APPENDIX C – CULTURAL RESOURCES PROGRAMMATIC AGREEMENT (PA) AND WORK PLAN

C.1 CONSULTATION WITH THE SHPO AND NATIVE AMERICAN GROUPS REGARDING PHASE II REPORT AND THE DEVELOPMENT OF THE PROGRAMMATIC AGREEMENT (PA)..... C-3
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This Appendix C contains response letters from Native American Groups requesting to be participants in the development of the Programmatic Agreement (PA). It contains the PA among the Federal Highway Administration; Arkansas State Highway and Transportation Department; Little Rock District, Army Corps of Engineers; and Arkansas State Historic Preservation Office. The associated Work Plan for Phase II NRHP Evaluations of 20 Archaeological Sites in the Proposed River Valley Intermodal Facilities, Pope County, Arkansas is also contained in this Appendix.

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C.1 CONSULTATION WITH THE SHPO AND NATIVE AMERICAN GROUPS REGARDING PHASE II REPORT AND THE DEVELOPMENT OF THE PROGRAMMATIC AGREEMENT (PA)

080157

RECEIVED
AHTD

JUL 26 2012

ENVIRONMENTAL
DIVISION

The Department of
Arkansas Heritage

Mike Beebe
Governor

Cathie Matthews
Director

Arkansas Arts Council
•
Arkansas Natural Heritage Commission
•
Delta Cultural Center
•
Historic Arkansas Museum
•
Mosaic Templars Cultural Center
•
Old State House Museum

Arkansas Historic Preservation Program

1500 Tower Building
323 Center Street
Little Rock, AR 72201
(501) 324-9880
fax: (501) 324-9184
tdd: (501) 324-9811
e-mail:
info@arkansaspreservation.org
website:
www.arkansaspreservation.com

An Equal Opportunity Employer

July 25, 2012

Mr. Randal Looney
Environmental Coordinator
Arkansas Division
Federal Highway Administration
700 W. Capitol Avenue, Room 3130
Little Rock, Arkansas 72201-3298

RE: Multi County – General
Section 106 Review – FHWA
Report Titled "Phase II Testing of Archaeological Sites at the River Valley Intermodal Facility Alternatives, Johnson and Pope Counties, Arkansas"
AHPP Tracking Number 49225

Dear Mr. Looney:

My staff has reviewed the referenced Phase II archeological testing report. It is thorough, comprehensive, and well written. We also concur with the findings and conclusions presented therein. Specifically, eight archeological sites (3PP449/3PP611, 3PP610, 3PP681, 3PP682, 3PP729, 3PP733, 3PP740, and 3JO715) are eligible for inclusion in the National Register of Historic Places, while 22 sites discussed in the report are ineligible. Also, two properties (3PP722 and 3PP743) were not tested due to land owner access issues. Therefore, the National Register eligible properties in the selected alternative should be avoided and protected, or mitigated by archeological data recovery. No further work or protection is needed on the ineligible sites.

To move forward with the Section 106 review process, the Federal Highway Administration should develop a Programmatic Agreement to address land owner access issues and the two unevaluated sites, and develop a treatment plan for historic properties. We can then proceed with our review of this undertaking.

Thank you for your interest and concern for the cultural heritage of Arkansas. If you have any questions, please contact George McCluskey of my staff at (501) 324-9880.

Sincerely,

George M. Cluskey

Frances McSwain
Deputy State Historic Preservation Officer

cc: Dr. John Eddins, Advisory Council on Historic Preservation
Mr. Chris Davies, U.S. Army Corps of Engineers, Little Rock District
Mr. Lynn P. Malbrough, Arkansas State Highway and Transportation Department
Mr. Robert Cast, Caddo Nation
Dr. Richard Allen, Cherokee Nation of Oklahoma
Ms. Lisa Larue Baker, United Keetoowah Band of Cherokee Indians
Dr. Andrea Hunter, Osage Nation
Ms. Jean Ann Lambert, Quapaw Tribe of Oklahoma
Mr. C. Andrew Buchner, Panamerican Consultants, Inc.
Dr. Ann M. Early, Arkansas Archeological Survey

U.S. Department of Transportation
Federal Highway Administration

Arkansas Division

700 West Capitol Ave
Suite 3130
Little Rock AR 72201
(501) 324-6423

August 9, 2012

In Reply Refer To:
AHTD Job No. 080157
Arkansas River Valley Intermodal Facility
Johnson County, Arkansas

Mr. Robert Cast
Tribal Historic Preservation Officer
Caddo Nation
P.O. Box 487
Binger, OK 73009

Dear Mr. Cast: Robert

As part of continued consultation with the Caddo Nation on the Arkansas River Valley Intermodal Facility, a copy of the Phase II testing results for the project is enclosed for your review and comment. The Arkansas State Historic Preservation Officer (SHPO) reviewed the report and provided comments on July 25, 2012. A copy of that correspondence is also enclosed. The SHPO recommended our agency develop a Programmatic Agreement (PA) to address land owner access issues encountered during the Phase II field work, and also develop a treatment plan for historic properties and further, avoid National Register eligible properties and/or protect/mitigate them through data recovery. The FHWA intends to proceed in this fashion and invite tribal nations to participate in the development of the PA.

A Supplemental Draft Environmental Impact Statement (SDEIS) has been prepared for the project and due to the high number of archeological sites present in the project area, it was FHWA's decision to perform Phase II archeology prior to developing a PA so that more in-depth information would be available to share with tribal nations and aid in the identification of a preferred alternative location for the project. While no formal decision has been made at this time, the Green Alternative (Figure 1-01 of the enclosed report) is being considered as the preferred. This designation must be made prior to moving forward with the development of a Final EIS (FEIS), of which and the development of the PA and treatment plan will be major component.

Upon your review of the report and if this process as described above is acceptable to the Caddo Nation, we respectfully request that you respond within 30 days and we will submit for your review a draft PA and treatment plan.

As always, we appreciate the input we receive from the Caddo Nation on our projects and look forward to working with you on the PA and treatment plan. If you have any questions or concerns, please do not hesitate to contact me at (501) 324-6430 or via email at Randal.looney@dot.gov.

Sincerely,

Randal Looney
Environmental Coordinator

Enclosure

U.S. Department of Transportation
Federal Highway Administration

Arkansas Division

700 West Capitol Ave
Suite 3130
Little Rock AR 72201
(501) 324-6423

August 9, 2012

In Reply Refer To:
AHTD Job No. 080157
Arkansas River Valley Intermodal Facility
Johnson County, Arkansas

Dr. Richard Allen
Historic Preservation Program
Cherokee Nation of Oklahoma
P.O. Box 948
Tahlequah, OK 74465

Dear Dr. Allen:

As part of continued consultation with the Cherokee Nation of Oklahoma on the Arkansas River Valley Intermodal Facility, a copy of the Phase II testing results for the project is enclosed for your review and comment. The Arkansas State Historic Preservation Officer (SHPO) reviewed the report and provided comments on July 25, 2012. A copy of that correspondence is also enclosed. The SHPO recommended our agency develop a Programmatic Agreement (PA) to address land owner access issues encountered during the Phase II field work, and also develop a treatment plan for historic properties and further, avoid National Register eligible properties and/or protect/mitigate them through data recovery. The FHWA intends to proceed in this fashion and invite tribal nations to participate in the development of the PA.

A Supplemental Draft Environmental Impact Statement (SDEIS) has been prepared for the project and due to the high number of archeological sites present in the project area, it was FHWA's decision to perform Phase II archeology prior to developing a PA so that more in-depth information would be available to share with tribal nations and aid in the identification of a preferred alternative location for the project. While no formal decision has been made at this time, the Green Alternative (Figure 1-01 of the enclosed report) is being considered as the preferred. This designation must be made prior to moving forward with the development of a Final EIS (FEIS), of which and the development of the PA and treatment plan will be major component.

Upon your review of the report and if this process as described above is acceptable to the Cherokee Nation of Oklahoma, we respectfully request that you respond within 30 days and we will submit for your review a draft PA and treatment plan.

As always, we appreciate the input we receive from the Cherokee Nation of Oklahoma on our projects and look forward to working with you on the PA and treatment plan. If you have any questions or concerns, please do not hesitate to contact me at (501) 324-6430 or via email at Randal.looney@dot.gov.

Sincerely,

Randal Looney
Environmental Coordinator

Enclosure

U.S. Department of Transportation
Federal Highway Administration

Arkansas Division

700 West Capitol Ave
Suite 3130
Little Rock AR 72201
(501) 324-6423

August 9, 2012

In Reply Refer To:
AHTD Job No. 080157
Arkansas River Valley Intermodal Facility
Johnson County, Arkansas

Dr. Andrea A. Hunter
Osage Nation Historic Preservation Office
Osage Nation
627 Grandview
Pawhuska, OK 74056

Dear Dr. Hunter:

As part of continued consultation with the Osage Nation on the Arkansas River Valley Intermodal Facility, a copy of the Phase II testing results for the project is enclosed for your review and comment. The Arkansas State Historic Preservation Officer (SHPO) reviewed the report and provided comments on July 25, 2012. A copy of that correspondence is also enclosed. The SHPO recommended our agency develop a Programmatic Agreement (PA) to address land owner access issues encountered during the Phase II field work, and also develop a treatment plan for historic properties and further, avoid National Register eligible properties and/or protect/mitigate them through data recovery. The FHWA intends to proceed in this fashion and invite tribal nations to participate in the development of the PA.

A Supplemental Draft Environmental Impact Statement (SDEIS) has been prepared for the project and due to the high number of archeological sites present in the project area, it was FHWA's decision to perform Phase II archeology prior to developing a PA so that more in-depth information would be available to share with tribal nations and aid in the identification of a preferred alternative location for the project. While no formal decision has been made at this time, the Green Alternative (Figure 1-01 of the enclosed report) is being considered as the preferred. This designation must be made prior to moving forward with the development of a Final EIS (FEIS), of which and the development of the PA and treatment plan will be major component.

Upon your review of the report and if this process as described above is acceptable to the Osage Nation, we respectfully request that you respond within 30 days and we will submit for your review a draft PA and treatment plan.

As always, we appreciate the input we receive from the Osage Nation on our projects and look forward to working with you on the PA and treatment plan. If you have any questions or concerns, please do not hesitate to contact me at (501) 324-6430 or via email at Randal.looney@dot.gov.

Sincerely,

Randal Looney
Environmental Coordinator

Enclosure

U.S. Department of Transportation
Federal Highway Administration

Arkansas Division

700 West Capitol Ave
Suite 3130
Little Rock AR 72201
(501) 324-6423

August 9, 2012

In Reply Refer To:
AHTD Job No. 080157
Arkansas River Valley Intermodal Facility
Johnson County, Arkansas

Jean Ann Lambert
Tribal Historic Preservation Officer
Quapaw Tribe of OK
P.O. Box 765
Quapaw, OK 74363

Dear Ms Lambert:

As part of continued consultation with the Quapaw Tribe of Oklahoma on the Arkansas River Valley Intermodal Facility, a copy of the Phase II testing results for the project is enclosed for your review and comment. The Arkansas State Historic Preservation Officer (SHPO) reviewed the report and provided comments on July 25, 2012. A copy of that correspondence is also enclosed. The SHPO recommended our agency develop a Programmatic Agreement (PA) to address land owner access issues encountered during the Phase II field work, and also develop a treatment plan for historic properties and further, avoid National Register eligible properties and/or protect/mitigate them through data recovery. The FHWA intends to proceed in this fashion and invite tribal nations to participate in the development of the PA.

A Supplemental Draft Environmental Impact Statement (SDEIS) has been prepared for the project and due to the high number of archeological sites present in the project area, it was FHWA's decision to perform Phase II archeology prior to developing a PA so that more in-depth information would be available to share with tribal nations and aid in the identification of a preferred alternative location for the project. While no formal decision has been made at this time, the Green Alternative (Figure 1-01 of the enclosed report) is being considered as the preferred. This designation must be made prior to moving forward with the development of a Final EIS (FEIS), of which and the development of the PA and treatment plan will be major component.

Upon your review of the report and if this process as described above is acceptable to the Quapaw Tribe of Oklahoma, we respectfully request that you respond within 30 days and we will submit for your review a draft PA and treatment plan.

As always, we appreciate the input we receive from the Quapaw Tribe of Oklahoma on our projects and look forward to working with you on the PA and treatment plan. If you have any questions or concerns, please do not hesitate to contact me at (501) 324-6430 or via email at Randal.looney@dot.gov.

Sincerely,

Randal Looney
Environmental Coordinator

Enclosure

U.S. Department of Transportation
Federal Highway Administration

Arkansas Division

700 West Capitol Ave
Suite 3130
Little Rock AR 72201
(501) 324-6423

August 9, 2012

In Reply Refer To:
AHTD Job No. 080157
Arkansas River Valley Intermodal Facility
Johnson County, Arkansas

Ms. Lisa Larue-Baker
Historic Preservation Officer
United Keetoowah Band of Cherokee Indians
P.O. Box 746
Tahlequah, OK 74465

Dear Ms Larue-Baker:

As part of continued consultation with the United Keetoowah Band of Cherokee Indians on the Arkansas River Valley Intermodal Facility, a copy of the Phase II testing results for the project is enclosed for your review and comment. The Arkansas State Historic Preservation Officer (SHPO) reviewed the report and provided comments on July 25, 2012. A copy of that correspondence is also enclosed. The SHPO recommended our agency develop a Programmatic Agreement (PA) to address land owner access issues encountered during the Phase II field work, and also develop a treatment plan for historic properties and further, avoid National Register eligible properties and/or protect/mitigate them through data recovery. The FHWA intends to proceed in this fashion and invite tribal nations to participate in the development of the PA.

A Supplemental Draft Environmental Impact Statement (SDEIS) has been prepared for the project and due to the high number of archeological sites present in the project area, it was FHWA's decision to perform Phase II archeology prior to developing a PA so that more in-depth information would be available to share with tribal nations and aid in the identification of a preferred alternative location for the project. While no formal decision has been made at this time, the Green Alternative (Figure 1-01 of the enclosed report) is being considered as the preferred. This designation must be made prior to moving forward with the development of a Final EIS (FEIS), of which and the development of the PA and treatment plan will be major component.

Upon your review of the report and if this process as described above is acceptable to the United Keetoowah Band of Cherokee Indians, we respectfully request that you respond within 30 days and we will submit for your review a draft PA and treatment plan.

As always, we appreciate the input we receive from the United Keetoowah Band of Cherokee Indians on our projects and look forward to working with you on the PA and treatment plan. If you have any questions or concerns, please do not hesitate to contact me at (501) 324-6430 or via email at Randal.looney@dot.gov.

