

3.14 VISUAL AND AESTHETIC RESOURCES

3.14.1 Introduction

This section describes visual resources in the Project area. The purpose of this information is to establish the existing visual context, against which the reader can understand the visual changes related to the Proposed Action and alternatives. This section also establishes a structure for the discussion of impacts in Section 4.12. For example, this discussion of the visual setting identifies groups of people who have views of the Project area because the Project could change their views and experiences. Section 4.12 analyzes visual impacts to these same viewer groups.

The Project area consists of five river segments: St. Joseph (RM 391 – RM 498), Kansas City (RM 357 – RM 391), Waverly (RM 250 – RM 357), Jefferson City (RM 130 – RM 250), and St. Charles (RM 0 – RM 130). The LOMR is known for its fertile floodplains suitable for agricultural purposes, and the river and its riparian corridor are the predominant visual features in the Project area landscape and viewshed.

The majority of development along the river is comprised of rural areas and small towns and cities with roots as agricultural communities. The cities of St. Joseph, Kansas City, North Kansas City, and the outlying suburbs of St. Louis are larger metropolitan centers in the Project area and along the river; these areas add to the view characteristics in the Project area. Recreational uses are located in both the rural and developed areas, and primarily consist of parks and trails, conservation and wildlife areas, river access points, and recreational uses on the river itself (see Figure 3.14-1). Views associated with the river, urban areas, and recreational areas are discussed by river segment in Section 3.14.5.

Onshore and offshore dredging operations, and the associated equipment on the river, are features in the river landscape (see Figure 3.14-2). These operations introduce barges and heavy equipment into the viewshed of the river, a valued visual resource, and detract from views associated with the river itself. While operations, in their entirety, may detract from views associated with the river, some viewers are likely to regard barges and tows as an aesthetic resource that add to the interest of views. Conversely, other viewers may seek out areas on the river that do not have views of barges, high boating activity, and development in search of views with fewer human and more natural influences. Viewer groups affected by dredging activities include residents in riverside communities and recreationists along the Project segments in rural and developed areas, who have a higher sense of ownership of views of the river. Residents near dredging operations, however, see these operations as

part of their existing visual environment (see Figure 3.14-3). Those employed at riverside places of business and industrial areas and motorists using adjacent roadways are moderately affected by dredging operations because, although they value views of the river, they are more focused on work or driving activities when viewing dredging operations. Agricultural areas are the least affected by dredging operations because visual access to dredging operations is often limited by the presence of vegetation along the riverbanks and the absence of visual access points.



Figure 3.14-1 Recreational Viewers Canoeing on the River

3.14.2 Regulatory Setting

This section describes the regulations that apply to visual and aesthetic resources that could be affected by the Proposed Action and alternatives.



Figure 3.14-2 Onshore Dredging Facilities and Equipment

3.14.2.1 Federal

There are no federally designated roadways in the Project area.

3.14.2.2 State

Missouri Statewide Comprehensive Outdoor Recreation Plan

The Missouri Statewide Comprehensive Outdoor Recreation Plan (SCORP) includes inventories and assessments of current recreation resources (local, state, and federal) within the state (MDNR 2008). The Missouri SCORP is used as a reference by local community recreation planners, park

departments, and the MDNR Grants Management staff when considering grant applications for funding from the Land Water Conservation Fund, the Recreational Trails Program, and other outdoor recreation funding agencies and sources.



Figure 3.14-3 Residence on Riverbank with Views of Dredging Operations on the River

Wetlands also are identified as an important recreational feature, as they provide opportunities for wildlife viewing, bird watching, hiking, hunting, and education. Protecting, restoring, and creating new wetlands are stated to be a high priority for Missouri's recreational interests. Protection of fish and wildlife habitat also is listed as a high priority.

The Missouri SCORP identifies the Katy Trail and the Lewis and Clark Water Trail as trails of statewide importance. The 165-mile segment of the Katy Trail between St. Charles and Boonville is officially designated as part of the Lewis and Clark National Historic Trail and American Discovery Trail. The Katy Trail is also designated as a Millennium Legacy Trail. The Lewis and Clark Water Trail follows RM 0 to RM 554.4 of the Missouri River and is the longest river trail in the nation. The Missouri SCORP indicates that these important trails are or should be supported by local communities as well as state and federal trail funding agencies.

Katy Trail State Park

Katy Trail State Park is a state park administered by the MDNR. Title 10, Division 90, Chapter 1—Organization and Description establishes that:

...The activities of the division consist of making the various state-owned facilities accessible to all segments of today's society including the youth, handicapped, senior citizens and the disadvantaged through a systematic program which will permit the division to acquire, protect, develop and interpret for the inspiration, use and enjoyment of the people of the state a well balanced system of areas of outstanding scenic, recreational and historic significance (Missouri Secretary of the State 2010).

3.14.2.3 Local

This section identifies counties in the Project area for which there were readily available policies regarding visual resources.

FOCUS – Kansas City, Missouri

FOCUS (Forging Our Comprehensive Urban Strategy) is Kansas City's comprehensive and strategic plan. The seven FOCUS component plans include a Preservation Plan, Northland Plan, and Physical Framework Plan.

Preservation Plan

The *Preservation Plan—A Plan for Meaningful Communities* has an action to “develop programs to protect significant abandoned and endangered historic properties” in part by “developing a land conservation program to protect historic, natural and scenic resources, including parks, open space, scenic views, trails, archaeological sites, and other landscape elements” (Kansas City 1997).

Northland Plan

The Northland Plan guides development of northern Kansas City. It states that “because of the area's long history of agricultural and urban use, only remnants of natural vegetation remain. Together with

steep slopes and floodplains, areas of natural vegetation in the Northland are largely concentrated along stream corridors. These corridors provide a host of environmental benefits, such as attenuation of flooding, water quality protection, habitat for wildlife, and scenic quality.” (Kansas City 1998a)

The plan includes an initiative to “protect sensitive natural resources such as stream corridors, floodplains, woodlands, and steep slopes,” that would, in turn, protect scenic resources (Kansas City 1998a). It also promotes development of the Kansas City Metropolitan Greenway System (Metro Green) along the Missouri River to link north and south Kansas City.

Physical Framework Plan

Under “Natural Systems and Historic Resources,” the Physical Framework Plan states that “beyond simple objective measures of risks and costs, natural systems also can be seen as form-givers, through ‘quality of life’ and scenic attributes. In this way, natural features such as vistas, waterfronts, and woodlands attract development by adding value.” It identifies historic resources, slope and topography, vegetation and habitat types, water resources and floodplains, and soils as the form-givers that have and do shape Kansas City (Kansas City 1998b).

St. Louis County Zoning Ordinance, Missouri

St. Louis County zoning includes the “Park and Scenic” (PS) Zoning District. Under the PS regulations, “land, owned by public agencies or in which public agencies have some lesser legal interest, which has recreational, scenic, and health value [is subject to PS regulations] and is established to preserve the community’s cultural values by preserving this land in an essentially natural or native condition” (St. Louis County 2010).

