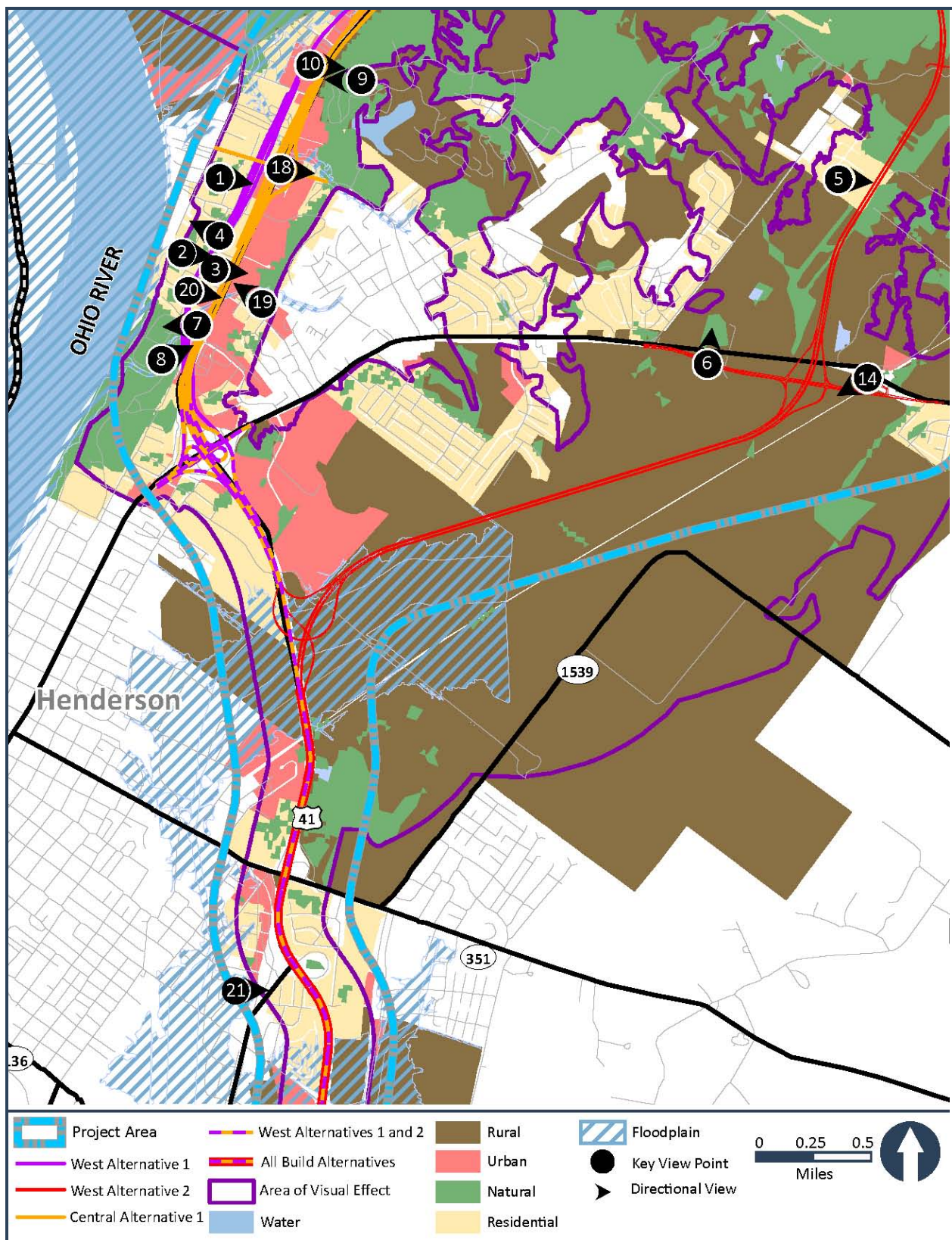


Figure 4.3-1. Key Views – Area of Visual Effect – South

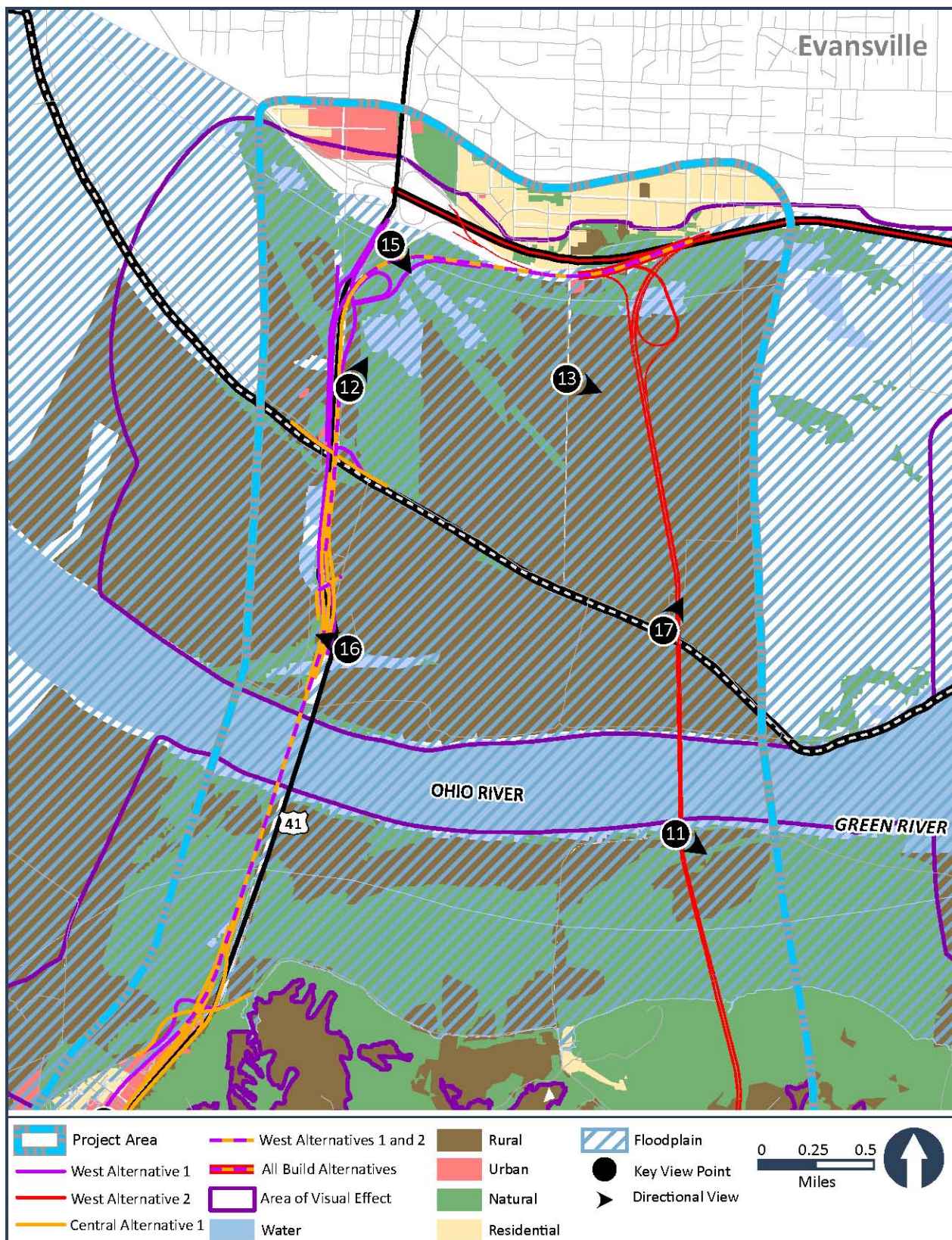


Figure 4.3-2. Key Views – Area of Visual Effect – North

4.3.1 RESIDENTIAL VIEWSHEDS

Residential viewsheds embody the visual characteristics of the residential landscape unit (**Section 3.3.1**). **Table 4.3-2** summarizes the viewsheds organized by alternative.

Table 4.3-2. Residential Viewsheds

WEST ALTERNATIVE 1	
Key View	Viewer Group
View 1: Springer Road/Springer Drive	Residential Neighbors
View 2: Donna Drive/Johnson Drive	Commuting Travelers Pedestrian Travelers Bicycling Travelers
WEST ALTERNATIVE 2	
Key View	Viewer Group
View 3: Elm Street/Canary Lane	Residential Neighbors Civic Neighbors
View 4: US 41/Harmony Lane	Commuting Travelers Touring Travelers Shipping Travelers Pedestrian Travelers Bicycling Travelers
CENTRAL ALTERNATIVE 1	
Key View	Viewer Group
View 5: Culpepper Court	Residential Neighbors
View 6: US 60/Jackson McClain Property	Commuting Travelers Touring Travelers Shipping Travelers

VIEW 1: SPRINGER ROAD/SPRINGER DRIVE

This view can be seen by residential neighbors west of the intersection of Springer Road and Springer Drive looking east toward the adjacent residential areas (**Plate 4.3-1**). Springer Drive and private residential lots with driveways, single-family homes and accessory elements, and ornamental landscaping are in the foreground, middle ground, and background of the view, respectively. A dense line of trees is in the far background.

This view is dominated by single-family ranch homes to the west of existing US 41 and the urban landscape unit of the project area. Adjacent to the road, driveways provide access to private homes. No pedestrian facilities are provided along the road for residents to use. Throughout the spring, summer, and fall, ornamental landscaping obstructs views of residential areas and the urban landscape unit to the east. This vegetation provides privacy for area residents.



Plate 4.3-1. View 1: Springer Road/Springer Drive – Existing

NATURAL HARMONY

The natural harmony of the view is moderately low. The residential structures and accessory elements that dominate the view lack distinct architectural character and fail to lend memorability to the residential landscape. They are arranged in uniform, grid-like patterns that are simplistic and horizontal.

The ornamental landscaping provides some diversity in color, form, pattern, and texture. The evergreen trees provide splashes of color in winter. However, it should be noted that the vegetation will display greater diversity throughout the spring, summer, and fall.

CULTURAL ORDER

The cultural order of the view is high. The view is largely typical of views anticipated in residential areas. Although the man-made elements dominate the landscape, they do not encroach upon their surroundings.

PROJECT COHERENCE

The project coherence of the view is moderate/average. The use of ornamental landscaping to integrate natural and man-made elements lends a sense of visual compatibility and harmony to the view. Although this brings some coherence to the view, the homes still appear “placed” in the landscape.

SUMMARY OF VISUAL QUALITY

Table 4.3-3 summarizes the existing visual quality rating for Springer Road/Springer Drive . As shown in the table, the overall visual quality rating for this view is 4.33 (Moderate/Average).

Table 4.3-3. Existing Visual Quality – View 1: Springer Road/Springer Drive

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 1: Springer Road/Springer Drive	3	6	4	4.33

VIEW 2: DONNA DRIVE/JOHNSON DRIVE

Commuting, pedestrian, and bicycling travelers have this view of Donna Drive between the Ohio River and US 41 when looking west to the intersection of Donna Drive and Johnson Drive (**Plate 4.3-2**). Donna Drive and private residential lots with driveways, single-family homes and accessory elements, and ornamental landscaping are in the foreground and middle ground of the view, respectively. A dense line of trees and a fence are in the background.

The view consists of a linear pattern of single-family ranch homes and moderately tall trees along a narrow, two-lane residential street. The view is neither distinctly horizontal nor vertical and has no focal point. However, the evergreen trees in the middle ground of the view draw viewer's attention during the winter due to their mass and color. The mature trees and Donna Drive dominate the view. The thick line of trees in the background of the view separates the area from adjacent residential areas.



Plate 4.3-2. View 2: Donna Drive/Johnson Drive – Existing

NATURAL HARMONY

The natural harmony of the view is moderately low. The residential street with the single-family ranch homes and mature trees to the north and south are not unusual, making this view unmemorable. The view somewhat lacks the ornamental landscaping that lends distinct colors, textures, and patterns to the residential landscape.

CULTURAL ORDER

The cultural order of the view is high. The single-family homes dominate, but do not disrupt, the harmony and orderliness of the landscape. Furthermore, the thick line of trees in the background of the view screen additional residential development to the west.

PROJECT COHERENCE

The project coherence of the view is very high. Donna Drive blends with the residential setting of the neighborhood, providing an integrated design with its setting.

SUMMARY OF VISUAL QUALITY

Table 4.3-4 summarizes the existing visual quality rating for Donna Drive/Johnson Drive. As shown in the table, the overall visual quality rating for this view is 5.33 (Moderately High).

Table 4.3-4. Existing Visual Quality – View 2: Donna Drive/Johnson Drive

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 2: Donna Drive/ Johnson Drive	3	6	7	5.33

VIEW 3: ELM STREET/CANARY LANE

This view can be seen by residential and civic neighbors at the intersection of Elm Street/Canary Lane looking east toward US 41 and the Henderson commercial strip (**Plate 4.3-3**). Canary Lane and private residential lots with driveways, single-family homes and accessory elements, and ornamental landscaping are in the foreground and middle ground. US 41 and adjacent urban areas are in the background. A dense line of trees is in the far background.

This view is dominated by single-family ranch homes to the west of existing US 41 and the urban landscape unit of the project area. Adjacent to the road, driveways provide access to private homes. No pedestrian facilities are provided along the road for residents to use. Throughout the spring, summer, and fall, ornamental landscaping limits views of the urban landscape unit to the east. This vegetation provides privacy for residents.

NATURAL HARMONY

The natural harmony of the view is moderately low. The residential structures and accessory elements that dominate the view, as well as the commercial structures visible in the background of the view, lack distinct architectural character and fail to lend memorability to the residential landscape. They are arranged in uniform, grid-like patterns that are simplistic and horizontal.



Plate 4.3-3. View 3: Elm Street/Canary Lane

The view is strongly horizontal; however, some verticality is provided by the mature trees and by the cell and broadcasting towers visible in the far background. The yellow fire hydrant in the foreground strongly contrasts surrounding elements and generates some visual interest.

The ornamental landscaping provides some diversity in color, form, pattern, and texture. The evergreen shrubs provide splashes of color in the winter landscape. However, it should be noted that the vegetation will display greater diversity throughout the spring, summer, and fall.

CULTURAL ORDER

The cultural order of the view is moderately low. Although the single-family ranch homes dominate the landscape, they do not encroach upon their surroundings. These elements are largely typical of views anticipated in residential areas. However, the urban landscape unit visible in the background of the view is not: it encroaches on the residential landscape and disrupts the orderliness of the view.

PROJECT COHERENCE

The project coherence of the view is moderate/average. The use of ornamental landscaping to integrate natural and man-made elements, as well as the dense line of trees in the far background of the view, lends a sense of visual compatibility and harmony. Although this brings some coherence to the view, the homes and commercial building structures appear “placed” in the landscape.

SUMMARY OF VISUAL QUALITY

Table 4.3-5 summarizes the existing visual quality rating for Elm Street/Canary Lane. As shown in the table, the overall visual quality rating for this view is 3.33 (Moderately Low).

Table 4.3-5. Existing Visual Quality – View 3: Elm Street/Canary Lane

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 3: Elm Street/Canary Lane	3	3	4	3.33

VIEW 4: US 41/HARMONY LANE

Commuting, touring, shipping, pedestrian, and bicycling travelers have this view of Harmony Lane looking west from US 41 (**Plate 4.3-4**). Harmony Lane and private residential lots with driveways, single-family homes and accessory elements, and ornamental landscaping are in the foreground and middle ground. Additional single-family homes and a dense line of trees are in the background.

The view is dominated by single-family ranch homes and accessory elements that form a linear pattern along a narrow two-lane residential street. Harmony Lane has no pedestrian amenities. Although the focal point of the view is Harmony Lane, the mature trees draw viewer attention due to their size and texture.



Plate 4.3-4. View 4: US 41/Harmony Lane

NATURAL HARMONY

The natural harmony of the view is moderate/average. The residential structures and accessory elements that dominate the view are typical of the residential setting. They lack distinct architectural character and fail to lend memorability to the residential landscape. They are arranged in uniform, grid-like patterns that are simplistic and horizontal in nature.

Strong horizontality is created by Harmony Lane, the residential structures and accessory elements, and the mature trees. The red chimney on the house on the left and the green shutters on the house on the right lend color to the view and generate some visual interest. The dense network of branches and mature trees creates patterns and textures that draw the eye.

CULTURAL ORDER

The cultural order of the view is very high. Although the single-family ranch homes and accessory elements dominate the landscape, they do not encroach upon their surroundings. These elements are largely typical of views anticipated in residential areas. This residential landscape has no non-typical intrusions.

PROJECT COHERENCE

The project coherence of the view is high. The use of ornamental landscaping and the density of the mature trees integrate natural and man-made elements and lend a sense of visual compatibility and harmony to the view. The mature trees create a park-like setting that is welcome in the residential landscape unit.

SUMMARY OF VISUAL QUALITY

Table 4.3-6 summarizes the existing visual quality rating for US 41/Harmony Lane. As shown in the table, the overall visual quality rating for this view is 5.67 (High).

Table 4.3-6. Existing Visual Quality – View 4: US 41/Harmony Lane

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 4: US 41/Harmony Lane	4	7	6	5.67

VIEW 5: CULPEPPER COURT

This view can be seen by residential neighbors east of the intersection of Culpepper Court and Harpeth Glenn Trace looking east toward natural areas (**Plate 4.3-5**). Culpepper Court is in the foreground of the view; private residential lots with driveways, as well as single-family homes and accessory elements are in the middle ground. A retention pond, meadow, and a thick line of trees are in the background.

Culpepper Court is part of the Pleasant View Neighborhood, a subdivision of single-family homes on the east side of Henderson. The view is dominated by single-family ranch homes along a two-lane residential court and is strongly horizontal. In the background, a single street lamp

and power lines dot the landscape, but they disappear into their surroundings. The thick line of trees in the background obstructs extended views to the east.



Plate 4.3-5. View 5: Culpepper Court – Existing

NATURAL HARMONY

The natural harmony of the view is moderately low. The view is typical of the residential landscape unit. The homogenous architectural character of the residential structures fail to lend memorability to the view. The view lacks the ornamental landscaping that contributes visual contrast and distinctness to the landscape.

CULTURAL ORDER

The cultural order of the view is high. Although the single-family homes dominate the view, they do not encroach upon the landscape. The thick line of trees in the background screens additional development to the west, containing the view and providing a sense of unity.

PROJECT COHERENCE

The project coherence of the view is moderate/average. Although the single-family homes do not disrupt the orderliness of the landscape, they are not integrated with the natural environment. The lack of ornamental landscaping creates an imbalance in this residential landscape. Although the residential area is systematic and organized, the natural setting is scattered and unorganized.

SUMMARY OF VISUAL QUALITY

Table 4.3-7 summarizes the existing visual quality rating for Culpepper Court. As shown in the table, the overall visual quality rating for this view is 4.33 (Moderate/Average).

Table 4.3-7. Existing Visual Quality – View 5: Culpepper Court

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 5: Culpepper Court	3	6	4	4.33

VIEW 6: US 60/JACKSON MCCLAIN PROPERTY

Commuting, touring, and shipping travelers on US 60 have this view when looking north toward the Jackson McClain property (**Plate 4.3-6**). The two lanes of US 60 are in the foreground of the view. The private driveway, fence, and a line of mature trees are in the middle ground. The lawn, the main house, and additional vegetation are in the background. A narrow strip of cropland can be seen to the north of the thick line of vegetation to the east of the property.

The Historic Jackson McClain Property is located along US 60, east of the Henderson commercial strip.. The property includes a house, meat house, tenant house, and carriage house. The main house was constructed in 1852. According to the National Register criteria, this property is eligible for listing on the National Register of Historic Places.



Plate 4.3-6. View 6: US 60/Jackson McClain Property – Existing

NATURAL HARMONY

This viewshed experiences seasonal variations of vegetation colors and textures, which are critical in determining natural harmony. Throughout the spring, summer, and fall, the natural harmony

of the view is high. The surrounding dense vegetation limits motorists' views of the residential structures, reducing the degree of memorability. However, the contrasting colors of the fence and variety of tree species increase visual interest.

During the winter, the natural harmony of the view is also high. The decrease in density of the vegetation allows for views of the main house, which has rich architectural character and is very vivid. However, the contrasting colors of the tree species are lost.

CULTURAL ORDER

The cultural order of the view is very high. The surrounding dense vegetation limits the encroachment of US 60 on the property, thus protecting residential interests. It also splits views of the property and offers visual integrity with the surrounding elements of the landscape.

PROJECT COHERENCE

The project coherence of the view is very high. The amount of vegetation on the property compared to the placement of residential structures provides a balanced visual relationship between natural and man-made elements.

SUMMARY OF VISUAL QUALITY

Table 4.3-8 summarizes the existing visual quality rating for US 60/Jackson McClain Property. As shown in the table, the overall visual quality rating for this view is 6.67 (Very High).

Table 4.3-8. Existing Visual Quality – View 6: US 60/Jackson McClain Property

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 6: US 60/Jackson McClain Property	6	7	7	6.67

4.3.2 NATURAL VIEWSHEDS

Natural viewsheds embody the visual characteristics of the natural landscape unit (see **Section 3.3.2**). **Table 4.3-9** summarizes the viewsheds organized by alternative.

Table 4.3-9. Natural Viewsheds

WEST ALTERNATIVE 1	
Key View	Viewer Group
View 7: Elm Street/Atkinson Park Circle	Commuting Travelers Touring Travelers Pedestrian Travelers Bicycling Travelers
View 8: Elm Street/Atkinson Park Road (Shelter)	Recreational Neighbors Residential Neighbors Civic Neighbors
WEST ALTERNATIVE 2	
Key View	Viewer Group

View 9: John James Audubon State Park	Recreational Neighbors Civic Neighbors
View 10: US 41/John James Audubon State Park	Commuting Travelers Touring Travelers Shipping Travelers
CENTRAL ALTERNATIVE 1	
Key View	Viewer Group
View 11: Green River Road 2/Green River State Forest	Recreational Neighbors Agricultural Neighbors

VIEW 7: ELM STREET/ATKINSON PARK CIRCLE

Commuting, touring, pedestrian, and bicycling travelers of Elm Street have a view of Atkinson Park when looking west toward the baseball fields (**Plate 4.3-7**). In this view, the two travel lanes of Elm Street are in the foreground; the entrance to Atkinson Park is in the middle ground. The baseball fields and a thin line of trees are in the background.

Atkinson Park is wedged between the Ohio River and US 41. Amenities at Atkinson Park include recreational softball and baseball fields, a skate park, a swimming pool, grills and shelters, and a playground.

The view is dominated by Elm Street. Vegetation elements are scattered throughout the view and add to the natural character of the setting. A series of large mast lights and score boards dot the landscape. The park entrance is marked by a series of flags and is the focal point of the view.

NATURAL HARMONY

The natural harmony of the view is moderately high. The flags provide a pop of color that draws the eye and creates visual interest. However, the signage lacks the visual prominence necessary to draw visitors into the park. The break in the tree line allows motorists to see activity within the park from Elm Street, adding to the memorability of the view. The diversity in colors and textures of the vegetation, although sparse, also helps improve the natural harmony of the view.

CULTURAL ORDER

The cultural order of the view is moderate/average. Although the large, vertical mast lights and score boards of the park fields detract from the landscape and may be seen as disorderly, they are part of a typical baseball field environment and may be considered part of the natural setting in this scenario. The viewshed is balanced between vegetation and pavement.



Plate 4.3-7. View 7: Elm Street/Atkinson Park Circle – Existing

PROJECT COHERENCE

The project coherence of the view is moderate/average. The light vegetation surrounding the park separates the park from adjacent land uses, but does not screen it. However, the natural and man-made elements show some integration.

SUMMARY OF VISUAL QUALITY

Table 4.3-10 summarizes the existing visual quality rating for Elm Street/Atkinson Park Circle. As shown in the table, the overall visual quality rating for this view is 4.33 (Moderate/Average).

Table 4.3-10. Existing Visual Quality – View 7: Elm Street/Atkinson Park Circle

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 7: Elm Street/Atkinson Park Circle	5	4	4	4.33

VIEW 8: ELM STREET/ATKINSON PARK ROAD (SHELTER)

This view can be seen by recreational, residential, and civic neighbors of Atkinson State Park from the shelter just south of the intersection of Elm Street and Atkinson Park Road looking east toward US 41 and residential and urban areas (**Plate 4.3-8**). The gravel parking pad of the shelter area and the two travel lanes of Atkinson Park Road are in the foreground of the view. A thin line of trees and a grassy berm is in the middle ground. Residential homes and commercial businesses are in the background.

The view is dominated by the gravel parking pad and adjacent residential and commercial structures. These structures draw the eye from Atkinson Park to adjacent land uses. The two travel lanes of Elm Street are hidden by the grassy berm; however, north and south traffic is visible from the park. US 41 is somewhat visible in the far background of the view, but it is largely screened by nearby commercial structures.



Plate 4.3-8. View 8: Elm Street/Atkinson Park Road (Shelter) – Existing

NATURAL HARMONY

The natural harmony of the view is low. The view lacks memorability and is dominated by the gravel parking pad of the shelter in the foreground. Although the trees contribute some diversity to the view, they lack density and fail to screen the park from adjacent land uses. These land uses are visually incompatible with the natural landscape unit.

CULTURAL ORDER

The cultural order of the view is very low. The minor presence of the trees between the park and adjacent land uses does little to improve the encroachment by residential and commercial structures. These elements disrupt the integrity of the natural setting and generate visual confusion.

PROJECT COHERENCE

The project coherence of the view is very low. The transition between the natural, recreational, and urban landscape units is abrupt. Furthermore, the natural and man-made elements are not integrated in this view.

SUMMARY OF VISUAL QUALITY

Table 4.3-11 summarizes the existing visual quality rating for Elm Street/Atkinson Park Road . As shown in the table, the overall visual quality rating for this view is 2 (Low).

Table 4.3-11. Existing Visual Quality – View 6: Elm Street/Atkinson Park Road (Shelter)

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 8: Elm Street/Atkinson Park Road (Shelter)	2	1	1	2

VIEW 9: JOHN JAMES AUDUBON STATE PARK

This view can be seen by recreational and civic neighbors of John James Audubon State Park from the fork between the park entrance road and the campground entrance road looking west toward US 41 and the urban landscape unit (**Plate 4.3-9**). The park entrance road and adjacent lawn and landscaping are in the foreground of the view; the edge of the campground, a dense mass of trees, and the campground entrance road are in the middle ground. The park entrance, US 41, a car dealership, and a thick line of trees are in the background.

John James Audubon State Park opened in 1934 and preserves the legacy of John James Audubon, a Henderson artist and naturalist. Park amenities include a large lake, hiking trails, cabins, a campground, picnic areas and shelters, and a museum with a nature center, gift shop, and golf course.

The view is dominated by the entrance road to the park. The park entrance sign fades into the background of the view and is not easily visible from this key view.

NATURAL HARMONY

The natural harmony of the view is moderate/average. The view lacks memorability. Other than the trees, nothing distinguishes the park entrance from the adjacent areas. The park sign lacks visual prominence and is dominated by the car dealership in the background.

