DEPARTMENT OF THE ARMY
SOUTH PACIFIC DIVISION, CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103

REPLY TO
ATTENTION OF

SEP 20 2011

CESPD-PDC

MEMORANDUM FOR Commander, Los Angeles District, ATTN: CESPL-PM-C, Ms. Gwen Meyer

SUBJECT: Review Plan for Tres Rios Environmental Restoration Construction Project, Arizona,

1. Enclosed is the Tres Rios Environmental Restoration, Arizona, Project Review Plan for Phase 1A - Flood Control North Levee (105th Ave. to 115th Ave.), Phase 1B - Flood Control North Levee (115th Ave. To El Mirage Road), Phase 2 - Flow Regulating And Overbank Wetlands (FRW&OBW), Phase 2 - In Plant Secondary Effluent Pump Station (LPSEPS), Phase 3 - Environmental Restoration, Phase 4 - Recreation Phase, and Phase 5 – Open Water Marsh. The enclosed review plan is in accordance with Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, dated 31 January 2010. The South Pacific Division, Business Technical Division, Planning and Policy Division, and Los Angeles District Support Team reviewed and approves the Review Plan.

2. With this MSC approval the Review Plan will be made available for public comment via the internet and the comments received will be incorporated into future revisions of the Review Plans.

3. I hereby approve the above Review Plan which is subject to change as study circumstances require. This is consistent with study and construction development under the Project Management Business Process. Subsequent revisions to this Review Plan after public comment or during project execution will require new written approval from this office.

4. The point of contact for this Review Plan approval is Mr. Paul Bowers, District Support Team Lead, (415) 503-6556, paul.w.bowers@usace.army.mil.

Building Strong From New Mexico All The Way To The Pacific!

Clyde Y. Olazaki

Encl
Review Plan

for Andrew Constantaras, P.E.
Director, Regional Business Directorate

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

MAILING ADDRESS:
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REVIEW PLAN

TRES RIOS ENVIRONMENTAL RESTORATION PROJECT

PHOENIX, ARIZONA

Prepared by:

U.S. Army Corps of Engineers
Los Angeles District

13 September 2011

TRES RIOS ENVIRONMENTAL RESTORATION PROJECT

PHASE 1A - FLOOD CONTROL NORTH LEVEE (105th Ave. to 115th Ave.)
PHASE 1B - FLOOD CONTROL NORTH LEVEE (115th Ave. to El Mirage Road)
PHASE 2 - FLOW REGULATING AND OVERBANK WETLANDS (FRW&OBW)
PHASE 2 - IN PLANT SECONDARY EFFLUENT PUMP STATION (IPSEPS)
PHASE 3 - ENVIRONMENTAL RESTORATION
PHASE 4 - RECREATION PHASE
PHASE 5 – OPEN WATER MARSH

PHOENIX, ARIZONA

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PHASE 5 – OPEN WATER MARSH

Phoenix, Arizona

1. INTRODUCTION

a. Purpose. This Review Plan defines the level and outlines the scope of the quality management activities for the overall Tres Rios Environmental Restoration Project consisting of Phase 1A Flood Control Levee, Phase 1B Flood Control Levee, Phase 2 Flow Regulating and Overbank Wetlands (FRW&OBW), Phase 2 In-Plant Secondary Effluent Pump Station (IPSEPS), Phase 3 Environmental Restoration, Phase 4- Recreation and Phase 5-Open Water Marsh.

b. References.

(1) ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999
(2) ER 1110-1-12, Engineering and Design Quality Management, 21 Jul 2006
(3) WRDA 2007 H. R. 1495 Public Law 110-114, 8 Nov 2007
(4) EC 1165-2-209, Civil Works Review Policy, 31 Jan 2010
(5) Army Regulation 15–1, Committee Management, 27 November 1992 (Federal Advisory Committee Act Requirements)
(6) National Academy of Sciences, Background Information and Confidential Conflict Of Interest Disclosure, BI/COI FORM 3, May 2003

c. Review Requirements. This review plan was developed in accordance with draft EC 1165-2-209, which establishes the procedures for ensuring the quality and credibility of the U.S. Army Corps of Engineers (USACE) decision and implementation documents through independent review. This Review Plan (RP) identifies the most important skill sets needed in the reviews, the objective of the review and the specific advice sought, thus setting the appropriate scale and scope of review for each individual phase of the overall project. The EC outlines three levels of review: District Quality Control (DQC), Agency Technical Review (ATR), and Independent External Peer Review (IEPR).