St. Charles County Master Plan, Missouri

The Natural Resources section of the master plan states that the “Highway 94 corridor between U.S. Highway 40/61 and the Warren County line contains a unique set of scenic features. In a study of this area prepared in 2002, approximately 30 scenic vistas or view sheds were identified along this 21-mile section of highway.” The master plan identifies a goal to “protect and manage natural resources to retain the benefits they provide by “[minimizing] the impacts of development encroaching on natural resource areas” (St. Charles County 2008).

City-Wide Master Plan of Wyandotte County/Kansas City, Kansas

The City-Wide Master Plan states that parks, open space, and trails “offer unspoiled views and interactions with wildlife” and recommends actions to:

- Enhance the Missouri and Kansas River corridors;
- Promote cluster development along the Missouri River Bluffs to preserve key view sheds, open space and trail connections;
- Develop portholes along the River Corridors to allow safe and convenient public access to the rivers;
- Protect the Missouri and Kansas Rivers, streams and creeks from encroaching development;
- Increase public access to and public ownership of stream corridors; [and]
- Protect, restore and create wetlands in riparian corridors to promote aquatic and wildlife breeding grounds, store floodwaters and provide aesthetic value.” (Wyandotte County 2008) “

3.14.3 Concepts and Terminology

Identifying the visual conditions of a Project area involves three steps:

1. Identifying the visual resources of the landscape;
2. Assessing the character and quality of those resources relative to the overall regional visual character; and
3. Determining the importance of views of the visual resources to the people who view them.

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area (FHWA 1988). Visual quality can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area (BLM 1980). Viewer response is a combination of viewer exposure and viewer sensitivity. Viewer exposure is a function of the number of viewers, number of views seen, distance of the viewers, and viewing duration. Viewer sensitivity relates to the extent of the public’s concern for a particular viewshed. These terms and criteria are described in detail below.

3.14.3.1 Visual Character

Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, rural, and urban features and is intrinsically tied to land use. Urban features are those associated with landscape settlements and development, including roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly seasonally, and even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic components used to describe visual character for most visual assessments are the elements of form, line, color, and texture of the landscape features (USFS 1995, FHWA 1988). The appearance of the landscape is

described in terms of the dominance of each of these components. For the purpose of this analysis, aerial imagery and the interactive capabilities of Google Earth and Google Maps were used to evaluate the existing visual character the five river segments.

3.14.3.2 Visual Quality

Visual quality is evaluated using the well-established approach to visual analysis adopted by the Federal Highway Administration, using the concepts of vividness, intactness, and unity (FHWA 1988, Jones et al. 1975), which are described below.

- Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- Intactness is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes and in natural settings.
- Unity is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, as modified by its visual sensitivity. High-quality views are highly vivid and relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity.

3.14.3.3 Visual Exposure and Sensitivity

Viewer exposure is based on the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and type and expectations of individuals and viewer groups.

To identify the importance of views of a resource, a viewshed can be broken into distance zones of foreground, middleground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer. Although distance zones in a viewshed may vary between different geographic regions or types of terrain, the standard foreground zone is 0.25–0.5 mile from the viewer, the middleground zone from the foreground zone is 3–5 miles from the viewer, and the background zone is from the middleground to infinity (USFS 1995).

The measure of the quality of a view is tempered by the overall sensitivity of the viewer. Visual sensitivity depends on the number and type of viewers, and the frequency and duration of views. Visual sensitivity also is modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration. For example, visual sensitivity is generally higher for views seen by people who are driving for pleasure; people engaging in recreational activities such as hiking, biking or camping; and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (USFS 1995, FHWA 1988, SCS 1978). Commuters and non-recreational travelers generally have fleeting views and tend to focus on commute traffic, not on the surrounding scenery; therefore, these viewers generally are considered to have low visual sensitivity. Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they generally are considered to have high visual sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are usually assessed as having high visual sensitivity.

Judgments of visual quality and viewer response must be based in a regional frame of reference (SCS 1978). The same landform or visual resource appearing in different geographic areas could have a different degree of visual quality and sensitivity in each setting. For example, a small hill may be a significant visual element on a flat landscape but have very little significance in mountainous terrain.

3.14.4 Sources of Information

Information used in the preparation of this section included:

- General plans;
- Google Earth and Google Maps; and
- Project area maps.

3.14.5 Viewer Groups and Viewer Responses

The primary viewer groups in the Project area are persons living or conducting business near dredging operations; travelers using the interstates, highways, and smaller local roads; and recreationists (boaters, fishermen, and swimmers using the Missouri River; trail users; bicyclists; and joggers). All viewer groups have direct views of the Project areas described in this document.

3.14.5.1 Residents

Suburban and rural residences are located directly adjacent to riverbanks or are separated from them by local streets, agricultural lands, industrial districts, or open land. Suburban residences are mostly oriented inward toward the developments; and only residents along the water's edge have a full view of the LOMR, including current dredging operations. Both suburban and rural residents are likely to have a high sense of ownership over their adjacent waterways, the open space that surrounds them, the recreational opportunities they provide, and their inherent scenic quality. Because of the sense of ownership and their extended viewing times of the river, residents would be highly sensitive to visual changes associated with the river.

3.14.5.2 Businesses

Viewers from industrial, commercial, government, and educational facilities have semi-permanent views of the LOMR from their respective facilities. Situated in different locations throughout the Project area, these facilities' views differ depending on the placement of the dredging operations and other activities on the river. Employees and users of these facilities are likely to be occupied with their work activities and tasks at hand, have intermittent visual access to the river, and would have moderate sensitivity to visual changes associated with the river.

3.14.5.3 Roadway Users

The vantages of roadway users differ based on the roadway they are traveling and the elevation of the roadway. The majority of views are limited to the foreground by suburban, commercial, and industrial development. However, if the vantage is elevated, as on bridges crossing the Missouri River and other local roadways along the river banks, the viewer has a greater chance of viewing the river, dredging operations, and other activities.

Travelers use roadways at varying speed. Normal highway and roadway speeds differ based on the traveler's familiarity with the route and roadway conditions (for example, presence or absence of rain or snow). Single views typically are of short duration, except on straighter stretches where views last slightly longer. Viewers who frequently travel these routes generally possess moderate visual sensitivity to their surroundings. The passing landscape becomes familiar to these viewers, and their attention typically is not focused on the passing views but on the roadway, roadway signs, and surrounding traffic. Viewers who travel local routes for their scenic quality generally possess a higher regard for the visual experience. Roadway users would have low sensitivity to visual changes

associated with the river because of the intermittent and sometimes limited visual access to the river combined with the short duration of views allowed by normal roadway speeds.

3.14.5.4 Recreationists

Recreational users view the Project area from parks, waterways, roadways, and trails. Recreational uses consist of boating and fishing, hunting, birding, walking, running, jogging, and bicycling in and around the river and along trails and local roads. Users of the waterways are likely to seek out natural areas within the corridor, such as sand and gravel bars and beaches, in addition to using the waterways as a resource. Waterway users have differing views based on their location in the landscape and are accustomed to variations in the level of industrial, commercial, suburban, and recreational activities occurring within the Project area. Viewer sensitivity is high among recreationists because they are more likely to regard the natural and built surroundings as a holistic visual experience.

