ENVIRONMENTAL ASSESSMENT

AHTD JOB NUMBER 061275

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Arkansas River Str. & Apprs. (Broadway) (LR/NLR)

Pulaski County

Submitted Pursuant to 42 U.S.C. 4332 (2)

by the

U.S. Department of Transportation

Federal Highway Administration

and the

Arkansas State Highway and Transportation Department

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PROJECT DESCRIPTION

The Arkansas State Highway and Transportation Department (AHTD) and the Federal Highway Administration (FHWA) are proposing to replace the existing Highway 70 Bridge crossing the Arkansas River between the Cities of Little Rock (LR) and North Little Rock (NLR), Arkansas. Figure 1 shows the project location.

PURPOSE AND NEED

The purpose of the proposed project is to ensure that the Highway 70 Arkansas River Bridge (a.k.a. Broadway Bridge) in Pulaski County will continue to safely provide for modern transportation needs across the Arkansas River. The project is proposed due to deterioration of the existing structure, increasing maintenance costs, and its functional obsolescence which warrant a thorough analysis of the bridge and how best to deal with its deteriorating state.

Needs Analysis

The need for a better bridge arises from an increase in population growth, the existing bridge condition, and the insufficiency of the deck cross-section for existing and forecasted traffic needs.

Population Growth

According to the U.S. Census, the population of Pulaski County increased from 361,474 in 2000 to 382,748 in 2010, an increase of 5.9 percent (Table 1). During that same period, LR's population grew 5.7% from 183,133 to 193,524, and NLR's population grew 3.1% from 60,433 to 62,304 residents.

From 2000 to 2010, the NLR Central Business District (CBD) had a 16.3% increase in population and a 45.4% growth in total housing units. The LR CBD experienced a 50.7% growth in residential population and a 96.8% growth in total housing units during the decade. The higher growth for housing units compared to population suggests that there

Figure 1.
Project Location

Table 1 Demographic Data			
	Cities of NLR and LR	**Pulaski County**	**Arkansas**
Population 2010	255,828	382,748	2,915,918
Population 2000	243,566	361,474	2,673,400
Population 1990	237,336	349,773	2,354,353
Percent Change 1990/2000	2.6%	3.3%	13.6%
Percent Change 2000/2010	4.8%	5.9%	9.1%
Median Resident Age	35.5	35.1	36.0
Median Household Income	$40,419.00	$45,121.00	$39,267.00
Median House Value	$128,850.00	$134,300.00	$102,300.00
White-Non Hispanic	49.2%	55.3%	74.5%
Black	41.0%	35.0%	15.4%
Hispanic	6.3%	5.8%	6.4%
Other Races	3.5%	3.9%	3.7%
Education Attained by Age 25+			
High School Graduates	87.7%	88.2%	81.9%
Bachelors Degree or higher	31.2%	30.7%	19.1%
Employment by Industry Type			
Educational, Health Care & Social Services	28.2%	26.0%	22.4%
Manufacturing, Construction, Warehousing & Transportation	16.4%	18.3%	28.0%
Retail, Food Services & Accommodations	19.1%	19.0%	20.7%
Other Services*	36.3%	36.7%	28.9%
Unemployment Rate	6.7%	6.7%	7.4%
*Other Services include Public Administration, Wholesale Trade, Information, Finance and Insurance, and Professional, Scientific and Management.			

were a large number of new housing units on the market at the time of the 2010 Census. As these new housing units have continued to become occupied, the residential population growth has continued in the downtown areas since the 2010 Census. There has been extensive redevelopment of downtown LR and NLR along both sides of the Arkansas River.

The continuing trend of residential redevelopment in the two cities' downtown areas has again been recently demonstrated by the announcement of a condominium conversion on LR's Main Street and the 2012 completion of a large apartment complex, a few blocks west of the Broadway Bridge, in NLR. This downtown residential growth illustrates the continued and increasing need for safe and efficient crossings of the river.

Bridge Condition

The need for a substantial rehabilitation or replacement of the Broadway Bridge is demonstrated by the bridge's physical condition. Its National Bridge Inventory Sufficiency Rating is 12.7 out of a possible 100, with the classification as Structurally Deficient. Appendix A contains more information related to the bridge ratings. The condition of the deck, superstructure, and substructure are all rated as poor, at this time.

The nearly 90-year old Broadway Bridge opened to traffic in 1923; its main spans consisted of five open spandrel arch deck spans with 37 reinforced concrete tee-beam approach spans having a total length of 2,355 feet. In 1974 two concrete deck arch spans were replaced with a single 420 foot steel arch span to accommodate the McClellan-Kerr Navigation System's navigation channel on the Arkansas River. The conversion modified the original concrete substructure to hold the arch span.

The bridge has become impractical to maintain with the AHTD's maintenance forces due to the deteriorating condition of the sidewalks, concrete arches, deck girders, and substructure.

All of these features have numerous cracks and spalls that have exposed the reinforcing steel. This exposure allows chlorides to reach the main reinforcing steel, causing widespread cracks and delamination. Routine maintenance costs for the Broadway Bridge were an average of $82,406 per year during Federal fiscal years (FFY) 2005-2011. For comparison, the maintenance costs for the Main Street Bridge (five blocks east of the Broadway Bridge and built in 1973) were an average of $10,253 per year during FFY 2005-2011. Inspections for the Broadway Bridge expend a larger amount of time and effort to identify and document the various intricacies of the bridge as compared to a plate girder structure such as the Main Street Bridge which are much simpler to inspect. Maintenance costs will continue to increase for the Broadway Bridge into the future.

Bridge Cross-Section and Ramps

The existing Broadway Bridge has four 10-foot lanes and two 8-foot sidewalks that, along with the concrete railings, bring the total bridge width to 60 feet. The Broadway Bridge is functionally classified as a principal arterial because of its importance to regional traffic flow. Current standards in the National Bridge Inventory rate principal arterial bridges of this width as functionally obsolete. The standard's minimum width necessary is a clear 51-foot roadway. The Broadway Bridge has a clear roadway width of 40 feet.

A 400-foot long by 20-foot wide access ramp connects southbound Broadway to westbound Highway 10 (La Harpe Boulevard). This ramp has a curvature that requires a low design speed and intersects La Harpe Boulevard at an acute angle with a yield sign. The sight distance is limited for vehicles yielding to La Harpe Boulevard traffic because of the ramp guardrails. A second, nearly 400-foot long 20-foot wide access ramp connects westbound La Harpe Boulevard to northbound Broadway. This Broadway Bridge access ramp ends in a low-speed curve and a stop sign with the view of approaching vehicles limited by the bridge railing.

Existing and Forecast Traffic Need

The Broadway Bridge is one of three bridges connecting the CBDs of LR and NLR. The Main Street Bridge, five blocks to the east, and Interstate 30 Bridge, ten blocks to the east, provide alternative river crossings in the immediate project area. The Interstate 430 crossing is approximately seven miles to the west and the Interstate 440 crossing is approximately seven miles to the east. Total traffic growth at these downtown river crossings has been moderate and steady.

Existing and forecast traffic volumes for the three downtown river bridges are displayed in Table 2. The estimated traffic volume on the Broadway Bridge in 2012 is 24,000 vehicles per day (vpd). Traffic operations on the bridge are very poor due to the traffic signals just beyond the end of the bridge on both sides of the river. Traffic flow across the bridge is currently operating at a Level of Service (LOS) F for both morning and evening peak periods (see Appendix B for a description of LOS). Although the bridge adequately operates as a four-lane arterial, peak hour traffic at both ends of the bridge funnels in from all directions and disperses in all directions with numerous turning movements that lower the efficiency of the signalized intersections.

Traffic demand on the Broadway Bridge is forecast to grow at a modest rate of 1.1% per year to 32,000 vehicles per day by the year 2035. This traffic demand is limited to some degree by traffic operations of adjacent signalized intersections operating at close to maximum volumes. However, continued residential growth in the immediate downtown area is expected to increase traffic during the off-peak period, which currently has a lot of underutilized capacity. This is expected to expand the congested period of LOS F well beyond the peak hour, given existing constraints.

The Interstate 30 Bridge is estimated to carry 124,000 vehicles per day in 2012 and is experiencing LOS F with daily stop-and-go traffic in both the AM and PM peak periods. It is forecast to grow at about 0.5% a year to 138,000 vpd by 2035, given the existing capacity limits on peak hour traffic.

Table 2 Estimated & Forecast Vehicles per Day Arkansas River Bridges (Downtown LR/NLR)			
Bridge	2012	2035	2035 w/Widened I-30
Broadway	24,000	32,000	26,000
Main Street	12,000	23,000	17,000
Interstate 30	124,000	138,000	158,000
Total Bridge Traffic	160,000	193,000	201,000

Forecast traffic volumes on the downtown bridges in 2035 may vary if Interstate 30 is widened between Interstate 40 and Interstate 440 (Table 2). The widening of Interstate 30 is included in the list of projects proposed for a half-cent sales tax that will be voted on in November 2012. Regardless of the outcome of this election, major work will likely occur on Interstate 30 before 2035, given the age of the Interstate 30 corridor and the existing congestion. Any widening of Interstate 30 will be attractive to commuters needing to cross the Arkansas River. However, continued redevelopment of residential and commercial properties on both sides of the river can be expected to provide for continued growth of local traffic crossing the river that would favor the non-Interstate bridges and maintain future traffic volumes at or above existing volumes.

The vehicles crossing the Broadway Bridge are over 99% automobiles, along with Central Arkansas Transit (CAT) buses and an occasional tractor-trailer making deliveries. Although some growth in trucks and buses can be expected, their use of the bridge is expected to remain limited, as it is not designated as a truck route.

Special events at Dickey-Stephens Park (NLR) and at the Robinson Center Music Hall (LR) occasionally attract school children in large numbers, occupying buses that utilize the bridge. Robinson Center is particularly problematic, as the single-truck loading dock is approximately 50 feet from the edge of pavement immediately at the south end of the

bridge. This arrangement causes blockage of Broadway while trucks back into the dock. During loading and unloading, the trailers block the sidewalk and often partially block the roadway. Large productions that have numerous truckloads of sets and costumes involve a particularly difficult, slow, and dangerous process of unloading/loading equipment. The LR Convention and Visitors Bureau has proposed a $65 million renovation of the Robinson Center that would include re-orientation of the loading dock to run parallel with Broadway and allow multiple trucks to unload simultaneously. The proposed designs will consider the Robinson Center loading dock access in the final design plans.

Currently, CAT runs electric replica vintage trolleys, known as the River Rail Streetcar, on a limited double loop through downtown LR and NLR. The River Rail has a barrier separated two-way single-track crossing of the river on the Main Street Bridge. Although the River Rail is currently primarily a tourist circulator, there is a desire to use it as the foundation on which to grow a rail transit system for the area in the future. The presence of a two-way single-track connection across the river is seen as a limiting factor for the future of the River Rail. The 2011 *River Rail Airport Study* included a recommendation for a northbound single-track rail line on the Broadway Bridge to be constructed when the River Rail is extended northward on Main Street.

Non-motorized traffic on the Broadway Bridge is light but steady. Pedestrians use the 8-foot sidewalks to walk to work and to exercise. Bicycles are less frequent due to a bridge railing that is too short for safe cycling on the sidewalk and narrow 10-foot wide travel lanes that make cycling difficult during peak traffic times. At off-peak times, bicyclists are seen using the bridge primarily to travel between the sections of the Arkansas River Trail that runs along both sides of the Arkansas River. In addition, drain inlets on the arch section of the bridge have grates that are not bicycle friendly and force bicyclists farther into the travel lane. Given downtown development trends and the growth in bicycling in the area, non-motorized uses of the bridge can be expected to grow.

Economic Analysis

An economic analysis was conducted for this project in Pulaski County. The analysis included a review of demographic data that was compiled for NLR, LR, Pulaski County and the State of Arkansas (see Table 1).

The study area has experienced a population growth rate of 4.8 percent in the last decade. Compared to the state average, the population of the study area is younger, has achieved a much higher educational level and has a larger minority representation. Contributing factors to the higher level of educational achievement are the access to higher education facilities and the types of jobs that are in the study area. Approximately 28% of the work force is in the educational, health care and social services fields. In addition to the government sector, large employers include the healthcare industry, banking, and the legal profession. The LR and NLR metropolitan area draws workers from a large region, with the daytime population in the two cities increasing by approximately 75,000 on work days.

In addition to serving as a critical highway link for workers commuting to jobs in this labor market, the Broadway Bridge connects the CBDs of LR and NLR. The cities are committed to providing services in their downtown areas to accommodate residents and the visitors to the area as well as the growing needs of the business sectors. Several attractions have been developed on both sides of the Arkansas River such as the Argenta Arts District, Dickey-Stephens Park, Verizon Arena, the Clinton Presidential Center and Park, the River Market District, and the Statehouse Convention Center. This has led to a surge in population growth in the areas at both ends of the Broadway Bridge. Many of the citizens in this area favor improved Arkansas River crossings and enhanced access to non-traditional transportation options such as sidewalks, bike lanes and trails. The proposed improvements under consideration for the Broadway Bridge would serve the projected traffic needs while providing non-traditional transportation options in the area and economic growth opportunities in the region.

ALTERNATIVES DEVELOPMENT

Project History

At the request of the AHTD, the proposed project was listed for funding in Fiscal Year 2013 in the Central Arkansas Regional Transportation Study's (CARTS) Fiscal Years 2012-2013 Transportation Improvement Program (TIP) that was adopted by the Metroplan Board of Directors in March 2010. Metroplan is the area's Metropolitan Planning Organization. The CARTS TIP was incorporated into the Arkansas Highway Commission's State Transportation Improvement Program that went into effect in April 2010. An internal AHTD project management team (PMT) began meeting in September 2010. A consulting engineering firm was secured in June 2011, at the recommendation of the PMT, to develop proposals and design the project in order to meet the funding commitments.

A meeting of local stakeholders was held in July 2011. Three bridge types were presented as examples for discussion at that meeting: Conventional Plate Girder, Steel Tied Arch, and Cable Stayed. Throughout this and other discussions in the community, several desires were expressed: 1) the need for a substantial pedestrian/bicycle facility; 2) design considerations for a future River Rail Streetcar line extension; 3) a pedestrian connection underneath the bridge between Dickey-Stephens Park and its parking lots; and 4) an "iconic" bridge design. Both the Steel Tied Arch and the Cable Stayed bridge types could be considered iconic.

Metroplan presented a cross-section proposal at that time that included a barrier-separated two-lane, two-way connector between La Harpe Boulevard and Riverfront Drive (Highway 100).

The bridge design discussion at that meeting led to a continuing exchange of ideas over the following year between LR, NLR, Metroplan, and the AHTD. Individual meetings were held with impacted stakeholders such as the Arkansas Travelers Baseball

organization representing Dickey-Stephens Park, Little Rock Convention and Visitors' Bureau representing the Robinson Center, and the U.S. Army Corps of Engineers, among others.

A Public Involvement Meeting was held in February 2012 (Appendix C). On display were two bridge types that resulted from a bridge-type study, a proposed typical section that included a shared-use pedestrian/bicycle facility, provisions in deck design for a future River Rail extension and examples of architectural design features that could be applied to any bridge type or typical cross-section.

Due to concerns over the impacts that could result from an estimated 22-month bridge closure with replacement of the bridge on existing location, LR and NLR proposed the construction of a bridge on new location connecting Chester Street in Little Rock with Riverfront Drive at Smarthouse Way and Karrott Street in NLR, just east of the Union Pacific Railroad. Their proposal included the conversion and retention of the existing Broadway Bridge as a "Festival" bridge after construction of the Chester Street Bridge was completed. The "Festival" bridge would be owned by the cities with shared use by pedestrians and bicyclists.

The Chester Street Bridge proposal, in addition to other possible bridge locations in the CBD, could enhance the capacity and roadway network across the river in the future. If additional river crossing capacity is needed after replacement of the Broadway Bridge and future Interstate 30 corridor improvements, the Chester Street Bridge proposal would be a viable option. However, any bridge project proposed at this time that does not serve the Broadway corridor would not serve the purpose and need for the Broadway Bridge replacement project and would require more extensive environmental studies to analyze all potential new bridge location options in the CBD.

The Chester Street Bridge proposal would lengthen trips into the CBD by 0.7 mile for many drivers. Due to the extra distance, some vehicle trips could be expected to shift to the Main Street Bridge which would not only impact traffic operations at numerous

intersections but also increase vehicle/pedestrian conflicts in high pedestrian areas on both sides of the river. In addition, high volumes of traffic would be introduced onto not only Chester Street but all the east-west streets between Broadway and Chester Street requiring changes in signalization and street widening for construction of turn bays at several intersections.

The location of the Broadway Bridge has focused traffic on the Broadway corridor for nearly a century. For years before the Interstate system, U.S. Highway 70 along Broadway was the primary national highway corridor through the Little Rock area from the northeast to Texas and Mexico. The importance of Broadway to local commerce has been vital to the economic health of the city since those early days. With the decline of LR's Main Street as a retail center, the importance of Broadway has been further solidified as the two tallest buildings in Arkansas were built on Broadway. An immense number of location decisions have been made by business and community leaders based on the pivotal importance of Broadway as a primary arterial for the region. Constructing a bridge at Chester Street and closing the Broadway Bridge to traffic would have a severe economic impact to dozens of businesses along Broadway and throughout downtown. In addition, a Chester Street bridge would require several business relocations creating further economic hardship. Due to these to these and other concerns, the Little Rock Planning Commission, in its latest action related to the Chester Street Bridge proposal, did not approve an amendment to the Little Rock Master Street Plan for the Chester Street Bridge.

Concern over the length of the bridge closure led to AHTD proposing the construction of a new bridge adjacent to the existing bridge. This would allow for the potential retention of the Broadway Bridge and shorten the length of time that the river crossing would be closed. Whether the existing bridge would be retained or not, closure of the bridge during construction could be shortened to approximately three months. Metroplan then contracted with a bridge engineering firm on behalf of the cities to obtain an independent

assessment of the existing bridge's condition, rehabilitation needs, and costs in order for the cities to make an informed decision concerning assumption of bridge ownership.

The development of alternatives for the proposed Broadway Bridge project as outlined above has produced alternatives that can be summarized by three major components: location; lane configuration including pedestrian/bicycle facilities; and, bridge types. Variations of each of the three components have been combined in multiple ways to produce proposed alternatives. The following discussion outlines the variations of each of the three alternative components.

Location

Two basic locations have been considered for the proposed project; the existing location and an offset alignment to the immediate west of the existing bridge. Keeping the project on the existing alignment would maintain a straight connection across the river. Constructing a new bridge on an offset alignment would require a gentle curve on the approaches to both ends of the bridge in order to reconnect with the existing roadway. An offset alignment would allow most of the bridge to be constructed while traffic continues to use the existing bridge. Closure of the Broadway Bridge would be required for an approximate 3-month period while the new approaches were being connected. In comparison, replacement of the bridge on the existing location would require closure of the bridge for at least 18-22 months for demolition and construction.

Lane Configuration and Pedestrian/Bicycle Facilities

The number and width of vehicle travel lanes, pedestrian /bicycle facilities and their connections to adjacent facilities, and structural provisions were considered in several combinations during the alternatives development process.

Typical Vehicular Cross-Sections

The current curb to curb roadway width of 40 feet containing four 10-foot lanes is classified as substandard by the National Bridge Inventory System. This width is barely

sufficient for large vehicles to pass when all four lanes are in use. It was decided early in the process by the PMT to propose that new lanes on the bridge be eleven feet wide to accommodate buses, trucks, and the potential of a future River Rail Streetcar line. Due to the congested intersections at both ends of the bridge and modest speeds along the corridor, 12-foot lanes that are often used for major facilities were determined to be inappropriate. It was understood from the beginning that the project would include pedestrian facilities and would add provisions to the bridge for bicycles given the proximity of the Arkansas River Trail beneath the bridge and the rapid growth in bicycling in the area.

Physical constraints presented by development along south Broadway in Little Rock prevent the reasonable addition of any lanes south of a connection to La Harpe Boulevard. There have been five proposals for vehicular lane configurations considered during the process.

1. Four 11-foot lanes;
2. Four 11-foot lanes with two 4-foot "shy distances" or setbacks to barriers;
3. Four 11-foot lanes and a barrier-separated La Harpe Boulevard to Riverfront Drive Connector with two 11-foot lanes with 1-foot "shy distances" on each side that terminates at a roundabout at Riverfront Drive;
4. Five 11-foot lanes with the third southbound lane extending from a free right-turn for eastbound West Broadway traffic in NLR southward to a ramp to westbound La Harpe Boulevard; and
5. Five 11-foot lanes with the third southbound lane extending from a ramp from Riverfront Drive in NLR southward to a ramp to westbound La Harpe Boulevard.

Pedestrian/Bicycle Provisions

There have been seven proposals for serving pedestrian and bicycle traffic.

1. Two 5-foot bicycle lanes and two 8-foot sidewalks;

2. Shared use pedestrian/bicycle facilities between ramps from the bridge to the Arkansas River Trail underneath with the following widths and considerations:
    a. 14 feet for full length of the project;
    b. 16 feet for full length of the project with observation areas and 16-foot ramps to the Arkansas River Trail;
    c. 20 feet if observation areas are provided;
    d. 24 feet minimum if observation areas are not provided;
    e. 26 feet with 12-foot sidewalks beyond the ramps on each side;
3. Rehabilitation of the existing Broadway Bridge as a "Festival" bridge for use as a pedestrian/bicycle facility, with no pedestrian or bicycle provisions to be constructed on the new vehicular bridge.

Ramps from the proposed shared use pedestrian/bicycle facility to the Arkansas River Trail on both sides of the river have been proposed as either helix or spiral ramps to minimize the land area required, or as straight ramps. On the south side of the river, all proposals for the new connecting ramp would be in the existing location of the La Harpe Boulevard westbound ramp to the northbound Broadway Bridge that will not be replaced due to lack of traffic demand. The "Festival" bridge proposal would reuse the existing ramp at this location. On the north side of the river, one proposal had the ramp location inside the levee connecting to the Arkansas River Trail at the junction of the Willow Street entrance. Another proposal had the ramp location partially over the levee and touching down outside the levee next to Riverfront Drive at the Willow Street entrance to minimize impacts to the usable area of the narrow park.

Additional Design Considerations

Given the proximity of the intersection of Broadway and West Broadway to the north end of the bridge and the high traffic volume and congestion at that intersection, the future design of that intersection and its potential impact on the design of the project has been reviewed. The following general concepts have been considered.

1. Signalized intersection
    a. Eastbound channelized right-turn lane flowing into a dedicated third southbound lane
    b. Northbound right turn lane lengthened to 350 feet
    c. Northbound double left-turn lanes
2. Roundabout (2-lane)
    a. Eastbound right-turn bypass lane
    b. Northbound right-turn bypass lane
    c. Eastbound single-lane approach with other directions 2-lane approaches

River Rail Streetcar Extension

It was agreed early in the process that structural provisions would be made for a possible future addition of a River Rail Streetcar extension across the bridge in a shared lane similar to most of the River Rail system. This proposal for extension of the system across the river at Broadway is consistent with recent study recommendations for the system.

Bridge Types

Four bridge types were developed after the study of appropriate bridge types for the location and in consideration of voiced stakeholder desire for an "iconic" bridge. The four bridge types were Plate Girder, Tied Arch, Twin Tied Arch, and Cable Stayed, as shown in Figure 2.

ALTERNATIVES CONSIDERED AND DISCARDED

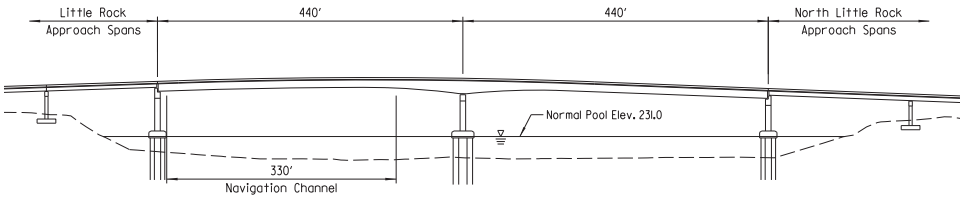
Rehabilitation and Upgrade of the Existing Bridge

Rehabilitation using Federal funds would require that the bridge be improved to existing design standards unless design exceptions are granted by the FHWA. Exceptions would be required for the bridge railing, vertical clearance over the roadways, clear roadway widths, retaining substandard live loading and substandard seismic provisions. Correcting the deck width deficiencies for wider vehicular lanes and pedestrian/bicycle facilities by the modification of the steel arch span would require either complete removal or extensive bracing due to the clear space between the arch ribs and would not be economically feasible. If design exceptions were granted, a partial rehabilitation that included deck repair would result in a bridge that does not serve the expressed needs of the public; would leave deteriorating concrete and rusting reinforcing steel at the heart of the bridge; and shorten the useful life of the resulting bridge an indeterminate length of time.

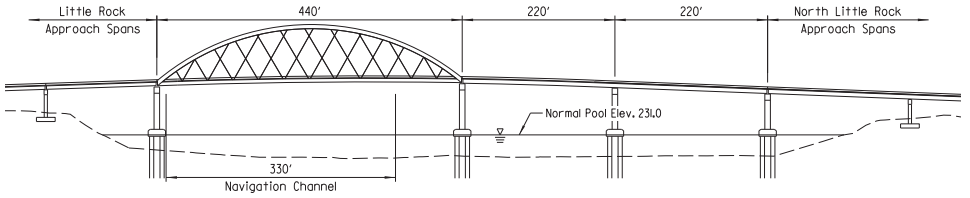
A full rehabilitation of the bridge may be possible at a cost estimate of $37 million. This estimate does include seismic and live load strengthening of the structure and does not include the substandard railing, vertical clearance, and clear roadway width requirements. It is estimated that the rehabilitation would take approximately 22 months to complete. Some of this work could be performed while the bridge is open to traffic, although traffic flow would be impacted. Full rehabilitation would include the removal and replacement of the concrete deck on the concrete arch spans which would require the bridge to be closed during that portion of the work. It is estimated that the closure for that work would be 9 to 10 months, about 50% of the rehabilitation period.

The $37 million spent on rehabilitation would be expected to last for 15 years. Although the elements that would be rehabilitated should be serviceable after 15 years, it should be noted that 25% of the structure would require patching every 15 years. So there would be a continuing, unforeseeable amount of rehabilitation that would need to be undertaken in

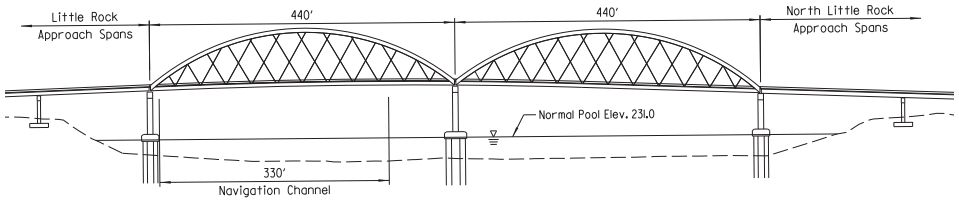
Plate Girder



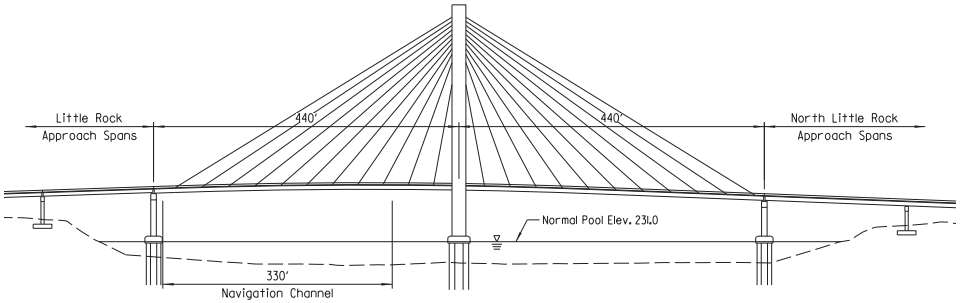
Single Tied Arch

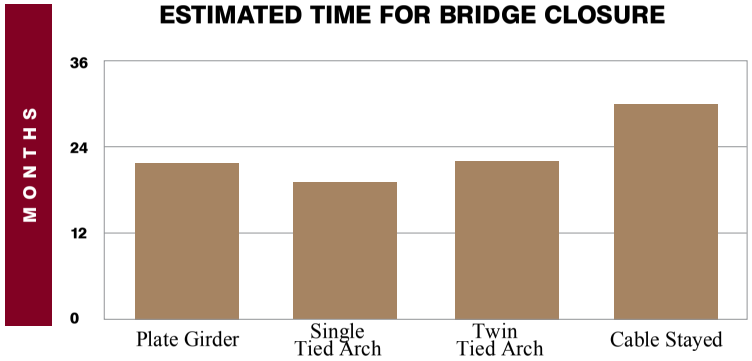


Twin Tied Arch



Cable Stayed





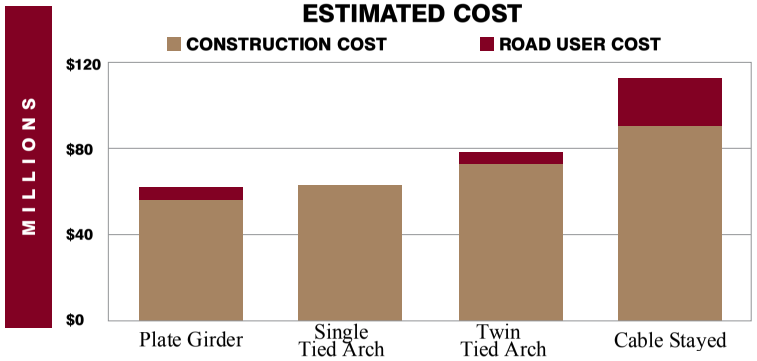


Figure 2.
Bridge Types Considered

comparison with extremely minor maintenance that would be expected to occur on a new bridge constructed to an expected life of 75 years.

The structure's rehabilitation would leave a bridge that would function poorly as a River Rail Streetcar route. Existing River Rail Streetcar vehicles are nine feet wide at the mirrors which would leave only a six-inch clearance on each side of the vehicle in the 10-foot lanes. Currently, the River Rail has two 10-foot shared-street sections, one on President Clinton Avenue in LR, and another along Main Street in NLR. Both narrow sections are crowded and slow, impairing both streetcar and automobile flow due to the narrow 10-foot lanes, with automobiles frequently venturing into the opposing lanes to pass a streetcar. Introduction of a streetcar onto such narrow bridge lanes would have a substantial impact on the traffic operations on the Broadway Bridge, especially at peak traffic hours.

Rehabilitation would leave the community with an aesthetically pleasing bridge that many in the community admire. However, rehabilitation of the structure was discarded as an alternative because it would result in a bridge that does not have the desired pedestrian/bicycle facilities, would function poorly as a future River Rail route, and would leave a 90-year old bridge in place with substandard clearance over La Harpe Boulevard and a 15-year rehabilitation life cycle after a substantial expenditure of funds.

Partial Replacement of the Existing Bridge

Since the existing 1974 steel arch span was not as old as the rest of the bridge, the structural and economic feasibility of incorporating the existing span into a new structure was considered. The following issues were identified with retaining the arch span.

1. The 58-foot 9-inch clear space between the steel arch ribs will not accommodate any new structure width. Retrofitting the steel arch span for increased bridge width and the resulting increased load would be cost prohibitive.

A design exception that would leave the bridge with 10-foot lanes that barely accommodate buses and tractor-trailers and the bridge would function poorly as a River Rail Streetcar route. Retaining the existing typical roadway cross-section would also mean that there would be no room for the community's expressed desire for a safe bicycle facility on the bridge.

2. The original piers and abutments are approximately 90 years old and have a poor condition rating due to spalls, cracks, and exposed reinforcing steel. High chloride content is probable based on tests conducted on other parts of this structure. High chloride content leads to corrosion of reinforcing steel and spalling, cracking, and delamination of concrete. Remediation of the existing piers and abutments may be possible but will not be cost beneficial due to their age. Total replacement of the piers would require the additional cost of removal and re-erection of the existing steel arch span or temporary shoring with protection from barge impact.

Although partial replacement of the bridge could be accomplished, the design of the steel arch span argues against any economically feasible widening to enhance the typical cross-section of the bridge. Incorporating the steel arch into a new bridge with a design exception would then leave the community and state with a bridge that is rated as functionally obsolete, does not have the desired pedestrian/bicycle facilities, and would make it difficult to expand the River Rail Streetcar across the bridge as desired, due to the narrow 10-foot lanes.

Lane Configuration Including Pedestrian/Bicycle Facilities

Four lane with Two Bicycle Lanes & Sidewalks

One alternative presented at the July 2011 stakeholders meeting consisted of a replacement structure at the existing location with a bridge of a typical width of 54 feet from curb line to curb line; it would have a cross-section of four 11-foot travel lanes with 5-foot bicycles lanes and 8-foot sidewalks on each side. The overall bridge width would be 74 feet. The southbound ramp from the bridge at La Harpe Boulevard would be

rebuilt to modern geometric standards but the westbound La Harpe Boulevard ramp to northbound Broadway would not be replaced as the approximate 200 vehicles per day using that ramp do not justify the expense. No particular bridge type or design was associated with the alternative. This alternative was discarded after the meeting due to the desire of local stakeholders to have a wider pedestrian/bicycle facility.

Four lanes with 14-foot Shared Pedestrian/Bicycle Facility

Another alternative that was proposed at the July 2011 stakeholders meeting consisted of a replacement structure at the existing location with a cross-section that included four 11-foot travel lanes separated from the barriers by a 4-foot "shy distance" or setback, and a 14-foot wide pedestrian and bicycle shared use path on the east side of the bridge. The southbound ramp from the bridge to La Harpe Boulevard would be rebuilt to modern geometric standards but the little-used westbound La Harpe Boulevard ramp to northbound Broadway would not be replaced. No particular bridge type or design was associated with the alternative. An unspecified number of observation areas at intervals along the pedestrian/bicycle shared facility were discussed; these would serve to keep stationary people from blocking the path. This specific alternative was not carried forward due to the lack of elements that would improve traffic flow at Broadway and West Broadway; and due to resistance from local officials regarding the width of the pedestrian/bicycle shared use facility, which Metroplan had requested to be 26 feet wide.