CULTURAL ORDER

The cultural order of the view is very low. Although the park roads, signage, and vegetation are typical of the natural setting, US 41 and the urban landscape unit in the background are not. These elements encroach upon the landscape and disrupt the natural setting of the park.

PROJECT COHERENCE

The project coherence of the view is low. The lack of vegetation screening between the park entrance and the urban landscape unit creates a harsh transition zone, which contributes to the limited visual integration between natural and man-made elements.



Plate 4.3-9. View 9: John James Audubon State Park – Existing

SUMMARY OF VISUAL QUALITY

Table 4.3-12 summarizes the existing visual quality rating for John James Audubon State Park. As shown in the table, the overall visual quality rating for this view is 2.33 (Low).

Table 4.3-12. Existing Visual Quality – View 9: John James Audubon State Park

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 9: John James Audubon State Park	4	1	2	2.33

VIEW 10: US 41/JOHN JAMES AUDUBON STATE PARK

Commuting, touring, and shipping travelers of US 41 have this view of John James Audubon State Park when looking east from US 41 (**Plate 4.3-10**). In this view, the four travel lanes and two left-/right-turn lanes of US 41 are in the foreground of the view. The entrance to John James Audubon State Park is in the middle ground. A thick line of trees is in the background.

The view is strongly horizontal and is dominated by the trees in the background. The lawns at the entrance of the park draw the eye with their curvilinear forms, which are distinctly different from the grid-like forms exhibited by surrounding areas. The lawns lead to the entrance of the park, which is occupied by ornamental trees and the park entrance sign. The mature vegetation

in the background of the view obstructs extended views into the park and protects the interests of recreational neighbors.

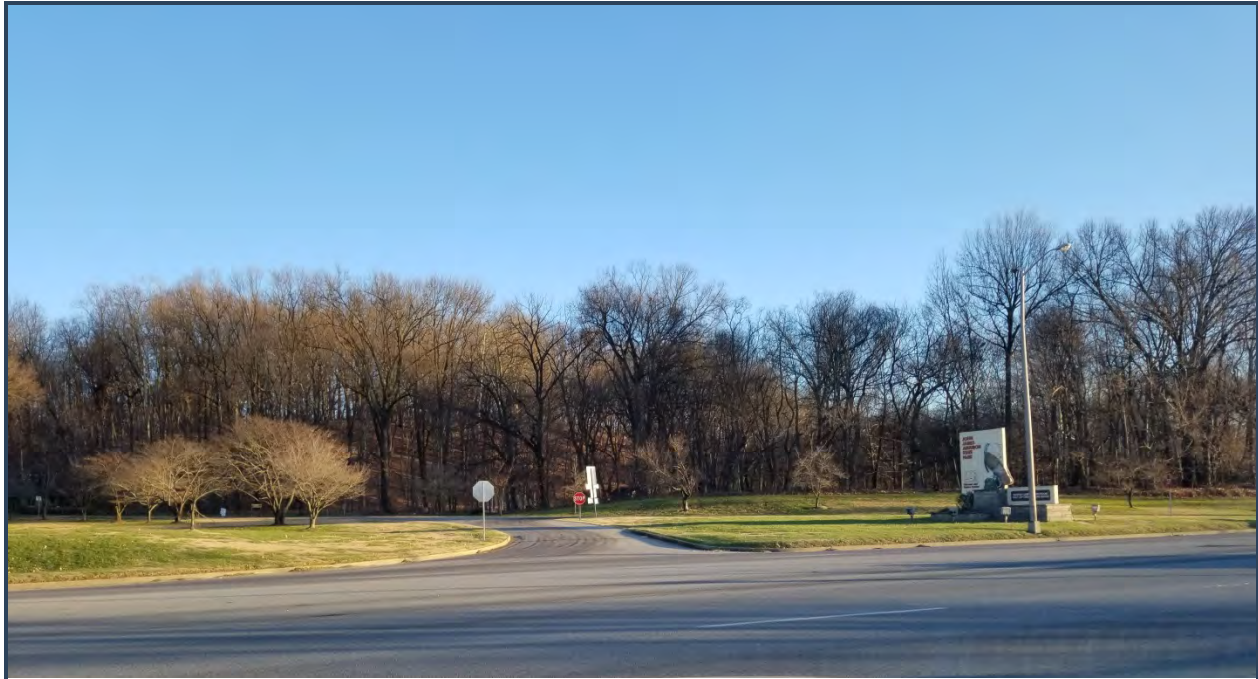


Plate 4.3-10. View 10: US 41/John James Audubon State Park – Existing

NATURAL HARMONY

The natural harmony of the view is moderately high. The view is highly diverse and contains a variety of seasonal colors, textures, and patterns. The soft textures of the vegetation contrast with the coarse textures of the roadway elements, creating visual interest. The sign is the focal point of the view, but it lacks the visual prominence necessary to draw visitors into the park.

CULTURAL ORDER

The cultural order of the view is moderate/average. The park roads, signage, and vegetation are typical of the natural setting and contribute to the orderliness of the view. Although US 41 encroaches on the view, it does not dominate it.

PROJECT COHERENCE

The project coherence of the view is moderately high. Although the dense vegetation surrounding the park separates it from adjacent land uses, the lack of screening at the entrance to the park contributes to the harsh edge between the natural and urban landscape units. However, the natural and man-made elements show some integration.

SUMMARY OF VISUAL QUALITY

Table 4.3-13 summarizes the existing visual quality rating for US 41/John James Audubon State Park. As shown in the table, the overall visual quality rating for this view is 4.67 (Moderately High).

Table 4.3-13. Existing Visual Quality – View 10: US 41/John James Audubon State Park

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 10: US 41/John James Audubon State Park	5	4	5	4.67

VIEW 11: GREEN RIVER ROAD 2/GREEN RIVER STATE FOREST

Recreational and agricultural neighbors of Green River Road 2 have this view when looking south from Green River Road 2 toward the Green River State Forest (**Plate 4.3-11**). Cropland is in the foreground of the view; Green River State Forest is in the middle ground. Additional trees are in the background.

The 1,106-acre Green River State Forest serves as important habitat for wildlife, including summer habitat for forest-dwelling bat colonies, migratory birds, and the rare copperbelly water snake. It is rarely used by the public for recreation.

The view is unobstructed by man-made development and embodies the visual characteristics of both rural and natural areas. The trees visually frame and enclose the view. The view has strong horizontal lines that are created by the cropland and the trees.

NATURAL HARMONY

The natural harmony of the view is high. The bright colors and soft textures of the background vegetation experience seasonal variation that contrasts with the cropland's coarse textures and monochromatic shades of green and tan. The diverse vegetation and lack of man-made development leaves a memorable impression on the viewer. The strong contrast between forest and cropland creates a hard edge and stimulates visual interest. During the growing season, views are more diverse and enclosed. During winter, views are less diverse and more open due to the lack of vegetation on the cropland.

CULTURAL ORDER

The cultural order of the view is very high. The view is largely typical of views anticipated in rural or natural areas. Short views are open due to the cropland; extended views are blocked by Green River State Forest.



Plate 4.3-11. View 11: Green River Road 2/Green River State Forest – Existing

PROJECT COHERENCE

The project coherence of the view is very high. Green River Road 2 is visually integrated with its setting.

SUMMARY OF VISUAL QUALITY

Table 4.3-14 summarizes the existing visual quality rating for Green River Road 2/Green River State Forest. As shown in the table, the overall visual quality rating for this view is 6.67 (Very High).

Table 4.3-14. Existing Visual Quality – View 11: Green River Road 2/Green River State Forest

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 11: Green River Road 2/ Green River State Forest	6	7	7	6.67

4.3.3 RURAL VIEWSHEDS

Rural viewsheds embody the visual characteristics of the rural landscape unit (**Section 3.3.2**). **Table 4.3-15** summarizes the viewsheds organized by alternative.

Table 4.3-15. Rural Viewsheds

WEST ALTERNATIVES 1 AND 2	
Key View	Viewer Group
View 12: US 41/Waterworks Road	Commuting Travelers Touring Travelers Shipping Travelers
CENTRAL ALTERNATIVE 1	
Key View	Viewer Group
View 13: Weinbach Avenue	Commuting Travelers Touring Travelers Shipping Travelers
View 14: US 60/CSX Railroad	Agricultural Neighbors

VIEW 12: US 41/WATERWORKS ROAD

This view can be seen by commuting, touring, and shipping travelers of US 41 looking west toward cropland (**Plate 4.3-12**). US 41 has four travel lanes and is located in the rural landscape unit in this view. Its steel guard rail and roadside vegetation are in the foreground of the view. Cropland and two dense lines of trees are in the middle ground. Additional cropland and a thick line of trees are in the background.

The cell tower behind the thick line of trees in the middle ground is the focal point of the viewshed. The cropland, trees, and roadside vegetation dominate the view. The cropland is subject to flooding and allows for extended views to the west. However, the vegetation along the south side of the view is dense and screens Waterworks Road and additional development. Power lines are visible in the immediate foreground, but they are transparent and fade into the background. Some farming infrastructure is visible in the far background. However, the form and scale of these elements are not discernable from this key view.

NATURAL HARMONY

The natural harmony of the view is low. This viewshed contains many vegetation elements (such as the cropland, trees, and roadside vegetation) that are similar in pattern and texture. Although the cell tower is the prime focus, it does not lend memorability to the view. The visual elements in this viewshed are strongly horizontal and are similar in color in varying shades of green and gray.



Plate 4.3-12. View 12: US 41/Waterworks Road – Existing

CULTURAL ORDER

The cultural order of the view is high. The majority of the view consists of vegetation elements including cropland, trees, and roadside vegetation, which are visually harmonious with one another. Although the cell tower is the prime focus of the view, it does not disrupt its orderliness. Additional elements, including the steel guard rail, power lines, and the farming infrastructure visible in the far background, do not disrupt its visual integrity.

PROJECT COHERENCE

The project coherence of the view is high. Visual intrusion from US 41 is minimal on the rural landscape unit, which brings the natural and man-made elements within this view together to form a coherent and balanced visual pattern.

SUMMARY OF VISUAL QUALITY

Table 4.3-16 summarizes the existing visual quality rating for US 41/Waterworks Road. As shown in the table, the overall visual quality rating for this view is 4.67 (Moderately High).

Table 4.3-16. Existing Visual Quality – View 12: US 41/Waterworks Road

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 12: US 41/Waterworks Road	2	6	6	4.67

VIEW 13: WEINBACH AVENUE

Commuting, touring, and shipping travelers of Weinbach Avenue have this view when looking west toward US 41 and Ellis Park (**Plate 4.3-13**). Weinbach Avenue and cropland are in the foreground and middle ground of the view. A dense line of trees and cell towers are in the background.

The view is dominated by Weinbach Avenue and adjacent cropland. The cropland is subject to flooding and permits extended views to the west. The cell towers dot the landscape, fading into the background.



Plate 4.3-13. View 13: Weinbach Avenue – Existing

NATURAL HARMONY

The natural harmony of the view is low. The road pavement with the cropland to the west is not unusual, making the view unmemorable. The scale and materials of Weinbach Avenue make it visually harmonious with the natural setting. The monoculture plantings of crops lack diversity and provide few colors, textures, and patterns. The verticality of the cell towers contrasts the horizontality of the landscape.

CULTURAL ORDER

The cultural order of the view is high. The lack of man-made development in the view does not disrupt the natural setting. The thick line of trees in the background screens the views of US 41 and additional development.

PROJECT COHERENCE

The project coherence of the view is high. The paved road blends with the natural setting of the cropland, providing an integrated design with its setting.

SUMMARY OF VISUAL QUALITY

Table 4.3-17 summarizes the existing visual quality rating for Weinbach Avenue. As shown in the table, the overall visual quality rating for this view is 4.67 (Moderately High).

Table 4.3-17. Existing Visual Quality – View 11: Weinbach Avenue

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 13: Weinbach Avenue	2	6	6	4.67

VIEW 14: US 60/CSX RAILROAD

This view can be seen by agricultural neighbors of US 60 looking southwest down the CSX Railroad (**Plate 4.3-14**). US 60 is a two-lane highway in the rural landscape unit in this view. Cropland and the CSX Railroad are in the foreground and middle ground of the view. Additional cropland and a dense line of trees are in the background.

The focal point of the view is the CSX Railroad, which travels southwest under the existing US 41 to the CSX Henderson Yard. Cropland dominates this view. It is subject to flooding and permits extended views to the southwest. Power lines and spotty vegetation dot the landscape, starting in the foreground and fading into the background. The power lines cross the railroad in the middle ground. Some man-made structures are visible in the far background. However, the form and scale of these structures are not discernable from this key view.

NATURAL HARMONY

The natural harmony of the view is low. The memorability of this view increases slightly with the depth of the view of the CSX Railroad southwest toward existing US 41. However, the railroad itself is not very vivid. Because they lack a distinct color, the tracks blend in with the surrounding area. The visual elements in this viewshed display strong horizontality and have similar shades of brown and green. Furthermore, although this view displays field conditions post-harvest, it has a slightly “fuller,” but relatively unobstructed, long-range view.

CULTURAL ORDER

The cultural order of the view is high. The majority of the view consists of vegetation including cropland and the thick line of trees in the background. These elements tie the view together and give it a cohesive feel. The railroad is the prime focus of the view, but does not disrupt its orderliness. Additional elements, including the power lines and the man-made structures visible in the far background, do not disrupt its visual integrity.



Plate 4.3-14. View 14: US 60/CSX Railroad – Existing

PROJECT COHERENCE

The project coherence of the view is high. The natural and man-made elements within this view form a coherent and balanced visual pattern. The aesthetics of the railroad provide an integrated design with its setting.

SUMMARY OF VISUAL QUALITY

Table 4.3-18 summarizes the existing visual quality rating for US 60/CSX Railroad. As shown in the table, the overall visual quality rating for this view is 4.67 (Moderately High).

Table 4.3-18. Existing Visual Quality – View 14: US 60/CSX Railroad

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 14: US 60/CSX Railroad	2	6	6	4.67

4.3.4 FLOODPLAIN VIEWSHEDS

Floodplain viewsheds embody the visual characteristics of the floodplain landscape unit (**Section 3.3.4**). **Table 4.3-19** summarizes the viewsheds organized by alternative.

Table 4.3-19. Floodplain Viewsheds

WEST ALTERNATIVES 1 AND 2	
Key View	Viewer Group
View 15: US 41/Borrow Pit Wetlands	Commuting Travelers Touring Travelers Shipping Travelers
View 16: US 41/Ellis Park	Commuting Travelers Touring Travelers Shipping Travelers
View 17: Shawnee Drive	Agricultural Neighbors

VIEW 15: US 41/BORROW PIT WETLANDS

Commuting, touring, and shipping travelers of US 41 have this view when looking east from the US 41 ramp toward the borrow pit wetlands (**Plate 4.3-15**). The two lanes of the US 41 ramp and the jersey barrier are in the foreground of the view. The water body and adjacent vegetation are in the middle ground. A dense line of trees is in the background.

A borrow pit wetland is an area in which soil has been removed for use in nearby construction. These areas fill with water and form ponds and wetlands that serve as habitat for aquatic species. The edges of the water form distinct lines that are softened by the adjacent vegetation. The vegetation frames and encloses the view, but it also serves as a backdrop. The colors and texture of the vegetation experience seasonal variation and are enhanced by the reflective surface of the water.

NATURAL HARMONY

The natural harmony of this view is very high. The borrow pit wetlands are the focal point of this view, which is highly diverse and contains a vast variety of forms, lines, colors, and textures created by water and vegetation components. The US 41 ramp runs perpendicular to the water feature, which dominates adjacent landscape elements. Its reflective nature enhances the rich colors and textures of the adjacent vegetation. These distinctive elements make the view highly memorable.

CULTURAL ORDER

The cultural order of the view is very high. The view is dominated by natural elements. The presence of these elements reduces the impact of the US 41 ramp, which is narrow and does not encroach upon the natural vista.

PROJECT COHERENCE

The project coherence of the view is very high. The layout the ramp perpendicular to the borrow pit wetlands provides a scenic vantage point from which to view the borrow pit wetlands and

provides an integrated design with its setting. The landscape elements are in compositional harmony with one another; they integrate to form a landscape representative of a wetland habitat.



Plate 4.3-15. View 15: US 41/Borrow Pit Wetlands - Existing

SUMMARY OF VISUAL QUALITY

Table 4.3-20 summarizes the existing visual quality rating for US 41/Borrow Pit Wetlands. As shown in the table, the overall visual quality rating for this view is 7 (Very High).

Table 4.3-20. Existing Visual Quality – View 15: US 41/Borrow Pit Wetlands

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 15: US 41/Borrow Pit Wetlands	7	7	7	7

VIEW 16: US 41/ELLIS PARK

Commuting, touring, and shipping travelers of US 41 have this view when looking east toward Ellis Park (**Plate 4.3-16**). In this view, US 41, a grass buffer, an access road, and a parking lot are in the foreground of the view. The main structure of Ellis Park is in the middle ground. The racetrack and accessory structures, including horse barns, are in the background. A thick line of trees is visible in the far background.

Ellis Park, home to live thoroughbred racing, is just north of the existing US 41 twin bridges. The park has year-round wagering and racing, dining, and gaming. The park was constructed in 1922 and is a regional destination.

Ellis Park is highly visible from US 41; aside from the south end of the park, no vegetation buffer exists between the park and the highway. An abrupt change in elevation separates the highway from the park. The view has strong horizontal lines created by the parking lot, racetrack, horse barns, and the thick line of trees. These lines are contrasted by the verticality of the main structure, park signage, and lighting elements.

NATURAL HARMONY

The natural harmony of the view is high. Park elements are visually distinct and leave a long-lasting impression on the viewer. The dominating presence of the main structure of Ellis Park is very memorable. However, the lack of a gateway feature makes the entrance to the park difficult to locate. In addition, the parking lot detracts from the memorability of the view. The views lack diversity. Colors are monochromatic and consist of various shades of grey, brown, green, and burgundy.



Plate 4.3-16. View 16: US 41/Ellis Park – Existing

CULTURAL ORDER

The cultural order of the view is moderate/average. The view has a balance of structure, paving, and vegetation. Although the parking lot is an eyesore, the presence of trees and additional

vegetation in the view improves the visual encroachment of the parking areas and building structures.

PROJECT COHERENCE

The project coherence of this view is moderate/average. The parking lot and building structures of Ellis Park provide some project coherence between natural and man-made elements, providing an integrated design with its setting.

SUMMARY OF VISUAL QUALITY

Table 4.3-21 summarizes the existing visual quality rating for US 41/Ellis Park. As shown in the table, the overall visual quality rating for this view is 4.67 (Moderately High).

Table 4.3-21. Existing Visual Quality – View 16: US 41/Ellis Park

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 16: US 41/Ellis Park	6	4	4	4.67

VIEW 17: SHAWNEE DRIVE

Agricultural neighbors of Shawnee Drive have this view when looking west toward US 41 and Ellis Park (**Plate 4.3-17**). Shawnee Drive and cropland are in the foreground and middle ground of the view. A natural gas pipeline station and a thick line of trees are in the background.

The view is dominated by Shawnee Drive and adjacent cropland. The cropland is subject to flooding and permits extended views to the west. Power lines dot the landscape, starting in the foreground and fading into the background.

NATURAL HARMONY

The natural harmony of the view is low. The gravel road with cropland to the north and south is not unusual, making the view unmemorable. The scale and materials of Shawnee Drive make it visually harmonious with the natural setting. The monoculture plantings of crops lack diversity and provide few colors, textures, and patterns. The verticality of the power lines contrasts the horizontality of the landscape. The natural gas pipeline station in the view is a non-typical visual element, but it lacks vividness and does not encroach upon the visual character of the landscape.

CULTURAL ORDER

The cultural order of the view is high. The lack of man-made development in the view does not disrupt the natural setting. The thick line of trees in the background of the view screens views of US 41 and additional development.



Plate 4.3-17. View 17: Shawnee Drive – Existing

PROJECT COHERENCE

The project coherence of the view is high. The gravel road blends with the natural setting of the cropland, providing an integrated design with its setting.

SUMMARY OF VISUAL QUALITY

Table 4.3-22 summarizes the existing visual quality rating for Shawnee Drive. As shown in the table, the overall visual quality rating for this view is 4.67 (Moderately High).

Table 4.3-22. Existing Visual Quality – View 17: Shawnee Drive

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 17: Shawnee Drive	2	6	6	4.67

4.3.5 URBAN VIEWSHEDS

Urban viewsheds embody the visual characteristics of the urban landscape unit (**Section 3.3.2**). **Table 4.3-23** summarizes the viewsheds organized by alternative.

Table 4.3-23. Urban Viewsheds

WEST ALTERNATIVE 1	
Key View	Viewer Group
View 18: US 41/Watson Lane	Commuting Travelers Touring Travelers Shipping Travelers
View 19: US 41/Superior Auto	Civic Neighbors
WASHINGTON STREET/US 41	
Key View	Viewer Group
View 19: US 41/Superior Auto	Civic Neighbors
View 20: US 41/Wendy's	Commuting Travelers Touring Travelers Shipping Travelers
View 21: Washington Street/US 41	Residential Neighbors Civic Neighbors
CENTRAL ALTERNATIVE 1	
Key View	Viewer Group
View 21: Washington Street/US 41	Residential Neighbors Civic Neighbors

VIEW 18: US 41/WATSON LANE

Commuting, touring, and shipping travelers of Watson Lane have this view when looking east toward US 41 (**Plate 4.3-18**). Watson Lane, the edges of commercial buildings, and roadside vegetation are in the foreground of this view. US 41, additional commercial buildings, and their associated signage are in the middle ground. A thick line of trees is in the background.

Watson Lane is a 2-lane arterial street that connects residential areas to the east and west of the strip commercial development along US 41. The view is visually framed, but not enclosed by, the business on the north and south sides of the street. Limited vegetation is located on either side of the street, which has no pedestrian amenities. The views have strong horizontal lines created by US 41, the rooflines of the buildings, and the thick line of trees in the background. These horizontal lines are accented by the short, vertical lines created by the elevation of the buildings and the power lines along Watson Lane.

NATURAL HARMONY

The natural harmony of the view is moderate/average. The intersection of Watson Lane and US 41 is the focal point and dominates the view. The view contains some diversity of visual patterns such as form, line, color, and texture. The various colors and textures of the commercial businesses and their signage attract the eye and create some visual interest. However, the views lack the unique visual elements that generate memorability.

CULTURAL ORDER

The cultural order of the view is moderately low. The scale of US 41 is not visually appropriate for the view. It is much larger than that of adjacent architectural and landscape elements and contrasts strongly with Watson Lane.



Plate 4.3-18. View 18: US 41/Watson Lane – Existing

PROJECT COHERENCE

The project coherence of the view is moderate/average. The thick line of vegetation running parallel to US 41 and the strip commercial development provides a somewhat integrated design with its setting. However, the manmade and natural elements are not well integrated. In addition, little separation exists between the residential areas to the east and west of US 41 and the urban areas along the Henderson strip.

SUMMARY OF VISUAL QUALITY

Table 4.3-24 summarizes the existing visual quality rating for US 41/Watson Lane. As shown in the table, the overall visual quality rating for this view is 3.67 (Moderate/Average).

Table 4.3-24. Existing Visual Quality – View 18: US 41/Watson Lane

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 18: US 41/Watson Lane	4	3	4	3.67

VIEW 19: US 41/SUPERIOR AUTO

This view can be seen by civic neighbors of US 41 and Superior Auto looking west from US 41 (**Plate 4.3-19**). US 41 has four travel lanes and two left-/right-turn lanes and is in the foreground of the view. The Superior Auto parking lot and structure are in the middle ground. A thick line of trees and a billboard featuring Strong Business Solutions is in the background.

The focal point of this view is Superior Auto. Featured cars are prominent in this view. Superior Auto is accessed via US 41, which offers easy access to commercial businesses along the Henderson strip.

NATURAL HARMONY

The natural harmony of the view is moderately high. US 41 and the Superior Auto parking lot and structure dominate this view. US 41 does little to make this view memorable. However, the architectural character and vibrant colors of the commercial business and billboard draws the eye and creates visual interest. In addition, the thick line of trees in the background offers different patterns and textures, which improve the natural harmony of the view.

CULTURAL ORDER

The cultural order of the view is low. There is little balance between structure and paving and vegetation. However, the thick line of trees in the background of the view improves the visual encroachment by US 41 and the commercial businesses.

PROJECT COHERENCE

The project coherence of the view is moderately high. The thick line of vegetation running parallel to US 41 and the strip commercial development provides a somewhat integrated design with its setting. However, US 41 and the Superior Auto parking lot and structure provide little integration between man-made and natural elements.



Plate 4.3-19. View 19: US 41/Superior Auto – Existing

SUMMARY OF VISUAL QUALITY

Table 4.3-25 summarizes the existing visual quality rating for US 41/Superior Auto. As shown in the table, the overall visual quality rating for this view is 4 (Moderate/Average).

Table 4.3-25. Existing Visual Quality – View 19: US 41/Superior Auto

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 19: US 41/Superior Auto	5	2	5	4

VIEW 20: US 41/WENDY'S

This view can be seen by commuting, touring, and shipping travelers of US 41 looking east between Wendy's and Grandy's (**Plate 4.3-20**). The four travel lanes and two left-/right-turn lanes of US 41 are in the foreground of the view. Commercial businesses and their parking areas, including Thornton's Gas Station and Denny's, are in the middle ground. A thick line of trees is visible in the background.

US 41 dominates the view. It offers easy access to commercial businesses along the Henderson strip; however, it has no sidewalks for pedestrian access. Commercial business signage is prominent in this view.



Plate 4.3-20. View 20: US 41/Wendy's – Existing

NATURAL HARMONY

The natural harmony of the view is moderate/average. The dominating presence of US 41 and the parking areas do little to make this view memorable. However, the architectural character of the commercial businesses creates visual interest. In addition, the vibrant colors of the signage draw the eye and make the commercial businesses easy to locate from distances near and far.

CULTURAL ORDER

The cultural order of the view is low. The majority of this view is structure, signage, or paving. The minor presence of the thick line of trees in the background of the view does little to improve the visual encroachment caused by US 41 and the parking areas.

PROJECT COHERENCE

The project coherence of the view is moderately high. The layout of US 41 parallel to the strip commercial development provides an integrated design with its setting. However, the man-made elements are not integrated with the natural landscape.

SUMMARY OF VISUAL QUALITY

Table 4.3-26 summarizes the existing visual quality rating for US 41/Wendy's. As shown in the table, the overall visual quality rating for this view is 3.67 (Moderate/Average).

Table 4.3-26. Existing Visual Quality – View 20: US 41/Wendy's

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 20: US 41/Wendy's	4	2	5	3.67

VIEW 21: WASHINGTON STREET/US 41

This view can be seen by residential and civic neighbors of the Edward T. Breathitt Pennyryle Parkway from the Washington Street/US 41 intersection looking east (**Plate 4.3-21**). Washington Street, private residential lots with gravel parking, single-family homes and accessory elements, and ornamental landscaping are in the foreground of the view. Washington Street, commercial businesses and their parking lots, and US 41 are in the middle ground. The Edward T. Breathitt Pennyryle Parkway interchange is in the background. A thick line of trees is in the far background.