Sincerely,

Randal Looney
Environmental Coordinator

Enclosure

TRIBAL HISTORIC PRESERVATION OFFICE

Date: September 27, 2012 **File: 1112-1211AR-9**

RE: AHTD Job No. 080157; River Valley Intermodal Facility PA development

Mr. Randal Looney
Environmental Coordinator
Arkansas Division
Federal Highway Administration
700 W. Capitol Ave., Room 3130
Little Rock, Arkansas 72201-3298

Dear Mr. Looney,

On August 14th, 2012 the Osage Nation received the report titled: "Phase II Testing of Archaeological Sites at the River Valley Intermodal Facility Alternatives, Johnson and Pope Counties, Arkansas" and agree with the SHPO that it is thorough, comprehensive and well-written. We concur with the SHPO that FHWA should develop a Programmatic Agreement to address land owner issues and the two unevaluated sites, and develop a treatment plan for historic properties. The Osage Nation requests to participate in the development of the Programmatic Agreement and the treatment plan as a consulting party.

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

Please contact the Osage Nation Historic Preservation Office with your response to this request. Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation.

Sincerely,

Andrea A. Hunter

Dr. Andrea A. Hunter
Tribal Historic Preservation Officer

Barker Fariss, Ph.D.
Archaeologist I

627 Grandview, Pawhuska, OK 74056, (918) 287-5328, Fax (918) 287-5376

From: Lisa LaRue-Baker - UKB THPO [mailto:ukbthpo-larue@yahoo.com]
Sent: Wednesday, August 29, 2012 11:00 PM
To: Looney, Randal (FHWA)
Cc: lstapleton@unitedkeetoowahband.org
Subject: RE: Arkansas River Valley Intermodal Facility

Yes, please! Or if it's on a PDF, you could send me that :-)
Thanks!

Lisa LaRue-Baker
Acting THPO
United Keetoowah Band of Cherokee Indians in Oklahoma
PO Box 746
Tahlequah, OK 74465

c 918.822.1952 f 918.458.6889
ukbthpo-larue@yahoo.com

--- On **Wed, 8/29/12, Randal.Looney@dot.gov <*Randal.Looney@dot.gov*>** wrote:

From: Randal.Looney@dot.gov <Randal.Looney@dot.gov>
Subject: RE: Arkansas River Valley Intermodal Facility
To: ukbthpo-larue@yahoo.com
Cc: lstapleton@unitedkeetoowahband.org
Date: Wednesday, August 29, 2012, 7:39 AM

Will do Lisa and thank you. When you say information on the "archeological sites", do you want a copy of the Phase II testing report? We look forward to working with you all on the PA as well. Thanks - Randal

1

From: Lisa LaRue-Baker - UKB THPO [mailto:ukbthpo-larue@yahoo.com]
Sent: Tuesday, August 28, 2012 8:15 PM
To: Looney, Randal (FHWA)
Cc: lstapleton@unitedkeetoowahband.org
Subject: Arkansas River Valley Intermodal Facility

The UKB would like to take part in the development of the Programmatic Agreement for this project.

Can you please send me the SHPO comments, and information on the archeological sites, as they were somehow separated from the letter by the time it reached my desk. FOR THIS CORRESPONDENCE ONLY, please send to the following address, so I can be sure and receive it in a timely manner: Lisa LaRue-Baker, 4283 Murietta Ave., #9, Sherman Oaks, CA 91423 ALL OTHER CORRESPONDENCE should continue to be sent to the UKB tribal headquarters.

Thank you, and the UKB looks forward to working with you on this project.

Lisa LaRue-Baker

Acting THPO

United Keetoowah Band of Cherokee Indians in Oklahoma

PO Box 746

Tahlequah, OK 74465

c 918.822.1952 f 918.458.6889

ukbthpo-larue@yahoo.com

2

C.2 PROGRAMMATIC AGREEMENT (PA)

PROGRAMMATIC AGREEMENT
AMONG THE
FEDERAL HIGHWAY ADMINISTRATION;
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT;
LITTLE ROCK DISTRICT, ARMY CORPS OF ENGINEERS;
RIVER VALLEY REGIONAL INTERMODAL FACILITIES AUTHORITY;
ARKANSAS STATE HISTORIC PRESERVATION OFFICE
REGARDING THE CONSTRUCTION OF THE RIVER VALLEY INTERMODAL FACILITIES, RUSSELLVILLE, ARKANSAS

WHEREAS, the Federal Highway Administration (FHWA) has determined that the proposed River Valley Intermodal Facilities located near Russellville, Arkansas is necessary to promote economic development in central Arkansas; and

WHEREAS, a Preferred Alternative for the Undertaking was selected and consists of approximately 882 acres located in the floodplain of the Arkansas River which constitutes the Area of Potential Effects (Attachment A); and

WHEREAS, the FHWA has determined that the Undertaking will have an effect on properties that are listed in or eligible for inclusion in the National Register of Historic Places (NRHP) and in accordance with 36 Code of Federal Regulations (CFR) Part 800 Protection of Historic Resources, regulations implementing Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470f), must address these effects; and

WHEREAS, the FHWA is the Lead Federal Agency for this undertaking (36 CFR Part 800.2(a)(2)); and

WHEREAS, the Advisory Council on Historic Preservation (the Council) has been invited to participate and has chosen not to be a signatory to this agreement; and

WHEREAS, identification and evaluation surveys were conducted within portions of the proposed River Valley Intermodal Facilities to identify resources listed, or eligible for inclusion, in the NRHP and seven archaeological sites (sites 3PP449/3PP611, 3PP610, 3PP681, 3PP682, 3PP729, 3PP733, and 3PP740) were determined eligible (Attachment B); and

WHEREAS, previous cultural resources investigations indicate that twenty archaeological sites occur in portions of the River Valley Intermodal Facilities not yet subject to evaluation survey (Attachment C), and some of these resources may be considered NRHP-eligible and may be affected by the Undertaking; and

WHEREAS, the Caddo Nation, Cherokee Nation of Oklahoma, Quapaw Tribe of Oklahoma, the Osage Nation, and the United Keetoowah Band of Cherokee Indians (Tribes) have been included through consultation and in drafting this agreement and have been invited to be signatories to this Programmatic Agreement (PA); and

WHEREAS, the consultations stipulations with the Arkansas State Historic Preservation Office (SHPO), the Tribes, and other consulting parties as set forth in 36 CFR Part 800.4 through 800.6 shall apply in this PA; and

NOW, THEREFORE, the signatories agree that the following stipulations will be implemented to take into account the effect of this undertaking on these historic properties.

STIPULATIONS

FHWA will ensure that the following stipulations are carried out prior to taking any action that could have an effect on historic properties.

I. NRHP EVALUATION OF CULTURAL RESOURCES

FHWA, in consultation with the Arkansas SHPO, the Tribes, and other consulting parties as appropriate, will ensure that Phase II investigations to determine eligibility for listing on the NRHP of twenty archaeological sites located in the southern portion of the project area (Attachment C) will be conducted prior to construction.

A. A Phase II research design and work plan has been prepared in consultation with the Arkansas SHPO, the Tribes, and other consulting parties as appropriate (Attachment D). The Phase II research design and work plan will be approved by the Arkansas SHPO and reviewed by the Tribes and other consulting parties prior to implementation.

B. At the completion of fieldwork, FHWA will notify the Arkansas SHPO of the preliminary findings and submit the Phase II technical report detailing the eligibility recommendations for review and concurrence within 120 days.

C. In the event that any archaeological site is determined NRHP-eligible and cannot be avoided through project redesign, FHWA will follow the procedures described in Stipulation II.B.

II. TREATMENT OF HISTORIC PROPERTIES

Those individual historic properties that FHWA and the Arkansas SHPO agree are eligible for listing in the NRHP and that will be adversely affected by the Undertaking, will be treated by FHWA in the following manner:

A. Avoidance through project redesign and preservation in place will be the preferred treatment.

B. Although avoidance and preservation are preferred, if FHWA determines, in consultation with the Arkansas SHPO, that no other actions are feasible to avoid and minimize effects to historic properties, then FHWA, the Arkansas SHPO, the Tribes, and

other consulting parties will determine the appropriate mitigation measure(s) to resolve the "Adverse Effect" to historic properties.

C. FHWA will ensure that treatment plans are developed, which may include archaeological data recovery, and implement the treatment plans in consultation with the Arkansas SHPO, the Tribes, and other consulting parties.

D. If data recovery is the agreed upon treatment, individual data recovery plans for each site will be prepared and each plan will address substantive research questions developed in consultation with the Arkansas SHPO. It shall specify, at a minimum, the following:

1. The property, properties, or portions of properties where the treatment plan is to be carried out;

2. The research questions to be addressed, with an explanation of research relevance and importance;

3. The methods to be used, with an explanation of methodological relevance to the research questions;

4. Proposed methods of disseminating results of the work to the interested public; and

5. A proposed schedule for the submission of progress reports to the Arkansas SHPO.

E. FHWA shall submit the treatment plan to the Arkansas SHPO, the Tribes, and other consulting parties for a 30-day review and comment to determine whether the measures are sufficient to reduce or mitigate adverse effects to historic properties. FHWA will take into account the Arkansas SHPO comments, and shall ensure that the data recovery plan is implemented. The Arkansas SHPO may monitor this implementation. Should there be a disagreement between FHWA and the Arkansas SHPO that cannot be resolved, FHWA shall contact the Council and request comment on the dispute in accordance with Stipulation IX of this PA.

F. FHWA will ensure that adequate provisions, including personnel, time, and laboratory space, are available for the analysis and curation of recovered materials from historic properties.

G. FHWA will develop and implement an adequate program in consultation with the Arkansas SHPO to secure historic properties from vandalism during data recovery.

III. DATA RECOVERY FOR SITES 3PP449/3PP611, 3PP610, 3PP681, 3PP682, 3PP729, 3PP733, AND 3PP740

Archaeological sites 3PP449/3PP611, 3PP610, 3PP681, 3PP682, 3PP729, 3PP733, and 3PP740 have been determined eligible and are within the limits of the project. If the sites cannot be avoided through project redesign, FHWA, in consultation with the Arkansas SHPO, the Tribes, and other consulting parties as appropriate, will ensure that data recovery investigations for these seven sites will be conducted prior to construction.

A. Data recovery plans for sites 3PP449/3PP611, 3PP610, 3PP681, 3PP682, 3PP729, 3PP733, and 3PP740 have been prepared in consultation with the Arkansas SHPO, the Tribes, and other consulting parties as appropriate (Attachment E).

B. FHWA shall submit the data recovery plans to the Arkansas SHPO, the Tribes, and other consulting parties for a 30-day review and comment to determine whether the measures are sufficient to reduce or mitigate adverse effects to historic properties. FHWA will take into account the Arkansas SHPO comments, and shall ensure that the data recovery plans are implemented. The Arkansas SHPO may monitor this implementation. Should there be a disagreement between FHWA and the Arkansas SHPO that cannot be resolved, FHWA shall contact the Council and request comment on the dispute in accordance with Stipulation IX of this PA.

C. FHWA will ensure that adequate provisions, including personnel, time, and laboratory space, are available for the analysis and curation of recovered materials from historic properties.

D. FHWA will develop and implement an adequate program in consultation with the Arkansas SHPO to secure historic properties from vandalism during data recovery.

IV. PROFESSIONAL QUALIFICATIONS STANDARDS

FHWA will ensure that all cultural resources work is conducted under the direct supervision of an individual, or individuals, who meet the *Secretary of the Interior's Professional Qualifications Standards* for an archeologist (48 FR 44716).

V. REPORTING STANDARDS

FHWA will ensure that all work plans, data recovery plans, and archeological technical reports meet the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* (48 FR 44716-39) and the Guidelines for Archeological Fieldwork and Report Writing in *A State Plan for the Conservation of Archeological Resources in Arkansas* (Davis and Early, 2010).

VI. HUMAN REMAINS

Human remains, burial furniture or sacred items, as defined in the Native American Graves Protection and Repatriation Act (NAGPRA), the Archaeological Resources Protection Act (ARPA), and the Arkansas burial law (Act 753 of 1991, as amended) may be present in the project area. If they are encountered, the procedures outlined below will be followed.

A. The treatment of human remains and associated funerary objects will be in compliance with NAGPRA, the Archaeological Resources Protection Act (ARPA), the recommended guidance set forth in the Council's *Policy Statement Regarding the Treatment of Burial Sites, Human Remains, and Funerary Objects* published February 23, 2007, and the Arkansas burial law (Arkansas Act 753 of 1991, as amended). Other than a crime scene, no human remains will be removed or excavated without first securing a burial excavation permit from the Arkansas Historic Preservation Program (AHPP).

B. If human remains are discovered, FHWA will ensure that all activities in the area that could disturb the remains, associated burial furniture, or sacred items are suspended. The remains will be left as found and reasonable measures taken to protect the find until the proper authorities can be notified. A ten (10) meter buffer area will be established surrounding the remains and no ground disturbance will occur therein.

C. FHWA will immediately contact the appropriate law enforcement agency, as required by federal and state law. If it is obvious that the remains are non-Indian, or if law enforcement officials assume jurisdiction of the remains (as in the case of a homicide, missing persons case, or unreported death), then there will be no need to contact the Tribes for further consultation. FHWA will notify the Arkansas SHPO and appropriate next of kin, if known, and comply with the relevant requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, ARPA, and the Arkansas burial law (Act 753 of 1991, as amended).

D. If preliminary evaluation of the find indicates that the remains are not a crime scene and are, or could be, Native American, then FHWA will contact the Arkansas SHPO and the signatory Tribes within 24 hours. The parties will consult as per the regulations set forth in 36 CFR Part 800, the Council's *Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects*, ARPA, NAGPRA, and the guidelines for the Arkansas burial law (Act 753 of 1991, as amended). If the remains are not Native American, FHWA will consult with the Arkansas SHPO, living descendants, or other interested parties.

E. In cases of uncertain cultural affiliation of Native American remains, FHWA will consult with the Arkansas SHPO and the signatory Tribes in the Section 106 review process regarding the treatment and disposition of the remains. All decisions will be made in compliance with NAGPRA, ARPA, Section 106 (36 CFR Part 800), the

Council's *Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects* and the Arkansas burial law (Act 753 of 1991, as amended).

VII. TRIBAL CONSULTATION

FHWA consultation with the signatory Tribes will remain open throughout the review of this undertaking. Consultation methods will vary depending on the needs of the Tribes. These may include phone calls, emails, formal written correspondence, on-site meetings, and providing various levels of documentation for review.

VIII. POST REVIEW DISCOVERIES

If either FHWA or the Arkansas SHPO determines, at any time, that the undertaking will affect a previously unidentified property that may be eligible for inclusion in the NRHP, or affect a known historic property in an unanticipated manner, they will address the discovery or unanticipated effect in accordance with 36 CFR Part 800.13.

IX. DISPUTE RESOLUTION

Should any signatory object to any findings, proposed actions or determinations made pursuant to this agreement, FHWA will consult with the objecting party to resolve the objection. If FHWA determines that the objection cannot be resolved, it will request comment from the Council pursuant to 36 CFR Part 800.6. Any Council comment provided in response to such a request will be taken into account by FHWA in accordance with 36 CFR Part 800.6(b) (2) with reference only to the subject of the dispute. FHWA responsibility to carry out all other actions under this PA that are not subject to the dispute shall remain unchanged.