Four lanes with a Barrier-Separated Two-lane Highway 10 to Riverfront Drive Connector and a 26-foot Shared Pedestrian/Bicycle Facility

The Metroplan Alternative presented at the July 2011 stakeholder meeting is shown in Figure 3. The proposed alternative has three major distinguishing components. First, a barrier-separated, two-lane, two-way connector (connector proposal) would provide a direct connection to a signalized intersection at La Harpe Boulevard on the south and on the north the connector would curve over the Dickey-Stephens Park parking lot on an elevated structure to a proposed roundabout at Riverfront Drive. Second, a 26-foot wide shared pedestrian/bicycle facility would span the river between ramps connecting the

Arkansas River Trail on each side of the river. The little-used westbound La Harpe Boulevard ramp to northbound Broadway would not be replaced. The proposed south riverbank pedestrian/bicycle ramp to the Arkansas River Trail would be in that location. Beyond the ramps, the pedestrian/bicycle facility would narrow to 14 feet wide. Third, a roundabout would be utilized at the intersection of Broadway and West Broadway just beyond the north end of the bridge. Although the Broadway at West Broadway intersection is beyond the bridge, its operation meters traffic crossing the bridge along with the signal at Markham and Broadway in LR. Due to the proximity of the Broadway at West Broadway intersection to the end of the bridge, any capacity additions to its northbound approach would almost certainly affect the design of the northern end of the bridge.

Traffic flow impacts of the connector proposal were analyzed using a VISSIM micro-simulation. Traffic forecasts used in the analysis represent an approximate 25% growth in traffic from 2011 to 2035, 20 years after expected completion of the project. This is at the high end of what can reasonably be expected in the corridor, given growth trends, the limitation of PM peak vehicle throughput from south Broadway in the coordinated Little Rock traffic signal grid, and the possibility of Interstate 30 over the Arkansas River being widened during this period. There was agreement between the AHTD and Metroplan that additional capacity crossing the river will be needed during the period.

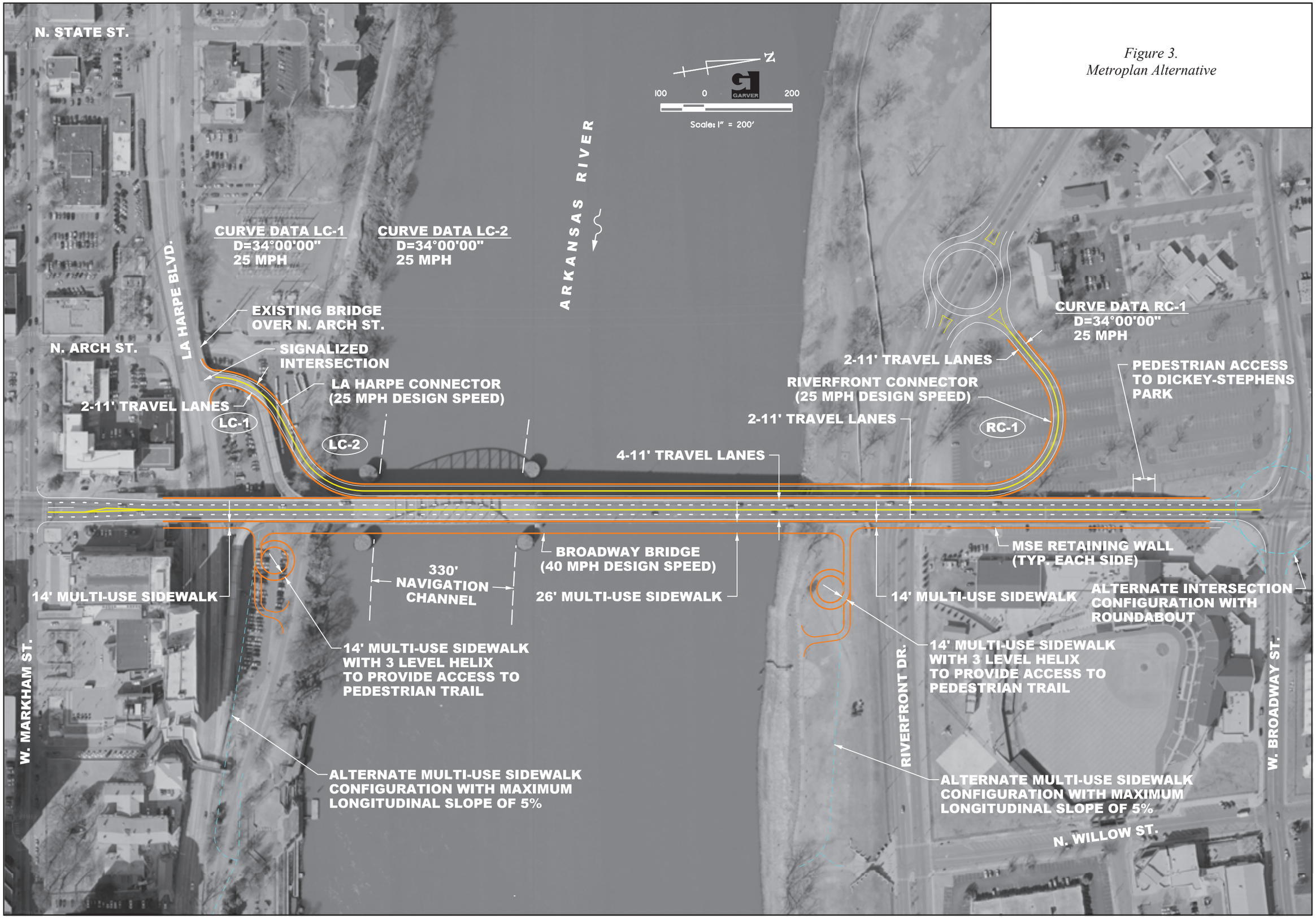


Figure 3.
Metroplan Alternative

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VISSIM analysis of the 2035 forecast indicated that the connector proposal would operate at an acceptable level in AM peak. The PM analysis shows the connector proposal reduced queues on eastbound Markham at Broadway. However, due to the fixed signal cycle length in the coordinated downtown LR signal grid, the decrease in demand for green time on Markham at Broadway had little impact on the congestion experienced by northbound Broadway traffic, since the signal cannot be retimed to take advantage of the decreased demand. Given the constraints of signal timing and the physical limitations presented by the proximity of the Robinson Center to the east and LR City Hall to the west, there is little that can be done to improve the operations of the Broadway at Markham intersection by the proposed project.

The micro-simulation indicated that the roundabout may have a longer queue at Broadway and West Broadway than a traffic signal. Also, the westbound approach to the Pike Avenue roundabout to the west fails in the PM peak with the shift of traffic to Riverfront Drive. With this alternative, alterations to the Pike Avenue roundabout intersection would be necessary to ensure proper operation.

A more detailed analysis was conducted of the intersection at Broadway and West Broadway using *Highway Capacity Software 2010* (*HCS 2010*) based on the *Highway Capacity Manual*, as well as both the *Synchro* and *SimTraffic* traffic analysis software packages. Multiple approaches were used as each program has different methodologies with its own strengths and weaknesses. Similar results were reported with both intersection alternatives operating acceptably with existing volumes. The roundabout produced slightly less overall delay but had failures on specific approaches: southbound in the morning peak and westbound in the afternoon peak. Analyses were performed for 2035 and an interim year that was an average of existing and 2035 traffic volumes. For the interim analysis, the signal performed better than the roundabout although both showed LOS F for some movements. By the year 2035, both options experience LOS F for certain movements, particularly the morning peak southbound

movement and the afternoon peak westbound movement. Only the roundabout shows LOS F for all of the overall results. In general, the heavy directional flow through this intersection makes it difficult at peak times for vehicles on some approaches to find sufficient gaps to maintain an acceptable LOS. Therefore, the roundabout design was discarded.

The proposed pedestrian/bicycle shared use facility was proposed to be 26 feet wide between the ramps connecting to the existing Arkansas River Trail below the bridge and 14-foot sidewalks on the ground. The minimum width recommended by the 2012 *Guide for the Development of Bicycle Facilities* by the American Association of State Highway and Transportation Officials for a two-directional shared use path is 10 feet. Typically, width ranges from 10 to 14 feet, with the wider values applicable to areas with high use and /or a wider variety of user groups. The most prominent and busiest bridges along the Arkansas River Trail are the Big Dam Bridge and the Two Rivers Bridge, which are both 14 feet wide. They are both in a peaceful park-like setting, attract large numbers of users, and are frequently congested. The Broadway Bridge currently is used by small numbers of pedestrians for both non-recreational and recreational uses. Bicycle traffic is currently very limited due to the height of the railing, the limited lane width and heavy traffic. The proposed 26-foot width was proposed due to the substantial growth of bicycling along the Arkansas River Trail and a belief that a more pleasant and protected pedestrian environment on the bridge would significantly increase the numbers of pedestrians using the bridge, especially for special events such as Riverfest and the Fourth of July Fireworks.

The originally proposed straight ramps to the Arkansas River Trail were replaced with helix or spiral ramps by the AHTD consultant in Figure 3 to provide a means of connecting the bridge to the trail below with a fairly compact design. However, after further consideration it was determined that sight distances would present an unsafe situation because they would be very limited. Descending bicyclists would have a hard

time determining what was ahead. Ascending bicyclists would be trapped behind slow walkers without being able to see whether it was safe to pass.

The additional width proposed in the Metroplan connector proposal, along with the ramp structure to the proposed Riverfront Drive roundabout that spans the ballpark parking lot, is estimated to increase the bridge cost between $8 and $10 million above a similarly constructed 5-lane typical cross-section. It was determined that the additional expense and impacts to operational efficiency do not justify the expense of the Metroplan connector proposal, the roundabout at Broadway and West Broadway, or the 26-foot pedestrian/bicycle shared use path.

Bridge Types

As a result of the July 2011 stakeholder meeting and subsequent discussions and analysis, four bridge types were studied and the results presented at the February 2012 Public Involvement. The bridge type analysis addressed the major concerns voiced to date: cost, speed of construction, and aesthetics. The four bridge types were Plate Girder, Tied Arch, Twin Tied Arch, and the Cable Stayed, previously shown in Figure 2.

Cost estimates were developed for all four bridge types for the lane configuration that was presented at the Public Involvement Meeting held in February 2012. Those cost estimates have been revised upward since the meeting with an additional $1.75 million in estimated demolition costs. The new estimates range from $60.2 million for the Plate Girder Bridge to $93.0 million for the Cable Stayed Bridge. The Single and Twin Tied Arch Bridges have intermediate costs at $65.8 and $75.9 million, respectively.

Although cost is a very important consideration when choosing bridge type, the length of time required for construction is also critical as the various impacts of traffic disruption and rerouting has its own costs to vehicle users and to businesses along both the existing route and detour routes. A road user cost study was performed using data from the CARTS regional traffic forecast model to estimate the changes in traffic flow with the

temporary closing of the existing Broadway Bridge. Those changes in traffic flow would incur costs on vehicle users through time delay, additional fuel cost and vehicle wear. The Single Tied Arch Bridge, using accelerated construction techniques, was used as a base since it could be constructed in the shortest time span. Accelerated construction techniques are not available for the Cable Stayed Bridge, resulting in an estimated 30 months for construction. The estimated period of construction for each bridge type is shown in Table 3. Figure 2 illustrates a comparison of the cost of bridge types with and without consideration of road user costs. The additional road user costs incurred with the Plate Girder Bridge during the additional three months closure as compared to the Single Tied Arch Bridge would make it roughly equivalent, but still costing $5.6 million less than the Twin Tied Arch Bridge.

Table 3
Estimated Duration of Construction

	Base Construction Period (months)	Construction w/Accelerated Techniques (months)
Plate Girder	22	18
Single Tied Arch	20	15
Twin Tied Arch	23	16
Cable Stayed	30	N/A

In order to gather input on the public's opinion of each bridge type, a questionnaire was provided at the Public Involvement Meeting in February 2012 that asked, "*Of the bridge types considered, what* ***BRIDGE TYPE*** *do you prefer*?" The results shown in Table 4 consolidate the completed questionnaires and other comments received. A full synopsis for the public involvement is available in Appendix C.

Cable Stayed Bridge

The bridge type analysis found that a Cable Stayed Bridge would be the most expensive bridge type at $93.0 million, which is 55% more than the least expensive Plate Girder

Bridge. In addition, the duration of construction would take an estimated 30 months, which is up to double the estimated time of other alternatives. Although this bridge type would potentially be the most iconic of the bridge types, results of the public involvement survey indicated that only 12% of those responding preferred the Cable Stayed Bridge. Given all of the above, the Cable Stayed Bridge was discarded from further evaluation.

Table 4
Public Involvement Bridge Preference Results

Bridge Type	Responses	%
Plate Girder	29	40
Single Tied Arch	10	14
Cable Stayed	9	12
Twin Tied Arch	8	11
Not specific enough to determine	8	11
None of the above	6	8
Did not mention a design preference	3	4
Total Responses	73	100

Twin Tied Arch Bridge

The bridge type analysis found that a Twin Tied Arch Bridge would be the second most expensive bridge type at $75.9 million, which is 26% more than the least expensive Plate Girder Bridge. Duration of construction would take an estimated 23 months without accelerated techniques and 16 months with them, increasing the cost to $79.1 million. Although this bridge type could lessen the duration of closure, it would shorten the closure by only an estimated one month at an additional cost of $7.9 million compared to the Single Tied Arch Bridge. Results of the public involvement survey indicated that only 11% of those responding preferred the Twin Tied Arch Bridge. Given all of the above, the Twin Tied Arch Bridge type was discarded from further evaluation.

Single Tied Arch

The Single Tied Arch Bridge (Figure 4) is a bridge type that is a more elaborate modern arch reminiscent of the existing steel arch. At an estimated base cost of $65.8 million, the Single Tied Arch Bridge would be 9% more expensive than a Plate Girder Bridge. However, this alternative was developed in response to a concern for the length of time the bridge would need to be closed as it would shorten the estimated closure time to 22 months.

Figure 4. Single Tied Arch Bridge with Five Lanes and a 16-foot Shared Pedestrian/Bicycle Facility

With accelerated construction techniques such as constructing the arch off-site, then floating it on a barge and sliding it into place, an approximate three months of construction time could be saved. This and other accelerated techniques would raise the estimated cost to $71.2 million as compared to the estimate of $63.7 million for an

accelerated Plate Girder Bridge that would take three months longer to build. A Single Tied Arch Bridge would save road users money in vehicle idling, added distance traveled, and time lost by shortening the period of bridge closure. Three less months of bridge closure would make this bridge type as economically feasible as the Plate Girder Bridge when road user costs are considered. Both the Single Tied Arch and Plate Girder Bridges were presented at the February 2012 Public Involvement Meeting. Both bridges were shown with identical five-lane cross-sections, two examples of architectural finishes and two types of outside railing for a 16-foot pedestrian/bicycle shared facility. After the public involvement the responses to the questionnaire regarding the preferred bridge type indicated that 14% of the respondents preferred the Single Tied Arch Bridge, compared with 40% of the respondents preferring the Plate Girder Bridge type. Given the additional cost, lack of interest for the bridge type, and newly developed alternatives that would have a greater impact on the duration of the bridge closure, the Single Tied Arch Bridge has been discarded from further consideration.

ALTERNATIVES CONSIDERED

No Action

The existing condition and continued deterioration of the Broadway Bridge make it necessary to take action to preserve public safety. This alternative would leave the Broadway Bridge as it exists; no rehabilitation, widening, or other improvements would be undertaken. Only minor repair or routine maintenance would be performed. This alternative would not alleviate the worsening condition of the bridge, improve traffic operations, or provide a safe river crossing for bicyclists or any connection for them from the bridge to the Arkansas River Trail. In addition, the deteriorating bridge and narrow 10-foot lanes would likely prevent any extension of the River Rail Streetcar line across the bridge, as has been proposed. Existing traffic volumes on the bridge and the adjacent bridges over the Arkansas River indicate that there is significant existing traffic demand, and forecast traffic warrants a safe, functional bridge serving the existing roadway approaches. This alternative will be carried through the analysis process for a comparison of potential impacts.

Replace Bridge at Existing Location

Plate Girder Bridge

A proposed Plate Girder Bridge alternative at the existing location was presented at the Public Involvement in February 2012. It contains a five-lane typical bridge cross section with three southbound lanes from a signalized north intersection of Broadway at West Broadway to a lane drop at the southbound ramp to La Harpe Boulevard, plus a lengthened northbound right-turn lane to eastbound West Broadway. The southbound Broadway to westbound La Harpe Boulevard ramp would be replaced with a more direct, 15-foot lane with 4-foot inside and 6-foot outside shoulders, and an acceleration lane on La Harpe Boulevard. The little-used westbound La Harpe Boulevard ramp to northbound Broadway would not be replaced. That ramp location utilized as a 16-foot pedestrian/bicycle ramp connecting to the Arkansas River Trail. A similar ramp to the

east was proposed on the north side of the river that would touch down inside of the levee in Riverfront Park. NLR was concerned that the proposed ramp location would negatively impact other uses of the park and asked that it be revised.

Revised Plate Girder Alternative (Alternative 1)

As the result of continuing studies and comments, three proposed revisions were made to the Plate Girder Bridge alternative after the February 2012 Public Involvement Meeting. Design of Alternative 1 is shown in Figure 5, cross-section in Figure 6 and a conceptual view on Figure 7. The biggest change is the revision of the third southbound lane from starting at Broadway to beginning at the junction with a newly proposed ramp from Riverfront Drive. This proposal improves traffic operations at the Broadway and West Broadway intersection in the morning peak, and addresses the concerns about the impact of an additional lane to the design of the intersection expressed by Metroplan in response to the February 2012 Public Involvement. Also revised is the touchdown location of the pedestrian/bicycle ramp from the bridge to the north side of the Arkansas River Trail. After further negotiations with the U.S. Army Corp of Engineers it was determined that the ramp could bridge the levee, touch down on its north side next to Riverfront Drive, and intersect the Arkansas River Trail via the Willow Street entrance. These revisions do not add any cost to the estimate for the alternative.

As part of the pedestrian element of the project, a connection underneath the bridge between Dickey-Stephens Park and its parking lot on the west side of the bridge is proposed. See Figure 8 for a possible three arch design of this connection that ties in with the design of Dickey-Stephens Park.

The third change is the change in the location of the pedestrian overlooks along the bridge. Initially the lookouts were placed around the support pier spires. In response to concerns about pedestrian safety, graffiti, and space, the lookouts were moved to locations between the supports piers. These locations will allow better viewing, more pedestrian room and improve safety concerns.

The Plate Girder Bridge alternative was presented at the February 2012 Public Involvement with two generalized architectural finishes that could be applied to any alternative. The Plate Girder Bridge in Figure 9 has a more traditional design, and the one in Figure 10 has a contemporary design. Two examples of the outside railing for the pedestrian/bicycle shared use facility are also shown in these figures. One is a closed barrier that has a solid bottom half and a railing for the top half, and the other design has an open rail the whole height. The estimated cost for the Plate Girder Bridge with five travel lanes and a pedestrian/bicycle shared use facility as discussed above is $60.2 million, rising to $63.7 million with accelerated construction techniques.

Offset Alignment Alternatives (Construct Bridge Upstream Adjacent to Existing Location)

In response to concerns over the impact of a potential bridge closure of 18 months or more and the desire by LR and NLR to possibly retain the existing Broadway Bridge to be a "Festival" bridge, the AHTD developed three alternatives that could be built immediately adjacent to the existing bridge. Because the new bridge needs to connect to the existing intersections on each end, these alternatives include a gentle curve at both ends of the bridge. These proposals contain a third southbound lane that originates at the proposed ramp from eastbound Riverfront Drive and extends to a redesigned ramp onto westbound La Harpe Boulevard. They also contain a dual northbound left-turn lane at Broadway and West Broadway and an extended northbound right-turn lane at Broadway and West Broadway. A shared 16-foot pedestrian/bicycle facility connected by 16-foot ramps to the Arkansas River Trail would be included if the existing bridge were not to be retained and converted to a pedestrian/bicycle facility.

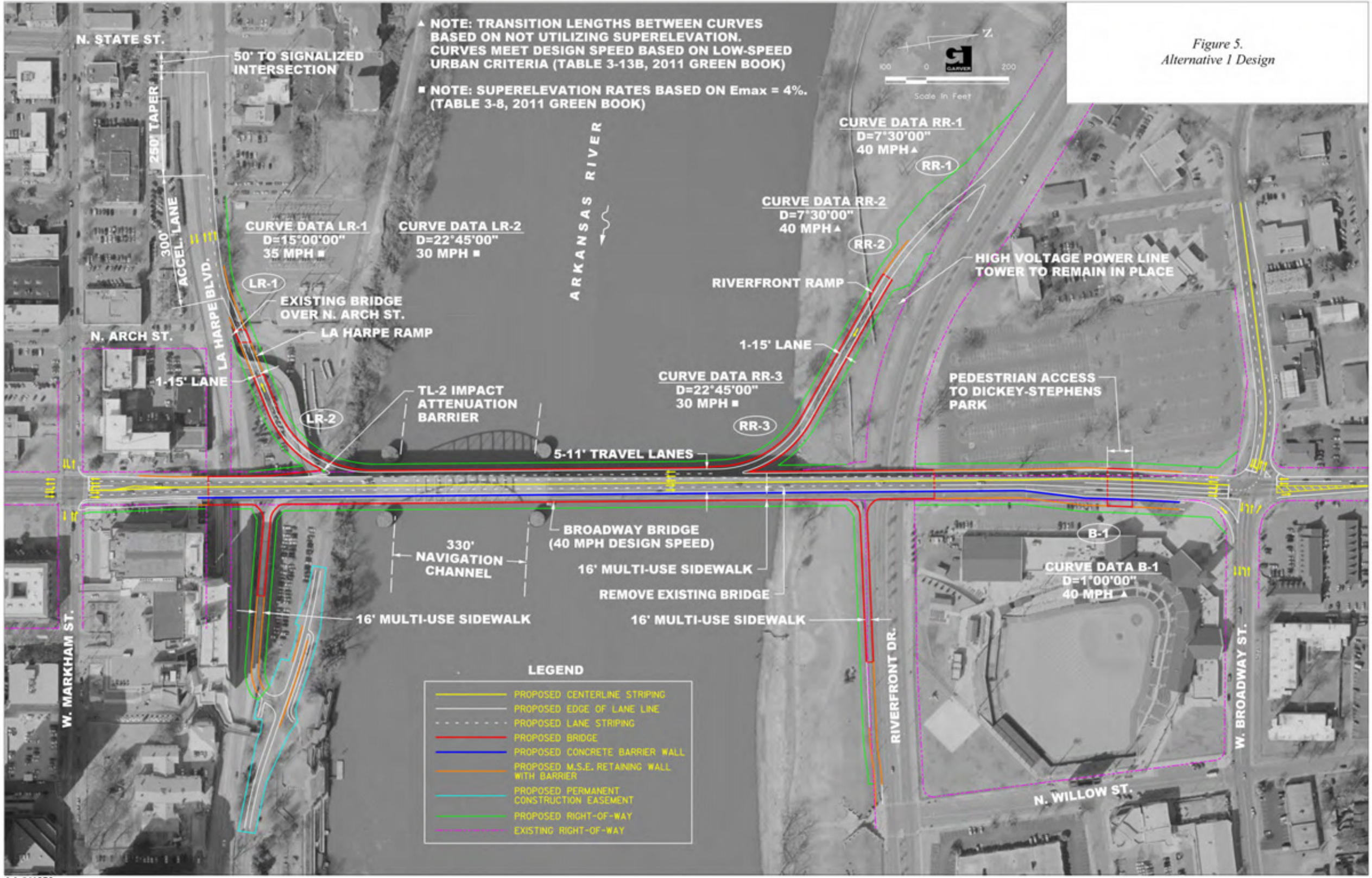

Figure 5.
Alternative 1 Design

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Figure 6.
Alternatives 1 and 2
Bridge Typical Cross-Section

Figure 7. Alternative 1 Conceptual View

Figure 8. Pedestrian Access to Dickey-Stephens Park

Figure 9. Plate Girder Design Bridge (Traditional Design)

Figure 10. Plate Girder Design Bridge (Contemporary Design)

These alternatives address the following concerns expressed by local officials.

1. Length of bridge closure - The proximity of the bridge to the existing location would allow for construction of most of the new bridge without closure of the existing bridge. The closure would be limited to approximately three months to construct the short bridge approaches on each end.

2. A benefit of the bridge alignment curvature would be a damping effect on vehicular speeds which should assist with traffic operations and pedestrian safety at the intersections on each approach.

3. Size of the Broadway at West Broadway intersection - A proposed single southbound connector from Riverfront Drive to La Harpe Boulevard would decrease the eastbound to southbound right turns passing through the Broadway at West Broadway intersection in NLR. This would improve intersection operations and decrease the proposed design of the southern leg of the intersection by eliminating a proposed free right turn lane.

4. LR and NLR expressed a desire to retain and rehabilitate the existing Broadway Bridge and develop it as a pedestrian "Festival" bridge, with exact provisions for bicycles yet to be determined. At either end of the existing Broadway Bridge there would be partial demolition of the approaches so that the new vehicular bridge would be able to connect to the existing intersections. Also suitable pedestrian/bicycle ramps could transition from the bridge ends down to the sidewalk system on the ground.

Offset Plate Girder Bridge – Demolish Existing Bridge (Alternative 2)

Alternative 2 would use an offset alignment consisting of a revised plate girder bridge with five 11-foot travel lanes, a concrete protective barrier, and a 16-foot shared use path on the east side. The project would demolish the existing bridge. The Alternative 2 design is shown in Figure 11 and the conceptual view in Figure 12. This alternative

▲ NOTE: TRANSITION LENGTHS BETWEEN CURVES BASED ON NOT UTILIZING SUPERELEVATION. CURVES MEET DESIGN SPEED BASED ON LOW-SPEED URBAN CRITERIA (TABLE 3-13B, 2011 GREEN BOOK)

■ NOTE: SUPERELEVATION RATES BASED ON Emax = 4%. (TABLE 3-8, 2011 GREEN BOOK)

N

100 0 200

Scale In Feet

Figure 11.
Alternative 2 Design

N. STATE ST.

50' TO SIGNALIZED INTERSECTION

250' TAPER

300' ACCEL. LANE

LA HARPE BLVD.

N. ARCH ST.

1-15' LANE

CURVE DATA LR-1
D=15°00'00"
35 MPH ■

CURVE DATA LR-2
D=22°45'00"
30 MPH ■

ARKANSAS RIVER

LR-1

EXISTING BRIDGE OVER N. ARCH ST.

LA HARPE RAMP

LR-2

TL-2 IMPACT ATTENUATION BARRIER

5-11' TRAVEL LANES

CURVE DATA RR-1
D=7°30'00"
40 MPH ▲

RR-1

CURVE DATA RR-2
D=7°30'00"
40 MPH ▲

RR-2

HIGH VOLTAGE POWER LINE TOWER TO REMAIN IN PLACE

RIVERFRONT RAMP

CURVE DATA RR-3
D=22°45'00"
30 MPH ■

1-15' LANE

RR-3

PEDESTRIAN ACCESS TO DICKEY-STEPHENS PARK

CURVE DATA B-4
D=7°30'00"
40 MPH ▲

B-4

B-2

BROADWAY BRIDGE
(40 MPH DESIGN SPEED)

16' MULTI-USE SIDEWALK

REMOVE EXISTING BRIDGE

B-3

CURVE DATA B-3
D=7°30'00"
40 MPH ▲

B-1

CURVE DATA B-1
D=7°30'00"
40 MPH ▲

CURVE DATA B-2
D=7°30'00"
40 MPH ▲

330' NAVIGATION CHANNEL

16' MULTI-USE SIDEWALK

16' MULTI-USE SIDEWALK

W. MARKHAM ST.

RIVERFRONT DR.

W. BROADWAY ST.

N. WILLOW ST.

LEGEND

- PROPOSED CENTERLINE STRIPING
- PROPOSED EDGE OF LANE LINE
- PROPOSED LANE STRIPING
- PROPOSED BRIDGE
- PROPOSED CONCRETE BARRIER WALL
- PROPOSED M.S.E. RETAINING WALL WITH BARRIER
- PROPOSED PERMANENT CONSTRUCTION EASEMENT
- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY

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would require an estimated three month bridge closure for construction. Total cost is estimated at $61.8 million including $4.8 million in demolition costs for complete removal of the existing bridge.

Figure 12. Alternative 2 Conceptual View

Offset Plate Girder Bridge - Retain Existing Bridge (Alternative 3A)

Alternative 3A is a five-lane Plate Girder bridge built adjacent to the existing bridge, which would be retained. A conceptual deck view is shown in Figure 13 and the design in Figure 14. This alternative would have no pedestrian/bicycle facilities since they would be on the rehabilitated Broadway Bridge (Figure 15). At both ends of the existing Broadway Bridge there would be a partial demolition of the approaches so that the new vehicular bridge would be able to connect to the existing intersections. New ramps could

be constructed to provide for a gradual transition from the existing bridge deck to the existing sidewalks in LR and NLR.

Figure 13. Alternative 3A Conceptual Deck View

Due to the thickness of steel girders required to support the long span over the navigation channel, the high point of that span would be approximately six feet higher than the existing bridge and would partially block views of the river valley to the west from the existing Broadway Bridge, as shown in Figure 13**.** The estimated total cost is $56.5 million; this includes $0.9 million in demolition costs and $8.2 million to convert the existing bridge to a pedestrian/bicycle usage. The estimated bridge closure time would be three months.

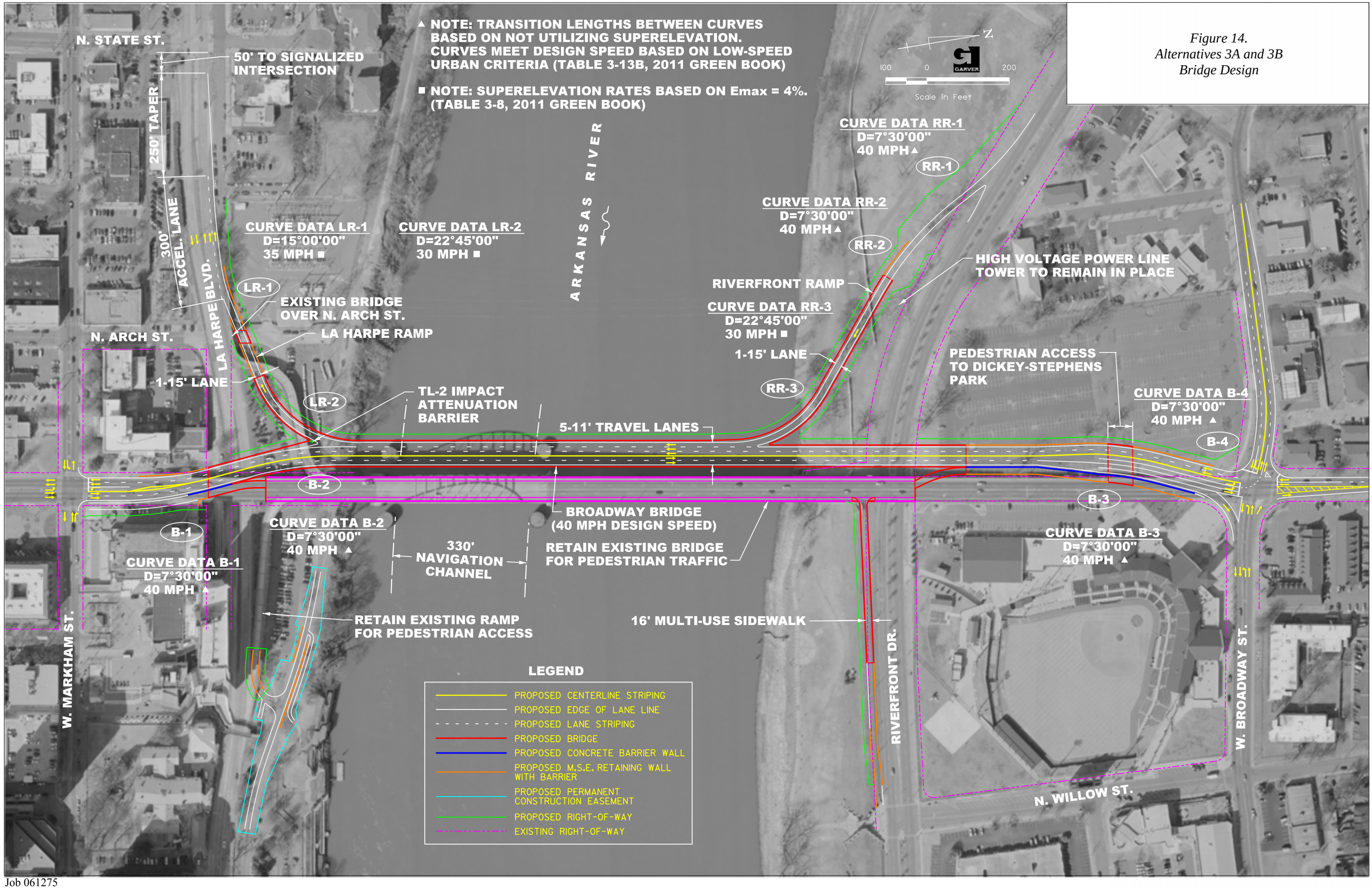

Figure 14.
Alternatives 3A and 3B
Bridge Design

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Figure 15
Alternatives 3A and 3B
Bridge Typical Cross-Section

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Offset Steel Arch Bridge – Retain Existing Bridge (Alternative 3B)

Alternative 3B is an Offset Steel Arch Bridge with the same lane configuration as the Offset Plate Girder Bridge. This alternative was developed in response to comments concerning the negative impacts to the view from the proposed "Festival" bridge that could result from the higher elevation of Alternative 3A. The two arches could provide more of an iconic structure desired by local leaders by creating "Twin Arches" for the "Twin Cities." This conceptual view is shown in Figure 16. The major difference is that it would bridge the navigation channel with a Steel Arch designed to closely mimic the existing Broadway Bridge. This would bring the height of the structure down to match that of the existing Broadway Bridge, as shown in the conceptual deck view in Figure 17.

