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Presentation
to the

CIVIL WORKS REVIEW BOARD

May Branch, Fort Smith, Arkansas
Feasibility Study

COL Wally Walters, Commander
Army Corps of Engineers, Little Rock District

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October 26, 2006

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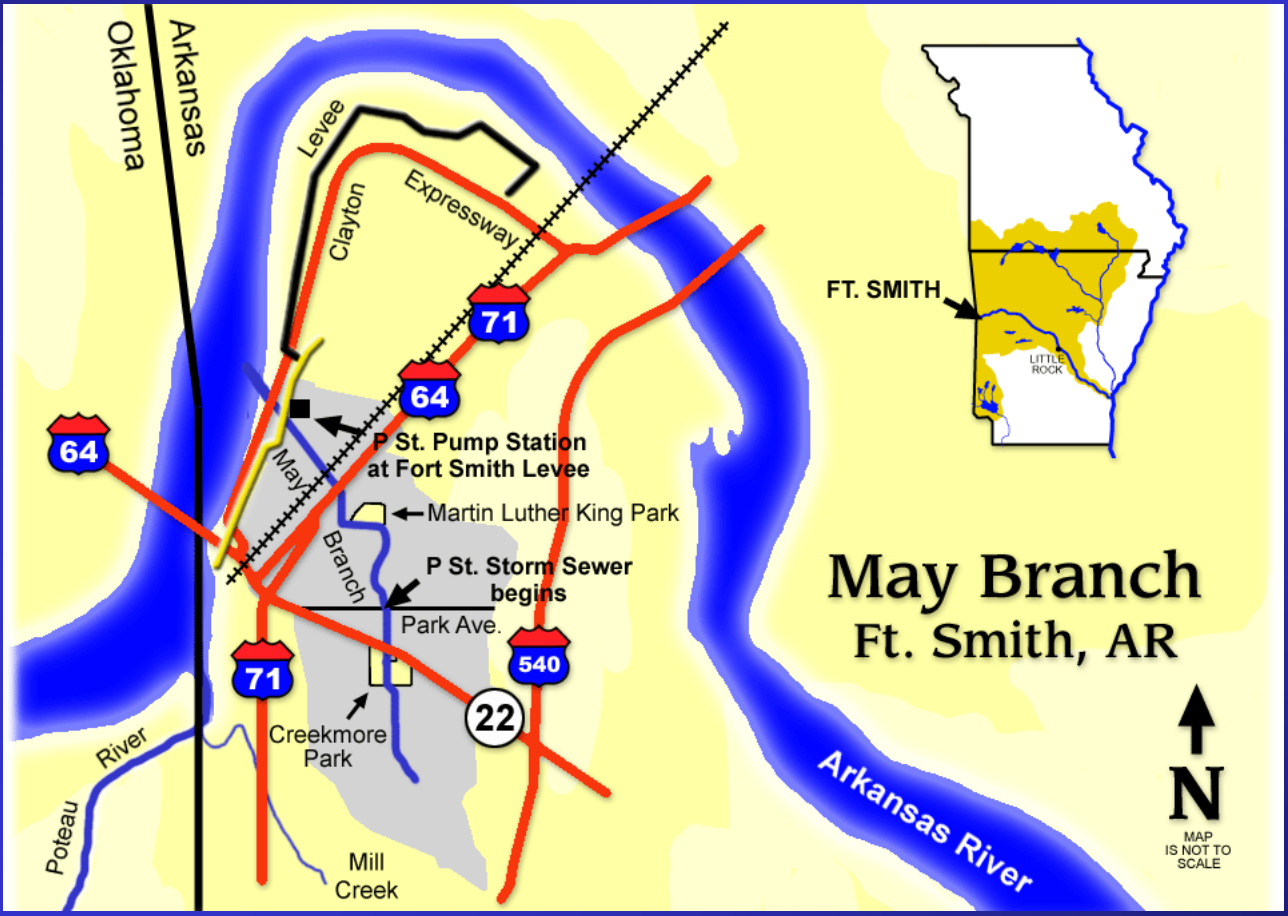
Vicinity Map