X. AMENDING THE AGREEMENT

Should any signatory to this agreement believe that the terms are not being met or cannot be met, that party will immediately notify FHWA and request consultation to amend this agreement in accordance with 36 CFR Part 800. The process to amend this agreement will be conducted in a manner similar to that leading to the execution of this agreement.

XI. TERMINATING THE AGREEMENT

Any signatory to this agreement may terminate it by providing 30 calendar days notice to the other parties, provided that the parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of termination, FHWA will comply with 36 CFR Part 800.4 through 800.6 with regard to the undertaking covered by this agreement.

XII. FAILURE TO CARRY OUT THE AGREEMENT

In the event FHWA does not carry out the terms of this agreement, FHWA will comply with 36 CFR Part 800.4 through 800.6 with regard to the undertaking covered by this agreement.

XIII. FULLFILLMENT OF SECTION 106 RESPONSIBILITIES UNDER THE NHPA

Execution and implementation of this PA evidences that FHWA has afforded the Council a reasonable opportunity to comment pursuant to 36 CFR Part 800 and has taken into account the effect of this undertaking on historic properties.

SIGNATORIES

RIVER VALLEY REGIONAL INTERMODAL FACILITIES AUTHORITY

_____ _____

Roy Reaves, Chairman
River Valley Regional Intermodal Facilities Authority

Date

8

SIGNATORIES

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

_____ _____

Scott E. Bennett, Date
Director of Highways & Transportation

9

SIGNATORIES

ARKANSAS STATE HISTORIC PRESERVATION OFFICE

_____ _____

Cathie Matthews,
Arkansas SHPO

Date

10

SIGNATORIES

FEDERAL HIGHWAY ADMINISTRATION

_____	_____
Randal J. Looney, Environmental Coordinator	Date

11

SIGNATORIES

U.S. Army Corps of Engineers, Little Rock District

_____ _____

Randy Hathaway
Deputy District Engineer

Date

12

SIGNATORIES

CADDO NATION

_____ _____

Brenda Shemayne Edwards,
Tribal Chairperson

Date

13

SIGNATORIES

CHEROKEE NATION OF OKLAHOMA

_____ _____

Bill John Baker,
Principal Chief

Date

14

SIGNATORIES

QUAPAW TRIBE OF OKLAHOMA

_____ _____

John Berrey,
Tribal Chairperson

Date

15

SIGNATORIES

THE OSAGE NATION

_____	_____
John D. Red Eagle, Principal Chief	Date

16

SIGNATORIES

UNITED KEETOOWAH BAND OF CHEROKEE INDIANS

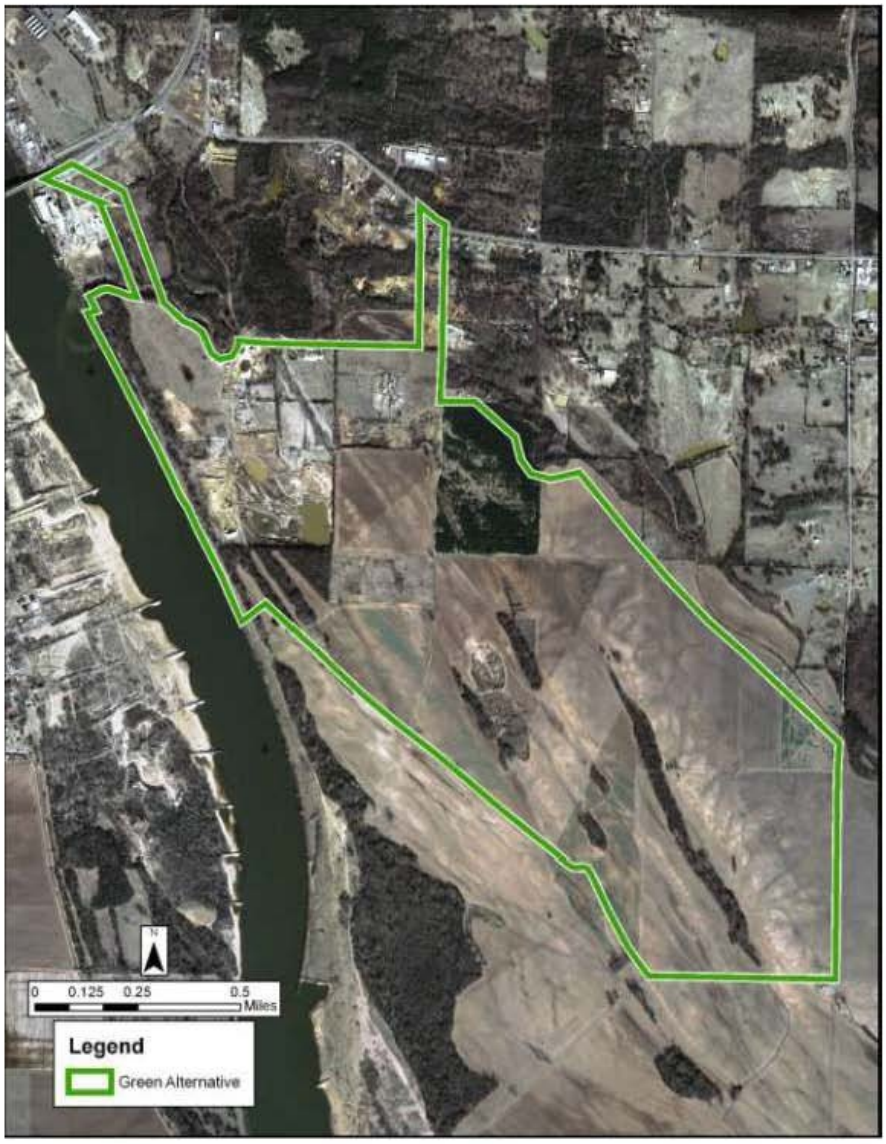
_____ _____

George Wickliffe, Date
Chief

17

ATTACHMENT A

PREFERRED ALTERNATIVE (AREA OF POTENTIAL EFFECTS)



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ATTACHMENT B

NRHP-ELIGIBLE CULTURAL RESOURCES

Site	Component(s)	Site Size (m^2)	Positive ST Frequency	Average artifact yield per + ST	Artifact Recovery
3PP449/ 3PP611	Late Archaic/Middle Fourche Maline, Historic Cherokee, Historic Tenant period	20,100	77	3.1	687
3PP610	Late Archaic, Terminal Late Archaic/Early Fourche Maline, Late Fourche Maline/Mississippian-Caddo, Historic Cherokee, Historic Tenant period	36,000	259	7.0	9,008
3PP681	Late Fourche Maline (Plum Bayou)	4,200	16	1.4	76
3PP682	Fourche Maline, Late Fourche Maline (Plum Bayou), Historic Tenant period	2,200	13	2.2	354
3PP729	Late Archaic, Late Archaic/Middle Fourche Maline, Late Fourche Maline/Mississippian-Caddo, Plum Bayou, Mississippian	15,600	66	2.5	637
3PP733	Archaic, Fourche Maline, Late Fourche Maline/Mississippian-Caddo, Post-1300 Mississippian-Caddo, Historic Cherokee, Historic Tenant period	9,400	45	2.2	292
3PP740	Late Archaic/Middle Fourche Maline, Fourche Maline, Late Fourche Maline/Mississippian-Caddo, Historic Tenant period	15,900	58	4.6	1,792
		Totals:	***534***		***12,846***

ST = shovel test

Source: *Phase II Testing of Archaeological Sites at the River Valley Intermodal Facility Alternatives, Johnson and Pope Counties, Arkansas*, Prepared by Panamerican Consultants, Inc., June 2012

ATTACHMENT C
CULTURAL RESOURCES REQUIRING PHASE II EVALUATION

Site	Component(s)	Research Potential
3PP17	Prehistoric	Undifferentiated prehistoric; intact deposits
3PP669	Prehistoric	Low density Woodland (Plum Bayou Phase)
3PP671	Prehistoric/Historic	Intact deposits (Late Woodland)
3PP672	Prehistoric	Undifferentiated prehistoric; possible intact deposits
3PP673	Prehistoric/Historic	Low density Woodland (Late Woodland)
3PP674	Prehistoric/Historic	Possible intact deposits (late Woodland Fourche Maline)
3PP675	Prehistoric/Historic (20th century)	Low density Woodland
3PP677	Prehistoric/Historic (20th century)	Possible Cherokee
3PP678	Prehistoric/Historic (20th century)	Possible Cherokee; possible intact deposits
3PP680	Prehistoric	Possible intact deposits (Late Woodland)
3PP684	Prehistoric/Historic	Low density Woodland
3PP685	Prehistoric/Historic	Undifferentiated prehistoric; intact deposits
3PP687	Prehistoric/Historic	Undifferentiated prehistoric; intact deposits
3PP688	Prehistoric/Historic (20th century)	Possible Cherokee
3PP689	Prehistoric/Historic	Intact deposits (Plum Bayou)
3PP690	Prehistoric/Historic	Undifferentiated prehistoric; intact deposits
3PP720	Prehistoric	Low density Woodland
3PP722	Prehistoric/Historic	Historic Cherokee, Prehistoric Isolated Find
3PP728	Prehistoric/Historic	Possible Cherokee
3PP743	Prehistoric	Undifferentiated Prehistoric

Source: *Archaeological Survey of the Proposed River Valley Intermodal Facility, Pope County, Arkansas.* Prepared by Mid-Continental Research Associates, Inc., 2005

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ATTACHMENT D
WORK PLAN FOR PHASE II NRHP EVALUATIONS OF 20 ARCHAEOLOGICAL SITES IN THE PROPOSED RIVER VALLEY INTERMODAL FACILITY, POPE COUNTY, ARKANSAS

The Work Plan contains archaeological site locations and is not included here in accordance with Section 304 of the National Historic Preservation Act to protect these archaeological sites from harm.

ATTACHMENT E
TREATMENT PLAN FOR ARCHAEOLOGICAL SITES 3PP449/3PP611, 3PP610, 3PP681, 3PP682, 3PP729, 3PP733, AND 3PP740, WITHIN THE RED/GREEN ALTERNATIVE OF THE RIVER VALLEY INTERMODAL FACILITIES, POPE COUNTY, ARKANSAS

Data Recovery Plan in progress

The Treatment Plan contains archaeological site locations and is not included here in accordance with Section 304 of the National Historic Preservation Act to protect these archaeological sites from harm.

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C.3 WORK PLAN FOR PHASE II NRHP EVALUATIONS OF 20 ARCHAEOLOGICAL SITES

WORK PLAN FOR
PHASE II NRHP EVALUATIONS OF 20 ARCHAEOLOGICAL SITES IN THE PROPOSED RIVER VALLEY INTERMODAL FACILITIES, POPE COUNTY, ARKANSAS

Prepared by:

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Revised October 18, 2012

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INTRODUCTION

Panamerican Consultants, Inc. (Panamerican) is pleased to submit this Work Plan to the River Valley Regional Intermodal Facilities Authority (Authority), the Federal Highway Administration (FHWA), Arkansas Highway and Transportation Department (AHTD), the Little Rock District, U.S. Army Corps of Engineers (USACE), and the Arkansas State Historic Preservation Office (SHPO) to conduct Phase II testing of twenty (20) archaeological sites in portions of the Green Alternative at the proposed River Valley Intermodal Facilities (RVIF) in Pope County, Arkansas. Panamerican is a small business (NAICS code 541720), founded in 1989, that specializes in cultural resource management and archaeological research. Additional information regarding Panamerican can be obtained by visiting our home page on the Internet www.panamconsultants.com or the "About Panamerican" tab in the Lamar Terrace Archaeology web page http://www.lamarterracedig.com/panamerican.htm.

This work plan details the level of work necessary to complete Phase II archaeological investigations in compliance with Section 106, and be compliant with the Appendix B of the Arkansas State Plan: *Guidelines for Archeological Fieldwork and Report Writing in Arkansas* (Revised Version in effect as of 1 January 2010). This Work Plan is similar in approach to the Work Plan that was utilized during the 2011-2012 Phase II testing efforts that were conducted at multiple sites within the Red-Green Alternative overlap and one site within the Purple Alternative (Buchner et al. 2012).

More generally, the Phase II will be in compliance with all appropriate Federal and State laws, regulations, guidelines and policies pertaining to the identification, evaluation and treatment of cultural resources. These include but are not limited to the National Historic Preservation Act (Public Law 89-665), Executive Order 11-593 (Protection and Enhancement of the Cultural Environment), the Secretary of the Interior's "Standards and Guidelines for Archeology and Historic Preservation" (48 FR44716-39), the National Environmental Policy Act of 1969 (Public Law 91-190), the Archaeological Resources Protection Act of 1979 (Public Law 96-95), and the Advisory Council on Historic Preservation, Procedures for the Protection of Historic and Cultural Properties' (36 CFR Part 800), Arkansas Act 58 of 1967, Arkansas Act 480 of 1977, Arkansas Act 753 of 1991, Arkansas Act 1533 of 1999 and the standards and guidelines set forth Appendix B of the Arkansas State Plan: *Guidelines for Archeological Fieldwork and Report Writing in Arkansas* (Revised Version in effect as of 1 January 2010).

PROJECT PURPOSE

The primary purpose of the project is to assess the National Register of Historic Places (NRHP) eligibility status of 20 archaeological sites in accordance with the Memorandum of Agreement (MOA), and to make recommendations for appropriate management and treatment of the NRHP-eligible sites. The site testing data will then be included in the cultural resources portion of an Environmental Impact Statement (EIS) that will be prepared by Parsons. The sites to be tested are summarized below (Table 1).

The proposed project is an example of a "compliance" driven archaeological study, as the effects the proposed intermodal facility will have on identified resources must be assessed and recommendations made to comply with Section 106 of the National Historic Preservation Act. The Advisory Council of Historic Preservation's (ACHP) Section 106 regulations (36 CFR 800) were amended August 5, 2004, and can be viewed on-line at http://www.achp.gov/regs.html.

The main objective in conducting the investigations of these sites is to make a formal determination of each site's NRHP eligibility status via an archaeological field study. The investigations will be a "standard" Phase II cultural resources management (CRM) project, and the specific objectives of the fieldwork are to determine the following:

- The spatial limits (horizontal and vertical) of the site within the area of potential effects (APE);
- The cultural affiliation of the components represented;
- The presence or absence of undisturbed subsurface features or stratified deposits;
- The density and distribution of intact archaeological deposits within the APE; and
- The classes of archaeological remains that are recoverable.

Table 1. Archaeological Sites to Test for NRHP Eligibility.