Figure 16. Alternative 3B Conceptual View

Figure 17. Alternative 3B Conceptual Deck View

This alternative would have no pedestrian/bicycle facilities since they would be on the rehabilitated Broadway Bridge. At both ends of the existing Broadway Bridge there would be partial demolition of the approaches so that the new vehicular bridge would be able to connect to the existing intersections. Ramps could provide a transition from the full width bridge deck to the sidewalks on the ground.

Alternative 3B is estimated to cost $62.6 million and would require an estimated three month bridge closure for construction of the short connection to the existing roadway at both ends. This cost includes $0.9 million in demolition costs and $8.2 million for conversion of the existing bridge to a pedestrian/ bicycle facility.

ALTERNATIVES COMPARISON AND SUMMARY

The proposed project has had three primary components for which alternatives have been studied. Variations of location, lane configuration including pedestrian/bicycle facilities and bridge type, have been considered for the project with considerable input being provided by stakeholders in the community. The economic feasibility of all alternative variations is a very important consideration since limited resources already prevent the AHTD from addressing many needs throughout Arkansas.

Location

Two location alternatives have been considered for the proposed project: 1) the existing location of the Broadway Bridge; and 2) a location offset that is adjacent to and just upstream of the existing bridge. Constructing the project on the existing bridge location has the benefits of little additional impacts and would maintain a straight connection across the river. Construction on an offset alignment would require gentle curvature at each end of the bridge to tie the structure back into the existing roadway network. This curvature would eliminate any views down Broadway through the bridge, however, due to the difference in elevation of the two riverbanks and the necessity for additional clearance over the river's navigation channel, any view would terminate at the bridge crest over the navigation channel as it does currently.

The most significant effect that the proposed project locations would have is on traffic operations during construction. As the information in Table 5, indicates, constructing a new bridge on the existing alignment would require a minimum of 18 months total closure of the bridge if an arch bridge is constructed over the navigation channel and all accelerated construction techniques are employed. Constructing on the proposed offset alignment would result in bridge closure for an estimated three months. The new bridge could be constructed while traffic used the existing bridge, until it was necessary to close the existing bridge for construction of the approach roadway to the bridge ends.

Lane Configuration Including Pedestrian/Bicycle Facilities

Typical Vehicular Cross-Sections

The typical cross-section of traffic lanes for the proposed project was carefully considered in order to take advantage of this opportunity to provide additional traffic capacity across the Arkansas River. Unfortunately, the limited right of way along Broadway in LR prevents an addition of travel lanes across the bridge without unreasonable impacts and expense. However, other lane addition options were considered.

The presence of highways underneath the approaches to the Broadway Bridge on both sides of the river provides a potential for ramp connections that could divert traffic from the existing intersections at each end of the bridge. All alternatives remaining under consideration propose a third southbound lane across the bridge that would drop at a ramp to westbound La Harpe Boulevard on the south side of the river. Review of existing traffic patterns revealed there is very limited demand for eastward oriented ramps at La Harpe Boulevard on the south side. That river crossing demand is primarily satisfied by the Main Street and Interstate 30 Bridges. However, there is a substantial demand for Broadway Bridge traffic to travel to and from westbound La Harpe Boulevard that is currently partially served by the off-ramp.

On the north side of the river, Riverfront Drive does not currently have a ramp, but such ramps have been discussed for several decades. Access to the Broadway Bridge from Pike Avenue (Highway 365) intersects Riverfront Drive at a roundabout that provides an opportunity for alternative ramp access to the bridge using Riverfront Drive rather than West Broadway.

The Plate Girder Bridge on existing location alternative that was carried forward from the public involvement includes a third southbound lane to La Harpe Boulevard, but with that proposal the third lane begins at the Broadway at West Broadway intersection. In response to concern over the impact of the third southbound lane to the design of the

Broadway at West Broadway intersection, and in the interest of providing even better traffic operations at that intersection, a proposed shortening of the southbound third lane is shown in the offset alignment alternatives. This has been incorporated into a revised version of the Plate Girder Bridge on existing location alternative. A proposed ramp from eastbound Riverfront Drive would lead to the third lane. This connection to Riverfront Drive would divert traffic out of the Broadway at West Broadway intersection and would eliminate the extra lane and wide turning radius for eastbound to southbound vehicles at the intersection, thus making it more pedestrian friendly.

Pedestrian/Bicycle Facilities

An important aspect of the Broadway Bridge is the pedestrian connection across the river. It is used for both regular transportation and for recreation. Bicyclists also use the existing bridge but are currently discouraged by the roadway's heavy traffic, 10-foot travel lanes, drainage grates on the arch span and the low railing height on the sidewalk. Early consideration was given to bicycles lanes and sidewalks but there was resistance from the community and the question as to where the bicycles lanes go. There has been a consensus developed during the process that a shared pedestrian/bicycle facility along the east side of the bridge would best serve the needs of all pedestrians and bicyclists desiring to cross the bridge. By being on the east side of the bridge, conflicts with the southbound to westbound off-ramp to westbound La Harpe Boulevard would be avoided. The east side would also allow easier connections to the Arkansas River Trail, which is considered very important to enhance the continuity of the developing central Arkansas bicycling network and the Arkansas River Trail in particular.

Straight ramps have been proposed on the south riverbank using the general design of the existing westbound La Harpe Boulevard to northbound Broadway Bridge ramp that will not be replaced by the project. On the north side of the project, early proposals depicted a straight ramp running into NLR's Riverfront Park as close to the levee as the Corps of Engineers would allow. Subsequent discussions have developed a ramp proposal that

passes over the levee and touches down on the levee's north side running parallel to Riverfront Drive. This connects to the entrance of the park through the levee at Willow Street.

The proposed width of the shared pedestrian/bicycle facility is 16 feet in all alternatives remaining under consideration that do not retain the existing bridge. This is two feet wider than the big Dam Bridge and the Two Rivers Bridge on the Arkansas River Trail. Given the urban setting with 20,000 to 30,000 vehicles a day passing a few feet away, it is not expected that use of this facility will grow to the point of the facilities to the west, which are almost purely recreational. In addition, there are multiple pedestrian and bicycle bridges less than a mile away that will spread demand. There will certainly be special occasions that will attract large numbers of people to the bridge and cause congestion, such as Riverfest fireworks. Just as with vehicular facilities, the AHTD cannot afford to design for the rare traffic peak, resulting in capacity underutilization the vast majority of the time. If additional width of this facility is desired by local communities, then additional funding can be provided by the local communities.

Another possibility presented by the Cities of LR and NLR is the rehabilitation of the existing bridge for a "Festival" bridge that would contain pedestrian and bicycle facilities. This would allow construction of a new bridge on an offset alignment without any pedestrian/bicycle facilities. The exact provisions for pedestrians and bicyclists on the preserved existing bridge are yet to be determined, but there is more than adequate width.

Bridge Type

The one remaining bridge type that was carried forward after the public involvement is the Plate Girder Bridge and it is part of all but one remaining alternative. It is the most inexpensive, the most preferred by respondents to the public involvement questionnaire, and can be constructed in a reasonable length of time.

A different kind of arch bridge type was developed as a means of spanning the navigation channel on the offset alignment if the existing Broadway Bridge is retained. This would allow the deck of the bridge to be constructed at the same height as the existing bridge in order to preserve sight lines to the western Arkansas River Valley. This bridge type would have many of the characteristics of the Tied Arch Bridge but would closely match the existing Broadway Bridge to provide a "twin arch" appearance.

Table 5 summarizes several aspects of the major alternative concepts that have been discussed to date.

Table 5

Construction Alternative Comparisons

	Months of Traffic Impacts	Estimated Demolition Cost	Conversion of Existing Bridge to Ped/Bike Facility	Estimated Construction Cost	Total Construction Cost[3]
		(in millions $)			
No Action	0	0	0	0	0
Alternative 1:	18 – 22 closed[1]	$4.8	N/A	$55.4 - 58.9[1]	$60.2 - 63.7[1]
Alternative 2:	3 closed	$4.8	N/A	$57.0	$61.8
Alternative 3A:	3 closed	$0.9	$8.2[2]	$47.4	$56.5
Alternative 3B:	3 closed	$0.9	$8.2[2]	$53.4	$62.6

[1] With and without construction acceleration techniques.
[2] Basic rehabilitation alone. Does not include landscaping or other enhancements to the rehabilitated bridge.
[3] Includes demolition and rehabilitation costs, where applicable.

IMPACT ASSESSMENT

The section provides a description of the impacts associated with the proposed project. The project consists of construction of a new structure on either its existing alignment or on an offset alignment just west of the existing structure. The following information outlines the environmental consequences of each alternative and mitigation for potential impacts.

Relocations

None of the alternatives would result in relocation of any residences, businesses, or non-profit organizations.

Social Environment

The social environment of the project area refers to the communal setting in which persons live and reflects their quality of life. The proposed project area consists of commercial, recreational and residential property. This includes businesses, city buildings, schools, public facilities, worship centers, and civic clubs.

The geographic area considered for analysis of existing social conditions and environmental consequences consists of Pulaski County, AR. The project study area involves the Cities of LR and NLR. Both cities function as a cultural and economic hub of Arkansas.

Located in the center of Pulaski County, LR is the capital and largest city in the state of Arkansas. The U.S. Census Bureau reports a population of 193,524 in 2010. NLR is just north of LR with a population of 62,304 in 2010. The Broadway Bridge, which has been identified as a high priority corridor connecting the two cities, is not only the oldest bridge connecting LR/NLR, but also remains the most utilized thoroughfare in the CBD. Key businesses and corporations within the project area consist of the LR City Hall, the Robinson Center Music Hall, Double Tree Hotel, Dickey-Stephens Park, and the Statehouse Convention Center.

None of the alternatives would have any social impacts since the new bridge is proposed to keep a link between the two cities in the same location as present. The new construction alternatives would have positive long term impacts on the downtown CBD's of the LR and NLR areas, although a temporary detour of traffic is anticipated, a decrease in the use of businesses and storefronts is not expected.

Environmental Justice Impacts and Title VI Compliance

This proposed project is in Compliance with Title VI and Executive Order 12898. The AHTD public involvement process did not exclude any individuals due to income, race, color, religion, national origin, sex, age, or disability. By using the 2010 U.S. Census Data, the Health and Human Services Poverty Guidelines, (Federal Register, January, 2011), making field observations, and conducting a public involvement meeting, determinations were made that the proposed project will not have any disproportionate or adverse impacts on minorities, low-income, elderly, or disabled populations.

Wetlands, Rivers, and Floodplain Impacts

Wetlands and Rivers

There are no wetlands that will be impacted by the project. Alternatives 1 and 2 will remove the existing Broadway Bridge and replace it with a new bridge. The four piers from the existing bridge, which are below the normal pool elevation of 231 mean sea level, will be removed and replaced with a new bridge with three piers that are below the normal pool elevation. Alternative 3 has two bridge construction options and both options keep the existing bridge as a pedestrian bridge. Alternative 3A will retain the existing four piers that are below the normal pool elevation and add three additional piers below the normal pool elevation for the new bridge. Alternative 3B will retain the existing four piers that are below the normal pool elevation and add four additional piers below the normal pool elevation for the new bridge. Construction of this project should be covered under the terms of a Nationwide Permit 15 for U.S. Coast Guard Approved

Bridges as defined in the Federal Register 77 (34): 10184-10290. No significant impacts to the wetlands and the river system are anticipated as a result of this project.

Maintenance of navigation lighting on the existing and proposed bridges and all required maintenance responsibilities would be the responsibility of the owner. If bridge use is discontinued, removal of the structure will be required. Coast Guard coordination letters are provided in Appendix E.

Floodplain Impacts

A floodplain is flat or nearly flat land adjacent to a stream or river that experiences occasional or periodic flooding. It includes the floodway, which consists of the stream channel, and adjacent areas that carry flood flows. A Special Flood Hazard Area (SFHA) is the area covered by a flood that has a 1% chance of occurring (or exceeded) each year, also known as a 100-year flood. The SFHA crossings are derived from Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps. The Arkansas River is a Water of the United States, under the jurisdiction of the U.S. Army Corps of Engineers.

A preliminary hydraulic study of the proposed alternates for the project referenced above has been performed to identify any encroachments into areas of special flood hazard as shown on the communities Flood Insurance Rate Maps issued by the FEMA. Each alternate will consist of one Zone AE floodplain crossing over the Arkansas River. The regulatory floodway width at this crossing site is approximately 1,100 feet. Any crossing at this site must be designed so as to cause no increase in flood depths during passage of the 100 year (1% annual chance) flood. A description of the encroachments along each alternate alignment follows.

Alternative 1

The main bridge length over the river at this crossing will be approximately 1,765 feet long and 81 feet wide with access bridges to Riverfront Drive, La Harpe Boulevard, and

the city parks. The modeled hydraulics predicts "no rise" for the FEMA regulatory condition (100 yr, 1% annual occurrence frequency).

Alternative 2

This alternate includes an offset alignment that is approximately 100 ft. to the west of the existing alignment. The bridge length will be approximately 1,783 feet long by 81 feet wide with access bridges to Riverfront Drive, La Harpe Boulevard, and the city parks. The hydraulics is expected to result in "no rise" for the FEMA regulatory condition (100 yr, 1% annual occurrence frequency).

Alternatives 3A and 3B

These alternatives consist of an offset alignment approximately 80 ft. to the west of the existing bridge, with a bridge length approximately 1,847 feet long and 63 feet wide with access bridges to Riverfront Drive, La Harpe Boulevard, and the city parks. The modeled hydraulics predicts approximately 0.10 foot "rise" for the FEMA regulatory condition (100 yr, 1% annual occurrence frequency). This increase in water surface may require coordination with the communities involved (LR, NLR and Pulaski County) with respect to the FEMA Conditional Letter of Map Revision and Letter of Map Revision process. It may also require coordination with the United States Army Corp of Engineers, regarding changes in the north bank levee's level of protection.

Pulaski County participates in the National Flood Insurance Program. All of the floodplain and floodway encroachments identified above will be designed to comply with the respective local agency's flood damage prevention ordinance. During the project design, hydraulic data, and construction plans will be submitted to the local agencies for review, approval and/or permitting as specified by their ordinance.

The local ordinances prohibit any new construction within the boundaries of any identified regulatory floodway(s) that would cause any increase in flooding depths on upstream, or adjacent, properties. Similarly, the local ordinances require that the

cumulative effects of all construction within any identified 100 year floodplain (Zone AE, Special Flood Hazard Area) may cause an increase in flooding depths anywhere within the community.

The AHTD's internal policy is to design projects within these areas so that any permanent construction within an identified 100 year floodplain, (Zone AE, Special Flood Hazard Area) may not cause an increase in flooding depths during passage of the 100 year flood if there are any existing insurable buildings within the boundaries of the floodplain with floor elevations below the current 100 year flood elevation, and that the increase in flooding depth caused by any new construction may not cause other insurable buildings to be flooded during passage of the 100 year flood. (i.e. If the buildings are flooding now, they won't be flooded worse, and if the buildings aren't being flooded now, they won't flood).

This project will serve as a principal arterial and, as such, will serve emergency vehicles in time of disaster. This project will be designed so that the low beam chord will have a 1 foot minimum vertical clearance above the 100 year regulatory floodway elevation and, therefore, will not have a significant potential for interruption or termination due to flooding.

Bridges and/or drainage structures will be sized sufficiently to minimize impacts on natural and beneficial floodplain values. These values include, but are not limited to fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquiculture, forestry, natural moderation of floods, water quality, maintenance, and groundwater recharge. The design measures to minimize floodplain impacts include (1) avoiding longitudinal encroachments, (2) sufficient bridging and/or drainage structures to minimize adverse effects from backwater, (3) sufficient bridging and/or drainage structures to minimize increases in water velocity, (4) minimizing channel alterations, (5) adequate and timely erosion control to minimize erosion and

sedimentation, and (6) utilizing standard specifications for controlling work in and around streams to minimize adverse water quality impacts.

The final project design will be reviewed to confirm that the design is adequate and that the potential risk to life and property are minimized. The project will not support incompatible use or development of the floodplain. Adjacent properties should not be impacted nor have a greater flood risk than existed before construction of the project. None of the floodplain crossings will constitute a significant floodplain encroachment or a significant risk to property or life.

Threatened and Endangered Species

A threatened species is one that is likely to become endangered in the near future. An endangered species is one that is in danger of extinction throughout all or a significant portion of its range.

A records check of the Arkansas Natural Heritage Commission (ANHC) database of sensitive species was completed for the project area. The ANHC tracks federally designated threatened or endangered species, as well as those that are considered sensitive species within Arkansas. The records check indicated the presence of the endangered Least tern *Sterna antillarum* in the project area.

Least terns are Neotropical migratory birds that breed in North America and winter in Central and South America. They are the smallest members of the Family Laridae (gulls and terns). Least terns have historically been subdivided into three separate subspecies based on habitat use and vocalizations (USFWS 1990 and Thompson *et al.* 1997). The eastern or coastal least tern (*Sterna a. antillarum*) breeds along the Atlantic and Gulf coasts, California least terns (*Sterna a. browni*) breed along the California coast and the interior least terns (*Sterna a. athalassos*) breed along the Mississippi, Red, Arkansas, Ohio, Missouri, and Rio Grande River Systems. More recent research has been unable to clearly separate the subspecies (USFWS 1990, Thompson 1992). Based on the uncertain

taxonomic status of the US Fish and Wildlife Service (USFWS) has chosen to manage each population separately rather than as subspecies. Therefore, all least terns occurring greater than 50 miles from the coast are considered to be the interior population (USFWS 1990).

Interior least terns are colonial nesters, constructing shallow bowl shaped nests or scrapes on large barren sand/gravel bars and islands along large braided river channels (USFWS 1990, Thompson *et al.* 1997, Watterson 2009). Much of the historic nesting habitat has been modified or destroyed by channel alterations, impoundments, shoreline developments, and recreational activities (USFWS 1990, Thompson *et al.* 1992, Watterson 2009). The resulting population declines and loss of available nesting habitat led the USFWS to list the interior population of the least tern as endangered in May 1985 (50 Federal Register 21784-21792).

Recent studies have shown, as a result of the limited availability of suitable nesting habitat that least terns have begun to utilize artificial nesting habitats such as roof tops (Forys and Borboen–Abrams 2006, Watterson 2009). In 2007, least terns were first observed successfully nesting on rooftops in Arkansas (Watterson 2009).

Least terns forage primarily on small fish in shallow waters of streams, ponds and reservoirs. While the distance to which least terns can travel to suitable foraging areas can vary widely (10 feet to 4.7 mile), most foraging activity takes place within 328 feet of the nesting colony (Wilson *et al*. 1993, Forys and Borboen–Abrams 2006, Watterson 2009).

The No Action Alternative will have no effect on least terns. No natural nesting habitat exists within the project area; the nearest known least tern colony is located just upstream of Murray Lock and Dam (7.3 miles from the project area) (ANHC 2012). While none of the proposed construction alternatives will impact buildings, the nearest known rooftop nesting colony is located within 0.9 mile of the project area (Watterson 2009). This is well within the foraging range for least terns. The project area is highly urbanized and

any least terns utilizing the area are likely adapted to human activities. Potential impacts to the species are anticipated to be similar among all construction alternatives. No adverse impacts are expected to either a threatened or endangered species known to occur within the project area.

Migratory species, such as the Cliff Swallow (*Hirundo pyrrhonota*) and the Barn Swallow (*Hirundo rustica*), are the predominant species inhabiting the bridge during the nesting season. The *Migratory Bird Treaty Act of 1918* is a United States federal law, making it unlawful to pursue, hunt, take, capture, kill or sell birds listed therein as ("migratory birds"). The statute does not discriminate between live or dead birds and also grants full protection to any bird parts including feathers, eggs and nests. Over 800 species are currently on the list. A special provision for migratory birds will be included in the bid package to avoid impacts to migratory species. Impacts to the nesting birds will be lessened by having the contractor demolish the structure outside of the nesting season (March to September).

Species of Concern

The ANHC records check also indicated one species of concern. The paddlefish (*Polyodon spathula*) was identified as having the potential to be impacted by the construction of the proposed project. The paddlefish was identified from the Arkansas River near the Murray Lock and Dam and likely utilizes this segment of the river for foraging, and less likely for reproduction.

The paddlefish has a conservation status of G4S2, meaning that it is imperiled within the state but apparently secure globally. Historically the paddlefish was once much more widespread and common in Arkansas. Dam construction and widespread habitat alteration has restricted the species to large, low-gradient rivers such as the Mississippi, Arkansas, White, Red, and Ouachita rivers (Robison and Buchanan 1988). Paddlefish are filter feeders, typically feeding in open water near the surface or in backwater areas where plankton concentrate. Spawning occurs in early spring as adults migrate upstream

into swift currents over gravel bars or mid-channel areas with gravel substrate (Robison and Buchanan 1988).

The No Action Alternative will have no adverse effect on paddlefish or their habitats. All proposed construction alternatives could potentially impact paddlefish by increasing sedimentation during construction. Impacts should be temporary in nature and will be minimized by the use of erosion control Best Management Practices (BMPs).

Water Quality

The project area lies within the Arkansas River Valley Ecoregion where the primary turbidity standard set by Arkansas Department of Environmental Quality (ADEQ) for streams is 21 Nephelometric Turbidity Units (NTUs) and 25 NTUs for lakes and reservoirs (Regulation 2). Given the existing water quality within the region, additional sediments contributed during construction will likely result in localized, short-term adverse water quality impacts. Temporary exceedances of state water quality standards for turbidity may occur. Other potential sources of water quality impacts include petroleum products from construction equipment, highway pollutants from the operations of the facility, and toxic and hazardous material spills.

The AHTD will comply with all requirements of *The Clean Water Act*, as amended, for the construction of this project. This includes Section 401; Water Quality Certification, Section 402; National Pollutant Discharge Elimination Permit (NPDES), and Section 404; Permits for Dredged or Fill Material. The NPDES Permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will include all specifications and BMPs needed for control of erosion and sedimentation. This will be prepared when the roadway design work has been completed in order to best integrate the BMPs with the project design.

Public/Private Water Supplies

The project area is not within a public drinking water system's Wellhead Protection Area. No direct, indirect, or cumulative impacts to public drinking water supplies are anticipated due to this project. If any permanent impacts to private drinking water sources were to occur due to this project, the AHTD would take appropriate action to mitigate these impacts. Impacts to private water sources due to the contractor neglect or misconduct are the responsibility of the contractor. Central Arkansas Water (CAW) has a 16-inch diameter water line suspended from the deck on the west side along with several utility conduits. The CAW has requested that the city water line be added to the proposed structure if the old Broadway Bridge is demolished (Appendix E).

Wild and Scenic Rivers

There are no federal or state regulated water bodies impacted by this project that are designated wild or scenic rivers.

Hazardous Materials

A hazardous material is any item or chemical that can cause harm to people, plants, or animals when released into the environment. The presence of hazardous materials within the project area was assessed by visual reconnaissance and government records. A database search was conducted to determine the presence of any known contaminants within the project area.

Databases from ADEQ revealed a remediated "Brownfield Site" within the immediate project area. Brownfield sites are abandoned or underused industrial and commercial facilities available for re-use. This Brownfield site is located between Riverfront Drive and the Arkansas River west of the Broadway Bridge and is next to the Baring Cross Brownfield site. NLR owns the site and is actively pursuing a tenant to use the property.

Over 24,000 pounds of lead based paint and primer were removed from the Broadway Bridge structure in the fall of 1996. However due to potential asbestos, arsenic, and

cadmium in various non-structural bridge components such as conduits, pipe insulation, and equipment components, there may be small amounts of hazardous waste generated by demolition and removal. Testing of existing materials will take place as part of the continuing project development process. The construction specifications for the project would address the issue of appropriate management and disposal of these materials in conformance with all regulatory requirements. Hazardous materials generated during construction would be handled in accordance with ADEQ regulations. Characterization and classification of these materials for off-site disposal or treatment would be performed according to criteria established by the identified receiving facilities' permits, ADEQ, or the appropriate out-of-state or federal regulating authority.

Because there would be no construction associated with the No Action Alternative, there would be no impacts from hazardous materials or generation of hazardous waste associated with this alternative. Alternatives 1 and 2, which involve demolition of the existing bridge, could produce small amounts of hazardous waste for disposal. Alternatives 3A and 3B would not be expected to produce hazardous waste since the existing structure would not be demolished

If any other hazardous materials are identified, observed or accidentally uncovered by any AHTD personnel, contracting company(s) or state regulatory agency, it will be the AHTD's responsibility to determine the type, size and extent of contamination. The AHTD will identify the type of contaminant, develop a remediation plan and coordinate disposal methods to be employed for the particular type of contamination. All remediation work will be conducted in conformance with ADEQ, Environmental Protection Agency (EPA), and Occupational Safety and Health Administration (OSHA) regulations.

An asbestos survey by a certified asbestos inspector will be conducted on the bridge structure before demolition. If the survey detects the presence of any asbestos-containing materials, plans will be developed to accomplish the safe removal of these materials prior

to demolition. All asbestos abatement work will be conducted in accordance with ADEQ, EPA and OSHA asbestos abatement regulations.

Noise

"Noise" is defined as an unwanted sound that interferes with an activity or disturbs the person hearing them. Sound is measured in a logarithmic unit called a decibel (dB). The human ear is more sensitive to middle and high frequency sounds, so this study uses sound levels weighted towards these frequencies, measured in A-weighted decibels (dBAs).

Existing ambient noise levels near the trails on both sides of the Broadway Bridge were measured and vary from 60-65 dBA. If the proposed project results in traffic noise increases exceeding 66 dBA, or results in a change of over 10 dBA for a sensitive noise receptor, the FHWA considers that receptor to be impacted. Sensitive noise receptors are residences or businesses that have a special sensitivity to noise, such as schools, churches, libraries, and parks. Table D-1 listing the noise abatement criteria can be found in the Noise Analysis in Appendix D.

Noise predictions have been made for this project utilizing the Federal Highway Administration's TNM 2.5 (Traffic Noise Model) procedures. These procedures indicate that noise levels are below the FHWA noise criteria beyond the project's proposed right of way limits and no sensitive receptors are currently impacted. Any increases in roadway noise levels will not be the result of the proposed project, but instead a result of traffic volume increases during the planning period (Year 2025). Therefore, any noise level increases will occur independently of this proposed project, and no project related noise impacts are anticipated. In compliance with Federal guidelines, local authorities will not require notification.

Construction noise from this project would be temporary and relatively minor. The Noise Analysis which details the methods used and the results can be found in Appendix D.

Air Quality

The Environmental Protection Agency has set National Ambient Air Quality Standards (NAAQS) for air-borne pollutants considered harmful to the public. These standards are required by the Federal *Clean Air Act*, which was last amended in 1990. Compliance regulations with NAAQS rest with ADEQ. ADEQ also has oversight in compliance with the State Implementation Plan (SIP). The SIP provides information on transportation initiatives within the state and their conformance with the NAAQS.

Utilizing the Mobile Source Emission Factor Model 5.0a and CALINE 3 dispersion model, air quality analysis was conducted on previous projects for carbon monoxide. These analyses incorporated information relating to traffic volumes, weather conditions, vehicle mix, and any vehicle operating speeds to estimate carbon monoxide levels for the design year. These computer analyses indicate that carbon monoxide concentrations of less than one part per million (ppm) will be generated in the mixing cell for a project of this type. This computer estimate, when combined with an estimated ambient level of 1.0 ppm, would be less than 2.0 ppm and well below the national standards for carbon monoxide.

This project is located in an area that is designated as in attainment for all transportation pollutants. Therefore, the conformity procedures of the *Clean Air Act*, as amended, do not apply.

Visual Environment

The project is in the Arkansas River Floodplain Ecoregion. The landform is level river valley. Landscape components in the project area are urban (Figures 18 and 19). Natural vegetation in the project area consists of cottonwood and sycamore trees along the river. Planted vegetation includes a variety of street trees and landscaping.

Historical structures are considered visually sensitive resources. Historical structures visible from the existing bridge include the Old Statehouse, the Robinson Arts Center,

LR City Hall, and the Pulaski County Courthouse. Other visually sensitive resources include recreational areas, the riverfront parks and the Dickey-Stephens Park.

Viewers from the bridge are primarily commuter traffic, but there is also some local, commercial, and tourism traffic. Pedestrians and bicyclers also use the bridge.

Viewers of the bridge are numerous, particularly from high-rise structures southeast of the bridge. The bridge can be viewed from the river, the riverside parks and trails (Figures 20 and 21), Main Street Bridge, and Dickey-Stephens Park. The appearance of the new bridge is dependent upon final design.

Figure 18. View to the south on the Broadway Bridge

Figure 19. View to the northeast from the Broadway Bridge

Figure 20. Broadway Bridge and LR Skyline viewed from NLR

Figure 21. View of the Broadway Bridge from the Arkansas River Trail, LR side

Land Use/Land Cover

Land use in the project area includes transportation, recreational, commercial, government, and residential uses (Figure 22). There are public parks adjacent to the river on both sides of the river, the Julius Breckling Riverfront Park on the LR side and the NLR Riverfront Park on the north side. On the north side of the river, Riverfront Drive abuts the park, and Dickey-Stephens Park on the east side of the bridge with a large parking lot on the west. On the south side of the river, La Harpe Boulevard passes below the bridge. The Arkansas River is navigable by barge and other large river boats west to Catoosa, Oklahoma, which is just east of Tulsa and approximately 300 river miles upstream from LR. The McClellan-Kerr Arkansas River Navigation System is a series of locks and dams that permit the passage of large river vessels from Catoosa to the Mississippi River. None of the alternatives will impact land use in the area.

Figure 22. Land Use/Land Cover

Section 4(f) and 6(f) Impacts

Section 4(f) of the Department of Transportation Act of 1966 permits the Secretary of Transportation to approve a project that requires the use of any publicly-owned land from a park, recreation area, or wildlife refuge of national, state, or local significance, or any land from a historic site of national, state, or local significance, only if the following determinations have been made: (1) there is no feasible and prudent alternative to the use of such land; and (2) all possible planning has been undertaken to minimize harm to the Section 4(f) lands resulting from such use. These determinations, with supporting documentation, are set forth in a Section 4(f) Evaluation and are made pursuant to 49 U.S.C. 303.

Potential Section 4(f) impacts have been identified for this project and include impacts to parks and historic properties. Details of these impacts are outlined in the sections below titled “Historic Properties 4(f) Impacts” and “Public Park 4(f) Impacts”. Section 4(f) evaluations for these resources will be completed once a Preferred Alternative is identified for the project.

Land and Water Conservation Fund 6(f) monies appropriated to the City of LR were used in Riverfront Park. No such funds were used in NLR’s Riverfront Park. Section 6(f) addresses park land acquired through the Land and Water Conservation Fund Act. State and local governments often obtain grants through the Land and Water Conservation Fund Act to acquire or make improvements to parks and recreation areas. Section 6(f) of this Act prohibits the conversion of property acquired or developed with these grants to a non-recreational purpose without the approval of the Department of the Interior's (DOI) National Park Service. Section 6(f) directs DOI to assure that replacement lands of equal value, location, and usefulness are provided as conditions to such conversions. Consequently, where conversions of Section 6(f) lands are proposed for highway projects, replacement lands will be necessary.

Public Parks and Trails

Located in downtown LR, Julius Breckling Riverfront Park stretches eleven blocks paralleling the south bank of the Arkansas River (see Figure 23). The park provides 33 acres of urban parkland for outdoor events, leisure activities, and information about Arkansas' history. The park is home to the Riverfest Amphitheatre, Peabody Park, several outdoor pavilions, and boasts a Sculptural Promenade. It is owned by LR and managed by the LR Department of Parks and Recreation. The La Harpe Boulevard north bound off ramp onto Broadway Bridge runs along the north border of the park.

The NLR Riverfront Park consists of 29 acres located between Riverfront Drive and the Arkansas River in downtown NLR. The parks Riverwalk is a picturesque promenade featuring views of the Arkansas River and LR's skyline (Figure 24). The park offers a built-in speaker system, amphitheatre pad, utilities and permanent restroom facilities. NLR owns the property and administers the site as a multi-use facility.

Pedestrian access to the Broadway Bridge from LR and NLR is via sidewalks on both sides of Broadway Street. These sidewalks are not ADA compliant. A staircase on the eastern side of the Broadway Bridge in NLR allows access to Riverfront Park (Figure 25). There are two staircases on the LR side that allow access to the eastern and western sides of the bridge. Pedestrians are also able to pass underneath the north and south ends of the Broadway Bridge for access to the Riverfront Parks.

Figure 23. Julius Breckling Riverfront Park and the La Harpe Boulevard north bound on-ramp to the Broadway Bridge

Figure 24. NLR's Riverfront Park Riverwalk

Figure 25. Stair access to NLR's Riverfront Park

The Broadway Bridge can be used as a connection to the Arkansas River Trail (Figure 26). The trail connects downtown LR to Pinnacle Mountain State Park on the southern shore, and from downtown NLR to Cook's Landing on the northern shore. A 14-mile loop was created with the addition of the Big Dam Bridge, a pedestrian bridge crossing the Arkansas River at Murray Lock and Dam, and the Junction Bridge and Clinton Presidential Park Bridge in the River Market, both on newly-renovated railroad bridges located in the River Market District.

Recreation

Recreational opportunities in the project area include pedestrian/bicycle use of the Riverfront Parks and trails, fishing and water recreation on the Arkansas River, and baseball at Dickey-Stephens Park.

The No Action Alternative would not impact any of these recreational resources. Each of the construction alternatives would have positive impacts on pedestrian/bicycle recreation in the area due to enhanced facilities providing crossings of the river and improved connections to the city parks and trails. None of the alternatives will impact fishing or water recreation.