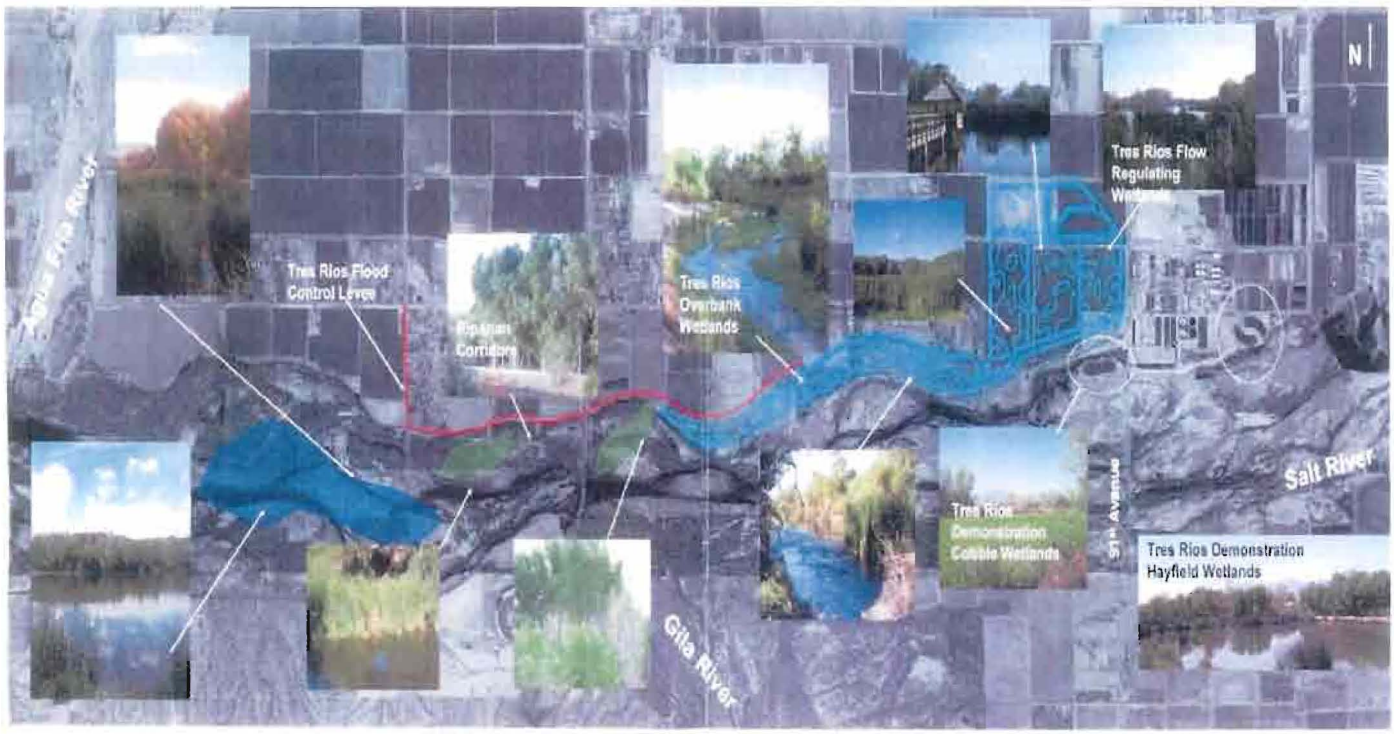
(1) District Quality Control. DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). It is managed in the home district and may be conducted by staff in the home district as long as they are not doing the work involved in the study or overseeing contracted work that is being reviewed. Basic quality control tools include a Quality Management Plan providing for seamless review, quality checks and reviews, supervisory reviews, Project Delivery Team (PDT) reviews, etc. The Major Subordinate Command (MSC)/District quality management plans address the conduct and documentation of this fundamental level of review. Further description of the District Quality Control for the project is provided under item 3-DISTRICT QUALITY CONTROL

(2) Agency Technical Review. ATR is an in-depth review, managed within USACE, and conducted by a qualified team outside of the home district that is not involved in the day-to-day production of the project/product. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR team reviews the various work products and assures that all the parts fit together as a coherent package. ATR teams will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), etc.), and may be supplemented by outside experts as appropriate. To assure independence, the leader of the ATR team shall be from outside the parent MSC. Detailed description of the ATR is provided under item 4-AGENCY TECHNICAL REVIEW below.

