5.0 CUMULATIVE IMPACT SUMMARY

5.1 INTRODUCTION

A cumulative impact occurs due to a change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Past and present actions occurring within the area have affected the existing conditions of the surrounding area and are discussed in the affected environment description for each of the resources evaluated. The following reasonably foreseeable future actions have been identified in the study area:

- Arkansas River Navigation Project;
- Industrial Development in the Arkansas River Bottoms Near Russellville;
- Expansion of Soil and Gravel Excavation and Removal;
- Continuation of Agricultural Land Uses; and
- Increase Existing Arkansas River Commerce.

The primary past, present, and reasonably foreseeable future actions that have occurred both within and adjacent to the project areas that have been considered in the analysis of cumulative impacts were identified in Section 4.1.3.3 of the SDEIS. The SDEIS can be found online at the following location: (http://www.rivervalleyintermodal.org/deis.htm).

The SDEIS considered the Highway 247 improvement project as a reasonably foreseeable future project that could have cumulative impacts when combined with the intermodal project. Since the SDEIS was written, the Highway 247 project was completed and is now considered as part of the present condition. It has been removed from the reasonably foreseeable future projects in the cumulative impact analysis for future projects, but is still considered in the overall analysis of the cumulative project impacts.

5.2 SUMMARY OF CUMULATIVE IMPACTS

The impact of the reasonably foreseeable future actions combined with the impact of the implementation of each of the proposed alternatives is identified for each resource category in Sections 4.2 through 4.18 of this FEIS. More details regarding cumulative impacts of each of the alternatives were discussed in Section 6 of the SDEIS, which can be found online at the following location: (http://www.rivervalleyintermodal.org/deis.htm).

There were meaningful long-term beneficial cumulative economic impacts identified during the analysis. There were no substantial adverse cumulative impacts identified in the cumulative impact analysis. A summary of cumulative impacts for each alternative is described below, with a focus on the Green (Preferred) Alternative. Table 5.1 at the end of this section contains a side-by-side comparison of the cumulative impacts of each alternative.

5.2.1 Arkansas River Navigation Project

5.2.1.1 No Action Alternative

No adverse or beneficial cumulative impacts associated with construction of the intermodal facilities would occur under the No Action Alternative. However, cumulative impacts caused by past, present and reasonably foreseeable future projects would continue to impact the proposed project area regardless of whether the proposed intermodal facilities are built. Improvements to the Arkansas River Navigation could result in increased barge and truck traffic at the existing Port of Dardanelle as well as potential future expansion of infrastructure in this area. The expansion of current operations would continue and some economic growth would occur. However, benefits associated with the improvements provided by the Arkansas River Navigation project would not be as valuable for the region, if the intermodal facilities are not constructed to take full advantage of the commercial navigation resources available.

5.2.1.2 Green (Preferred) Alternative

An overall improvement in infrastructure that would result from development of the intermodal facilities proposed for the Green (Preferred) Alternative in combination with improvements in commercial navigation on the Arkansas River would provide long-term beneficial impacts to commercial navigation throughout the ARV. By deepening the commercial navigation channel of the Arkansas River, barges would be able to carry heavier loads and increase the productivity and utility of the intermodal facilities and the Arkansas River transportation options. The new transportation capabilities would promote economic growth and provide social benefits for the ARV region.

Implementation of the Green (Preferred) Alternative along with the improvements planned as part of the Arkansas River Navigation project could cumulatively reduce overall risks to the human and natural environments from hazardous materials. Increased river navigation capabilities and intermodal connection options would allow more of those hazardous materials to be transported by river, and environmentally safer alternative, rather than have those same materials be transported by multiple trucks or rail cars through more densely populated areas.

5.2.1.3 Red Alternative

Cumulative impacts of implementation of the Red Alternative together with the increase in commercial navigation on the Arkansas River would be similar to those described for the Green (Preferred) Alternative.

5.2.1.4 Purple Alternative

Cumulative impacts to social and economic resources associated with implementation of the Purple Alternative together with the impacts of the increase in commercial navigation on the Arkansas River would be similar to those described for the Green (Preferred) Alternative. However, cumulative benefits in the form of additional jobs, personal income, transportation costs savings, and other monetary returns associated with manufacturing and distribution activities would be limited by the lack of current

businesses and potential facilities users in the area, when compared to the Green (Preferred) and Red Alternatives.

5.2.2 Industrial Development in the Arkansas River Bottoms Near Russellville

5.2.2.1 No Action Alternative

No adverse or beneficial cumulative impacts associated with construction of the intermodal facilities would occur under the No Action Alternative. However, cumulative impacts caused by past, present, and reasonably foreseeable future projects would continue to impact the proposed project area regardless of whether the proposed intermodal facilities are built. It is unlikely that substantial industrial development would occur in the Arkansas River bottoms near Russellville without the construction of the intermodal facilities as proposed for the Green (Preferred) and Red Alternatives. This would result in the region not taking full advantage of the long-term beneficial cumulative impacts to the local and regional social and economic environments that could be provided through improvements to commercial navigation realized by the Arkansas River Navigation Project.

Development of the Arkansas River Bottoms near Russellville as an industrial site would occur without the intermodal facilities would likely not involve federal funding and NEPA documentation would not be required. Therefore, it is likely that adverse impacts to resources in the project area would be more severe, because the public and agency coordination process would be avoided and mitigation for known adverse impacts to resources would likely be avoided as well with the result being additional long-term adverse impacts that may have otherwise been avoided, minimized, or mitigated.

5.2.2.2 Green (Preferred) Alternative

Most of the industrial development in the Russellville Bottoms in the reasonably foreseeable future is anticipated to occur within the actual intermodal facilities property as infrastructure and utilities would be provided in this area. Cumulative benefits and would likely be further in the future once the intermodal facilities property has reached capacity to support new developments.

5.2.2.3 Red Alternative

Cumulative impacts of implementation of the Red Alternative together with the industrial development in the Arkansas River Bottoms near Russellville would be similar to those described for the Green (Preferred) Alternative.

5.2.2.4 Purple Alternative

Impacts associated with the industrial development in the Arkansas River Bottoms near Russellville would occur outside of the cumulative impact geographic area of analysis defined for the Purple Alternative (see Section 4.1.3.2). Therefore there would be no cumulative impact associated with implementation of this project and the construction of intermodal facilities proposed under the Purple Alternative.