The construction alternatives will impact parking areas adjacent to the Dickey-Stephens Park along the north Broadway Bridge approach. Alternative 1 would impact parking less than Alternatives 2, 3A and 3B. Currently, access between the parking area on the west side of Broadway and the ballpark is gained by walking beneath the spans on the bridge's north end. This access will be replaced and enhanced with all the construction alternatives by utilizing brick facings and arched openings at the pedestrian access that will match the ballpark's surrounding architecture.

Public Park Section 4(f) Impacts

The areas abutting the Broadway Bridge to the north and south are used as parks, trails, and travel ways. There is no feasible way to avoid impacts to park facilities if a construction alternative is built. The No Action Alternative would not have Section 4(f) impacts to public parks in the project area. Right of way needs from each park for each construction alternative are outlined in Table 6 and shown in Figures 27 through 29. Although acquisition of park property will be required for each construction alternative, the project would improve roadway, bicycle, and pedestrian facilities to FHWA and AHTD design standards. Connectivity between the bridge and the adjacent parks would be enhanced through provision of continuous ADA compliant sidewalks. These public park Section 4(f) impacts are relatively minor and should allow for a *De Minimis* Section 4(f) Evaluation to be completed once a Preferred Alternative is identified.

Figure 26.
Arkansas River Trail

On Road Bike Lanes
On Road No Shoulder
Shared Path
Sidewalk
Under Construction

0 0.25 0.5
Mile

Job 061275

AHTD - Environmental GIS - Reed
July 24, 2012

Two Rivers Park
Two Rivers Bridge
River Mountain Park
Cook's Landing Park
Big Dam Bridge Cook's Landing
Overlook Park
Big Dam Bridge Murray Lock and Dam
Arkansas River
Murray Park
Kiwanis Park
Rebsamen Municipal Park
Burns Park
North Little Rock
Emerald Park
Emerald Park Golf Course
Riverview Park
Cammack Village
Reservoir Park
Allsopp North Park
Allsopp South Park
Vestal Park
Dickey Stephens Park
Knoop Park
North Little Rock Transit Center
Junction Bridge
River Front Park
Broadway Bridge
River Front Park
William J. Clinton Presidential Center and Park
East Little Rock Park
Little Rock
MacArthur Park
100
40
430
365
176
107
10
30
70
630

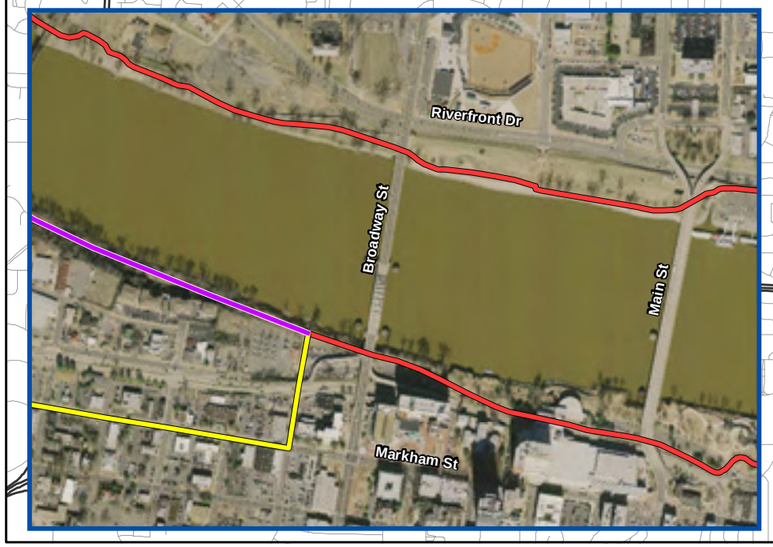

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Table 6

Park 4(f) Impacts

	No Action	Alternative 1	Alternative 2	Alternative 3A	Alternative 3B
LR Riverfront Park (acres)	0	0.33	0.32	0.75	0.75
NLR Riverfront Park (acres)	0	0.92	1.02	1.00	1.00
Recreation	None	Improved access to Trails, Parks and Dickey-Stephens Park	Improved access to Trails, Parks and Dickey-Stephens Park	Improved access to Trails, Parks and Dickey-Stephens Park	Improved access to Trails, Parks and Dickey-Stephens Park

Figure 27.
Park and Historic Property Impacts for Alternative 1

Figure 28.
Park and Historic Property Impacts for Alternative 2

Figure 29
Park and Historic Property
Impacts for Alternative 3A and 3B

Cultural Resources

A cultural resources assessment of the project corridor has been conducted. It included a records check and field survey. The Arkansas Archeological Survey site (AAS) files and Arkansas Historic Preservation Program (AHPP) historic property files have been reviewed for information on previously recorded sites or historic properties in the area. Several early maps were also reviewed to gather information regarding early historic settlement in the project area. These included copies of the 1855 General Land Office maps for Townships 1 and 2 north, Range 12 west, the 1936 Pulaski County road map and the 1886, 1889, 1892, 1897 and 1913 Little Rock Sanborn Fire Maps.

While there were no archaeological sites recorded adjacent to the project area in the AAS site files, a recent archeological report by Pan American Consultants (2007) reported the discovery of a shipwreck next to the bridge on the downstream side. After additional investigation they determined that the wreck was eligible for inclusion on the National Register.

Two structures listed on the National Register of Historic Places were found during the AHPP records check. These structures are the Robinson Center and LR City Hall. These structures are located on either side of Broadway at the LR end of the bridge.

A cultural resources survey was conducted for the project area which included a pedestrian survey and architectural survey. The surveys identified no new archeological sites or historic structures in the project area.

The shipwreck has been avoided and will not be impacted by the project. A review of the National Register boundaries for the Robinson Center and LR City Hall (Figures 30 and 31) found that both boundaries extend to the edge of the existing right of way of Broadway Avenue.

Figure 30. LR City Hall

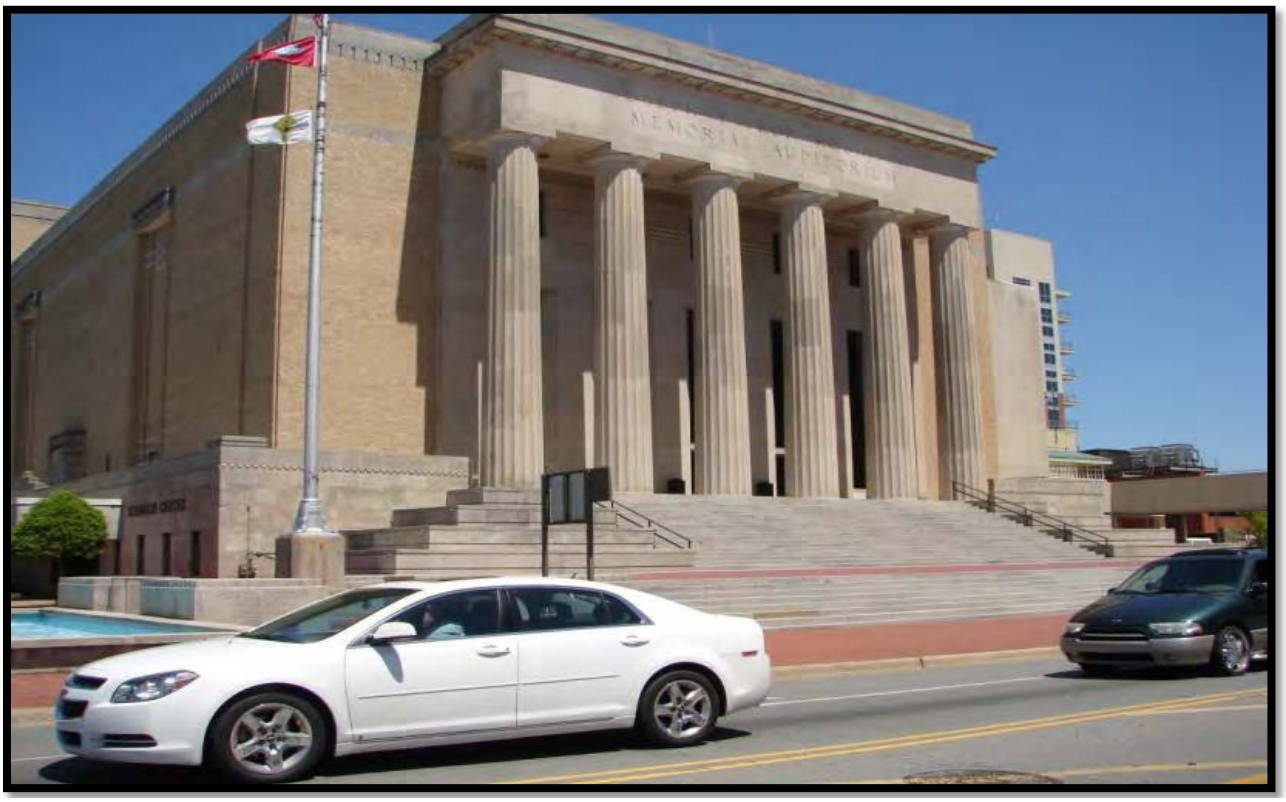

Figure 31. Robinson Center

The No Action Alternative will not impact any historic properties. The construction alternatives will take a limited amount of property from the National Register boundary of Robinson Center. This area consists of sidewalk and parking, and is not considered to be contributing to the historic integrity of the structure, and should not constitute an adverse effect on the property.

Historic Trail signage has been erected on the Broadway Bridge indicating that three historic trails crossed the Arkansas River in the general area. These trails are the Trail of Tears, Southwest Trail and Civil War Trail.

The Trail of Tears Bell Route was delineated as a historic trail by the National Park Service (NPS) in the early 1990s. The official route runs along Broadway in North Little Rock and will not be affected by the project. Parts of the trail ran from south Arkansas to Little Rock, but are not included in the historic trail by the NPS. Any crossings would have been in the general location of Ferry Street which was destroyed by the construction of the Interstate 30 Bridge.

The Southwest Trail is a generalized term describing the many roads (Postal, Military, and Public) that were used to enter the area from the early 19th century until Arkansas became a state. The trail entered Arkansas at Nix Ferry in Randolph County and exited over the Red River south and west of Washington in Hempstead County. The Arkansas River crossing for the trail would have most likely been the same as the one used by the Trail of Tears in the 1830s.

The Civil War Trail refers to the Union Army crossing of the Arkansas River during the Civil War. In 1863 the Union Army built a pontoon bridge nine miles south of Little Rock which was used to cross the river and occupy Little Rock.

None of these trails actually crossed the river at the point where the Broadway Bridge is situated. The signage, which is part of a program run by the AHPP, is located on the most convenient and visible access across the Arkansas River.

The Broadway Bridge is a Concrete Deck Arch, Open Spandrel bridge which was built in 1923 by the Luten Bridge Company as part of a the Broadway-Main Street Bridge Improvement District (Figure 32). In the late 1960s and early 1970s all bridges over the Arkansas River were demolished or reconstructed due to the construction of the McClellan-Kerr navigation system. The Broadway Bridge had two concrete arch spans over the navigation channel replaced with a Steel Arch span (Figure 33). Due to this work, the historic integrity of the bridge was significantly affected and the bridge was determined not eligible to the National Register in 2010.

Consultation letters have been sent to the Caddo Nation, the Cherokee Nation of Oklahoma, the Chickasaw Nation, the Choctaw Nation of Oklahoma, the Muscogee (Creek) Nation of Oklahoma, the Osage Nation, the Quapaw Tribe of Oklahoma, the Seminole Nation of Oklahoma and the United Keetoowah Band of Cherokee Indians. Responses from the tribes have not been received to date.

A cultural resources report documenting the results of the survey and all management recommendations is being prepared for submittal to the SHPO for review and concurrence.

Historic Properties Section 4(f) Impacts

Impacts to the National Register boundary for Robinson Center would constitute a Section 4(f) impact on a historic property. However, these impacts are relatively minor and should allow for a *De Minimis* Section 4(f) Evaluation to be completed once a Preferred Alternative is identified.

Figure 32. Broadway Bridge (circa 1968)

Figure 33. Broadway Bridge (2012)

COMMENTS AND COORDINATION

Public Involvement

The AHTD provided the opportunity for early public input into the development of the project on February 7, 2012, at the Arkansas Transit Association in NLR, Arkansas. Public officials and the public were given the opportunity to discuss the proposed project with AHTD personnel. There were 29 individuals present at the Public Officials Meeting and 157 in attendance at the Public Involvement Meeting. The Public Involvement Meeting Synopsis is located in Appendix C.

Early and Continuing Coordination

The AHTD and FHWA have coordinated with federal and local agencies throughout the planning and preliminary design process. Various agencies were contacted as part of the early project scoping process in order to provide information on the proposed project and schedule. Input was solicited early in the process from interested parties. A copy of letters, documents, and correspondence can be found in Appendix E.

Members from various advocacy and stakeholder groups provided valuable input into the project alternative analysis process. Expanding the project goals to encompass user group desires and coordination with various agencies and advocacy groups will continue on a regular basis throughout the final design phase.

COMMITMENTS

The AHTD's standard commitments associated with relocation procedures, hazardous waste abatement, and control of water quality impacts have been made in association with this project. They are as follows:

If hazardous materials, unknown illegal dumps or underground storage tanks are identified or accidentally uncovered by AHTD personnel or its contractors, the AHTD will determine the type, size, and extent of the contamination according to the AHTD's response protocol. The AHTD in cooperation with the ADEQ will determine the remediation and disposal methods to be employed for that particular type of contamination. The proposed project will be in compliance with local, state, and Federal laws and regulations. An asbestos survey will be conducted by a certified asbestos inspector if the bridge is slated for demolition. If the survey detects the presence of any asbestos-containing materials, plans will be developed to accomplish the safe removal of these materials prior to demolition. All asbestos abatement work will be conducted in conformance with ADEQ, EPA, and OSHA asbestos abatement regulations.

Once design for the preferred alternative has been completed a full report documenting the bridge will be prepared and submitted to the SHPO for review. All borrow pits, waste areas and work roads will be surveyed for cultural resources when locations become available.

The AHTD will comply with all requirements of the *Clean Water Act*, as amended, for the construction of this project. This includes Section 401, Water Quality Certification; Section 402, NPDES; and Section 404, Permit for Dredged or Fill Material.

A Water Pollution Control Special Provision will be incorporated into the contract to minimize potential water quality impacts.

A special provision for migratory birds will be included in the bid package to avoid impacts to nesting migratory species.

RECOMMENDATIONS

The Broadway Bridge Project will improve the crossing between LR and NLR and provide improved multimodal integration and park connectivity. A preferred alternative, once identified, will represent the alternative that best meets the project's Purpose and Need and serves the greatest number of stated project goals, while minimizing environmental effects. Table 7 shows a comparison of the bridge alternatives considered with their appropriate information, impacts, and costs.

Table 7

Alternative Comparisons

	No Action	Alternative 1	Alternative 2	Alternative 3A	Alternative 3B
Broadway Bridge (length x width)(feet)	0	1,765 x 81	1,783 x 81	1,847 x 63	1,847 x 63
Bridge Closure (months)	0	18 - 22[1]	3	3	3
Estimated Demolition Cost (millions)	0	$4.8	$4.8	$0.9	$0.9
Conversion of Existing Bridge to Ped/Bike Facility (millions)		N/A	N/A	$8.2[2]	$8.2[2]
Total Estimated Construction Cost[3](millions)	0	$60.2 - $63.7[1]	$61.8	$56.5	$62.6
Public Parks Section 4(f) Impacts (acres)	None	LR Park – 0.33 NLR Park – 0.92	LR Park – 0.32 NLR Park – 1.02	LR Park – 0.75 NLR Park – 1.00	LR Park – 0.75 NLR Park – 1.00
Impacts to Trail Systems	None	Temporary	Temporary	Temporary	Temporary
Historic Properties Section 4(f) Impacts	None	Minor	Minor	Minor	Minor
Recreation	None	Improved access to Trails, Parks and Dickey-Stephens Park	Improved access to Trails, Parks and Dickey-Stephens Park	Improved access to Trails, Parks and Dickey-Stephens Park	Improved access to Trails, Parks and Dickey-Stephens Park
Floodplain Impacts	None	None	None	0.10 foot rise	0.10 foot rise
Hazardous Materials	None	Possible asbestos	Possible asbestos	None	None

[1] With and without construction acceleration techniques.
[2] Basic rehabilitation alone. Does not include landscaping or other enhancements to the rehabilitated bridge.
[3] Includes demolition and rehabilitation cost.

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Appendix A

Bridge Sufficiency Ratings

The bridge's sufficiency rating provides an overall measure of the bridge's sufficiency to remain in service and is used to determine eligibility for federal funds. A bridge sufficiency rating includes a multitude of factors: inspection results of the structural condition of the bridge, traffic volumes, number of lanes, road widths, clearances, and importance for national security and public use, as examples.

The sufficiency rating is calculated by using a formula defined by the Federal Highway Administration. The formula places 55 percent of its value on structural adequacy and safety, 30 percent on serviceability and functional obsolescence, and 15 percent on essentiality for public use.

The result is based on a 0–100 percent scale in which 100 percent would represent an entirely sufficient bridge and zero percent would represent an entirely insufficient or deficient bridge. The sufficiency rating for the Broadway Bridge is 12.7 and in addition is qualified to be in the structurally deficient and functionally obsolete categories. Definitions of the functionally obsolete and structurally deficient categories are as follows:

Functionally Obsolete

Of the Department's 12,531 bridges, a total of 1,724, about 14 percent, are rated as functionally obsolete.

A functionally obsolete bridge is one that was built to design standards that are outdated. Functionally obsolete bridges are those that have lower load carrying capacity, inadequate lane or shoulder widths, less vertical clearances or occasionally flood causing significant traffic delays.

A functionally obsolete bridge is perfectly acceptable to drive over, but it does not meet all of today's bridge design standards. Yet, when it comes time to consider upgrading that bridge or making improvements, the Department must look at ways to bring the structure up to current standards.

Structurally Deficient

Of the Department's 12,531 bridges, 837 are rated as structurally deficient, about 7 percent.

Bridges are categorized as structurally deficient if, significant load-carrying elements are found to be in poor condition due to deterioration, or the structural adequacy drops below an acceptable minimum for the Average Daily Traffic (ADT) of the route, or the adequacy of the waterway opening provided by the bridge results in occasional or frequent flooding causing severe traffic delays.

Every bridge constructed goes through a natural deterioration or aging process, although each bridge is unique in the way it ages.

The fact that a bridge is classified under the federal definition as “structurally deficient” does not imply that it is unsafe. A structurally deficient bridge, when left open to traffic, typically requires significant maintenance and repair to remain in service and eventual rehabilitation or replacement to address deficiencies. To remain in service, structurally deficient bridges are sometimes posted with weight limits to restrict the gross weight of vehicles using the bridges.

Appendix B

Descriptions of Level of Service

The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level of service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with level of service F the worst.

In general, the various levels of service are defined as follows for uninterrupted flow facilities.

DESCRIPTIONS OF LEVEL OF SERVICE (LOS)

Signalized Intersections

LOS A — This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B — This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOC C — This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D — This level is typically assigned when the volume-to-capacity ratio is no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E — This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F — This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Appendix C

Public Involvement Meeting Synopsis

A public officials meeting and a public involvement meeting were held Tuesday, February 7, 2012 for discussion of the proposed bridge replacement project over the Arkansas River on Highway 70 (Broadway Bridge). The Public Officials Meeting was held from 10:00 a.m. to 12:00 p.m. at the Arkansas Transit Association in North Little Rock, Arkansas. The Public involvement meeting was held from 4:00 to 7:00 p.m. at the same location. The public officials and the general public were invited to view bridge design examples, discuss options, and provide comments. Department personnel and the design consultants were available to present the information and to address questions and concerns. Special efforts to involve minorities and the public included the following:

Display advertisement placed in *Arkansas Democrat-Gazette* on Sunday, January 29, 2012 and Sunday, February 5, 2012.

Display advertisement placed in the *North Little Rock Times*, *Jacksonville Patriot*, and *Sherwood Voice* on Thursday, February 2, 2012.

Public Service Announcements to *La Pantera 1440 AM* and *KOKY 102.1 FM* which aired on Saturday, February 4, 2012 through Tuesday, February 7, 2012.

Outreach to Minority Ministers Letters.

Distribution of flyers in the project area.

Displays at the meetings included information related to bridge types, bridge layout, and architectural finishes. This information was also included in handouts to the public that contained a citizen comment form. Copies of the displays/handouts used at the meetings are attached.

AHTD staff reviewed all comments received and evaluated their contents. The summary of comments listed below reflects the personal perception or opinion of the person or organization making the statement. The sequencing of the comments is random and is not intended to reflect importance or numerical values. Some of the comments were combined and/or paraphrased to simplify the synopsis process.

Table 1 outlines the attendance and participation at the meetings.

Table 1		
	Public Officials Meeting	Public Involvement Meeting
Attendance (including AHTD staff)	29	157
Comment Forms received	0	57
Letters received	1	2
e-mail comments received	0	13
Oral comments	0	1

An analysis of the comment forms, letters, oral responses and e-mails are discussed in the following paragraphs and shown in Tables 2 thru 4. The citizen comment form consisted of three questions and four comment sections regarding different aspects of the project. The three questions and four requests for comments listed on the citizen comment form are shown below in *italics* followed by a summary of responses.

Do you feel there is a need for the proposed bridge replacement on Hwy. 70 (Broadway Street Bridge) over the Arkansas River? Yes? No? Comment (optional).

Table 2		
Yes	No	No Response
53	8	4

What is your main concern for the proposed bridge replacement project? **Please select one.** The choices were: Cost, Time to Completion, Visual and Other.

Table 3			
Cost	Time to Completion	Visual	Other
11	14	20	20

Comments are summarized below organized by the concern that was indicated.

<u>Cost</u>

The 11 individuals who considered cost to be the most important issue were concerned about higher costs, cost minimization, cost reduction and using alternative construction materials.

One individual recommended that the Department acquire the necessary funding before starting the project to eliminate bond costs and interest expense. Another individual thought that by using the existing bridge during construction it would decrease construction costs. Other respondents thought that by providing maintenance and upgrades to the existing bridge, the useful life of the existing bridge could be extended another 20-50 years. The option of

upgrading the bridge deck with fiber reinforced polymer concrete was also mentioned along with the addition of pedestrian walks supported by the existing bridge arches.

Time to Completion

The 14 individuals who chose time to completion as their main concern were interested in how the project could be built in the shortest amount of time resulting in minimization of detour impacts to Dickey Stephens Park. Business owners were concerned about how much time new traffic diversions would impact their businesses. One individual thought that proposed project should have phased construction to minimize impacts to traveling motorists. Another individual suggested a new bridge upstream off Riverfront Drive in North Little Rock to La Harpe Boulevard in Little Rock to divert existing bridge traffic thereby lessening time for bridge completion and traffic detours.

Visual

The 20 individuals who noted that the visual aspects of the project were their main concern had a wide range of ideas for what they thought the new bridge should look like. Their ideas ranged from a simple plate girder structure to a baroque design with a full complement of amenities. Keywords used by these individuals were: simple, historic, modern, context, traditional, visually appealing, innovative, beautiful, landmark signature, progressive and iconic.

Other

A mix of ideas, suggestions and comments were evident in the responses from the 20 individuals who had other main concerns about the project. Many suggested having bike lanes on each side or wanted an increase in the pedestrian lane width from 16 feet to 20 feet. One person wanted to evaluate the microclimate of the river for possible wind power generation. Enhancements to the lighting on the bridge; opening up more bridge underpass access to Dickey Stephens Park; building another bridge further upstream; and separating bikes for safety of pedestrians with an overhead bike path were other comments made by these respondents.

Of the bridge types considered, what **BRIDGE TYPE** do you prefer? Why?

Table 4

Bridge Type	Total
Plate Girder Bridge	29
Single Tied Arch Bridge	10
Twin Tied Arch Bridge	8
Cable Stayed Bridge	9
Not specific enough	8
Did not mention a design preference	3
None of the above	6

Please provide comments on the various proposed roadway cross sections of the new bridge (additional travel lanes, shared use path for pedestrians and bicyclists, dedicated lane for La Harpe west, etc.).

Citizen responses in the section included:

Not sure how a dedicated lane from NLR to La Harpe will work.
I definitely would enjoy a dedicated bicycle lane.
Absolutely must include light rail right of way and pedestrian/bike access.
Four lanes on north end is good.
Worried there is not enough room on the shared path for pedestrians and bicyclists.
Four vehicular lanes and a wide pedestrian/bike pathway seems to make the most sense. It is good to have physical barrier between vehicles and pedestrians/bikes.
Need to increase dedicated lane to a minimum of 20 feet.
We need additional travel lanes for cars.

Please provide comments on the pedestrian connections to/from the bridge on the north and south side of the river and the potential Riverfront Park impacts that may occur.

Citizen responses in the section included:

No impact on north side of river, but south side needs redesign for vehicles/pedestrians.
Attaching to the river trail is a nice bonus, but commuters are looking for north-south options.
I really like how they connect to the current path, and I think it will be a great addition to the River Trail system.
The ramps down to the parks are a huge step in the right direction.
If pedestrian observation areas are to be incorporated on the bridge deck, then a minimum width of 20 feet of bike lanes and pedestrian walkway should be provided over the main span.
Would help encourage a healthier lifestyle.
Both sides could greatly benefit from stair access. Making a pedestrian on foot travel the entire length of the bicycle ramp to exit the bridge is cruel and inconvenient.
Start the ramp down to the north shore over the water. When the ramp reaches the bank it can split right and left so riders can choose which way to go when they land.
It makes sense to keep pedestrians to one side.

Please provide comments on the examples of architectural finishes shown in the bridge renderings (brick vs. stone/concrete treatments, open vs. closed railing, etc.).

Eight responses preferred the open rail design and three preferred the closed barrier design.

Citizen responses in the section included:

They all look good to me.
Brick is not an appropriate material for bridge construction.

Brick is nice since it matches Dickey Stephens Park. Open railing is also good since it provides views of the river.
The red brick and concrete underpass from the parking lot to the ballpark is a very nice design.
Parking lot access to ballpark under bridge is well placed and well planned.
I like the tree etchings used on the I-430/I-630 interchange. Brick is pretty but may become a maintenance problem.
Brick is incredibly dated and cliché.
I prefer a concrete and steel look.

Please provide any additional comments below:

Citizen responses in the section included:

The replacement of the Broadway Bridge is a unique opportunity that should not be wasted.
It needs to be functional, have an artistic design that matches the cities, beautiful in the river viewscape and something that generations will admire in the future.
I was incredibly underwhelmed at the sight of the design proposals. All three of the fully visualized proposals were snooze worthy and depressing. I pray that it will be a design I can feel proud of having in our city and not a regret. A little imagination can go a long way.
I'd go back to the drawing board on the designs. Modern look for a forward looking city.
Replacing the current bridge is too disruptive and not farsighted enough. New bridge should be built to the west of the current bridge along a new Pike Avenue and Cross Street corridor.

Attachments: Citizen comment form with handouts/displays

RJ
DN_

TT:ym

CONCEPT 1A - PLATE GIRDER
OPEN RAIL
CLOSED BARRIER

CONCEPT 1B - PLATE GIRDER
OPEN RAIL
CLOSED BARRIER

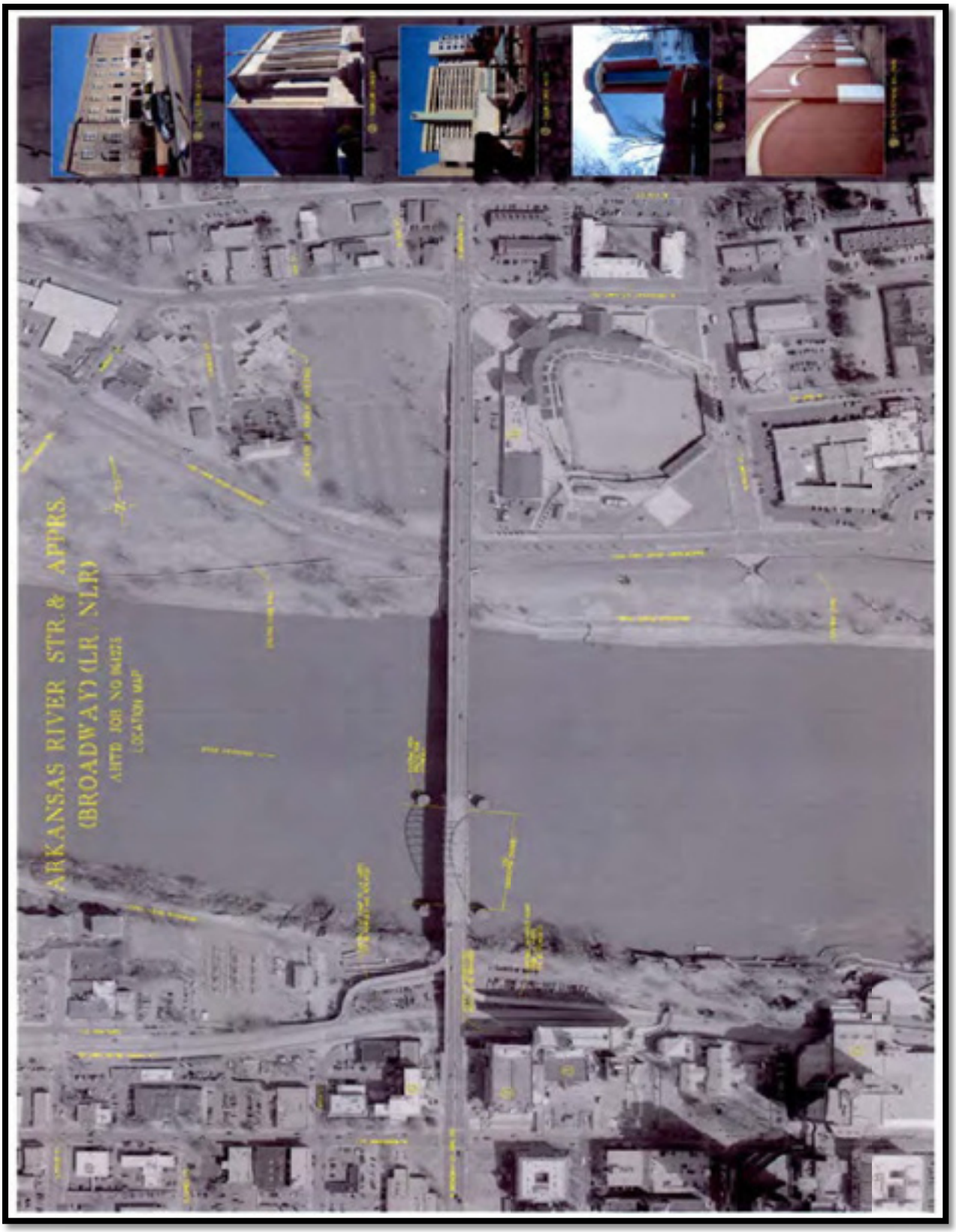
CONCEPT 2 - SINGLE TIED ARCH
OPEN RAIL
CLOSED BARRIER