(3) Type II Independent External Peer Review (IEPR). IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. In accordance with Section 2035 of Water Resources Development Act (WRDA) of 2007 and EC 1165-2-209, all projects addressing flooding or storm damage reduction undergo a Safety Assurance Review (SAR) of the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed. IEPR should occur on a regular schedule sufficient to inform the Chief of Engineers on the adequacy, appropriateness, and acceptability of the design and construction activities for the purpose of assuring public health, safety, and welfare.

2. PROJECT DESCRIPTION

Overall Project View without Features (above)
Overall Project View with Features Proposed- (Below)



Overall Project View as Constructed features

a. Project Authority. The Project was authorized in accordance with the provisions of Section 101(b)(4) of Water Resources Development Act of 2000 (WRDA 2000), Public Law 106-541 (PL 106-541), and under authority given in Section 6 of Public Law 761, Seventy-fifth Congress, June 28, 1938, which reads in part as follows:

"The Secretary of War (now Secretary of the Army) is hereby given authorized and directed to cause preliminary examination and surveys for flood control ...at the following named localities –Gila River and tributaries, Arizona and New Mexico."

In addition, the project was authorized by the American Recovery and Reinvestment Act (ARRA) of 2009, Public Law 111-5 (PL. 111-5), One Hundred-eleventh Congress, February 2009.

b. Project Location and Description. The Tres Rios Ecosystem Restoration project was conceived to provide flood control in combination with environmental restoration. The project is located in central Maricopa County, about nine miles west of downtown Phoenix. The project generally includes a one-mile wide corridor along the Salt River and Gila River extending from 87th Avenue on the east,

just upstream of the City of Phoenix 91st Avenue Waste Water Treatment Plant (WWTP), past the confluence with the Agua Fria River, and ends near Bullard Avenue on the west. The proximity of the project area to these three rivers led to the name "Tres Rios". In the Spanish language, Tres Rios means "three rivers". The total project reach is seven miles.

Because the overall project was large and complex, it was decided to divide into phases with consideration of funding availability.

1. Phase 1A - Flood Control North Levee (105th Ave. to 115th Ave.)

   Phase 1A is the first phase of the overall project. It was designed in 2005. In 2007, construction was completed. It protects against the 1-percent chance (0.01 probability) of exceeding the elevation of the top of the levee. Phase 1A consists of newly compacted earth fill levee, and modified Holly Acres Levee extending from 105th Avenue to 115th Avenue, and is located along north bank of the Salt River.
   To absorb water energy and reduce water velocity, four guide dikes were constructed. These guide dikes were oriented at a 90 degree angle with the levee. Guide dikes provide a great level of protection for the levee.
   Irrigation tail water and excess storm water channels and ditches were constructed along landward side of the levee.
   A detention basin was also constructed on the landward side of the levee.

2. Phase 1B- Flood Control Levee (115th Avenue to El Mirage Road)

   Phase 1B is the second phase of the overall project that was designed in 2006. In 2008, construction was completed. It protects against the 1-percent chance (0.01 probability) of exceeding the elevation of the top of the levee. Phase 1B consists of a modified existing Holly Acres Levee extending from 115th Avenue to El Mirage Road, and is located along north bank of the Salt River.
   There are five guide dikes that were constructed along the levee on the riverward side the levee. These guide dikes provide additional protection for the levee. A reinforced concrete collector channel, irrigation tail water ditches and detention basin were also constructed along the landward side of the levee.

3. Phase 2 – Flow Regulating Wetlands and Overbank Wetlands (FRW & OBW).

   The Flow Regulating and Overbank Wetlands design contract was awarded to Damon Scott Williams and Associates (DSWA) in 2003. Construction of FRW was completed in 2009, and construction of OBW was finished in 2010.