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Project Study Authorization

RESOLVED BY THE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION OF THE HOUSE OF REPRESENTATIVES, UNITED STATES, that the Board of Engineers for Rivers and Harbors, established by Section 3 of the River and Harbor Act approved June 13, 1902, is hereby requested to review in cooperation with the States of Arkansas and Oklahoma, political subdivisions, agencies and instrumentalities thereof, and appropriated Federal agencies as a shared effort, the report of the Chief of Engineers on the Arkansas River and tributaries, published as House Document No. 308, seventy-fourth Congress, and other pertinent reports, with a view to determining whether any modification of the recommendations contained therein are advisable at this time, with particular reference to developing an implementable plan for storage, conservation, treatment, and conveyance of water in the Arkansas River and tributaries in Arkansas and Oklahoma, for municipal, industrial, and agricultural uses and other purposes. This study should include an assessment of the usability of the water for various uses.

(Adopted March 11, 1982)

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Purpose

- To present the findings and recommendations of the May Branch, Fort Smith, Arkansas, Feasibility Study and Environmental Assessment

- To demonstrate that the proposed project is technically feasible, economically justified, and environmentally sound

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Problems and Opportunities

- Problems
  - **Flood damages to industry, businesses, and residences**
- **Opportunity**
  - **Alleviate flood damages**
  - **Restore some minor aquatic habitat**

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Constraints

- Maintain the flood reduction provided by the Fort Smith Levee and P St. Pump Station
- Avoid potential contamination sites
- Minimize relocations
- Adhere to the open space criteria required under FEMA's HMGP
- Federal interest limit at Grand Ave.
- Avoid wetlands.

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P Street Drain Outlet

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Park Avenue

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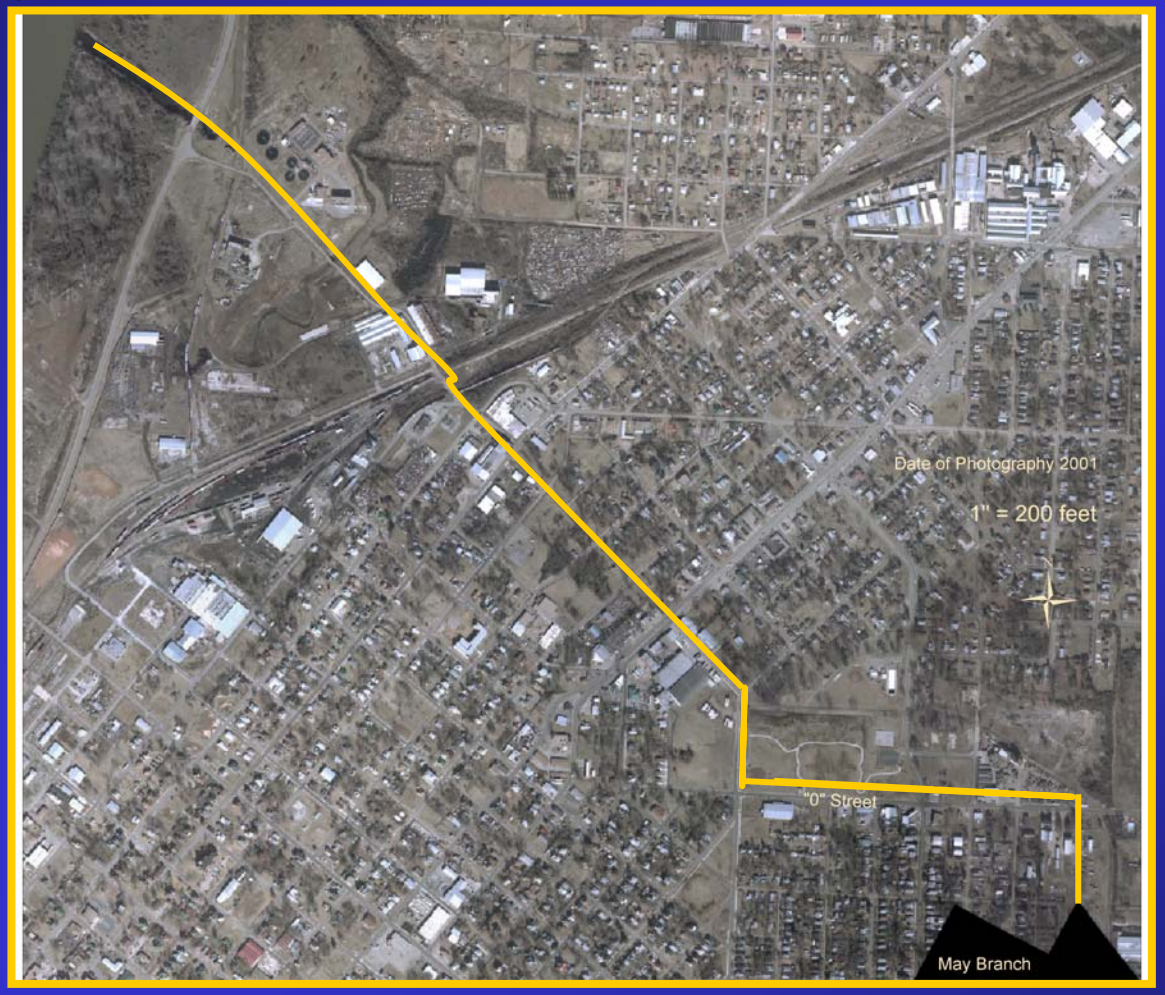
P Street Storm Drain