PEDESTRIAN ACCESS TO DICKEY-STEPHENS BALLPARK

CLOSED BARRIER

OPEN RAIL

Bridge Types Considered
Type 1 – Plate Girder
Type 2 – Single Tied Arch
Type 3 – Twin Tied Arch
Type 4 – Cable Stayed
ESTIMATED TIME FOR BRIDGE CLOSURE
MONTHS
ESTIMATED COST
CONSTRUCTION COST
MILLIONS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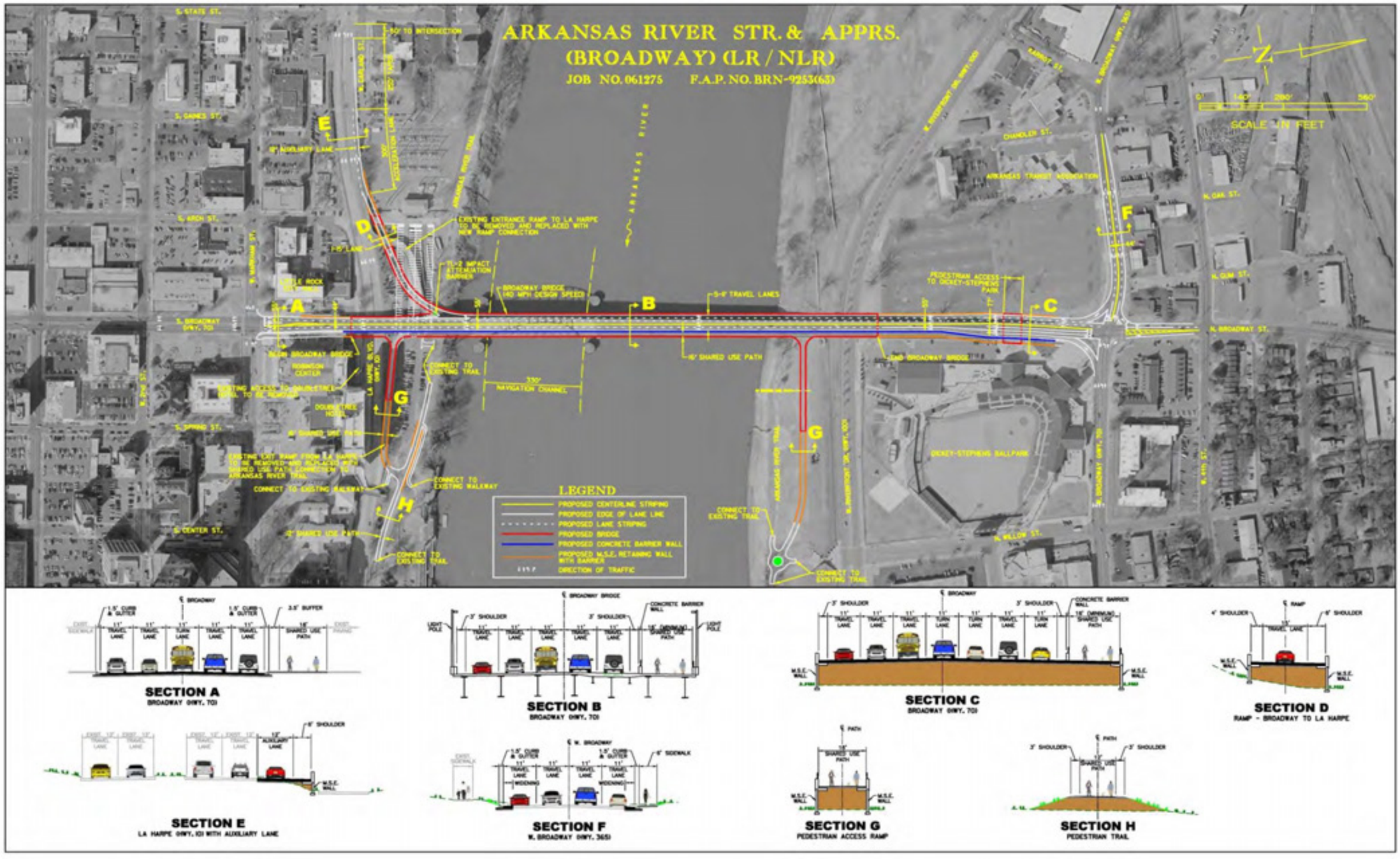
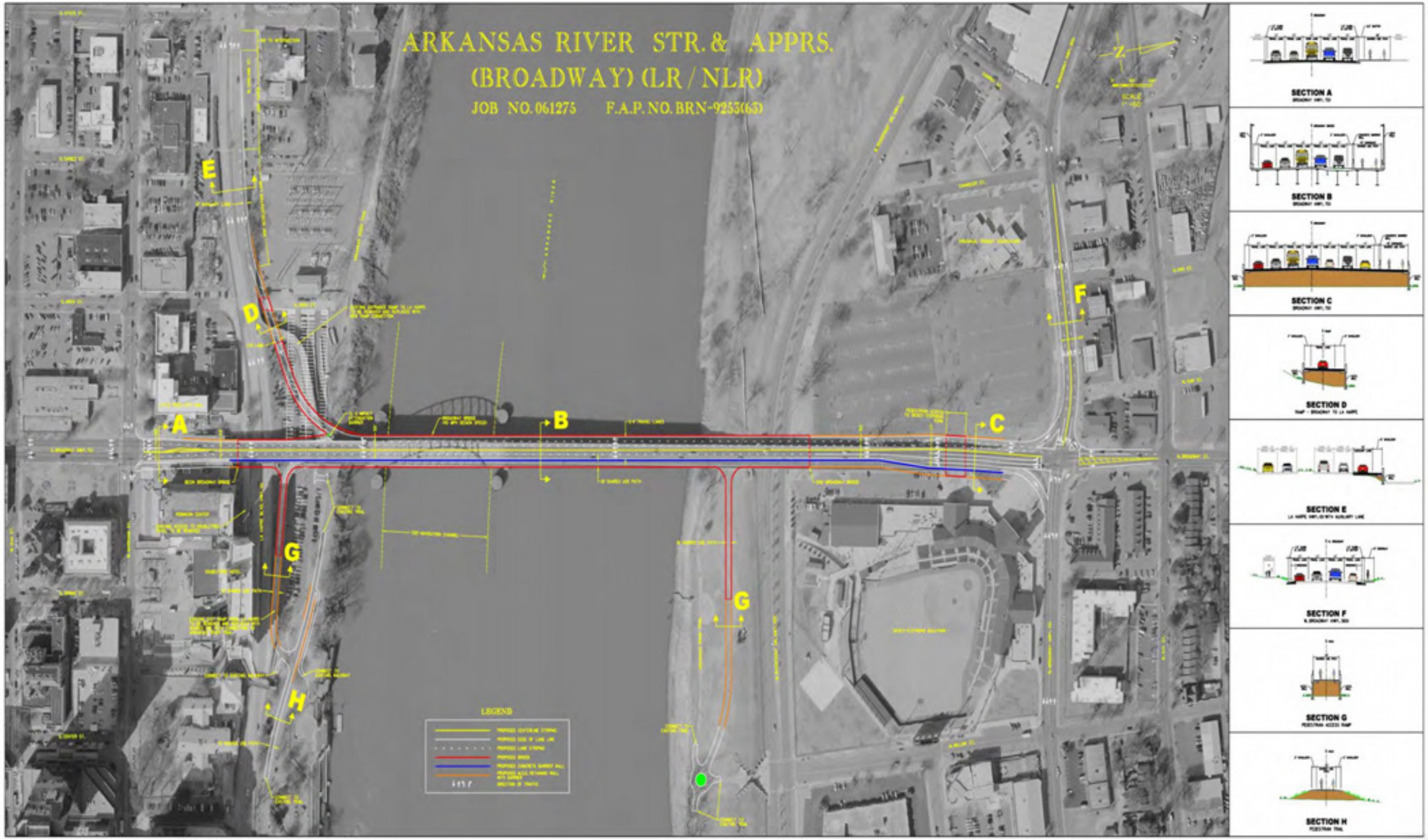
(BROADWAY) (LR NLR)


ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR / NLR)
JOB NO. 061275 F.A.P. NO. BRN-9253(63)
SCALE IN FEET
ARKANSAS RIVER
BROADWAY BRIDGE (40 MPH DESIGN SPEED)
5-9' TRAVEL LANES
16' SHARED USE PATH
330' NAVIGATION CHANNEL
PEDESTRIAN ACCESS TO DICKEY-STEPHENS PARK
DICKEY-STEPHENS BALLPARK
ARKANSAS TRANSIT ASSOCIATION
EXISTING ENTRANCE RAMP TO LA HARPE TO BE REMOVED AND REPLACED WITH NEW RAMP CONNECTION
TL-2 IMPACT ATTENUATION BARRIER
CONNECT TO EXISTING TRAIL
CONNECT TO EXISTING WALKWAY
CONNECT TO EXISTING TRAIL
LEGEND
PROPOSED CENTERLINE STRIPING
PROPOSED EDGE OF LANE LINE
PROPOSED LANE STRIPING
PROPOSED BRIDGE
PROPOSED CONCRETE BARRIER WALL
PROPOSED M.S.E. RETAINING WALL WITH BARRIER
DIRECTION OF TRAFFIC
SECTION A
BROADWAY (HWY. 70)
SECTION B
BROADWAY (HWY. 70)
SECTION C
BROADWAY (HWY. 70)
SECTION D
RAMP - BROADWAY TO LA HARPE
SECTION E
LA HARPE (HWY. 10) WITH AUXILIARY LANE
SECTION F
W. BROADWAY (HWY. 365)
SECTION G
PEDESTRIAN ACCESS RAMP
SECTION H
PEDESTRIAN TRAIL


ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR / NLR)
JOB NO. 061275 F.A.P. NO. BRN-9253(63)
A
B
C
D
E
F
G
H
LEGEND
SECTION A
SECTION B
SECTION C
SECTION D
SECTION E
SECTION F
SECTION G
SECTION H

Appendix D

Noise Analysis

Noise Analysis
Arkansas River Str. & Apprs. (Broadway) (LR/NLR) (F)

A noise assessment has been conducted for this project utilizing the following: FHWA's Traffic Noise Model 2.5 (TNM), existing and proposed roadway cross sections, existing traffic data, and projected traffic data for the design year of 2025.

Fundamentals of Noise

"Noise" is defined as an unwanted sound. Sounds are described as noise if they interfere with an activity or disturb the person hearing them. Sound is measured in a logarithmic unit called a decibel (dB). The human ear is more sensitive to middle and high frequency sounds than it is to low frequency sounds, so sound levels are weighted to more closely reflect human perceptions. These "A-weighted" sounds are measured using the decibel unit dBA. Because the dBA is based on a logarithmic scale, a 10 dBA increase in sound level is generally perceived as twice as loud while a 3 dBA increase is just barely perceptible to the human ear.

Sound levels fluctuate with time depending on the sources of the sound audible at a specific location. In addition, the degree of annoyance associated with certain sounds varies by time of day, depending on other ambient sounds affecting the listener and the activities of the listener. The time-varying fluctuations in sound levels at a fixed location can be quite complex, so they are typically reported using statistical or mathematical descriptors that are a function of sound intensity and time. Noise levels for this study are reported in hourly equivalent sound levels or Leq. Leq is defined as the equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as a time-varying sound level during the same time period. Leq is expressed in units of dBA, which are decibels on the A-weighted scale.

Noise Impact Criteria

Noise levels were compared to FHWA's Noise Abatement Criteria (NAC), which include seven different Activity Categories based on land use (Table D-1). According to AHTD's "Policy on Highway Traffic Noise Abatement", a noise receptor is considered impacted under the following scenarios: (1) if predicted noise levels approach, equal, or exceed the NAC Activity Criteria Leq dBA (Table D-1), or (2) if future predicted noise levels exceed existing noise levels greater than 10 dBA. The term "approach" is considered to be 1 Leq dBA less than the NAC Leq dBA (i.e., 66 Leq dBA for residential structures).

Table D-1
Noise Abatement Criteria

Activity Category	Activity Critieria[1] Leq dBA	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[2]	67	Exterior	Residential
C[2]	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio stations, recording studios, recreation areas, Section 4(f) sites[4], schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[2]	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D, or F.
F	–––	–––	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities, (water resources, water treatment, electrical), and warehousing.
G[3]	–––	–––	Undeveloped lands that are not "permitted".

[1]The Leq dBA Activity Criteria values are for impact determination only, and are not design standards for noise Abatement.
[2]Includes undeveloped lands that have been permitted for this Activity Category.
[3]Indicates no building permits on or before the date of public knowledge.
[4]Section 4(f) property means publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of a historic site of national, state, or local significance, as initially defined in Section 4(f) of the Department of Transportation Act of 1966 and addressed in 23 CFR 774, Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites.

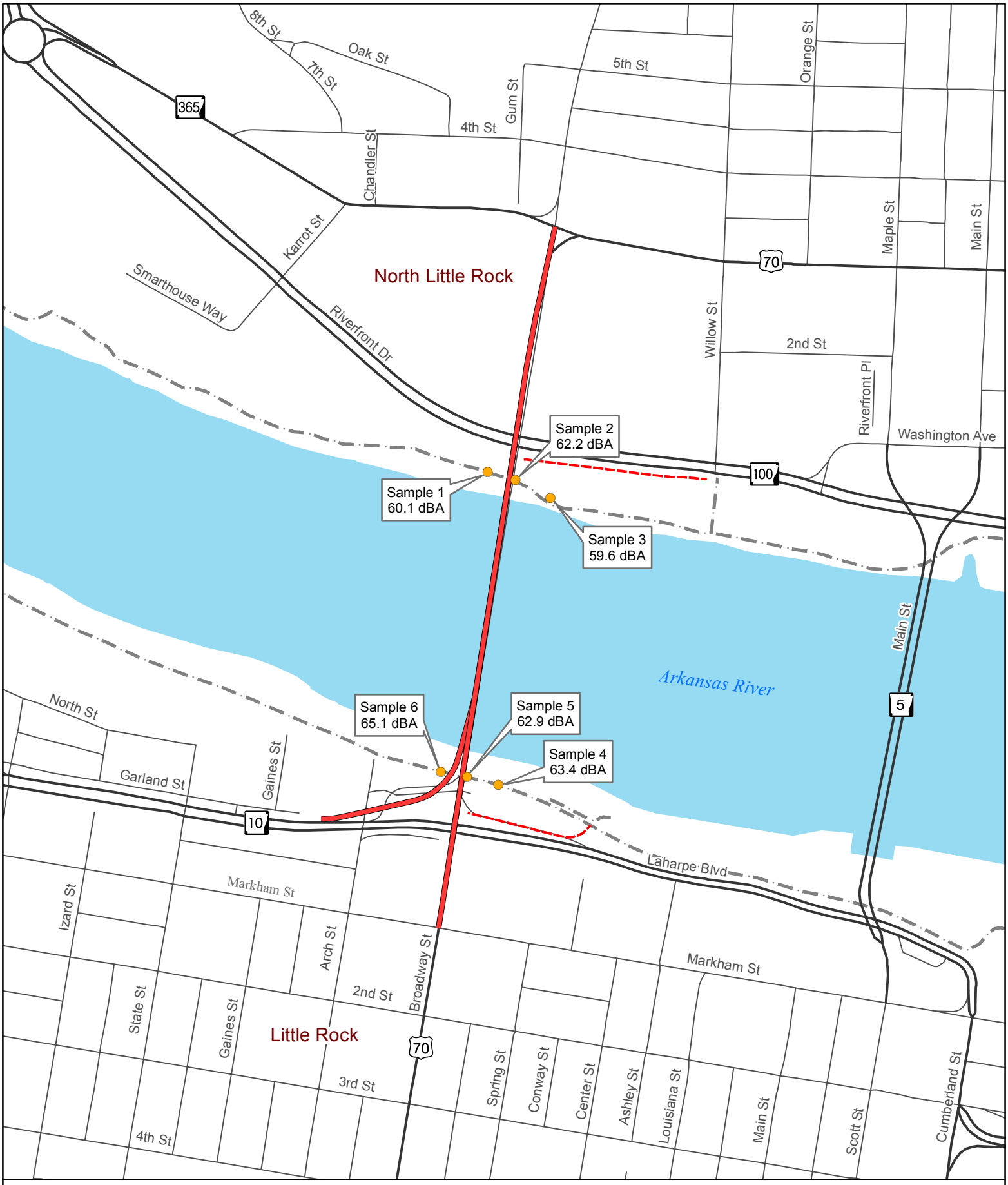


Figure D-1.
Ambient Noise Readings

Existing Conditions

Traffic Noise Model 2.5 Setup

FHWA's Traffic Noise Model 2.5 (TNM) was used to predict traffic noise levels for the future No Action and Build Alternative. Traffic noise analyses were performed for the Construction Alternative utilizing a roadway cross-section of five 11-foot wide paved travel lanes with a 16-foot wide walkway. Traffic noise analysis for the No Action Alternative was modeled using the current Broadway Bridge cross-section of four 10-foot wide travel lanes. Current and future traffic data used in the TNM 2.5 model are listed in Table D-2.

Table D-2
Current and Future Average Daily Traffic (ADT)

Design Year	No Action	Construction Alternative	Directional Distribution	Percent Truck	Design Speed (mph)
2012	24,000	24,000	70/30	1%	35
2035	32,00	32,000	70/30	1%	35

Traffic Noise Analysis

The existing roadway and the Construction Alternative were evaluated using 66 Leq dBA. This is the level that "approaches" the NAC Activity Criteria level for residential properties (Table D-1). The noise measurement data collected at the six sample locations were used to determine if the TNM model could adequately predict the Leq dBA at these locations.

For the FHWA TNM run of a noise study area to be considered valid, two of the three modeled levels at each measurement location must be within +/- 3 dBA of the corresponding measured levels. When a difference is over 3 dBA, the model input data is examined for errors and for the need for refinements to the modeling in particular with regard to pavement widths and terrain. A comparison of the noise measurement data and the predicted noise levels for the No Action Alternative indicate that the modeled and measured noise levels were within the 3 dBA validation parameters.

Effects of Project Alternatives

These procedures indicate that noise levels are below the FHWA noise criteria beyond the project's proposed right-of-way limits and no sensitive receptors are currently impacted or should be impacted for the 2025 planning period.

Appendix E

Correspondence and Coordination

April 9, 2010

RECEIVED
APR 21 2010
Asst. Chief Engr.-Planning

Carl Rosenbaum
Arkansas Highway Commission
P.O. Box 2261
Little Rock, AR 72203

Dear Commissioner Rosenbaum:

We are delighted to see that the Highway Commission has committed $45 million to the replacement or reconstruction of the Broadway Bridge linking Little Rock and North Little Rock. This presents us all with a signal opportunity to design and build a bridge that can serve the needs of our communities deep into the 21st century.

The Cities of Little Rock and North Little Rock and Pulaski County government want to actively partner with the Department in the design and construction of a new Broadway Bridge. Since this opportunity presents itself only once a century, we all should make every effort to build something our children can point to with pride.

We believe the new bridge not only should be beautiful, but should accommodate rail transit and have broad pedestrian and bicycle paths. We do not believe that a reconstruction of the existing structure can accommodate our shared vision of the future. Consequently, we call on the Department to move promptly into plans for a new bridge.

In order to move things along, we are prepared to sponsor a design competition for a new span. It will be critical for us to actively involve our citizens early on in this endeavor if we are to have their support when funding decisions are made. Since Metroplan provides a common table at which all of the parties can gather, we suggest that initial discussions take place through their good offices.

We are all excited about this opportunity and look forward to hearing from you about our next step at your earliest convenience.

Sincerely yours,

Mayor Mark Stodola
City of Little Rock

Mayor Pat Hays
City of North Little Rock

Judge Floyd G. "Buddy" Villines
Pulaski County

cc: Dan Flowers, Director of Highways
Frank Vozel, Chief Engineer
Scott Bennett, Deputy Director for Planning
Jim McKenzie, Metroplan
Betty Wineland, CATA

ARKANSAS STATE HIGHWAY COMMISSION

P.O. Box 2261
Little Rock, Arkansas 72203-2261
Phone (501) 569-2000 Fax (501) 569-2400
www.arkansashighways.com

May 14, 2010

The Honorable Mark Stodola
Mayor of Little Rock
City Hall, Room 203
500 W. Markham
Little Rock, AR 72201-1427

The Honorable Pat Hays
Mayor of North Little Rock
P.O. Box 5757
North Little Rock, AR 72119-5757

The Honorable Floyd G. "Buddy" Villines
Pulaski County Judge
201 South Broadway, Suite 400
Little Rock, AR 72201

Dear Mark, Pat and Buddy:

Reference is made to your recent letter regarding the improvements to the Highway 70 (Broadway Street) bridge over the Arkansas River that are included in the Statewide Transportation Improvement Program (STIP) for Federal Fiscal Years 2010 through 2013.

The commitment made by the Commission in the STIP is to proceed with the development of needed improvements to this structure. The cost shown is an estimate of the cost needed to ensure that the bridge will continue to be structurally sound and functionally operational for existing and projected traffic well into the future.

We appreciate your offer to partner with the Department in the improvements to the Highway 70 bridge. However, your "vision" for the bridge could result in the cost being well over the estimated STIP amount. Any significant deviation from the cost estimate shown in the STIP would mean that 1) other needed bridge improvements included in the STIP would have to be delayed, 2) the improvements to this bridge would have to be delayed, or 3) the additional funds needed would have to be provided from sources other than those available to the Commission.

Since all bridges included in the STIP were identified based on bridge inspections and ratings, we do not believe that it would be appropriate to delay any of the other bridge improvements in the State in order to provide a design for the Highway 70 bridge beyond what is warranted based on structural and functional needs. Therefore, any cost needed beyond what is already planned for structural and capacity needs would have to be borne by others. If your partnership includes a commitment to provide this additional cost, please advise and we will host a meeting to discuss the partnering arrangements.

Your letter calls on the Department to move promptly into plans for a new bridge. Our plan is to develop a project to improve the bridge so that it will be structurally sound for existing and projected traffic. Although we may consider the construction of a new bridge parallel to the existing bridge, we believe at this time that improvements can be made to the bridge at its existing location. Also, we are unsure at this time whether any improvements to the main span of the bridge will be needed.

We are willing to consider your offer to sponsor a design competition for a new span. We do, however, want to be sure that you fully understand our position on this offer.

- As stated earlier, we are unsure at this time whether any improvements to the main span will be needed.
- The time required to hold the proposed design competition and select a design will ultimately delay project development, which is contrary to your "call on the Department to move promptly into plans for a new bridge."
- Any additional construction cost for providing improvements beyond the rehabilitation/replacement of the existing travel lanes and sidewalks would have to be borne by others.
- Likewise, the cost of accommodating rail transit can be considered, but the additional cost for design, construction and any future maintenance would have to be borne by others.

The vision that you have for the Highway 70 bridge will most likely lead to the need to commit a significant amount of funds to the project beyond what the Commission is able to provide. If the Cities of Little Rock and North Little Rock and Pulaski County are ready to commit funding to this endeavor, we can begin discussions on if and how to incorporate your thoughts.

Pulaski County

F.G. "BUDDY" VILLINES
COUNTY JUDGE / CHIEF EXECUTIVE OFFICER

ADMINISTRATION BUILDING
201 SOUTH BROADWAY, SUITE 400
LITTLE ROCK, ARKANSAS 72201
501-340-8305
501-340-8282 FAX

RECEIVED
JUL 14 2010
DIRECTOR'S OFFICE
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

July 12, 2010

Mr. Dan Flowers
Arkansas State Highway Commission
P.O. Box 2261
Little Rock, AR 72203

CITIES
ALEXANDER
CAMMACK VILLAGE
JACKSONVILLE
LITTLE ROCK
MAUMELLE
NORTH LITTLE ROCK
SHERWOOD
WRIGHTSVILLE

UNINCORPORATED AREA
600 SQUARE MILES

MILITARY BASES
LRAFB
CAMP ROBINSON

Dear Dan,

I appreciated the two meetings regarding High-Speed Rail and the Broadway Bridge. Both are very important to this community and its future.

A couple of follow up thoughts. Regarding High Speed Rail, Scott made a real good point with the question of "will this entice people to choose rail travel who otherwise would use the highways or air transportation?" I believe that depends upon the speed and efficiency of the rail solution. To that end, the study should estimate the average speed along the corridor of "higher speed" rail (110 miles per hour) and high-speed rail (150-200 mph). This would necessarily project the number of stations and the time at those stations.

Regarding the Broadway Bridge, as I stated, my interests would be to insure that the bridge could hold two tracks (north-south) for rail transit, have sidewalks wide enough for pedestrians and bicycles and a superstructure solution that creates a signature facility.

Thank you for your time and interest.

RECEIVED
JUL 15 2010
Asst. Chief Engr.-Planning

Sincerely,

Buddy Villines
County Judge./Chief Executive Officer

RECEIVED
JUL 15 2010
DEPUTY DIRECTOR AND CHIEF ENGINEER'S OFFICE

ARKANSAS STATE HIGHWAY COMMISSION

P.O. Box 2261
Little Rock, Arkansas 72203-2261
Phone: (501) 569-2000 Fax (501) 569-2400
www.arkansashighways.com

July 19, 2010

The Honorable Buddy Villines
Pulaski County Judge/Chief Executive Officer
201 South Broadway, Suite 400
Little Rock, AR 72201

Dear Judge Villines:

Reference is made to your recent letter regarding on meetings on High-Speed Rail and the Highway 70 (Broadway) Bridge.

I thought both meetings were very productive and I appreciate the input from you and the others who attended.

At its July 13th meeting, the Commission authorized the Department to proceed with coordinating with the Federal Railroad Administration (FRA) for the high-speed rail studies from Texarkana to Memphis. We will take your comments on the speed and efficiency of rail transportation into consideration in developing the work plan for the studies. Also, as mentioned at the recent meeting, we will provide the high-speed rail "focus group" with the opportunity to comment on the proposed work plan before transmitting it to the FRA.

We understand and appreciate your interest in the proposed improvements to the Broadway Bridge. We will certainly consider these interests as we proceed with project development. Also, we will continue to coordinate with you and the Cities of Little Rock and North Little Rock throughout the process.

We look forward to working with you throughout these endeavors.

Sincerely,

Dan Flowers
Director of Highways
and Transportation

c: Deputy Director and Chief Engineer
Assistant Chief Engineer – Planning
Assistant Chief Engineer – Design
Bennett/Director/Villines-Rail and Broadway Bridge 7-10.doc

ARKANSAS STATE HIGHWAY COMMISSION
Little Rock, Arkansas

Mayor Mark Stodola
Mayor Pat Hays
Judge Floyd G. "Buddy" Villines
May 14, 2010

Page Three

Since this is a major structure on the State Highway System, the Department is and will remain the lead agency for coordinating partnering agreements and receiving and addressing comments from local officials and the public. If you are unable to commit funding to this project, we will continue with our plans and keep you informed as plan development progresses. In addition, we will coordinate with you on the aesthetic aspects for the improvements to be made.

Please advise as soon as possible of the level of your commitment to partner in this project so that we may proceed accordingly.

Sincerely,

Carl S. Rosenbaum
Chairman

c: Director
Deputy Director and Chief Engineer
Assistant Chief Engineer – Planning
Assistant Chief Engineer – Design
Betty Wineland, CATA

CSR:SEB:seb

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

Dan Flowers
Director
Phone (501) 569-2000 Fax (501) 569-2400

P.O. Box 2261
Little Rock, Arkansas 72203-2261
WWW.ARKANSASHIGHWAYS.COM

January 4, 2011

The Honorable Mark Stodola
Mayor of Little Rock
City Hall, Room 203
500 W. Markham
Little Rock, AR 72201-1427

RECEIVED
JAN 05 2011
Asst. Chief Engr.-Design

The Honorable Pat Hays
Mayor of North Little Rock
P.O. Box 5757
North Little Rock, AR 72119-5757

The Honorable Floyd G. "Buddy" Villines
Pulaski County Judge
201 South Broadway, Suite 400
Little Rock, AR 72201

Gentlemen:

Reference is made to the proposed project to reconstruct the Broadway Bridge over the Arkansas River on Highway 70.

The Department has made an assessment of the existing bridge structure and determined that the entire bridge should be replaced. It is anticipated that the structure north of Highway 100 in North Little Rock will be a roadway section with retaining walls.

The Department's Project Planning Committee has determined that the proposed structure should be 54 feet from face of curb to face of curb. This will allow for four 11 foot travel lanes with five foot bike lanes on each side. Eight foot sidewalks are also proposed for each side of the bridge.

The alignment of the proposed bridge has also been investigated. Based on the many constraints in the area, it appears that constructing the new structure along the existing location will provide the best alignment. Therefore, closure of the existing bridge during construction will be required.

The Department, in cooperation with Metroplan, has been working to analyze the effects of adding the additional traffic from the Broadway Bridge to the other river crossings during the time of closure. From this analysis, it appears that the other river crossings will be able to handle the additional traffic projected to divert from the Broadway Bridge.

During the planning and design of this project, it is critical that the decision to close the bridge during construction be made at the beginning of the design process. During the design of the structure, the Department can investigate measures to accelerate the construction of the structure and all feasible measures for acceleration will be included in the contract to minimize the closure time. In addition, we will work with your staffs to determine the revisions to signalization, signing and striping or any other traffic control measures that may be needed to facilitate traffic flow during the closure period.

The purpose of this letter is not only to keep you informed of the progress of the planning for this bridge, but also to seek your support for the proposed closure of the bridge during the construction process.

We appreciate your input regarding this significant bridge project and we look forward to your response regarding the closure of the bridge during construction.

Sincerely,

Frank Vozel

Frank Vozel
Deputy Director and
Chief Engineer

c: Commissioner Carl S. Rosenbaum
Director
Assistant to the Director
Assistant Chief Engineer-Design
Assistant Chief Engineer-Planning
Bridge
Roadway Design
Metroplan

FV:PLM:bpm
McConnell:Chief:Broadway Br Reconstruction 1-11.doc

ARKANSAS STATE HIGHWAY COMMISSION

MINUTE ORDER

District: Six

County: Pulaski

Category: Improvement Project

WHEREAS, IN PULASKI COUNTY, the Broadway Bridge over the Arkansas River on Highway 70 was originally constructed in 1929 and the navigation span was reconstructed in 1974; and

WHEREAS, the bridge is structurally deficient and is in need of replacement; and

WHEREAS, the Statewide Transportation Improvement Program includes the bridge replacement project for FY 2013; and

WHEREAS, a consultant is needed to supplement Department staff to provide the design for the identified improvements.

NOW THEREFORE, the Director is hereby authorized to engage the services of a qualified engineering consultant to perform design services and to proceed with the project as funds become available.

RECEIVED

JAN 18 2011

Asst. Chief Engr.-Design

Approved:

Chairman

Vice-Chairman

Member

Member

Member

Submitted By:

Phillip McConnell

Assistant Chief Engineer - Design

Approved:

Director

Minute Order No. 2011 012

Date Passed JAN 8 2011

ACE-D

Form 19-456
Rev. 05/11/2010

CENTRAL ARKANSAS WATER
Depend on us – today and tomorrow

221 E. Capitol Ave.
P.O. Box 1789
Little Rock, AR 72203-1789

501-377-1298
501-210-4980 fax

January 27, 2011

Mr. Gene Kuettel
Section Head – Utilities Section
Right of Way Division
Arkansas State Highway and Transportation Department
P.O. Box 2261
Little Rock, AR 72203-2261

Re: Job Number 061275
Arkansas River Str. & Apprs. (Broadway)
(LR/NLR) (Hwy 70)
Pulaski County

Dear Mr. Kuettel,

Please be advised that Central Arkansas Water (CAW) has a 16-inch steel pipeline conveying potable water installed on the existing Broadway Street Bridge (Hwy 70). This water line has been in place since 1925 and is a critical component of our potable water distribution system in Little Rock and North Little Rock, conveying as much as 2.7 Million gallons of water per day. We understand that during the demolition of the existing structure and construction of the new structure, it will not be possible to convey water at this location. However, on a permanent basis, we want to maintain this crossing.

CAW wants to work with the AHTD to have a new pipeline installed on the new Broadway Street Bridge. It is my understanding that when the Interstate 440 bridge was designed and constructed, the then North Little Rock Municipal Water Utility (now merged with CAW) contracted with the AHTD to have the new interstate bridge designed with consideration for the placement of a potable water line, installation of the water line was a pay item in the bridge construction, and NLR paid for the installation of the line. I have been told the same scenario also was utilized for the reconstruction of the Mains Street Bridge and modification of the Broadway Street Bridge some 30 years ago. CAW would like to work with AHTD to form a similar arraignment for the new Broadway Street Bridge. Please advise me as to how we may proceed with a possible agreement.

CENTRAL ARKANSAS WATER

J E Ferguson

Jim Ferguson, P.E.
Director of Engineering

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

Dan Flowers
Director
Phone (501) 569-2000 Fax (501) 569-2400

P.O. Box 2261
Little Rock, Arkansas 72203-2261
WWW.ARKANSASHIGHWAYS.COM

June 24, 2011

Mr. Jim McKenzie
Executive Director
Metroplan
501 West Markham Street, Suite B
Little Rock, Arkansas 72201

Dear Mr. McKenzie:

Reference is made to our recent conversation and your subsequent e-mail requesting a copy of the contract for the Arkansas River Str. & Apprs. (Broadway) (LR/NLR).

Enclosed please find a copy of the contract and the work order transmitted to the consultant.

In our conversation, you mentioned your interest in reviewing the contract language related to public involvement for the project and to the cross-section of the structure. Although the consultant has included their cost for up to three public involvement sessions in the contract, the Department will determine the appropriate number and timing of public involvement sessions as project development progresses.

Concerning the cross-section of the bridge, the contract represents the Department's current thinking on this issue. Please be reminded, however, that the enclosed March 30, 2011 letter from Deputy Director and Chief Engineer Frank Vozel to Little Rock Mayor Mark Stodola shows our intent to have a scoping meeting to discuss the functional aspects of the bridge. This meeting will be scheduled in the near future. The Department will modify the contract and direct the consultant accordingly should subsequent decisions make it necessary.

RECEIVED
JUN 27 2011
PLANNING AND RESEARCH

Finally, your e-mail mentioned that Metroplan continues to receive quite a bit of interest from stakeholders including requests to see the contract. To honor the relationship between the Department and our consultant, we would appreciate you requesting that the stakeholders make us aware of their interest and their desire to see and/or have a copy of the contract.

If additional information is needed, please advise.

Sincerely,

Scott E. Bennett
Assistant Chief Engineer-Planning

Enclosures

c: Deputy Director and Chief Engineer
Assistant Chief Engineer-Design
Consultant Coordinator
Planning and Research

Bennett/McKenzie-Broadway Bridge Contract 6-2011.doc

GARVER
4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

MEETING MINUTES

To: Jennifer Williams, AHTD Consultant Coordinator
Date: July 12, 2011

From: John Ruddell

RE: Broadway Bridge Kickoff Meeting
AHTD Job 061275, Arkansas River Strs. & Apprs. (Broadway) (LR/NLR) P.E.

Copies To: Frank "Blake" Blakemore, HNTB
Mark Wyatt, Grubbs, Hoskyn, Barton & Wyatt

Attachment: Sign-In Sheet

A kickoff meeting for the Broadway Bridge Replacement was held on June 30, 2011 at 10:00 a.m. in the Central Office Auditorium of the AHTD headquarters in Little Rock. Those in attendance are shown on the attached sign-in sheet.

The meeting began with AHTD representatives Phil McConnell stating that the purpose of the meeting was to get all members familiar with the project and to bring up any and all concerns. Bert Parker, of Garver, then introduced the members of the design team that were present which included Garver, Grubbs Hoskyn Barton & Wyatt, and HNTB.

Following introductions and general remarks by AHTD and Garver the following items were discussed:

1. Team Member Assignments
   a. In the event that a conventional plate girder structure for the navigation span is selected, Garver will be responsible for superstructure design and HNTB will design the substructure.
   b. In the event that a tied-arch, cable stayed or other similar alternative is selected, HNTB will likely take the lead on the superstructure and Garver will design the substructure.

2. Information to be provided by the Owner
   a. Ms. Williams informed Garver that the current survey data is dated 6/28/11 on AHTD ftp site.
   b. Ms. Tiner gave Mr. Mitchell a list of traffic data that is still needed.
   c. Mr. Mitchell informed Ms. Tiner that the AHTD ftp site has current turning movements for Broadway in Little Rock and North Little Rock, Markham & Broadway in Little Rock, the exit ramp and the entrance ramp.
   d. AHTD currently has a FEMA approved LRD-1 hydraulic model. AHTD also has a hydraulic model in HEC-RAS, but this model has not been approved by FEMA.
   In a subsequent conversation with Mr. Booher, AHTD is going to inquire with the City of Little Rock if they would agree to allow the use of the HEC-RAS model to confirm a "No Rise" condition.