   The purpose of FRW is to receive the treated effluent delivered by the In-Plant Secondary Effluent Pump Station (IPSEPS) and buffer diurnal flowrate fluctuations. FRW consist of construction of 350-acres of wetlands including multiple wetland cells with emergent zones, vector control points, hummocks and islands. It also includes construction of diurnal flow control structures, discharge structures, weir gates, spillways and other structures associated with measurement of chlorine residual and sodium sulfite and composite samples. Deep

water wetlands and emergent zones were designed and constructed in a parallel arrangement, so that several cells/zones can be removed from service for maintenance while the rest are left functioning. In addition to those described above, construction of operation & maintenance roads, access ramps, landscaping and piping are features to be connected with flow regulating wetlands. An approximate 2-mile crushed rock slope-soft bottom trapezoidal channel was constructed to provide flood damage reduction to local residents as well as provide protection from flood damage to FRW.
The intent of OBW is to convey regulated flow delivered from FRW, maintain a constant depth and discharge effluent into environmental restoration open-water-marsh as described in Phase 3 of this Review Plan. The OBW consists of construction of 148-acres of wetlands including cells that were design and constructed in series with inlet and outlet gate valves to control the flow in and out of each cell. The average depth of each cell is 4.5 feet. Features including islands, access roads and berms that make OBW functional are included to make OBW a unique environmental feature.

4. Phase 2 – In Plant Secondary Effluent Pump Station (IPSEPS).

   The In-Plant Secondary Effluent Pump Station design contract was awarded to Damon Scott Williams and Associates (DSWA) in 2003 concurrently with the FRW&OBW contract. Design was finished in early 2010. Construction of the IPSEPS was scheduled to begin in summer 2010.

   To utilize treated effluent generated by the 91st Avenue Waste Water Treatment Plant (WWTP), which is operated by multi-city Sub-Regional Operating Groups (SROG) consisting of the cities of Glendale, Mesa, Phoenix, Scottsdale, and Tempe who own capacity in the plant, for the purpose of restoring the Salt River ecosystem, a pump station was considered for design and construction. It will pump treated effluent from the 91st WWTP to FRW via 84" diameter pipes. The pump station is located on east side of the 91st Avenue, next to the existing Unified Pump Station which is operated by the local sponsor (City of Phoenix-Water Services Department).

   The pump capacity is 300 mgd expandable to 460 mgd as a maximum discharge. Related key elements of the IPSEPS include: approach channels, wet well, appurtenances, 84"-Dia. force mains (piping system) with associated valves, motors, meters, connection of pump station automatic control system to existing plant distributed control system (DCS), and a ventilation system.

5. Phase 3– Environmental Restoration (ER)

   The Phase 3-Environmental Restoration consists of phases 3A, 3B and 3C. Design contract was awarded to GENTERRA Consultants Inc. in January 2010, initially, but later turned over to Kiewit Western Company as a Design-Build Contract to complete work for Phase 3A. Phase 3A is currently under construction..
   The project area extends approximately 5.2 miles in length and one-mile in width, along the Gila River and Salt River. The project initiates near the 115th Avenue crossing near the Gila River and Salt River confluence area. The project then continues downstream along the Gila

River just downstream of the Agua Fria River confluence.

The development of the project offers an opportunity to restore critical riparian and wetland habitats that have been lost in the region as a result of water resources development in the Phoenix metropolitan area. The project will take the opportunity to utilize various water sources including natural river and groundwater flows, and most importantly, the treated effluent from the 91st Avenue WWTP via IPSEPS, FRW and OBW described above. These water sources will serve to expand and sustain riparian and wetland habitats along the watercourse without the need of a permanent irrigation system.

Design consists of a series of cottonwood/willow stringers/riparian corridors on the north side of the river. This design shall include plans for diverting water to the cottonwood/willow stringers to support the riparian habitat and design, while maintaining the ability for water to flow through the stringers and continue downstream into the open water/marshes. Design also calls for several open water/marshes with nesting islands and benches along the river and would allow for this feature area to receive water from (1) treated effluent through the riparian corridors, (2) the natural flow of the river, and (3) to utilize the relatively high groundwater table in the area to help support and sustain these habitats.

Design of the improved habitat areas will accommodate future trail-connections and alignments for the last phase of the overall project. The project design shall identify the space and setbacks required to safely accommodate the future design and construction of trails and other amenities

6. Phase 4 - Recreation Phase

The Recreation Phase design contract was awarded to Tetra Tech in 2010. Based on Alternative 3.5 from the Tres Rios Feasibility Study and Environmental Impact Statement report April 2000, the consultant will develop a Final Development Plan. The Final Development Plan should be completed in August 2010, and Construction Documents completed in February 2011.

The goal of this phase is to take advantage of and formalize the multiple recreational opportunities available at the site. This phase provides recreational opportunities for visitors of all ages and backgrounds to enjoy and become more aware of this unique resource. Most of the 150,000 expected visitors will be taking advantage of the recreational opportunities at the Tres Rios project between October and May when temperatures are moderate.