Site	Components	Research Potential	Remarks
3PP17	Prehistoric	Intact deposits	
3PP669	Prehistoric	Low density Woodland	
3PP671	Prehistoric/Historic	Intact deposits	
3PP672	Prehistoric	Possible intact deposits	
3PP673	Prehistoric/Historic	Low density Woodland	
3PP674	Prehistoric/Historic	Possible intact deposits	
3PP675	Prehistoric/Historic	Low density Woodland	
3PP677	Prehistoric/Historic	Possible Cherokee	
3PP678	Prehistoric/Historic	Possible Cherokee; Possible intact deposits	
3PP680	Prehistoric	Possible intact deposits	
3PP684	Prehistoric/Historic	Low density Woodland	
3PP685	Prehistoric	Intact deposits	
3PP687	Prehistoric/Historic	Intact deposits	
3PP688	Prehistoric/Historic	Possible Cherokee	
3PP689	Prehistoric/Historic	Intact deposits	
3PP690	Prehistoric/Historic	Intact deposits	
3PP720	Prehistoric	Low density Woodland	
3PP722	Historic	Possible Cherokee	Landowner denied access during last Phase II
3PP728	Prehistoric/Historic	Possible Cherokee	
3PP743	Prehistoric	Possible intact deposits	Landowner denied access during last Phase II

Data after Lafferty et al. (2005:Table 80) except Historic component from 3PP685 was deleted and Prehistoric component at 3PP722 was deleted (Tabular data elsewhere in Lafferty et al. 2005 reveal no diagnostics for these components were recovered.).

PROJECT LOCATION

The RVIF Alternatives are located within the New Hope Bottoms area south of Russellville, which lies on the opposite bank of the Arkansas River from Dardanelle. This is a rural area that is used principally for agriculture, sand and topsoil mining, and hunting.

The Red Alternative consists of an 832-ac. tract located near Arkansas River Mile (RM) 203 along the left descending bank of the river and extends northward to State Highway 247 and south into the Arkansas River floodplain. The Green Alternative consists of an 882-ac. tract located adjacent to and including portions of the Red Alternative, near Arkansas RM 203 along the left descending bank of the river. The Red/Green Alternative overlap consists of the area where the Red Alternative and the Green Alternative overlap (see hatched area in Figure 1).

The twenty sites in this Phase II study are located primarily in the southern portion of the Green Alternative. Two sites (3PP722 and 3PP743) were originally scheduled for testing during the 2011-2012 Phase II testing efforts; however, permission was not obtained from the landowners for access and excavation.

Figure 1 contains archaeological site locations and is not included here in accordance with Section 304 of the National Historic Preservation Act to protect these archaeological sites from harm.

PREVIOUS INVESTIGATIONS

There have been eight previous archaeological investigations at the proposed River Valley Intermodal facility Alternatives in Pope County, Arkansas. These studies are reviewed below. The 2005 Mid-Continental Research Associates, Inc. (MCRA) survey should be noted, because the 20 sites to be tested were recommended for additional work as a result of that survey. The most recent work at the proposed facility was Panamerican's 2011-2012 multi-site testing project in the Red-Green Alternative overlap.

DARDANELLE RESERVOIR RBS

The Smithsonian Institution conducted the earliest work in the study area as one of their River Basin Survey projects that figure prominently in 1950s and 1960s US archaeology. During 1957, Greengo (1957) surveyed the Dardanelle Reservoir and documented 55 archaeological sites. Twenty-one of these sites were located in Pope County, including Site 3PP17, the Howell Farm site, a village that lies within the proposed Intermodal Facility tract and is among the sites to test during this study (see Table 1). This site is the most southeastern, or most downstream, site documented during the Dardanelle Reservoir River Basin Survey (Greengo 1957: Figure 1).

HOWELL FARM EXCAVATIONS

During 1970, the Arkansas Archeological Survey (AAS) conducted test excavations at the Howell Farm site (3PP17 site file). As noted above, this site is proposed to be tested during this study. Work conducted included the excavation of three 1-x-1 m test units, and two 1-x-1.5 m test units that formed a discontinuous trench (Cochran 1976: Figure 2). Nine Woodland period burials that lacked grave goods were identified within three pits (A, B, and C) exposed in the excavation units. Cochran's (1976) skeletal analysis resulted in the identification of the following burial population: one sub-adult of indeterminate sex; one adult male; three adult females; and four adults of indeterminate sex. The remains exhibited poor preservation and only limited anthropomorphic traits could be collected.

3PP449 EXCAVATIONS

During 1996, the AAS directed test excavations at 3PP449, an early nineteenth-century Cherokee site that is located within the Red-Green Alternative overlap (Stewart-Abernathy 1998). Work was conducted by Arkansas Archeological Society volunteers, and included the recovery a 100 percent controlled surface collection, the excavation of "nearly 140 cores" at 1 m intervals within primary site area, and excavation of four 1-x-2 m test units (Stewart-Abernathy 1998:45-46). Euro-American artifacts recovered are diagnostic for the period 1790-1835, and included English ceramics, dark green bottle glass, a cut shank nail, a bullet mold fragment, and two metal buttons. Distinctive artifacts that reveal the site's Native American occupation include two glass beads, a sherd of Overhill Curvilinear Complicated Stamped pottery, and pieces of sheet brass (Stewart-Abernathy 1998:50). The article detailing the 3PP449 excavations is notable for summarizing the archaeology and history of the Historic Cherokee occupation of Arkansas (Stewart-Abernathy 1998).

HPA RECORDS REVIEW

During 2002, Historic Preservation Associates (HPA) conducted a cultural resources records review for the proposed Intermodal Facility (Klinger et al. 2003). This involved a "desktop" study of two proposed locations for the Intermodal Facility, Alternative 2 and Alternative 3. Alternative 2 corresponds to the Red-Green Alternative, while Alternative 3 was located elsewhere along the Arkansas River in Pope County. HPA desktop suggested that as a many as 102 sites could be located within both alternatives.

2003 MCRA 220 AC. SURVEY

During 2003, MCRA surveyed a 220 ac. tract slated for development as an industrial park (Sierzchula and Lafferty 2003). This is the 220 ac. tract later purchased by the Arkansas Valley Alliance for Economic Development, and most of it is within the Red-Green Alternative overlap. The site detection method employed by MCRA was a pedestrian (visual) survey supplemented with the excavation of shovel tests at unstated intervals. The tract was sub-divided into three areas for survey. In Area 1, 35 shovel tests were excavated, in Area 2 at least three shovel tests were excavated, and in Area 3, six shovel tests were excavated (Sierzchula and Lafferty 2003:17). MCRA's survey resulted in the identification of four newly recorded archaeological sites (3PP609, 3PP610, 3PP611, and 3PP612). These sites were "considered not eligible for nomination to the National Register of Historic places [and] MCRA recommends no further archaeological work" (Sierzchula and Lafferty 2003:i). Sierzchula and Lafferty (2003:19) could not re-locate 3PP449 and they concluded "… the site was misplotted . . . [or] destroyed."

SLACKWATER HARBOR SURVEY

Also during 2003, the Corps of Engineers Little Rock District archaeologist reported conducted a survey of the proposed slackwater harbor in the study area (Davies 2003). Because a copy of this report is not on file with the AAS we must rely on Lafferty et al.'s (2005:42) summary of this work that states that "no archaeological sites" were found and that "most of the area had been disturbed by a gravel pit." Thus this study yielded negative findings.

2005 MCRA 801 AC. SURVEY

During 2005, MCRA conducted a 801 ac. survey for the proposed Intermodal Facility (Lafferty et al. 2005). This survey tract also included most—but not all—of the 220 ac. industrial park tract previously surveyed by MRCA during 2003. The 2005 survey resulted in the identification of 80 archaeological sites, including four isolated finds that were assigned trinomials because they yielded diagnostic artifacts. The field methods employed were similar to those used during the 220 ac. tract survey, and indeed some of the same crewmembers conducted both projects (Sierzchula and Lafferty 2003:17). Again, a pedestrian (visual) survey was employed that was supplemented with the excavation of shovel tests at unstated intervals. However, a major difference between the 2003 and 2005 surveys is that the 2005 survey was conducted when surface visibility was excellent, while the during the 2003 study, surface visibility was more limited. During the 2005 survey, the agricultural fields that characterize most of the study area were freshly plowed and rain-washed, and 100 percent visibility was afforded over 45 percent of the study area (Lafferty et al. 2005:49). Another 10 percent of the study area offered fair surface visibility, while over 21 percent of the survey area was previously disturbed (Lafferty et al. 2005: Table 3). All but two sites were initially detected via surface survey; then limited shovel testing was conducted within their boundaries (which were determined by surface examination).

Table 2 below provides additional information about the 20 sites scheduled for testing that were identified during the MCRA 2005 survey.

Site size among the 20 sites is highly variable, and ranges from a low of 801 m^2 (3PP699) to a high of 30,121 m^2 (3PP690). Over half of the sites are greater than 5,000 m^2 in size. The site size listed in Table 2 is typically the area reported on the 2005 site form, but there are several exceptions:

- ★ The 3PP17 area listed in Table 2 is the area of the site to test; this site actually covers 25,000 m^2, but the portion south of Duffield Road is outside the RVIF and will not be tested.

★ The 3PP673 area is confusingly reported as 11,364 m^2 and as 1.96 ha on the site form, and we assume a site area of 1.96 ha because this is the area stated in the report (Lafferty et al. 2005:69).

Table 2. Archaeological data for the 20 sites to test (after Lafferty et al. 2005).

Site	Size (m^2)	Surface Recovery	Subsurface Recovery	Total Recovery	Maximum depth (cm)	Components	Remarks
3PP17	12,460	1	12	13	60	Woodland	Nine burials found in 1970 AAS excavation.
3PP669	801	0	16	16	0	Woodland (Plum Bayou)	
3PP671	6,459	40	101	141	90	Late Woodland; Historic isolate	Site may extend farther west; Prehistoric features likely.
3PP672	1,885	16	2	18	63	Late Archaic	
3PP673	19,600	29	0	29	0	Late Woodland; 20th Century isolate	Intact A horizon from 20-40 cmbs
3PP674	3,359	16	1	17	45	Late Woodland (Fourche Maline); weak 20th Century	
3PP675	19,600	31	0	31	0	Late Woodland; late19th and 20th Century	Possible buried A horizon from 61-80 cmbs
3PP677	3,124	51	4	55	20	Early 19th Century; 20th Century; weak Undifferentiated Prehistoric	
3PP678	5,993	52	3	55	70	19th and 20th Century; Early 19th Century isolate; Prehistoric Isolate	
3PP680	7,219	43	4	47	40	Late Archaic/Woodland; Late Woodland	Intact A horizon from 13-25 cmbs in portions of site
3PP684	23,784	44	1	45	15	Late Woodland; 20th Century	
3PP685	1,902	17	34	51	100	Undifferentiated Prehistoric	No historic recovery, 2005 Table 80 is wrong
3PP687	9,057	42	5	47	75	Undifferentiated Prehistoric; 20th Century	
3PP688	2,500	46	13	59	55	early 19th to 20th Century; weak Woodland	Intact A horizon from 30-55 cmbs
3PP689	9,550	45	22	67	70	Late Woodland (Plum Bayou); weak 20th Century	
3PP690	30,121	277	90	367	75	Woodland; Mississippian; Historic isolate	"Bird Point Ridge"

Site	Size (m^2)	Surface Recovery	Subsurface Recovery	Total Recovery	Maximum depth (cm)	Components	Remarks
3PP720	1,699	28	0	28	0	Late Woodland (Fourche Maline)	
3PP722	5,835	40	12	52	20	early 19th Century (Cherokee)	No prehistoric recovery, 2005 Table 80 is wrong
3PP728	3,848	77	2	79	50	early 19th Century; late 19th/early20th Century; Prehistoric isolate	
3PP743	3,735	0	4	4	50	Undifferentiated Prehistoric	

- ★ The 3PP675 area is confusingly reported as 12,561 m^2 and as 1.96 ha on the site form, and we assume a site area of 1.96 ha because this is the area stated in the report (Lafferty et al. 2005:73). Also this site "extends west for an undetermined distance" (Lafferty et al. 2005:Figure 32).
- ★ The 3PP688 area is ambiguously reported as 9,057 m^2 and as 1.25 ha on the site form, and we assume a site area of 0.25 ha because this is the area stated in the report (Lafferty et al. 2005:96).
- ★ Site 3PP690, the "Bird Point Ridge" site, extends for 500 m along the ridge, but only the northern 350 m (north of Duffield Road) is within the RVIF. It is thought that the area in Table 2 represents the whole site rather than the portion that requires testing.

Total Recovery is variable and ranges from four (3PP743) to 367 at 3PP690, which is a relatively high density Late Woodland/Mississippian scatter known as "Bird Point Ridge" that is well known to local relic collectors. While relatively light, the 2005 recovery from these 20 sites on average is roughly twice that of the 32 sites in the previous testing program (61.1 artifacts per site versus 35.0). Lafferty et al. (2005:221) remarked that one of the most surprising findings of the 2005 survey was the low artifact density at the identified sites. Not reflected in Table 2 is 1970 excavation there by AAS, which resulted in the identification of nine burials that are curated at the University of Arkansas Curation Facility (UACF).

Another important pattern to note in Lafferty et al.'s (2005) site data is that most of the recovery was from the surface. Over 73 percent (895 of 1,221) of the recovered artifacts were collected from the surface. Surface recovery ranged from zero in one case (3PP743) to a high of 277 artifacts at the "Bird Point Ridge" site.

Subsurface recovery was typically light, and all but two sites produced 34 or less artifacts from shovel tests. Four sites failed to produce any subsurface artifacts (3PP669, 3PP673, 3PP675, and 3PP720). Two exhibit unusually high subsurface recovery: 3PP671 (n=101) and 3PP690 (n=90). Subsurface recovery was generally low because Lafferty et al. (2005) excavated only few judgmentally placed shovel tests at each site. However, given this, the 3PP671 and 3PP690 recoveries should be viewed as indicative of high-density subsurface deposits at these sites.

Maximum Depth of recovery ranges from 15 to 100 cmbs at the 16 sites that produced subsurface artifacts. Three of these sites appear to be shallow plowzone deposits (3PP684, 3PP677, and 3PP722). Four of these sites are moderately deep (50 cm or less). Importantly, nine of the sites are deeply buried (50 cm or greater in maximum depth). The maximum depth of recovery is illustrated as Figure 2 because this data has significant bearing on the Phase II testing work plan.