3. Design Criteria Discussion
   a. Seismic Operational Classification has been preliminarily set to Site Class C until further investigations can be completed.
   b. Mr. Fuselier deemed that the new bridge should be categorized as "Essential."

c. Trolley Loading for River Rail should be considered in the design process.
d. Preliminary contact, by Mr. Ruddell, with the U.S. Coast Guard (USCG) indicated that the owner (AHTD) needs to make contact in order to determine required navigational channel width. Mr. Ruddell agreed to send Mr. Fuselier USCG contact information.
e. Mr. Fuselier agreed to send Mr. Ruddell correspondence that he has had with the U.S. Army Corps of Engineers regarding the levee clearances.
f. Sidewalk widths and approach roadway width will be discussed at the upcoming Stakeholders Meeting.
g. Design speed for Broadway was agreed upon to be 40 m.p.h. and 30 m.p.h. on the access ramps.
h. Mr. McConnell was not aware of any future improvements for La Harpe and Riverfront that would impact bridge span configuration. This will be discussed in the Stakeholders Meeting.
i. AHTD will require Right-of-Way or permanent easement for the access ramps and will work with the cities on air space agreements for use under the ramps, as they have done in the past.

4. Roadway Typical Section
   a. Roadway typical sections will be discussed during the Stakeholder Meeting.
   b. Garver agreed to provide essential displays for Stakeholders Meeting.

5. Configuration of entrance and exit ramps
   a. Configuration of entrance and exit ramps will be discussed at the Stakeholders Meeting.

6. Public Involvement Process
   a. Mr. Malbrough noted that AHTD will have a better idea on the required public involvement process after the Stakeholders Meeting.
   b. Mr. McConnell stated that the public involvement meeting should be as early as possible in order to get the public involved.
   c. Mr. Malbrough said that for the public involvement meetings AHTD would need displays showing conceptual bridge configurations, typical sections and connections to local roads.
   d. Mr. Malbrough also stated that the scope and cost of the project should be clearly defined and presented to the public.
   e. It was determined that the consultants should direct all questions regarding the project to Mr. McConnell.

7. Environmental Constraints
   a. The ship wreck (a wooden barge) that is located SE of the existing Broadway Bridge is eligible for the Historic Register, although Mr. Marlbough said that it should be considered as a Historic Monument and should be avoided.
   b. Mr. Mitchell noted that Robinson Auditorium might be relocating their loading docks to La Harpe. Mr. McConnell mentioned that it would be good to invite Robinson personnel to the Stakeholders Meeting.
   c. AHTD noted that coordination would be needed with State Historic Preservation Office (SHPO) regarding the potential impact on the Trail of Tears.
   d. AHTD noted that prospective staging areas and temporary easements will need to part of the Section 4f evaluation.

8. Goals for the Bridge Type Selection Study
    a. Mr. Ruddell noted that the primary goal was to determine which bridge type could be built within the budget established by AHTD.
    b. The plate girder option with additional aesthetics will be used as the baseline option..
    c. Mr. McConnell noted that AHTD has $45 million in the STIP for the project.
    d. Mr. Laviolette, with HNTB, noted that there are Federal programs, such as Highways For Life, that have a history of helping fund projects that incorporate Accelerated Bridge Construction (ABC) techniques.
    e. Mr. Ruddell gave an example of HNTB's Bridge Selection Matrix, and AHTD mentioned that this type of selection process could be useful in determining the final bridge type.

9. Aesthetic Considerations
    a. Overlook areas should be included in the project if the project budget allows.
    b. Aesthetic lighting will have to be approved by USCG.
    c. Mr. Fuselier noted that it would be acceptable to paint only the exterior girders and use weathering steel elsewhere.
    d. Brick veneer form liners would be allowed.
    e. Mr. Fuselier stated that barriers would need to meet TL-4 criteria.

10. Access to parking lot at Dickey-Stephens
    a. Mr. McConnell was very favorable of the form liners on MSE walls set to match Dickey-Stephens Park.
    b. Vertical clearance is shown to be 8 ft. in the design criteria, and Mr. Fuselier commented that although AHTD does not prefer slab spans, they could be considered due to site restraints.

11. Pedestrian Access to ground
    a. The number and location of access points will be discussed in the Stakeholders Meeting.
    b. ADA compliant ramps will be required.
    c. Cyclists need to be kept in consideration at all access points.

12. Accommodation of River Rail Trolley
    a. To accommodate the future River Rail Trolley, Mr. Fuselier preferred using a thickened slab and saw cutting planned portions of the deck in the future versus providing troughs and infill due to joints they would create.

13. Double Tree Hotel Access Coordination
    a. The Double Tree Hotel officials will be included in the Stakeholders Meeting.

14. Miscellaneous
    a. Longitudinal stiffeners can be used as needed.
    b. Bridge Scupper configuration will include bicycle grates and will be allowed to drain straight down into the river.
    c. Utility attachments include a 16 inch water line and existing and future communication lines (possible that a utility rack may be needed).
    d. Preliminary indication is that the existing gas line is to be bored and jacked at an alternate site.
    e. AHTD requested that maintenance access be available down both sides of the bridge.

L:\2011\11017080 - Broadway Bridge over the Arkansas River\Correspondence\Meeting Minutes\AHTD WilliamsJe 11.7.12 Broadway Kickoff Meeting Minutes.doc

15. Schedule
    a. Mr. Fuselier had no issues with taking river borings while river is low and stable as long as pier locations are relatively apparent. Additional borings could be considered in order to create a more accurate soil profile.

16. DBE Considerations
    a. Mr. Moore, with AHTD, and Ms. Valero, with FHWA, presented the DBE program and stated that although there are no DBE requirements, DBE participation is encouraged.
        i. Put forth a good faith effort.
        ii. Document all efforts and present in Progress Reports.
        iii. See AHTD Specifications for DBE requirements.

17. Stakeholders Meeting
    a. Mr. McConnell stated that he thought all attendees of the Stakeholders Meeting were aware of the purpose for the meeting.
    b. Mr. McConnell also stated that the meeting will be held as soon as possible.
    c. Some topics to be discussed:
        i. Typical Sections
        ii. Bike lanes and sidewalks
        iii. Access points
        iv. Ramps to Riverfront Dr. and La Harpe
        v. Lighting
        vi. Accelerated Bridge Construction

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Sign in Sheet
Kickoff Meeting for

Arkansas River Strs. & Apprs. (Broadway) (LR/NLR) P.E.

AHTD Job 061275

6/30/11 @ 10:00 PM
AHTD Central Office Auditorium

Name	Organization	Phone/E-mail
Jennifer Williams	AHTD - Cons. Coord.	569-2029/Jennifer.Williams@arkansashighways.com
John Cantabery	Garver	376-3633/JFCantabery[redacted]
Nicci Tiner	Garver	372-3633/ndtiner@garverusa.com
Glynn Fidmer	Garver	376-3633/gafidmer@garverusa.com
Michael Hill	AHTD - HBM	569-2143/mike.hill@arkansashighways.com
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JOHN KENDRICK	AHTD - ROW	569-2330 John.Kendrick@arkansashighways.com
Lynn MALBROUGH	AHTD - ENV	569-2526 Lynn.Malbrough@arkansashighways.com
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Don Nichols	AHTD - Env	569-2611 don.nichols@arkansashighways.com
James Moore	" ESO/DBE	569-2279 James.Moore@arkansashighways.com
Jim Simnette	FHWA - AR Dn.	324-6437 James.Simnette@dot.gov
RYAN BRUMFIELD	FHWA - AR DIVISION	324-5637 Ryan.Brumfield@dot.gov
Steve M. Mitchell	AHTD - P&R	569-2065 steve.mitchell@arkansashighways.com
JOHN MATHIS	AHTD - MAINT.	569-2658 JOHN.MATHIS@

Sign in Sheet
Kickoff Meeting for

Arkansas River Strs. & Apprs. (Broadway) (LR/NLR) P.E.

AHTD Job 061275

6/30/11 @ 10:00 PM

AHTD Central Office Auditorium

Name	Organization	Phone/E-mail
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David Hall	AHTD	501-569-2535 david.hall@arkansashighways.com
Phil McConnell	AHTD	501-569-2301
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NORTH LITTLE ROCK, ARKANSAS 72119-5757
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July 20, 2011

Mr. Phil McConnell
Assistant Chief Engineer-Design
Arkansas State Highway and Transportation Department
P.O. Box 2261
Little Rock, AR 72203-2261

Re: Broadway Bridge

Dear Mr. McConnell:

Thank you for the invitation to attend an elected officials meeting on the functional design requirements of the new Broadway Bridge. Unfortunately, I have a previous commitment out of town and will be unable to be present. I have asked Joe Smith, Director of Commerce and Government Affairs, to represent me and also to share my thoughts in the form of this letter.

Regarding the functional design of the new bridge, I think the new bridge should have the following characteristics:

1. It should be an outstanding bicycle/pedestrian environment with access to the River Trail on both banks.

2. It should be built so that River Rail service can be easily added to the bridge in the future.

3. It should alleviate congestion at the Broadway and Broadway intersection to the extent possible by:

   a. considering a roundabout for that intersection, as identified in the Area-wide Freeway Study of several years ago.

   b. considering a direct connection between Riverfront Drive in North Little Rock with La Harpe Boulevard in Little Rock, which could divert traffic from the narrow section of West Broadway between the Bridge and Pike Avenue.

4. It should add critically needed lane capacity over the Arkansas River (see above).

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5. It should provide quality pedestrian access from the parking lot at the southwest corner of Broadway and Broadway to Dickey-Stephens Park.

Metroplan's staff suggestion in regards to an asymmetric cross-section is worthy of consideration as it appears to meet all of my above suggestions.

Regarding the bridge design, I feel compelled to state as early as possible that the bridge should be iconic in nature, possibly incorporating in some way, North Little Rock's history as a railroad town. People need to look at the bridge and immediately know that it is grounded in Little Rock and North Little Rock.

The public is very interested in this bridge design. There should be a robust public process that allows all who are interested to fully participate in the design process. In addition to City and County elected officials and the general public, there are several stakeholders that I can recommend be involved early on including both chambers of commerce, and the organizations representing the downtown business communities in both cities, among others.

Finally, this bridge will be a symbol of our community for the next 100 years. It is important that it be done right. I would rather the replacement of the bridge be delayed, assuming no immediate danger to the public, while adequate resources are marshaled, than an inadequate bridge be built in a rush.

Thank you for considering my comments. I intend to be actively involved in this project and promise my full support to get this bridge built so that it will be a credit to our communities long into the future.

Sincerely,

Patrick H. Hays
Mayor

PHH:jmc

cc: The Honorable Mark Stodola
The Honorable Buddy Villines
Mr. Dan Flowers
Mr. Scott Bennett
Commissioner John Burkhalter
Commissioner Thomas Schueck
Mr. Jim McKenzie

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North Little Rock, AR 72118

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MEETING MINUTES

To: Jennifer Williams, AHTD Consultant Coordinator
Date: July 26, 2011

From: John Ruddell

RE: Stakeholders Meeting
AHTD Job 061275, Arkansas River Strs. & Apprs. (Broadway) (LR/NLR) P.E.

Copies To: Frank "Blake" Blakemore, HNTB
Mike Laviolette, HNTB

Attachment: Sign-In Sheet
Broadway Bridge Replacement – Functional Requirements, submitted by Metroplan
A letter from North Little Rock Mayor Patrick Hays

A Stakeholders Meeting for the Broadway Bridge Replacement was held on July 21, 2011 at 9:00 a.m. in the Central Office Auditorium of the AHTD headquarters in Little Rock. A partial list of those in attendance is shown on the attached sign-in sheet. Additional attendees not shown on the sign-in sheet included Jim Rice with the Robinson Center, Little Rock Mayor Mark Stodola and other members of the City of Little Rock staff.

The meeting began with AHTD representative Phil McConnell stating that the purpose of the meeting was to get all Stakeholders together and to bring up any and all concerns. Introductions where then presented by those associated with the City of Little Rock (LR), North Little Rock (NLR), Pulaski County, Metroplan, FHWA, Arkansas Travelers, Garver, HNTB, and AHTD.

Due to the time constraints of Mayor Stodola, Mr. McConnell asked the Mayor if he would like to discuss any of the items on the agenda first. The Mayor noted that the pedestrian and cyclist access to and from the bridge is very important. Also critical is access to the Robinson Center during and after construction. He also noted that there is a chance that potential renovation of the Robinson Center might coincide with the construction of the Broadway Bridge project.

The following items were discussed:

1. Typical Sections
    a. Mr. McConnell proposed two alternatives for discussion;
        i. Alternate 1 - Four 11' lanes, two 5' bike lanes, two 8' sidewalks
        ii. Alternate 2 - Four 11' lanes, two 4' shy distance, one 14' shared use path located on the east side of the bridge
    b. Mr. McConnell also noted that the proposed bridge width must incorporate a minimum clear roadway width of 50'.
    c. Mr. McKenzie prefers Alternate 2 with the shared use path. He feels that Alternate 1 would have a tendency to "trap" cyclists against adjacent traffic.
    d. Mr. McKenzie recommends a shared use path of 26' in width. Furthermore he recommended two 13' travel lanes on the west side of the bridge be added to facilitate a direct connection from La Harpe to Riverfront Drive. He also noted a two-lane roundabout was suggested by the Area-wide

freeway study to replace the signal at the north and of the bridge with intersection of Broadway that be a part of this project.

e. Mr. McConnell noted that adding width to the bridge adds considerable cost to the project. AHTD's preliminary study estimated the bridge cost to be approximately $174 per square foot.
f. Ms. Otto asked whether the local cyclist community has provided any input on the location of a bikeway, and Mr. Parker noted that he has received comments that a shared use path would be greatly appreciated.
g. Mr. McConnell noted that from the discussion, it appears that a shared use path would be the preferred choice.

2. Ramp Configurations
   a. Mr. McKenzie stated that the ramp access should not be allowed to cross the shared use path, therefore the existing entrance ramp should be removed from service.
   b. Ms. Otto asked what the current and future average daily traffic (ADT) is for the Broadway Bridge.
   c. Mr. McConnell responded stating that the 2011 ADT is 21,000 and it is projected to be 27,500 for 2030.
   d. Mr. McConnell stated that the design year is 2033.
   e. Mr. Bennett noted that during the construction phase of the Broadway Bridge traffic can be rerouted to the Main St. bridge. In doing this, the ADT of the Main St. bridge will still be less than what it was before the I-30 Bridge was opened.

3. Pedestrian access from bridge to ground and access to Dickey-Stephens ballpark
   a. Mayor Stodola stated that it is critical that a pedestrian ramp be provided connecting the shared use path to the River Trail on the LR side of the river.
   b. Mr. McKenzie also noted that the NLR side of the river would need a similar pedestrian ramp. He also mentioned that the Pfluger Pedestrian Bridge in Austin Texas is a good example of pedestrian access ramps.
   c. Pedestrian access to Dickey-Stephens ballpark will be available beneath the Broadway Bridge in its current location.

4. Future configuration of River Rail trolley
   a. Mr. McConnell noted that the bridge deck will be designed to accommodate future River Rail trolley loads.
   b. Mr. McKenzie noted that there will be no need to include load requirements for a regional light rail connection. He also noted that there is an active study of the location of the future River Rail trolley to determine whether the bridge will need to accommodate one or two lines of trolley rails.

5. Access to adjacent facilities
   a. Mayor Stodola noted that access to the Robinson Center is important and might need to be similar to the Double Tree access.
   b. Mr. Rice noted that the current access to the Robinson Center is on Broadway, which causes traffic congestion when unloading trucks for shows.
   c. Mr. Rice also mentioned that the Robinson Center might be undergoing some renovations that will possibly relocate the loading dock.
   d. Mr. Smith noted that the parking lot off of Riverfront Dr. and access to Dickey-Stephens ballpark at the southwest corner of their facility must remain open during construction. This is the main access for all maintenance and emergency vehicles to the park.

6. Aesthetics
    a. Mr. McConnell stated that the retaining walls at Dickey-Stephens ballpark could have a brick form liner similar to the ballpark.
    b. Mr. McConnell showed renderings of possible overlook areas and noted that overlook areas could be incorporated.
    c. Mr. McConnell stated that the use of aesthetic lighting will be reviewed, but that the cities of LR and NLR will need to handle the cost of power and maintenance. Mayor Stodola wants to see a lighting plan for the bridge. The Clinton Bridge was given as an example of aesthetic lighting.
    d. Three conceptual bridge types where presented for discussion;
        i. Conventional Plate Girder Unit
        ii. Steel Tied Arch
        iii. Cable-Stayed
    e. There was agreement by many in the audience that the cable-stayed option achieved the goal of an iconic bridge structure.
    f. Mr. McConnell indicated that preliminary estimates determined that the cable-stayed option could be as much as four times the cost of the conventional plate girder.
    g. Mayor Stodola asked whether it was possible to have a typical girder bridge and false cables or some other aesthetically pleasing feature.
    h. Garver noted the Mayors question and will study the possibility.
    i. Ms. Otto asked if there was a plan to let public officials come back with input on the appearance of the bridge.

7. Closure of Bridge during construction
    a. Any and all closures need to be coordinated with the cities of LR and NLR for detours and lighting signalization.
    b. Mr. Smith noted that closures need to be discussed with the cites of LR, NLR and the public as early as possible prior to scheduled closings. He thought that 8 months should be a minimum.
    c. Mr. Vozel noted that the cities signals and traffic departments need to be included in the development of the Maintenance of Traffic (MOT) plan.
    d. Mr. Smith asked who was going to develop the MOT plan. Mr. McConnell stated that it would be a team effort lead by Garver.

8. Other Issues
    a. Mayor Stodola wanted to know if there were any additional bridge alternatives that were looked at by the design team.
    b. Mr. McKenzie noted that there is a great deal of community interest in the project and wanted to know how much input will the public have on the final bridge type.
    c. Mr. McConnell noted that the three conceptual bridge types shown were simply three that Garver had submitted in their proposal.
    d. AHTD is handling the NEPA process and therefore there will be public meetings in which the public will be able to express any and all concerns about the proposed alternatives and be able to note their preferred alternative.
    e. Ms. Otto asked whether there would be any additional meeting with the Stakeholders during the design process. Mr. Bennett noted that although there are no additional meetings scheduled, it could be arranged if needed.
    f. Mayor Stodola stated that it would be helpful to see more options for bridge types and to get some public input.

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g. Ms. Otto noted that she feels that the focus of the design team should be on the needed capacity of the Broadway Bridge, and thus determining the best typical section.
h. Mr. Bennett noted that Broadway could not feasibly be widened to 6 travel lanes due to the close proximity of the Robinson Center and Little Rock City Hall on the south side, and the levee and the Dickey-Stephens ballpark on the north side.
i. *Subsequent to the Stakeholders Meeting Mr. McKenzie provided Mr. McConnell with a list of Metroplan's Functional Requirements for the project. Please see attached for a copy of this list.*
j. *In the absence of Mayor Hays a letter was presented to Mr. McConnell by Mr. Smith. The letter states Mayor Hays' support of the project and his thoughts on the functionality of the new Broadway Bridge. This letter has been attached.*

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Sign in Sheet
Stakeholders Meeting for

Arkansas River Strs. & Apprs. (Broadway)(LR/NLR) P.E.
AHTD Job 061275
July 21, 2011 @ 9:00 A.M.
AHTD Central Office Auditorium

Name	Organization	Phone/E-Mail
Mike Laviolette	HNTB	mlaviolette@hntb.com / 402 342-4421
Nathan Hamilton	City of NLR	501-975-8833 nhamilton@northlittlerock.ar.gov
Jim McKenzie	METROPLAN	MCKENZIE@METROPLAN.ORG
Tom Schweich		
CARL FUSELIER	AHTD - BRIDGE	CARL.FUSELIER@ARKANSASHIGHWAY.COM
SANDRA L. OTTO	FHWA	324 6434 SANDRA.OTTO@DOT.GOV
Frank Vozar	AHTD	
RANDY ORT	AHTD	569-2227
Brent Gather	FHWA	324-6424 brent.gather@dot.gov
Alan Meadors	AHTD	569-2201
SCOTT BENNETT	AHTD	569-2241
Brenda Price	AHTD/ENV	569-2885

Sign in Sheet
Stakeholders Meeting for

Arkansas River Strs. & Apprs. (Broadway)(LR/NLR) P.E.
AHTD Job 061275
July 21, 2011 @ 9:00 A.M.
AHTD Central Office Auditorium

Name	Organization	Phone/E-Mail
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RUSS MEEKS	ARK. TRAVELERS	RUSS@KAWLAW.NET
MIKE FUGETT	AHTD	MIKE.FUGETT@ARKANSASHIGHWAYS.COM

BROADWAY BRIDGE REPLACEMENT
FUNCTIONAL REQUIREMENTS

MINIMUM REQUIREMENTS

1. Must go back in the same location between LR City Hall and Robinson Center

2. Should accommodate the expansion of Robinson Center northward and provide for new loading facilities at La Harpe level

3. Should connect the bike/pedestrian facilities on the bridge directly to the River Trail on both banks

4. Should be compatible with the addition of River Rail trolley lines at a future date

5. Rapid reconstruction once closed to traffic

DESIRABLE REQUIREMENTS

1. High overall design quality resulting in iconic structure.

2. Additional lane capacity over the Arkansas River by connecting La Harpe directly with Riverfront. Preliminary modeling indicates such capacity can draw 8,000-12,000 vehicles per day.

3. High quality pedestrian/bike environment on the bridge
   - no auto traffic crossing bike lanes or sidewalks
   - minimum deck vibration on pedestrian deck
   - high design quality for pedestrian environment on the bridge similar to the Pfluger Bridge over Lady Bird (Town) Lake in Austin, TX

4. Two-lane roundabout at the north end of the bridge to replace the signal as suggested by the Area-wide Freeway Study

Metroplan Staff Comments *July 20, 2011*

ASYMMETRICAL CROSS-SECTION PROPOSAL

The asymmetrical cross-section proposed below could meet all of the minimum and desired functional requirements listed on the preceding page. It was inspired by the Main Street Bridge in Columbus, Ohio designed by HNTB.

West side – One south-bound and one north-bound lane from a full three-legged signalized intersection on La Harpe to a single lane roundabout on Riverfront. No merge to or from main bridge lanes. Northern ramp flies over the floodwall and Riverfront Drive, curves westward back to Riverfront over the Dickey-Stephens parking lot to the roundabout on Riverfront.

Center – Two south-bound and two north-bound 11 foot lanes. Northern terminus at Broadway in a two-lane roundabout.

East side – Twelve-foot sidewalk widening to 26 feet when joined by ramps coming up from the River Trail on each side of the river. Joint use pedestrian/bicycle crossing similar to the Pfluger pedestrian/bike bridge over Lady Bird (Town) Lake in Austin. Decorative railing on riverside of pedestrian/bikeway plaza on the bridge.

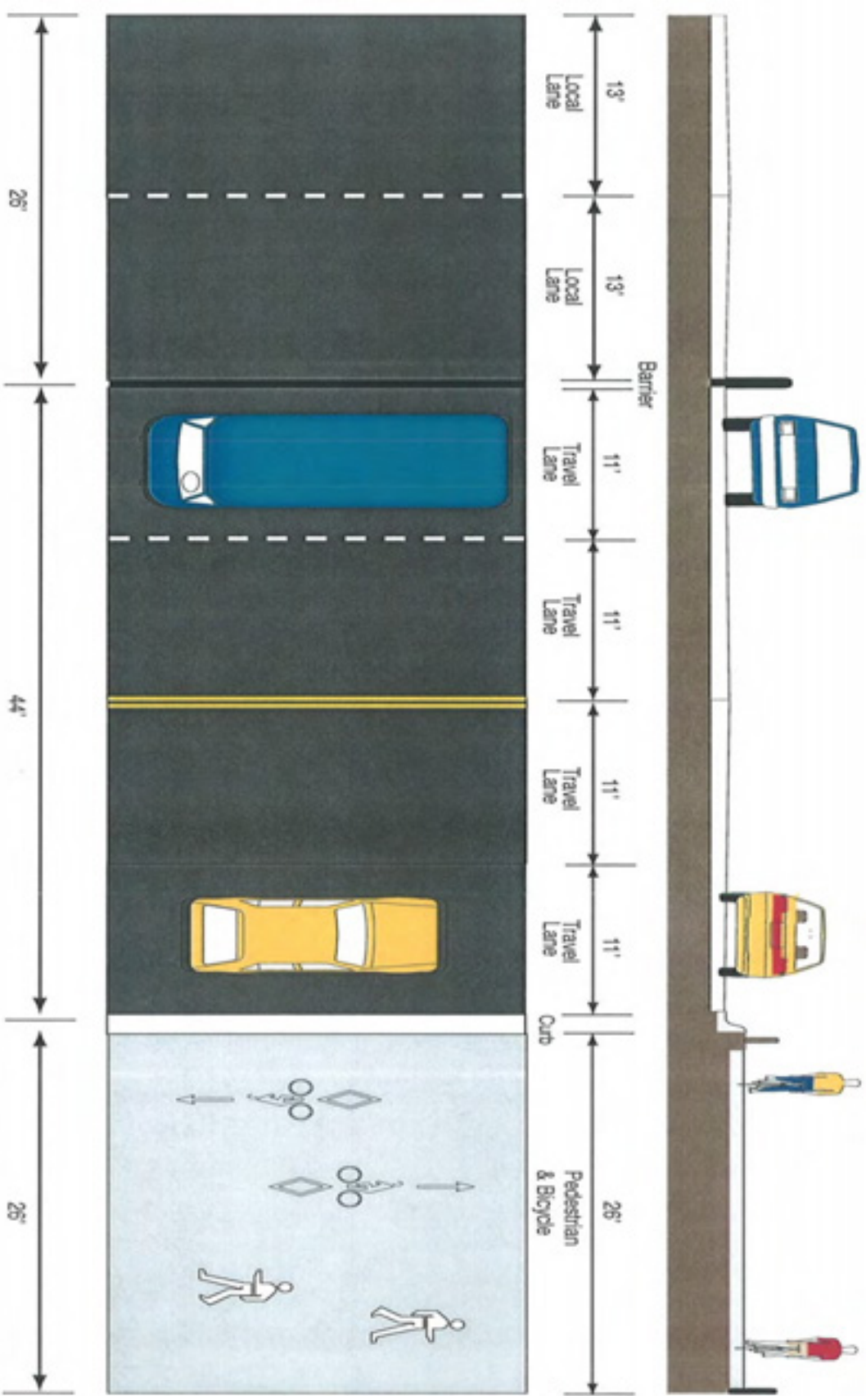
Advantages

By concentrating all pedestrian and bicycle facilities on the east side of the bridge, it improves safety and provides an opportunity to create a unique pedestrian space on the bridge in the same cross-section footprint as originally proposed. No longer will cyclists be trapped between a truck or trolley car and a raised sidewalk. With the offset La Harpe-Riverfront Connector on the west side of the bridge, it removes auto traffic from crossing pedestrian and bicycle lanes as the southern ramps to La Harpe now require. It also simplifies connections to and from the River Trail on both sides of the river.

Preliminary modeling by Metroplan staff indicate that the additional capacity of a two lane roadway connecting La Harpe directly with Riverfront can attract up to 12,000 vehicles per day if all turning movements are accommodated on both ends of the connection. This connection should markedly improve the operation of Broadway in Little Rock in the PM peak and should significantly reduce congestion on the section of Broadway between the bridge and Pike Avenue in North Little Rock. Maximum congestion relief on the north side could be achieved if a two-lane round-about were to replace the signal at the north end of the bridge as recommended by the Area-wide Freeway Study.

See attached diagrams and rough computer renderings.

Metroplan Staff Comments *July 20, 2011*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Barrier
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Travel Lane
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Travel Lane
Curb
26'
Pedestrian & Bicycle

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July 20, 2011

Mr. Phil McConnell
Assistant Chief Engineer-Design
Arkansas State Highway and Transportation Department
P.O. Box 2261
Little Rock, AR 72203-2261

Re: Broadway Bridge

Dear Mr. McConnell:

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   a. considering a roundabout for that intersection, as identified in the Area-wide Freeway Study of several years ago.

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"An Equal Opportunity Employer"

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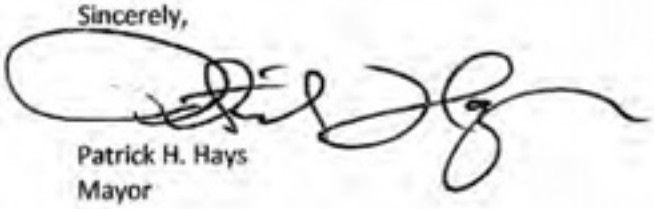
Thank you for considering my comments. I intend to be actively involved in this project and promise my full support to get this bridge built so that it will be a credit to our communities long into the future.

Sincerely,



Patrick H. Hays
Mayor

PHH:jmc

cc: The Honorable Mark Stodola
The Honorable Buddy Villines
Mr. Dan Flowers
Mr. Scott Bennett
Commissioner John Burkhalter
Commissioner Thomas Schueck
Mr. Jim McKenzie

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

INTEROFFICE MEMORANDUM

August 29, 2011

TO: Mr. Phillip McConnell, Assistant Chief Engineer-Design

FROM: Jennifer Williams, Consultant Coordinator

SUBJECT: Job 061275
Arkansas River Bridge Strs. & Apprs. (Broadway) (LR/NLR) P.E.
Pulaski County

A meeting for the replacement of Broadway Bridge was held on Monday, August 22 2001 at 1:30 p.m. in the Commission Conference Room of AHTD Central Office in Little Rock. The purpose of the meeting was to discuss the Department's analysis of proposed functional requirements requested by Metroplan subsequent to the July 21, 2011 stakeholder's meeting held at AHTD Central Office. A copy of this list is attached.

Those in attendance were as follows:

AHTD:	**Metroplan:**	**Garver, LLC:**
Phil McConnell	Jim McKenzie	John Ruddell
Andy Brewer	Rebecca Barkley	John Cantabery
Carl Fuselier	Casey Covington	Seth Yancey
Jessie Jones	Richard Magee	
Steve Mitchell		
Trinity Smith	**FHWA:**	
Jennifer Williams	Brent Dather	

After brief introductions, the meeting was turned over to Mr. Brewer who presented VISSIM models of three alternatives for Year 2035 projected traffic in both AM and PM peak hours. Alternative 1 modeled the roadway and adjacent intersections if no improvements were made. Alternative 2 modeled Metroplan's recommendation for a six lane bridge with two of those lanes providing direct access from La Harpe in Little Rock to Riverfront in North Little Rock. Alternative 3 modeled the Department's recommendation for a five lane bridge to include three southbound lanes and two northbound lanes. A northbound right turn only lane would also be added at the intersection of Broadway and Broadway in North Little Rock.

After presentations of the models, Metroplan indicated they would like to review the Department's recommendation further and requested peak hour volumes used to model these alternatives along with snapshots of the VISSIM models. *(Note: This information was provided to Metroplan on Monday, August 22nd, 2011)* Metroplan indicated that they would expedite their review and provide comments as soon as possible. The Department indicated that as soon as they received a response, they could provide Garver, LLC with guidance on the typical section of the bridge structure which would allow them to proceed with the bridge type study.

Attachments

c: Bridge Division
Planning and Research Division
Roadway Design Division
FHWA
Metroplan
Garver, LLC

GARVER

4701 Northshore Drive
North Little Rock, AR 72118

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MEETING MINUTES

To: Jennifer Williams, AHTD Consultant Coordinator

Date: September 29, 2011

From: John Ruddell

RE: Meeting with Elmo Webb, US Corps of Engineers
AHTD Job 061275, Arkansas River Strs. & Apprs. (Broadway) (LR/NLR) P.E.

Copies To:

Attachment:

A meeting was held with Elmo Webb of the US Corps of Engineers to discuss the location of the pedestrian connection on the north side of the river and possible affects on the current levee system. This meeting was held on September 29, 2011 at the Broadway Bridge. Those in attendance where Mr. Webb, John Ruddell (Garver) and Seth Yancey (Garver).

After brief introductions the following items were discussed:

1. Mr. Ruddell began the meeting by going over the scope of the project and potential impacts to levee.
2. Mr. Webb requested to see preliminary layout and borings in order to make a complete review of the project, and noted that if the structure is located within 15ft. of the toe of the levee a permit would be required.
3. Mr. Webb also noted that whether or not the 100yr. high water gets on the levee, the Corps still inspects and certifies the levee for the maximum credible flood.
4. Mr. Webb informed us that if needed seepage could be taken into account.

ARKANSAS STATE HIGHWAY COMMISSION

P.O. BOX 2261
LITTLE ROCK, ARKANSAS 72203-2261
PHONE (501) 569-2000 • VOICE/TTY 711 • FAX (501) 569-2400
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November 1, 2011

Mr. Jim McKenzie
Executive Director, Metroplan
501 West Markham Street, Suite B
Little Rock, Arkansas 72201

Dear ~~Mr. McKenzie~~ Jim:

Reference is made to the enclosed article published in the Arkansas Democrat-Gazette titled "Social media touted to get bridge right", which concerns the replacement of the Highway 70 (Broadway) Bridge over the Arkansas River. The following statement in the article needs to be clarified:

- *"The department projects it will have $45 million available in 2013 to tear down the bridge and build a new one.*

The subject article is one of several articles I have read that mention that the Department has budgeted or committed $45 million to this project. It is true that the Federal Fiscal Years 2010-2013 Statewide Transportation Improvement Program (STIP) includes replacement of the Highway 70 Bridge in 2013 for an estimated cost of $45 million. However, this was an early planning estimate based on very limited information. It is important to note that our commitment is to replace the bridge, not to spend $45 million. As the project develops and more information becomes available, this estimate will be refined.