Recreational design features will include the following:

Site Access Parking, Picnic Tables and Restroom Facilities: Those visiting the project will be able to arrive by private vehicle or alternate modes of transportation, including horse, public transit or bicycle. Users may enter at one of five primary access points along the bank at 91st Avenue, 99th Avenues, 107th Avenue, 115th Avenue (Avondale Blvd.), and El Mirage Road. These points coincide with existing river

crossings or roads. Amenities at each access point will vary, but shall include: twenty-five (25) stabilized decomposed granite parking spaces, picnic tables, staging/educational areas with one (1) interpretive sign, and a pre-fabricated composting (toilet) restroom facility. Each trail head will provide appropriate information and directional signage, an orientation kiosk to give visitors an overview of the activities and experience available, and orient users to the sensitivity of the area and appropriate uses and expectations.

Trails: Stabilized decomposed granite multi-use trail connections from the site access parking lots and trail heads (above) to the environmental restoration project, overbank wetlands existing maintenance roads/trails will be provided. Barrier-free access will also be provided for users with limited mobility. Trail directional signage will be included.

Future Educational Design Features and Visitor/Interpretive Center: In a future phase of the Tres Rios Ecosystem Restoration project, the City of Phoenix and others will design and construct a visitor/interpretive center and possibly some outdoor classrooms and interpretive exhibits. As a part of this contract, the recreation phase design shall plan for the future center and any outdoor classrooms, and coordinate for these features in our design by ensuring our recreational features will not conflict with future programming.

7. Phase 5- Open Water Marsh.
   Final phase of the overall Tres Rios Environmental Restoration project includes Open Water Marsh along the south side of the Salt River that extends from 91st Avenue to 105th Avenue. It is expected that this phase will be awarded sometimes in FY15.

c. History and ARRA Program Inclusion. From 2003 to 2010, the Los Angeles District of the Corps of Engineers (SPL) has awarded multiple Architect-Engineer (A/E) and construction contracts mentioned above for the overall project. Of those A-E and construction contracts, the following phases were selected to be eligible for the ARRA of 2009.

Name	ARRA Approved Amount	Award Date
Phase 2-ISEPS Construction	$25,000,000.00	April 2010
Phase 2-OBW Construction	$15,000,000.00	April 2009

d. Value Engineering. A Value Engineering Study was conducted to evaluate potential project modifications resulting in cost savings and an improved project. In January 2002, a meeting was conducted by members of the COE design team. The purpose of the meeting was to review the results of the Value Engineering Follow-up Memorandum, dated August 2001. A report entitled, "Tres Rios Value Engineering: Proposed Actions for Final Value Engineering Recommendations," was the result of the meeting. Recommendations in the report pertained to phases 1A and 1B by the COE to be studied further and adopted, if reasonable.

e. Real Estate. There are no Real Estate issues with Phase 3 Environmental Restoration and

Recreation Phase.

f. Issues, Models, and Challenges. The datum's for the Tres Rios Project have not changed. It was designed and built using the same datum's NGVD 1929 for vertical and NAD 1983 Arizona Central Zone. Horizontal. Unit of measure is US Survey Feet. This project was also referenced to NAVD 1988 as per the Comprehensive Evaluation of Project Datum's (CEPD). The difference between NGVD 1929 and NAVD 1988 is 2.19 feet (add 2.19 feet to NGVD 1929 to get 1988).

HEC-RAS, which is part of the Corps-approved models, was used for this project.

For this project, MII (second generation of MCACES, Micro-Computer Aided Cost Estimating System) was used to develop the construction cost estimates.

For this project, the Abbreviated Cost and Schedule Risk Analysis model (for projects under $40 million) was used to develop the contingency factors used in the Total Project Cost Estimate.