The view is dominated by single-family homes and commercial businesses. These elements are organized in a linear pattern along Washington Street. Utility poles are scattered throughout the landscape. These poles and the mature trees are the only vertical elements in the view. US 41 is hidden by the Pennyryle Parkway interchange.



Plate 4.3-21. View 21: Washington Street/US 41

NATURAL HARMONY

The natural harmony of this view is moderately low. The view lacks memorability. The architectural diversity between the residential and commercial structures is minimal. Although

the trees add some visual interest to the view, they do little to increase its overall harmony. The Pennyryle Parkway interchange provides some visual contrast with its surroundings, but it is not vivid enough to draw the eye.

CULTURAL ORDER

The cultural order of this view is very low. The urban landscape unit is incompatible with the residential landscape unit. These areas encroach on one another and create visual conflict. The scale of the Pennyryle Parkway interchange is incompatible with its surroundings. However, it obstructs views of US 41 and provides some separation from adjacent landscape units.

PROJECT COHERENCE

The project coherence of this view is very low. The transition between residential and urban landscape units is abrupt. In addition, the natural and man-made elements are not integrated in this view.

SUMMARY OF VISUAL QUALITY

Table 4.3-27 summarizes the existing visual quality rating for Washington Street/US 41. As shown in the table, the overall visual quality rating for this view is 1.67 (Low).

Table 4.3-27. Existing Visual Quality – View 21: Washington Street/US 41

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 21: Washington Street/US 41	3	1	1	1.67

CHAPTER 5 – ANALYSIS PHASE

The build alternatives' visual impacts on visual quality are assessed by evaluating how the visual character of the AVE is altered and how viewers' experiences change. These impacts to visual quality are discussed using the same terms used to define existing visual quality: natural harmony, cultural order, and project coherence. The anticipated viewer response to these changes for each landscape unit has also been provided.

Photo simulations were used to predict visual changes. These photo simulations give a clear before and after image of the location, scale, and visual appearances of the features affected by the proposed alternatives. Photos were taken during field visits by car or on foot in daylight during fall and winter 2017. The location and orientation of the photos was documented and then used to create 3D models of the proposed alternatives, which were then simulated with the existing photo. The simulations are intended to provide the relative location of the alternatives as they appear within the landscape.

The collective visual impacts of the proposed alternatives are summarized according to the overall compatibility of the proposed project with the existing visual character and the degree of the impacts, whether beneficial, adverse, or neutral. The residential, natural, rural, floodplain, and urban viewsheds are discussed in **Sections 5.1** through **5.5**, respectively. Visual impacts are summarized in **Section 5.6**. Highway traffic noise barriers are discussed in **Section 5.7**.

Table 5.0-1 summarizes the build alternatives' impacts on the selected key views within the residential, natural, rural, floodplain, and urban landscape units. The existing and proposed conditions, as well as the visual quality change, are provided for each viewshed.

Table 5.0-1. Visual Quality Rating Changes

VISUAL QUALITY RATING CHANGES				
Key View	Build Alternative	Existing Condition	Proposed Condition	Visual Quality Change
View 1: Springer Road/Springer Drive	West Alternative 1	Moderate/ Average	Low	Adverse
View 2: Donna Drive/Johnson Drive	West Alternative 1	Moderately High	Low	Adverse
View 3: Elm Street/Canary Lane	West Alternative 2	Moderately Low	Low	Adverse
View 4: US 41/Harmony Lane	West Alternative 2	High	Moderate/Average	Adverse
View 5: Culpepper Court	Central Alternative 1	Moderate/Average	Moderately Low	Adverse
View 6: US 60/Jackson McClain Property	Central Alternative 1	Very High	Very High	Neutral

VISUAL QUALITY RATING CHANGES				
Key View	Build Alternative	Existing Condition	Proposed Condition	Visual Quality Change
View 7: Elm Street/Atkinson Park Circle	West Alternative 1	Moderate/Average	Moderate/Average	Neutral
View 8: Elm Street/Atkinson Park Road (Shelter)	West Alternative 1	Low	Very Low	Adverse
View 9: John James Audubon State Park	West Alternative 2	Low	Low	Neutral
View 10: US 41/John James Audubon State Park	West Alternative 2	Moderately High	Moderate/Average	Adverse
View 11: Green River Road 2/Green River State Forest	Central Alternative 1	Very High	Moderate/Average	Adverse
View 12: US 41/Waterworks Road	West Alternative 1	Moderately High	Moderate/Average	Adverse
View 12: US 41/Waterworks Road	West Alternative 2	Moderately High	Moderately High	Neutral
View 13: Weinbach Avenue	Central Alternative 1	Moderately High	Moderate/Average	Adverse
View 14: US 60/CSX Railroad	Central Alternative 1	Moderately High	Moderate/Average	Adverse
View 15: US 41/Borrow Pit Wetlands	West Alternative 1	Very High	Moderate/Average	Adverse
View 15: US 41/Borrow Pit Wetlands	West Alternative 2	Very High	Very High	Neutral
View 16: US 41/Ellis Park	West Alternative 1	Moderately High	Moderately High	Neutral
View 16: US 41/Ellis Park	West Alternative 2	Moderately High	Moderate/Average	Adverse
View 17: Shawnee Drive	Central Alternative 1	Moderately High	Moderate/Average	Adverse
View 18: US 41/Watson Lane	West Alternative 1	Moderate/Average	High	Beneficial
View 18: US 41/Watson Lane	West Alternative 2	Moderate/Average	Moderately High	Beneficial
View 19: US 41/Superior Auto	West Alternative 1	Moderate/Average	Moderately Low	Adverse
View 19: US 41/Superior Auto	West Alternative 2	Moderate/Average	Moderately Low	Adverse
View 20: US 41/Wendy's	West Alternative 2	Moderate/Average	Moderate/Average	Neutral

VISUAL QUALITY RATING CHANGES				
Key View	Build Alternative	Existing Condition	Proposed Condition	Visual Quality Change
View 21: Washington Street/US 41	West Alternative 1	Low	Low	Neutral
View 21: Washington Street/US 41	West Alternative 2	Low	Low	Neutral
View 21: Washington Street/US 41	Central Alternative 1	Low	Low	Neutral

5.1 RESIDENTIAL VIEWSHEDS

The impacts of the proposed build alternatives on the visual quality of the residential landscape unit, and the selected views within this unit, are described herein. **Table 5.1-1** summarizes the visual quality change of each viewshed organized by alternative.

Table 5.1-1. Residential Viewsheds

WEST ALTERNATIVE 1			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 1: Springer Road/ Springer Drive	Moderate/Average	Low	Adverse
View 2: Donna Drive/Johnson Drive	Moderately High	Low	Adverse
WEST ALTERNATIVE 2			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 3: Elm Street/Canary Lane	Moderately Low	Low	Adverse
View 4: US 41/Harmony Lane	High	Moderate/Average	Adverse
KEY VIEW			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 5: Culpepper Court	Moderate/Average	Moderately Low	Adverse
View 6: US 60/Jackson McClain Property	Very High	Very High	Neutral

5.1.1 VIEWER RESPONSE

The predicted viewer responses to the proposed alternatives in the residential landscape unit based on the physical factors of the project area were studied with consideration given to existing and proposed visual quality conditions.

Based on the community goals and objectives for visual quality outlined in **Section 3.2**, as well as an understanding of existing and proposed conditions of visual character, the residential neighbors of the proposed project are expected to respond negatively to the changes brought on by the proposed alternatives. This viewer group has prolonged exposure to the proposed alternatives. In many cases, they are near, and have unobstructed views of, the proposed alternatives. Although they may become desensitized to views over time, residential neighbors have high sensitivity to the visual effects of the proposed alternatives.

VIEW 1: SPRINGER ROAD/SPRINGER DRIVE

In this proposed view, the four travel lanes of West Alternative 1 will be located west of US 41 (**Figure 5.1-1**). Springer Drive and private residential lots with driveways, single-family homes and accessory elements, and ornamental landscaping are in the foreground and middle ground of the view. West Alternative 1 is also in the middle ground. A dense line of trees is in the far background. The existing view is included for reference (**Plate 5.1-1**).

West Alternative 1 is the focal point of the view and is visually connected with its surroundings. In this view, the ornamental landscaping buffer at the east terminus of Springer Drive has been removed, opening views to West Alternative 1. This creates a harsh vertical transition zone between the residential area and adjacent land uses and decreases privacy for residents.

NATURAL HARMONY

The natural harmony of the proposed view is moderately low. The memorability of the view increases slightly with the addition of West Alternative 1. Although the interstate itself is not a memorable feature, it introduces contrasting colors, forms, and textures that, while repetitive, generate visual interest. However, the elimination of the ornamental landscaping buffer at the east terminus of Springer Drive reduces the diversity of vegetation in the view, which decreases the vividness of the view and voids the contrast created by the interstate.



Figure 5.1-1. View 1: Springer Road/Spider Drive – Proposed



Plate 5.1-1. View 1: Springer Road/Spider Drive - Existing

CULTURAL ORDER

The cultural order of the proposed view is very low. West Alternative 1 is a non-typical visual intrusion on the residential landscape unit. Although it is not the dominant element in the view, it acts on an encroaching element and draws attention away from the residential area. In addition, the removal of the ornamental landscaping buffer at the east terminus of Springer Drive further disrupts the view by decreasing its level of orderliness.

PROJECT COHERENCE

The project coherence of the proposed view is very low. West Alternative 1 lacks sensitivity to its surroundings. Like the homes, the interstate appears “placed” in the landscape. In addition, the man-made elements are not balanced with the natural landscape, thus decreasing its overall visual harmony.

SUMMARY OF VISUAL QUALITY

Table 5.1-2 summarizes the proposed visual quality rating for Springer Road/Springer Drive. As shown in the table, the overall proposed visual quality rating for this view is 1.67 (Low); the overall existing visual quality rating is 4.33 (Moderate/Average). Therefore, the visual impact of West Alternative 1 for this view is adverse.

Table 5.1-2. Proposed Visual Quality – View 1: Springer Road/Springer Drive

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 1: Springer Road/ Springer Drive	3	1	1	4.33	1.67

VIEW 2: DONNA DRIVE/JOHNSON DRIVE

In this proposed view, the four travel lanes of West Alternative 1 will be located in the foreground of the view (**Figure 5.1-2**). Donna Drive and private residential lots with driveways, single-family homes and accessory elements, and ornamental landscaping are in the middle ground. A dense line of trees is in the background. The existing view is included for reference (**Plate 5.1-2**).

The most visible change to this view is the addition of the West Alternative 1, which dominates the view. The vertical transition zone between the interstate and the residential area is harsh and decreases privacy for residents. The interstate substantially increases the amount of pavement in the view, decreasing the balance with adjacent materials.



Figure 5.1-2. View 2: Donna Drive/Johnson Drive – Proposed



Plate 5.1-2. View 2: Donna Drive/Johnson Drive – Existing

NATURAL HARMONY

The natural harmony of the proposed view is moderate/average. The contrasting colors, patterns, and textures of the interstate in the foreground of the view contrast with those of the residential landscape and create visual interest. Although the view has greater depth toward the residential area, the memorability of the view does not change because the structures are largely homogenous.

CULTURAL ORDER

The cultural order of the proposed view is very low. West Alternative 1 dominates and encroaches upon the residential landscape. Its scale is inappropriate for its surroundings and decreases the level of orderliness in the view. However, the other elements in the view remain unchanged.

PROJECT COHERENCE

The project coherence of the proposed view is very low. West Alternative 1 does not blend with its surroundings, and lacks an integrated design with its setting.

SUMMARY OF VISUAL QUALITY

Table 5.1-3 summarizes the proposed visual quality rating for Donna Drive/Johnson Drive. As shown in the table, the overall proposed visual quality rating for this view is 2 (Low); the overall existing visual quality rating is 5.33 (Moderately High). Therefore, the visual impact of West Alternative 1 for this view is adverse.

Table 5.1-3. Proposed Visual Quality – View 2: Donna Drive/Johnson Drive

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 2: Donna Drive/ Johnson Drive	4	1	1	5.33	2

VIEW 3: ELM STREET/CANARY LANE

In this proposed view, the six travel lanes of West Alternative 2 will be located just west of US 41 (**Figure 5.1-3**). Canary Lane and private residential lots with driveways, single-family homes and accessory elements, and ornamental landscaping are in the foreground of the view. West Alternative 2 is in the middle ground. A dense line of trees is in the background. The existing view is included for reference (**Plate 5.1-3**).

West Alternative 2 is the focal point of the view and is visually connected with its surroundings. Residential lots in the middle ground have been displaced by the proposed interstate. This creates a harsh vertical transition zone between the residential area and adjacent land uses and decreases privacy for residents. West Alternative 2 screens the urban landscape unit to the west.



Figure 5.1-3. View 3: Elm Street/Canary Lane – Proposed



Plate 5.1-3. View 3: Elm Street/Canary Lane – Existing

NATURAL HARMONY

The natural harmony of the proposed view is moderately low. The proposed interstate reinforces the strong horizontal nature of the view. The memorability of the view increases slightly with the addition of West Alternative 2. Although the interstate itself is not a memorable feature, it introduces contrasting colors, forms, and textures that, while repetitive, generate visual interest. The elimination of the residential lots in the middle ground detracts from the harmony of the residential landscape. The removal of the mature trees reduces the diversity of the view; the screening of the urban landscape unit to the west decreases the vividness of the view.

CULTURAL ORDER

The cultural order of the proposed view is moderately low. West Alternative 2 is a non-typical visual intrusion on the residential landscape unit. Although it is not the dominant element in the view, it acts on an encroaching element and draws attention away from the residential area. However, the screening of the urban landscape unit to the west in the background decreases the disruption of the residential setting. In a way, the interstate acts as a buffer between the residential and urban landscape units, helping to create visual harmony. In addition, the removal of the ornamental landscaping buffer at the east terminus of Springer Drive further disrupts the view by decreasing its level of orderliness.

PROJECT COHERENCE

The project coherence of the view is very low. West Alternative 2 lacks sensitivity to its surroundings. Like the homes, the interstate appears “placed” in the landscape. In addition, the man-made elements are not balanced with the natural landscape thus decreasing its overall visual harmony.

SUMMARY OF VISUAL QUALITY

Table 5.1-4 summarizes the proposed visual quality rating for Elm Street/Canary Lane. As shown in the table, the overall proposed visual quality rating for this view is 2.33 (Low); the overall existing visual quality rating is 3.33 (Moderately Low). Therefore, the visual impact of West Alternative 2 for this view is adverse.

Table 5.1-4. Proposed Visual Quality – View 3: Elm Street/Canary Lane

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 3: Elm Street/ Canary Lane	3	3	1	3.33	2.33

VIEW 4: US 41/HARMONY LANE

In this proposed view, the six travel lanes of West Alternative 2 will be in the foreground of the view (**Figure 5.1-4**). Harmony Lane and private residential lots with driveways, single-family homes and accessory elements, and ornamental landscaping are in the foreground and middle ground. Additional single-family homes and a dense line of trees are in the background. The existing view is included for reference (**Plate 5.1-4**).

The most visible change in this view is the addition of West Alternative 2, which dominates the view. Harmony Lane has become a cul-de-sac at the interstate. Not visible in this view is the new bike/pedestrian trail, which will run parallel on the west side of the proposed interstate and offer recreational opportunities to residents. The vertical transition zone between the interstate and the residential area harsh and decreases privacy for residents. US 41 becomes a frontage road for West Alternative 2 and is just east of the interstate. The interstate substantially increases the amount of pavement in the view, thus decreasing the balance with adjacent materials.

NATURAL HARMONY

The natural harmony of the proposed view is moderate/average. West Alternative 2 dominates the view and reinforces its strong horizontality. Its colors, patterns, and textures contrast with those of the residential landscape and create visual interest. Although the view toward the residential area has greater depth, the memorability of the view does not change because the structures are largely homogenous.

CULTURAL ORDER

The cultural order of the proposed view is moderate/average. West Alternative 2 dominates the view and encroaches upon the residential landscape. Although its scale is inappropriate for its surroundings, it is visually similar to that of the existing US 41, which not visible in the view but is just east of the image. The proposed interstate decreases the orderliness of the view, but it does not affect the visual state of surrounding elements.

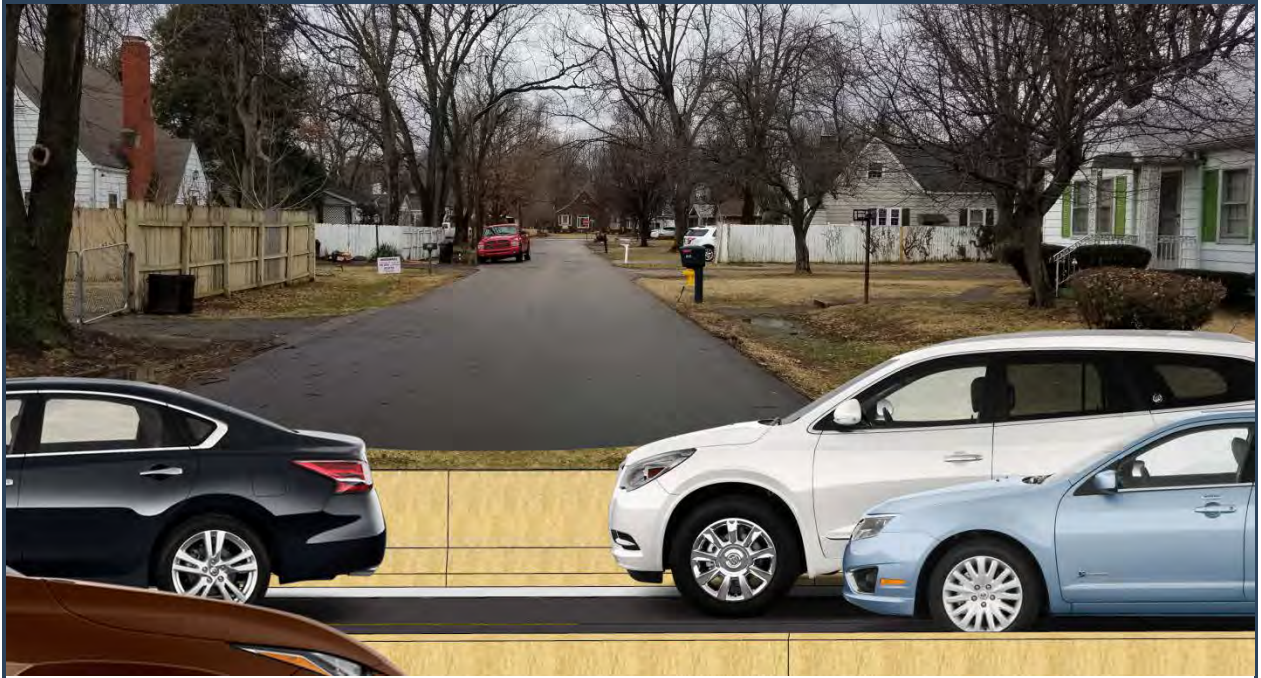


Figure 5.1-4. View 4: US 41/Harmony Lane – Proposed



Plate 5.1-4. View 4: US 41/Harmony Lane – Existing

PROJECT COHERENCE

The project coherence of the proposed view is moderately low. West Alternative 2 does not blend with its surroundings, and it lacks an integrated design with its setting. However, its visual similarities to the existing US 41 reduces its overall effect on project coherence.

SUMMARY OF VISUAL QUALITY

Table 5.1-5 summarizes the proposed visual quality rating for US 41/Harmony Lane. As shown in the table, the overall proposed visual quality rating for this view is 3.67 (Moderate/Average); the overall existing visual quality rating is 5.67 (High). Therefore, the visual impact of West Alternative 2 for this view is adverse.

Table 5.1-5. Proposed Visual Quality – View 4: US 41/Harmony Lane

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 4: US 41/Harmony Lane	4	4	3	5.67	3.67

VIEW 5: CULPEPPER COURT

In this proposed view, the four travel lanes of Central Alternative 1 are south of Culpepper Court in the meadow adjacent to the buffer of mature trees (**Figure 5.1-5**). Culpepper Court is in the foreground of the view; private residential lots with driveways and single-family homes and accessory elements are in the middle ground. A retention pond, meadow, and Central Alternative 1 are in the background. A dense line of trees is in the far background. The existing view is included for reference (**Plate 5.1-5**).

Central Alternative 1 is the focal point of the view, but it does not dominate it. Residents of the Pleasant View Neighborhood will be visually connected with, but will have no access to, the interstate. In addition to the thick line of trees in the far background, the interstate will obstruct extended views to the east. It will also displace the power lines in the background.



Figure 5.1-5. View 5: Culpepper Court – Proposed



Plate 5.1-5. View 5: Culpepper Court – Existing

NATURAL HARMONY

The natural harmony of the proposed view is moderate/average. The colors, patterns, and textures introduced by Central Alternative 1 will contrast with those of the residential landscape unit. They will increase the diversity of the view and create visual interest.

CULTURAL ORDER

The cultural order of the proposed view is moderately low. The view will be encroached upon by Central Alternative 1, which is not typical within the residential landscape unit. In comparison to the narrow streets typically found within a residential setting, the scale of the interstate is much larger. However, in addition to the thick line of trees in the far background, the interstate helps screen additional development to the west, adding some order to the view.

PROJECT COHERENCE

The project coherence of the view is low. Although Central Alternative 1 is not directly adjacent to the residential structures, it is not sensitive to its surroundings and does not integrate the man-made and natural elements in the view.

SUMMARY OF VISUAL QUALITY

Table 5.1-6 summarizes the proposed visual quality rating for Culpepper Court. As shown in the table, the overall proposed visual quality rating for this view is 3 (Moderately Low); the overall existing visual quality rating is 4.33 (Moderate/Average). Therefore, the visual impact of Central Alternative 1 for this view is adverse.

Table 5.1-6. Proposed Visual Quality – View 5: Culpepper Court

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 5: Culpepper Court	4	3	2	4.33	3

VIEW 6: US 60/JACKSON MCCLAIN PROPERTY

Central Alternative 1 is south of this proposed view (**Figure 5.1-6**). US 60 has been revised and moved south of its existing alignment, allowing the private driveway of the Jackson McClain property to extend forward and provide a greater buffer zone between the house and the highway. The private driveway of the property and lawn are in the foreground of the view. The driveway, fence, and a line of mature trees are in the middle ground. The lawn, the main house, and additional vegetation are in the background, with a narrow strip of cropland visible to the west of the thick line of vegetation to the east of the property. The existing view is included for reference (**Plate 5.1-6**).

The most visible change in the view is the shift of US 60, which reduces the visual connectivity between the property and US 60.



Figure 5.1-6. View 6: Springer Road/Driver – Proposed



Plate 5.1-6. View 6: US 60/Jackson McClain Property – Existing

NATURAL HARMONY

This natural harmony of the proposed view is very high. The memorability of the view slightly increases with the shift of US 60 south of its existing alignment. Because US 60 will be farther from the property, more of the grounds will be visible from this vantage point, lending a greater sense of vividness to the view. In addition, the property is an isolated portion of the residential landscape unit and is surrounded by the rural landscape unit. The change in elevation from short cropland to tall, mature trees will create visual interest.

CULTURAL ORDER

The cultural order of the proposed view is very high. The shift of US 60 south of its existing alignment will increase the orderliness of the view by removing non-typical intrusions from the front of the property. In addition to the surrounding dense vegetation, which limits encroachment from adjacent land uses, this will help protect residential interests.

PROJECT COHERENCE

The project coherence of the view is very high. The distance between US 60 and the property will increase the coherence of the view by providing a more balanced and harmonious visual relationship between the natural and man-made elements in the view.

SUMMARY OF VISUAL QUALITY

A summary of the proposed visual quality rating for US 60/Jackson McClain Property is provided in **Table 5.1-7**. As shown in the table, the overall proposed visual quality rating for this view is 7 (Very High); the overall existing visual quality rating is 6.67 (Very High). Therefore, the visual impact of Central Alternative 1 for this view is neutral.

Table 5.1-7. Proposed Visual Quality – View 6: US 60/Jackson McClain Property

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 6: US 60/Jackson McClain Property	7	7	7	6.67	7

5.2 NATURAL VIEWSHEDS

The impacts of the proposed build alternatives on the visual quality of the natural landscape unit, and the selected views within this unit, are described herein. **Table 5.2-1** summarizes the visual quality change of each viewshed organized by alternative.

Table 5.2-1. Natural Viewsheds

WEST ALTERNATIVE 1			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 7: Elm Street/Atkinson Park Circle	Moderate/Average	Moderate/Average	Neutral
View 8: Elm Street/Atkinson Park Road (Shelter)	Low	Very Low	Adverse
WEST ALTERNATIVE 2			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 9: John James Audubon State Park	Low	Low	Neutral
View 10: US 41/John James Audubon State Park	Moderately High	Moderate/Average	Adverse
CENTRAL ALTERNATIVE 1			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 11: Green River Road 2/ Green River State Forest	Very High	Moderate/Average	Adverse

5.2.1 VIEWER RESPONSE

The predicted viewer responses to the proposed alternatives in the natural landscape unit based on the physical factors of the project area were studied with consideration given to existing and proposed visual quality conditions.

Based on the community goals and objectives for visual quality outlined in [Section 3.2](#), as well as an understanding of existing and proposed conditions of visual character, the recreational neighbors of the proposed project are expected to have both neutral and adverse responses to the changes brought on by the proposed alternatives. This viewer group may have infrequent but long durations of exposure to these alternatives.

Levels of exposure depend largely on proximity to the proposed alternatives. In natural areas with dense vegetation, recreational neighbors exhibit little awareness of the proposed alternatives. However, in natural areas with minimal vegetation, recreational neighbors exhibit high awareness of the proposed alternatives. In these conditions, recreational neighbors are highly sensitive to the proposed alternatives, which disrupt their experiences of the natural environment.

VIEW 7: ELM STREET/ATKINSON PARK CIRCLE

In this proposed view, the four travel lanes of West Alternative 1 and the two travel lanes of Elm Street are in the foreground of the view (**Figure 5.2-1**). The entrance to Atkinson Park is in the middle ground. The baseball fields and a thin line of trees are in the background. The existing view is included for reference (**Plate 5.2-1**).

The view is dominated by West Alternative 1. There will be no visual separation between the park and the interstate. However, the interstate will be vertically separated from Elm Street. Motorists will be visually connected to the park, with little visual obstruction from the vegetation elements at the entrance of the park.

NATURAL HARMONY

The natural harmony of the proposed view is high. The modified at-grade interstate will look across Atkinson Park, drawing views into the park and creating visual interest. Motorists will be able to see over and through the thin masses of trees and have views of park amenities. However, the limited visibility of the sign decreases the overall memorability of the view.

CULTURAL ORDER

The cultural order of the proposed view is moderately low. The introduction of West Alternative 1 substantially increases the amount of pavement visible in the view, creating imbalance between natural and man-made elements. In addition, the scale of the interstate is inappropriate for the natural setting.

PROJECT COHERENCE

The project coherence of the proposed view is moderately low. Although Elm Street provides some separation between the interstate and the park, it fails to soften the transition between the natural park setting and West Alternative 1. However, there is still some integration between natural and man-made elements.