Existing Conditions, P St. Storm Drain Built in 1910

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P Street at 9th Street

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Looking Upstream

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Upstream Flood Heights

Figure 9.--FLOOD HEIGHTS ALONG MAY BRANCH.

This apartment building is located in the Elm Grove Housing Project on North P Street. The bottom and middle arrows show the heights of the August 1971 Flood and the Intermediate Regional Flood, respectively.

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Arkhola and Grand Ave

Channel Alignment tight fit between hill and Arkhola Plant

Grand Ave Limit of Federal Interest

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Alternative Plans

Evaluated:

- **No Action**
- **Non-Structural, Relocate flood plain structures**
- **Structural**
  - Pump Stations
  - Tunnel construction
  - Channel Reconstruction with Road and Railroad Crossings

Effective Plan Selected to be Optimized:

- **Channel Reconstruction with Road and Railroad Crossings**

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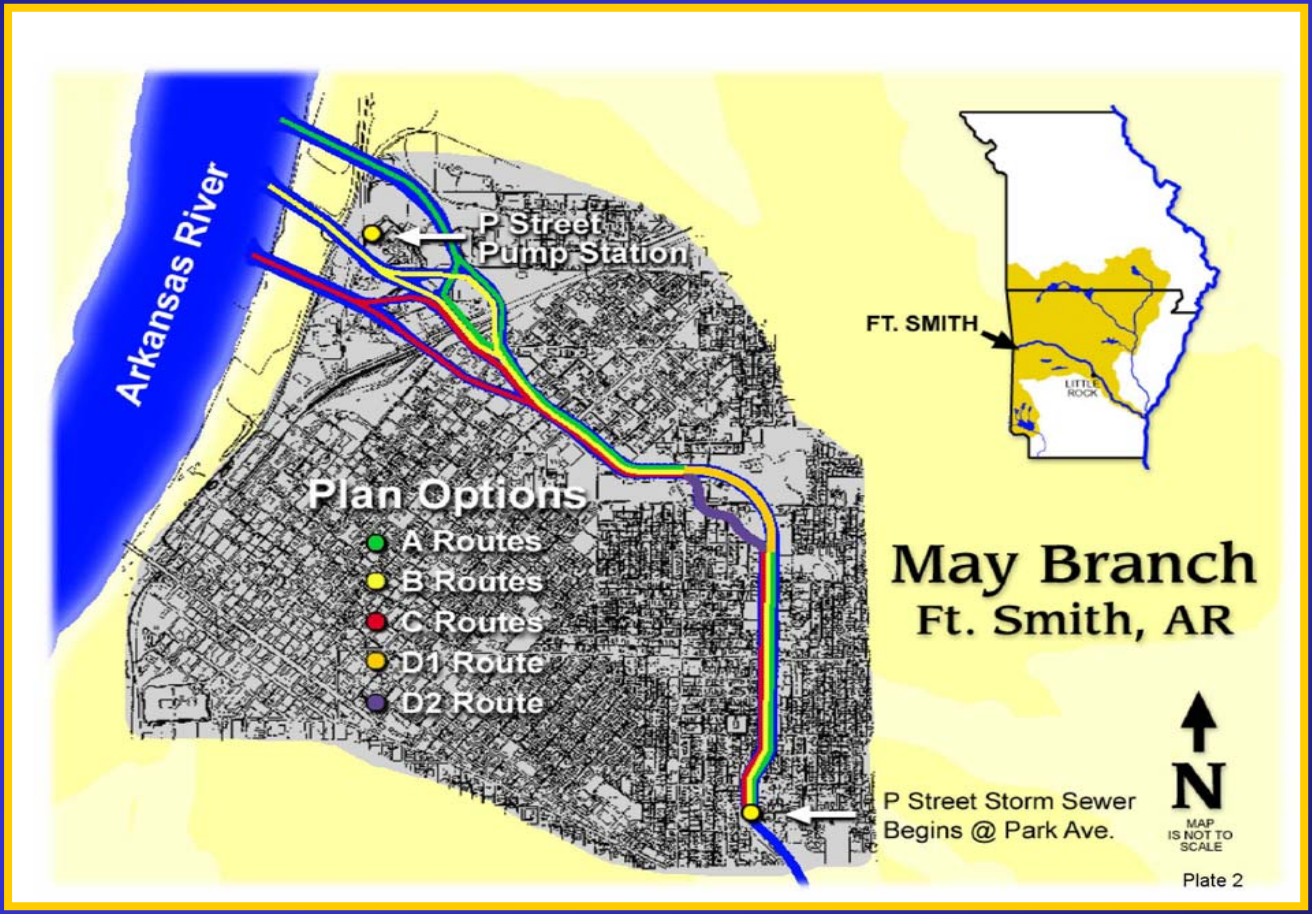
Plan Route Options



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NED/LPP Comparison

NED Costs and Benefits	Item	LPP Costs and Benefits