3.14.6 Existing Visual Conditions

The Project area is located between the riverbanks of the Missouri River, starting in the east at the confluence of the Missouri River with the Mississippi River (RM 0), approximately at St. Louis, Missouri, and extending west to approximately Rulo, Nebraska (RM 498). Agriculture located along the banks of the Missouri River is the predominant land use type in the Project area. However, many cities and towns are near the Missouri River; the largest is Kansas City, with a population exceeding 400,000. A patchwork of fields separates the urban center of Kansas City, Missouri, and its suburban and rural communities. Overall, a mix of developed and natural landscapes characterizes the areas adjacent to the river.

The alternatives to the Proposed Action may include impacts outside the floodplain (for example, if upland mining becomes a source of sand and gravel). This would affect a broader viewer group and may include more recreationists, motorists, and residents than those limited to the area in and around the Missouri River.

The Project has been broken into five segments between the riverbanks of the Missouri River, described below. Using aerial imagery and the interactive capabilities of Google Earth and Google Maps, the five river segments were evaluated for their existing visual conditions. Google Earth was used to determine places that accommodate recreationists, such as state and local parks.

Figure 3.11-1 (Sheets 1 through 5) shows land cover types along the river that play a large role in

determining the visual conditions of the Project area. There are public recreation areas and river access areas (public boat ramp facilities) in all of the river segments. Locations of these public access boat ramps and other recreational land use locations are described in detail in Section 3.11.

Tables 3.14-1 through 3.14-5 show major river access points (boat ramps) within the Project area but do not serve as a comprehensive list. Figure 3.11-2 (Sheets 1 through 5) shows recreational facilities and bridges that offer views of the Project area. In addition to public boat access points, many private access points are located in the river segments.

3.14.6.1 Visual Condition of St. Joseph Segment

The St. Joseph segment extends along the Missouri River from RM 391 to RM 498. Table 3.14-1 summarizes the towns and cities, bridges, recreation facilities, and dredging operations in the St. Joseph segment with views of the river. Figures 3.11-1 (Sheet 1) and 3.11-2 (Sheet 1) in Land Use and Recreation show the land covers and recreational features, respectively, that affect this segment. A rural visual character comprised of agricultural fields in the floodplain on both banks of the Missouri River dominates views in the segment. A patchwork of cultivated fields reach toward the water's edge but are separated from the river by bands of riparian vegetation. These bands of vegetation vary from thin and sparsely vegetated to wide and densely vegetated, and frequently obstruct views of and from the river. Local roadways sometimes skirt close to the river's edge; however, riparian vegetation often blocks views of the river. Where roadway travelers do have views of the river, they are often brief because they are offered through breaks in vegetation and roadways typically parallel the river for only short intervals. In rural areas of the segment, few residences are located close to the river's edge. However, rural lands transition from agricultural fields to the suburban and urban land uses of St. Joseph, Atchison, and Leavenworth that have developed the river's edge.

Land uses along the river in these towns and cities include industrial, residential, and open space land uses. Industrial uses along the river are comprised of large warehouse facilities and infrastructure with little vegetation; industrial uses offer few public views of the river. Views of the river can be seen by those working at industrial facilities located at the river's edge. Residential areas along the river tend to be large, stately homes that are located higher up on the river's banks, with elevated views out over the river and its lush riparian corridor. The riparian corridor can limit views of the river, dependent on location in the landscape. Open spaces such as parks and conservation areas often provide the most direct and unobstructed public views of the river, along with providing boating access points to the river. The river corridor creates a noticeable contrast to the surrounding area and is used and enjoyed for its vegetation and wildlife, recreational opportunities, and scenic quality. Views of the river have vivid

seasonal contrast in spring and summer when vegetation and agricultural fields are green and in leaf, and higher water flows hide the river bed—compared to fall and winter when vegetation browns and the leaves have fallen, and lower waters expose sand and gravel bars, or when snow blankets the landscape in white. Views from the river to surrounding areas often are limited to the foreground and bluffs in the background by bends in the river, the riverbanks, levees, vegetated riparian corridors, and development. However, in rural locations where the terrain is flatter and riparian vegetation is sparse, limited views of agricultural fields may be possible if a levee is not present.

In addition to open space along the river, bridge crossings often provide scenic views of the Missouri River as roadway travelers cross them. These bridges do not support pedestrian and bicycle traffic in this segment, as identified in Table 3.14-1. Views from bridges may extend to the middleground and background; but a notable part of the viewshed consists of the wide, meandering river corridor that is framed by lush riparian vegetation. Development along the river bank may also be seen when crossing bridges, such as from the Highway 59 Bridge. Most of the roadways in rural areas are set back from and do not offer views of the river. Where roadways travel along the river, scenic views of the river corridor typically are present. Some of these views may be obstructed by roadside or riparian vegetation, crops, or other features. In developed areas, roads pass by the river with open views of the waterway, or these views may be partially or fully obstructed by infrastructure and development.

Holliday Sand & Gravel Company has a dredging operation in this segment (see Table 3.14-1 and Figures 3.11-1 [Sheet 1] and 3.11-2 [Sheet 1] in Land Use and Recreation). Dredging operations include barges with heavy equipment on the river's water surface and onshore stockpile operations that use heavy equipment and have related infrastructure.

The Holliday Sand & Gravel Company onshore facility in St. Joseph is located in an established industrial area on the river bank with agricultural land beyond a thickly wooded corridor and levee on the opposite bank. The industrial, open space, and wooded corridor areas limit views of operation from the banks below the U.S. Highway 36 Bridge. However, motorists traveling over the U.S. Highway 36 Bridge are able to see the onshore facility and some of the dredging operations. In addition, for approximately 6,000 feet immediately upstream from the C.R.I. & P. Railroad Bridge, Interstate 229 (I-229) runs along the east bank of the river providing motorists unobstructed view of the barges and dredging operations. Going north, I-229 provides limited views of the river as it moves away from the river bank and follows the top of the heavily forested bluff for approximately 3 miles before moving farther away from the river. Below the bluff is a relatively narrow strip of generally open floodplain with some agricultural land, a nature center, casino, public ball fields, public waterworks, and a public and

commercial boat ramp. The west bank is primarily open agricultural land. Recreationists on the river have an unobstructed view of barges and dredging operations.