3. DISTRICT QUALITY CONTROL (DQC)

The District Quality Control and Quality Assurance activities for the Tres Rios Environmental Restoration project have been or are being completed under the previous USACE policy of Independent Technical Review per ER 1110-1-12, Engineering & Design Quality Management. Agency Technical Review (formally called Independent Technical Review), quality checks and reviews, supervisory reviews, and Project Delivery Team (PDT) reviews are required by the ER. The following ITR procedures were followed by the Los Angeles District for the Plans and Specifications (P&S) and the Design Documentation Report (DDR) for construction of the Tres Rios Environmental Restoration project:

(1) As an initial feature of the work, the designated engineer; DSWA, GENTERRA and the In-House design lead developed a quality control plan (QCP) that is appropriate to each phase of the project for which the designated engineer is responsible for. The QCP describes the procedures to be implemented by the A/E's and the PDT to assure quality control. The QCP includes the breakdown of the responsibilities of each member of the A/E's engineering design staff and the A/E's review team as well. The USACE-SPL (U.S. Army Corps of Engineers-Los Angeles District) was responsible for the review and approval of this plan. A list of the PDT members is included in the Appendix A.

(2) The A/E's are required to conduct their own design review and an independent technical review of their Pre-Final and Final products before submitting to the USACE-SPL for review. The A/E's independent quality control teams, which are independent teams of engineers not working on the project, are required to perform official reviews using DrChecks to document the comments and responses. In the end, the A/E's provide QCP certification that the plans and specifications (P&S) have undergone the A/E's quality control procedure and that the plans are ready for advertising. It is also noted that the A/E's are required to have all the design drawings and specifications stamped by a registered professional engineer.

(3) In addition to the Independent Review held by the A/E's, there are two agency review

teams reviewing the project's packages for technical adequacy including the City of Phoenix Water Services Department and the Flood Control District of Maricopa County. The City of Phoenix Water Services Department is responsible for operation and maintenance of the IPSEPS, FRW and OBW. The Flood Control District of Maricopa County (FCDMC) is responsible for operation and maintenance of all flood control features consisting of Phase 1A-Levee and Phase 1B-Levee including guide dikes, channels and interior drainage. These two main key agencies have been involved in the review of the A/E's and In-House design packages and were provided the opportunity to review every single level of submittal. Review comments were documented in either DrChecks or MS Word documents.

(4) Besides the two main agencies mentioned above, the Maricopa County Department of Transportation (MCDOT) and Arizona Development Services Department (ADSD) were also involved in review of the packages. Review comments/resolutions were documented.

(5) The last agency review team is the USACE-SPL. Design, cost, real estate, environmental and construction engineers provided reviews on the A/E's FRW & OBW, IPSEPS, ER and Recreation Phase design packages from the standpoint of contracting and managing the construction of this project.

(6) The USACE-SPL also performed thorough review of all in-house designs of flood control features consisting of 1A and 1B to make sure these features were designed in accordance with the USACE's Engineering Manual and Regulations.

Quality assurance certificates were completed.

4. AGENCY TECHNICAL REVIEW (ATR)

a. Scope. Agency Technical Review (ATR) is undertaken to "ensure the quality and credibility of the government's scientific information" in accordance with ER 1110-1-12. In order to insure incorporation of the USACE national experience for Flood Risk Management Projects (as updated per post-Katrina investigations), and in addition to the A-E's ITRs, the ATRs will also be performed. Moreover, all provisions and checklists for Safety Assurance Review (SAR) contained in EC 1165-2-209 will be incorporated into the ATR. The ATR team will be established per ER 1110-1-12 and EC 1165-2-209. The Corps will manage the ATR internally and it will be conducted by individuals and organizations that are separate and independent from those that accomplished the work, in accordance with policy. The ATR Team Leader will be a Corps of Engineers employee and must be outside the home MSC district. The required disciplines are described below.

b. ATR Disciplines. As stipulated in ER 1110-1-12, ATR members will be sought from the following sources: regional technical specialists (RTS); appointed subject matter experts (SME) from other districts; senior level experts from other districts; Center of Expertise staff; appointed SME or senior level experts from the responsible district; experts from other USACE commands; contractors; academic or other technical experts; or a combination of the above. The ATR Team will be comprised of the following disciplines.