The Department inspects and evaluates each bridge in the State that is over 20 feet in length. These bridges are inventoried and assigned a sufficiency rating that ranges from 0 to 100 with 0 being worst and 100 being best. The sufficiency rating is a numerical rating of a bridge based on its structural adequacy and safety and its serviceability and functional obsolescence. For a bridge structure to qualify for Federal-aid Highway Bridge Program (HBP) funding, it must be at least 20 feet in length, have a sufficiency rating of 80.0 or less, and be classified as functionally obsolete or structurally deficient. The Highway 70 Bridge is rated at 12.7 and is classified as structurally deficient.

Currently, there are a total of 2,469 bridges in Arkansas that qualify for rehabilitation or replacement under the HBP. The Department is responsible for prioritizing the improvement of these bridges within the limited amount of funding made available each year. Since enactment of the Safe, Accountable, Flexible,

Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the Department has received an average of $67.1 million annually in HBP funds. When considering current discussions in Congress, this amount could be reduced by as much as 34 percent annually with the enactment of new highway legislation.

Bridges are included in the STIP and scheduled based on sufficiency rating, average daily traffic, maintenance expenditure history, the estimated cost and the amount of funding available for the upcoming years. Because of your involvement with the Central Arkansas Regional Transportation Study (CARTS) Transportation Improvement Program (TIP), you are well aware of the process of reviewing and revising all cost estimates based on current construction costs and more detailed information as it becomes available throughout the project development process. This is the process we will use throughout the development of plans for the replacement of the Highway 70 bridge.

While Metroplan is interested in securing funds to make the Highway 70 Bridge an "iconic" structure, the Department is committed to using HBP funds to replace the Highway 70 bridge with a "safe, functional and aesthetically pleasing" structure. Any design features over and above what is needed to provide a "safe, functional and aesthetically pleasing" structure, not over and above the $45 million planning estimate included in the STIP, will be the responsibility of entities other than the Department. Our position is based on the limited HBR funding available for all bridge improvement needs identified across the State. We must be fiscally responsible and live within our means.

Hopefully, this information has eliminated any misconceptions concerning funds available for the project. If additional information is needed, please advise.

Sincerely,

Scott

Scott E. Bennett
Director of Highways
and Transportation

Enclosure

c: Commissioner Thomas B. Schueck
Deputy Director and Chief Engineer
Assistant Chief Engineer-Planning
Assistant Chief Engineer-Design
Mayor Mark Stodala, Little Rock
Mayor Patrick Hayes, North Little Rock
Judge Floyd G. "Buddy" Villines, Pulaski County
Noel Oman, Arkansas Democrat-Gazette

SEB:FV:LHT:11-2-2011
Tudor:Letters:McKenzie-Broadway Bridge Article 10-2011 C.doc

City of Little Rock

Mark Stodola
Mayor

City Hall, Room 203
500 W. Markham
Little Rock, Arkansas 72201-1427
Phone: (501) 371-4510
Fax: (501) 371-4498
www.littlerock.org

November 9, 2011

Scott Bennett
Director of Highways and Transportation
Arkansas State Highway Commission
P.O. Box 2261
Little Rock, AR 72203-2261

Dear Scott:

Thank you for copying me on the letter sent recently to Mr. Jim McKenzie, the executive director of Metroplan concerning the replacement of the Broadway Bridge. After reading the letter I would like to ask for some clarification on a couple of the issues contained therein.

I have always understood that the Arkansas State Highway Commission has tentatively reserved the amount of $45 million for the replacement of the bridge. This number is based on apparently someone's estimate of what it would cost for a bridge that is both functionally safe and aesthetically pleasing. Considering the timeline for construction, I presume the estimate of the cost is simply that, an estimate. Conceivably it may cost less than $45 million dollars and conceivably it may cost more than $45 million dollars. Is my understanding correct?

As to the other issue referenced in the letter, who will decide whether the design of the bridge is "aesthetically pleasing?" My belief is that this decision should not rest with any one agency, one engineering firm, or single group of interested citizens. I hope that the process of designing an "aesthetically pleasing" structure will be one that is done in concert with the community. I am confident that both the Highway Department and the community can reach a common definition that ultimately culminates in a design that is embraced by all individuals. Thank you in advance for considering these questions.

Sincerely,

Mark Stodola
Mayor

cc: Jim McKenzie
Commissioner Thomas B. Schueck
Commissioner Jon Burkhalter
Deputy Director and Chief Engineer
Assistant Chief Engineer-Planning
Assistant Chief Engineer – Design
Mayor Patrick Hays, North Little Rock
Judge Floyd G. "Buddy" Villines, Pulaski County
Noel Oman, Arkansas Democrat -Gazette

ARKANSAS STATE HIGHWAY COMMISSION

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November 21, 2011

The Honorable Mark Stodola
Mayor of Little Rock
500 West Markham Street
Little Rock, Arkansas 72201-1427

Dear ~~Mayor~~ Mark Stodola:

Reference is made to your recent letter requesting clarification on some issues concerning the replacement of the Highway 70 (Broadway) Bridge.

The estimated cost to replace the Highway 70 Bridge was $45 million at the time the Statewide Transportation Improvement Program (STIP) Federal Fiscal Years 2010-2013 was published in April 2010. As you are aware, this was an early planning estimate based on very limited information. As the project develops and more information becomes available, this estimate will be refined. You are correct that the actual cost to replace this bridge could be more or less.

The Department is committed to replacing the Highway 70 Bridge with a "safe, functional and aesthetically pleasing" structure. As with any other project of this type, the Department will consider input from the community during the public involvement phase. This will include evaluating and considering comments regarding the aesthetics of the new structure. However, since this bridge is on a State Highway, the Department will ultimately make the final decision on the bridge's design based on the best use of funds available and meeting the original STIP schedule of Federal Fiscal Year 2013.

It should be emphasized that there are two important reasons why the original schedule must be met. First, this bridge is classified as structurally deficient and is in need of replacement. Second, the money committed to this project must be obligated in Federal Fiscal Year 2013 or the Department could lose these funds. Therefore, a final decision on the design of the bridge must be made by early spring of 2012 in order to avoid these concerns.

If additional information is needed, please advise.

Sincerely,

Scott E. Bennett
Director of Highways
and Transportation

c: Commissioner Thomas B. Schueck
Commissioner John Burkhalter, P.E.
Deputy Director and Chief Engineer
Assistant Chief Engineer-Planning
Assistant Chief Engineer-Design
Jim McKenzie, Metroplan
Mayor Patrick Hays, North Little Rock
Judge Floyd G. "Buddy" Villines, Pulaski County
Noel Oman, Arkansas Democrat-Gazette

SEB:FV:LHT:11-21-2011

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METROPLAN

SMART PLANNING MAKES SMART PLACES.

February 22, 2012

Mr. Scott Bennett
Director
Arkansas State Highway and Transportation Department
P.O. Box 2261
Little Rock, Arkansas 72203-2261
c/o environmentalmeetings@ahtd.ar.gov

RE: Broadway Bridge Comments

Dear Director Bennett:

Please accept these comments on behalf of the Metroplan staff regarding the bridge type study results for the proposed new Broadway Bridge. We believe that our local elected officials also support the recommendations that we have made herein.

Sincerely yours,

Jim McKenzie
Executive Director

Attachment: Comments on New Broadway Bridge.pdf

METROPLAN COMMENTS ON THE NEW BROADWAY BRIDGE PROPOSAL

General Comments

Thank you for the opportunity to comment on the proposed bridge types for the new Broadway Bridge. While we wish this process could have been a truly collaborative one with all stakeholders involved from the very beginning, we appreciate the willingness of the Department and its contractors to consider our suggestions and conduct analyses of them.

None of the bridge types rendered for public viewing meet what we believe were the higher aspirations of the community expressed in the pubic outreach conducted by Metroplan. While generally adequate considering the funding constraints the Department imposed on itself, unnecessarily in our opinion, the end result is a highway bridge that is inappropriate for an urban setting where an arterial bridge is called for. It is a bridge with additional lane capacity that is enough to increase speed where increased speeds are not desired, but not enough to forestall additional river crossings. It is an intersection too large for its context but not large enough to be sufficient over the long-term. And it is a bridge that while meeting minimum standards for pedestrians and bicycles, is still under capacity for demonstrated pedestrian and bicycle peaks on a nationally recognized bikeway.

The recommendations herein are intended to improve the project by (1) making it more appropriate for its urban context, (2) providing for adequate bicycle/pedestrian facilities, (3) lowering cost of construction, (4) improving the roadway operations over current levels and (5) adequately planning for the long-term system within which the bridge operates.

1. Fifth Lane Analysis

AHTD had initially scoped this bridge replacement for four 11 ft. lanes with 5 ft. bikeways and 8 ft. sidewalks on each side for a width of 70 feet across the main bridge deck. Metroplan suggested shifting all 26 feet of bikeways and pedestrian ways to the east side of the bridge for safety purposes and to simplify connections to the Arkansas River Trail and to add two 13 ft. lanes to the west side of the bridge to provide local street connectivity between La Harpe Blvd and Riverfront Drive in North Little Rock. AHTD responded by proposing three 11 ft. southbound lanes, two 11 ft north bound lanes, 3 feet of shy zone on each side of the bridge and 16 feet of shared bicycle/pedestrian path for a total cross-section of 77 feet of bridge desk.

AHTD staff proposed the fifth lane to (1) reduce queuing on west Broadway in the AM peak and (2) provide a lane for vehicles traveling to La Harpe to avoid queuing traffic backing up from the light at Markham. Long time observation suggests that the traffic queuing on the bridge in the AM is as much the result of the La Harpe ramp backing up rather than traffic queuing from the Markham

intersection. The proposed ramp merge modifications at La Harpe and the revised signal timing at Markham should address the majority of queuing that currently occurs on the bridge. West Broadway will still queue in the AM peak until a new bridge is built, at which time the problem should virtually disappear.

Metroplan's analysis indicates that (1) the third south bound lane will do little or nothing to postpone the necessity of constructing an additional arterial bridge in the downtown area west of Broadway (the suggested Chester Street Bridge) and (2) it adds little bridge operational efficiency that is not realized by the improvements proposed to the westbound ramp onto La Harpe and signal timing modifications at Markham Street. Beyond those improvements, the minor benefits of adding a third southbound lane do not justify the added costs.

Further, the existence of the third southbound lane provides a handy excuse of providing the high-speed free right turn onto the bridge at Broadway in North Little Rock, creating an unsafe pedestrian condition and an intersection out of scale with the context. Finally, the inclusion of the extra carriageway width for the fifth lane and the three foot shy zones on each side of the roadway will induce drivers to travel in excess of the posted speed limit during non-peak hours. Carrying excess speed onto South Broadway in Little Rock is particularly concerning given that is the most dangerous pedestrian corridor in the metropolitan area. Traffic calming measures, including the use of a raised median and narrower lanes at the bridge entry points, would promote slower speeds and serve as focal points signaling drivers to changing conditions as they enter the city grids.

Recommendations:

Therefore, we recommend that the fifth travel lane be dropped, thereby reducing the bridge deck by 11 feet, and that four of those feet be added to the bicycle/pedestrian way on the east side of the bridge. The bridge main deck will then be comprised of four 11 foot lanes, two 3-foot shy zones and twenty feet of bicycle lanes and pedestrian way for a total of 70 feet, the width in the original scope.

Also, we recommend traffic calming techniques be utilized in the vicinity of the intersection approaches to the bridge.

2. Bicycle/Pedestrian Issues

A. Inadequate Capacity for Bicycle/Pedestrian Space on the Bridge

The Arkansas River Trail is the major east-west bikeway in the region, is the key bicycle element on the Strategic Regional Transportation System, and has received recognition in regional and national publications and from the Secretary of the Interior. River crossings at the Big Dam Bridge (14 feet), the Clinton Presidential Bridge(12.5/17 feet) and the Two Rivers Park Bridge (14 feet) have proven too narrow during peak usage and have led to extensive user conflict.

Given the direct connections from the proposed Broadway Bridge to the Arkansas River Trail and the location of significant pedestrian attractions in this corridor, we anticipate high and increasing bicycle and pedestrian use over the anticipated life span of the bridge. The sixteen feet of combined bikeway and pedestrian way initially proposed is inadequate for anticipated volumes.

Recommendation:

If pedestrian observation areas are to be incorporated on the bridge deck, then a minimum width of 20 feet of bike lanes and pedestrian walkway should be provided over the main span. If pedestrian observation areas are not provided on the bridge deck, then a minimum of 24 feet of bike lanes and pedestrian ways should be provided. As ramps drop from the main bridge span to the Arkansas River Trail, the shared bicycle/pedestrian way can be reduced to 14-16 feet to the terminal intersections.

B. North Little Rock Connection to the Arkansas River Trail

The ramp shown in the presented renderings to the Arkansas River Trail in North Little Rock takes up an excessive amount of the parkland.

Recommendations:

Alternatively, the ramp should land on and gradually descend the levy into the park along the south face of the levy or, preferably, should drop below the main bridge deck once over the navigation channel, paralleling the upper sidewalk as it descends under the bridge deck, then branching east and west to merge with the River Trail from a lower elevation. The bridge deck could be narrowed after clearance of the lowered bicycle lanes.

3. Broadway/Broadway Intersection Over-sized for Context

The Broadway and Broadway intersection in North Little Rock is embedded in an urban grid with major pedestrian generators located at the intersection. The southern leg of the intersection contains two free right hand turns (one south bound, one east bound) with excessively broad radii and a total of seven lanes of traffic. In an attempt to solve a congestion problem that this bridge connection is incapable of solving alone for projected future volumes, a very high capacity highway intersection has been inappropriately placed at this location.

Metroplan staff believes there are several flaws with the analysis completed for the intersection. In particular, we believe that it creates a distortion to analyze a single facility in this context. An overall downtown river crossings system analysis

would have been far more informative, since the capacity of all downtown bridges operate relative to one another. Secondly, we disagree with the assumptions for future PM peak demand, since the Little Rock traffic signal system controls volume per hour over the bridge, and it is at or near peak-hourly throughput now. We also disagree with the signal timing assumptions made for the signalized intersection since those timing assumptions do not give enough time for pedestrians to cross the expanded seven-lane southern leg. And finally, it is inappropriate to select a preferred intersection design based simply on the relative congestion performance of a single 15-minute peak rather than on a 24-hour basis, especially since this area is facing possible air quality non-attainment status.

Even with the pedestrian underpass connecting Dickey-Stephens Park with the parking lot to its west, we anticipate a continued pedestrian demand to cross Broadway west to east at the intersection. The same level of effort afforded to vehicles during the analysis should be given to pedestrians and other modes of transportation crossing and utilizing the facility.

Roundabout Analysis.

Metroplan appreciated the opportunity to discuss the roundabout analysis with Garver staff and the resulting corrections to the HCM analysis. This revised HCM analysis clearly demonstrates that the roundabout would perform better than the current signal and performs as good or better than the proposed intersection for all conditions other than the most aggressive of traffic projections, when all intersection types fail.

Having said that, the roundabout designed for this intersection was also far too large and inappropriate for the urban context of this location.

Pedestrian Interactions.

It would appear that not enough attention was paid to pedestrian use of the Broadway and Broadway intersection. Given the intersection location next to Dickey-Stephens Park, proximity and connection to the Arkansas River Trail, and locations of nearby residential neighborhoods, pedestrian use of the intersection is high and expected to increase. It is worth noting that the Arkansas Travelers baseball club targets children as a key audience and one should anticipate that a high percentage of pedestrian traffic to that location would be young people.

The same considerations for pedestrians should be made as for vehicles, including providing minimum crossing distances, minimizing conflicts with turning vehicles, and providing ample signal crossing time. We disagree with the signal timing assumptions made for the signalized intersection since those timing assumptions would not give sufficient time for pedestrians to cross the now seven lane southern leg as well as the 4 lane western leg.

Any intersection design that does not provide pedestrians a safe and efficient crossing of all 4 legs of the intersection should not be considered.

Recommendation:

The current footprint of the intersection should be the maximum limits of the current Broadway at Broadway intersection. The third south-bound lane should be dropped from the plans and consideration should be given to further tightening the curb radii in the current intersection. The proposed double left lanes west bound should be reduced to a single dedicated left and proposed new right hand northbound lane should be dropped from the plans as well. These actions would both make the intersection more pedestrian friendly and reduce the negative impact on Dickey-Stephens Park.

While we realize that reducing the size of the intersection from that which is proposed will continue some operational inefficiencies in the short-term, we believe that the higher value is in providing a context sensitive intersection at this location. In the longer term, the construction of a new arterial bridge to the west, changing travel patterns and/or the increase in public transit ridership will reduce demand to the point that the more appropriately sized intersection will be quite adequate.

4. Design Options

A. Open Railing

In all instances, an open railing is preferred on the riverside of the bicycle/pedestrian way and on the bicycle/pedestrian ramps connecting to the Arkansas River Trail.

B. Plate Girder Blind Spots for Pedestrians

On the two plate girder options, additional observation spaces are provided surrounding upright pillars. Provision of pedestrian observation areas allows the bicycle/pedestrian way to be narrower than would otherwise be called for (although not as narrow as proposed). In both design options, this treatment creates blind spots for pedestrians in which persons of ill will could hide without being seen. It also, unfortunately, provides a convenient platform for graffiti artists to use in tagging the bridge columns. One of the lessons we should have learned in the failed experience of the defunct Main Street pedestrian mall, is that if pedestrians can't see clearly what is ahead of them, they are reluctant to walk there.

Recommendation:

For the plate-girder options, consult with the police chiefs of Little Rock and North Little Rock regarding potential for blind spots that might be perceived as threatening to pedestrians and that could result in excessive graffiti on the bridge. Consider placing the columns that extend above the bridge deck outboard of the pedestrian way, while combining the overlooks from three to two located safely between the upright columns.

Pulaski County

F.G. "BUDDY" VILLINES
COUNTY JUDGE / CHIEF EXECUTIVE OFFICER

ADMINISTRATION BUILDING
201 SOUTH BROADWAY, SUITE 400
LITTLE ROCK, ARKANSAS 72201
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CITIES
ALEXANDER
CAMMACK VILLAGE
JACKSONVILLE
LITTLE ROCK
MAUMELLE
NORTH LITTLE ROCK
SHERWOOD
WRIGHTSVILLE

UNINCORPORATED AREA
600 SQUARE MILES

MILITARY BASES
LRAFB
CAMP ROBINSON

RECEIVED
MAR 12 2012
Asst. Chief Engr.-Planning

March 7, 2012

Mr. Scott Bennett
Arkansas Highway Department
P.O. Box 2261
Little Rock, AR 72203

Dear Scott,

I wanted to take the opportunity to comment on the design options for the Broadway Bridge. As you are well aware, this is a vitally important project for the county, the region and the state. We have one chance to get it right.

Comments:

1) I prefer the twin tiered arch. Especially if the arches can have a contour that is designed to have more "form" than just part of a circle.

2) The first rendering of the bridge that AHTD brought forward had a combined pedestrian/bicycle space of 26 feet. I favor getting as close to that space as possible. Sixteen feet is too narrow.

   You mentioned that we had 14 feet on the Big Dam Bridge. That was a decision made not only on the basis of cost but also because we were breaking new ground. Prior to this project, pedestrian/bicycle trails were 10-12 feet. With the rapid growth in the utilization of "The Big Dam Bridge" we've learned that the width needs to be considerably wider. A width of 20-22 feet would be much safer for the traffic that will use the bridge.

3) The intersection in NLR at Broadway needs to be thought of as an urban intersection. The standard highway intersection would have a very negative impact at a very important corner. A traffic circle or some other approach can better serve the need to move traffic and be a positive asset for the community.

Thank-you for the opportunity to comment.

Sincerely,

Buddy

Buddy Villines
County Judge/Chief Executive Officer

Cc: John Burkhalter
Tom Schueck
Mayor Mark Stodola
Mayor Pat Hays

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MAR 12 2012
DEPUTY DIRECTOR AND CHIEF ENGINEER'S OFFICE

RECEIVED
MAR 12 2012
ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT

GARVER

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MEETING MINUTES

To: Jennifer Williams, AHTD Consultant Coordinator

Date: March 13, 2012

From: John Ruddell

RE: Meeting with US Corps of Engineers
AHTD Job 061275, Arkansas River Strs. & Apprs. (Broadway) (LR/NLR) P.E.

Copies To:

Attachment: Handout

A meeting was held with Elmo Webb of the US Corps of Engineers to discuss the location of the pedestrian connection on the north side of the river and possible affects on the current levee system. This meeting was held on March 13, 2012 at the Broadway Bridge. Those in attendance where Mr. Webb, John Ruddell (Garver) and Seth Yancey (Garver).

After brief introductions the following items were discussed:

1. Mr. Ruddell began the meeting by going over the handout of the proposed ramp alignment. The alignments were similar to those presented at the Public Involvement Meeting held February 7, 2012.
2. Mr. Webb was concerned about having the piers of the proposed pedestrian ramp located on the river side of the levee due to future maintenance issues around the piers.
3. Possible alternative alignments were discussed. The first option consisted of the placing the pedestrian ramp on top of the levee with the inclusion of a supplemental floodwall at the toe of the existing levee. The second option would locate the pedestrian ramp on the land side of the levee adjacent to Riverfront Dr.

March 30, 2012

Mr. Scott Bennett
Director
Arkansas Highway & Transportation Department
P.O. Box 2261
Little Rock, AR 72203

Re: Possible Bridge Replacement Consideration

Dear Scott:

As you are aware, there has been a great deal of interest and attention given to the Arkansas Highway & Transportation Department's (AHTD) plans for demolishing and reconstructing the Broadway Bridge that connects our two cities (Little Rock and North Little Rock).

Over the last several months, a significant amount of time and effort has been expended by many in Central Arkansas to address this need, and we very much appreciate the AHTD and its Commission's efforts to seek input from all, primarily the two cities (Little Rock and North Little Rock) which will be impacted the most by the current bridge construction plans.

Also, significant attention has been given to this project by our Council of Governments (Metroplan) wherein discussion and review of the construction plans that have been promulgated and shared with us, along with ongoing local input, will continue to be made in an effort to improve and enhance this connection between our two cities.

However, it is becoming more and more apparent that current plans to tear down the Broadway Bridge and rebuild its replacement in the same location, will cause significant traffic disruption for an extended period of time; with projected traffic delay costs exceeding $40 million dollars. Therefore, with concerns about various design proposals, and the shortness of time available to offer meaningful suggestions for design improvements, we feel it would be appropriate to suggest that the AHTD consider the following alternative.

We would suggest that the federal bridge replacement monies be used to build the "replacement

bridge" at Chester Street and La Harpe Boulevard (State Highway 10) on the south, connecting to Riverfront Drive and then on to Pike Avenue (Highway 365) on the north. (See attached Exhibit A) This route would also provide easy access across the river to and from I-630. When completed, the Broadway Bridge would be removed from the State Highway Transportation System and all vehicular traffic would be prohibited. The cities of Little Rock and North Little Rock would assume responsibility for the operation and maintenance of the existing Broadway Bridge as a pedestrian destination connecting the Robinson Center Music Hall with Dickey Stephens Ball Park. (See attached Exhibit B and C) This type of alternative use has been adopted in several cities throughout the country. Various leisure, business and entrepreneurial activities could be planned for the Bridge's ongoing pedestrian use. (See attached Exhibit D) The benefits of this alternative are numerous.

1. This option allows the Broadway Bridge to stay in use while the Chester Street Bridge is being built causing no economic loss and no traffic disruption.

2. While this option will require additional time for necessary environmental review and R-O-W acquisition on the front end, the Highway Department estimates under the current plan is that Broadway Bridge will take most of 2015 to complete. With the removal of "pedestrian considerations" for the replacement bridge, the additional engineering and time necessary for environmental and R-O-W considerations can be made up on the back end of the timeline with completion scheduled by the end of 2015, over 3 years from now. While some engineering modifications will be necessary, the engineering and architectural designs already completed would be easily transferable.

3. By removing the need for demolition of the Broadway Bridge the time required to build the Chester Street Bridge will be substantially accelerated.

4. This alternative should amount to a substantial cost savings to the Department, currently estimated at a minimum of $58 million dollars. By alleviating the expense of demolition and by alleviating the expense of additional pedestrian and bicycle lanes, the cost should be substantially reduced. It would also most likely allow additional funding for a more atheistically pleasing bridge at the Chester Street location. (See attached Exhibit E)

Before embarking on this suggestion, we have investigated and discussed this option with both current and formal federal highway officials who have advised us that this approach is a permissible use of the federal bridge replacement funds.

If the Highway Commission is willing to consider this alternative then the two of us will take this proposal to our respective governing bodies for approval. We believe this suggestion should merit serious, thoughtful review as it would seem to offer a win, win scenario for all concerned.

While we cannot speak for our City Board or City Council at this time, we feel that given the opportunity for them to consider this approach, as well as the entire community, that a significant consensus would develop supporting this approach.

Thank you again for the willingness of the AHTD to work with us and we stand ready, willing and able to pursue this opportunity in any way you deem appropriate.

Sincerely,

Mark Stodola, Mayor
City of Little Rock

Patrick H. Hays, Mayor
City of North Little Rock

cc: Members of the Highway Commission

Exhibit A

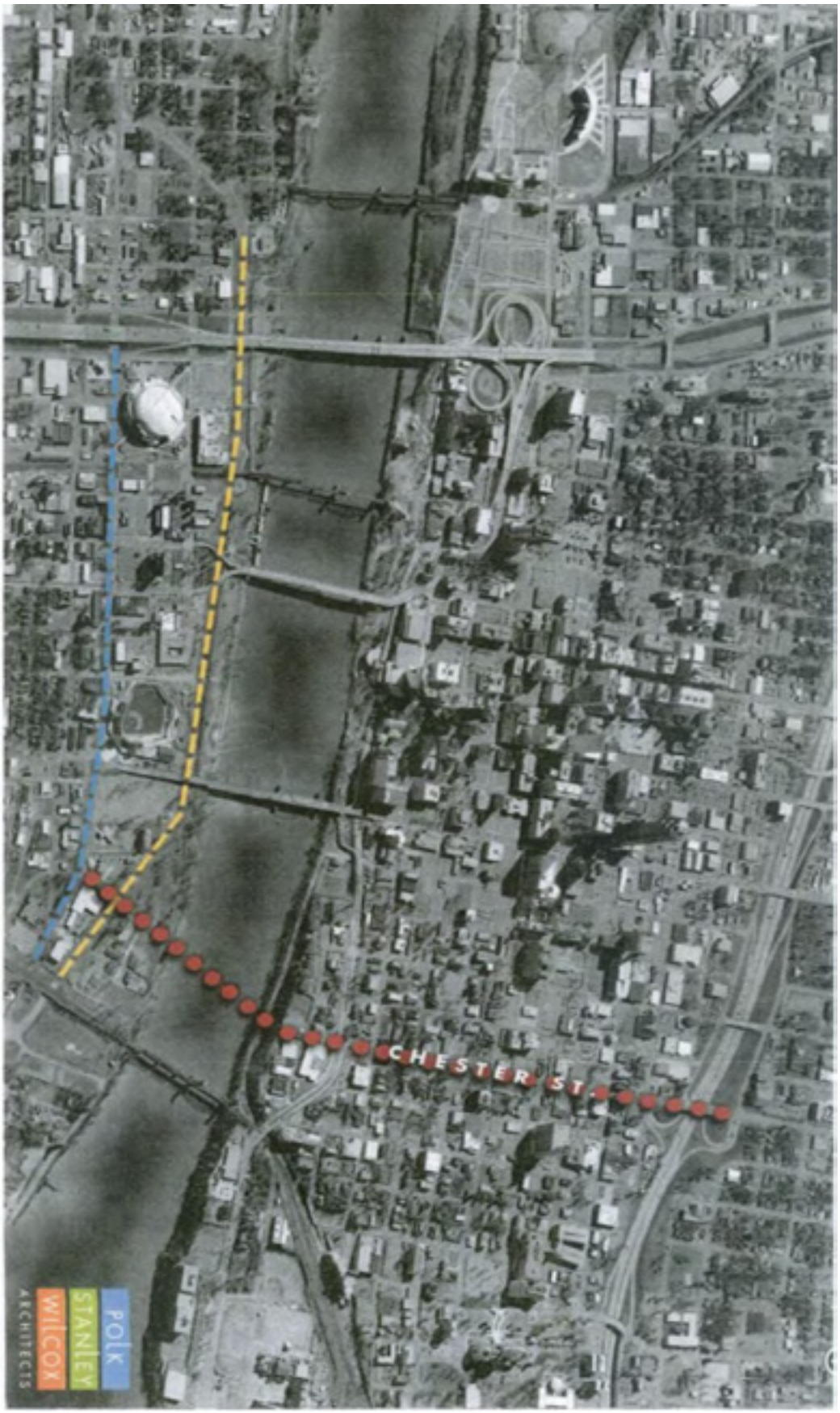

Exhibit B

Exhibit C

Exhibit D

Exhibit E

P.O. Box 2261
LITTLE ROCK, ARKANSAS 72203-2261
PHONE (501) 569-2000 • VOICE/TTY 711 • FAX (501) 569-2400
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April 3, 2012

The Honorable F. G. "Buddy" Villines
Pulaski County Judge
Administration Building
201 South Broadway, Suite 400
Little Rock, AR 72201

Dear ~~Judge~~ Buddy Villines:

Reference is made to your letter dated March 7, 2012 concerning the project to replace the Highway 70 (Broadway) bridge over the Arkansas River.

Your preference for a twin tied arch structure is noted. The bridge type selection will be determined as a part of the environmental process.

Various options for the Broadway/Broadway intersection in North Little Rock were analyzed by the Department's consultant. The results of their engineering analysis showed that a signalized intersection was the most efficient in accommodating both vehicle and pedestrian traffic.

Your other comment regarding the width of the pedestrian/bicycle path is addressed in the enclosed Department's letter and report to Metroplan.

Thank you for your interest in this project. If you need additional information, let me know.

Sincerely,

Scott E. Bennett
Director of Highways
and Transportation

Enclosure

c: Highway Commission
Deputy Director and Chief Engineer
Assistant Chief Engineer – Design
Assistant Chief Engineer – Planning
Environmental
Roadway Design
Bridge
Planning and Research
FHWA
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April 3, 2012

Mr. Jim McKenzie
Executive Director
Metroplan
501 West Markham Street
Little Rock, AR 72201

Dear Mr. ~~McKenzie~~ Jim

Reference is made to your letter dated February 22, 2012 transmitting your comments on the project to replace the Highway 70 (Broadway) bridge over the Arkansas River. Your comments are addressed in the enclosed report.

Thank you for your interest in this project. If you need additional information, let me know.

Sincerely,

Scott E. Bennett
Director of Highways
and Transportation

Enclosure

c: Highway Commission
Deputy Director and Chief Engineer
Assistant Chief Engineer – Design
Assistant Chief Engineer – Planning
Environmental
Roadway Design
Bridge
Planning and Research
Programs and Contracts
FHWA
Metroplan Board of Directors
Ed Levy, Little Rock Bicycle Friendly Community Committee

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Arkansas State Highway and Transportation Department (AHTD)

Highway 70 (Broadway) Arkansas River Bridge Replacement Project

AHTD Response to Metroplan's Comments

April 3, 2012

1. Fifth Lane Analysis

- **Metroplan Recommendation:** Drop the fifth lane, reduce the bridge deck by 11 feet with four of those feet added to the bicycle/pedestrian way on the east side of the bridge. This results in four 11-foot lanes, two 3-foot shy zones and twenty feet of bicycle/pedestrian way for a total of 70 feet, the width of the original scope.

  AHTD Response:

  - Without the extra southbound lane to allow a free right turn for vehicles traveling from the west, the Highway 70 (Broadway)/Highway 70 (Broadway) intersection will continue to fail and congestion worsen. The ability of eastbound vehicles to make a free right (turning south) is the only way to improve the eastbound approach level of service without penalizing the other approaches. Redistribution of green time from the other approaches will cause them to fail.

  - The fifth lane was proposed to relieve morning peak congestion at the Highway 70 (Broadway)/Highway 70 (Broadway) intersection, which has been identified annually by the CARTS Congestion Management Process (CMP). The 2011 CARTS CMP report lists west Highway 70 (Broadway) from Highway 70 (Broadway) to Pike as having an "extreme" degree of congestion and is ranked as the second worst in the metropolitan area.

  - Concerns for pedestrian safety will be addressed during intersection design. We share the concern for the impact of the free rights on pedestrians crossing the western, eastern, and southern legs of the Highway 70 (Broadway)/Highway 70 (Broadway) intersection. Over 50 weeknight events at Dickey-Stephens overlap with the evening traffic peak hour plus there are approximately another 30 weekend games and event nights. The crossings on the eastern and western legs of the intersection will be considered for such measures as an activated pedestrian crossing signal specifically for the right turning traffic. A preliminary analysis shows that signalization of the northbound right turn would not have a substantial impact on intersection operations.

  - Elimination of the pedestrian crosswalk across the southern leg of the Highway 70 (Broadway)/Highway 70 (Broadway) intersection is also under consideration with pedestrian/bicycle traffic being routed through the bridge underpass.

- We will continue to work to ensure that the design of the intersection will provide the safest conditions possible for pedestrian and bicycle crossings.

- **Ed Levy, Chairman of the Little Rock Bicycle Friendly Community Committee, Comment:** The third dedicated southbound lane will introduce additional lane change movements on the bridge as people turning right at Broadway/Broadway NLR intersection onto the bridge have to merge left to go straight thru to Markham, and all others entering from NLR wanting to take the dedicated exit to La Harpe will have to merge right. It adds additional lane changes to southbound bridge traffic reducing operational safety for MV users.

  AHTD Response:

  - A preliminary engineering analysis has determined that there is adequate weaving distance and the additional lane should not be an operational concern.

- **Metroplan Recommendation:** Utilize traffic calming techniques in the vicinity of the intersection approaches to the bridge.

  AHTD Response:

  - Given the current travel speeds on the bridge with 10-foot lanes, safety at the intersections on both ends of the bridge is a legitimate concern. Measures being considered to enforce appropriate speed through both intersections include matching the existing lane width on the approaches. This would also decrease the project's impact on Robinson Auditorium and Dickey Stephens Park.