Table 3.14-1 Notable Locations with Views of the Missouri River in the St. Joseph Segment

	Name	River Mile (RM)
Towns and cities	Leavenworth, Kansas	RM 396
	Atchison, Kansas	RM 422
	Elwood, Kansas	RM 448
	St. Joseph, Missouri	RM 448
Bridges	Centennial Bridge (State Route 92) [N]	RM 397.5
	Amelia Earhart Bridge (U.S. Highway 59) [N]	RM 422.5
	U.S. Highway 36 Bridge [N]	RM 447.8
	U.S. Highway 159 Bridge [N]	RM 498
Parks and trails	Veterans Administration Park	RM 394 – RM 395.4
	Landing Park	RM 397
	Riverfront Park	RM 397.5 – RM 399.3
	Weston Bend State Park and Weston Bluffs Trail	RM 402 – RM 403
	Jackson Park	RM 422
	Independence Park	RM 422.9
	Huston Wyeth Park	RM 450
	Remington Nature Center of St. Joseph	RM 450.4
	River Bluffs Park	RM 453.2
Conservation areas (CAs), wildlife areas (WAs), and USACE mitigation sites ^a	Benedictine Bottoms Mitigation Site	RM 424 – RM 428
	Arthur Dupree Memorial CA	RM 449.8 – RM 451.6
	Sunbridge Hills CA	RM 452 – RM 453.2
	Logan Memorial WA	RM 453.2
	Worthwine Island CA	RM 456.2 – RM 459.9
	Monkey Mountain CA	RM 464 – RM 466
	Wolf Creek Bend CA	RM 477 – RM 482
	Bob Brown CA	RM 483 – RM 486

Table 3.14-1 Notable Locations with Views of the Missouri River in the St. Joseph Segment

	Name	River Mile (RM)
River access (RA)	Riverfront Park	RM 397.5
	Independence Park	RM 422.9
	Jentell Brees RA	RM 437.2
	Wathena RA	RM 441
	St. Joseph Yacht Club	RM 444
	Flathead Fishing Club RA	RM 444.7
	Elwood RA	RM 447.8
	Show Boat Landing RA	RM 449
	French Bottom RA	RM 450.4
	Sunset Grill (St. Joseph) RA	RM 451.9
	Nodaway Island RA	RM 462.1
	Brown RA	RM 462.9
	Charles Bend RA	RM 468.4
	Payne Landing RA	RM 477
	Iowa Point Bend RA	RM 485.9
White Cloud	RM 488	
Rulo Park	RM 498	
Existing dredging operations	Holliday Sand & Gravel Company–St. Joseph	RM 447.5

Notes:

[P] = Pedestrian and [B] = Bicycle traffic on bridges. [N] = No or [U] = Undeterminable pedestrian or bicycle traffic on bridges.

^a Locations provided by the U.S. Army Corps of Engineers (USACE).

Sources: Google Earth 2009, 2010; USACE et al. 2003.

Views of and from the river in the St. Joseph segment are moderately vivid. While views of waterways are often highly valued, the visual character of the river corridor in this segment is typical of upstream and downstream portions of the river. The intactness and unity of the viewshed is also moderate because transitions between rural and suburban and urban landscapes are gradual, not abrupt. In addition, each of the rural and developed areas within the segment has the visual cohesion typical of such land uses.

A wide variety of viewer groups in the St. Joseph segment would be affected by proposed dredging operations. Motorists traveling along state and county roads along the river and over bridge crossings are exposed to dredging activities in the Project area. Residents and recreationists, including bicyclists,

pedestrians, and boaters, can view dredging operations along the river. Those employed at businesses and industrial districts along the riverfront of this segment would be exposed to visual changes along the river.

3.14.6.2 Visual Condition of Kansas City Segment

The Kansas City segment extends along the Missouri River from RM 357 through RM 391.

Table 3.14-2 summarizes the towns and cities, bridges, recreation facilities, and dredging operations with views of the river. Figures 3.11-1 (Sheet 2) and 3.11-2 (Sheet 2), respectively, in Land Use and Recreation show land cover and recreational features that affect this segment. Kansas City, Kansas, Kansas City, Missouri, and North Kansas City, Missouri, and their outskirts dominate this segment. Land uses on the floodplain along the river in the urban areas are largely industrial, commercial, and open space, and are comprised of large warehouse and commercial facilities and parks. Only narrow bands of riparian vegetation remain along these river reaches.

Views of the river can be seen by those working at industrial facilities located at the river's edge. Industrial and commercial facilities and infrastructure offer few public views of the river. No major residential areas on the flood plain flank the river in these urban areas. Residential areas generally begin at the edge of the floodplain. Those residential areas may have middle- or background views of the river if located on the bluff, or foreground views if the river bends close to the bluff. Open spaces such as parks often provide the most direct and unobstructed public views of the river, along with providing boating access points to the river (see Figure 3.14-4).

Segments of the river east and west of Kansas City are agricultural lands that reach toward the water's edge but are separated from the river by bands of riparian vegetation. The patchwork of agricultural fields creates a rural visual character that contrasts with the urban nature of the rest of the segment. Within the rural areas, bands of riparian vegetation along the river vary from thin and sparsely vegetated to wide and densely vegetated, and frequently obstruct views of and from the river. Local roadways sometimes skirt close to the river's edge; however, riparian vegetation often precludes views of the river. Where roadway travelers do have views of the river, they are often brief because they are offered through breaks in vegetation and roadways typically parallel the river for only short intervals. In rural areas of the segment, few residences are located close to the river's edge.

Table 3.14-2 Notable Locations with Views of the Missouri River in the Kansas City Segment

	Name	River Mile (RM)
Towns and cities	Randolph, Missouri	RM 360
	Kansas City, Missouri	RM 365
	North Kansas City, Missouri	RM 365
	Kansas City, Kansas	RM 368
	Riverside, Missouri	RM 373
	Parkville, Missouri	RM 377.5
Bridges	Interstate 435 Bridge [N]	RM 360.3
	Chouteau Bridge (State Route 269) [N]	RM 362.3
	Paseo Bridge (Interstate 29/35) [N]	RM 364.7
	Heart of America Bridge (U.S. Highway 71/State Highway 9) [N]	RM 365.5
	Broadway Bridge (U.S. Highway 169) [N]	RM 366.2
	Fairfax Bridge (U.S. Highway 69) [N]	RM 372.5
	Interstate 635 Bridge [N]	RM 374.1
	Interstate 435 Bridge [N]	RM 383.5
Parks and trails	Riverfront Park	RM 362.3 – RM 364
	Richard L. Berkley Riverfront Park	RM 365
	Holland Park	RM 366.3 – RM 369.7
	Kaw Point Riverfront Park	RM 367.5
	EH Young Riverfront Park	RM 372
	English Landing Park	RM 377
	Missouri Riverfront Trail (Platte County Parks & Recreation 2010)	RM 372 – RM 376
Conservation areas (CAs), Wildlife areas (WAs), and USACE mitigation sites	Liberty Bend CA	RM 351
River access (RA)	Riverfront Park RA	RM 363
	Kaw Point Riverfront Park RA	RM 367.5
	English Landing Park RA	RM 377.4
	Leavenworth Boat Club	RM 396.7
Existing dredging operations	Holliday Sand & Gravel Company–Randolph	RM 360
	Holliday Sand & Gravel Company–Riverside	RM 372

Notes:

[P] = Pedestrian and [B] = Bicycle traffic on bridges. [N] = No or [U] = Undeterminable pedestrian or bicycle traffic on bridges.

Sources: Google Earth 2009, 2010; USACE et al. 2003.