5.2.3 Expansion of Soil and Gravel Excavation and Removal

5.2.3.1 No Action Alternative

It is possible that the expansion of soil and gravel operations in the region would likely result in long-term adverse impacts to economic resources, because once those lands are mined they provide less potential to be used for other more productive land uses, such as agriculture or commercial and industrial areas. Impacts from mining operations would be incremental to other impacts that are likely to result from reasonably foreseeable future projects or activities.

5.2.3.2 Green (Preferred) Alternative

The proposed intermodal facilities project under the Green (Preferred) Alternative would likely result in shifts in the sand, soil, and gravel excavation operations from within the proposed project boundaries to adjacent areas. However, the expansion of soil and gravel excavation operations is not expected to result in major land use changes at any given location as these operations would likely continue to be small, scattered operations most likely impacting lands not currently being used for other more productive uses. There could be some cumulative loss of agricultural land uses in the areas where the soil and gravel operations relocate as good farmland soils are excavated and transported to areas outside the project vicinity for use as topsoil for lawns, landscaping, or other purposes. Conversely, if land outside the boundaries of the Red Alternative eventually converts to industrial or commercial land uses, the potential for long-term adverse impacts is less than what would occur under the No Action Alternative which may result in the current soil, sand, and gravel excavations to continue to somewhat randomly expand on those lands. This is because most of the underlying soils, sand, and gravel would remain in place or onsite if it were used for industrial purposes and could potentially be converted back to productive agricultural land uses in the future.

The expansion of soil, sand, and gravel operations in the project area would result in some additional cumulative impacts to water bodies, wildlife, and vegetation resources, primarily due to erosion and sedimentation in nearby streams and/or wetlands. Sedimentation can reduce the quality of aquatic habitats making them less productive for aquatic organisms. Mining operations may also result in the loss of terrestrial habitats, such as old fields, grasslands, or forests that provide beneficial habitat for various wildlife species, and can directly impact cultural sites.

5.2.3.3 Red Alternative

Cumulative impacts of implementation of the Red Alternative together with the expansion of soil and gravel excavation would be similar to those described for the Green (Preferred) Alternative.

5.2.3.4 Purple Alternative

Impacts associated with the expansion of soil and gravel excavation would occur outside of the cumulative impact geographic area of analysis defined for the Purple

Alternative (see Section 4.1.3.2). Therefore, there would be no cumulative impact associated with implementation of this project and the construction of intermodal facilities proposed under the Purple Alternative.

5.2.4 Continuation of Agricultural Land Use

5.2.4.1 No Action Alternative

No adverse or beneficial cumulative impacts associated with construction of the intermodal facilities would occur under the No Action Alternative. However, cumulative impacts caused by past, present, and reasonably foreseeable future projects would continue to impact the proposed project area regardless of whether the proposed intermodal facilities are built. Agricultural land uses within and adjacent to the proposed project area boundaries would likely remain under the No Action Alternative. This would create a minor beneficial impact to farmland and soils resources in general; however, no additional benefits in terms of improving regional economic growth would be realized.

5.2.4.2 Green (Preferred) Alternative

The agricultural land uses in the Green (Preferred) Alternative project area would be complemented by the anticipated product storage capacity and shipping options provided at the intermodal facilities. The revenues generated by new industries within the intermodal facilities and continued agriculture production on remaining farmland adjacent to the site would result in beneficial cumulative economic impacts. In the long-term, overall dust emissions from the area would be slightly reduced as the exposed soils in cultivated areas and gravel and dirt roads currently in the intermodal facilities area would be replaced by hardened surfaces, paved roads, and permanent vegetation in non-developed areas.

5.2.4.3 Red Alternative

Cumulative impacts of implementation of the Red Alternative together with the continuation of agricultural land uses would be similar to those described for the Green (Preferred) Alternative.

5.2.4.4 Purple Alternative

Cumulative impacts of implementation of Purple Alternative together with the continuation of agricultural land uses would be similar to those described for the Green (Preferred) Alternative. It is likely that adjacent poultry and cattle operations would benefit from the intermodal facilities.

5.2.5 Increase Existing Arkansas River Commerce

5.2.5.1 No Action Alternative

No adverse or beneficial cumulative impacts associated with construction of the intermodal facilities would occur under the No Action Alternative. Commerce along the Arkansas River would likely remain at current levels. The Arkansas River would remain an underutilized resource for commerce in the State of Arkansas.

5.2.5.2 Green (Preferred) Alternative

Beneficial cumulative impacts would be expected if the proposed intermodal facilities could potentially support additional use of the available commercial navigation system provided on the Arkansas River. The incremental increase in commercial navigation from the intermodal facilities would compliment any other increase in the existing Arkansas River commerce. This would provide potential additional economic and social benefits for the region.

5.2.5.3 Red Alternative

Cumulative impacts of implementation of the Red Alternative together with the increase of existing Arkansas River commerce would be similar to those described for the Green (Preferred) Alternative.

5.2.5.4 Purple Alternative

Cumulative impacts of implementation of Purple Alternative together with the existing Arkansas River commerce would be similar to those described for the Red Alternative.

5.2.6 Summary

Cumulative impacts are the result of combining the potential effects of the project with other planned developments, as well as foreseeable development projects. The semi-rural nature of the areas surrounding the project alternatives contributed to the number of identifiable reasonably foreseeable future projects in the region. Although the cumulative impacts of each of the alternatives differ in some ways, implementation of any of the alternatives in association with any of the reasonably foreseeable future actions foreseen in the area, will result in long-term beneficial economic impacts and will not result in a significant adverse cumulative impact to the physical, social, or cultural resources in the region. Table 5.1 contains a side-by-side comparison of the cumulative impacts associated with each alternative.