Figure 5.2-1. View 7: Elm Street/Atkinson Park Circle



Plate 5.2-1. View 7: Elm Street/Atkinson Park Circle – Existing

SUMMARY OF VISUAL QUALITY

Table 5.2-2 summarizes the proposed visual quality rating for Elm Street/Atkinson Park Circle. As shown in the table, the overall proposed visual quality rating for this view is 4 (Moderate/Average); the overall existing visual quality rating is 4.33 (Moderate/Average). Therefore, the visual impact of West Alternative 1 for this view is neutral.

Table 5.2-2. Proposed Visual Quality – View 7: Elm Street/Atkinson Park Circle

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 7: Elm Street/ Atkinson Park Circle	6	3	3	4.33	4

VIEW 8: ELM STREET/ATKINSON PARK ROAD (SHELTER)

In this proposed view, the four travel lanes of West Alternative 1 are just east of the existing Elm Street and Atkinson Park Road (**Figure 5.2-2**). The gravel parking pad of the shelter area and the two travel lanes of Atkinson Park Road are in the foreground of the view. A thin line of trees and a grassy berm are in the middle ground. West Alternative 1 is in the background. Commercial businesses are in the far background. The existing view is included for reference (**Plate 5.2-2**).

The view is dominated by West Alternative 1, which is the focal point. However, the most visible change is the removal of the residential structures east of the park. The commercial structures are somewhat screened by the interstate, but they are still visible from the park.

NATURAL HARMONY

The natural harmony of the view is very low. Although the interstate provides some contrasting colors, textures, and patterns, it lacks memorability. The displacement of the residential structures reduces the vividness of the view due to a decrease in the diversity of visual elements. However, because the urban area is more visible, this leads to a slight increase in the complexity of the view.

CULTURAL ORDER

The cultural order of the proposed view is low. The proposed interstate is not visually compatible with the recreational neighbors of Atkinson Park. It encroaches on the park setting and disrupts the orderliness of the view. However, the elimination of the residential structures in the middle ground of the view decreases the disruption of the park setting. In a way, the interstate acts as a buffer between the natural and urban landscape units, helping to create visual harmony.



Figure 5.2-2. View 8: Elm Street/Atkinson Park Road (Shelter)



Plate 5.2-2. View 8: Elm Street/Atkinson Park Road (Shelter) – Existing

PROJECT COHERENCE

The project coherence of the proposed view is very low. The transition between the park and West Alternative 1 is harsh and insensitive to the natural setting. The integration between natural and man-made elements is severely lacking.

SUMMARY OF VISUAL QUALITY

Table 5.2-3 summarizes the proposed visual quality rating for Elm Street/Atkinson Park Road. As shown in the table, the overall proposed visual quality rating for this view is 1.33 (Very Low); the overall existing visual quality rating is 2 (Low). Therefore, the visual impact of West Alternative 1 for this view is adverse.

Table 5.2-3. Proposed Visual Quality – View 8: Elm Street/Atkinson Park Road (Shelter)

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 8: Elm Street/Atkinson Park Road (Shelter)	1	2	1	2	1.33

VIEW 9: JOHN JAMES AUDUBON STATE PARK

In this proposed view, the six travel lanes of West Alternative 2 are just west of US 41 (**Figure 5.2-3**). The park entrance road and adjacent lawn and landscaping are in the foreground of the view; the edge of the campground, a dense mass of trees, and the campground entrance road are in the middle ground. The park entrance, the condensed US 41, and West Alternative 2 are in the background. A thick line of trees is in the far background. The existing view is included for reference (**Plate 5.2-3**).

The view remains dominated by the entrance road to the park. However, West Alternative 2 becomes the focal point of the view and draws views away from the park. The car dealership previously visible in the background has been displaced by West Alternative 2. This reduces views of the urban landscape unit but does not completely eliminate them. There will be limited separation between the park and West Alternative 2.

NATURAL HARMONY

The natural harmony of the proposed view is moderately high. West Alternative 2 is a dominant horizontal feature compared to the verticality of the mature trees, which increases the vividness of the view by creating visual interest. However, the interstate itself is not a unique man-made feature. The elimination of the car dealership in the background of the view decreases the memorability of the viewshed by eliminating formerly contrasting elements that drew the eye. The park sign still lacks visual prominence and is now dominated by West Alternative 2.



Figure 5.2-3. View 9: John James Audubon State Park – Proposed



Plate 5.2-3. View 9: John James Audubon State Park – Existing

CULTURAL ORDER

The cultural order of the proposed view is very low. There are no transitional elements between the park and the urban landscape unit. The interstate is inappropriately scaled for the natural setting and encroaches on the park. The lack of vegetation between the park and the proposed interstate decreases the orderliness of the view.

PROJECT COHERENCE

The project coherence of the proposed view is very low. The transition zone between West Alternative 2 and the park is harsh, and integration is lacking between natural and man-made elements. This is not an integrated visual design.

SUMMARY OF VISUAL QUALITY

Table 5.2-4 summarizes the proposed visual quality rating for John James Audubon State Park. As shown in the table, the overall proposed visual quality rating for this view is 2.33 (Low); the overall existing visual quality rating is also 2.33 (Low). Therefore, the visual impact of West Alternative 2 for this view is neutral.

Table 5.2-4. Proposed Visual Quality – View 9: John James Audubon State Park

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 9: John James Audubon State Park	5	1	1	2.33	2.33

VIEW 10: US 41/JOHN JAMES AUDUBON STATE PARK

In this proposed view, the six travel lanes of West Alternative 2 are in the foreground just west of US 41 and John James Audubon State Park (**Figure 5.2-4**). The revised US 41 will be somewhat visible in the foreground of the view, but it will be condensed and vertically separated from the proposed interstate. The entrance to John James Audubon State Park is in the middle. A dense line of trees is in the background. The existing view is included for reference (**Plate 5.2-4**).

The view's strong horizontal lines are reinforced by the lines created by West Alternative 2. The proposed interstate is prominent in the view, but it does not dominate it. The vegetation and curvilinear lines of the lawn draw the eye into the park. However, the sign becomes less visible from the interstate due to its scale.



Figure 5.2-4. View 10: US 41/John James Audubon State Park – Proposed

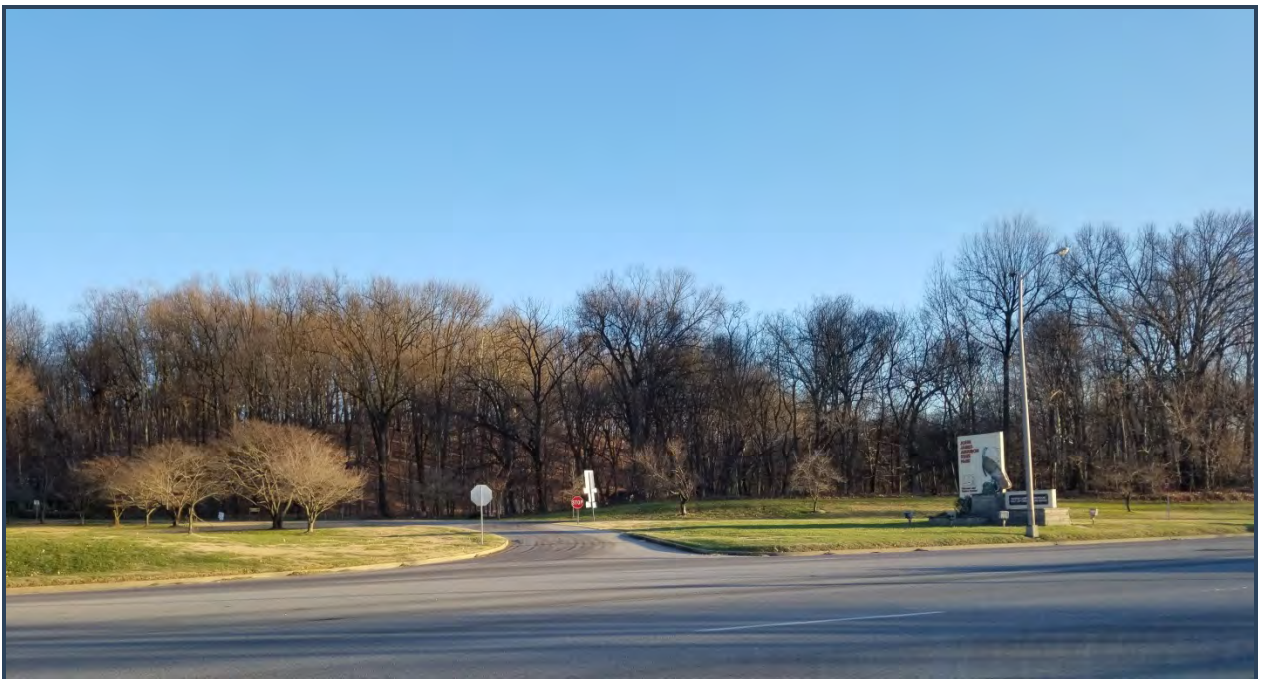


Plate 5.2-4. View 10: US 41/John James Audubon State Park – Existing

NATURAL HARMONY

The natural harmony of the proposed view is moderate/average. The sign has become less visible, which decreases the overall memorability of the view. However, viewers' perspectives increase with the greater depth of views into the park, which will elevate visual interest and draw eyes toward vibrant natural elements. In addition, because the proposed interstate will be located farther from the property than the current US 41, more of the park will be visible from this vantage point, thus increasing the complexity and diversity of the view.

CULTURAL ORDER

The cultural order of the proposed view is moderately low. West Alternative 2 will add additional man-made elements and will increase the amount of pavement in the view, which will decrease its overall orderliness. These elements encroach upon the view and are not appropriately scaled for the natural setting of the park.

PROJECT COHERENCE

The project coherence of the proposed view is moderate/average. The revised US 41 and West Alternative 2 create a harsh transition zone between the natural and urban settings. The natural and man-made elements are not well integrated in this view.

SUMMARY OF VISUAL QUALITY

Table 5.2-5 summarize the existing visual quality rating for US 41/John James Audubon State Park. As shown in the table, the overall proposed visual quality rating for this view is 3.67 (Moderate/Average); the overall existing visual quality rating is 4.67 (Moderately High). Therefore, the visual impact of West Alternative 2 for this view is adverse.

Table 5.2-5. Proposed Visual Quality – View 10: US 41/John James Audubon State Park

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 10: US 41/John James Audubon State Park	4	3	4	4.67	3.67

VIEW 11: GREEN RIVER ROAD 2/GREEN RIVER STATE FOREST

In this proposed view, cropland is in the foreground (**Figure 5.2-5**). The Green River State Forest and the four travel lanes of Central Alternative 1 are in the middle ground. Additional trees are in the background. The existing view is included for reference (**Plate 5.2-5**).

Central Alternative 1 will run immediately adjacent to the Green River State Forest. Due to its modified at-grade condition, it will appear slightly elevated above its surroundings. The view is open between the cropland and Central Alternative 1. However, the Green River State Forest obstructs extended views.



Figure 5.2-5. View 11: Green River Road 2/Green River State Forest



Plate 5.2-5. View 11: Green River Road 2/Green River State Forest – Existing

NATURAL HARMONY

The natural harmony of the proposed view is moderately high. Central Alternative 1 disrupts the natural setting. However, the Green River State Forest remains the dominant element in the view. The strong contrast between forest, cropland, and interstate creates a hard edge and stimulates visual interest.

CULTURAL ORDER

The cultural order of the proposed view is moderate/average. Central Alternative 1 encroaches on the natural vista; its scale is not visually appropriate for its surroundings.

PROJECT COHERENCE

The project coherence of the proposed view is low. Although the landscape elements are in compositional harmony with one another, Central Alternative 1 is inconsistent with this composition. Its layout and design fails to provide an integrated design with its setting.

SUMMARY OF VISUAL QUALITY

Table 5.2-6 summarizes the proposed visual quality rating for Green River Road 2/Green River State Forest. As shown in the table, the overall proposed visual quality rating for this view is 3.67 (Moderate/Average); the overall existing visual quality rating is 6.67 (Very High). Therefore, the visual impact of Central Alternative 1 for this view is adverse.

Table 5.2-6. Proposed Visual Quality – View 11: Green River Road 2/Green River State Forest

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 11: Green River Road 2/ Green River State Forest	5	4	2	6.67	3.67

5.3 RURAL VIEWSHEDS

The impacts of the proposed build alternatives on the visual quality of the rural landscape unit, and the selected views within this unit, are described herein. **Table 5.3-1** summarizes the visual quality change of each viewshed organized by alternative.

Table 5.3-1. Rural Viewsheds

WEST ALTERNATIVE 1			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 12: US 41/Waterworks Road	Moderately High	Moderate/ Average	Adverse
WEST ALTERNATIVE 2			
Key View	Existing Condition	Proposed Condition	Visual Quality Change

WEST ALTERNATIVE 1			
View 12: US 41/Waterworks Road	Moderately High	Moderately High	Neutral
CENTRAL ALTERNATIVE 1			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 13: Weinbach Avenue	Moderately High	Moderate/ Average	Adverse
View 14: US 60/CSX Railroad	Moderately High	Moderate/ Average	Adverse

5.3.1 VIEWER RESPONSE

The predicted viewer response to the proposed alternatives in the rural landscape unit based on the physical factors of the project area were studied with consideration given to existing and proposed visual quality conditions.

Based on the community goals and objectives for visual quality outlined in [Section 3.2](#), as well as an understanding of existing and proposed conditions of visual character, the agricultural neighbors of the proposed project are expected to have a neutral response to the changes brought on by the proposed alternatives. This viewer group is largely migratory and has prolonged seasonal exposure to the proposed alternatives. The viewers have largely unobstructed views of the proposed alternatives, but they will be focused on the task at hand and will have little awareness of the interstate. In addition, they may become desensitized to views over time and experience low sensitivity to the visual effects of the proposed alternatives.

VIEW 12: US 41/WATERWORKS ROAD

In this proposed view, the four travel lanes of West Alternatives are in the foreground ([Figure 5.3-1](#)). They are just west of, and run parallel to, US 41, which will be maintained as a two-lane local road in this scenario. Cropland and dense thick lines of trees are in the middle ground. Additional cropland and a thick line of trees are in the background. The existing view is included for reference ([Plate 5.3-1](#)).

The cell tower remains the focal point of the viewshed. Although the vegetation elements still dominate the view, West Alternative 1 will be prominent within this viewshed. The power lines have been removed to reflect the shift west from US 41. Travelers on West Alternative 1 will remain visually connected with the cropland. The roadside vegetation may be eliminated within this view, but the overall character of the rural landscape unit remains intact.

West Alternative 2 replaces US 41, but it maintains the same alignment. Thus, the existing view remains unchanged in this scenario.

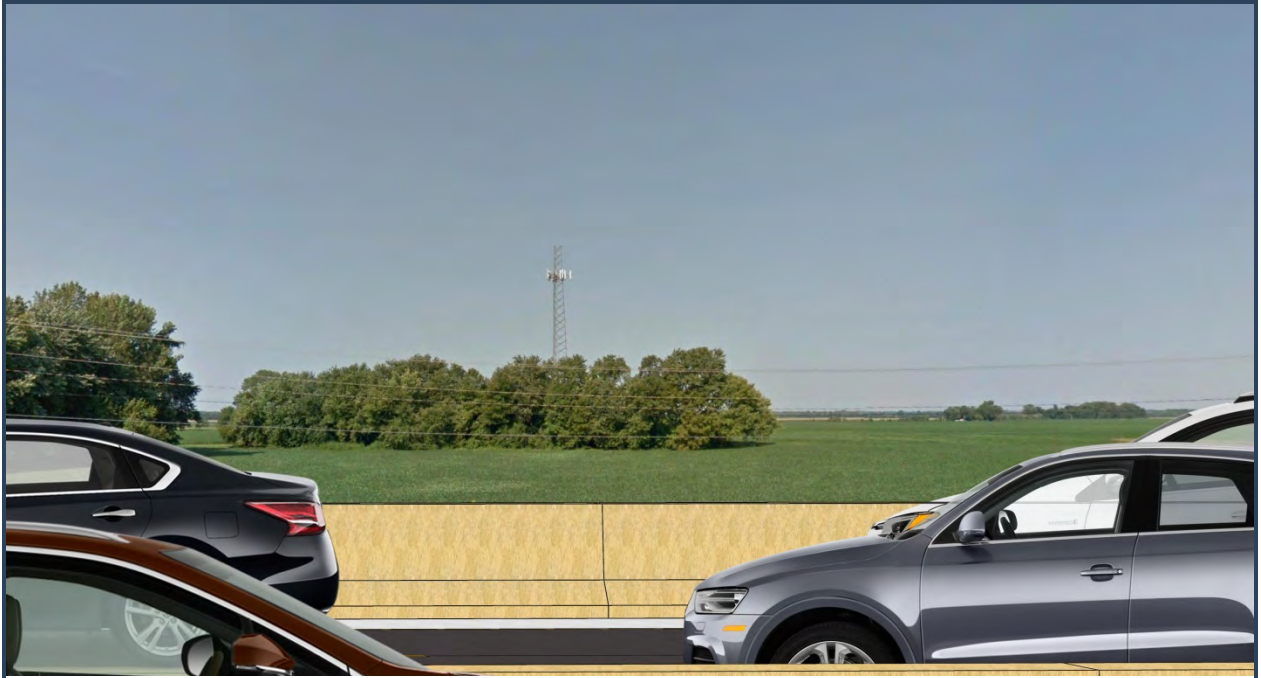


Figure 5.3-1. View 12: US 41/Waterworks Road – Proposed (West Alternative 1)



Plate 5.3-1. View 12: US 41/Waterworks Road – Existing

NATURAL HARMONY

The natural harmony of the proposed view is low. West Alternative 1 will have no visual impact on the harmony of this view. It lends no visual memorability to, nor does it detract from, the vividness of the existing view. Although the vegetation in the foreground will include some changes, the visual patterns of the existing landscape remain untouched. These differences are unlikely to be perceived by travelers on the interstate.

West Alternative 2 will have no effect on the natural harmony of the view.

CULTURAL ORDER

The cultural order of the proposed view is moderately high. West Alternative 1 will be a visual encroachment on the view, drawing the eye away from other elements that provide visual character in the landscape. However, the proposed interstate is not significant enough in this scenario to disrupt the orderliness of its surroundings. Little visible pattern is evident within the man-made elements of the view, and the visual order of an undisturbed landscape is not apparent.

West Alternative 2 will have no effect on the cultural order of the view.

PROJECT COHERENCE

The project coherence of the proposed view is moderately high. The layout of West Alternative 1 parallel to US 41 provides an integrated design with its setting.

West Alternative 2 will have no effect on the project coherence of the view.

SUMMARY OF VISUAL QUALITY

Table 5.3-2 summarizes the proposed visual quality ratings for US 41/Waterworks Road for West Alternatives 1 and 2. As shown in the table, the overall proposed visual quality rating for this view for West Alternative 1 is 4 (Moderate/Average); the overall existing visual quality rating is 4.67 (Moderately High). In comparison, the overall proposed visual quality rating for this view for West Alternative 2 remains unchanged at 4.67 (Moderately High). Therefore, the visual impact of West Alternative 1 for this view is adverse, and the visual impact of West Alternative 2 for this view is neutral.

Table 5.3-2. Proposed Visual Quality – View 12: US 41/Waterworks Road

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
West Alternative 1					
View 12: US 41/ Waterworks Road	2	5	5	4.67	4
West Alternative 2					
View 12: US 41/ Waterworks Road	2	6	6	4.67	4.67

VIEW 13: WEINBACH AVENUE

In the proposed view, Central Alternative 1 and cropland are in the foreground of the view (**Figure 5.3-2**). Weinbach Avenue and cropland are in the middle ground. A thick line of trees and cell towers are in the background. The existing view is included for reference (**Plate 5.3-2**).

The most visible change to the view is the addition of Central Alternative 1. The view is dominated by Central Alternative 1 and cropland. Travelers will be visually connected with, but will have no access to, Weinbach Avenue. Central Alternative 1 obstructs views of the thick line of trees in the background.

NATURAL HARMONY

The natural harmony of the proposed view is low. Central Alternative 1 is a visually contrasting element; but it does not add visual interest to the view. Its scale is compatible with its surroundings, and the use of materials is kept visually consistent with similar transportation infrastructure in the area.

CULTURAL ORDER

The cultural order of the proposed view is moderately high. Central Alternative 1 somewhat disrupts the natural setting. It has a higher elevation than adjacent elements, but it is not an eyesore. It does not block extended views to the west.

PROJECT COHERENCE

The project coherence of the proposed view is moderately high. Central Alternative 1 somewhat blends with the natural setting of the cropland, providing a moderately integrated design with its setting.



Figure 5.3-2. View 13: Weinbach Avenue – Proposed



Plate 5.3-2. View 13: Weinbach Avenue – Existing

SUMMARY OF VISUAL QUALITY

Table 5.3-3 summarizes the proposed visual quality rating for Weinbach Avenue. As shown in the table, the overall proposed visual quality rating for this view is 4 (Moderate/Average); the overall existing visual quality rating is 4.67 (Moderately High). Therefore, the visual impact of Central Alternative 1 for this view is adverse.

Table 5.3-3. Proposed Visual Quality – View 13: Weinbach Avenue

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 13: Weinbach Avenue	2	5	5	4.67	4

VIEW 14: US 60/CSX RAILROAD

In this proposed view, the two travel lanes of the revised US 60, cropland, and CSX railroad are in the foreground of the view (**Figure 5.3-3**). The four travel lanes of Central Alternative 1 and its on/off ramps, as well as the CSX railroad and additional cropland, are in the middle ground. Additional cropland and a thick line of trees are in the background. The existing view is included for reference (**Plate 5.3-3**).

This view undergoes several notable changes that dramatically alter its visual quality. The shift of US 60 south of its existing alignment places it prominently in the foreground of the view. The addition of the four travel lanes of Central Alternative 1 and its on/off ramps substantially increases the amount of pavement in the view. US 60 will be vertically separated from Central Alternative 1. Travelers on US 60 will have access to Central Alternative 1 at this interchange. The CSX Railroad will remain an underpass for US 60 and will travel parallel to Central Alternative 1. Travelers of Central Alternative 1 will be visually connected with the adjacent cropland. The elimination of several areas of vegetation in this view will open views to additional cropland.

NATURAL HARMONY

The natural harmony of the proposed view is moderately high. The memorability of the view substantially increases with the creation of the proposed US 60/Central Alternative 1 interchange, which is a dramatic departure from transportation infrastructure within the rural landscape unit. Although the elevated interstate will create a visual barrier within this view, the patterns displayed by this man-made element, while repetitive, will be in stark contrast to the rural elements of its surroundings. This will generate visual interest and attract the eye.



Figure 5.3-3. View 14: US 60/CSX Railroad – Proposed



Plate 5.3-3. View 14: US 60/CSX Railroad – Existing

CULTURAL ORDER

The cultural order of the proposed view is low. The proposed US 60/Central Alternative 1 will be the prime focus of the view. Although the majority of the view still consists of vegetation, the revised US 60 and proposed Central Alternative 1 will dominate the view and disrupt the natural patterns and orderliness of the landscape. Additional man-made elements, including the CSX railroad, power lines, and man-made structures will be “lost” in the view.

PROJECT COHERENCE

The project coherence of the view is moderate/average. Central Alternative 1 introduces a substantial number of man-made elements to the rural setting and lacks balance and coherence. However, the layout of Central Alternative 1 parallel to the CSX railroad provides a somewhat integrated design with its setting.

SUMMARY OF VISUAL QUALITY

Table 5.3-4 summarizes the proposed visual quality rating for US 60/CSX Railroad. As shown in the table, the overall proposed visual quality rating for this view is 3.67 (Moderate/Average); the overall existing visual quality rating is 4.67 (Moderately High). Therefore, the visual impact of Central Alternative 1 for this view is adverse.

Table 5.3-4. Proposed Visual Quality – View 14: US 60/CSX Railroad

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 14: US 60/CSX Railroad	5	2	4	4.67	3.67

5.4 FLOODPLAIN VIEWSHEDS

The impacts of the proposed build alternatives on the visual quality of the floodplain landscape unit, and the selected views within this unit, are described herein. **Table 5.4-1** summarizes the visual quality change of each viewshed organized by alternative.

Table 5.4-1. Floodplain Viewsheds

WEST ALTERNATIVE 1			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 15: US 41/Borrow Pit Wetlands	Very High	Moderate/Average	Adverse
View 16: US 41/Ellis Park	Moderately High	Moderately High	Neutral
WEST ALTERNATIVE 2			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 15: US 41/Borrow Pit Wetlands	Very High	Very High	Neutral
View 16: US 41/Ellis Park	Moderately High	Moderate/Average	Adverse
CENTRAL ALTERNATIVE 1			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 17: Shawnee Drive	Moderately High	Moderate/Average	Adverse

5.4.1 VIEWER RESPONSE

The predicted viewer responses to the proposed alternatives in the floodplain landscape unit based on the physical factors of the project area were studied with consideration given to existing and proposed visual quality conditions.

The floodplain landscape unit consists of agricultural neighbors. Based on the community goals and objectives for visual quality outlined in Section 3.2, as well as an understanding of existing and proposed conditions of visual character, the agricultural neighbors of the proposed project are expected to have both neutral and adverse responses to the changes brought on by the proposed alternatives. This viewer group is largely migratory and has prolonged seasonal exposure to the proposed alternatives. The viewers have largely unobstructed views of the proposed alternatives, but they will be focused on the task at hand and will have little awareness of the interstate. In addition, they may become desensitized to views over time and experience low sensitivity to the visual effects of the proposed alternatives.

VIEW 15: US 41/BORROW PIT WETLANDS

In this proposed view, the four travel lanes of West Alternatives 1 and 2 and a jersey barrier are in the foreground (**Figure 5.4-1**). The water body and adjacent vegetation is in the middle ground. The ramp of West Alternative 1 (shown screened in the proposed view) is also in the middle ground. A thick line of trees is in the background. The existing view is included for reference (**Plate 5.4-1**).

West Alternatives 1 and 2 would shift the existing alignment of the ramp by approximately 45 degrees and would convert the two-lane ramp into a four- or six-lane interstate, respectively. Views will be redirected from the water feature to the adjacent trees.

NATURAL HARMONY

The natural harmony of the proposed view for West Alternative 1 is moderate/average; the natural harmony of the proposed view for West Alternative 2 is high. The ramp shown in the middle ground of the view for West Alternative 1 is the focal point. It detracts from the overall harmony of the view and creates a visual distraction that draws the eye away from the natural environment.

Although the borrow pit wetlands are still the focal point, West Alternative 2 redirects views from the water feature to the adjacent trees, which reduces the dominance of the water feature and enhances the dominance of the trees. This reduces the distinctiveness of the view. However, the rich colors, textures, and patterns of the water and vegetation elements still make the view memorable.

CULTURAL ORDER

The cultural order of the proposed view for the West Alternative 1 is moderately low; the cultural order of the proposed view for West Alternative 2 is very high. In the scenario of West Alternative 1, the view is dominated by the ramp and the natural elements that surround it. The ramp encroaches on the natural landscape. It is a non-typical element and interrupts the viewshed.