$22,856,500	Project First Cost	$24,813,100
$24,861,500	Total Investment Cost	$27,269,100
$1,388,300	Interest & Amortization	$1,522,600
$55,200	OMRR&R	65,200
$1,443,500	Total Average Annual Costs	$1,587,800
$1,443,500	Total Average Annual Benefits	$1,723,300
$252,200	Net Annual Benefits	$135,500
1.17	Benefit/Cost Ratio	1.09

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Recommended Plan

Locally Preferred Plan Recommended as Approved by ASA(CW) 27 October 2005

- 2.77 miles of reconstructed channel
- 5 Railroad & 9 Road Crossings
- Hydraulic Control Structure at Levee
- Estimated cost = $30.5 million
- Benefit-to-Cost Ratio = 1.09
- Net Annual Benefits = $ 1.7 million

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LPP COSTS AND BENEFITS

Investment Costs:	Project Construction Costs	$24,813,100
(3.8-year construction period)	Interest During Construction	2,456,000
(50-year period of analysis)	Total Investment Cost	**$27,269,100**
Average Annual Costs:	Interest & Amortization	$1,522,600
	OMRR&R	65,200
	Total Average Annual Costs	**$1,587,800**
Aver. Ann. NED Benefits:	Flood Damage	$1,366,800
	Emergency, Nonphys & Utility	269,400
	Auto, Flood Insurance & Repair	87,100
	Total Average Annual Benefits	**$1,723,300**
Net Annual Benefits:		**$135,500**
Benefit/Cost Ratio:	.82 @ 7% per EO 12893	**1.09 @ 5.125%**