Table 5.1. Summary of Cumulative Impacts of the No Action, Green (Preferred), Red, and Purple Alternatives.				
	No Action Alternative	**Green (Preferred) Alternative**	**Red Alternative**	**Purple Alternative**
Land Use & Infrastructure	No adverse or beneficial cumulative impacts associated with construction of the intermodal facilities would occur.	Cumulative impacts would include potential land use changes, infrastructure improvements, and increased truck, rail, and barge traffic. All of these changes would result from a combination of the intermodal facilities project and other reasonably foreseeable improvements, including the Arkansas River Navigation Project.	Cumulative impacts on land use would be similar in type and magnitude to those of the Green (Preferred) Alternative.	Cumulative impacts would include potential land use changes, infrastructure improvements, and increased truck, rail, and barge traffic. All of these changes would result from a combination of the intermodal facilities project and other reasonably foreseeable improvements such as the Arkansas River Navigation Project.
Farmland, Soils, & Physical Environment	There would be no cumulative impacts to farmland, soils, and physical environment that could occur in combination with other past, present, or reasonably foreseeable activities near the project area.	Dredging impacts associated with this project would not cause substantial increases in impacts to farmland or soils when combined with the proposed MKARNS improvements. It is possible that some of the lands adjacent to the intermodal facilities proposed for the Green (Preferred) and Red project areas would be converted to industrial or commercial land uses by the City of Russellville or private individuals. Cumulative impacts to farmland and soils due to additional industrial and commercial development anticipated in the reasonably foreseeable future are not expected to be substantial. There may be some cumulative loss of agricultural land uses where farmland soils are excavated and transported to areas outside the project vicinity. The combination of the intermodal facilities project and increased likelihood that agricultural land uses would continue in adjacent areas would result in minor beneficial cumulative impacts to farmland and soils resources.	Cumulative impacts to farmland, soils, and the physical environment would be similar to those under the Green (Preferred) Alternative.	The combination of the intermodal facilities project and increased likelihood that agricultural land uses would continue in adjacent areas would result in minor beneficial cumulative impacts to farmland and soils resources.

Table 5.1. Summary of Cumulative Impacts of the No Action, Green (Preferred), Red, and Purple Alternatives.				
	No Action Alternative	**Green (Preferred) Alternative**	**Red Alternative**	**Purple Alternative**
Social Environment	No adverse or beneficial cumulative impacts associated with construction of the intermodal facilities would occur.	Construction of the intermodal facilities would allow the ARV region to take full advantage of the MKARNS and the provision of additional interconnection between barges and land-based shipping options via trucks and trains. The combination of the Highway 247 improvements, MKARNS improvements, and construction of the proposed intermodal facilities is expected to provide cumulative benefits in terms of social and economic improvements and growth in the ARV. Cumulative benefits from other industrial developments in the Russellville bottoms would likely be further in the future once the intermodal facilities property has reached capacity to support new developments. Continuing agricultural land uses in areas surrounding the intermodal facilities would have primarily beneficial impacts to social and economic resources in the region.	Cumulative social impacts would be similar to those of the Green (Preferred) Alternative.	Cumulative impacts would be similar as those of the Green (Preferred) Alternative. The communities of Knoxville, Clarksville, and the ARV would be afforded the opportunity to take full advantage of the resources available to the area.
Relocation	No adverse or beneficial cumulative impacts associated with construction of the intermodal facilities would occur under the No Action Alternative.	Relocations required due to the intermodal facilities project would be cumulative to relocations required for other known past, present, and reasonably foreseeable projects in the area. It is anticipated that there is currently enough replacement housing available in the general project vicinity to provide comparable, suitable options for the relatively few relocations. In the long-term, additional residential developments may be required in the ARV region.	Cumulative impacts would be similar to those of the Green (Preferred) Alternative.	Cumulative impacts would be similar to those of the Green (Preferred) Alternative.
Economic	No adverse or beneficial cumulative impacts associated with construction of the intermodal facilities would occur under the No Action Alternative.	Improved and expanded transportation services would be created in the ARV by providing for more economically efficient movement of goods. Currently, the region lacks shipping choices and transportation support facilities that facilitate the use of different transportation modes. The proposed facilities would result in cumulative benefits in the form of additional jobs, personal	Cumulative economic impacts would be similar to those realized under the Green (Preferred) Alternative, except for there would be less farmland revenue lost under the Red Alternative	Cumulative economic impacts would be similar to those realized under the Green (Preferred) Alternative. These cumulative benefits would be limited by the lack of current

Table 5.1. Summary of Cumulative Impacts of the No Action, Green (Preferred), Red, and Purple Alternatives.				
	No Action Alternative	**Green (Preferred) Alternative**	**Red Alternative**	**Purple Alternative**
Economic (Continued)		income, transportation costs savings, and other monetary returns associated with manufacturing and distribution activities. In addition, establishing the intermodal facilities close to existing industries would encourage these industries to stay and/or expand their business in the region. Potential cumulative impacts include the expansion or establishment of existing and new market areas. Potential long-term, cumulative economic effects could be realized by the private Port of Dardanelle from loss of employment and personal income associated with the intermodal facilities and their activities. The recent improvement of Highway 247 could offset some of the potential adverse impacts associated with the intermodal facilities because the improvements to Highway 247 provided the same types of benefits for the existing port as they would for the proposed intermodal facilities.	due to less farmland being impacted.	businesses in the immediate area of the Purple Alternative, when compared to the Green (Preferred) and Red Alternatives. It is anticipated that there would be economic benefits from future residential and/or commercial developments that could occur in the Knoxville and Clarksville area due to the proximity to the proposed intermodal facilities.
Pedestrian & Bicyclist Considerations	Due to the industrial nature of this project, no new pedestrian or bicycle routes are proposed as part of this project. No impacts would occur to existing pedestrian or bicycle routes.	Due to the industrial nature of this project, no new pedestrian or bicycle routes are proposed as part of this project. No impacts would occur to existing pedestrian or bicycle routes.	Due to the industrial nature of this project, no new pedestrian or bicycle routes are proposed as part of this project. No impacts would occur to existing pedestrian or bicycle routes.	Due to the industrial nature of this project, no new pedestrian or bicycle routes are proposed as part of this project. No impacts would occur to existing pedestrian or bicycle routes.