West Alternative 2 has no impact on the cultural order of the view, which remains dominated by natural elements. Although the size of the roadway increases, its presence does not encroach upon the natural vista.

PROJECT COHERENCE

The project coherence of the proposed view for West Alternative 1 is moderate/average; the project coherence of the proposed view for West Alternative 2 is very high. In the scenario of West Alternative 1, the ramp obstructs views and is incoherent with the natural landscape. West Alternative 2 have no impact on the coherence of the view. The visual relationship between the interstate and the natural elements of the view results in compositional harmony and an integrated design with its setting.

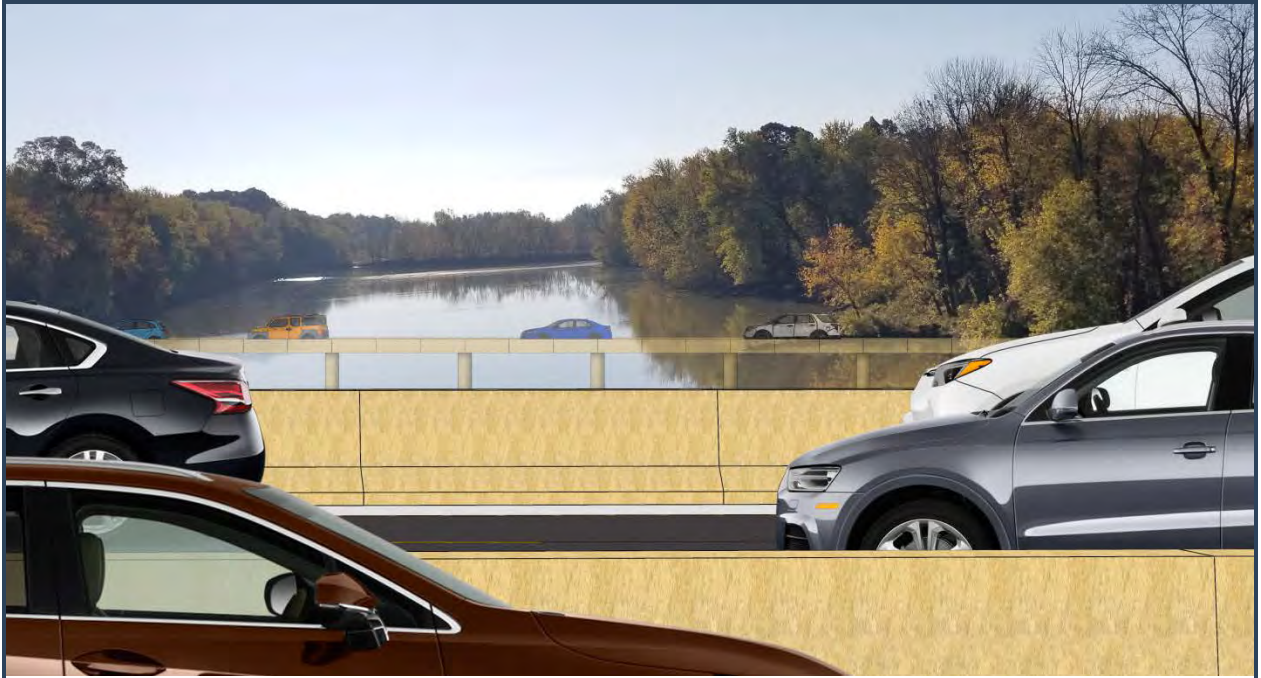


Figure 5.4-1. View 15: US 41/Borrow Pit Wetlands – Proposed (West Alternatives 1 and 2)



Plate 5.4-1. View 15: US 41/Borrow Pit Wetlands – Existing

SUMMARY OF VISUAL QUALITY

Table 5.4-2 summarizes the proposed visual quality ratings for US 41/Borrow Pit Wetlands for West Alternatives 1 and 2. As shown in the table, the overall proposed visual quality rating for this view for West Alternative 1 is 3.67 (Moderate/Average); the overall existing visual quality rating is 7 (Very High). In comparison, the overall proposed visual quality rating for this view for West Alternative 2 is 6.67 (Very High), slightly lower than the existing visual quality rating. Therefore, the visual impact of West Alternative 1 for this view is adverse; the visual impact of West Alternative 2 for this view is neutral.

Table 5.4-2. Proposed Visual Quality – View 15: US 41/Borrow Pit Wetlands

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
West Alternative 1					
View 15: US 41/Borrow Pit Wetlands	4	3	4	7	3.67
West Alternative 2					
View 15: US 41/Borrow Pit Wetlands	6	7	7	7	6.67

VIEW 16: US 41/ELLIS PARK

In this proposed view, the six travel lanes of West Alternative 2 and a parking lot are in the foreground (**Figure 5.4-2**). The main structure of Ellis Park is in the middle ground. The racetrack and accessory structures including horse barns are in the background. A dense line of trees is visible in the far background. The existing view is included for reference (**Plate 5.4-2**).

West Alternative 2 replaces US 41 and abuts the park. A new interchange will be provided at Nugent Drive. West Alternative 1 maintains US 41 as a two-lane local access road. It will not include a new interchange at this location. The proposed four-lane interstate will be located just west of US 41 and will not affect this view.

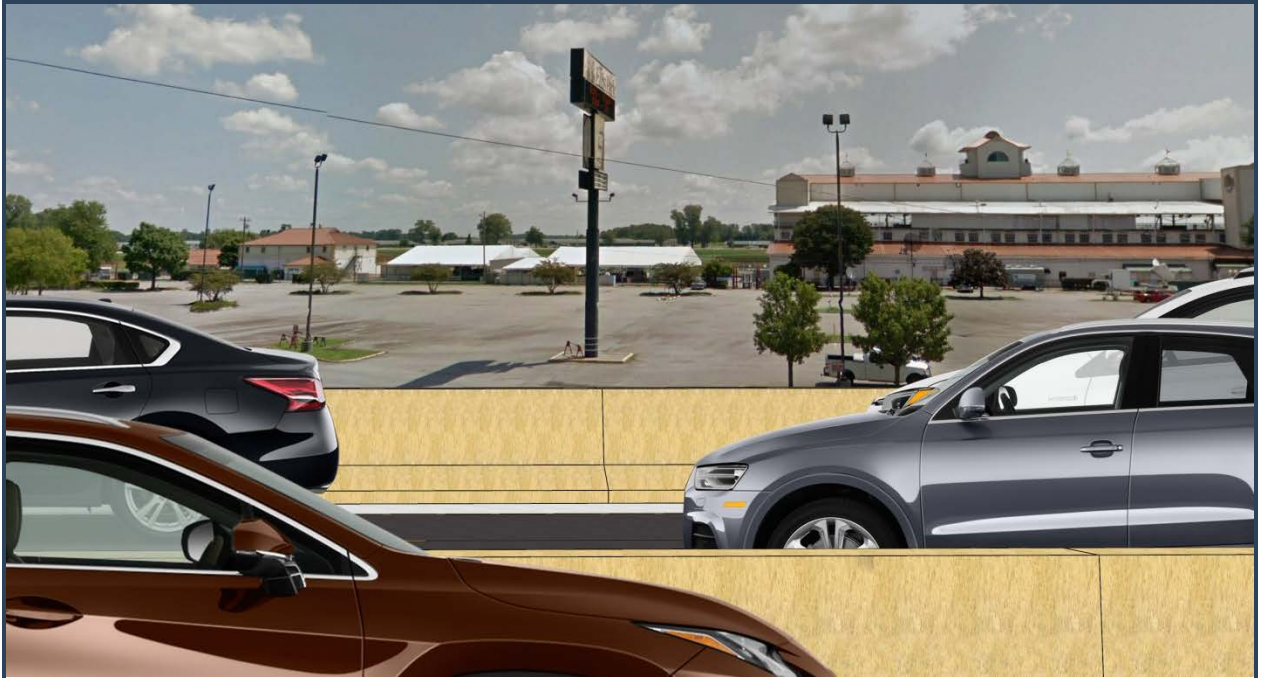


Figure 5.4-2. View 16: US 41/Ellis Park – Proposed (West Alternative 2)



Plate 5.4-2. View 16: US 41/Ellis Park – Existing

NATURAL HARMONY

The natural harmony of the proposed view is very high. Park elements are visually distinct and very memorable. The addition of an interchange in West Alternative 2 adjacent to Ellis Park will increase the vividness of the view. The interchange will be provided at Nugent Drive directly in front of the main structure of the park. In this scenario, Nugent Drive becomes an underpass at this location. Access to the park is physically and visually enhanced at the interchange. However, the dominance of West Alternative 2 and the parking lot detracts from the natural harmony of the view. In addition, the views lack diversity. Colors are monochromatic and consist of various shades of grey, brown, green, and burgundy.

West Alternative 1 will have no effect on the natural harmony of the view.

CULTURAL ORDER

The cultural order of the proposed view is moderately low. The view is dominated by structure and paving, but it has some vegetation. The parking lot and West Alternative 2 are an eyesore, but the presence of trees and additional vegetation in the view mitigates the visual encroachment of these elements.

West Alternative 1 will have no effect on the cultural order of the view.

PROJECT COHERENCE

The project coherence of this proposed view is moderately low. The layout of West Alternative 2 parallel to the parking lot and building structures of Ellis Park provides an integrated design with its setting. There is some integration of man-made elements with the natural landscape.

West Alternative 1 will have no effect on the project coherence of the view.

SUMMARY OF VISUAL QUALITY

Table 5.4-3 summarizes the proposed visual quality ratings for US 41/Ellis Park for West Alternatives 1 and 2. As shown in the table, the overall proposed visual quality rating for this view for West Alternative 1 is 4.67 (Moderately High) and remains unchanged. In comparison, the overall proposed visual quality rating for this view for West Alternative 2 is 4.33 (Moderate/Average); the overall existing visual quality rating is 4.67 (Moderately High). Therefore, the visual impact of West Alternative 1 for this view is neutral; the visual impact of West Alternative 2 for this view is adverse.

Table 5.4-3. Proposed Visual Quality – View 15: US 41/Borrow Pit Wetlands

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
West Alternative 1					
View 16: US 41/Ellis Park	6	4	4	4.67	4.67
West Alternative 2					
View 16: US 41/Ellis Park	7	3	3	4.67	4.33

VIEW 17: SHAWNEE DRIVE

In the proposed view, Shawnee Drive and cropland are in the foreground and middle ground of the view (**Figure 5.4-3**). The natural gas pipeline station and the four travel lanes of Central Alternative 1 are in the background. A dense line of trees is in the far background. The existing view is included for reference (**Plate 5.4-3**).

The most visible change to the view is the addition of Central Alternative 1. The view is still dominated by Shawnee Drive and the adjacent cropland. Agricultural neighbors of Central Alternative 1 will be visually connected with, but will have no access to, the interstate. Central Alternative 1 obstructs views of the thick line of trees in the far background. Shawnee Drive is a cul-de-sac at the natural gas pipeline station. Power lines dot the landscape, starting in the foreground of the view and fading into the background.



Figure 5.4-3. View 17: Shawnee Drive – Proposed



Plate 5.4-3. View 17: Shawnee Drive – Existing

NATURAL HARMONY

The natural harmony of the proposed view is low. Central Alternative 1 is a visually contrasting element, but it does not add visual interest to the view. Its scale is compatible with its surroundings, and the use of materials is kept visually consistent with similar transportation infrastructure in the area.

CULTURAL ORDER

The cultural order of the proposed view is moderately high. Central Alternative 1 somewhat disrupts the natural setting. It has a higher elevation than adjacent elements, but it is not visually obstructive. It does not block extended views to the west.

PROJECT COHERENCE

The project coherence of the proposed view is moderately high. Central Alternative 1 blends somewhat with the natural setting of the cropland, providing a moderately integrated design with its setting.

SUMMARY OF VISUAL QUALITY

Table 5.4-4 summarizes the proposed visual quality rating for Shawnee Drive. As shown in the table, the overall proposed visual quality rating for this view is 4 (Moderate/Average); the overall existing visual quality rating for this view is 4.67 (Moderately High). Therefore, the visual impact of Central Alternative 1 for this view is adverse.

Table 5.4-4. Proposed Visual Quality – View 17: Shawnee Drive

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 17: Shawnee Drive	2	5	5	4.67	4

5.5 URBAN VIEWSHEDS

The impacts of the proposed build alternatives on the visual quality of the urban landscape unit, and the selected views within this unit, are described herein. **Table 5.5-1** summarizes the visual quality change of each viewshed organized by alternative.

Table 5.5-1. Urban Viewsheds

WEST ALTERNATIVE 1			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 18: US 41/Watson Lane	Moderate/Average	Moderately High	Beneficial
View 19: US 41/Superior Auto	Moderate/Average	Moderately Low	Adverse
View 21: Washington Street/US 41	Low	Low	Neutral
WEST ALTERNATIVE 2			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 18: US 41/Watson Lane	Moderate/Average	High	Beneficial
View 19: US 41/Superior Auto	Moderate/Average	Moderately Low	Adverse
View 20: US 41/Wendy's	Moderate/Average	Moderate/Average	Neutral
View 21: Washington Street/US 41	Low	Low	Neutral
CENTRAL ALTERNATIVE 1			
Key View	Existing Condition	Proposed Condition	Visual Quality Change
View 21: Washington Street/US 41	Low	Low	Neutral

5.5.1 VIEWER RESPONSE

The predicted viewer response to the proposed alternatives in the urban landscape unit based on the physical factors of the project area were studied with consideration given to existing and proposed visual quality conditions.

The urban landscape unit consists of retail and commercial neighbors. Based on the community goals and objectives for visual quality outlined in [Section 3.2](#), as well as an understanding of existing and proposed conditions of visual character, the retail and commercial neighbors of the proposed project are expected to have beneficial, adverse, and neutral responses to the changes brought on by the proposed alternatives.

These viewer groups have prolonged exposure to the proposed alternatives. They are near, and have somewhat unobstructed views of, the proposed alternatives. Like residential neighbors, retail and commercial neighbors may become desensitized to views over time, but they have high sensitivity to the visual effects of the proposed alternatives.

VIEW 18: US 41/WATSON LANE

In this proposed view, the four travel lanes of West Alternative 1 will be located west of US 41 in the foreground ([Figure 5.5-1](#)). Commercial businesses and the Watson Lane/US 41 intersection are in the middle ground. Additional commercial businesses are in the background. A dense line of trees is visible in the far background.

Alternatively, the six travel lanes of West Alternative 2 will be located just west of US 41 in the foreground of the view (**Figure 5.5-2**). The Watson Lane interchange and US 41, which will receive a road diet type improvement, will be in the middle ground. US 41 will serve as a frontage road for the proposed interstate and will become a two-lane road with a left-/right-turn lane and pedestrian facilities on the east side of the road. Commercial businesses and their parking areas are in the background. A dense line of trees is visible in the far background. The existing view is included for reference (**Plate 5.5-1**).

Because a significant number of motorists will be redirected from US 41 to the interstate, it is critical to consider how Watson Lane, a vital access road for commercial businesses and residents alike, will be perceived when looking from West Alternatives 1 and 2. The view undergoes several notable changes that dramatically alter its visual quality.

In both scenarios, the view has been raised to reflect the elevated condition of the proposed interstates at Watson Lane. Watson Lane becomes an underpass for West Alternatives 1 and 2. The interchange provides interstate access to US 41, which will be vertically separated from West Alternatives 1 and 2. Travelers of US 41 will be visually connected with, but will have restricted access to, West Alternatives 1 and 2.



Figure 5.5-1. View 18: US 41/Watson Lane – Proposed (West Alternative 1)



Figure 5.5-2. View 18: US 41/Watson Lane – Proposed (West Alternative 2)



Plate 5.5-1 View 18: US 41/Watson Lane – Existing

NATURAL HARMONY

The natural harmony of the proposed view for West Alternative 1 is high; the natural harmony of the proposed view for West Alternative 2 is very high. The scale of the proposed interstate will strongly contrast with its surroundings and create visual interest. West Alternative 1 extends views to the commercial businesses on the east side of US 41, increasing the visibility of vibrant colors and distinct textures. However, it results in the displacement of residential structures to the west of US 41.

The scale of West Alternative 1 more strongly contrasts with its surroundings than West Alternative 2. It also extends views to the commercial business on the east side of US 41, but it results in the displacement of businesses on the west side of US 41.

CULTURAL ORDER

The cultural order of the proposed view for West Alternative 1 is moderately low; the cultural order of the proposed view for West Alternative 2 is moderate/average. The corridor is not a typical intrusion in the area and will dominate the surrounding landscape.

For West Alternative 2, the orderliness of the Watson Lane intersection is increased by its conversion into an interchange. However, like West Alternative 1, West Alternative 2 is not a typical intrusion in the area and will also dominate the surrounding landscape.

PROJECT COHERENCE

The project coherence of the proposed view for both West Alternatives 1 and 2 is high. There is some blending of the man-made development with the natural landscape, providing an integrated design with its setting. In addition, the interstate will act as a visual barrier that strengthens the harmony of the residential and urban areas.

SUMMARY OF VISUAL QUALITY

Table 5.5-2 summarizes the proposed visual quality ratings for US 41/Watson Lane for West Alternatives 1 and 2. As shown in the table, the overall proposed visual quality rating for this view for West Alternative 1 is 5 (Moderately High); the overall visual quality rating for this view for West Alternative 2 is 5.67 (High). In comparison, the overall existing visual quality rating for this view for both West Alternatives 1 and 2 is 3.67 (Moderate/Average). Therefore, the visual impacts of both West Alternatives 1 and 2 for this view is beneficial.

Table 5.5-2. Proposed Visual Quality – View 15: US 41/Watson Lane

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
West Alternative 1					
View 18: US 41/Watson Lane	6	3	6	3.67	5
West Alternative 2					
View 18: US 41/Watson Lane	7	4	6	3.67	5.67

VIEW 19: US 41/SUPERIOR AUTO

In the proposed view, commercial lawn and the four travel lanes and two left-/right-turn lanes of US 41 are in the foreground of the view (**Figure 5.5-3**). The Superior Auto parking lot and structure are in the middle ground. West Alternative 1 is in the background.

Alternatively, the commercial lawn and US 41, which will receive a road diet type improvement, will be in the foreground of the view (**Figure 5.5-4**). US 41 will serve as a frontage road for the proposed interstate and will become a two-lane road with a left-/right-turn lane and with pedestrian facilities on the east side of the road. The six lanes of West Alternative 2 are in the middle ground. A dense line of trees is visible in the background. The existing view is included for reference (refer to **Plate 5.5-3**).

For West Alternatives 1 and 2, the view undergoes several notable changes that dramatically alter its visual quality. West Alternative 1 results in the removal of the thick line of trees in the background; West Alternative 2 results in the displacement of commercial businesses on the west side of US 41. The addition of West Alternatives 1 and 2 substantially increases the amount of pavement in the view. The proposed interstates will be vertically separated from US 41. Travelers of US 41 will be visually connected with, but will have restricted access to, West Alternatives 1 and 2. However, access to commercial businesses from US 41 will not change.



Figure 5.5-3. View 19: US 41/Superior Auto – Proposed (West Alternative 1)



Figure 5.5-4. View 19: US 41/Superior Auto – Proposed (West Alternative 2)



Plate 5.5-2. View 19: US 41/Superior Auto – Existing

NATURAL HARMONY

The natural harmony of the proposed view for West Alternative 1 is moderately low; the natural harmony of the proposed view for West Alternative 2 is very low. For West Alternative 1, the dominating presence of US 41 and the Superior Auto parking lot do little to make this view memorable. The natural harmony of the view is lessened by the elimination of the thick line of trees in the background. The addition of West Alternative 1 detracts from the visual value of natural harmony. However, the architectural character and vibrant colors of the commercial business still draw the eye and create visual interest.

For West Alternative 2, although the presence of US 41 has been lessened, the proposed interstate dominates the view. The elimination of the commercial businesses in the middle ground detracts from its vividness. The billboard in the background creates some visual interest and is the focal point of the view.

CULTURAL ORDER

The cultural order of the proposed view for West Alternative 1 is low; the cultural order of the proposed view for West Alternative 2 is moderately low. For West Alternative 1, most of this view is structure, signage, or paving. No vegetation elements improve the visual encroachment of West Alternative 1.

For West Alternative 2, the proposed interstate visually encroaches upon the view. However, the thick line of trees in the background of the view helps soften the effects of the proposed interstate.

PROJECT COHERENCE

The project coherence of the proposed view for West Alternative 1 is moderate/average; the project coherence of the proposed view for West Alternative 2 is moderately high. The layout of West Alternatives 1 and 2 parallel to US 41 and the strip commercial development provides an integrated design with its setting. For West Alternative 1, man-made elements are not integrated with the natural landscape. However, West Alternative 2 is somewhat integrated with the landscape, increasing the value of its visual coherence.

SUMMARY OF VISUAL QUALITY

Table 5.5-3 summarizes the proposed visual quality ratings for US 41/Watson Lane for West Alternatives 1 and 2. As shown in the table, the overall proposed visual quality rating for this view for West Alternative 1 is 2.67 (Moderately Low); the overall proposed visual quality rating for this view for West Alternative 2 is 3 (Moderately Low). In comparison, the existing visual quality rating for this view for both West Alternatives 1 and 2 is 4 (Moderate/Average). Therefore, the visual impact of both proposed West Alternatives 1 and 2 for this view is adverse.

Table 5.5-3. Proposed Visual Quality – View 15: US 41/Superior Auto

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
West Alternative 1					
View 19: US 41/Superior Auto	3	1	4	4	2.67
West Alternative 2					
View 19: US 41/Superior Auto	1	3	5	4	3

VIEW 20: US 41/WENDY'S

In this proposed view, the six travel lanes of West Alternative 2 will be located just west of US 41 in the foreground (**Figure 5.5-5**). US 41 will also be located in the foreground of the view and will receive a road diet type of improvement. It will become a two-lane road with a left-/right-turn lane with pedestrian facilities on the east side of the road. Commercial businesses and their parking areas, including Thornton's Gas Station and Denny's, are in the middle ground. A thick line of trees is visible in the background. The existing view is included for reference (refer to **Plate 5.5-3**).

Most of the traffic from US 41 will be redirected onto West Alternative 2. Travelers on West Alternative 2 will be visually connected with, but will have restricted access to, adjacent commercial businesses. West Alternative 2 will be vertically separated from US 41. The improved streetscape of US 41 will offer easier access to commercial businesses along the Henderson strip.

NATURAL HARMONY

The natural harmony of the proposed view is moderately high. The memorability of this view slightly increases with a greater depth in the view toward the commercial areas. In addition, the improved views of distant vegetation also increase the visual value of natural harmony. However, the dominating presence of the parking areas does little to make this view memorable.

CULTURAL ORDER

The cultural order of the proposed view is moderately low. The parking area acts as a visually encroaching element on this view. However, the established architectural character of the commercial businesses counteracts this by drawing attention away from these areas. The addition of West Alternative 2 will increase the sense of cultural order of the urban landscape, which is less dominated by US 41.



Figure 5.5-5. View 20: US 41/Wendy's – Proposed



Plate 5.5-3. View 20: US 41/Wendy's – Existing

PROJECT COHERENCE

The project coherence of the proposed view is moderately high. The layout of West Alternative 2 parallel to US 41 and the strip commercial development provides an integrated design with its setting. However, the man-made elements are not integrated with the natural landscape.

SUMMARY OF VISUAL QUALITY

Table 5.5-4 summarizes the proposed visual quality rating for US 41/Wendy's. As shown in the table, the overall proposed visual quality rating for this view is 4.33 (Moderate/Average); the overall existing visual quality rating is 3.67 (Moderate/Average). Therefore, the visual impact of West Alternative 2 for this view is neutral.

Table 5.5-4. Proposed Visual Quality – View 20: US 41/Wendy's

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
View 20: US 41/Wendy's	5	3	5	3.67	4.33

VIEW 21: WASHINGTON STREET/US 41

In this proposed view, Washington Street, private residential lots with gravel parking, single-family homes and accessory elements, and ornamental landscaping are in the foreground of the view (**Figure 5.5-6**). Washington Street, commercial businesses and their parking lots, and US 41 are in the middle ground. The Pennyryle Parkway has been upgraded to meet interstate standards and includes a ramp that flows from I-69 (formerly US 41) south and intersects with US 41 at the Washington Street/US 41 intersection. The ramp and the Edward T. Breathitt Pennyryle Parkway interchange are in the background. A thick line of trees is in the far background. The existing view is included for reference (**Plate 5.5-4**).

The Pennyryle Parkway upgrade serves West Alternatives 1 and 2 and Central Alternative 1. The view will remain the same for all build alternatives; it remains dominated by the single-family homes and commercial businesses. Additional paving is introduced by the Pennyryle Parkway upgrade. This becomes the focal point of the view and draws the eye toward the interchange.



Figure 5.5-6. View 21: Washington Street/US 41 – Proposed



Plate 5.5-4. View 21: Washington Street/US 41 – Existing

NATURAL HARMONY

The natural harmony of the proposed view for West Alternatives 1 and 2 and Central Alternative 1 is moderately low. Some visual interest is introduced by the ramp. The ramp contrasts with, but does not encroach upon, its surroundings; however, it does not increase the overall harmony of the view.

CULTURAL ORDER

The cultural order of the proposed view for West Alternatives 1 and 2 and Central Alternative 1 is very low. Although the scale of the ramp is compatible with its surroundings, it does not increase the orderliness of the view. The remainder of the view remains unchanged.

PROJECT COHERENCE

The project coherence of the proposed view for West Alternatives 1 and 2 and Central Alternative 1 is very low. The natural and man-made elements are not balanced in this view. The ramp lacks integration with its setting.

SUMMARY OF VISUAL QUALITY

Table 5.5-5 summarizes the proposed visual quality rating for Washington Street/US 41. As shown in the table, the overall proposed visual quality rating for this view for West Alternatives 1 and 2 and Central Alternative 1 is 1.67 (Low) and remains unchanged. Therefore, the visual impact of West Alternatives 1 and 2 and Central Alternative 1 for this view is neutral.

Table 5.5-5. Proposed Visual Quality – View 21: Washington Street/US 41

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	EXISTING VISUAL QUALITY	PROPOSED VISUAL QUALITY
West Alternative 1					
View 21: Washington Street/US 41	3	1	1	1.67	1.67
West Alternative 2					
View 21: Washington Street/ US 41	3	1	1	1.67	1.67
Central Alternative 1					
View 21: Washington Street/ US 41	3	1	1	1.67	1.67

5.6 SUMMARY OF VISUAL IMPACTS

To comparatively summarize the visual impacts of the project, the collective visual impacts were calculated for each alternative. Collective visual impacts are the cumulative changes in the visual quality of the proposed project compared to those of the existing conditions. These impacts are described in the following sections.

