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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