Table 5.1. Summary of Cumulative Impacts of the No Action, Green (Preferred), Red, and Purple Alternatives.				
	No Action Alternative	**Green (Preferred) Alternative**	**Red Alternative**	**Purple Alternative**
Air Quality	There would be no cumulative impacts as the result of the No Action Alternative.	Cumulative impacts to local air quality may be beneficial in the long-term as a result of reduced emissions from trucks from promoting the use of barge and/or train transportation versus primarily truck transportation and lower dust emissions. Lower dust emissions would result from fewer gravel or dirt roads being utilized in the project area.	Impacts would be similar to those of the Green (Preferred) Alternative, except that the long-term reduction in dust emissions in the project area may be slightly worse under the Red Alternative because more gravel roads and agricultural lands would be replaced with hardened surfaces, structures, or permanent vegetation compared to the Green (Preferred) Alternative.	Impacts would be similar to those of the Green (Preferred) Alternative.
Noise	There would be no cumulative impacts as the result of the No Action Alternative.	Long-term cumulative impacts would be anticipated when the noise associated with the intermodal facilities is combined with the additional noise expected due to other reasonably foreseeable projects in the area. The increased noise levels would mainly affect the residences interspersed along Highway 247.	Cumulative impacts would be similar to those of the Green (Preferred) Alternative.	Cumulative impacts would be similar to those of the Green (Preferred) Alternative. The increased noise levels would mainly affect the residences interspersed along Highway 64.
Water Quality	No addition to cumulative impacts on water quality would occur in combination with other unrelated activities near the project area.	Most of the potential cumulative water quality impacts associated with reasonably foreseeable projects or activities in the area would be short-term impacts that occur during the construction phase of the intermodal facilities project. It is unlikely that construction for the various foreseeable projects, including the intermodal facilities, would occur at the same time. Water quality impacts to surface and groundwater resources in the area remain minimal.	Cumulative impacts would be similar to those of the Green (Preferred) Alternative. However, the potential for cumulative impacts to water quality would be somewhat higher due to impacts to wetlands associated with the Whig Creek	Cumulative impacts to water quality would be similar to those of the Green (Preferred) and Red Alternatives. However, the potential for cumulative impacts to water quality would be somewhat less because the Purple Alternative

Table 5.1. Summary of Cumulative Impacts of the No Action, Green (Preferred), Red, and Purple Alternatives.				
	No Action Alternative	**Green (Preferred) Alternative**	**Red Alternative**	**Purple Alternative**
Water Quality (Continued)			watershed and the riparian buffer zone along the Arkansas River.	location does not contain any water bodies listed on the State 303(d) list, is not located near a major urban groundwater source, and would retain a riparian buffer zone along Lake Dardanelle.
Wetlands	There would be no cumulative impacts to wetlands associated with any of the past, present, or reasonably foreseeable future actions.	There would be minor cumulative impacts to wetlands associated with the intermodal facilities project under the Green (Preferred) Alternative in combination with other past, present, and reasonably foreseeable future projects. Due to the small size of most of the mining operations anticipated to occur in the area, and the number of wetlands remaining in the floodplains surrounding the Green (Preferred) Alternative, it is not likely that substantial cumulative impacts to wetlands would occur as a result of expansion of sand and gravel removal.	Cumulative impacts would be similar to those of the Green (Preferred) Alternative.	No cumulative impacts are anticipated due to the combination of the proposed action and other projects. It is unlikely that developments would occur outside of the proposed intermodal facilities boundaries within the reasonably foreseeable future.
Water Body Modification, Wildlife, & Vegetation	There would be no cumulative impacts associated with any of the past present or reasonably foreseeable future actions.	Construction of the intermodal facilities would result in minor cumulative adverse impacts due to modifications to water bodies and removal of wildlife habitats (riparian forests and wetlands). Proposed water body modifications, such as construction of a new railroad bridge over Whig Creek, construction of the levee system, and dredging in the Arkansas River, would combine with modifications associated with past, present, and reasonably foreseeable projects in the area. The main cumulative impacts would be due to the removal of wetlands associated with the existing water bodies causing decreased water quality and reduced stream bank integrity in those areas.	The cumulative impacts to water bodies, wildlife, and vegetation would be substantially higher compared to those of the Green (Preferred) Alternative. The Red Alternative would impact more riparian forests and wetlands adjacent to streams.	Construction of the intermodal facilities would result in minor cumulative adverse impacts to water bodies, wildlife, and vegetation due to modifications to water bodies and removal of wildlife habitats. Proposed water body modifications, such as dredging in Lake Dardanelle, would

Table 5.1. Summary of Cumulative Impacts of the No Action, Green (Preferred), Red, and Purple Alternatives.				
	No Action Alternative	**Green (Preferred) Alternative**	**Red Alternative**	**Purple Alternative**
Water Body Modification, Wildlife, & Vegetation (Continued)				combine with modifications associated with past, present, and reasonably foreseeable projects in the area. The main cumulative impacts would be due to the removal of forested habitat associated with the existing water bodies causing decreased water quality and reduced shoreline integrity.
Floodplains	There would be no cumulative impacts of the No Action Alternative that could occur as the result of other unrelated activities near the project area.	Due to the negligible increase of flood impacts as determined by the floodplain analysis conducted for the intermodal facilities project, measurable cumulative impacts are not anticipated.	Cumulative impacts would be similar to those of the Green (Preferred) Alternative. Even though the Red Alternative would impact fewer acres of floodplain than the Green (Preferred) Alternative, the potential impacts to flood levels would be higher, primarily due to the levees for the Green (Preferred) Alternative being offset from the Arkansas River. The Red Alternative would have more impact on flood levels than the Green Alternative.	Cumulative impacts are not anticipated due to the negligible floodplain disturbance that would occur.

Table 5.1. Summary of Cumulative Impacts of the No Action, Green (Preferred), Red, and Purple Alternatives.				
	No Action Alternative	**Green (Preferred) Alternative**	**Red Alternative**	**Purple Alternative**
Commercial Navigation	The potential cumulative social and economic benefits provided by the improved barge transportation capabilities of the Arkansas River Navigation project, the Highway 247 project, industrial development in the project area, and the proposed intermodal facilities would not be realized.	The combination of transportation services provided at the intermodal facilities and the existing transportation services and storage capabilities provided by the adjacent private Port of Dardanelle could complement each other to attract additional users of the commercial navigation system. Any increased use of the MKARNS would provide cumulative benefits to the regional economic and social environments.	Cumulative impacts would be similar to those of the Green (Preferred) Alternative.	Cumulative impacts would be similar to those of the Green (Preferred) Alternative.
Threatened & Endangered Species	There would be no cumulative impacts to threatened and endangered species.	Increased barge traffic using the Arkansas River due to the proposed action and the Arkansas River Navigation project could have minimal cumulative adverse impacts on the interior least tern.	Cumulative impacts would be similar to those of the Green (Preferred) Alternative.	Cumulative impacts would be similar to those of the Green (Preferred) Alternative.
Cultural Resources	No impacts are expected that could contribute to the cumulative disturbance or destruction of NRHP-eligible cultural resources resulting from other reasonably foreseeable projects in the area as identified below.	Direct impacts are expected that would contribute to the cumulative disturbance or destruction of cultural resources resulting from all past, present, and future construction projects in the area. Such cumulative effects would further diminish the regional archaeological record decreasing the potential of its overall research contribution; would disrupt the regional architectural character and historic setting; and would diminish the Native American cultural resources.	Cumulative impacts would be similar to those of the Green (Preferred) Alternative.	The intermodal facilities, which would involve dredging operations and grading work mainly associated with construction of the levee, could result in cumulative impacts to cultural resources when combined with impacts from the Arkansas River Navigation project.