5.6.1 COLLECTIVE VISUAL QUALITY

The collective visual impact rating for each alternative was calculated by first finding the collective visual quality for both the existing condition and the modified viewsheds. Collective visual quality is the cumulative change in the visual effects of the proposed project compared to those of the existing conditions. Calculations for the collective visual quality for each alternative are shown in **Table 5.6-1** through **5.6-3**. Collective visual quality is calculated via the following equation:

$$\text{Collective Visual Quality} = \text{Visual Quality for all Key Views}$$

5.6.2 COLLECTIVE VISUAL IMPACT

After the collective visual quality is calculated for each condition, the collective visual impact can be determined. Calculations for the collective visual impact for each alternative are shown in **Table 5.6-4**. Collective visual impact is calculated via the following equation:

$$\text{Collective Visual Impact} = \text{Collective Visual Quality} / \text{Number of Key Views}$$

5.6.3 COLLECTIVE VISUAL RESOURCE CHANGE

After the collective visual impact is calculated, the same methodology used to determine the visual resource change of key views (see **Section 2.3.1**) is used to calculate the collective visual resource change. The collective visual resource change is the cumulative change in the visual quality of the landscape between existing and proposed conditions. Calculations for the visual resource change for each alternative are shown in **Table 5.6-5**. Collective visual resource change is calculated via the following equation:

$$\text{Collective Visual Resource Change} = \text{Collective Existing Visual Impact} - \text{Collective Alternative Visual Impact}$$

5.6.4 COLLECTIVE DEGREE OF VISUAL IMPACT

The same methodology used to determine the degree of visual impact for each key view (see **Section 2.3.3**) can be used to determine the collective degree of visual impact for each alternative. As previously stated, a negative score indicates an adverse visual impact, a positive score indicates a beneficial visual impact, and a score of 0 indicates a neutral visual impact (no change). Calculations for the collective degree of visual impact for each alternative are shown in **Table 5.6-5**.

Table 5.6-1. Collective Visual Quality – West Alternative 1

WEST ALTERNATIVE 1		
Key View	Existing Visual Quality	Alternative Visual Quality
View 1: Springer Road/Springer Drive	4.33	1.67
View 2: Donna Drive/Johnson Drive	5.33	2
View 7: Elm Street/Atkinson Park Circle	4.33	4
View 8: Elm Street/Atkinson Park Road (Shelter)	2	1.33

WEST ALTERNATIVE 1		
View 12: US 41/Waterworks Road	4.67	4
View 15: US 41/Borrow Pit Wetlands	7	3.67
View 16: US 41/Ellis Park	4.67	4.67
View 18: US 41/Watson Lane	3.67	5
View 19: US 41/Superior Auto	4	2.67
View 21: Washington Street/US 41	1.67	1.67
COLLECTIVE VISUAL QUALITY (TOTAL)	41.67	30.68

Table 5.6-2. Collective Visual Quality – West Alternative 2

WEST ALTERNATIVE 2		
Key View	Existing Visual Quality	Alternative Visual Quality
View 3: Elm Street/Canary Lane	3.33	2.33
View 4: US 41/Harmony Lane	5.67	3.67
View 9: John James Audubon State Park	2.33	2.33
View 10: US 41/John James Audubon State Park	4.67	3.67
View 12: US 41/Waterworks Road	4.67	4.67
View 15: US 41/Borrow Pit Wetlands	7	6.67
View 16: US 41/Ellis Park	4.67	4.33
View 18: US 41/Watson Lane	3.67	5.67
View 19: US 41/Superior Auto	4	3
View 20: US 41/Wendy's	3.67	4.33
View 21: Washington Street/US 41	1.67	1.67
COLLECTIVE VISUAL QUALITY (TOTAL)	45.35	42.34

Table 5.6-3. Collective Visual Quality – Central Alternative 1

CENTRAL ALTERNATIVE 1		
Key View	Existing Visual Quality	Alternative Visual Quality
View 5: Culpepper Court	4.33	3
View 6: US 60/Jackson McClain Property	6.67	7
View 11: Green River Road 2/ Green River State Forest	6.67	3.67
View 13: Weinbach Avenue	4.67	4
View 14: US 60/CSX Railroad	4.67	3.67
View 17: Shawnee Drive	4.67	4
View 21: Washington Street/US 41	1.67	1.67
COLLECTIVE VISUAL QUALITY (TOTAL)	33.35	27.01

Table 5.6-4. Collective Visual Impact

BUILD ALTERNATIVES				
Build Alternative	Existing Collective Visual Quality	Alternative Collective Visual Quality	Existing Collective Visual Impact	Alternative Collective Visual Impact
West Alternative 1	41.67	30.68	4.17	3.07
West Alternative 2	45.35	42.34	4.12	3.84
Central Alternative 1	33.35	27.01	4.76	3.86
No Build Alternative	N/A	N/A	N/A	N/A

Table 5.6-5. Collective Visual Resource Change and Degree of Visual Impact

BUILD ALTERNATIVES				
Build Alternative	Existing Collective Visual Quality	Alternative Collective Visual Quality	Collective Visual Resource Change	Collective Visual Impact
West Alternative 1	4.17	3.07	-1.1	Adverse
West Alternative 2	4.12	3.84	-0.28	Adverse
Central Alternative 1	4.76	3.85	-0.90	Adverse
No Build Alternative	N/A	N/A	N/A	N/A

5.6.5 WEST ALTERNATIVES 1 AND 2

The differences in collective visual impact between the two proposed alternatives are moderate (Table 5.6-4). West Alternative 1 results in a collective visual impact rating of 3.07 (Moderately Low); West Alternative 2 results in a collective visual impact rating of 3.84 (Moderate/Average). In comparison, the collective visual impact ratings of the existing conditions for West Alternatives 1 and 2 are 4.17 (Moderate/Average) and 4.12 (Moderate/Average), respectively. Although both proposed alternatives result in overall adverse visual impacts and are not visually compatible with the AVE, West Alternative 1 results in a greater visual impact on the project area than does West Alternative 2.

5.6.6 CENTRAL ALTERNATIVE 1

The horizontal alignment of Central Alternative 1 differs from that of West Alternatives 1 and 2; therefore, it has been evaluated separately from the other project alternatives.

Considering the collective visual resource change of the three proposed alternatives, Central Alternative 1 is most comparable to West Alternative 1 (Table 5.6-5). The differences in the collective visual resource change of the proposed alternatives are very minute. Central Alternative 1 results in a collective visual resource change of -0.90; West Alternative 1 results in a collective visual resource change of -1.1. Although both proposed alternatives result in overall adverse visual impacts and are not visually compatible with the AVE, West Alternative 1 results in a slightly greater visual impact on the project than does Central Alternative 1.

5.6.7 NO BUILD ALTERNATIVE

The no build alternative, in which none of the build alternatives is constructed, results in no new visual impacts to existing visual resources. In this scenario, all transportation projects currently listed in the Evansville Metropolitan Organization's Transportation Improvement Program would be constructed except for the I-69 Ohio River Crossing Project. The existing visual quality of the project area would remain intact.

5.7 HIGHWAY TRAFFIC NOISE BARRIERS

Highway traffic noise barriers are an important element to be considered within the VIA for environmental clarity. According to *Keeping the Noise Down: Highway Traffic Noise Barriers* (FHWA 2001), highway traffic noise barriers are solid obstructions constructed between the highway and adjacent landscape units and are designed to lessen traffic noise levels for highway neighbors. Although they do not completely block out all noise generated by traffic, they can reduce it by as much as one-half, regardless of the materials used (FHWA 2001).

A noise impact analysis was conducted in March 2018 to identify where highway traffic noise barriers meet the criteria for effectiveness and cost. Preliminary locations of noise barriers have been outlined for each proposed alternative, along with the proposed length and height for each barrier. Final noise barrier locations will be determined by the design team at final design as approved by the public.

5.7.1 DESIGN CONSIDERATIONS

The design of a highway traffic noise barrier must consider the visual impact to its surroundings. Although noise barriers are constructed for the benefit of highway neighbors, motorists' views must also be considered. Noise barriers have visual implications for both neighbors and travelers of the proposed alternatives and should therefore be designed to preserve and protect aesthetic values and scenic vistas (FHWA 2001).

Highway traffic noise barriers may be constructed from earthen or non-earthen materials (such as concrete, masonry, wood, and metal), or a combination of both. Earth berms have a natural appearance and are usually more attractive than vertical walls, but they typically require more land to construct. In comparison, vertical walls require less space, but they are limited by height restrictions. Although vegetation may be planted to help decrease traffic noise, it is not feasible to plant enough vegetation to achieve a reduction equivalent to earthen berms or vertical walls (FHWA 2001).

5.7.2 PROPOSED VISUAL QUALITY WITH HIGHWAY TRAFFIC NOISE BARRIERS

For this VIA, two views representing the project area for all alternatives were selected to depict the visual impact of the highway traffic noise barriers. These views represent the typical views of interstate neighbors and travelers. The proposed visual quality for each view with highway traffic noise barriers are discussed using the same terms used to define existing and proposed visual quality, including natural harmony, cultural order, and project coherence. The anticipated viewer response to these overall changes has also been provided.

To evaluate the difference between the proposed visual quality for each view *without* highway traffic noise barriers and the proposed visual quality for each view *with* highway traffic noise barriers, the visual impacts have been summarized according to degree of impact, whether they be beneficial, adverse, or neutral.

VIEW 1: SPRINGER ROAD/SPRINGER DRIVE

In this proposed view, the four travel lanes of West Alternative 1 will be located west of US 41 (Figure 5.7-1). Springer Drive and private residential lots with driveways, single-family homes and accessory elements, and ornamental landscaping are in the foreground and middle ground of the view. Views of West Alternative 1 are obstructed by the vertical noise barrier in the middle ground. A dense line of trees is visible in the far background. The proposed view without highway traffic noise barriers has been included for reference (Figure 5.7-2).

The noise barrier is the focal point of the view. It creates a harsh vertical transition zone between the residential area and its surroundings. However, it provides some privacy for residents by blocking out views of the interstate.

NATURAL HARMONY

The natural harmony of the proposed view is moderately low. The memorability of the view is slightly increased with the addition of the noise barrier surrounding West Alternative 1. Although the noise barrier itself is not a memorable feature, it introduces contrasting forms and textures to the view. These patterns, although repetitive, generate some visual interest.

CULTURAL ORDER

The cultural order of the proposed view is moderately high. Although the noise barrier is a non-typical intrusion on the residential setting, its appearance blends with the architectural character of its surroundings. In addition to blocking views of the interstate, the noise barrier obstructs views of adjacent residential areas and the urban landscape unit to the east, which increases the overall orderliness of the view.



Figure 5.7-1. View 1: Springer Road/Springer Drive – Proposed with Highway Traffic Noise Barriers



Figure 5.7-2. View 1: Springer Road/Springer Drive – Proposed without Highway Traffic Noise Barriers

PROJECT COHERENCE

The project coherence of the view is moderately low. The aesthetics of the noise barrier are sensitive to its surroundings and do not interrupt the harmony of the residential setting. It brings a sense of privacy and coherence to the view.

SUMMARY OF VISUAL QUALITY

Table 5.7-1 summarizes the proposed visual quality rating for Springer Road/Springer Drive. As shown in the table, the overall proposed visual quality rating for this view with highway traffic noise barriers is 4 (Moderate/Average); the overall proposed visual quality rating for this view without highway traffic noise barriers is 1.67 (Low). Therefore, the visual impact of West Alternative 1 for this view is beneficial.

Table 5.7-1. Proposed Visual Quality with Highway Traffic Noise Barriers – View 1: Springer Road/Springer Drive

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 1: Springer Road/ Springer Drive	3	5	3	4
PROPOSED VISUAL QUALITY (WITHOUT HIGHWAY TRAFFIC NOISEBARRIERS)		PROPOSED VISUAL QUALITY (WITH HIGHWAY TRAFFIC NOISE BARRIERS)		
1.67		4		

VIEW 4: US 41/HARMONY LANE

In this proposed view, the four travel lanes of West Alternative 2 and its vertical noise barriers will be in the foreground, middle ground, and background of the view (**Figure 5.7-3**). US 41 will serve as a frontage road for West Alternative 2 and will become a two-lane frontage road with a left-/right-turn lane and pedestrian facilities on the east side of the road. Commercial businesses and their parking areas are just east of the proposed interstate in the foreground, middle ground, and background. A dense line of trees is visible in the far background. The proposed view without highway traffic noise barriers has been included for reference (**Figure 5.7-4**).

West Alternative 2 is the focal point of the view. The noise barriers on the west side of the proposed interstate obstruct views of the residential landscape unit to the immediate west. They provide privacy for residents on the opposite side of the noise barriers, but they create monotony for travelers on the proposed interstate. Harmony Lane, blocked by the noise barriers, becomes a cul-de-sac at the interstate.

NATURAL HARMONY

The natural harmony of the proposed view is high. The scale of West Alternative 2 and its noise barriers dominate the view and contrast with their surroundings. While the noise barriers block views of the residential landscape unit to the west, the proposed interstate extends views to the commercial businesses to the east, increasing the visibility of various colors, patterns, and textures and generating visual interest.



Figure 5.7-3. View 4: US 41/Harmony Lane – Proposed with Highway Traffic Noise Barriers

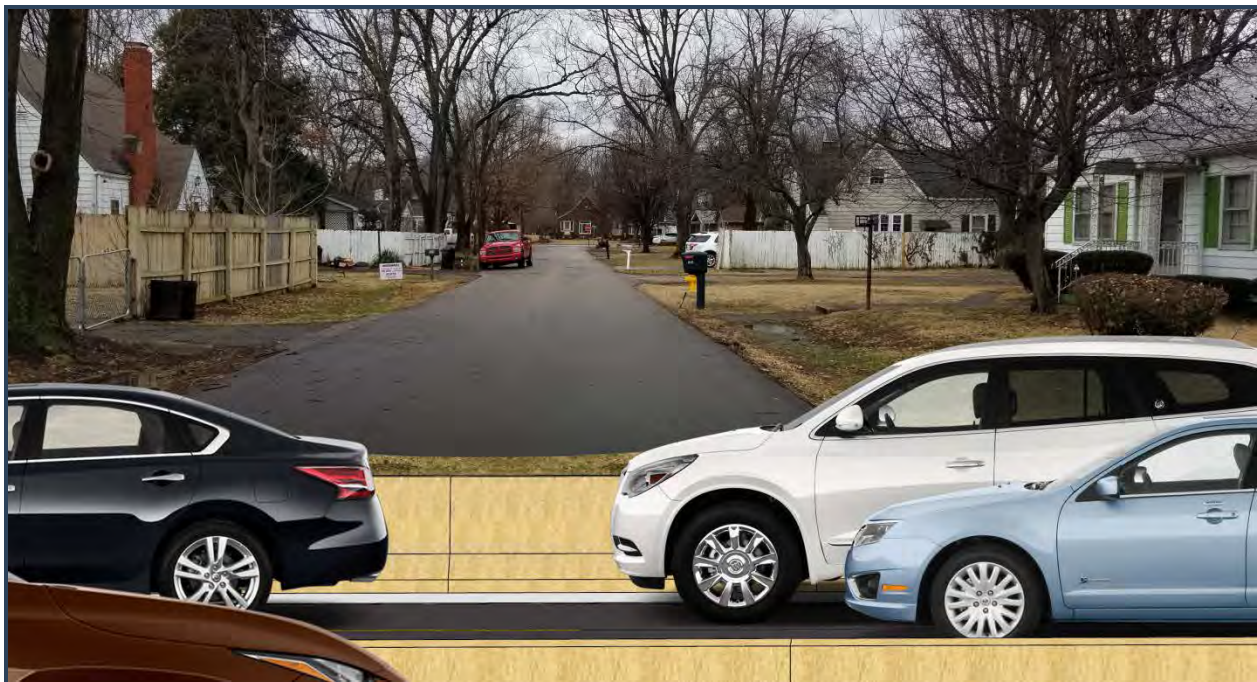


Figure 5.7-4. View 4: US 41/Harmony Lane – Proposed without Highway Traffic Noise Barriers

CULTURAL ORDER

The cultural order of the proposed view is moderate/average. West Alternative 2 and its noise barriers are a non-typical intrusion on the residential and urban landscape units and will

dominate the surrounding landscape. However, the orderliness of the view is slightly increased by the noise barriers, which obstruct views of the residential landscape unit and decrease visual clutter for interstate travelers.

PROJECT COHERENCE

The project coherence of the proposed view is moderate/average. Although the natural and man-made elements are not well balanced in the view, West Alternative 2 exhibits a somewhat integrated design with its setting. In addition, the noise barriers help increase the overall coherence of the view by reducing visual conflicts between structurally different elements.

SUMMARY OF VISUAL QUALITY

Table 5.7-2 summarizes the proposed visual quality rating for US 41/Harmony Lane. As shown in the table, the overall proposed visual quality rating for this view with highway traffic noise barriers is 4.67 (Moderately High); the overall proposed visual quality rating for this view without highway traffic noise barriers is 3.67 (Moderate/Average). Therefore, the degree of the visual impacts of West Alternative 2 for this view is beneficial.

Table 5.7-2. Proposed Visual Quality with Highway Traffic Noise Barriers – View 4: US 41/Harmony Lane

VIEW	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY
View 4: US 41/Harmony Lane	6	4	4	4.67
PROPOSED VISUAL QUALITY (WITHOUT HIGHWAY TRAFFIC NOISE BARRIERS)		PROPOSED VISUAL QUALITY (WITH HIGHWAY TRAFFIC NOISE BARRIERS)		
3.67		4.67		

5.7.3 SUMMARY OF VISUAL IMPACTS

The visual impacts of highway traffic noise barriers for neighbors and travelers of the proposed alternatives are both beneficial and adverse. Highway neighbors experience frequent and prolonged periods of exposure to views of the noise barriers. Beneficial visual impacts of the noise barriers include increased privacy, increased visual perceptions of safety, improved views, and a sense of ruralness. Adverse visual impacts of the noise barriers include restricted views, a sense of confinement, and loss of sunlight/lighting (FHWA 2001).

Highway travelers experience infrequent and short periods of exposure to views of the noise barriers. Beneficial visual impacts of the noise barriers include a decrease in visual clutter. Adverse visual impacts of the noise barriers include visual monotony, restricted views, a sense of confinement, and an overall loss of directional awareness (FHWA 2001).

5.7.4 MITIGATION

Because highway traffic noise barriers can significantly impact the visual surroundings of both neighbors and travelers of the proposed alternatives, mitigation measures must be considered to limit any adverse visual impacts the barriers may have on their surroundings.

NEIGHBORS

To mitigate the visual compatibility of the view from adjacent landscape units to the interstate for highway neighbors, lighting and structural elements and landscape techniques may be used. The scale of noise barriers should be visually compatible with their surroundings. Noise barriers should use attractive materials that harmonize with their surroundings. In some conditions, appropriately scaled lighting elements may be used to accommodate for loss of lighting.

Providing a vegetation buffer with shade trees, ornamental trees, shrubs and perennials between the noise barriers and adjacent development may help soften the overall impacts of the noise barriers by creating a more natural character.

TRAVELERS

To mitigate the visual compatibility of the view from the interstate to adjacent landscape units for highway travelers, structural elements and wayfinding practices may be used. For highway travelers, variations in the types, profiles, and transparency of the noise barriers may be used to decrease visual monotony. Varying colors, textures, and patterns may be used to generate visual interest and create visual contrast with their surroundings.

Providing gateway signage at key locations, establishing identity signage at key destinations, and providing wayfinding signage at consistent locations along the proposed interstate can help increase the directional awareness of travelers.

CHAPTER 6 – BRIDGE ALTERNATIVES

6.1 BRIDGE ALTERNATIVES

To improve long-term cross-river mobility between Evansville and Henderson, the future of the existing US 41 bridges is under discussion as part of this project. A navigation clearance study was conducted in August 2017 and included the preliminary study of various alignments for the Ohio River bridges. The screening process identified two preliminary crossing locations for the bridges:

- West Alternatives 1 and 2 – located just west of the existing US 41 twin bridges
- Central Alternative 1 – located east of the existing US 41 twin bridges

Figure 6.1-1 indicates the location of the bridge alternatives within the AVE. **Figure 6.1-2 to Figure 6.1-4** illustrate the typical cross sections for the main bridge span for West Alternatives 1 and 2 and Central Alternative 1.