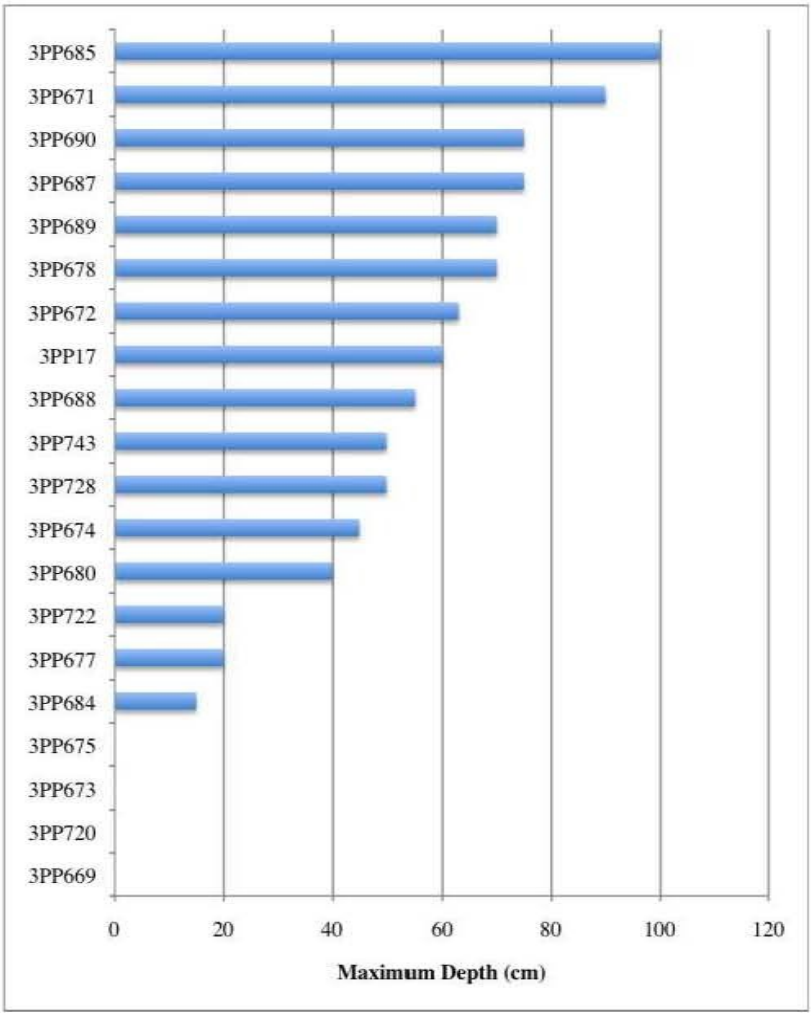

Figure 2. Chart for maximum depth of recovery among the 20 sites to be tested.

2011-2012 Testing in the Red-Green Alternative Overlap

The most recent archaeological investigation at the RVIF was Panamerican's 2011-2012 testing program in the Red-Green Alternative overlap (Buchner et al. 2012). During this study, seven sites in the Red-Green Alternative overlap were determined to be NRHP eligible

(3PP449/3PP611, 3PP610, 3PP681, 3PP682, 3PP729, 3PP733, and 3PP740), and two sites could not be tested because the landowners denied access (3PP722 and 3PP743). The methods employed during this recent testing program were successful and efficient, and we propose to utilize essentially the same approach during this 20 site testing package.

TESTING PROGRAM PROJECT DESIGN

The proposed Phase II testing project design is a multi-stage process that Panamerican successfully implemented during the 2011-2012 testing at the Red-Green Alternate overlap for the RVIF. The various major tasks are discussed below.

TASK 1—COORDINATION

Coordination will be conducted with Arkansas SHPO staff, and with other interested parties and stakeholders: AHTD, FHWA, U.S Army Corps of Engineers (USACE), the River Valley Regional Intermodal Facilities Authority, and Parsons. It is anticipated that conference calls will be primary method of facilitating coordination.

TASK 2—RESEARCH QUESTIONS AND THEMES

A formal research design should accommodate the types of data the investigator expects to encounter in the field. Thus it is important to define broad research themes prior to commencing fieldwork on a large-scale project such as the Intermodal Facilities site testing. A review of the culture history for this area reveals that there are obvious gaps in our understanding and knowledge of the past, as there have been relatively few sites excavated. In general, the research issues to be addressed, used, and reinterpreted in the final report include: refinement of the culture history for the area, detailed ceramic and lithic identification to aid in determining site occupation periods, studies of ceramic and lithic technology, and site function and variability.

Research themes provide a valuable set of tools for problem-oriented research and can be used to weigh the significance level of certain sites. The APE is located in the "Middle Arkansas River Valley" archaeological region defined in the *State Plan* (Davis 1982). This region lies between two better-defined archaeological areas: the Arkansas Ozarks and Southwest Arkansas. As the *State Plan* was being prepared, it was noted that the area where the above two regions met—the so-called Middle Arkansas River Valley—was not being appropriately treated. As a result, the Middle Arkansas River Valley Archaeological Region was created, as this "part of the state was different enough culturally and physiographically, thus it should be treated separately…" (Davis 1982:II:SU5:1). It was planned that study units and research problems would be developed for this region at a later date.

Research themes and questions are presented and discussed below using a period-by-period format. Note that the object of the Phase II testing is not to answer all the questions, but to demonstrate that eligible sites contain data potentially useful to addressing the questions. It is possible that the Phase II testing program may not yield enough data to answer some of the proposed research questions; however, given that the *State Plan* offers little specific guidance in the way of Middle Arkansas River Valley study units, we offer this broad approach.

Paleoindian Period

No Paleoindian diagnostics were recovered during the recent testing at the RVIF (Buchner et al. 2012:356).

Paleoindian occupations represent the first well-accepted occurrence of humans in the Western Hemisphere. Recent research on Paleoindian diagnostics (Ledbetter et al. 1996) indicates that the period may be subdivided into early (ca. 9500–9000 B.C.), middle (ca. 9000–8500 B.C.), and late (ca. 8500–8000 B.C.) stages, based on changes in hafted biface morphology. No radiocarbon dates are available to confirm independently the accuracy of the subdivision.

Sabo et al. (1990:36) note that "the Paleo-Indian period is represented in the Ozark area primarily by isolated finds of Clovis or Clovis-like points," and that examples have been recovered in several northern Arkansas counties. However as of 2006, no Paleoindian points are reported from Johnson or Pope counties (Morrow 2006:8). Lafferty et al. (2005) did not encounter any Paleoindian diagnostics at the Red Alternative, but noted that Archaic sites were clustered on Terraces (T) 4 and 5. If Paleoindian artifacts are found some pertinent themes are:

1. Do any of the terraces in the project area, in particular T-4 and T-5, contain evidence for Paleoindian occupation?
2. Could evidence for Paleoindian occupation be buried on T-4 or T-5?
3. What was the settlement pattern for Paleoindian, and did it differ from those of Archaic people? Do the project areas fall within a specific band's foraging territory, or was the area utilized by a number of highly mobile groups?
4. What was the nature and density of local Paleoindian occupation?
5. What was the material technology of Paleoindians, and what classes of chipped-stone stools, other than projectile points, are characteristic of this period?
6. What is the nature of the fluted point to non-fluted point transition?
7. What are the Paleoindian lithic raw material utilization patterns?
8. What was the subsistence base of the local Paleoindians, and how did it differ (if any) from that of Archaic people?

If no Paleoindian diagnostics are recovered, which is a definite possibility, then there will be no data to answer any of these questions and these questions will be dismissed.

Dalton Period

No Dalton diagnostics were recovered during the recent testing at the RVIF (Buchner et al. 2012:356).

The Dalton period is considered transitional between the Paleoindian and Archaic traditions. The key distinguishing feature of the material culture is the unfluted, serrated Dalton point, but the Dalton tool kit includes a number of other diagnostics include awls, burins, and scrapers made on Dalton points, and a specialized woodworking tool: the Dalton adze (Morse 1997). Sabo et al. (1990:41) suggest a date range of 8500–7500 B.C for Dalton in the Ozarks. While technologically similar to Paleoindian, Dalton assemblages suggest an adaptive pattern more akin to later Archaic cultures. One of the most important game species from this time to the contact era seems to have been the white-tailed deer.

Dalton components are well-documented in the Ozarks from modern excavations at bluff shelters. Important regional sites with stratified deposits and Dalton components include the Albertson site (3BE) (Dickson 1991), the Breckenridge site (3CR2) (Wood 1963; Thomas 1969), and the Tom's Brook Shelter (3JO1) in the Boston Mts. (Bartlett 1999 [1963]). No Dalton components are reported from the Intermodal facilities sites, but similar to Paleoindian they could exist, most likely on one of the older terraces.

Research themes for Dalton components, if any are identified, are similar to those proposed for Paleoindian. If no Dalton diagnostics are recovered, which is a definite possibility, then there will be no data to answer any Dalton research questions and these questions will be dismissed.

Early and Middle Archaic Periods

No Early or Middle Archaic diagnostics were recovered during the recent testing at the RVIF (Buchner et al. 2012:356).

Archaic lifeways are characterized by a hunter-gatherer economy designed to efficiently utilize Holocene natural communities (Caldwell 1958). An increasing human awareness of the seasonal availability of the local resources led to the development of cyclical patterns in behavior. The repetitive nature of the Archaic adaptive strategies is reflected in a number of archaeological attributes, including settlement patterns, technology, and diet.

In the Ozarks, the Early and Middle Archaic are combined "due to a lack of significant difference in the archeological record" (Sabo et al. 1990:48). The Early and Middle Archaic periods extends from 7,500-3000 B.C. following the Dalton period. During the Early and Middle Archaic periods, the key diagnostic artifacts remain projectile points, but the proliferation in point forms (and probably function) is suggestive of a major technological shift. Major regional sites include Calf Creek Cave, Albertson, Breckenridge, and Tom's Brook shelter (Sabo et al. 1990:51).

Across the Southeast, the Middle Archaic period was marked by a shift in subsistence modes. This was possibly due to environmental changes caused by a climatic episode called the Altithermal Optimum, or Hypsithermal. This change resulted in restricted deciduous forest occurrence, limiting the availability of certain floral and faunal resources. The cultural impact of this warming trend appears to have been most strongly felt from 5500–3500 B.C. Several settlement models regarding human adaptation during the climatic optimum have been posited. Santeford and Lafferty (1994:117) recommend investigating the postulated diversity of site types within the Middle Archaic settlement system. Tom's Brook culture is the dominant late Middle Archaic cultural manifestation in the northwest Arkansas and eastern Oklahoma.

Two Early to Middle Archaic points are reported from sites located in the proposed Intermodal facilities. Site 3PP689 on T-4 produced an Early Archaic Hidden Valley projectile point/knife (pp/k), and Site 3PP612 on T-5 produced a Middle Archaic Palmillas pp/k (Lafferty et al. 2005:199). Additionally, Site 3PP695 produced a full-grooved axe fragment that is considered a Middle Archaic diagnostic. Importantly Sites 3PP612 and 3PP695 will be tested, thus the following Archaic Research themes may be addressed via the result from there, including:

1. What was the density of Archaic populations at and near the project areas, and how did it change over time?
2. What is the settlement distribution, size, and function of Archaic sites through time?
3. How do local Archaic sites articulate with Archaic components in the rockshelters to the north? That is, are the project area's Archaic sites logistical camps within a season round that emphasized aggregation sites located in the upland shelters, or vice versa?
4. What was the material technology of Archaic people and how did it change through time?
5. Can the existing projectile point typology for Archaic sites be improved? Would cluster analysis of large numbers of projectiles obtained from testing assist in refining the Archaic point sequence, especially the Late Archaic varieties?
6. What was the level of participation of the local populations within the extensive Late Archaic trade network?
7. Within the Archaic times, what were subsistence practices, and what changes occurred in these practices?
8. What is the nature of evidence for the initial domestication and cultivation of floral species in Archaic times?
9. Is there a local settlement shift from T-5 to T-4 and T-3 during the transition from the Late Archaic to the Woodland as Lafferty et al. (2005) suggest?

Late Archaic and Early Woodland Periods

The recent testing at the Red-Green Alternate overlap produced abundant evidence for Late Archaic and Late Archaic/Early Woodland utilization of the RVIF (Buchner et al. 2012:Table 7-

02). Five sites produced Late Archaic diagnostics, and nine sites produced Late Archaic/Early-Middle Woodland Fourche Maline diagnostics.

The Late Archaic and the Early Woodland (3000 B.C.–A.D. 200) are also combined for discussion because "evidence of the Early Woodland period in the Ozarks is so sparse" (Sabo et al. 1990:57). The Late Archaic period begins after the Hypsithermal period as the modern climate and natural communities became established. Regionally, there is a dramatic proliferation in the number of sites, cultural elaboration, and widespread trade. There is evidence for more sedentary lifeways and possibly limited horticulture was being employed, as sunflower, squash, and other cultivated native starchy seed annuals appear in the archaeo-botanical record at this time in other areas of the southeast. Late Archaic settlement models typically have a seasonal round aspect, and there is evidence that the substantial "winter" villages, typically located on major streams, were actually occupied year round. Both earthen and shell mounds appear in the archaeological record in the Southeast at this time. The most common Late Archaic features in this region are pits with quantities of fire-cracked rock. Late Archaic assemblages are found at open habitation sites, as well as bluff shelters.

Diagnostic chipped stone tools include a variety of projectiles (Sabo et al. 1990:57-58). Other chipped stone artifacts include triangular bifaces, double bitted axes, scrapers, perforators, drills, and knives. Ground stone artifacts include manos and nutting stones. Regionally, there is a significant increase in the use of novaculite during the Late Archaic. Novaculite quarries developed in the central Ouachita Mountains during the Late Archaic (Trubitt 2002).

At the Red Alternative, Lafferty et al. (2005:201) reported that "Late Archaic points comprise the greatest number of point types recovered." Late Archaic pp/k types reported from sites there include an Epps pp/k from **3PP728**, an Edgewood pp/k form **3PP728**, Motley pp/ks from 3PP723 and 3PP728, a Williams pp/k form 3PP746, Gary *var. Gary* pp/ks from 3PP692, **3PP675**, and 3PP709, and Gary *var. Leflore* pp/ks from 3PP609, 3PP702, 3PP698, **3PP690**, 3PP747, 3PP727, 3PP730, 3PP701, 3PP733, and **3PP689** (Lafferty et al. 2005:202-204). Importantly, five of these sites [**bolded**] will be tested during this study. Lafferty et al. (2005:205) noted that the distribution of Gary *var. Gary* pp/ks was deviant from Gary *var. Leflore*; because *var. Gary* was restricted to higher terraces, while *var. Leflore* were better represented on T-3 and T-4. This may shift likely has chronological implications as the smaller *var. Leflore* likely date to the Woodland Period.

Research themes for Late Archaic components are essentially similar to those proposed for the Early to Middle Archaic, see above.

The initial Woodland period in the Arkansas River Valley is poorly understood, and the Early Woodland is described as "virtually non-existent" (Santeford and Lafferty 1994:125). Woodland components in the northern Ouachitas are generally referred to as Fourche Maline (Schambach 2001). Early Fourche Maline period assemblages are quite similar to Late Archaic assemblages with the additional of pottery (Imhoff et al. 1998:40). The dominant artifacts in Fourche Maline assemblages are grog-tempered Williams Plain ceramics, contracting stemmed (Gary) points, and chipped stone implements including double bitted axes (Schambach 2001).

Questions that are applicable to the Archaic, like those concerning subsistence, technology, settlements, etc., also are suited to the Woodland. The presence of ceramics provides for additional (non-stone) avenues of investigation into local technology. Some Woodland period research themes include:

1. What is the full range of Woodland site types: foraging stations; chipping stations/hunting camps; logistical/base camps; farmsteads; villages; burial mounds; etc.?