Figure 3.14-4 View of a River Access Point from the Missouri River

In addition to open spaces along the river, bridge crossings often provide scenic views of the Missouri River as roadway travelers cross them (see Figure 3.14-5). These bridges do not support pedestrian and bicycle traffic, as identified in Table 3.14-2. Views from bridges may extend to the middleground, with views to the background limited by development. However, a notable part of the viewshed consists of the wide, meandering river corridor that is framed by urban development. Views from bridges may extend to the background, where development is limited and bends in the river allow such views. Roadways in developed areas often pass by the river with open views of the waterway, or these views may be partially or fully obstructed by infrastructure and development. Roadways in rural areas are often set back from and do not offer views of the river. Where roadways travel along the river, scenic views of the river corridor typically are present. However, some of these views may be obstructed by roadside or riparian vegetation, crops, or other features.

While mostly developed in this segment, the river corridor creates a noticeable contrast to the surrounding area and is used and enjoyed for its recreational opportunities, scenic quality, vegetation, and wildlife. Views of the river have vivid seasonal contrast in spring and summer when vegetation and agricultural fields are green and in leaf, and higher water flows hide the river bed—compared to fall and winter when vegetation browns and the leaves have fallen, and lower waters expose sand and gravel bars or when snow blankets the landscape in white. Views from the river to surrounding areas are often limited to the foreground by bends in the river, development, the riverbanks, and vegetated riparian corridor.



Figure 3.14-5 Views of the Fairfax Bridge from West of RM 372

Holliday Sand & Gravel Company has two existing dredging operations in this segment, and The Master's Dredging Company has proposed one (see Table 3.14-2 and Figures 3.11-1 [Sheet 2] and

3.11-2 [Sheet 2] in Land Use and Recreation). Dredging operations include barges with heavy equipment on the river's water surface and onshore stockpile operations that also use heavy equipment and have related infrastructure (see Figure 3.14-6). Onshore facilities have converted areas that would typically be vegetated to large, unvegetated piles of sand and sediment along the river's edge. These features contrast with the more natural areas surrounding the facilities and detract from scenic views of the river corridor. In addition, dredge facilities create noise and movement that draw viewers' attention toward these areas, making them more noticeable to viewer groups.



Figure 3.14-6 Views of Holliday's Riverside Dredging Operation at RM 372

Holliday Sand & Gravel Company's dredging operations are located in more developed areas of the segment. The Holliday Sand & Gravel Company onshore sites are just outside of the urbanized reaches of Kansas City, Missouri. Light industrial land uses, which separate dredging operations from

nearby residential areas, surround these onshore facilities. The opposite shore is used for limited industrial uses that are set back from the water's edge. The Holliday Sand & Gravel Company–Riverside onshore facility is also located directly east of and bordering the EH Young Riverfront Park; the highly visible views of dredging operations detract from the riverfront viewshed.

The vividness, intactness, and unity of views of and from the river in the segment are moderate to moderately low. While views of waterways are often highly valued, the visual character of the river corridor in this segment is substantially developed with industrial and commercial land uses.

Agricultural lands with riparian corridors and open spaces in the urban areas create attractive riverside vantages, providing smaller areas with higher visual quality. However, the predominance of intense development and distinct change from developed to more rural lands visually dissects this segment. Vegetated river banks sometimes act to soften the scale and dominance of industrial areas located adjacent to the river in certain locations.

A wide variety of viewer groups in the Kansas City segment would be affected by proposed dredging operations. Motorists traveling along state and county roads along the river and over bridge crossings are exposed to dredging activities in the Project area. Residents and recreationists, including bicyclists, pedestrians, and boaters, can view dredging operations along the river. Those employed at businesses and industrial districts along the riverfront of this segment would be exposed to visual changes along the river.

3.14.6.3 Visual Condition of Waverly Segment

The Waverly segment extends along the Missouri River from RM 250 through RM 357. Table 3.14-3 summarizes the towns and cities, bridges, recreation facilities, and dredging operations with views of the river. Figures 3.11-1 (Sheet 3) and 3.11-2 (Sheet 3) in Land Use and Recreation show the land covers and recreational features, respectively, that affect this segment.

The land use patterns and visual character along this segment remain consistent throughout the entire extent—agriculture, interspersed with small, residential areas. The river slowly winds through primarily rural and agricultural land uses in the Waverly segment. Quaint rural communities are sporadically interspersed among the predominantly agricultural landscape. Gently rolling terrain transports the viewer throughout this pastoral landscape, where local roadways deliver them to the next agriculture-based community (Google Maps 2009). The nearly continuous band of lush riparian vegetation provides an attractive river edge and acts as a beneficial buffer between viewer groups and potential

dredging operations. Scenic views of the river are accessible to those traveling or working along the river.

Table 3.14-3 Notable Locations with Views of the Missouri River in the Waverly Segment

	Name	River Mile (RM)
Towns and cities	Miami, Missouri	RM 263
	Waverly, Missouri	RM 293.5
	Lexington, Missouri	RM 317
	Wellington	RM 323
	Napoleon	RM 329
	Sibley	RM 337
	River Bend, Missouri	RM 352.5
Bridges	Miami Bridge (State Route 41) [N]	RM 262.6
	Waverly Bridge (U.S. Highway 65) [N]	RM 293.2
	Lexington Bridge (State Route 13) [N]	RM 314.9
	Liberty Bend Bridge (State Route 291) [N]	RM 352.7
Parks and trails	Snake Bluff Recreation Park	RM 262.8
	Van Meter State Park	RM 265
	Port of Waverly Park	RM 293.5
	Lexington Riverfront Park	RM 316.4
	Fort Osage County Park	RM 337
	Mouth of the Little Blue Park	RM 338 – RM 339
	La Benite Park	RM 350.6 – RM 353
Conservation areas (CAs), wildlife areas (WAs), and USACE mitigation sites	Grand Pass CA	RM 266 – RM 272
	Cranberry Bend (USFWS)	RM 280.5 – RM 281.5 and RM 291.5
	Baltimore Bend CA	RM 292 – RM 300
	Jackass Bend (USFWS)	RM 337
	Cooley Lake CA	RM 340 – RM 342
River access (RA)	Miami/Snake Bluff Recreation Park RA	RM 262.8
	Waverly RA	RM 293.2
	Lexington Riverfront Park RA	RM 316.4
	USACE RA	RM 328.6
	Fort Osage County Park RA	RM 337.2
	Cooley Lake RA	RM 341.2
	Pigg's Landing	3 miles up Fishing River
	La Benite Park	RM 352.7

Table 3.14-3 Notable Locations with Views of the Missouri River in the Waverly Segment

	Name	River Mile (RM)
Existing dredging operations	Capital Sand Company, Kansas City–Carrollton	RM 287
	Capital Sand Company, Kansas City–Lexington	RM 317

Notes:

- B = Bicycle traffic on bridges.
- N = No pedestrian or bicycle traffic on bridges.
- P=Pedestrian traffic on bridges.
- U = Undeterminable pedestrian or bicycle traffic on bridges.
- USFWS = U.S. Fish and Wildlife Service.