  - Reducing the right turn radius for northbound vehicles is being considered at the Highway 70 (Broadway)/Highway 70 (Broadway) intersection.

2. Bicycle/Pedestrian Issues

- **Metroplan Recommendation:** If pedestrian observation areas are to be incorporated on the bridge deck, a minimum of 20 feet of bike lanes and pedestrian walkway should be provided over the span. If pedestrian observation areas are not provided on the bridge deck, a minimum of 24 feet of bike lanes and pedestrian ways should be provided. As ramps drop from the main bridge span to the Arkansas River Trail, the shared bicycle/pedestrian way can be reduced to 14-16 feet to the terminal intersections.

  AHTD Response:

  - The American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities recommends that under most conditions, a paved width for a two-directional shared use path is 10 feet. Under certain conditions it may be necessary or desirable to increase

the width of a shared use path to 12 feet, or even 14 feet, due to substantial use by bicycles, joggers, skaters and pedestrians. The AHTD Bicycle Facility Accommodation Policy states that if local or regional design standards specify greater widths than those recommended, the additional width will normally be funded by the local jurisdiction.

- While we understand that pedestrian and bicycle usage has increased on dedicated trails and bridges in the area, we believe that a 16-foot wide pedestrian/bicycle facility is adequate for this bridge. On occasion there may be some congestion, especially during special events. No transportation facility is built to handle every conceivable peak demand. It is our belief that typical usage on this bridge with over 24,000 vehicles per day a few feet away will not attract the casual pedestrians to the same degree experienced by the dedicated bridges in quieter environments upstream.

- The Department is willing to consider increasing the width of the pedestrian/bicycle path if the local stakeholders are willing to pay for the cost difference. We have estimated that increasing the currently proposed width of 16 feet to 20 feet would cost an additional $1.8 million. Based on previous comments concerning a 26 foot multi-use path, the increased cost from 16 feet to 26 feet would be an additional $4.5 million. **In order to meet the development timeline on this project, the Department must know by April 30 if a partnering arrangement is desired to fund this enhancement to the existing design.**

- **Metroplan Recommendation:** The ramp should land on and gradually descend the levee into the park along the south face of the levee or, preferably, should drop below the main bridge deck once over the navigation channel paralleling the upper sidewalk as it descends under the bridge deck, then branching east and west to merge with the River Trail from a lower elevation. The bridge deck could be narrowed after clearance of the lowered bicycle lanes.

AHTD Response:

- We are aware of the negative impacts of the ramp location and are working with the Corps of Engineers to develop a more acceptable design with less negative impacts. Metroplan's recommendation would likely cause a significant increase to the cost of the ramp connection to the River Trail.

3. Broadway/Broadway Intersection Oversized for Context

- **Metroplan Recommendation:** Maintain the current footprint of the intersection. The third southbound lane should be dropped from the plans and consideration be given to further tightening the curb radii in the intersection. The proposed double left lanes westbound should be reduced to a single dedicated left and proposed new right hand northbound lane should be dropped.

AHTD Response:

- We believe that capacity improvements are needed and warranted, and that the public expects these improvements as part of the project. We do not believe these needs should be ignored because of the somewhat recent proposal to construct a local bridge to the west that has not been included on the regional transportation plan or on future increases in transit usage that may or may not happen. However, as mentioned previously, consideration is being given to tightening the geometrics of the preliminary intersection layout.

4. Design Options

- **Metroplan Recommendation:** Open railing is preferred on both the bridge and the ramps to the River Trail.

  AHTD Response:

  - Your comment is noted.

- **Metroplan Recommendation:** Consult with police chiefs regarding potential blind spots that might be perceived as threats to pedestrians and that could result in excessive graffiti.

  AHTD Response:

  - We agree with your concerns. An equally important consideration may be the opportunity for the columns to hide children, dogs, etc. that may suddenly appear in front of unprepared bicyclists, thereby creating the potential for crashes.

- **Metroplan Recommendation:** Consider placing the columns that extend above the bridge deck outboard of the pedestrian way, while combining the overlooks from three to two located safely between the upright columns.

  AHTD Response:

  - This recommendation will be considered if this design option is selected.

April 3, 2012

The Honorable Mark Stodola
Mayor of Little Rock
500 West Markham, Room 203
Little Rock, AR 72201

The Honorable Patrick H. Hays
Mayor of North Little Rock
P. O. Box 5757
North Little Rock, AR 72119

Dear Mayors ~~Stodola~~ Mark & Pat and Hays:

Reference is made to your recent letter proposing that the Department use Federal-aid Bridge Replacement funds and State match to construct a new Arkansas River Bridge connecting Chester Street to Riverfront Drive Highway 365 (Pike Avenue) and having the cities take over maintenance and operation of the existing Highway 70 (Broadway) bridge as a non-vehicular bridge.

We agree with the current and former Federal Highway Administration officials that the proposed approach may be a permissible use of Federal-aid Bridge Replacement funds. This would only be possible if several issues could fall into place, including the execution of an agreement stipulating that the existing Highway 70 bridge would never again be open to vehicular traffic, or the cities would be required to reimburse the Federal government the cost of the new bridge. Although this proposed approach is permissible in concept, there are several reasons that the Department believes that it would not be possible.

As you are aware, the replacement of the existing Highway 70 bridge is scheduled for Federal Fiscal Year 2013, and the Department has been working toward this scheduled date since 2009, when the project was included in the current Statewide Transportation Improvement Program (STIP) and Metroplan's Transportation Improvement Program (TIP). The Department schedules projects so that certain Federal-aid funding, including Bridge Replacement funds, can be obligated in the year it is received (our "obligation plan").

If the Federal-aid funding received in a year is not obligated in that year, it is "lost," meaning that the Federal Highway Administration will redistribute those funds to other State Departments of Transportation who have shown an ability to obligate more Federal-aid funds than they have received. This also means that Federal taxes that were collected in Arkansas would not be able to be spent in Arkansas, but would instead be spent in other states. I am certain that neither of you would support anything that would result in the loss of Federal dollars to our State.

In order to obligate funds for construction, the project has to be ready to let to contract. This means that environmental clearance has been obtained, any needed right of way has been acquired, and the plans, specifications and estimate have been completed. Having the Highway 70 (Broadway) bridge ready to let to contract in 2013 is a critical part of our obligation plan for 2013, and it would not be possible to develop plans for a new Arkansas River bridge in the same timeframe. Therefore, not proceeding with the plans to replace the Highway 70 bridge at its existing location would result in the loss of funds that are available for that project.

We believe that a significant amount of planning would be required before your proposal could be seriously considered. This planning would show the impact of the changes in traffic patterns from Broadway to Chester Street, including the impact on and need for intersection improvements for vehicles that still have an origin or destination along Broadway and for interchange improvements at the existing Chester Street interchange. This planning would also help determine whether this proposed new bridge, like the existing Highway 70 bridge, would need to include an overpass of Highway 10 (LaHarpe) to accommodate the through traffic movement.

There should also be a significant amount of public involvement on the front end, especially since there has been some reported opposition to an extension of Chester Street and since the changes in traffic patterns for those currently using Broadway could be significant. After planning, the length of time required to complete the environmental process for this proposed new bridge, including Corps of Engineers and Coast Guard approval and permits, and to acquire the necessary right of way, would be a major concern.

A part of this major concern comes from the requirements of the Federal environmental process. Through this process, an alternate location for a transportation facility cannot be predetermined. Analysis of your proposal would also have to include any other feasible and prudent locations, and all of the "new" locations would have to be compared to the impact of making improvements at the existing location. Since the Federal environmental process tends to favor improvements to existing facilities, and since enough environmental work has been completed to show that replacing the Highway 70 bridge on existing location is a feasible and prudent alternative, it is doubtful that Federal approval would be granted for replacing this bridge at an alternate location.

With consideration of intersection and interchange improvements, and likely an overpass of Highway 10, your proposed project would involve much more than just bridge replacement and would therefore require the use of other categories of Federal-aid funds, which simply are not available.

As you should be able to see, while the proposed alternative may save demolition costs, there are enough additional associated costs that the proposed alternative would likely cost more than the current plans to replace the existing Highway 70 bridge in place. We also doubt that the proposed alternative could be built, as you state, with "alleviating the expense of additional pedestrian and bicycle lanes."

Your mention of possible cost savings allowing additional funding for a more aesthetically pleasing bridge at the Chester Street location also appears to be in contradiction with your statement that time and money could be saved since the engineering and architectural designs already completed for the existing Highway 70 bridge would be easily transferable to the "new bridge." If the desire is to do more with aesthetics under this new proposal, then it is doubtful that much of our existing work on the existing Highway 70 bridge would be "easily transferable." Even supposing that there would a cost savings with the proposed alternative, the Department has made it clear that cost savings do not "free up" money to add to aesthetics, but would rather "free up" funding for other needed projects around the State.

While we are not opposed to the construction of a bridge connecting Chester Street and Riverfront Drive, we believe that this bridge should be a new bridge that would be the responsibility of entities other than the Department to build, operate and maintain. Also, our understanding is that Metroplan staff has indicated that this new bridge will be needed in addition to, and not in lieu of, the existing Highway 70 bridge to meet the needs of vehicular traffic in the future.

We understand that undertaking any major project such as the replacement of the existing Highway 70 bridge will create inconveniences for motorists, but the end product should make these inconveniences worthwhile. I would remind you that, from the beginning of project development, the Department has informed you and other stakeholders that the existing bridge would have to be closed for a period of time during construction, and that all understood and agreed that the existing river crossings in the area could temporarily accommodate the increased traffic. This process of temporarily closing a road for construction is used in many large urban areas, even on sections of the Interstate system with much higher traffic volumes than on existing Highway 70.

Also, as mentioned previously, this project has been in the approved STIP and Metroplan's TIP since 2009. In fact, when this project was first discussed at a Metroplan Board meeting in 2009, Mayor Stodola was adamant that the bridge replacement was needed, that he was disappointed that it was included in the last year of the 2010-2013 STIP, and that we should do everything possible to expedite the project.

As you can see, while your proposal may be permissible, it is not possible. With project development for the replacement of the existing Highway 70 bridge needing to proceed, we would appreciate your efforts to support us in providing the safest, most efficient, cost effective and aesthetically pleasing structure possible. Your time and efforts in promoting a new river crossing from Chester Street to Riverfront Drive and Pike Avenue should be focused at the local level.

I understand that some have expressed concern that the Department does not have plans "on the shelf" that would cover the desire to delay a major project such as the replacement of the existing Highway 70 bridge. While I will not address this issue in detail, I do want to remind you that until recently, the Department "covered" Metroplan's share of STP-Attributable funds for many years because of your inability to develop projects in a timely manner, or because of your desire to let funds "build up" in order to implement bigger projects. In essence, we "covered" Metroplan because of your lack of an adequate plan to spend funds that were apportioned to you each year. The Department's lack of having plans "on the shelf" to cover the subject issue stems from the American Recovery and Reinvestment Act's additional funding and requirements, and from Congress requiring several rescissions of Federal-aid funds that have taken away our flexibility to expedite projects in one category to cover delaying projects in other categories. I would be happy to explain this further if you so desire.

Finally, in the interest of full disclosure, the *Arkansas Democrat-Gazette* requested and was provided a copy of your letter to me, and as you can see below, they are being provided a copy of my response to you.

Sincerely,

Scott E. Bennett
Director of Highways
and Transportation

c: Highway Commission
Deputy Director and Chief Engineer
Assistant Chief Engineers
Metroplan Board of Directors
Metroplan
Arkansas Democrat-Gazette

ARGENTA
DOWNTOWN COUNCIL

ARGENTA ARTS FOUNDATION

301 Main Street, Suite 203
North Little Rock, AR 72114
501-993-1234

April 11, 2012

Mr. Scott Bennett
Arkansas Highway & Transportation Department
PO Box 2261
Little Rock, AR 72203

RE; Possible Bridge Replacement Consideration

Dear Mr. Scott,

The Argenta Downtown Council and the Argenta Arts Foundation are writing you in support of the Mayor Hays and Mayor Stodola proposal to convert the Broadway Bridge into a pedestrian bridge and replace it with a new bridge located at Chester and La Harpe Blvd. on the south and Riverfront Drive on the north.

We have great concern regarding the rebuild of the Broadway Bridge and the impact it would have on our downtown area. We are most particularly concerned with the traffic disruption which we believe will send more traffic through our Main Street and neighborhood streets resulting in damage to our streets and pedestrian risks.

We appreciate your consideration in this matter.

Sincerely,

Donna Hardcastle
Executive Director

GARVER
4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

MEETING MINUTES

To: Jennifer Williams, AHTD Consultant Coordinator

Date: April 23, 2012

From: John Ruddell

RE: Meeting with US Corps of Engineers and AHTD
AHTD Job 061275, Arkansas River Strs. & Apprs. (Broadway) (LR/NLR) P.E.

Copies To:

Attachment: Handouts

A meeting was held with Elmo Webb of the US Corps of Engineers to discuss the location of the pedestrian connection on the north side of the river and possible affects on the current levee system. This meeting was held on April 18, 2012 at 2:00 p.m. at the Broadway Bridge. Those in attendance where Elmo Webb, Terry Tucker (AHTD Environmental Division), Jeremy Brooks (Grubbs, Hoskyn, Barton & Wyatt), John Ruddell (Garver) and Seth Yancey (Garver).

After brief introductions the following items were discussed:

1. Mr. Ruddell began the meeting by going over the handouts of the proposed ramp alignments. The alignments presented consisted of the pedestrian ramp being located on top of the existing levee with the inclusion of a supplemental floodwall at the toe of the levee and an alternate alignment with the pedestrian ramp being located on the land side of the existing levee running parallel to Riverfront Dr.
2. Mr. Webb made noted that he preferred the pedestrian ramp to be located on the land side of the levee and that an impervious layer of backfill material should be placed around foundation elements.
3. Mr. Ruddell inquired about leaving sheet pile in place after construction, but Mr. Webb would prefer it to be removed due to the possibility of seepage rising to the surface at the sheet piling. Once the sheet pile is removed any voids should be replaced by an impervious material.
4. Mr. Tucker asked about the high water elevation of the 100 year flood, Mr. Ruddell said that we would get that information for him.
5. Mr. Tucker also requested that we send him any correspondence that we have had with the US Coast Guard. Mr. Ruddell agreed to provide him with all correspondence that he has.

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

Scott E. Bennett
Director
Telephone (501) 569-2000
Voice/TTY 711

P.O. Box 2261
Little Rock, Arkansas 72203-2261
Telefax (501) 569-2400
www.arkansashighways.com

May 16, 2012

Mr. Jim McKenzie
Executive Director
Metroplan
501 West Markham Street, Suite B
Little Rock, Arkansas 72201

Dear Mr. McKenzie:

Reference is made to your request of May 15, 2012 concerning past and future maintenance expenses on the Highway 70 (Broadway) Bridge in the Little Rock/North Little Rock area.

Enclosed is a summary of maintenance costs for materials and labor for the Highway 70 bridge over the last several years.

You also mentioned your or the Cities' intent to obtain the services of a consultant to determine the future cost for maintenance of the bridge if it is converted to non-vehicular use only. The Department recently received "letters of interest" from five consultant firms responding to a request to perform structural inspection of the I-40 Mississippi River Bridge in West Memphis. As requested, we have enclosed a list of the five consultant firms for your possible use. If Metroplan or the Cities employ a consultant to determine future maintenance costs for this bridge, the Department will provide any information which we have available to assist in the consultant's analysis of the structure.

RECEIVED
MAY 17 2012
AHTD
MAINTENANCE DIVISION

If you have any questions concerning the enclosures or need additional information for future analysis, please do not hesitate to contact me.

Sincerely,

Frank Vozel
Deputy Director and
Chief Engineer

Enclosures

c: Highway Commission
Director
Assistant Chief Engineers
Maintenance
Bridge
District 6
Little Rock Mayor Mark Stodola
North Little Rock Mayor Patrick H. Hays
Pulaski County Judge F. G. "Buddy" Villines

Summary of Maintenance Costs
Highway 70 (Broadway Bridge)
Bridge A2978
Arkansas River
Little Rock/North Little Rock

	Heavy Bridge		District 6			
FY 2011			Fun. 486	$237.62		
	Fun. 486	$29,298.78	Fun. 500	$2,346.00		
	Fun. 566	$6,489.94	Fun. 566	$25.92		
		$35,788.72		$2,609.54	*Total -	$38,398.26
FY 2010	Fun. 482	$732.52				
	Fun. 486	$133,521.67 *	Fun. 486	$4,516.74		
	Fun. 488	$9,771.69	Fun. 488	$361.55		
	Fun. 500	$4,980.28	Fun. 500	$1,579.96		
		$149,006.16		$6,458.25	*Total -	$155,464.41
	*Extensive spall repairs to concrete girders = 16 weeks					
FY 2009			Fun. 482	$242.93		
	Fun. 486	$40,366.78	Fun. 486	$298.97		
	Fun. 488	$19,720.09	Fun. 488	$358.30		
	Fun. 500	$3,110.90	Fun. 500	$962.43		
	Fun. 566	$9,321.74	Fun. 566	$236.36		
		$72,519.51		$2,098.99	*Total -	$74,618.50
FY 2008	Fun. 500	$134.29		$0.00	*Total -	$134.29
FY 2007			Fun. 484	$394.96		
	Fun. 486	$109,845.29	Fun. 486	$6,733.19		
	Fun. 488	$3,281.39	Fun. 488	$24.77		
	Fun. 500	$476.70	Fun. 500	$858.00		
		$113,603.38		$8,010.92	*Total -	$121,614.30
FY 2006	Fun. 483	$528.30				
	Fun. 486	$36,463.31				
	Fun. 488	$12,384.64	Fun. 486	$795.48		
	Fun. 495	$1,575.32	Fun. 488	$169.98		
	Fun. 500	$17,289.89	Fun. 500	$1,111.88		
		$68,241.46		$2,077.34	*Total -	$70,318.80

	Heavy Bridge		District 6		
FY 2005	Fun. 483	$468.60			
	Fun. 486	$40,737.84			
	Fun. 488	$62,511.99	Fun. 486	$1,280.19	
	Fun. 500	$1,322.88	Fun. 488	$2,549.78	
	Fun. 566	$5,786.14	Fun. 500	$1,653.55	
		$110,827.45		$5,463.52	*Total - $116,290.97

Function 482 - Bridge Deck Repair (Repairing or patching areas between the curbs of the deck)
Function 483 - Bridge Deck Sealing (Sealing concrete decks from salt and chlorides)
Function 484 - Bridge Joint Repair (Repairs to any type of joint)
Function 486 - Bridge Superstructure Repair (Repairs to beams, girders, truss members, etc.)
Function 488 - Bridge Substructure Repair (Repairs to piers and abutments)
Function 495 - Bridge Cleaning (Cleaning deck, pier caps by sweeping, flushing or water blasting)
Function 500 - Bridge - Miscellaneous (Work not covered by activities above)
Function 566 - Accidents (Repair work due to vehicular accidents)

* Totals include Labor and Materials

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

Scott E. Bennett
Director
Telephone (501) 569-2000
Voice/TTY 711

P.O. Box 2261
Little Rock, Arkansas 72203-2261
Telefax (501) 569-2400
www.arkansashighways.com

May 29, 2012

Mr. Eric Washburn
Bridge Administrator
Eighth Coast Guard District
1222 Spruce Street
St. Louis, MO 63103-2832

Arkansas Job No. 061275
Arkansas River Str. & Apprs.
(Broadway) (LR/NLR) (F)
U.S. Hwy. 70, Pulaski County, Arkansas

Dear Mr. Washburn:

The Arkansas Highway and Transportation Department is preparing a project to replace the existing U.S. Highway 70 (Broadway Street) bridge over the Arkansas River, River Mile 119.1, at Little Rock, Arkansas. See the enclosed location sketch. We had earlier corresponded with your office regarding the horizontal and vertical clearance requirements for the new bridge.

There is local interest for the existing structure to remain in its current location for its use by pedestrians and bicyclists. If left in place, the bridge will be continually maintained and its use by vehicular traffic will be prevented except as required for maintenance activity. The attached sketch shows the existing piers' placement and their relationship to the proposed piers' placement. The vertical clearance for the proposed bridge will match or exceed the vertical clearance of the existing bridge. This is to request your approval for the portion of the existing bridge over the river to remain in its current location in the event local interests will agree to assume ownership and maintenance responsibilities.

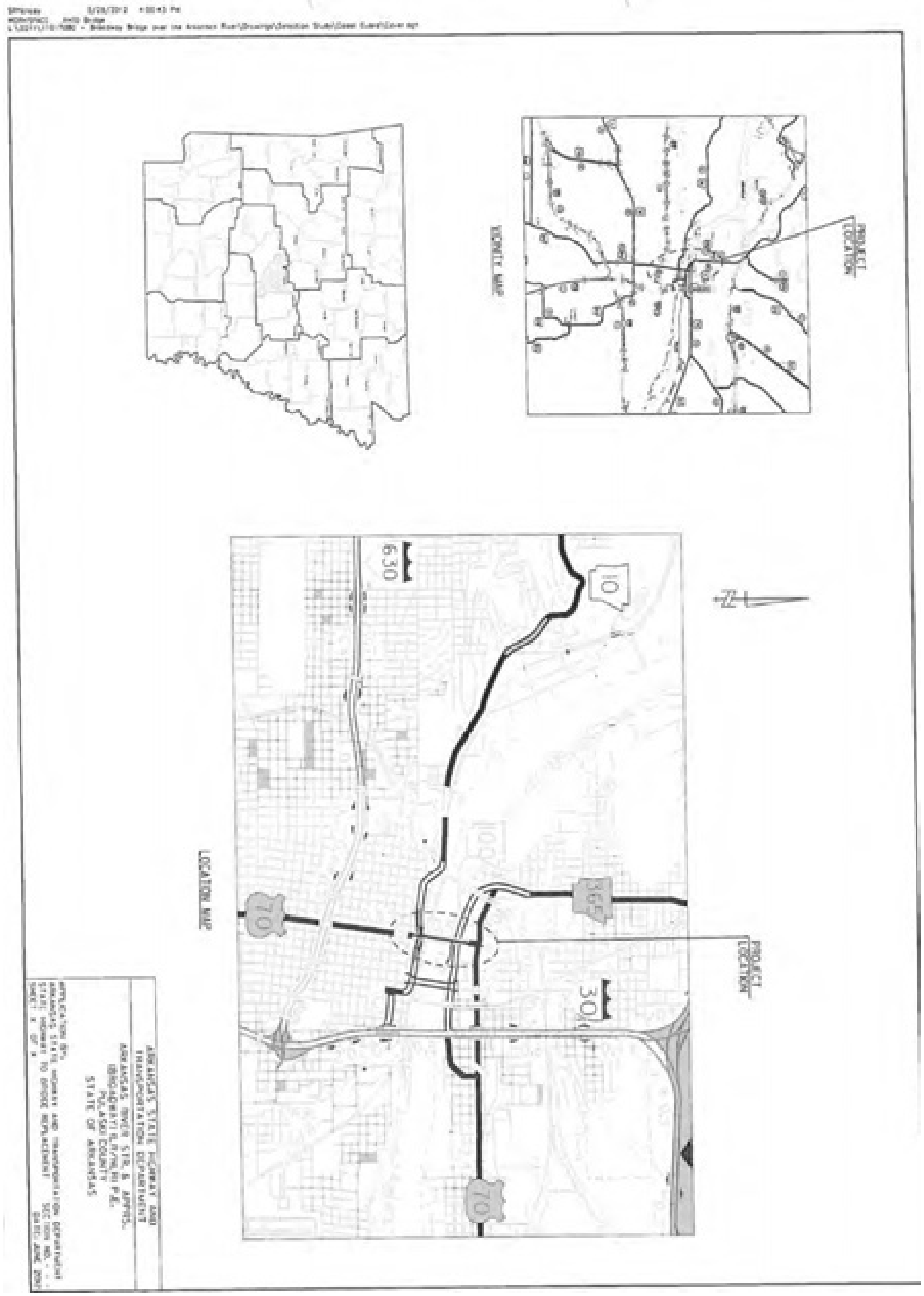
Please contact me at (501) 569-2362 if you need additional information or wish to discuss this matter. Your prompt attention would be greatly appreciated.

Yours truly,

Carl Fuselier

Carl Fuselier
Bridge Engineer

Enclosures
cc & encls.: Environmental Division


VICINITY MAP
PROJECT LOCATION
LOCATION MAP
630
10
70
365
30
PROJECT LOCATION
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
STATE OF ARKANSAS

EXISTING RAMP TO BE REMOVED
PROPOSED PIER (TYP.)
ARKANSAS RIVER
330' NAVIGATION CHANNEL
DOWNSTREAM PIER PROTECTION TO REMAIN
EXISTING PIER (TYP.)
UPSTREAM PIER PROTECTION TO BE REMOVED
EXISTING BROADWAY BRIDGE
PROPOSED BROADWAY BRIDGE
PLAN
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) LR/NLRD P.C.
PULASKI COUNTY
STATE OF ARKANSAS
APPLICATION BY:
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
STATE HIGHWAY TO BRIDGE REPLACEMENT
SECTION NO. -
SHEET # OF #
DATE: JUNE 2002

Bennett, Scott E.

From: Sandra.Otto@dot.gov
Sent: Wednesday, June 06, 2012 2:36 PM
To: Bennett, Scott E.; mckenzie@metroplan.org
Cc: Daniel, Terry W.; Hellin, Amy; Dather, Brent; Otto, Sandra
Subject: Broadway Bridge Replacement Project eligibility and use guidance

Scott and Jim—

We received the following guidance from our Headquarters Bridge office in answer to your eligibility questions—

1. The following bridge replacement/rehabilitation options for the Broadway Bridge under the Highway Bridge Program (HBP) are available at the discretion of the State DOT:
   - HBP funds up to the estimated cost of demolition of the existing structure may be used for improvements to the existing bridge.
   - HBP funds up to the estimated cost of pedestrian and bicycle lanes on a new structure may be used to improve the existing bridge in lieu of providing that function on the replacement structure.
2. Vehicular service on the improved Broadway Bridge structure may be allowed, subject to State design standards for the particular vehicular use and volume.
3. Bridge Inspection Considerations
   - If any public vehicular traffic is allowed on the improved Broadway Bridge, then NBIS inspections would be required. The FHWA considers vehicular use to include limited, seasonal or special occasion use by the public.
   - A bridge that is strictly used by pedestrians and bicycle traffic is not subject to NBIS inspections.
   - Inspection of pedestrian bridges is highly recommended.

Thank you for your patience as we sort through these complex federal program questions.

Sandy

Sandra Otto
Division Administrator
FHWA - Arkansas
ph 501-324-5625

6/6/2012

U.S. Department of Homeland Security
United States Coast Guard

Commander
Eighth Coast Guard District

1222 Spruce Street, Room 2.102D
St. Louis, MO 63103-2832
Staff Symbol: dwb
Phone: (314)269-2382
Fax: (314)269-2737
Email: david.a.orzechowski@uscg.mil
www.uscg.mil/d8/westernriversbridges

16591.1/119.1 ARW
June 20, 2012

Mr. Carl Fuselier
Bridge Engineer
Arkansas State Highway and Transportation Department
P.O. Box 2261
Little Rock, AR 72203-2261

Subj: BROADWAY BRIDGE, MILE 119.1, ARKANSAS WATERWAY

Dear Mr. Fuselier:

This is in reply to your letter dated June 4, 2012 regarding the proposed retention of the subject bridge after a new replacement bridge is built. Your request to retain the existing bridge would be contingent on the bridge being used as a transportation function, i.e. pedestrian. Any potential new owner would have to maintain the existing navigation lighting and all required maintenance responsibilities. If the owner of the bridge discontinues its use, then the Coast Guard will require the owner to remove the structure from the waterway in its entirety or to an elevation deemed appropriate by the responsible Coast Guard District Commander.

If you should have any further questions, please contact Mr. David Orzechowski at (314) 269-2382.

Sincerely,

ERIC A. WASHBURN
Bridge Administrator, Western Rivers
By direction of the District Commander

Mayor's Office
City of Little Rock
500 W. Markham St.
Little Rock, AR 72201

Mayor's Office
City of North Little Rock
300 Main St.
North Little Rock, AR 72114

July 25, 2012

Mr. Scott Bennett
Director
Arkansas Highway and Transportation Department
P.O. Box 2261
Little Rock, AR 72203-2261

Re: Broadway Bridge

Dear Mr. Bennett,

We have reviewed and studied the consultant commissioned structural analysis of the Broadway Bridge pursuant to your offer to transfer the bridge to Little Rock and North Little Rock for use as a bicycle and pedestrian bridge assuming construction of a new bridge immediately to the west. We are also in possession of the renderings of the two bridges side-by-side that you commissioned. Thank you for those renderings.

First, let us say how much we appreciate the effort the Department is making in trying to address the issues of concern that our two cities have expressed regarding this project.

Second, we acknowledge the crossing thoughts that were generated by your comments during yesterday's AHTD Commission meeting. We were unaware that you were going to be making pronouncements prior to talking with us. To date, we only have before us, prior to the transmission of this letter, your comments as communicated by today's article in the Arkansas Democrat-Gazette. Not having the chance to review in greater detail the basis for your comments, we can only hope that this letter will begin a productive dialogue between the AHTD, and the cities of Little Rock and North Little Rock, which could further clarify what now appears to be opposite viewpoints on a number of issues regarding the present status and potential use of the existing Broadway Bridge. Regrettably, we cannot accept your offer to transfer the bridge to our two cities for the following reasons:

- As you have deduced from the consultants' report, the recommendation for long-term continued use of the bridge for pedestrian use contemplates rehabilitation that is estimated to cost $16 to $24 million. This is significantly in excess of the $3 million in foregone demolitions costs that you have indicated might be available in bridge replacement money at the Department's discretion. The projected costs for rehabilitation of the structure are far more than our strained municipal budgets can afford in the foreseeable future.

- Unfortunately, the aesthetics and presentation of the bridge for pedestrian usage, destination and bicycle usage is unworkable. When we first proposed the replacement bridge at the Chester Street location, we envisioned the entrance to the Broadway Bridge as a destination with broad entry plazas on each side of the bridge. From the renderings you provided such entry point plazas would understandably be taken by the new bridge requirement to return back to the original street alignment, leaving only a narrow sidewalk for entry onto the bridge. In addition, on the south side, the steep angle of the bridge curvature will make it very difficult, if not impossible, for tractor-trailers to access the new loading dock at Robinson Center as currently planned. This later consideration also argues against building a new bridge parallel to the existing structure even if it is ultimately removed. Additionally, the height differential of the two bridges side-by-side will obscure the view of the river to the west and the 25-foot minimum distance between the two bridges raises additional concerns about traffic noise and the requirement to have a baffle barrier between the bridges which will further obscure sight lines.
- Finally, the extreme curvature of the new span in order to align with the existing right-of-way raises additional safety concerns as the span descends quickly toward its intersection with Markham street.

However, the consultant's report does provide another viable and realistic option – that of rehabilitation of the existing Broadway Bridge, extending its life for another 50 years. The benefit of this option is attractive from both an economic and community perspective. In forming their conclusions, our consultants also had the benefit of receiving past AHTD Broadway Bridge reports, including maintenance logs, inspections findings and scour reports performed by your staff.

First, the consultant's assessment puts complete rehabilitation costs at $16-25 million. This is far less than the $58 million currently estimated for a new plate girder bridge. The consultant's report emphasizes that the major deterioration of the Broadway Bridge exists on the sidewalks which are cantilevered off the side of the bridge's main substructure. Subsequent conversations with them lead us to believe that during rehabilitation the sidewalks and also the travel lanes, if necessary, can be widened and replaced to meet current functional needs.

Second, a major advantage to rehabilitation is that bridge traffic can be maintained during most of the work, obviating a complete shutdown of the bridge and the estimated $40 million economic loss resulting from the existing bridge being torn down. Shutting down the bridge for two years will create major traffic congestion and havoc for both cities' downtown areas. As you point out, 23,000+ cars use the Broadway Bridge daily.

We understand AHTD has always been concerned that programmed, but unused Highway Bridge funds, for FY2013 would have to be returned to the federal government. However, the newly passed MAP-21 Transportation Bill, which becomes effective October 1st, 2012, eliminates the federal Highway Bridge Program

as a separate designation. Those funds will now be a part of the National Highway Performance Program and the Surface Transportation Program, either of which can be used on the Broadway Bridge or any of the other many unfunded highway projects AHTD has statewide. AHTD is no longer in danger of losing obligation authority for FY2013.

Even under the old Transportation Bill, SAFETEA-LU, the money originally allocated for the Broadway Bridge would not have to be returned. U.S.C. Title 23 Program Transfer Provisions allow Highway Bridge Program funds of up to 50% to be transferred to several other various fund programs (see § 23 U.S.C. 144). We were not advised of this by AHTD, but only learned of this through the Research Department of the US Conference of Mayors (USCM).

With the enactment of MAP-21, we believe we now have more time to explore a successful resolution to the challenges presented. If the ½-cent sales tax election is successful in November, we have the potential to partner with AHTD, with a portion of the turnback funds that will come to our two cities. This additional source of funds could be of major assistance in resolving the many issues and alternatives which have been previously discussed.

Presently, we jointly recommend that AHTD undertake a complete rehabilitation of the Broadway Bridge in lieu of bridge replacement. Such an approach will save tax dollars, reduce the negative impact that shutting down the bridge will have on the traveling public and will result in major structural improvements to a bridge that has served us so well for the last 90 years.

We would request a meeting with you and Sandra Otto, Director of the Federal Highway Administration, to discuss these issues further and the additional options presented to us with the passage of the new federal Highway Fund legislation.

We look forward to working with the Department on a successful and mutually acceptable project for the Broadway Bridge.

Most Sincerely,

Mark Stodola
Little Rock Mayor

Pat Hays
North Little Rock Mayor

cc: Highway Commission
Governor Mike Beebe
Sandra Otto, Federal Highway Administration
Metroplan
Little Rock Regional Chamber of Commerce
North Little Rock Chamber of Commerce