2. What are the specific environmental contexts of Woodland sites, i.e., what landforms (T-5 etc.), soil types, were used by Woodland populations at the Intermodal facilities?
3. What is the settlement pattern of Early, Middle, and Late Woodland sites at and near the project area?
4. Is the apparent decrease in sites from Late Archaic to Early Woodland real or a result of survey or other bias?
5. What trade movement occurred during the Woodland stage?
6. What are Woodland lithic utilization patterns? How do they articulate with Late Archaic and Mississippian-Caddo lithic exploitation patterns?
7. Can the ceramic technology be better understood?
8. What can be known about domestication of plants during Woodland times? Are dry caves the only settings where evidence for such can be retrieved?
9. Is there archaeological evidence for social organization and non-secular beliefs changing during Woodland times as compared to the preceding Archaic stage?

Middle and Late Woodland Periods

The recent testing at the Red-Green Alternate overlap produced weak evidence for Middle Woodland occupation (one site), but abundant evidence for Late Woodland utilization of the RVIF (Buchner et al. 2012: Table 7-02). Eight sites produced Late Woodland (Fourche Maline or Plum Bayou related) diagnostics.

Fourche Maline components in the Arkansas River Valley are poorly known "because so few well dated and/or sealed deposits have been studied, and even diagnostic artifact assemblages are difficult to identify" (Sabo et al. 1990:79; Schambach 2002:98). The Middle and Late Woodland periods (A.D. 200-1000) are "poorly represented in the Ozarks" (Sabo et al. 1990:67). As a result, it has been suggested that the Middle and Late Woodland Ozark rockshelter occupations are components of settlement system that includes habitation sites in larger river valleys (Sabo et al. 1990:72).

Middle Woodland components are recognized at Albertson, Prall, Rogers, Tom's Brook, Falling Water Falls, and Breckenridge shelters. The Middle Woodland assemblage at Albertson included Snyders, Dickson, and Waubesa points, and dentate stamped sherds. This material appears affiliated with the Kansas City Hopewell, and thus suggests the Ozarks were a part of the Hopewellian interaction sphere.

Important contemporary sites in the Arkansas River Valley include Point Remove, Alexander, Gasfield and Spinach Patch. The latter two sites are associated with the Gober Complex, which Schambach (2002:99) suggests may not be Fourche Maline, which they are often considered. To the north, Late Woodland components are recognized by the presence of limestone-tempered cord marked ceramics. At the Albertson site, the Late Woodland represents a continuation of Middle Woodland traditions. By the end of the Late Woodland, the Ozarks "were occupied by local groups scattered along the some of the major waterways" (Sabo et al. 1990:82).

Importantly, one significant technology advance was introduced during the Late Woodland: the bow and arrow. Blitz (1988) proposes the bow and arrow was introduced in this area ca. A.D. 700, while Sabo et al. (1990:72) note it was introduced to the Ozarks before A.D. 900.

Lafferty et al. (2005:208) report that at the Red Alternative T-5 contains 17 sites with prehistoric pottery, T-3 and T-4 contains 15 sites with pottery, and T-1 contains only one site with pottery. The sites on T-3 and T-4 produced more sherds than the sites on T-5—which typically had less than 4 sherds each—thus Lafferty et al. (2005:208) remarked that "the highest density of pottery is concentrated" on T-3 and T-4. Interesting 11 sites on T-5 will be tested during this project, as

will six sites on T-3 and T-4. The test excavation of these sites should provide data for an examination of a number of Middle to Late Woodland themes, including:

1. Are the Middle/Late Fourche Maline components at the Intermodal facilities more akin to the Mulberry River people to the west or to the Plum Bayou culture to the east?
2. Can research at the Intermodal facilities lead to a better understanding of the proto-Spiroan Mulberry River culture?
3. Can Middle to Late Fourche Maline components be segregated from Early Fourche Maline components?
4. Is there a local settlement shift from T-5 to T-4 and T-3 during the Woodland? Is this a continuing part of a trend that began in the Late Archaic?
5. What are the specific environmental contexts of Middle to Late Woodland sites, i.e., what landforms, soil types, were used by Woodland populations at the Intermodal facilities?
6. Did the introduction of the bow and arrow technology contribute to a dispersal of the Late Woodland population over the preceding Woodland?
7. Did the introduction of bow technology contribute to any significant shift in the lithic resource procurement strategy?
8. Can mixed temper ceramic analysis aid in the refinement of the sequence?
9. Do the ceramic assemblages consist of plain, flat-bottomed, often flowerpot shaped, jars tempered with bone, grit, sand or grog?
10. Is there evidence for participation in the Hopewell Interaction sphere?
11. Do the local settlements resemble the 0.8-2.0 ha small villages with midden described by Schambach (2002)?
12. What types of houses and feature patterns characterize Middle and Late Fourche Maline settlements?
13. Are Fourche Maline houses not substantial enough to show up archaeologically, and do they not use storage pits as Schambach (2002) suggests?
14. Does the local Fourche Maline subsistence include a horticulture tradition based on the eastern North American starchy and oil seed complex?

Fourche Maline assemblages also contain coarsely chipped stone tools commonly referred to as "axes," but which were most likely garden implements, as well as abundant stone grinding stones for processing nuts and seeds (Schambach 2002:93). Site 3PP696 at the Red Alternative has produced a crude axe/hoe, but this site will not be tested.

The Terminal Late Woodland period marks a transition to more Mississippian-Caddo cultures. This trend is expressed as the Coles Creek period in the Lower Mississippi Valley. During the Coles Creek period, the dominant influence is Plum Bayou culture, which flourished in the Arkansas River Lowland around the Toltec Mounds site (3LN42). The Toltec Mounds is a large (40 hectare [ha]) site that includes 18 mounds arranged around two plazas, all surrounded by a D-shaped earthen embankment (Rolingson 1982). Mound construction at Toltec began ca. A.D. 700, and the site was abandoned before A.D. 1050 (Rolingson 2002:45-53).

The recent testing at the Red-Green Alternate overlap produced strong evidence for Late Woodland/Mississippian-Caddo occupation at the RVIF (seven sites contain such components) (Buchner et al. 2012:357).

Mississippian-Caddo Period

The recent testing at the Red-Green Alternate overlap produced weak evidence for post 1300 Mississippian utilization of the RVIF (one shell-tempered sherd from 3PP733) (Buchner et al. 2012:357-358).

Regionally, the Mississippian-Caddo period marks the final period of native cultural development. Diagnostic traits include shell-tempered ceramics, inter-regional exchange of exotic items, population nucleation on the floodplain, emphasis on corn agriculture, public architecture, the development of a distinctive elite iconography, and the rise of chiefdoms. There has been considerable archaeological research regarding Caddo culture (Perttula et al. 1999). In eastern Oklahoma, the sequence of Mississippian-Caddo development has been the topic of considerable research due to interest in the Spiro Mound site. There are also significant Mississippian-Caddo sites in the Arkansas River Valley, for example the Carden Bottoms site (3YE14) near Dardanelle is well known for its outstanding pottery.

In Western Arkansas, the Mississippi period is sub-divided into three phases: Harlan (A.D. 900-1300), Spiro (A.D. 1300-1500) and Ft. Coffee (A.D. 1500-1700). The Harlan phase is defined by the development of sedentary habitations related to regional mound centers, and the rise of significant mortuary ceremonialism (Sabo et al. 1990). Shell-tempered pottery is a key diagnostic.

The Spiro phase is represented by a dramatic shift in settlement patterns, and has been described by some researchers as the "Arkansas Valley Caddo Tradition" (Brown 1984:252). Residential sites are concentrated in the bottomlands of the Arkansas, Grand, and Illinois rivers and appear to relate to one of several regional mound centers (Sabo et al. 1990). This is thought to be related to a rise in the power and influence of the Spiro mound center, located southwest of Fort Smith, Arkansas. Numerous types of sites have been attributed to the Spiro phase, these include: hamlets, farmsteads, villages, and a variety of specialized sites.

At the Red Alternative, Lafferty et al. (2005:209) reported only three sites with shell-tempered pottery (3PP721, 3PP729, and 3PP732), so the Mississippian-Caddo occupation of the study area appears limited. Three sites (3PP690, 3PP694, and 3PP733) also yielded arrow points that Lafferty et al. (2005:206) dates to after A.D. 1000. Additionally Site 3PP688 produced a ground stone celt made from Trace Creek siltstone that is considered a Mississippian diagnostic (Lafferty et al. 2005:211). Two of these Mississippian-Caddo components will be tested (3PP688 and "Bird Point Ridge" [3PP690]), thus this testing project could yield information pertinent to the following questions or themes:

1. What is the settlement pattern of Mississippian-Caddo sites at and near the Intermodal facilities; for example which terraces were utilized?
2. What is the full range of Mississippian site types and what function does each site type serve within the regional settlement system?
3. Is the Mississippian-Caddo occupation more influenced from the east (Lower Mississippi Valley) or the west (Caddo), and how does the local occupation fit with the regional sequence?
4. Are the red slipped grog-tempered sherds such as the one from 3PP690 in the Red Alternative Plum Bayou or Early Mississippian aged?
5. Was the Red Alternative part of a lightly occupied border zone between competing chiefdoms, and was the Carden Bottoms area (across the river to the southeast of the RVIF) the major Mississippian-Caddo occupation along this reach of the Arkansas River?
6. What types of arrow points were used, and do they reflect Caddo or other influences?
7. What are the local Mississippian lithic procurement patterns?
8. Is there evidence for craft specialization in Mississippian communities?
9. Is there evidence of Mississippian iconography or art?

Protohistoric Period
No Protohistoric diagnostics were recovered during the recent testing at the RVIF (Buchner et al. 2012:357).

The opportunity to use historic documents along with archaeological data makes virtually any new research important for protohistoric sites. This is because (1) so little research has been done for this stage in terms of comparing historical information to archaeological evidence, and (2) this period is a crucial interface between aboriginal and modern times, and understanding the crossover from Mississippian-Caddo lifeways to historic times.

The Fort Coffee phase (A.D. 1500-1700) is final Mississippian-Caddo phase for western Arkansas, and overlaps with the "protohistoric." By this time, the social hierarchy represented during the preceding two phases had collapsed, and Spiro and other mound centers were no longer used for elaborate mortuary ceremonies (Sabo et al. 1990). Bison bone tools and food remains are found frequently at Fort Coffee phase sites suggesting a shift away from deer as the dominant source of meat. Unlike the Harlan and Spiro phase artifact assemblages, the elaborate ceremonial and burial artifacts are mostly absent, and utilitarian artifacts dominate.

1. All the previous questions related to subsistence, technology, settlement patterns, and the like apply here, with even greater emphasis on comparing Protohistoric data to earlier and later evidence.
2. Any new information on social organization, especially with regard to processes of acculturation, would be important; migration and trade are two examples.
3. Additional research of historic documents would be appropriate, not only with regard to finding new information, but also to better resolve various biases and interpretations that may be influencing current research.
4. Because smaller, dispersed sites that may reflect even single family homesites are possible in the Protohistoric, and new categories of artifacts may be present, various archaeological techniques such as shallow but wide area excavations, use of electronic remote-sensing devices, and innovative methods could be appropriate.
5. How are current survey techniques possibly missing these often minimal archaeological sites, and what modifications of both field and laboratory techniques might better identify them?

Historic Aboriginal—Cherokee Arkansas
During the recent testing in the Red-Green Alternative overlap, ten sites with Cherokee or possible Cherokee components were tested (Buchner 2012; Buchner et al. 2012). Site 3PP449/3PP611, the only previously excavated Cherokee farmstead in the Arkansas River Valley, was among these, and geophysical investigations were carried out as a part of the testing program there.

The Phase II Cherokee or possible Cherokee artifact recovery from the ten sites is summarized below (Table 3; after Buchner 2012). Site 3PP449/3PP611 produced the largest and most diverse early nineteenth century assemblage, and it is clearly the "premiere" Cherokee site in the New Hope Bottoms. 3PP610, another large multi-component site on T-5, produced the second largest Cherokee assemblage that included both ceramic and glass diagnostics. Site 3PP733 ranked third in recovery, but only yielded ceramic diagnostics. The other tested Cherokee components very low-density, and are interpreted as limited activity areas rather than habitation or cabin sites.

The study area is located within the "heartland" of Cherokee Arkansas, which is broadly defined as the Arkansas River corridor between Little Rock and Fort Smith (Stewart-Abernathy 1998:42). During the 1790s, Cherokee Indians began moving into the region, and they occupied it until 1828 when a treaty resulted in their relocation to Indian Territory (Oklahoma). The

largest number of Cherokee emigrated to Arkansas ca. 1817, and during the generation that they were in Arkansas, the population was probably four to five thousand. Also known as the Western Cherokee, they established scattered family farmsteads and farms complete with cattle, and some even owned slaves. The dispersed families were organized in traditional "towns," spread out along tributaries on the north side of the Arkansas River, at places such as Galla Creek, Illinois Bayou, Piney Creek, Spadra Creek, Horsehead Creek, and Mulberry River (from Pope County to Franklin County respectively), as well as Dutch Creek and Spring Creek south of the river (in Yell County). Additionally, Presbyterians established Dwight Mission (3PP58) in 1820 near Russellville to educate Cherokee in American lifeways. In 1819, the naturalist Nutall (1999:129) met Cherokee leader John Jolly at Webber's store (near what is now New London), and Nutall noted his appearance was that of an American, only his language was different.

Table 3. Cherokee or possible Cherokee diagnostic recovery during previous Phase II testing.

Site	Pearlware, plain	Pearlware, decorated	Whiteware, decorated	Redware	Bottle glass, dark green	Sheet copper scraps	Gunflint, tan	Metal button, Type 11	Totals
3PP449/3PP611	24	29	16	22	4	4	1	1	101
3PP610		3	9		7				19
3PP612			1						1
3PP692									0
3PP722	—	—	—	—	—	—	—	—	—
3PP730									0
3PP732	2								2
3PP733	2	6	1						9
3PP734			1						1
3PP736			5						5
Totals:	*28*	*38*	*33*	*22*	*11*	*4*	*1*	*1*	*138*

Data after Buchner (2012); — landowner denied access to site.

As noted in the "Previous Investigations" section, the only excavated Arkansas Cherokee habitation site (3PP449) is located within the Red-Green Alternative overlap (Stewart-Abernathy 1998). This site's artifact assemblage is characterized by a mixture of Euro-American artifacts dating to the period 1790-1835—such as English ceramics, dark green bottle glass, a cut shank nail, a bullet mold fragment, and two metal buttons—combined with distinctive Native American artifacts—glass beads, Overbill Curvilinear Complicated Stamped pottery, and pieces of sheet brass. Importantly, 3PP449—now known as 3PP449/611—will be revisited during this investigation, and the condition of the site will be re-evaluated. Stewart-Abernathy (1998) reported a number of constraints during their investigation of 3PP449, including: difficulty locating Cherokee features due to the presence of a heavy Woodland midden, and erosion of the terrace edge. It was suggested that mechanized stripping might be employed to locate Cherokee features (Stewart-Abernathy 1998:46).