Sources: Google Earth 2009, 2010; USACE et al. 2003.

Recreational uses in this segment include those associated with the river. The river corridor creates a noticeable contrast to the surrounding area and is used and enjoyed for its vegetation and wildlife, recreational opportunities, and high visual quality. Views of the river have vivid seasonal contrast in spring and summer when vegetation and agricultural fields are green and in leaf, and higher water flows hide the river bed—compared to fall and winter when vegetation browns and the leaves have fallen, and lower waters expose sand and gravel bars, or when snow blankets the landscape in white. Most views of the river are limited to the foreground by bends in the river, vegetation, and development where it occurs. Bridge crossings often provide scenic views of the Missouri River as roadway travelers cross them. These bridges do not support pedestrian and bicycle traffic, as identified in Table 3.14-3. Views from bridges may extend to the middleground and background; but a notable part of the viewshed consists of the wide, meandering river corridor framed by lush riparian vegetation. Most of the roadways in rural areas are set back from and do not offer views of the river. Where roadways travel along the river, scenic views of the river corridor typically are present. Some of these views may be obstructed by roadside or riparian vegetation, crops, or other features. In developed areas, roads often pass by the river with open views of the waterway that may be partially or fully obstructed by infrastructure and development.

Capital Sand Company has two dredging operations in this segment (see Table 3.14-3 and Figures 3.11-1 [Sheet 3] and 3.11-2 [Sheet 3] in Land Use and Recreation). Dredging operations include barges with heavy equipment on the river’s water surface and onshore stockpile operations that also use heavy equipment and have related infrastructure. Onshore facilities have converted areas that would typically be vegetated to large, unvegetated piles of sand and sediment along the river’s edge. These features contrast with the more natural areas surrounding the facilities and detract from scenic

views of the river corridor. Both dredging sites are located in rural, minimally developed areas, reducing the amount of viewer groups affected.

Both Capital Sand Company operations are surrounded by agricultural land uses buffered from the river by thick bands of riparian vegetation that block most views of dredging operations from land. The facility across from Lexington is located less than 1 mile southwest of Lexington Riverfront Park, which supports river access. Views of dredging operations are likely visible from the park and detract from the riverfront viewshed. Motorists with views of dredging operations are limited to those using local roads next to the dredging operations. Recreationists utilizing the open waters of the Missouri River have direct views of both operations.

Views of and from the river in this segment are moderately vivid. While views of waterways are often highly valued, the visual character of the river corridor in this segment is typical of upstream and downstream portions of the river. The intactness and unity of the viewshed is also moderate because there is a gradual change into riverside, agricultural communities and a seamless transition back into expansive, fertile agricultural and riparian landscapes along the river. In addition, each agricultural and developed portion in the segment has the visual cohesion typical of such land uses.

Viewer groups in the Waverly segment that would be affected by proposed dredging operations and exposed to visual changes along the river include motorists traveling along state and county roads along the river and over bridge crossings, residents and recreationists with views of the river, and employees of businesses along this segment's riverfront.

3.14.6.4 Visual Condition of Jefferson City Segment

The Jefferson City segment extends along the Missouri River from RM 130 through RM 250. Table 3.14-4 summarizes the towns and cities, bridges, recreation facilities, and dredging operations with views of the river. Figures 3.11-1 (Sheet 4) and 3.11-2 (Sheet 4) in Land Use and Recreation show the land covers and recreational features, respectively, in this segment. Similar to the Waverly segment, the river slowly winds through the Jefferson City segment primarily through rural and agricultural land uses. Quaint rural communities are sporadically interspersed among the predominantly agricultural landscape. Gently rolling terrain transports the viewer throughout this pastoral landscape, where local roadways deliver them to the next agriculture-based community (Google Maps 2009). The nearly continuous band of lush riparian vegetation provides an attractive river edge and acts as a beneficial buffer between viewer groups and potential dredging operations. Scenic views of the river are accessible to those traveling or working along the river.

Table 3.14-4 Notable Locations with Views of the Missouri River in the Jefferson City Segment

	Name	River Mile (RM)
Towns and cities	Jefferson City, Missouri	RM 144
	Booneville, Missouri	RM 196
	Rocheport, Missouri	RM 186
	Glasgow, Missouri	RM 226.5
Bridges	Jefferson City Bridge (U.S. Highway 54) [N]	RM 145
	Rocheport Bridge (Interstate 70) [N]	RM 185.1
	Boonslick Bridge (State Route 5 and 87/U.S. Highway 40) [P/B]	RM 196.6
	Missouri-Kansas-Texas Bridge (Katy Trail) [P/B]	RM 197
	Glasgow Bridge (State Route 240) [N]	RM 226.3
Parks and trails	Katy Trail	RM 149, RM 160.5 – RM 162, RM 168.5 – RM 170.5, RM 180 – RM 186, RM 197.1
	Ellis-Porter Park	RM 141.5
	Harley Park	RM 197.4
	Arrow Rock State Park	RM 210
	Stump Island Park	RM 226
Conservation areas (CAs), wildlife areas (WAs), and USACE mitigation sites	Smokey Waters CA	RM 130.3 – RM 135.8
	Marion Bottoms CA	RM 158 – RM 164
	Plowboy Bend CA	RM 166 – RM 173
	Eagle Bluffs CA	RM 170.6 – RM 177.3
	Overton Bottoms CA	RM 178 – RM 185.1
	Rocheport Cave CA	RM 183
	Diana Bend CA	RM 186.6 – RM 190.2
	Franklin Island CA	RM 192 – RM 195.4
	Jameson Island CA	RM 210 – RM 215
	Lisbon Bottoms CA	RM 213.5 – RM 219
River access (RA)	Noren RA	RM 144
	Marion RA	RM 158
	Hartsburg RA	RM 159.8
	Easely RA	RM 169.2
	Cooper's Landing RA	RM 170.3
	Taylor's Landing	RM 185.2
	Franklin Island	RM 195.1
	Rooster's Marina	RM 226.4
	Dalton Bottoms RA	RM 239

Table 3.14-4 Notable Locations with Views of the Missouri River in the Jefferson City Segment

	Name	River Mile (RM)
Existing dredging operations	Capital Sand, Kansas City-Jefferson City	RM 143.5
	Hermann Sand-Jefferson City	RM 146.5
	Capital Sand, Kansas City-Rocheport	RM 186
	Capital Sand, Kansas City-Boonville	RM 196.5
	Capital Sand, Kansas City-Glasgow	RM 226.5

Notes:

B = Bicycle traffic on bridges.

N = No pedestrian or bicycle traffic on bridges.

P=Pedestrian traffic on bridges.

U = Undeterminable pedestrian or bicycle traffic on bridges.

Sources: Google Earth 2009, 2010; USACE et al. 2003.