Discipline	Experience Needed for Review

Hydrology & Hydraulics	The team member should be a registered professional with 10 or more years experience in conducting and evaluating hydrologic and hydraulic analyses for flood risk management projects. Experience with all aspects of hydraulic engineering including: knowledge of analyses techniques of sediment and regime flows, forecasting of scour based on channel slope, sediment loads, sediment budget, geology, and basin/historic hydrology, and designing of the appropriate protection/launching apron dimensions and other river engineering structures; water velocities, pressures, directions, trajectories, and erosion potential; and hydraulic modeling is desired. Experience with the Dam or Levee Safety program is also desired. Active participation in related professional societies is encouraged.
Geotechnical Engineering	The team member should have 10 or more years experience in geotechnical engineering. Experience needs to include geotechnical design and evaluation of flood risk management structures to include: slope stability analysis of earthen slopes, levees, and embankments; seepage through earthen embankments; underseepage of earthen embankments, floodwalls, closure structures and other pertinent features; settlement of earthen embankments; foundation design; and riprap and grouted stone designs.
Structural Engineering	The team member should have 10 or more years experience in structural engineering. The reviewer shall have extensive experience in design and evaluations of large complex hydraulic structures associated with flood risk management projects. Experience needs to include bridge design and bridge evaluations for modifications associated with flood risk management projects. Also experience in design of hydraulic structures such as side drains constructed through levees. Practical knowledge of construction methods and techniques as it relates to structural portions of projects is encouraged. Experience with AASHTO and state road and bridge standards is encouraged.
Civil-Engineering	The team member should have 10 or more years experience with civil/site work projects to include levee systems, roads and highways, relocations, paving and drainage.
Cost Engineering	The team member should have 10 or more years demonstrated in the preparation of cost estimates, cost risk analyses and cost engineering. Experience is needed for complex Civil Works projects to include levee systems. Reviewer should be certified as a Cost Engineer by the Walla Walla DX which requires an 8 hour training and a signed certificate.
Landscape Architect	The team member should have 7 or more years demonstrated in the preparation of landscape architect. Experience is needed for complex Landscape projects to include wetlands systems.
Environmentalist/ Ecologist	The team member should have 5 or more years demonstrated in working as an environmental engineer or ecologist. Be expertise in Biology and Ecology. Familiarity with mitigation for endangered species and water quality impacts especially familiarity with the project area would be beneficial.

Geologist	The team member should have 5 or more years demonstrated in working as a Geologist. Be familiar with the project area. Experience and knowledge in rock.

NEPA Compliance. The team member should have 10 or more years experience in NEPA compliance activities and preparation of Environmental Assessments and Environmental Impact Statements for complex civil/site work projects. Experience is needed for levee system projects.

ATR Team Leader. The ATR Team Leader should have 10 or more years experience with Civil Works Projects and previously performed ATR Team Leader duties on complex civil works projects.

c. Communication. The communication plan for the ATR is as follows:

(1) The team will use Document Review and Checking System (DrChecks) to document the ATR process. The Technical Project Leader will facilitate the creation of a project portfolio in the system to allow access by all PDT and ATR Team members. An electronic version of the documents, appendices, and any significant and relevant public comments shall be posted in Adobe Acrobat PDF format at: ftp://ftp.usace.army.mil/pub/ at least one business day prior to the start of the comment period.

(2) The PDT shall send the ATR team leader one hard copy of the documents for each ATR team member such that the copies are received at least one business day prior to the start of the comment period.

(3) The PDT shall host an ATR kick-off meeting virtually to orient the ATR team during the first week of the comment period. If funds are not available for an on-site meeting, the PDT shall provide a presentation about the project, including photos of the site, for the team.

(4) The Technical Project Leader shall inform the ATR team leader when all responses have been entered into DrChecks and conduct a briefing to summarize comment responses to highlight any areas of disagreement.

(5) A revised electronic version of the documents with comments incorporated shall be posted at ftp://ftp.usace.army.mil/pub/ for use during back checking of the comments.

(6) PDT members shall contact ATR team members or leader as appropriate to seek clarification of a comment's intent or provide clarification of information in the report. Discussions shall occur outside of DrChecks but a summary of discussions may be provided in the system.

(7) Reviewers will be encouraged to contact PDT members directly via email or phone to clarify any confusion. DrChecks shall not be used to post questions needed for clarification.

d. Timing and Schedule.

The ATR process for this project will follow the following timeline. Products produced for these milestones will be reviewed, except those that are already completed. Actual dates may have to be

adjusted once the period draws closer. In addition, ATRs will be performed any Design Documentation Report(s) (DDR) and O&M Manual(s) for the project.

No additional costs for reviews are needed for the following phases because either design reviews or construction for these phases are completed.

Phase 1A - Flood Control North Levee (105th Ave. to 115th Ave.)