During Lafferty et al.'s (2005) survey of the Red Alternative, 13 sites with possible Cherokee components were reported. Diagnostics largely consists of ceramics including early annular wares, flow blue decorated, blue shell edge whiteware, sponged whiteware, and blue transfer prints. Five of these possible Cherokee components will be tested during this study (3PP677, 3PP678, 3PP688, 3PP722, and 3PP728). The mostly promising of these sites appears to be 3PP722, but access to this site was denied during the last testing project. Research themes that are applicable concern subsistence, technology, settlement patterns, trade, and site formation processes. Questions include:

1. What is the archaeological 'signature' of an Arkansas Cherokee site?
2. What types of artifacts should be considered Cherokee horizon markers?
3. Did Cherokee manufacture Overhill Curvilinear Complicated Stamped pottery at the project area?
4. What other traditional craft production continued and can be documented?
5. What types of subsurface features occur at these sites? Sheet middens, cellars, storage pits, and possibly burials can be expected, and could be generally similar to patterns at early nineteenth-century Euro-American cabin sites.
6. Is there one or more pit features (or filled cellars) located under each Cherokee house, as suggested by Stewart-Abernathy (1998)?
7. Can remote sensing be employed to locate Cherokee features?
8. Can the location of the historic settlements shown on archival maps be archaeologically identified?
9. Do Cherokee sites occur at fields shown on GLO plat maps?
10. Were the Cherokee settlements in the study area part of the Galla Creek town or the Illinois Bayou town?
11. Can the Cherokee town settlement pattern of scattered family farmsteads be delineated in the archaeological record?
12. Can historic individuals be attributed to any specific sites or site clusters in the project area?
13. What was the Cherokee subsistence base? Is there evidence for subsistence farming and hunting, as we suspect?
14. What was the nature and intensity of trade or exchange relations with Euro-American settlements?
15. How has modern agricultural activity affected the site formation process?

American Period

Pope County was founded in 1829, immediately after the Cherokee were relocated (Herndon 1922). Johnson County was created in 1833 from a portion of Pope County. With the removal of the Native Americans, Arkansas grew fairly rapidly in the 1830s and in 1836, Arkansas became the twenty-fifth state.

The American Pioneer Settlement Period (1803-1860) is roughly synonymous with Stewart-Abernathy and Watkins' (1982) pioneer activity period (1780-1850) in the *State Plan*. The Arkansas Cherokee occupation falls within the first half of this period. Sabo et al. (1990:149) view the settlement pattern of the American Pioneer Settlement Period in terms of a two-stage model with the period prior to the 1850s being viewed as an initial colonization stage, followed by a spreading phase dated post-1850s. During the initial colonization stage, a hunter-herder way of life was prevailed. This adaptive strategy was "focused on wild resources, with a minimal investment in permanent dwelling, land clearing, gardening or close management of stock" (Early 2000:8). Pioneer agriculturists followed the first wave (i.e., initial stage), but in some parts of the Ozarks, the hunter-herder persisted until the early twentieth-century. Pioneer agriculturists had a more complex and fixed impact on the landscape, as farmsteads, towns, and

service facilities were part of this settlement pattern. Few American Pioneer Settlement Period sites have been excavated in the Ozarks (Sabo et al. 1990:148).

The period from 1875 to 1930 is known as the Historic Developed Settlement Period (Sabo et al. 1990:158-170). During this period, the population density increased and there were significant changes in settlement patterns and agricultural practices. The Arkansas River Valley and the Ozarks transformed from Pioneer subsistence farming to general farming, and advances in the transportation infrastructure brought the region out of relative isolation. Numerous "small rural hamlets and communities sprang up throughout Ozarkia" (Sabo et al. 1990:161). As the railroad and road network improved, a logging boom spurred the development of numerous saw mills, and hardwood related industries (Sabo et al. 1990:164).

Regarding the archaeology of the Developed Settlement period, Sabo et al. (1990:166) have succinctly noted that "Although a large number of historic archaeological sites representing the Developed Settlement period have been identified in recent cultural resource management surveys, only a few of these studies have addressed these sites in a meaningful way, and even fewer of these sites have been intensively studied." Thus the archaeological characteristics of Historic Developed Settlement Period sites in the Ozarks are best understood through excavations conducted at a few farmstead sites, such as Moser (3BE311) (Stewart-Abernathy 1986), the Dowell Homestead (3WA577) (Lafferty et al. 1997), the Lambert Farmstead (3SW674) (Cande 1995), and the Beckham Homestead (3NW919) (Cande 2000). Systematic differences between yeomen farms and tenant farms may influence the archaeological record of farmsteads in the Ozarks (Sabo et al. 1990:169-170).

Historic Developed Settlement Period sites in the Ozarks yield high frequencies Architectural Group artifacts, principally nail and window glass. Kitchen Group artifacts are less well represented, and include bottle glass and ceramics dating from the late-nineteenth century to the mid-twentieth century. The ceramics are typically cheaper types, often from mismatched sets, and many of these types can be identified following Price (1979). Mean ceramic dates are often not calculated for these sites due to the long span of whiteware production (1830 to present), as well as problems relating to temporal lag. Only trace frequencies of other artifact groups are found (Activities, Arms, Clothing, Personal, Biological), and in small assemblages these minority groups types are often not represented. The cultural materials at Historic Developed Settlement Period sites are typically recovered from near surface contexts, and structural features such as rock piers and depressions are common. Occasionally these sites are multi-component, i.e. co-occur with prehistoric material.

During the survey of the Red Alternative, Lafferty et al. (2005:213-214) identified 47 historic components, and 27 of these produced historic ceramics. Fourteen of these sites produced "substantial" quantities of ceramics and are postulated to be house or residential sites. Fourteen of the sites to be tested contain historic components (see Table 1). These sites may contain data and artifacts that can be used to address the following American Period research themes:

1. Do the pre- and post-Civil War settlement pattern models proposed for the lower and middle South (clustered versus dispersed) hold true for the study area?
2. What are the settlement patterns of the nineteenth century? Is there a settlement hierarchy based on the locations of trails, ferries, and later railroads, or are the settlement patterns more influenced by local physiographic features?
3. Can the nineteenth-century communities identified on historic maps be associated with clusters of archaeological sites?
4. Can artifact patterns and matrix ordering be utilized to infer ethnic and other socio-economic class at Historic Developed Settlement Period sites?

5. What are the archaeological characteristics of the various extractive industry sites that are possible within the project vicinity, such as sawmills?
6. What types of historic site formation processes ("yard sweeping," razing, and refuse disposal in sinks) occur in the study area, and what are the resulting implications to archaeologists?
7. What additional information regarding the vernacular architecture of the Arkansas River Valley can be collected from further study of farmstead surface features?
8. Has the excavation of deep features, such as wells, cisterns, and privies, been overlooked as a potentially significant line of research at sites that are largely eroded or otherwise disturbed at near-surface levels?
9. Are mean ceramic date (MCD) calculations accurate, i.e., is there a "ceramic lag," and if so, of what average duration is it?
10. Does the development of the rural road network parallel an increase in population?

TASK 3A—FIELDWORK

Landowner Permission

Panamerican will obtain written permission from all the landowners to conduct the Phase II excavations and associated fieldwork. Under Arkansas State Law, landowner permission must be obtained prior to conducting fieldwork.

Permission to test two sites in the Red-Green Alternative overlap was previously denied by the landowners (Buchner et al. 2012). They include 3PP722, owned by Craig Bailey, and Site 3PP743, owned by the Wharton Family.

The remaining 18 sites are located north of Duffield Road in the northeast ¼ of Section 4 or northwest ¼ of Section 3 of T6N R20W in the southern portion of the Green Alternative. A preliminary review suggests that these sites are located on parcels owned by the Ronnie Duffield Living Trust or the Ronnie Duffield Gravel Company. During the prior Phase II work, it took considerable effort and the assistance of the Authority to obtain permission from Mr. Duffield to test sites on their property.

Safety

In general, Panamerican will comply with safety standards for Phase II archaeological assessments. All Panamerican vehicles contain fire extinguishers and first aid kits, and all permanent personnel have current certifications from the American Red Cross in CPR and First Aid. Each Panamerican fieldwork session starts with a safety meeting, and each person in attendance signs the meeting log. The company's Human Resources Officer maintains a log of these safety meetings.

Site Relocation

The site relocation methods will conform to those previously utilized by Buchner et al. (2012). The site locations will be identified using a handheld GPS receiver. The 2005 AAS site forms contain site sketch maps that show the UTMs for centrally located points (typically this is where a shovel test was excavated by MCRA). These UTM positions appear accurate to the nearest meter.

Panamerican will stake a point at each of the 20 sites based on the 2005 UTM coordinates, and label them with the site number and UTM coordinate. This stake will become the datum for the Phase II excavations at each site. The position of the datum will be recorded using Panamerican's sub-meter accurate GPS unit (a 2008 Trimble GeoExplorer).

Horizontal Control

The grid origin point will be designated the datum at each site (see above). All excavation units and features at the site will then be assigned binomial coordinate values (East and North,

abbreviated E and N) based on their metric position(s) relative to the datum/grid origin. The southwest corner of each excavation unit will be used as it reference point. Positions will be accurate to the nearest centimeter (0.01 m). All formal excavation units will be marked with their coordinates.

Because there are 20 sites to test, we will change the values of each datum/grid origin point at each site. For example, the grid origin point for the first tested site will be E1000 N1000, the second site's grid origin point will be E1100 N1100, and so forth. This will avoid redundant duplications of coordinates and is a quality control method we have used in multi-site testing programs in the past.

Vertical Control and Mapping

A contour map of each site will be generated using data collected from a company owned total station, or related equipment. The elevations of all shovel test locations and formal excavations will be recorded to the nearest 0.01 m. Some additional transit readings will be collected from beyond the site area in an effort to record each site's relationship to the larger topographic setting. The elevation values will be used with the E and N point coordinates to create an X, Y, and Z contour map for each site and its environs using a computer application.

The surface elevation at the grid origin will be arbitrarily established as 100 m. All elevations at each site will be vertically recorded to the nearest 0.01 m in relation to the grid origin. If possible, an open traverse will be worked back to a known USGS datum in an effort to establish the natural elevation of the grid origin (and thus all recorded points within a site).

Vertical control within the formal excavation units will be established "shooting in" the elevation of the each unit's datum (the ground surface the highest corner of each unit). Technicians excavating the units will record level depths in relation to this datum using traditional line level readings. Line level readings will be taken from a string pulled from datum.

Shovel Test Grids

A grid of shovel tests will be excavated at 10 m intervals at each of the 20 sites. This task is needed because there is currently limited subsurface data (one to three shovel tests) available regarding the deposits. This will provide data to produce subsurface density plots that will assist in the placement of the test units (see below).

The estimated number of shovel tests required at each site varies by its size. Each shovel test is assumed to cover 100 m^2, thus number of shovel tests represents the site area (see Table 2) divided by 100. Table 4 below summarizes our view of the required number of shovel tests at each of the 20 sites to test. In total 1,776 shovel tests are estimated. This estimation assumes that the site area reported by MCRA on the 2005 site forms is accurate, which was generally true during our last round of testing. If during the course of our fieldwork, it is determined that a site's subsurface deposit exceeds the previously reported site area by more than 5-10 percent, then a cost and/or labor adjustment may be requested.

A shovel test is defined as the excavation of a four-sided hole at least 30 cm to a side (0.09 square m). A standard shovel test will be excavated to 75 cm below surface (cm bs). At four sites where cultural deposits are greater than 70 cm deep (3PP671, 3PP685, 3PP687, and 3PP690; see Figure 2), the shovel tests will be excavated to 100 cm. To ensure consistent artifact recovery, all sediment will be hand screened through 0.25 in. mesh hardware cloth. All natural and cultural strata revealed in the individual shovel test profiles will be recorded using metric depth measurements, and described in terms of textural class and color (using the Munsell Soil Color Chart).

Table 4. Proposed Phase II Excavations by Site.

Site	Shovel tests	1-x-2 m Test Units	Remarks
3PP17	125	3	The Howell Farm Site. Only northern 180 m portion of site north of Duffield Road requires testing (see Lafferty et al. 2005:Figure 81).
3PP669	8	1	
3PP671	65	2	
3PP672	19	1	
3PP673	196	5	
3PP674	34	1	
3PP675	246	5	Added 50 extra shovel tests to cover 100-x-50 m area on west, because the site extends to west for an "undetermined distance" (see Lafferty et al. 2005:Figure 32).
3PP677	31	1	
3PP678	60	2	
3PP680	72	2	
3PP684	238	7	
3PP685	19	1	
3PP687	91	3	
3PP688	25	1	
3PP689	96	3	
3PP690	301	8	The Bird Point Ridge Site. Lafferty et al.'s (2005:Figure 46) map indicates the site extends 350 m north of Duffield Road, but text and AAS quad plot suggest 500 m.
3PP720	17	1	
3PP722	58	2	A promising probable Cherokee component.
3PP728	38	1	
3PP743	37	1	
"Flex" Units		5	
Totals:	1,776	54	

Test Units

Test units will be placed at each site in order to document the natural and cultural stratigraphy. The Principal Investigator will determine the placement of the units based on the results of the shovel testing, past experience, and geophysical findings. We will target "hot" spots (i.e., high-density locations) for formal excavation.

Formal excavations will consist of 1-x-2 m test units, the same unit size that was utilize during the 2011-2012 testing program. The number of 1-x-2 m units at each site will be partly based on site size and partly based on field results. At a minimum, one 1-x-2 m unit will be excavated at each site.

We propose to excavate fifty-four (54) 1-x-2 m units at 20 sites (Table 4). Forty-nine (49) 1-x-2 m units are planned at the 20 sites based on their surface area (i.e., larger sites get more units and we assume one unit per 60-x-60 m of site area). They include nine small sites where one 1-x-2 m unit is proposed; four sites where two 1-x-2 m units are proposed (3PP671, 3PP678, 3PP680, and 3PP722); three sites ("Howell Farm" [3PP17], 3PP687, and 3PP689) where three units are proposed; two sites (3PP673 and 3PP675) where five units are proposed; one site (3PP684) where seven units are proposed; and one site ("Bird Point Ridge" [3PP690]) where eight units are proposed.

Furthermore, we will excavate five (5) additional "Flex" units at sites to be determined based on the nature of the field results. It is likely that some of the small sites where only one unit is currently proposed will receive a second "flex" unit. These units can be viewed as "insurance" to be deployed at the discretion of the Field Director and/or Principal Investigator as necessary based on field findings. Additionally, should good evidence be found that a site is NRHP eligible within its first formal excavation unit, then any additional planned excavations will be redirected to other sites (because as additional excavations at that site would be unnecessary). To conclude, the formal excavation unit frequencies per site that are proposed in Table 4 should be viewed as flexible.