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Policy & Technical Review

• Feasibility Scoping Meeting	May 1999
• Independent Technical Review	Aug 2004
• Alternative Plan Formulation Briefing	Sep 2004
• Independent Technical Review	Jul 2006
• HQ Policy/Public Review	Sep 2006

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COST SHARING

Reaches 1 - 4	Federal	NonFederal	Total
Lands and Damages	$ 144,700	$3,296,700	$3,441,400
Relocations	-	4,943,600	4,943,600
Channel & Control Structure	13,136,000	-	13,136,000
Engineering and Design	1,484,200	558,500	2,042,700
Construction Management	1,336,300	503,000	1,839,300
5% Cash Contribution	(1,270,200)	1,270,200	-
Total Cost, Reaches 1-4	$14,831,000	$10,572,000	$25,403,000
Total Cost, Reaches 5-6	-	5,082,000	5,082,000
Total Cost, Reaches 1-6	$14,831,000	$15,654,000	$30,485,000
Percent of Cost, Reaches 1-6	49%	51%	100%

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Environmental Operating Principles

- Project will reduce human suffering from flooding
- Study shared with the public and other agencies to solicit their comments
- Temporary project construction impacts with no cumulative impacts
- Channel reestablishment will sustain/support minor aquatic ecosystem's viability

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Recommendation

I recommend that the Civil Works Review Board approve the May Branch, Fort Smith, Arkansas, Feasibility Report and Environmental Assessment.

- **The recommended plan is technically sound, environmentally acceptable, and economically feasible. It complies with all current policies and laws.**

- **The plan is supported by the local sponsor, the City of Fort Smith. The City has indicated a willingness and ability to provide all non-Federal requirements.**

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May Branch, Fort Smith, Arkansas Feasibility Study

Questions & Comments

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Presentation to the

CIVIL WORKS REVIEW BOARD

May Branch, Fort Smith, Arkansas
Flood Damage Reduction
Feasibility Study
By
Brigadier General Jeffrey J. Dorko
Commander
Southwestern Division

October 26, 2006

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Rationale for SWD Support

- Concur with Little Rock District (SWL) Commander's findings and recommendations
- Report complies with all applicable policies and laws in place at this time.
- Anticipate a favorable response to the draft Chief's Report
- Plan supported by sponsor and Congressional delegation

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Certification of Legal and Policy Compliance

- Legal certification by SWL Counsel on 3 July 2006
- Technical and Policy Compliance:
  - Technical Review provided by SWF/SWG technical experts
  - All comments resolved
  - SWD confirmed on 11 October 2006 that the project is technically, legally, and policy compliant

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SWD Quality Assurance Activities

- SWD reviewed ITR comments/responses to ensure appropriate resolution
- Active participation by vertical team
- Worked with SWL to successfully resolve HQ review comments
- SWL certified that project is technically, legally, and policy compliant
- SWD confirmed on 11 October 2006 that the project is technically, legally, and policy compliant

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SWD Recommendation

- Release Final Feasibility Report for State and Agency Review.
- Complete Chief's Report NLT 31 December 2006 to be postured to meet a contingent authorization in the event Congress passes WRDA 2006.

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Milestone Schedule

- Start S&A Review – 31 Oct 2006
- Complete Review – 5 Dec 2006
- Sign Chief's Report - 22 Dec 2006
- PCA Signed - Apr 2007
- Construction Complete - Dec 2013

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SWD 12 Points

- Sustain:
  - District's system analysis in full partnership with the sponsor determined additional pump capacity not needed (#2).
  - Used Risk-Based Concepts in Planning and Design (#2).
  - Adaptive Planning and Design demonstrated review taking longer than the document preparation and complete ITR at each phase so that the technical work was corrected and finalized before each phase of work was reviewed for policy.
  - Experienced planner wrote report with only few changes required.
- Improve:
  - Processes to expedite resolution of issues
  - Communication of Risk Effectively

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FY06 Budget Process

Questions?