Table 5.1. Summary of Cumulative Impacts of the No Action, Green (Preferred), Red, and Purple Alternatives.				
	No Action Alternative	**Green (Preferred) Alternative**	**Red Alternative**	**Purple Alternative**
Hazardous Waste Sites	There would be no cumulative impacts associated with Hazardous Waste Sites.	Improvements to the commercial navigation channel of the MKARNS would combine with industrial development and the intermodal facilities project to increase the potential for hazardous materials and wastes to be transported throughout the project vicinity and ARV region. An increase in hazardous materials and wastes in this area would increase the possibility that these materials could be accidentally released. Therefore, there is a long-term potential for short-term impacts to occur.	Cumulative impacts to hazardous waste sites would be similar to those of the Green (Preferred) Alternative.	Cumulative impacts to hazardous waste sites would be similar to those of the Green (Preferred) Alternative.
Visual Impacts	No cumulative impacts to the view shed are anticipated, because no activities related to the proposed intermodal facilities would occur.	No substantial cumulative visual impacts are anticipated in the project vicinity due to the combination of the proposed action and reasonably foreseeable future actions in the area.	Cumulative impacts would be similar to those of the Green (Preferred) Alternative. However, removal of the riparian vegetation along the Arkansas River would increase the potential for cumulative adverse impacts.	When viewed cumulatively, increased use of river transportation via barges would result in minor visual impacts for the entire region.

6.0 MITIGATION SUMMARY

6.1 INTRODUCTION

Mitigation measures would be implemented to eliminate or reduce the impact of adverse impacts as defined in 40 CFR 1508.20: “Mitigation” includes:

1) Avoiding the impact altogether by not taking a certain action or parts of an action;

2) Minimizing impacts by limiting the degree of magnitude of the action and its implementation;

3) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

4) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action and/or;

5) Compensating for the impact by replacing or providing substitute resources or environments.

Only those mitigation measures that are practicable (i.e., can be accomplished using existing technology with a reasonable commitment of resources) have been identified. In addition to the mitigation commitments identified in this FEIS, the Authority would use a wide range of ongoing environmental management programs, BMPs, Standard Operating Procedures (SOPs), monitoring programs, and permit compliance procedures to lessen the type and magnitude of adverse impacts. The Authority would adhere to all permit conditions in effect at the time the action occurs, under any circumstance.

6.2 MITIGATION SUMMARY OF THE NO ACTION ALTERNATIVE

Adverse impacts associated with not constructing the intermodal facilities have been described in the consequences section under the appropriate resource categories. However, no mitigation measures have been listed under the No Action Alternative as no practicable measures have been identified. Therefore, if the No Action Alternative is selected, no mitigation measures would be developed to reduce the impacts of this decision.

6.3 MITIGATION SUMMARY OF THE GREEN (PREFERRED) ALTERNATIVE

6.3.1 Land Use and Infrastructure

Adjacent land uses could be protected from construction and development activities of the intermodal facilities through good housekeeping practices and erosion and sedimentation BMPs. Signs and temporary fencing would delineate construction boundaries to minimize impacts to adjacent land uses. Construction and operations of the proposed intermodal facilities would comply with the respective regulations and avoid adverse impacts wherever possible. Appropriate marking of any existing utilities could reduce any interruptions in existing services and prevent any injuries and

damages. Proper coordination with the appropriate highway and railroad entities could reduce interruption in current service.

To help reduce overall cumulative impacts associated with shifts in the excavation operations caused by the intermodal facilities and other foreseeable future projects, local planners, resource agencies, and local landowners should help identify areas where such operations would be less detrimental or would have less long-term impacts to existing or adjacent resources and land uses.

6.3.2 Farmland

To reduce impacts of soil disturbance an SECP would be implemented, and the appropriate BMPs concerning sediment control would be applied. BMPs would be used to protect surface and groundwater resources in the project area. Any accidental contamination of such resources would be remediated immediately.

6.3.3 Social Environment

Relocation assistance would be in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Act of 1970* (Public Law 91-646). It is policy of AHTD that no person shall be displaced unless and until comparable replacement housing has been provided.

6.3.4 Relocation

Relocation assistance would be in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Act* as amended by *the* Surface *Transportation and Uniform Relocation Act of 1987*. Comparable replacement housing would be provided for all displaced households under the provisions of the above laws. AHTD relocation policy also includes construction of HLR if comparable, decent, safe, and sanitary replacement housing is not available in the local housing market.

6.3.5 Economic

The overall economic benefits the intermodal facilities would provide to the local and regional economies would mitigate potential adverse impacts due to losses of current revenues generated in the proposed project area. Potential long-term adverse impacts to the Port of Dardanelle can be minimized by developing mutually beneficial relationships and possibly developing cooperative agreements between the Port and the Authority.

6.3.6 Pedestrian and Bicyclist Consideration

Due to the industrial nature of this project, no new pedestrian or bicycle routes are proposed as part of this project. No impacts would occur to existing pedestrian or bicycle routes, and therefore, no mitigation would be needed to reduce adverse impacts.

6.3.7 Air Quality

No violations of the NAAQS are projected for this project. Therefore, no air quality mitigation measures are required for the project improvements.

All bituminous and Portland cement concrete proportioning plants and crushers would meet the requirements of AHTD. For any portable bituminous or concrete plant or crusher, the contractor must apply for a permit-to-install from AHTD.

During construction the contractor must comply with all federal, state, and local laws and regulations governing the control of air pollution. Adequate dust-control measures would be maintained so as not to cause detriment to the safety, health, welfare, or comfort of any person or cause any damage to any property or business.

Dust and airborne dirt generated by construction activities would be controlled through dust control procedures or a specific dust control plan, when warranted. The contractor and the Authority would meet to review the nature and extent of dust-generating activities and would cooperatively develop specific types of control techniques appropriate to the specific situation. Techniques that may warrant consideration include measures such as minimizing track-out of soil onto nearby publicly-traveled roads, reducing speed on unpaved roads, covering haul vehicles, and applying chemical dust suppressants or water to exposed surfaces, particularly those on which construction vehicles travel. Paving access roads and other roads within the intermodal facilities would reduce overall dust emissions from within the project area.