More generally, the 1-x-2 m units will be hand excavated in 10 cm arbitrary levels. Unit excavations will continue to at least the depth of previously recorded artifacts (see Table 2, Figure 2). Once that depth is achieved and two sterile levels are encountered, then excavations will cease. At the base of one unit at each site, a 50-x-50-x-50 cm "plug" will be excavated in one corner of each unit to test for more deeply buried deposits. The maximum depth of excavation is expected to be 1 m for the sites with previously reported artifacts from the upper 50 cm. The maximum depth for of unit excavations for the other sites (i.e., deeper sites; see Figure 2) is expected to be no deeper than 140 cm below surface.

All removed soil will be dry screened through 0.25 in. mesh to insure consistent artifact recovery. All recovered material will be separately bagged by unit and level. Formal excavations will be documented through use of standardized unit-level forms, plan and profile drawings, and photography. Sediments shall be described in terms of textural class and Munsell color value. Special samples will be removed directly from the unit excavations as dictated by the nature of the deposits. Special sample types include pollen and flotation.

Features

Features and/or artifact concentrations that are exposed in hand or mechanical excavations will be mapped, excavated, and recorded using standardized forms and scale drawings. Each feature will be assigned a unique feature number, and its basic size, shape, and matrix characteristics will be recorded. Following identification, all cultural features will be classified as either: (1) non-post feature; or (2) post mold. These feature classes will be differentially excavated and their sediment processed as follows:

- Non-post features will be cross-sectioned, and 50 percent excavated. Cross sectioning will provide information on feature shape and fill as well as initial information on integrity of material culture remains. Most of the removed fill will be dry screened through 0.25 in. mesh. A 2-liter sample will be processed by flotation. Flotation yields a heavy fraction (1/16-in. mesh) and two light fractions (1.40 mm and 0.335 mm). Once processed, the flotation samples will provide data regarding the presence or absence of micro artifacts (less than 1/4 in. mesh, but greater than 1/16 in. mesh in size) in the heavy fraction, and the nature and quantity of archae-botanical remains and charcoal in the light fractions.

- Postmolds or possible postmolds will be excavated without cross sectioning. Their fill will be processed by 0.25-in. mesh dry screening.

It is assumed that no more than 10 non-posts and 50 post molds will be encountered at each site. If more are encountered at a given site, then feature sampling or a budget modification will be necessary.

Our standardized feature form requires the following information: basic metric and location data, recovery methodology, fill Munsell color and textural class, types and density of recovered material; associated bag numbers; name of excavator and date; and feature class. Adequate space for additional particularistic comments by the excavators is provided. The elevation of the

top (i.e., point of origin) and base of each feature will be recorded. As noted above, scale plan and profile sketches and photography are a part of Panamerican's Standard Operating Plans (SOPs) for feature recording.

Documentation
Additional in field project documentation will include, but not be limited to the following type of records: (1) daily field notes of key project personnel (i.e., Field Director and Principal Investigator) that note general findings, excavation placement reasoning, and other key observations; (2) completion of various task oriented forms such as, shovel test records, unit-level forms, bag list, feature forms, feature log, and photographic logs; in addition to (3) various "in-house" paperwork, employee timesheets, expense reports, etc.

Photography
Digital photos will be taken in sufficient quantities to record significant data and information. All photographs will be recorded in a dedicated photographic log. The photo logs and digital images (.jpeg files) will become part of the permanent project records, and will be included with the curated material.

Human Remains
If potential human remains are encountered, work will cease in the immediate area of the discovery. The burial site will be flagged off (or otherwise physically delineated) as an "exclusion zone," and covered so as to prevent public viewing. The buffer zone around human remains will be 10 m in diameter.

Potential human burial locations will also be secured to prevent vandalism. Typically, this involves recovering them with soil, but other method(s) may also be employed. Panamerican will notify the Parsons archaeologist immediately upon encountering human burials or potential human burials. If the remains are human, Parsons will ensure that the appropriate Native American Tribes and the Arkansas SHPO are notified. Local law enforcement may be notified at the discretion of Parsons after consulting the SHPO/AHPP.

No human burials will be knowingly excavated nor will human remains and/or associated funerary artifacts be moved without the approval of the appropriate Native American Tribes and the Arkansas SHPO/AHPP. Field personnel will treat any human remains with the utmost respect.

Backfilling
Once the archaeological investigations are completed all hand excavations and any stripped areas will be backfilled. The site areas will be restored to its approximate original grade and drainage.

TASK 3B—REMOTE SENSING

Remote sensing was successfully employed at Site 3PP449/3PP611 during the 2011-2012 testing program (Buchner et al. 2012). We recommend that a geophysical survey be conducted at three sites in this package, and offer the following reasoning.

Howell Farm (3PP17)
Howell Farm (3PP17) is a Woodland village that was identified during the Dardanelle Reservoir survey (Greengo 1957) and was tested by the AAS in 1970. Importantly, testing revealed nine human period burials within three pit features. Sketch maps suggest that the burial pits were located south of Howell Road, and thus in a portion of 3PP17, is outside the RVIF. However, because 3PP17 is a large habitation or village, it is possible that similar pits or other Woodland features, such as structures, exist in the RVIF portion of the site. As a result, we recommend that a geophysical survey of 3PP17 be conducted. Test units can then be used to ground truth any geophysical anomalies.

Bird Point Ridge (3PP690)
Bird Point Ridge (3PP690) is a large prehistoric site well-known for yielding arrow points. The site contains a substantial Mississippian occupation at its southern end, while to the north it contains scattered Woodland farmsteads. There are likely human burials in the area of intensive Mississippian occupation. A geophysical survey would greatly enhance our ability to locate the Mississippian features, such as structures, pits, and burials, as well as individual Woodland farmsteads. Test units would be used to ground truth selected geophysical anomalies.

3PP722
Site 3PP722 is a moderate sized (0.58 ha) probable Cherokee habitation site. Geophysical investigations of 3PP722 could assist in identifying Cherokee cellar features or midden, similar to what was successfully done a nearby Cherokee component (3PP449/3PP611) during the recent testing.

The specific geophysical survey methods will be developed by the geophysical/remote sensing operator in consultation with the Principal Investigator and Parsons' archaeologist. Most likely a gradiometer will be initially employed at all three sites, and selected area could then be subjected to a Ground Penetrating Radar (GPR) survey. A target list will be generated, and the target locations will be reported using corrected UTMs.

TASK 4—ARTIFACT ANALYSIS AND CURATION

Artifacts collected as a result of the field investigations will be transported to Panamerican's office in Memphis, Tennessee for processing and analysis. Analyses will be accomplished under the supervision of our Laboratory Director and will adhere to regionally accepted standards for classification of cultural materials. Any recovered cultural material will be prepared for curation in accordance with 36 CFR Parts 79 and 800, and the *State Plan*.

The result of the recent Phase II testing in the Red-Green Alternate overlap can be used to estimate the number and classes of artifact that will be recovered during this testing program because the same testing methods will be employed. During the earlier testing, 28 sites produced artifacts (Buchner et al. 2012: Table 6-01). The average artifact recovery per site was 597, but there was considerable variation in assemblage size among the sites, thus the standard deviation is high (±1,722). Using an estimated average recovery of 597 artifacts, we estimate that 11,940 artifacts will be recovered during testing of the 20 sites.

The bulk of the recovery is expected to consist of prehistoric artifacts, as during the earlier Phase II work, they represented over 90 percent of the recovery. Prehistoric artifacts will be typed or classified using standard regional typologies. Lithic artifacts will be sorted following our standard laboratory procedures (Buchner et al. 2012). Emphasis will be placed on identifying and typing diagnostic specimens. Native American ceramics will be typed following Stewart-Abernathy (1998) and Lafferty et al. (2005).

Historic artifacts will be sorted into functional groups and individual categories following South (1977).

The overall goal of any analysis is to provide the data by which the hypothesis or research topics identified can be addressed. Material will be analyzed within the constructs of the local and regional typologies, and special attention will be given to those aspects of the data that will provide chronological and functional insights into the site assemblages.

Initial analysis will proceed by provenience (site, excavation unit/level, feature, etc.) Standardized analysis forms and format will be used to record pertinent data as well as to maintain provenience information in conjunction with direct computer input of relevant information. Recovered materials are prepared for curation as analysis proceeds. All 0.25 in.

recovery will be sorted by appropriate analytical category, class, etc., and subjected to full analysis.

Standardized forms will be used to record data concerning cultural materials. This effort will be geared toward the compilation of tabular summaries of recovery (i.e., EXCEL® spreadsheets). All pertinent information including sample type, assigned catalog numbers, date of analysis, and initials of analysts are recorded on these forms. As analysis proceeds, summary tables can be generated to provide data on diagnostic and other pertinent material recovered. This provides rapid access to cultural, temporal, and in particular cases, functional information, thus aiding interpretations. Eventually, all material recovered will be tabulated. These data can be presented by site, intra-site provenience, or analytical categories (see above) in the report of investigations.

Special Samples

Soil and flotation samples may be processed in our lab using flotation and/or fine mesh (1/16 in.) water screening as appropriate. Preliminary analysis of any recovered archae-botanical remains or faunal remains will be conducted to the extent that preservation allows. Funding for archaeo-botanical zooarchaeological and pollen analysis is not provided. The goal of the Phase II is to establish that nature and kind of cultural material that is retrievable; complete analysis of such would constitute Phase III data recovery.

Curation

All artifacts and project records will be curated at the UACF in Fayetteville upon project completion. The assemblage and records—including computer files—will be prepared for curation in a manner acceptable to AAS and that conforms to 36 CFR Parts 79 and 800.

TASK 5—MANAGEMENT SUMMARY

A Management Summary will be submitted within one week of the completion of the fieldwork. It be approximately five page long and will include site maps. The Management Summary will summarize the most salient aspects of the field results and will offer preliminary NRHP recommendations for the tested sites in both alternatives.

TASK 6—AAS SITE FORM UPDATES

An updated AAS site forms will be completed and submitted the AAS Registrar for each of the 20 sites that will be tested.

TASK 7—DRAFT REPORT

The results of the investigations will be detailed in a draft report. The draft report will meet or exceed the guideline found in Appendix B of the Arkansas State Plan: *Guidelines for Archeological Fieldwork and Report Writing in Arkansas* (Revised Version in effect as of 1 January 2010) and conform to the *American Antiquity* Style Guide. More generally, the document will be a well-illustrated, scientifically sound, stand-alone document detailing all aspects of the project, from background information, to fieldwork, artifact analysis, and conclusions.

In the draft and final reports, NRHP recommendations will be explicitly stated. Each site will be recommended as either "eligible" or "not eligible." If additional archaeological investigations are recommended at a given site (i.e., a site is recommended "eligible"), then preliminary assessments of Phase III field options may be provided in the recommendations.

After the completion of the test excavations, Panamerican will offer definitive recommendations regarding the NRHP status of each site investigated. Tested sites will be considered either "Eligible" or "Not Eligible;" no inconclusive determinations will be offered.

NRHP Criteria
The National Register of Historic Places outlines four criteria by which cultural resources should be evaluated:

> *The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:*
>
> *(a) that are associated with events that have made a significant contribution to the broad pattern of our history; or:*
>
> *(b) are associated with the lives of persons significant in our past; or*
>
> *(c) that embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
>
> *(d) that have yielded or may be likely to yield, information important in prehistory or history.*

Criterion d is most often applied to archaeological sites. However, it can be very broadly applied, to the point that virtually all sites are potentially eligible. For this reason a more objective, locally specific set of evaluation criteria needs has been established.

Specific NRHP Evaluation Criteria
Because limited CRM work has been conducted in this region (see *Previous Investigations* section above), specific, unequivocal NRHP criteria for archaeological sites have not been developed for the Arkansas River Valley. Below we propose a set of eligibility criteria for sites at the Intermodal facilities. These criteria are based on other published evaluation models developed by Panamerican, but should be viewed as provisional and subject to modification, as necessary, as testing data accumulate at the Intermodal Facilities.

Eligible Properties

The presence of any of the following characteristics on a site at the Intermodal Facilities will automatically make them "Eligible" for inclusion on the NRHP:

1. Any prehistoric site with identifiable, well preserved cultural features, specifically post molds, pits, hearths, or burials, and that has well preserved material useful for radiocarbon dating, faunal analysis, and/or archaeo-botanical analysis.

2. Stratified deposits with multiple components identifiable to specific time period/archaeological cultures that can be isolated horizontally or vertically from one another. Such components must be in minimally disturbed strata. Additionally, individual components on such sites must exhibit horizontal clusters of demonstrably associated (i.e., through refitting, raw material, or other techniques) artifacts indicative of undisturbed occupation floors.

3. Artifact density and diversity within one or more of these stratigraphically isolated components must be such as to provide a useful information return. Such components should exhibit artifact densities greater than an average of 100 artifacts per cubic meter (calculated on all artifact bearing levels within the site boundaries, or units where the specific component occurs, if this can be determined), and more than three distinct tool, debitage, or ceramic artifact categories. Sites with lower artifact densities may be considered eligible, but explicit reasons must be provided.

4. Single component site assemblages identifiable to specific time periods/archaeological cultures that meet criteria 2, and that are in minimally disturbed deposits.

5. Historic sites with well preserved and minimally disturbed sub-plowzone features such as cellars, wells, privies, foundations, chimneys, etc.

6. Yield high artifact densities that can provide useful information return (i.e., greater than 250 artifacts per cubic meter, calculated over all artifact bearing levels within the site boundaries, or units where the specific component occurs, if this can be determined). Sites with lower artifact densities may be considered eligible, but explicit reasons must be provided.

7. Can be tied to specific individuals or businesses through historic archival research, and as such can be used to help reconstruct the history of settlement in the area.

8. Unique single component prehistoric or historic sites possessing information not available at other locations. These components must exhibit horizontal clusters of demonstrably associated (i.e., through refitting or other techniques) artifacts or features indicative of undisturbed or minimally disturbed occupation floors.

Not Eligible Properties

The presence of any of the following characteristics automatically make a site evaluated at the Intermodal facilities "Not Eligible" for inclusion on the NRHP:

1. Isolated artifacts. Little information beyond that obtained at the time of the collection can be derived from such assemblages. Care must be taken, however, to ensure that the presence of other deposits has been ruled out. Isolates may be the only detected evidence of a complex site.

2. Deflated surface scatters.

3. Sites damaged by cultural or natural factors to the extent that depositional integrity is destroyed; in particular, low-density plowzone deposits.

4. Any multiple component or stratified site that has been found, through controlled excavations to be mixed or disturbed to the extent that the horizontal or vertical resolution of individual components cannot be accomplished.

5. Recent (post 1961) historic debris scatters.

Sites meeting these characteristics may still be considered eligible for listing on the NRHP, if for example, unusually rare assemblages were documented (i.e., Paleoindian), but explicit reasons must be provided.

TASK 8—FINAL REPORT

Following SHPO review, a final report will be prepared that incorporates reviewer's comments into the draft report.

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