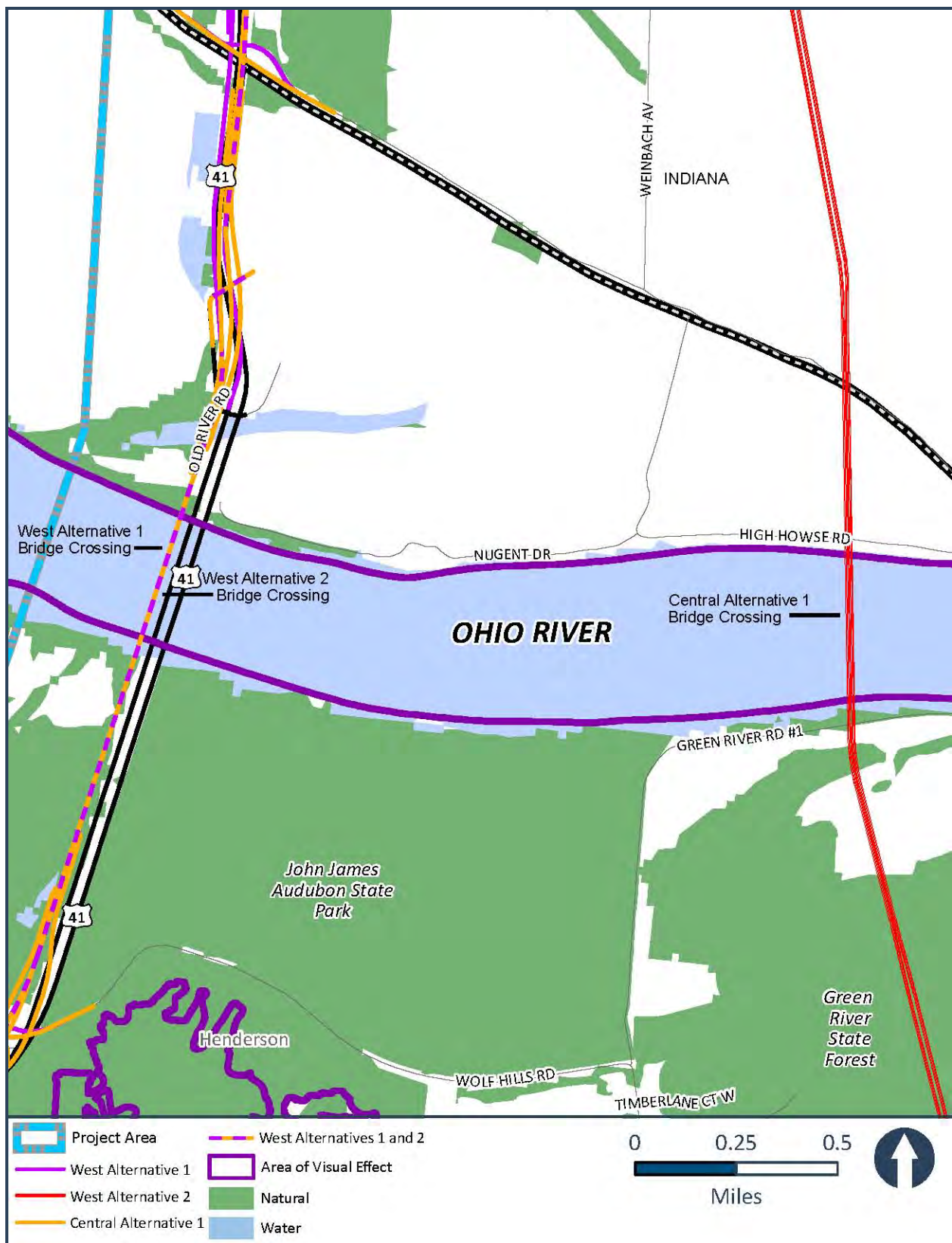


Figure 6.1-1. Bridge Alternatives Map

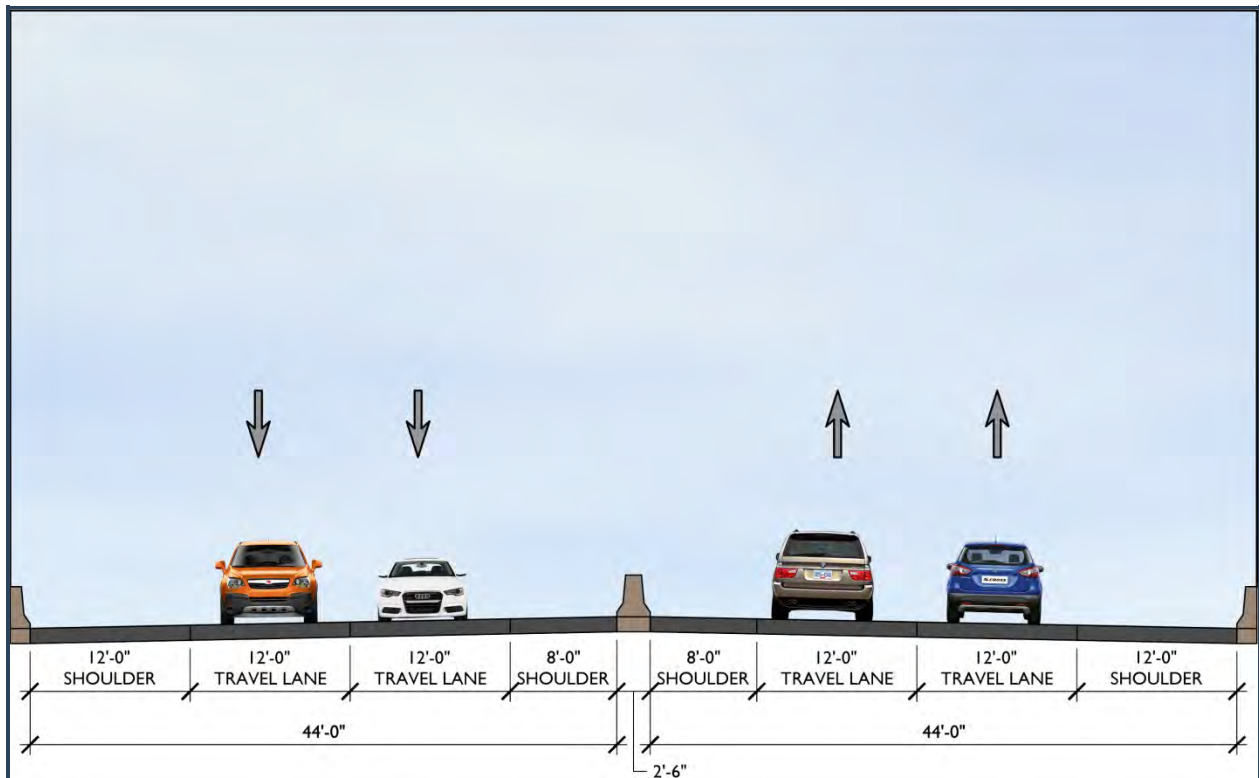
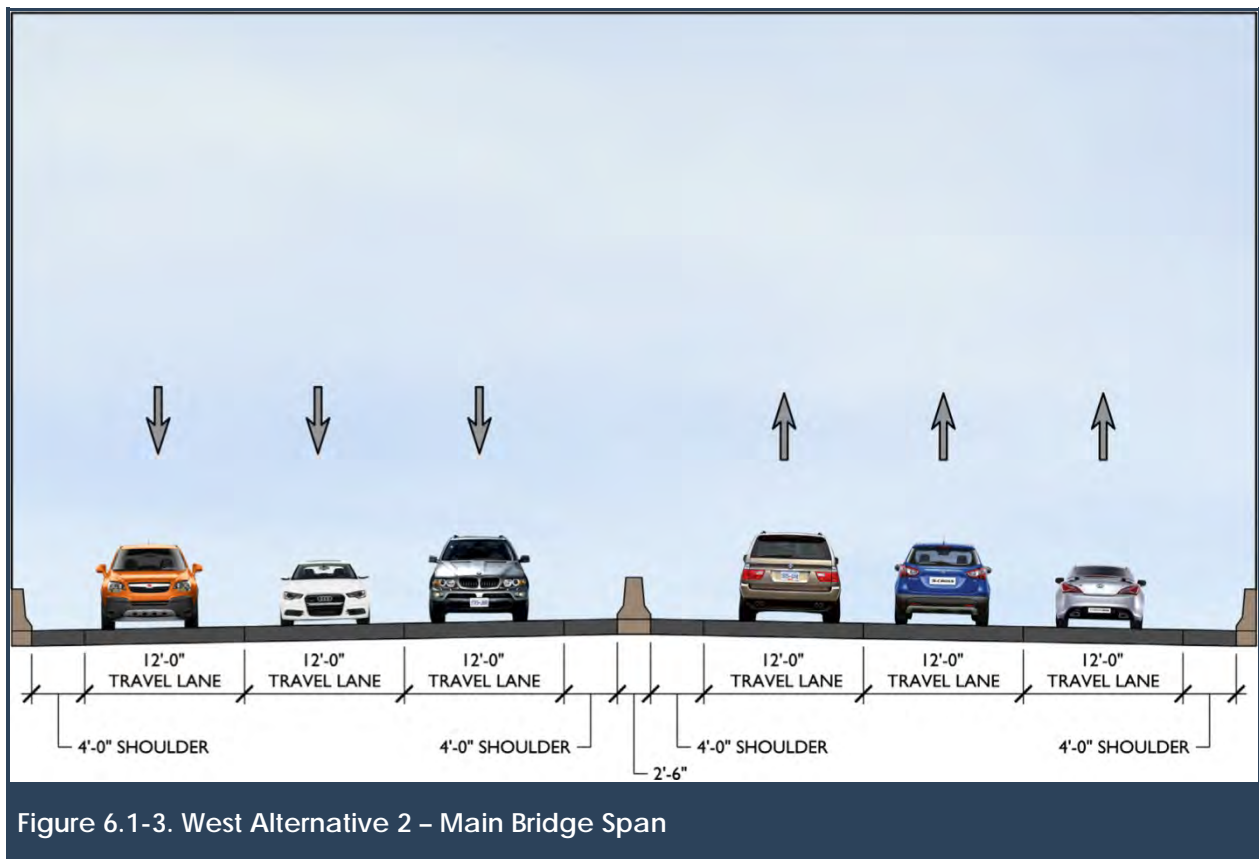
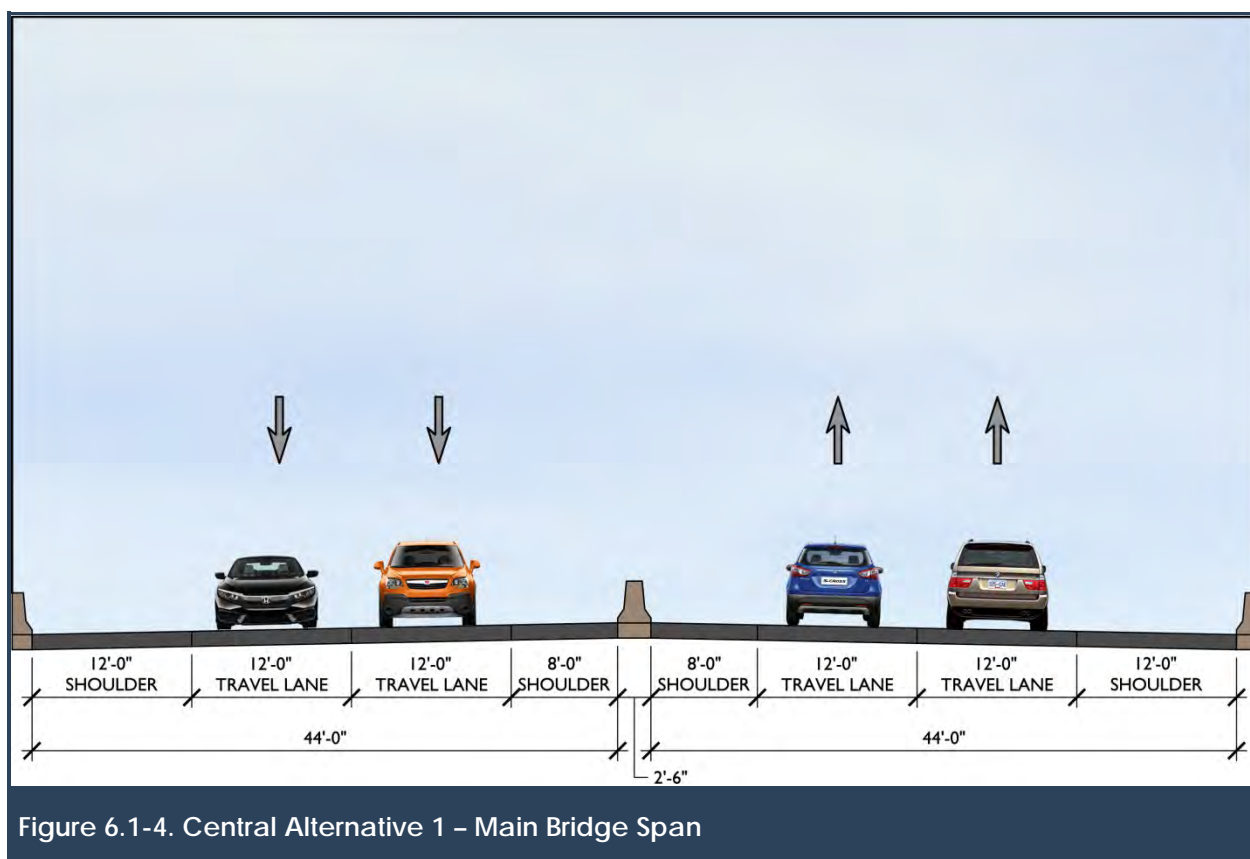


Figure 6.1-2. West Alternative 1 – Main Bridge Span





The No Build Alternative does not meet the purpose or need for this project, but it serves as a baseline comparison for the build alternatives. Because the structural condition of the bridges is assumed to continue to deteriorate over the next several years, this alternative would include the major rehabilitation of the US 41 bridges. Under this alternative, no physical changes are expected to result in the study area.

Due to the complex nature of the bridges, each alternative is evaluated separately from the roadway elements analyzed in [Chapter 5](#) –. The bridge alternatives for both West Alternatives 1 and 2 and Central Alternative 1 are evaluated according to the methodology and approach outlined in [Chapter 2](#) –. The components of visual quality used to evaluate visual resources include natural harmony, cultural order, and project coherence (refer to [Section 2.2.3](#)).

6.2 BRIDGE SETTING

The project area is characterized as a rural river valley with steep, wooded river banks. The Ohio River is roughly 2,000 feet wide at existing and proposed bridge locations. There is limited development adjacent to the river corridor. Surrounding areas may be characterized as rural, natural, and within a floodplain. [Plates 6.2-1 through 6.2-4](#) illustrate the existing visual quality of the Ohio River, river banks, and surrounding rural and natural landscape.



Plate 6.2-1. Upper Ohio River with US 41 Twin Bridges in the background, looking upstream



Plate 6.2-2. US 41 Twin Bridges in the foreground, looking upstream



Plate 6.2-3. Rural areas to the north of the US 41 Twin Bridges

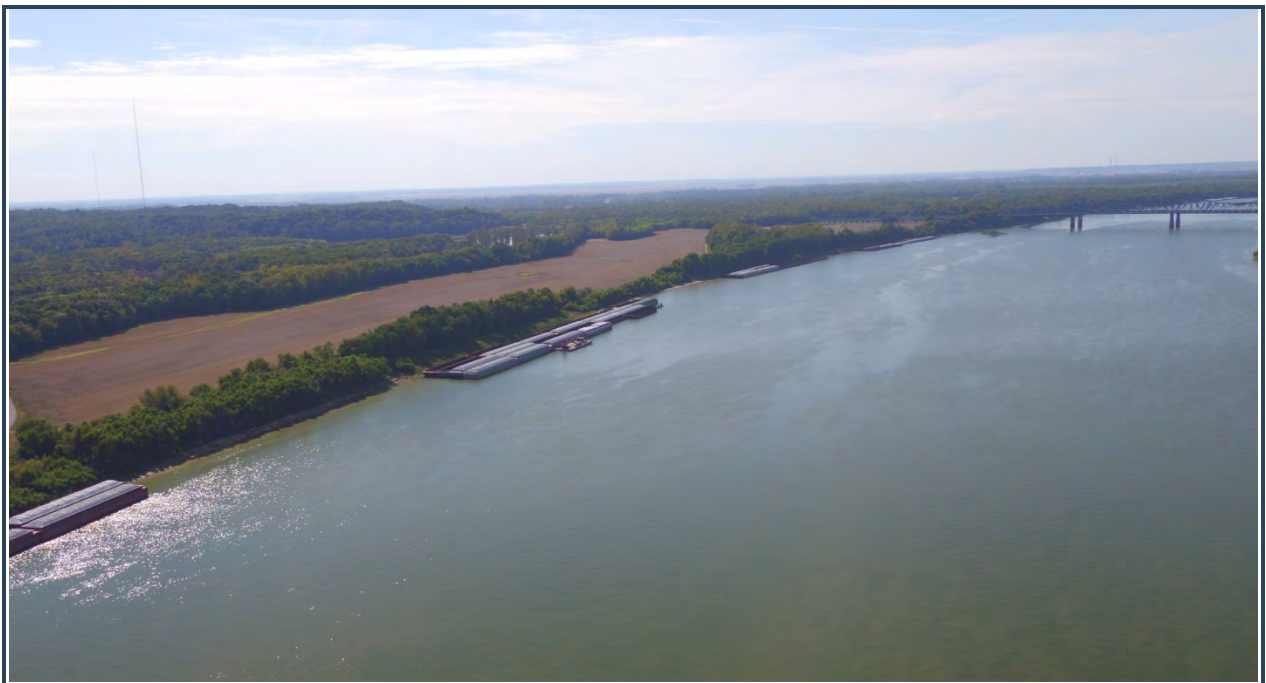


Plate 6.2-4. Natural areas to the south of the US 41 Twin Bridges

6.3 VIEWER RESPONSE AND SENSITIVITY

Changes to the visual environment in this location would only affect the bridge itself, with the remaining aspects of the river corridor remaining unchanged. Viewer groups in this area include bridge travelers (commuting, touring, motoring, and shipping), who have views from the bridge(s), and bridge neighbors (recreational, retail, and agricultural), which have views to the bridge(s), (refer to **Section 4.2**). However, the bridge neighbors' views are very limited, due to bridge surroundings. The bridge(s) are largely surrounded by agricultural land. Therefore, the visual impacts of the bridge(s) are somewhat reduced due to the limited number of viewers. Bridge neighbors may catch a glimpse of the bridge(s) from surrounding areas or the river itself.

The existing bridges are in the foreground and background of the perspective of travelers along US 41. For travelers, the bridges create a strong sense of entrance and act as a transition zone from Indiana to Kentucky. Views entering both Evansville and Henderson are framed by the bridge.

The bridge is in the background of the perspective of immediate local Evansville and Henderson residents and businesses. Interstate neighbors are a high-sensitivity user group and have the widest field of vision (FHWA 2015 Guidelines page 5-7). However, although they have constant exposure to the bridges and may notice visual changes to their appearance, they are likely to become desensitized to views over time. The dense buffer of mature trees along the riparian corridor and density of surrounding natural areas significantly limits the overall visibility of the existing bridges from nearby urban and residential areas.

6.4 BRIDGE ALTERNATIVES

The US 41 twin bridges, formally known as the Bi-State Vietnam Gold Star Bridges, connect Evansville to Henderson along US 41. They are just south of the existing US 41/I-69 interchange in Evansville and carry approximately 40,000 vehicles across the Ohio River each day. With the nearest bridge crossing between Kentucky and Indiana more than 70 miles from the project area, the bridges are the only crossing in the area. Although no bridge type has been chosen for the crossing at the time of this VIA writing, it is important to understand how each bridge type will impact the visual quality of the alternatives. Subsections 6.3.1 through 6.3.5 assess the visual quality for the five scenarios.

6.4.1 EXISTING US 41 BRIDGES

The existing bridges are cantilevered through truss bridges (**Figure 6.4-1**). **Plates 6.4-1 through 6.4-8** illustrate the motorists' view of the bridges. Cantilevered through truss bridges are structures that have cantilevered arms on either side of a through truss. Cantilevered arms are structures that project horizontally into space and are only supported on one end. Through trusses are a series of interconnected elements that are supported by triangular forms above the roadway.

Each bridge has two navigation channels and two 12-foot traffic lanes. The northbound bridge, which opened in 1932, has a main span of 720 feet. The southbound bridge, which opened in 1965, has a main span of 600 feet. Although the bridges are not currently on the National Register of Historic Places, one of the bridges was deemed eligible and the other has been recommended

eligible for inclusion. **Plates 6.4-1 through 6.4-8** illustrate the motorists' view of the bridges. (Note that temporary construction was occurring at the time of the field visit as evidenced in the figure.)



Figure 6.4-1. Existing US 41 Bridges



Plate 6.4-1. Travelers approach to the southbound US 41 twin bridge with the northbound bridge in the foreground



Plate 6.4-2. Travelers' perspective from the southbound US 41 bridge looking at the northbound US 41 bridge



Plate 6.4-3. Travelers' perspective from the southbound US 41 bridge



Plate 6.4-4. Travelers' perspective from the egress of the southbound US 41 bridge, approaching Henderson, KY



Plate 6.4-5. Travelers' approach to the northbound US 41 twin bridge with the southbound bridge at left



Plate 6.4-6. Travelers' perspective during construction from the northbound US 41 bridge looking at the southbound US 41 bridge to the left



Plate 6.4-7. Travelers' perspective from the northbound US 41 bridge



Plate 6.4-8. Travelers' perspective from the egress of the northbound US 41 bridge, approaching Evansville, IN

NATURAL HARMONY

The natural harmony of the existing US 41 bridges is very high. The twin bridges are landmarks in the Evansville and Henderson communities. They stand in strong contrast to the surrounding landscape and are the dominant element in the view (**Plate 6.4-9**). The vividness of the bridges is affected by the reflective surface of the water, which accentuates the structural elements of the bridges and leaves a memorable impression with the viewer.

CULTURAL ORDER

The cultural order of the bridges is moderately low. The structure of the bridges obstructs views of the surrounding landscape and encroaches on the natural visual setting of the Ohio River (**Plate 6.4-10**). The bridges also interfere with extended views down the Ohio River.

PROJECT COHERENCE

The project coherence of the bridges is moderately low. The bridges overpower the landscape and are visually intrusive. The natural and man-made elements are not balanced in this view.



Plate 6.4-9. The US 41 Twin Bridges are the most dominant elements in the view



Plate 6.4-10. The structure of the US 41 Twin Bridges obstructs views of the surrounding landscape for travelers on the bridge.

SUMMARY OF VISUAL QUALITY

Table 6.4-1 summarizes the existing visual quality rating for the existing US 41 bridges. As shown in the table, the overall visual quality rating for this view is 4.33 (Moderate/Average).

Table 6.4-1. Existing Visual Quality – Existing US 41 Bridges

BRIDGE ALTERNATIVE	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY RATING	VISUAL QUALITY
Existing US 41 Bridges	7	3	3	4.33	Moderate/ Average

6.4.2 CENTRAL ALTERNATIVE 1: EXISTING LANDSCAPE

The visual character of the existing landscape of Central Alternative 1 highlights the Ohio River (**Plates 6.4-11 and 6.4-12**). Views of the Ohio River landscape embody the visual characteristics of the floodplain prototype. It is a low population area with a high diversity of forms, lines, colors, and textures created by the water and adjacent vegetation. The edges of the water form strong horizontal lines that are softened by the adjacent vegetation. The vegetation experiences seasonal variations of colors and textures. These pattern elements are enhanced by the reflective surface of the water.

Because few potential viewers see the surrounding landscape from the river, the visual character in this scenario is minor.



Plate 6.4-11. Ohio River, looking downstream from the US 41 Twin Bridges to the Ohio River/Green River confluence



Plate 6.4-12. Ohio River, looking upstream from the Green River Barge Service Station

NATURAL HARMONY

The natural harmony of the view looking at the Ohio River landscape is very high. The landscape is very diverse and comprises visually distinct water and vegetation components. The Ohio River dominates this view. The surface of the water enhances the colors and textures of the adjacent vegetation. In this location, the existing US 41 Twin Bridges can be seen from both the northern and southern river banks. These views mimic the high memorability of the existing visual quality of the US 41 Twin Bridges. Although the bridges stand in strong contrast to the surrounding landscape, they are not the most dominant elements in this view.

CULTURAL ORDER

The cultural order of the existing view is moderately high. The landscape is largely unobstructed by non-typical man-made intrusions. The Twin Bridges are considered typical visual intrusions on this view due to their long-established status in the landscape. They are in the background of this view. However, in some scenarios, they obstruct extended views of surrounding landscape and the I-69 ORX bridge.

PROJECT COHERENCE

The project coherence of the existing view is high. The man-made elements in this view are largely integrated with their visual setting.

SUMMARY OF VISUAL QUALITY

Table 6.4-2 summarizes the existing visual quality rating for the Central Alternative 1 existing landscape. As shown in the table, the overall visual quality rating for this view is 6 (High).

Table 6.4-2. Existing Visual Quality – Central Alternative 1: Existing Landscape

BRIDGE ALTERNATIVE	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY RATING	VISUAL QUALITY
Central Alternative 1: Existing Landscape	7	5	6	6	High

6.4.3 CABLE-STAYED BRIDGE

A cable-stayed bridge has one or more towers from which cables run to support a thin deck. The cables run directly from the tower to the deck, forming a fan-like pattern or a series of lines.

The bridge will have six lanes of traffic crossing the Ohio River. The longest span will vary between 1,800 feet and 1,950 feet, depending on the alignment (West Alternatives 1 or 2 or Central Alternative 1) (Figures 6.3-2 through 6.3-4). The bridge will have a single 800-foot navigation channel supported by two primary piers.



Figure 6.4-2. Visual Quality of Views of the Cable-Stayed Bridge (West Alternative 1)

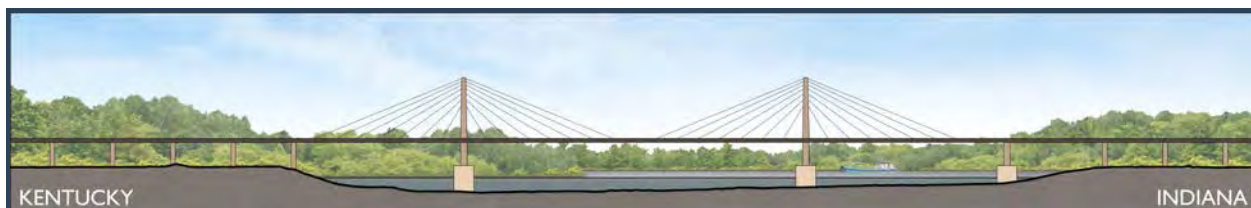
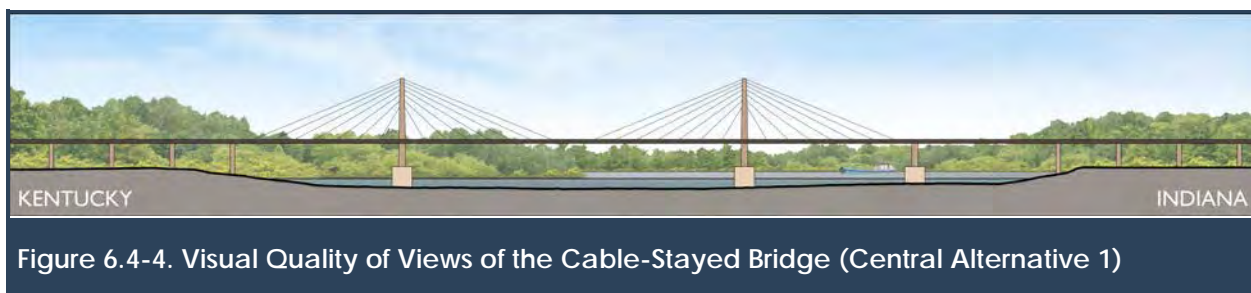


Figure 6.4-3. Visual Quality of Views of the Cable-Stayed Bridge (West Alternative 2)



A Midwestern example of a cable-stayed bridge is the William H. Natcher Bridge, which carries US 231 over the Ohio River and connects Owensboro, KY to Rockport, IN (**Plate 6.4-13**). The bridge, which opened in 2002, has four lanes of traffic and a longest span of 1,200 feet.



Plate 6.4-13. Cable-Stayed Bridge Example: The William H. Natcher Bridge carries US 231 over the Ohio River and connects Owensboro, KY to Rockport, IN (Photo Credit: David Sailors/CORBIS)

NATURAL HARMONY

For proposed West Alternative 2 and Central Alternative 1, the natural harmony of the cable-stayed bridge is very high. The bridge creates an iconic sense of place and stands in strong contrast to the surrounding landscape. The bridge has a large visual mass and size in comparison to its surroundings. It dominates the view but enhances the Ohio River vista.

Alternatively, the natural harmony of the cultural order for West Alternative 1 would be moderately low. In this scenario, an existing bridge would remain and create a conflict of styles that more negatively affect the visual quality.

CULTURAL ORDER

For West Alternative 2 and Central Alternative 1, the cultural order of the cable-stayed bridge is high. Although the bridge is large in scale, the visual effects of its massive vertical span are lessened by its highly transparent nature. The cables allow for a largely uninterrupted flow of landscape elements (**Plate 6.4-14**). The compositional harmony between the bridge and its surroundings makes it compatible with the landscape.

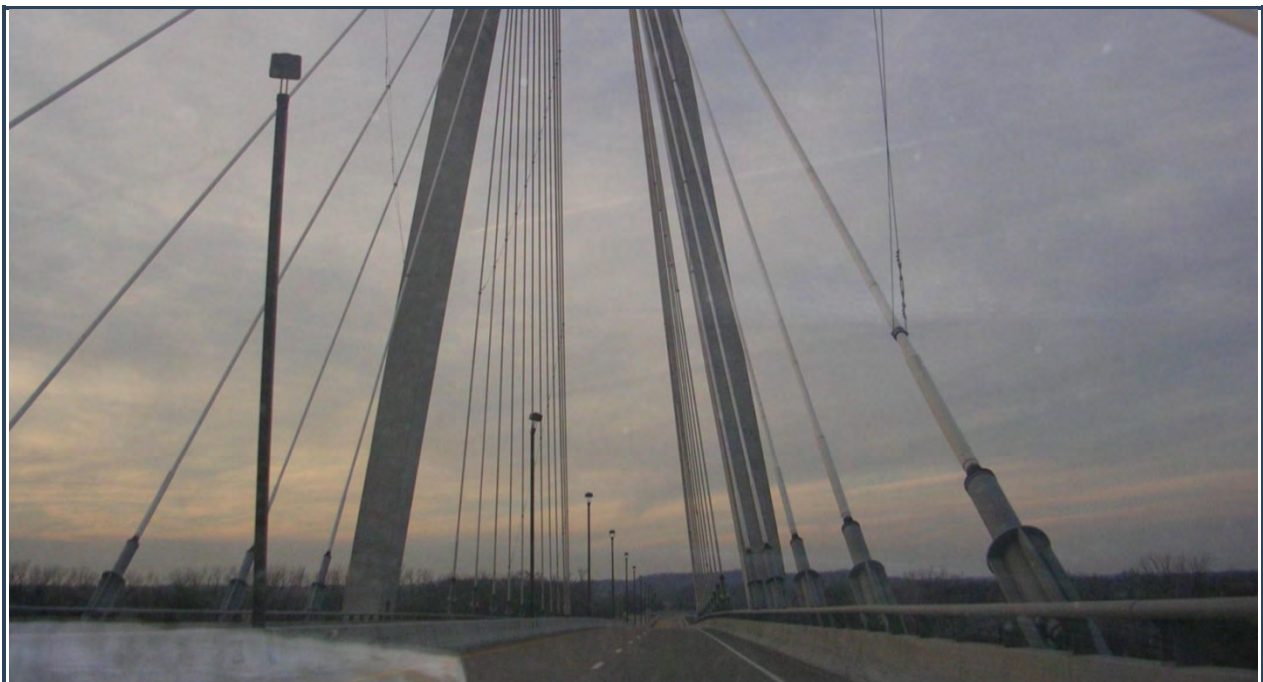


Plate 6.4-14. Cable-Stayed Bridge Example: The cables of the cable-stayed bridge allow for a largely uninterrupted view of surrounding landscape elements (William H. Natcher Bridge) (Photo Credit: James McCray)

Alternatively, the cultural order of the cable-stayed bridge for West Alternative 1 is moderately low. The view of the natural landscape is obstructed by the contrasting vertical lines of the various bridge types and therefore encroaches on the natural setting.

PROJECT COHERENCE

For West Alternative 2 and Central Alternative 1, the project coherence of the cable-stayed bridge is moderately high. The surface of the water reflects the bridge and surrounding landscape. It reveals an intermixing between structural bridge elements and natural setting patterns. The reflection accentuates the form and texture of the bridge and the landscape and leaves a memorable impression with the viewer.

Alternatively, the project coherence of the cable-stayed bridge for West Alternative 1 is moderately low due to the contrasting visual pattern of bridges and lack of visual integration with the natural setting.

SUMMARY OF VISUAL QUALITY

Table 6.4-3 summarizes the proposed visual quality ratings for the cable-stayed bridge. As shown in the table, the overall visual quality rating for the view of West Alternative 1 is 3 (Moderately Low); the overall visual quality ratings for the view of West Alternative 2 and Central Alternative 1 is 6 (High).

Table 6.4-3. Proposed Visual Quality – Cable-Stayed Bridge

BRIDGE ALTERNATIVE	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY RATING	VISUAL QUALITY
Existing US 41 Bridges	7	3	3	4.33	Moderate/ Average
Central Alternative 1: Existing Landscape	7	5	6	6	High
West Alternative 1: Cable-Stayed Bridge	3	3	3	3	Moderate/ Average
West Alternative 2: Cable-Stayed Bridge	7	6	5	6	High
Central Alternative 1: Cable-Stayed Bridge	7	6	5	6	High

VIEWER RESPONSE

Although the anticipated visual quality of the view to and from the cable-stayed bridge is high, the anticipated viewer response of commuters and tourists is very high. Commuters experience routine levels of activity and general awareness of the bridges. However, the substantial change from a bridge that encloses commuters to one that does not will significantly impact their peripheral views. Their views will become more complex, which may distract them from their ultimate destination but also attract their visual interest.