6.3.8 Noise

Although projected noise levels at certain receptors exceed the FHWA criteria for the Build alternatives in the year 2025, no noise mitigation is proposed for this project.

Construction noise impacts were also considered. Construction noise would be minimized by the use of mufflers on construction equipment. Air compressors would meet federal noise level standards and would, if possible, be located away from or shielded from residences and other sensitive noise receptors. To minimize or eliminate the effects of construction noise on adjacent sensitive receptors, mitigation measures meeting state requirements should be incorporated into the standard specifications for this project.

Where pavement must be fractured or structures must be removed, care will be taken to prevent vibration damage to adjacent structures. In areas where construction-related vibration is anticipated, basement surveys could be conducted before construction begins to document any damage caused by facilities construction.

6.3.9 Water Quality

It is expected that the combined use of water quality protection measures during construction and appropriate mitigation measures would result in no overall reduction in the long-term water quality. Although short-term and long-term adverse impacts would

be anticipated, BMPs would be followed to reduce or mitigate for the overall impact to water quality.

Examples of stream protection measures that may be used include the following:

- When possible, streamside and in-stream construction activities would be performed during dry periods, when stream flow is at a minimum.
- The unnecessary removal of existing vegetation would be avoided as much as possible. Canopy removal along all working or staging areas would be limited to the extent practicable.
- Where removal of vegetation is necessary, bank stabilization and sediment control measures would be employed immediately at the start of construction. Bank stabilization measures would include seeding with native species and placing of silt fences or rip-rap.
- Control structures would be inspected and properly maintained throughout the life of the project.

Specific mitigation measures for this project would be developed during the permit acquisition process once final design plans have been developed, but prior to any construction activities. All construction activities and associated mitigation requirements would need to be approved by the appropriate agencies responsible for protecting water resources in the project area. Continued coordination with appropriate regulatory agencies would occur during final planning and construction of the project and extend through required monitoring periods that may be established during the initial permit acquisition process.

An NPDES permit would be required for all construction activities and would also be required for the future facilities whose operations include discharges. In addition, an SPCC plan would be developed for both the construction process and for operations of the facilities after construction.

6.3.10 Wetlands

Mitigation measures would be required to reduce impacts to wetlands in the event jurisdictional wetland avoidance is not possible. The Authority would complete all Section 404 and 401perrmitting requirements in consultation with the U.S. Army Corp of Engineers (USACE) and the USEPA in accordance with the CWA prior to construction of the intermodal facilities.

Proposed measures for avoiding impacts to wetlands include the following elements:

- Avoidance of riparian and wetland zones would be used to the fullest possible extent to prevent impacts to these resources by reconfiguring the facilities or selective routing around jurisdictional wetland areas.
- Scheduling of construction activities and grading, to the extent practicable, would coincide with dry periods or low-flow conditions.

- In order to avoid disturbance of wetland/riparian soils and vegetation outside of the alternative project area, wetland boundaries would not be crossed by vehicles or other equipment. A construction corridor through any wetland or riparian area would be temporarily fenced to prevent disturbances (including operation of equipment and trucks, storage of material, and other construction activities) outside of the corridor.
- Sediment traps (e.g., straw bales, filter fabric fences, and siltation berms) located down-gradient from construction areas can be used to intercept eroded soils and sediments transported toward adjacent streams, wetlands, and floodplains during storm events.
- Material stockpiles (sand, gravel, and other construction materials) would not be in unprotected floodplains and wetlands and, if necessary, would be contained or enclosed by berms to prevent transport of materials into streams and wetlands.

Some potential measures to minimize wetland impacts include:

- Employing construction practices that reduce soil erosion (such as sediment traps and scheduling constraints) and minimize vegetation losses.
- Existing drainage patterns within the project area would be maintained uninterrupted, to the extent practicable.
- The width of roads through wetland areas would be minimized as much as possible to reduce the overall extent of wetland damages.
- The amount of vegetation removal would be minimized in wetlands and riparian areas.
- Disturbed areas in wetlands and riparian areas would be revegetated with native species or species similar to those that were present on the wetland before site alterations occurred.

A wetland mitigation and monitoring plan would be prepared to compensate for unavoidable wetland losses or damages. This plan would focus on wetland restoration and or creation off site or at the perimeter of the project. The following potential actions may be employed as compensation measures for wetland losses or impacts.

- The functions and values to be replicated would be coordinated with resource and permitting agencies. Specific functions to be enhanced or restored would be included in the Section 404 Permit.
- Restoration efforts would include revegetating areas denuded during construction either with seeding, sprigging, transplanting, or covering barren areas with wetland soils (natural seed bank) salvaged from wetlands filled elsewhere in the project area. The specific methods of site regeneration would vary according to site size and desired vegetation type.
- A wetland monitoring plan would be developed and implemented to insure the success of the wetland mitigation process and to confirm the accomplishment of intended goals.

- Permit conditions and mitigation plans would be coordinated with state and federal resource and permitting agencies.

6.3.11 Water Body Modification, Wildlife, and Vegetation

Where possible, efforts would be made to avoid and preserve the most sensitive habitats such as the higher quality wetlands and stream corridors during final design of the intermodal facilities. Whenever possible, impacts to water bodies, wildlife, and vegetation would be avoided and minimized.

Appropriate BMPs would be followed to mitigate for the overall impact to water bodies, wildlife, and vegetation. When possible, streamside and in-stream construction activities would be performed during dry periods, when stream flow is at a minimum. The removal of existing vegetation would be avoided as much as possible and would occur in winter months to avoid impacts to migratory bird species. Canopy removal along all working or staging areas would be limited to the extent practicable. Where removal of vegetation is necessary, bank stabilization and sediment control measures would be employed immediately at the start of construction. Bank stabilization measures would include seeding with native species and placing of silt fences or rip-rap. Control structures would be inspected and properly maintained throughout the life of the project. An SPCC plan would be developed for both the construction process and for operations of the facilities after construction.

6.3.12 Floodplains

Mitigation is not necessary as negligible floodplain impacts are anticipated based on the USACE floodplain analysis.

6.3.13 Commercial Navigation

Since no adverse impacts to commercial navigation are expected under the Green Alternative, mitigation measures would not be necessary.

6.3.14 Threatened and Endangered Species

Mitigation is not required for minimal impacts to T&E species. Therefore, no mitigation is needed to reduce impacts to T&E species under the Green alternative.