Civil Works Review Board

Significant Policy Review Concerns

May Branch, Fort Smith, Arkansas Flood Damage Reduction Study

Jay Warren, P.E.
Office of Water Project Review
Policy and Policy Compliance Division

Washington, DC – 26 October 2006

Areas of Policy Concern:

- Recommendation Exemption
- Definition of Federal Interest
- Definition of the LPP
- Railroad Embankment Modifications
- Relocation Assistance Payments
- Business Income and Wage Losses

Recommendation Exemption

Concern: The feasibility report recommends a locally-preferred plan with larger flow capacity features in Reaches 1 and 2 of the project than identified in the NED plan.

Reason: Policy requires that the NED plan be identified and recommended for implementation unless the Assistant Secretary of the Army (Civil Works), grants an exemption to this requirement.

Resolution: Seek ASA(CW) exception.

Resolution Impact: By memorandum dated 27 October 2005, the ASA(CW) granted an exception to the Administration policy requirement that the NED plan be recommended for implementation.

Definition of Federal Interest

Concern: The feasibility report must distinguish between local drainage problems and larger flood reduction problems where there is Federal interest.

Reason: Federal interest in cost sharing is limited to that portion of the project located downstream from the point where the flood discharge is greater than 800 cfs for the 10-percent chance flood under conditions expected to prevail during the period of analysis.

Resolution: Define limit of Federal interest.

Resolution Impact: The limit of Federal interest was determined to be just upstream of Grand Avenue where the 10-percent chance flood flow equals 800 cfs. Federal interest in cost sharing project features is limited to Reaches 1 through 4 of the project. Reaches 5 and 6 of the project will be constructed at 100-percent non-Federal expense.

Definition of the LPP

Concern: The draft feasibility report incorrectly classified reaches 5 and 6 of the LPP as a "betterment."

Reason: Reaches 5 and 6 do not satisfy the definition of "betterment" contained in the model project cooperation agreement (PCA) for Structural Flood Damage Reduction. The term does not include features not included in the "project" as defined in the PCA.

Resolution: Modify the definition of the LPP to comport with the Structural Flood Damage Reduction PCA model.

Resolution Impact: The definition of the LPP has been modified in the final feasibility report.

Cost Sharing Railroad Embankment Modifications

Concern: The draft feasibility report did not correctly specify cost sharing for railroad embankment modifications

Reason: Classification of project features impacts the Federal and non-Federal shares of project costs.

Resolution: The proposed box culverts through railroad embankment segments are more properly classified as covered channel segments

Resolution/Impact: Railroad embankment modifications are classified as covered channel segments in the final report and are shared as project costs not relocations.

Treatment of Relocation Assistance Payments

Concern: The economic evaluation in the draft report included relocation assistance payment costs in the computation of equivalent annual net benefits and benefit-cost ratio.

Reason: While relocation assistance payments are properly project financial costs, policy allows their exclusion from the economic evaluation of the project.

Resolution: Exclude relocation assistance payment costs from the economic evaluation.

Resolution Impact: The final report presentation includes relocation assistance payments in the project financial costs but excludes them from the project's economic costs

Business Income and Wage Losses

Concern: The economic appendix indicated that the array of benefits claimed included estimates of prevented business income and wage losses

Reason: Must document that such losses can not be compensated for by postponing an activity or transfer of the activity to other another location

Resolution: Given the difficulty in substantiating that such losses are not regional transfers, delete these benefits estimates from the economic evaluation

Resolution Impact: Estimates of business income and wage losses prevented were deleted from the array of benefits claimed

HQUSACE Policy Compliance Review Team RECOMMENDATION

Release the report and EA for S&A Review