Tourists, who have an experiential mindset for both the journey and the destination, will have an even greater appreciation for the cable-stayed bridge as a visual resource. The bridge opens views to the I-69 ORX bridge and beyond.

The cable-stayed bridge will have little impact on the residents and neighbors of the bridge because their views are largely blocked by adjacent natural areas.

Using the rating methodology and approach established in Section 2, the proposed cable-stayed bridge would result in an overall adverse visual impact on views for West Alternative 1, an overall beneficial visual impact on views for West Alternative 2, and an overall neutral visual impact on views for Central Alternative 1 (Table 6.4-4).

Table 6.4-4. Visual Impact Rating – Cable-Stayed Bridge

BRIDGE ALTERNATIVE	VISUAL QUALITY CHANGE	DEGREE OF VISUAL IMPACT
West Alternative 1: Cable-Stayed Bridge	-1.33	Adverse
West Alternative 2: Cable-Stayed Bridge	1.67	Beneficial
Central Alternative1: Cable-Stayed Bridge	0	Neutral

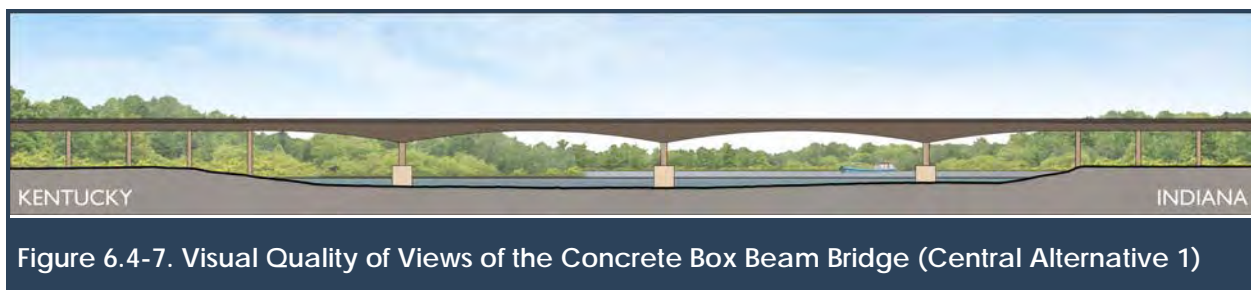
6.4.4 CONCRETE BOX BEAM BRIDGE

A concrete box beam bridge is a structure in which the main beams consist of girders in the shape of a hollow box. The box is typically rectangular or trapezoidal in cross section. The primary mass of the bridge is located below the roadway.

In this scenario, the concrete box beam bridge will be located just west of the existing bridges. It will have six lanes of traffic crossing the Ohio River. The total structure length will vary from 1,800 feet to 1,950 feet, depending on the alignment (West Alternatives 1 or 2 or Central Alternative 1) (Figures 6.3-5 through 6.3-7). The bridge will have a two 600-foot channels supported by three primary piers. If one of the existing US 41 bridges is maintained, the center pier will align with that of the existing bridge.



Figure 6.4-5. Visual Quality of Views of the Concrete Box Beam Bridge (West Alternative 1)



A Midwestern example of a concrete box beam bridge is the Dresbach Bridge, a pair of bridges that carry I-90 over the Mississippi River and connect La Crosse, WI to Winona County, MN (Plate 6.3-15). The bridge, which opened in 2016, has four lanes of traffic and a total structure length of 2,593 feet.



Plate 6.4-15. Concrete Box Beam Bridge Example: The Dresbach Bridge carries I-90 over the Mississippi River and connects La Crosse, WI to Winona County, MN (Photo Credit: Brian Todd)

NATURAL HARMONY

For West Alternative 2 and Central Alternative 1, the natural harmony of the concrete box beam bridge is low. This bridge has a much simpler form than the existing US 41 twin bridges. In terms of character pattern criteria, it is very distinguishable from the existing bridges. The lines of the bridges are much less complex and the mass is much less. The bridge is open; its scale matches that of its surrounding. Although the bridge is visible, it is subordinate to the landscape, which dominates the view with respect to the river. The bridge does not enhance the Ohio River vista.

Alternatively, the natural harmony of West Alternative 1 is very high. The form of the existing bridge will overpower that of the concrete box beam bridge and dominate the view.

CULTURAL ORDER

For West Alternative 2 and Central Alternative 1, the cultural order of the concrete box beam bridge is very high. The low profile of the bridge allows for unobstructed views of the river (**Plate 6.4-16**). The strong compositional harmony between the bridge and its surroundings makes it very compatible with the landscape.



Plate 6.4-16. Concrete Box Beam Bridge Example: The profile of the concrete box beam bridge opens views to the river (Dresbach Bridge)

Alternatively, for West Alternative 1, the cultural order of the concrete box beam bridge is moderately low. The structure of the remaining bridge will obstruct views of the surrounding landscape and encroach upon the natural visual setting of the Ohio River.

PROJECT COHERENCE

For West Alternative 2 and Central Alternative 1, the project coherence of the concrete box beam bridge is very high. The bridge type does not limit the view of the natural landscape and therefore creates an integrated visual design for the natural setting of the Ohio River.

Alternatively, for West Alternative 1, the project coherence is moderately low. The remaining bridge will overpower the box beam bridge and landscape. The bridge is visually intrusive and shows no relationship to the natural setting.

SUMMARY OF VISUAL QUALITY

Table 6.4-5 summarizes the proposed visual quality ratings for the concrete box beam bridge. As shown in the table, the overall visual quality rating for the view of West Alternative 1 is 4.33 (Moderate/Average); the overall visual quality ratings for the view of West Alternative 2 and Central Alternative 1 is 5.33 (Moderately High).

Table 6.4-5. Proposed Visual Quality – Concrete Box Beam Bridge

BRIDGE ALTERNATIVE	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY RATING	VISUAL QUALITY
Existing US 41 Bridges	7	3	3	4.33	Moderate/ Average
Central Alternative 1: Existing Landscape	7	5	6	6	High
West Alternative 1: Concrete Box Beam Bridge	7	3	3	4.33	Moderate/ Average
West Alternative 2: Concrete Box Beam Bridge	2	7	7	5.33	Moderately High
Central Alternative 1: Concrete Box Beam Bridge	2	7	7	5.33	Moderately High

VIEWER RESPONSE

The anticipated visual quality of views to and from the concrete box beam bridge for proposed West Alternative 1 is average. The anticipated viewer response of commuters and tourists in this scenario is moderately low. Although both commuters and tourists will recognize a visual change in the overall structure of the bridge, their subsequent reactions are unlikely to be significant. Because one of the existing bridges is maintained, commuters and tourists will not recognize any visual changes in one of the bridges. However, the addition of the adjacent concrete box beam bridge will open views to three sides of the I-69 ORX bridge and the cantilevered through truss bridge.

The anticipated visual quality of views to and from the concrete box beam bridge for West Alternative 2 and Central Alternative 1 is moderately high. The anticipated viewer response of commuters and tourists in this scenario is very high. Views will be open from the bridges on all

four sides. Viewers will be unencumbered by views of the large steel beams of the existing bridges. This will result in a loss of visual enclosure.

Both bridge scenarios will have little impact on the residents and neighbors of the bridge because their views are largely blocked by adjacent natural areas.

Using the rating methodology and approach established in **Chapter 2** –, the proposed concrete box beam bridge would result in overall neutral visual impact for West Alternative 1, an overall beneficial visual impact for West Alternative 2, and an overall adverse visual impact on Central Alternative 1 (**Table 6.4-6**).

Table 6.4-6. Visual Impact Rating – Concrete Box Beam Bridge

BRIDGE ALTERNATIVE	VISUAL QUALITY CHANGE	DEGREE OF VISUAL IMPACT
West Alternative 1: Concrete Box Beam Bridge	0	Neutral
West Alternative 2: Concrete Box Beam Bridge	1	Beneficial
Central Alternative 1: Concrete Box Beam Bridge	-0.67	Adverse

6.4.5 TIED-ARCH BRIDGE

A tied-arch bridge (also called bowstring-arch or bowstring-girder bridge) is a type of structure that has an arched rib on each side of the roadway (deck), and one tie beam on each arch that supports the deck. Vertical ties connected to the arches support the deck from above.

The tips of the arch of the bridge are tied together by a bottom chord. Most tied-arch bridges have vertical hangers. In some scenarios, however, the hangers are arranged in a diagonal pattern. These scenarios are illustrated in Figures 6.3-8 through 6.3-13.



Figure 6.4-8. Visual Quality of the Tied-Arch Bridge with Diagonal Hangers (West Alternative 1)



Figure 6.4-9. Visual Quality of the Tied-Arch Bridge with Vertical Hangers (West Alternative 1)



Figure 6.4-10. Visual Quality of the Tied-Arch Bridge with Diagonal Hangers (West Alternative 2)



Figure 6.4-11. Visual Quality of the Tied-Arch Bridge with Vertical Hangers (West Alternative 2)



Figure 6.4-12. Visual Quality of the Tied-Arch Bridge with Diagonal Hangers (Central Alternative 1)



A Midwestern example of a tied-arch bridge is the Hastings High Bridge, which carries HWY 61 over the Mississippi River in Hastings, MN) (Plates 6.4-17 and 6.4-18). The bridge was opened in 2013 and has four lanes of traffic and a total structure length of 1,983 feet.





Plate 6.4-18. Tied-Arch Bridge Example: The Hastings High Bridge carries US 61 over the Mississippi River in Hastings, MN (Photo Credit: CBS)

NATURAL HARMONY

For West Alternative 2 and Central Alternative 1, the natural harmony of the tied-arch bridge is moderately high. In comparison to the other design options, the bridge best replicates the form and lines of the existing twin bridges. The complexity and density of its structural elements creates a sense of place. Like the cable-stayed bridge, the tied-arch bridge stands in strong contrast to the surrounding landscape. Its curvilinear forms mimic those of the Ohio River. It has a large visual mass and size in comparison to its surroundings and dominates the view, but it enhances the Ohio River vista.

Alternatively, the natural harmony of the cultural order for West Alternative 1 would be moderately low. In this scenario, an existing bridge would remain and create a conflict of styles that more negatively affect the visual quality.

CULTURAL ORDER

For West Alternative 2 and Central Alternative 1, the cultural order of the tied-arch bridge is moderate/average. The large, horizontal arched ribs of the bridge structure may obstruct views of the surrounding landscape. However, the transparency of its hangers allow for a largely uninterrupted flow of landscape elements. For these reasons, the bridge is somewhat compatible and harmonious with its surroundings.

Alternatively, the cultural order of the tied-arch bridge for West Alternative 1 is moderately low. The view of the natural landscape is obstructed by the contrasting vertical lines of the various bridge types and therefore encroaches on the natural setting.

PROJECT COHERENCE

For West Alternative 2 and Central Alternative 1, the project coherence of the tied-arch bridge is moderate/average. The reflection will be dominated by the structure of the bridge and accented by the natural elements of its surroundings. The surface of the water reflects the bridge and surrounding landscape, leaving a memorable impression with the viewer. The similarity of the tied-arch bridge to the existing twin bridges results in little change in reflections on the surface of the water.

Alternatively, the project coherence of the tied-arch bridge for West Alternative 1 is moderately low due to the contrasting visual pattern of bridges and lack of visual integration with the natural setting.

SUMMARY OF VISUAL QUALITY

Table 6.3-7 summarizes the proposed visual quality ratings for the tied-arch bridge. As shown in the table, the overall visual quality rating for the view of West Alternative 1 is 3 (Moderately Low); the overall visual quality ratings for the view of West Alternative 2 and Central Alternative 1 is 4.67 (Moderately High).

Table 6.4-7. Proposed Visual Quality – Tied-Arch Bridge

BRIDGE ALTERNATIVE	NATURAL HARMONY	CULTURAL ORDER	PROJECT COHERENCE	VISUAL QUALITY RATING	VISUAL QUALITY
Existing US 41 Bridges	7	3	3	4.33	Moderate/ Average
Central Alternative: Existing Landscape	7	5	6	6	High
West Alternative 1: Tied-Arch Bridge	3	3	3	3	Moderately Low
West Alternative 2: Tied-Arch Bridge	5	4	5	4.67	Moderate/ Average
Central Alternative 1: Tied-Arch Bridge	5	4	5	4.67	Moderate/ Average

VIEWER RESPONSE

Although the anticipated visual quality of the view to and from the tied-arch bridge is moderately high, the anticipated viewer response of commuters and tourists is also high. Like the cable-stayed bridge, the substantial change from a bridge that visually encloses commuters to one that is largely open will significantly alter perceptions of the landscape. However, the overall form of the bridge is visually similar to that of the existing bridge. Commuters' general awareness of the

bridge will initially increase but will fade over time due to the frequency of their exposure to the views.

Tourists will have a moderately high level of appreciation for the tied-arch bridge. Although it is not as prominent as a landmark as the cable-stayed bridge, it does have substantial infrastructure that will increase its overall memorability for area visitors.

The tied-arch bridge will have little impact on the residents and neighbors of the bridge because their views are largely blocked by adjacent natural areas.

Using the rating methodology and approach established in **Chapter 2** –, the proposed tied-arch bridge would result in overall beneficial visual impacts on views for West Alternative 2 and Central Alternative 1. However, it would result in an overall adverse visual impact on views for West Alternative 1 (**Table 6.4-8**).

Table 6.4-8. Visual Impact Rating – Tied-Arch Bridge

BRIDGE ALTERNATIVE	VISUAL QUALITY CHANGE	DEGREE OF VISUAL IMPACT
Tied-Arch Bridge (West Alternative 1)	-1.33	Adverse
Tied-Arch Bridge (West Alternative 2)	0.34	Beneficial
Tied-Arch Bridge (Central Alternative 1)	1.33	Beneficial

6.5 SUMMARY OF VISUAL IMPACTS

To comparatively summarize the visual impacts of the bridge portion of the project, the alternative visual quality and visual impacts were calculated for each bridge alternative per build alternative. This section provides a comprehensive summary of the visual impacts for each bridge alternative.

6.5.1 COMPARISON OF VISUAL QUALITY

The visual impact ratings for each bridge alternative per build alternative were calculated by first determining the visual quality for the existing scenarios and proposed bridge alternatives (refer to **Sections 6.4.1** through **6.4.5**). Visual quality was calculated using the methodology and formulas discussed in **Section 2.3**. The components of visual quality used to evaluate visual resources include vividness, intactness, and unity.

Table 6.5-1 illustrates the comparison of visual quality for each bridge alternative per build alternative and the existing conditions.

Table 6.5-1. Comparison of Visual Quality

	EXISTING VISUAL QUALITY	DEGREE OF VISUAL IMPACT
Existing US 41 Bridges	4.33	Moderate/Average
Central Alternative 1: Existing Landscape	6	High
BRIDGE ALTERNATIVE	PROPOSED VISUAL QUALITY	DEGREE OF VISUAL IMPACT
West Alternative 1: Cable-Stayed Bridge	3	Moderate/Average
West Alternative 2: Cable-Stayed Bridge	6	High
Central Alternative 1: Cable-Stayed Bridge	6	High
West Alternative 1: Concrete Box Beam Bridge	4.33	Moderate/Average
West Alternative 2: Concrete Box Beam Bridge	5.33	Moderately High
Central Alternative 1: Concrete Box Beam Bridge	5.33	Moderately High
West Alternative 1: Tied-Arch Bridge	3	Moderately Low
West Alternative 2: Tied-Arch Bridge	4.67	Moderate/Average
Central Alternative 1: Tied-Arch Bridge	4.67	Moderate/Average

6.5.2 COMPARISON OF VISUAL IMPACT

After finding the visual quality ratings for the existing conditions and proposed bridge alternatives per build alternative, the visual impact was determined. Visual impact is a function of visual resource change and viewer response (refer to [Section 2.3.1](#)). It is found by determining the visual resource change of views of the bridge alternatives and the resulting degree of visual impact.

The visual resource change was calculated using the methodology discussed in [Section 2.3.1](#). The results of the visual resource change indicate the value of visual impact.

The degree of visual impact was found using the methodology discussed in [Section 2.3.3](#). As previously described, a negative score indicates an adverse visual impact, a positive score indicates a beneficial visual impact, and a score of 0 indicates a neutral visual impact (no change).

Table 6.5-2 illustrates the comparison of visual impact for each bridge alternative per build alternative and the existing conditions.

Table 6.5-2. Comparison of Visual Resource Change and Degree of Visual Impact

BRIDGE ALTERNATIVE	VISUAL QUALITY CHANGE	DEGREE OF VISUAL IMPACT
Existing US 41 Bridges	N/A	N/A
Central Alternative 1: Existing Landscape	N/A	N/A
West Alternative 1: Cable-Stayed Bridge	-1.33	Adverse
West Alternative 2: Cable-Stayed Bridge	1.67	Beneficial
Central Alternative 1: Cable-Stayed Bridge	0	Neutral
West Alternative 1: Concrete Box Beam Bridge	0	Neutral
West Alternative 2: Concrete Box Beam Bridge	1	Beneficial
Central Alternative 1: Concrete Box Beam Bridge	-0.67	Adverse
West Alternative 1: Tied-Arch Bridge	-1.33	Adverse
West Alternative 2: Tied-Arch Bridge	0.34	Beneficial
Central Alternative 1: Tied-Arch Bridge	1.33	Beneficial

6.5.3 WEST ALTERNATIVE 1 AND 2

West Alternatives 1 and 2 will cross the Ohio River at the location of the existing US 41 bridges. Thus, the alternative visual quality for each bridge alternative is compared to the existing visual quality of the twin bridges.

The concrete box beam bridge will have the highest visual quality rating for West Alternative 1, in which one existing US 41 bridge has been maintained. In this scenario, the degree of visual impact to the existing view is neutral (no change). However, the cable-stayed bridge and tied-arch bridge options are incompatible with the existing US 41 bridge. They create a conflict of styles and result in adverse visual impacts on the view.

In comparison, the cable-stayed bridge will have the highest visual quality rating for West Alternative 2, where no existing US 41 bridges are maintained. This is due to its high memorability. The concrete box beam bridge also receives a high visual quality rating due to its low profile and relative transparency compared to the other bridge options. The tied-arch bridge receives the lowest visual quality rating. It has a lower natural harmony rating than the cable-stayed bridge, as well as lower cultural order and project coherence ratings than the concrete box beam bridge. However, each bridge alternative has a beneficial degree of visual impact on the view.

6.5.4 CENTRAL ALTERNATIVE 1

Central Alternative 1 will cross the Ohio River east of the existing US 41 bridges. For this analysis, the alternative visual quality ratings for each bridge alternative are compared to the existing visual quality of the potential Central Alternative 1 bridge.

The tied-arch bridge will have the highest visual quality rating for Central Alternative 1 due to its high memorability. It results in a beneficial visual impact on the view. The cable-stayed bridge also receives a high visual quality rating due to its high memorability, but it results in a neutral visual quality rating due to its high visibility from the surrounding landscape. The concrete box-beam bridge results in the lowest visual quality rating due to its low vividness compared to that of the existing landscape. It is the only bridge option that results in an adverse visual impact on the view.

CHAPTER 7 – MITIGATION

Mitigation is the final analysis of the visual impact assessment (refer to Section 2.4). Mitigation involves the enhancement of beneficial impacts and the avoidance, minimization, or compensation of adverse impacts. Mitigation techniques address the specific impacts created by the alternatives (refer to **Section 2.4.2**). They may be applied at different stages of the project's lifespan, including construction and completion.

7.1 RESIDENTIAL LANDSCAPE UNIT

To mitigate the visual compatibility of the view from the residential landscape unit to the interstate for residents, access and circulation, lighting and structural elements, and landscape techniques may be used. Views in this landscape unit include the Springer Road/Springer Drive, Donna Drive/Johnson Drive, Culpepper Court, and US 60/Jackson McClain Property (refer to **Section 5.1**).

Visual and physical separation between the residential areas and the proposed interstate may be minimal. Possible techniques to minimize this impact include providing consistent sidewalk infrastructure on one or both sides of the interstate, providing a multiuse path on one or both sides of the interstate, and enhancing intersections with pedestrian and vehicular navigation elements.

Other elements may include providing appropriately scaled lighting elements, sound walls to limit noise and visibility of the interstate from adjacent residential areas, and fences between the interstate and homes to increase physical and visual perceptions of safety.

Finally, providing a vegetation buffer with shade trees, ornamental trees, shrubs, and perennials between the interstate and residential area may help decrease the overall visual impact of the interstate on the residential landscape unit.

7.2 NATURAL LANDSCAPE UNIT

To conserve the visual quality of the view of the natural landscape unit from the interstate for neighbors and travelers, wayfinding practices may be used. Views in this landscape unit include Elm Street/Atkinson Park Circle, Elm Street/Atkinson Park Road (Shelter), John James Audubon State Park (IC-8029A/IC-8029B), US 41/John James Audubon State Park (IC-8029A), and Green River Road 2/Green River State Forest (refer to Section 5.2). Significant visual impacts on the landscape unit may be mitigated by drawing the attention of motorists to local natural amenities. Techniques to achieve this may include providing gateway signage at key locations and intersections, establishing identity signage at key destinations, providing wayfinding signage at consistent locations along the proposed interstate, and increasing the scale of existing signage elements.

In addition, landscaping practices can be used. Landscaping approaches may include providing a vegetation buffer with shade trees, ornamental trees, shrubs, and perennials between the interstate and adjacent natural areas.

7.3 RURAL LANDSCAPE UNIT

To enhance the visual quality of the view from the interstate to the rural landscape unit for travelers, wayfinding and lighting practices may be used. Views in this landscape unit include US 41/Waterworks Road, Weinbach Avenue, and US 60/CSX Railroad (refer to [Section 5.3](#)). The interstate will diversify the views of the rural landscape unit. To enhance these views, techniques may include providing wayfinding signage at consistent locations along the proposed interstate, and using appropriately scaled lighting elements.

7.4 FLOODPLAIN LANDSCAPE UNIT

To mitigate the visual quality of the view from the floodplain landscape unit to the interstate for neighbors, landscaping practices may be used. Views in this landscape unit include US 41/Borrow Pit Wetlands, US 41/Ellis Park, and Shawnee Drive (refer to [Section 5.4](#)). Landscaping techniques may include providing a vegetation buffer with taller shade trees, ornamental trees, shrubs and perennials between the interstate and adjacent land uses.

7.5 URBAN LANDSCAPE UNIT

To mitigate views of the interstate from the urban landscape unit for neighbors, structural elements, public art, and landscaping practices may be used. Views in this landscape unit include US 41/Watson Lane, US 41/Superior Auto, and US 41/Wendy's (refer to [Section 5.5](#)). In the urban landscape unit, the interstate may encroach on views for residents and businesses. Techniques to mitigate this may include providing sound walls that limit noise and visibility of the interstate from adjacent land use areas, providing fences between the interstate and adjacent land use areas to increase physical and visual perceptions of safety, creating public art at key locations along the project alternative, and providing a vegetation buffer with shade trees, ornamental trees, shrubs, and perennials between the interstate and adjacent land use areas.

To enhance the view from the interstate to the urban landscape unit for travelers, access and circulation, lighting, wayfinding, landscaping, and public art practices may be used. Techniques may include providing consistent sidewalk infrastructure or multiuse paths on one or both sides of the interstate, enhancing intersections with pedestrian and vehicular navigation elements, and providing appropriately scaled lighting elements. In addition, providing gateway and wayfinding identity signage at key locations, intersections, destinations, neighborhoods, and commercial developments; and increasing the scale of existing signage elements may help enhance views. Furthermore, the use of landscaping in medians and along the edges of local roads may help generate visual interest.

7.6 BRIDGE ALTERNATIVES

The No Build Alternative, in which both existing US 41 bridges remain, results in no significant impact to existing visual resources. In this scenario, the bridges may receive future major structural rehabilitation. However, the existing visual quality of the bridges and its natural surroundings would remain intact.

For West Alternatives 1 and 2 and Central Alternative 1, enhancement and mitigation strategies are the same. Techniques may include lighting and structural elements, wayfinding, and

functional treatments. Lighting and structural elements may include providing appropriately scaled lighting elements along the length of the bridge. Wayfinding elements may include providing gateway signage at the entrances of both the north and south ends of the bridge. Functional treatments may include the integration of visual pattern elements of functional treatments with those of adjacent land uses.

APPENDIX A – ALTERNATIVE PHOTOGRAPHIC INVENTORY

A-1 WEST ALTERNATIVE 1 AND 2



US 41 – Looking South



US 41/Waterworks Road



Ellis Park – Looking at US 41



Ellis Park – Looking at US 41 Twin Bridges



Ellis Park – From US 41



US 41 Weigh Station



Sinclair Gas – From Nugent Drive



US 41 Twin Bridges – From Nugent Drive



US 41 – Bridge Egress



Henderson Welcome Sign – From US 41



US 41/Wolf Hills Road



Audubon State Park – From US 41



Race Track Road – Looking at US 41



Cole Drive



Audubon State Park



Audubon State Park – Campground



Audubon State Park – Shelter



US 41 – Henderson Commercial Strip



US 41/Watson Lane



Elm Street – Looking South



Watson Lane – Looking West



Robin Road – Looking to US 41



Holiday Inn Express – From US 41



Retting Road – Looking North



KFC – Looking to US 41



Wendy's – Looking to US 41



Atkinson Park – Looking to US 41



Elm Street Apartments – From Elm Street



The Father's House – From US 41



US 41 – Looking to US 60



US 41/US 60



US 41/US 60 – Landscaping



Barrett Circle Apartments



US 41/US 60 – Overlook

A-2 CENTRAL ALTERNATIVE 1



Weinbach Avenue – Looking South



Weinbach Avenue – Looking to Ellis Park



**Weinbach Avenue – Looking to US 41 Twin
Bridges**



Litter – From Nugent Drive



River Camps – From Nugent Drive



Ohio River – From Nugent Drive



Natural Gas Pipeline Station – From Shawnee Drive



Audubon Wetlands – From Wolf Hills Road



Henderson Landfill and Waste Transfer Station – From Wolf Hills Drive



Green River Barge Service



Ohio River – From Green River Road 2



Green River State Forest – From Green River Road 2



Braxton Park Drive



Harmony Lane



US 60 – Looking at Residential



Larue Drive – Looking West



Van Wyke Road – Looking to US 41



Kimsey Lane – Looking to US 41



Bike/Pedestrian Trail – Looking North



Brookstone Drive – Looking East

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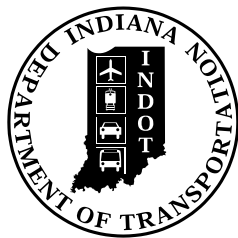


OHIO RIVER CROSSING

Visual Impact Assessment

I-69 Ohio River Crossing Project
Evansville, IN and Henderson, KY

Prepared by:
TAYLOR SIEFKER WILLIAMS DESIGN GROUP
10 South New Jersey Street, Suite 220
Indianapolis, IN 46204



APPENDIX B – LITERATURE CITED

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