6.3.15 Cultural Resources

The preferred mitigation for Cultural Resources is avoidance. Avoidance preserves the integrity of cultural resources and protects their research potential (i.e., their NRHP eligibility). Avoidance also eliminates the costs and potential construction delays associated with data recovery.

Should avoidance not be possible, resolution of potential adverse effects to historic properties will be achieved through execution of a PA between the FHWA, AHTD, USACE, the Authority, and appropriate Native American tribes. If Native American resources are identified through project consultation, specific mitigation measures will be developed in further consultation with the appropriate tribes.

If project excavation or staging areas occur in areas with intact NRHP-eligible archaeological resources, mitigation measures would be developed in consultation with the Arkansas SHPO. Traditionally, data recovery of archaeological sites has been the standard mitigation measure. Data recovery of archaeological information is now considered, in and of itself, an adverse effect under the revised Section 106 regulations (36 CFR 800.5(a)(2)(i)).

If additional cultural resources are discovered during construction activities, work would cease until those cultural resources could be assessed and evaluated by the Arkansas SHPO.

6.3.16 Hazardous Waste Sites

Since there are currently no hazardous waste sites in the project area, mitigation would not be necessary. Regulatory agencies would likely monitor all transport, storage, production, and use of hazardous materials as well as potential risks to humans that may occur with development of the intermodal facilities and associated industrial developments. Generation and management of hazardous waste would be addressed via the RCRA permitting process.

6.3.17 Visual Impacts

Potential mitigation measures for visual impacts would include, but not be limited to, those listed for the Red Alternative. The need for impact mitigation for the Green Alternative would be lessened due to the fact that a forested riparian buffer would remain between the intermodal facilities and the City of Dardanelle.

6.4 MITIGATION SUMMARY OF THE RED AND PURPLE ALTERNATIVES

Mitigation requirements for the Red and Purple Alternatives would be similar to the Green (Preferred) Alternative for most resources. There would be some variation to the type and level of mitigation effort required depending on the level of impacts for individual resources. Section 7 of the SDEIS discussed the mitigation requirements of each of the Red and Purple Alternatives in more detail. The SDEIS can be found online at the following location: (http://www.rivervalleyintermodal.org/deis.htm).

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7.0 REQUIRED PERMITS

Environmental Permits/certifications that may need to be obtained during the project development phase include: USACE Section 10 and Section 404 permits, an NPDES permit, and a state Section 401 water quality certification.

Potential business or industrial development within the intermodal facilities would be regulated by Federal, state, and municipal laws and regulations. The Authority will be responsible for insuring that all intermodal facilities developments are in accordance with applicable laws and regulations, and they will maintain a database of required permits.

Private industries most likely to have substantial impacts to the environment that choose to locate at the intermodal facilities would be required to disclose information regarding the types of activities they propose to conduct at the site in an appropriate, legal manner as part of the environmental and/or other regulatory permit application processes typically required of them.

Such tenants of the intermodal facilities would be required to conform to environmental laws set forth by Federal, state, and local regulatory agencies such as the USEPA, USACE, OSHA, USFWS, ADEQ and others. The ADEQ website contains information regarding many of the primary environmental laws these agencies are responsible for which may apply to the various types of industries potentially wanting to utilize the proposed intermodal facilities (http://www.adeq.state.ar.us/regs/fed_regs.htm and http://www.adeq.state.ar.us/regs/ar_env_laws.htm). Such private industries are typically aware of their responsibilities under such laws and regulations and typically have their own staff available or they hire consultants to ensure they comply with all legal requirements. It would not be beneficial for such businesses to not comply with environmental regulations due to the serious penalties and financial implications that could occur if they do not comply.

Therefore, even though it is not possible to fully assess all potential environmental impacts that could occur under the various scenarios of development that may occur at the intermodal facilities, it is expected that any substantial impacts would be identified and regulated by appropriate regulatory agencies which would help protect the local and regional human and natural environments. Reasonable options to avoid, minimize, and/or mitigate for any adverse impacts would be identified and enforced by the responsible regulatory agency or agencies during the permit application phase of those developments. Permits required for development of the initial intermodal facilities infrastructure such as levees, roads, rail access, the slackwater harbor, and any utilities would be the responsibility of the Authority and would be obtained prior to construction of the project.

There would be minor differences between the build alternatives for necessary permits. Impacts to Waters of the U.S., primarily impacts to jurisdictional wetlands, would be greater under the Red Alternative than the Green (Preferred) Alternative or the Purple Alternative. Additionally, the Purple Alternative would require a USACE Shoreline Use

Permit for any shoreline vegetation modification on Lake Dardanelle and a USACE Real Estate Instrument for activities not covered under the Shoreline Use Permit and that involve grade, cut, or fill and construction of structures http://www.swl.usace.army.mil/parks/dardanelle/shoreline.htm#).

8.0 RELATION OF SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The local short-term impacts of the proposed action and the use of resources for it are consistent with the maintenance and enhancement of long-term productivity for the region. Creation of the project would promote economic development by creating new jobs, specifically higher wage jobs, improve transportation capacity and competitiveness necessary for attracting new businesses and industries to the area, and enhance modal transfer efficiency and interrelationships by providing more shipping capabilities and capacity.

The level of development anticipated provides the basis for improved delivery of services and goods to and from the region. It should enhance the quality of life by reducing highway congestion, improving air quality due to fewer pollutants associated with trucks, preventing fewer accidents, and consuming lower amounts of fuel. These would be achieved through connectivity with waterway and rail transportation and a subsequent reduction in reliance on the truck mode as the primary method of transportation. There would be no discernable difference between the three proposed Alternatives.

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9.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

An irreversible commitment of resources occurs when there is destruction of a specific resource that cannot be replaced within a reasonable time frame. Irretrievable resource commitments result when there is a loss in value of a resource that cannot be restored. Most of the resource commitments for the proposed intermodal facilities are short-term or temporary. Those resources that may have irreversible or irretrievable commitments are discussed in detail below.

The proposed action would require the expenditure of human and fiscal resources and the potential modification of natural resources. Land and materials utilized in the construction of the project are considered an irreversible commitment.

Resources affected by construction of the project may be irreversibly altered. The proposed project would result in the commitment of between 740 and 860 acres of land most of which would be occupied by intermodal facilities. This commitment would be long-term although if a greater need arises for the use of the land, the facilities could be demolished and converted or altered for another use. At present, there are no reasonably foreseeable reasons to believe such a conversion would ever be necessary or desirable.