Known for its scenic views, the Katy Trail is a 225-mile bike path stretching across most of the state of Missouri. This trail was once the Missouri-Kansas-Texas rail line and now serves as a historical and recreational corridor accessible to the public year-round (MDNR 2009). The trail travels along the river and winds from its edge to within 2 miles of the river. Views from the trail can include expansive views of the river, lush vegetation lining the river and trail, agricultural fields, parks, towns and cities, and other points of interest that recreationists pass by on the trail. Views of the river are present, at various points, where the trail travels along the bank; but the majority of the trail does not have views of the river because of its distance from the river and vegetation or infrastructure that prevents such views.

Similar to the St. Charles segment, recreational uses in this segment include those associated with the river. The river corridor creates a noticeable contrast to the surrounding area and is used and enjoyed for its vegetation and wildlife, recreational opportunities, and high visual quality. Views of the river have vivid seasonal contrast in spring and summer when vegetation and agricultural fields are green and in leaf, and higher water flows hide the river bed—compared to fall and winter when vegetation browns and the leaves have fallen, and lower waters expose sand and gravel bars, or when snow blankets the landscape in white. Most views of the river are limited to the foreground by bends in the river, vegetation, and development where it occurs. Bridge crossings often provide scenic views of the Missouri River as roadway travelers cross them. The Boonslick Bridge in Booneville also supports pedestrian and bicycle traffic, as identified in Table 3.14-2. Views from bridges may extend to the middleground and background; but a notable part of the viewshed consists of the wide, meandering river corridor that is framed by lush riparian vegetation. Most of the roadways in this area are set back from and do not offer views of the river. Where roadways travel along the river, scenic views of the

river corridor typically are present. Some of these views may be obstructed by roadside or riparian vegetation, crops, or other features.

Hermann Sand & Gravel and Capital Sand Company have dredging operations in this segment (see Table 3.14-4 and Figures 3.11-1 [Sheet 4] and 3.11-2 [Sheet 4] in Land Use and Recreation). Dredging operations include barges with heavy equipment on the river's water surface and onshore stockpile operations that also use heavy equipment and have related infrastructure. Onshore facilities have converted areas that typically would be vegetated to large, unvegetated piles of sand and sediment along the river's edge. These features contrast with the more natural areas surrounding the facilities and detract from scenic views of the river corridor. In addition, dredge facilities create noise and movement that draw viewers' attention toward these areas, making them more noticeable to viewer groups.

Dredging operations in this segment are located adjacent to residential, agricultural, open space, and industrial areas located along the river bank. Views of the barges and dredging operations are frequently obscured by riparian vegetation along the rivers' edge. Motorists traveling across bridges and on local roads near the dredging operations would have more direct views of the barges and other dredging operations. Recreationists utilizing the open waters of the Missouri River have direct views of all operations. The Capital Sand Company–Jefferson City operation is located across the river from Jefferson City and the state capital building. This operation is highly visible to Jefferson City residents, businesses, recreationists, and roadway motorists near the river's edge in this location, and from the U.S. Highway 54 Bridge. The Capital Sand Company–Rocheport facility is located within 800 feet of the Katy Trail, but the facility and trail are both surrounded by dense vegetation that does not allow views of the facility from the trail. The Capital Sand Company–Glasgow facility is also located directly south of and bordering Stump Island Park, but the facility is separated from the park by a thick vegetative border. A river access point in the park allows views of dredging operations on the river and riverbank that detract from the riverfront viewshed. Views of this operation are also offered via the State Route 240 Bridge.

Views of and from the river in this segment are moderately vivid. While views of waterways are often highly valued, the visual character of the river corridor in this segment is typical of upstream and downstream portions of the river. The intactness and unity of the viewshed is also moderate because there is a gradual change into riverside, agricultural communities and a seamless transition back into expansive, fertile agricultural and riparian landscapes along the river. In addition, each of the agricultural and developed portions in the segment has the visual cohesion typical of such land uses.

Viewer groups within the Jefferson City Segment that would be affected by proposed dredging operations and exposed to visual changes along the river include motorists traveling along state and county roads along the river and over bridge crossings, residents and recreationists with views of the river, and employees of businesses and government agencies along this segment's riverfront.

3.14.6.5 Visual Condition of St. Charles Segment

The St. Charles segment extends along the Missouri River from RM 0, at its confluence with the Mississippi River, through RM 130. Table 3.14-5 summarizes the towns and cities, bridges, recreation facilities, and dredging operations with views of the river. Figures 3.11-1 (Sheet 5) and 3.11-2 (Sheet 5) in the Land Use and Recreation section show the land covers and recreational features, respectively, that affect this segment. The St. Charles segment begins in the silted floodplains located at the confluence of the Missouri and Mississippi Rivers. The convergence of the Missouri River with the Mississippi River, to the east, is visually important to this segment and the Project in that it provides a physical feature that acts as a visual limit to the Project area. The beginning of this river segment is characterized by scattered residential, commercial, industrial, and open space land uses that are often separated from the river by a band of agriculture located on the river's floodplain. The more developed portions of this segment of the Missouri River give way to a pastoral landscape with expansive agricultural land uses on the floodplains that are dotted with rural communities and small towns and cities. Being near the confluence of two rivers, the land in this portion of the segment has been shaped by the Missouri River overtopping its banks and flowing over land during flood events. This has left behind remnant oxbow lake and flow pattern scars, but these are not readily apparent from ground level views, especially when row crops are growing and cover the landscape. This seamless ebb and flow between fertile agricultural fields and rural communities continues on throughout the extent of the St. Charles segment.

The Katy Trail also travels along portions of this segment. Similar to the Jefferson City segment, the trail travels along the river and winds from its edge to within 2 miles of the river. Views from the trail can include expansive views of the river, lush vegetation lining the river and trail, agricultural fields, parks, towns and cities, and other points of interest that recreationists pass by on the trail. A large portion of the trail travels along the riverbank in this segment, offering views of the river. The remainder of the trail does not have views of the river because of its distance from the river and vegetation or infrastructure that prevents such views. The river corridor creates a noticeable contrast to the surrounding area and is used and enjoyed for its vegetation and wildlife, recreational opportunities, and high scenic quality. Most views on the river are limited to the foreground by bends in the river,

vegetation, and development where it occurs. Views of the river have vivid seasonal contrast in spring and summer when vegetation and agricultural fields are green and in leaf, and higher water flows hide the river bed—compared to fall and winter when vegetation browns and the leaves have fallen, and lower waters expose sand and gravel bars, or when snow blankets the landscape in white.