Construction would require the expenditure of materials that are generally not retrievable. Considerable amounts of fossil fuels, labor, and construction materials such as cement, aggregate, iron, and gravel would be expended and large amounts of labor and natural resources are necessary in the fabrication and preparation of construction materials. However, although these materials are generally not retrievable, they are not in short supply and their use would not have an adverse effect upon continued availability of these resources. In addition, construction would also require large, one-time investment of both state and federal funds that are not retrievable.

The commitment of these resources is based on the concept that residents both within the project area, as well as the region, would benefit by improvements in the quality of the local and regional intermodal transportation systems. The facilities would improve the highway, railway, and shipping capabilities of the region by substantially enhancing accessibility and saving time. The facilities should provide a positive influence on the economy of the region and the livelihood of its citizens.

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10.0 CONSTRUCTION IMPACTS

Adverse impacts from construction are primarily short-term in duration (i.e. they exist only during construction periods). Some construction inconveniences such as noise, dust, traffic conflicts, etc. are unavoidable.

In order to minimize possible detrimental effects due to siltation, soil erosion, or possible pollution of area watercourses, the construction contractors will be required to comply with the special provisions of the Standard Specifications for Road and Bridge Construction as issued by AHTD and as amended by the most recent applicable supplements. These provisions implement the requirements of the FHWA's Federal-Aid Policy Guide, Subchapter G part 650b. Contractors will be required to conduct and schedule operations according to these provisions.

Construction procedures will also be governed by Section 107.01 of the Standard Specifications to observe any noise ordinance in effect within the project limits. Detoured traffic will be routed during construction so as to cause the least practicable noise impact upon residential and noise sensitive areas.

In addition, disruption to utility services will be minimized since it is the standard policy of the FHWA, AHTD, and the USACE to coordinate all utility relocations with the affected utility companies. Furthermore, the Authority will coordinate with AHTD and local governments during the construction phase to minimize disruption of communities resulting from any required detouring of traffic.

Any action taken on open burning will be in accordance with ADPCE Regulations, and specifications regarding air pollution control will be followed. The regulations on fugitive dust will also be in accordance with state laws. The general contractor and all asphalt plants, quarry operations, etc. associated with the project will be required to have a valid operation permit from the state.

Solid waste generated by construction activities will be disposed of in accordance with all state rules and regulations concerning solid waste management. Where possible, land debris will be disposed of in a registered sanitary landfill site. If the use of a registered landfill is not possible, the contractor will dispose of the solid waste in a manner that will not create a hazard to public health or become a public nuisance.

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11.0 ACRONYMS

Acronyms that were used during the development of the RVIF EIS include the following:

A

ACHP	Advisory Council on Historic Preservation
ADEQ	Arkansas Department of Environmental Quality
ADPCE	Arkansas Department of Pollution Control and Ecology
ADWS	Arkansas Department of Workforce Services
ADT	Average Daily Traffic
AHTD	Arkansas State Highway and Transportation Department
ANHC	Arkansas Natural Heritage Commission
APE	Area of Potential Effect
ARM	Arkansas River Mile
ARV	Arkansas River Valley
AST	Above Ground Storage Tank
Authority	River Valley Regional Intermodal Facilities Authority

B

BMPs	Best Management Practices

C

CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CEQ	Council on Environmental Quality
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CORRACTS	Corrective Action Activity
CR	County Road
CWA	Clean Water Act

D

dBA	Decibel A-Weighted Scale
DEIS	Draft Environmental Impact Statement
DOI	U.S. Department of the Interior
DRRR	Dardanelle Russellville Railroad

E

EA	Environmental Assessment
EDR	Environmental Data Resources, Inc.
EIS	Environmental Impact Statement
EMS	Emergency Medical Services
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ERNS	Emergency Response Notification System
ESA	Endangered Species Act

F

FAF	Freight Analysis Framework
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FEIS	Final Environmental Impact Statement
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act

	FINDS	Facility Index System
	FIRMs	National Flood Insurance Rate Maps
	FONSI	Finding of No Significant Impact
	FPPA	Farmland Protection Policy Act
	FRA	Federal Railroad Administration
	FTTS	FIFRA/TSCA Tracking System
G		
H		
	HLR	Housing of Last Resort
	HSWA	Hazardous and Solid Waste Amendments
I		
	I-40	Interstate 40
J		
K		
L		
	Leq	Equivalent Sound Level
	Leq(h)	Hourly Equivalent Sound Level
	LOS	Level of Service
	LQG	Large Quantity Generators
	LUST	Leaking Underground Storage Tank
M		
	MBTA	Migratory Bird Treaty Act
	MKARNS	McClellan-Kerr Arkansas River Navigation System
	MCL	Maximum Contaminant Levels
	Mil	millage
	MINES	Mines Master Index File
N		
	NAAQS	National Ambient Air Quality Standards
	NAFTA	North American Free Trade Agreement
	NEPA	National Environmental Policy Act
	NFRAP	No Further Remedial Action Planned
	NHPA	National Historic Preservation Act
	NOA	Notice of Availability
	NPDES	National Pollutant Discharge Elimination System
	NPL	National Priority List
	NRCS	Natural Resources Conservation Service
	NRHP	National Register of Historic Places
	NMFS	National Marine Fisheries Service
	NWI	National Wetlands Inventory
	NWR	National Wildlife Refuge
O		
	OSHA	Occupational Safety and Health Administration
P		
	PA	Programmatic Agreement
	ppm	parts per million
R		
	RCRA	Resources Conservation and Recovery Act
	ROD	Record of Decision
	RVIF	River Valley Intermodal Facilities
S		
	SARA	Superfund Amendments and Reauthorization Act
	SDEIS	Supplemental Draft Environmental Impact Statement

SECP	Sediment and Erosion Control Plan
SHPO	State Historic Preservation Office
SPCC	Spill, Prevention, Control and Countermeasures
SQG	Small Quantity Generators
SWF/LF	Solid Waste Facility/Land Fill
SWRCY	Solid Waste Recycling

T

TCP	Traditional Cultural Properties
T&E	Threatened and Endangered
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
TSDF	Treatment, Storage, or Disposal Facility

U

UPRR	Union Pacific Railroad
U.S.	United States
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank

V

VOC	Volatile Organic Compounds
VPD	Vehicles Per Day

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12.0 REFERENCES

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13.0 PREPARERS

Personnel involved in the development of the RVIF EIS include the following:

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