Table 3.14-5 Notable Locations with Views of the Missouri River in the St. Charles Segment

	Name	River Mile (RM)
Towns and cities	St. Charles, Kansas	RM 28
	Chesterfield, Missouri	RM 39
	Weldon Spring, Kansas	RM 44
	Washington, Missouri	RM 67.5
	New Haven, Missouri	RM 81.5
	Hermann, Missouri	RM 98
	Gasconade, Kansas	RM 105
	Chamois, Kansas	RM 118
	Mokane, Missouri	RM 123
Bridges	Lewis Bridge (U.S. Highway 67/367) [N]	RM 8
	Discovery Bridge (State Route 370) [N]	RM 27
	Interstate 70 [N]	RM 29.5
	Veterans Memorial Bridge (State Route 364) [P/B]	RM 32.7
	Daniel Boone Bridge (Interstate 64) [N]	RM 44
	Washington Bridge (State Route 47) [N]	RM 67.5
	Hermann Bridge (State Route 19) [P/B]	RM 97.9
Parks and trails	Edward and Pate Jones Confluence Point State Park	RM 0.5-2
	Fort Bellefontaine County Park	RM 6.7
	Sioux Passage County Park	RM 10.4
	Sunset Park	RM 19.5
	St. Stanislaus County Park	RM 22
	Ed Bales Memorial Park	RM 26.7
	Frontier Park	RM 28.9
	Hermann Riverfront Park	RM 97.5
	Gasconade Park	RM 104.5
Katy Trail	RM 27 – RM 33.5, RM 42 – RM 48, RM 55.5 – RM 56.5, RM 84.5 – RM 90.5, RM 109.3 – RM 115	

Table 3.14-5 Notable Locations with Views of the Missouri River in the St. Charles Segment

	Name	River Mile (RM)
Conservation areas (CAs), wildlife areas (WAs), and USACE mitigation sites	Colombia Bottom CA	RM 0 – RM 5
	Pelican Island Natural Area	RM 10.5 – RM 16
	St. Stanislaus CA	RM 21 – RM 23.5
	Bangert Memorial WA	RM 30
	Weldon Springs CA	RM 44 – RM 49.4, RM 52 – RM 55
	Howell Island CA	RM 44.7 – RM 49.7
	Tate Island CA	RM 110.3 – RM 113.3
	Saint Aubert Island CA	RM 120 – RM 125
River access (RA)	Columbia Bottom RA	RM 3.5
	Sioux Passage County Park RA	RM 10.4
	Pelican Island RA	RM 10.3
	Blanchette Landing RA	RM 27.5
	Frontier Park RA	RM 28.9
	Washington City RA	RM 68.3
	Weldon Spring RA	RM 48.5
	New Haven RA	RM 81.4
	Hermann Riverfront Park RA/Olympic Marine	RM 97.5
	Gasconade Park RA	RM 104.5
	Chamois RA	RM 117.8
	Mokane RA	RM 124.5
Existing dredging operations	Limited Leasing–Fort Belle	RM 8
	J.T.R.–Riverview	RM 16.5
	Limited Leasing–Bridgeton	RM 28
	J.T.R.–St. Charles	RM 31
	Limited Leasing–Chesterfield	RM 44
	Capital Sand, Kansas City–Washington	RM 65.5
	Hermann Sand–Hermann	RM 96.8

Notes:

B = Bicycle traffic on bridges.

N = No pedestrian or bicycle traffic on bridges.

P=Pedestrian traffic on bridges.

U = Undeterminable pedestrian or bicycle traffic on bridges.

Sources: Google Earth 2009, 2010; USACE et al. 2003.

In addition to open spaces along the river, bridge crossings often provide scenic views of the Missouri River as roadway travelers cross them. The Veterans Memorial and Hermann Bridges also support

pedestrian and bicycle traffic. Views from bridges may extend to the middleground, with views to the background limited by development. However, a notable part of the viewshed consists of the wide, meandering river corridor that is framed by urban development (see Figure 3.14-7). Views from bridges may extend to the background where development is limited and bends in the river allow such views. Roadways in developed areas often pass by the river with open views of the waterway, or these views may be partially or fully obstructed by infrastructure and development. Roadways in rural areas are often set back from and do not offer views of the river. Where roadways travel along the river, scenic views of the river corridor typically are present. Some of these views may be obstructed by roadside or riparian vegetation, crops, or other features.

The Capital Sand Company (see Figure 3.14-8), Hermann Sand & Gravel Company, Limited Leasing Company, and J.T.R. have dredging operations in this segment (see Table 3.14-5 and Figures 3.11-1 [Sheet 5] and 3.11-2 [Sheet 5] in Land Use and Recreation). Dredging operations include barges with heavy equipment on the river's water surface and onshore stockpile operations that also have heavy equipment and infrastructure. Onshore facilities have converted areas that typically would be vegetated to large, unvegetated piles of sand and sediment along the river's edge (see Figure 3.14-9). These features contrast with the more natural areas surrounding the facility and detract from scenic views of the river corridor. In addition, dredge facilities create noise and movement that draw viewers' attention toward these areas, making them more noticeable to viewer groups.

These dredging operations are located adjacent to residential, agricultural, open space, and industrial areas located along the river bank. Dredging operations are often buffered from adjacent land uses by thick bands of riparian vegetation that block views of dredging equipment and barges. Motorists traveling across bridges and on local roads located near the dredging operations would have more direct views of the barges and other dredging operations. Recreationists utilizing the open waters of the Missouri River have direct views of all operations. The Edward N. Rau Contractor Company proposed facility is located directly southeast of and bordering the Washington City River Access point. The highly visible views of dredging operations detract from the riverfront viewshed. The Hermann Sand & Gravel–Hermann facility is also located less than 1 mile northeast, and across the river, from Hermann Riverfront Park (see Figure 3.14-10). A river access point in the park allows views of dredging operations on the river and riverbank that detract from the riverfront viewshed.



Figure 3.14-7 Views of Bridgeton, Interstate 70 Bridge, and Dredging on the River from Limited Leasing–Bridgeton Dredging Operation at RM 28

The vividness, intactness, and unity of views of and from the river in the segment are moderate to moderately low. While views of waterways are often highly valued, the visual character of the river corridor in this segment is substantially developed with industrial and commercial land uses near the confluence. Open spaces along the river in the urban areas create attractive riverside vantages, providing smaller areas with higher visual quality. Vividness increases as the landscape provides viewer groups with intact views of lush riparian habitat along the rivers' edge in rural areas outside of the St. Louis metropolitan region. Within the St. Louis metropolitan region, agricultural land uses often bound the river, and urban development is located abruptly beyond the patchwork of fields. The rolling terrain on the outskirts of St. Louis act to create an attractive, yet distinct separation between developed lands to the east and more rural lands to the west. These distinct changes create visually contrasting portions of the segment, affecting and lowering the intactness and unity within the transition zone and the St. Louis metropolitan areas. Outside of the transition zone, and within rural areas to the

west, intactness and unity increase due to gradual changes between rural communities and smaller towns and cities to agricultural areas.



Figure 3.14-8 Views of Capital Sand Company, St. Louis–Washington Dredging Operation and River beyond at RM 65.5

A wide variety of viewer groups in the St. Charles segment would be affected by proposed dredging operations. Motorists traveling along state and county roads along the river and over bridge crossings are exposed to dredging activities in the Project area. Residents and recreationists, including bicyclists, pedestrians, and boaters, can view dredging operations along the river. Those employed at businesses and industrial districts along the riverfront of this segment would be exposed to visual changes along the river.



Figure 3.14-9 Views of Limited Leasing Company–Bridgeton Dredging Operation and Large Sand Piles at RM 28



Figure 3.14-10 Views of the River, Hermann, and the Hermann Bridge from Hermann Sand & Gravel–Hermann Dredging Operations at RM 96.8

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