Final P&S Package	15 Mar 2005
Complete Back Check Review	18 Mar 2005
QC Certification	22 Mar 2005
BCOE Certification Complete	19 Apr 2005
Advertise Construction Contract	15 Jun 2005
Open Bids	14 Jul 2005
Construction Contract Award	29 Jul 2005

Phase 1B- Flood North Control Levee (115th Ave. to El Mirage Road)

Final P&S Package	10 Sept 2006
Complete Back Check Review	27 Sept 2006
QC Certification	29 Sept 2006
BCOE Certification Complete	04 Oct 2006
Advertise Construction Contract	04 Jun 2007
Open Bids	05 Jul 2007
Construction Contract Award	26 Jun 2007

Phase 2 – Flow Regulating and Overbank Wetlands

Final P&S Package	3 April 2008
Complete Back Check Review	14 April 2008
QC Certification	14 April 2008
BCOE Certification Complete	17 April 2008
Advertise Construction Contract	22 April 2008
Open Bids	02 June 2008
Construction Contract Award	23 June 2008

Phase 2 – In Plant Secondary Effluent Pump Station (IPSEPS)

Final P&S Package	17 Feb 2010
Complete Back Check Review	25 Feb 2010
QC Certification	25 Feb 2010
BCOE Certification Complete	17 Feb 2010
Advertise Construction Contract	4 Mar 2010
Open Bids	6 April 2010
Construction Contract Award	27 April 2010

Phase 3 – Environmental Restoration (3A) Design-Build (D-B)

Final P&S Package	Sept 2011

D-B Quality Control	April 2011
QC Certification	Aug 2011
Complete Back Check Review	Aug 2011
BCOE Certification	12 July 2011
D-B Contract Award	1 Feb 2010
Physical Completion	May 2012

Beside ATR, there will be costs for reviews associated with the following phases.

Phase 3 – Environmental Restoration (3B) Design-Build (D-B)

Final P&S Package	May 2012
A-E Quality Control	Oct 2011
ATR	Sept 2011
ATR Complete Back Checking	Aug 2012
ATR Certification	Sept 2012
BCOE Certification	Sept 2012
DB Contract Award	Sept 2011
Physical Completion	Oct 2012

Phase 3 – Environmental Restoration (3C) Design-Build (D-B)

Final P&S Package	Aug 2014
A-E Quality Control	June 2014
ATR	April 2014
ATR Complete Back Checking	June 2014
ATR Certification	July 2014
BCOE Certification	Sept 2014
DB Contract Award	Sept 2014
Physical Completion	August 2015

Phase 4 - Recreation Phase

Final P&S Package	18 Apr 2012
A-E Quality Control	26 July 2011
ATR	Nov 2011
ATR Complete Back Checking	April 2012
ATR Certification	April 2012
A-E QC Certification	6 April 2012
BCOE Certification	11 April 2012
Advertise	17 May 2012
Open Bids	17 May 2012
Award	19 June 2012

Phase 5 – Open Water Marsh

Final P&S Package	Apr 2016
A-E Quality Control	July 2015
ATR	Sept 2015
ATR Complete Back Checking	April 2016
ATR Certification	April 2016
A-E QC Certification	6 April 2016
BCOE Certification	April 2016
Advertise	May 2016
Open Bids	May 2016
Award	June 2016

e. Funding.

The Los Angeles District will provide labor funding by cross charge labor codes. Funding for travel, if needed, will be provided by way of a government order. The Project Manager will work with the ATR team leader to ensure that adequate funding is available and is commensurate with the level of review needed.

The current cost estimates for the ATR are as follows:
1. Phases 3B: in the range of $10,000 to $15,0000
2. Phase 3C: in the range of $13,000 to $20,000
3. Phase 4: $10,000 to 15,000
4. Phase 5: $15,000 to $20,000.

The ATR team leader shall provide organization codes for each team member and a responsible financial point of contact (CEFMS responsible employee) for creation of labor codes.

Reviewers shall monitor individual labor code balances and alert the ATR team leader to any possible funding shortages.

f. Review.

(1) ATR Team responsibilities are as follows:

(a) Reviewers shall review project authorization material and the design documents to confirm that work was done in accordance with established professional principles, practices, codes, and criteria and for compliance with laws and policy. Comments on the design documents shall be submitted into DrChecks.

(b) Reviewers shall pay particular attention to one's discipline but may also comment on other aspects as appropriate. Reviewers who do not have any significant comments pertaining to their assigned discipline shall provide a comment stating this.

(c) Grammatical and editorial comments shall not be submitted into DrChecks. Comments should be submitted to the ATR manager via electronic mail using tracked changes feature in

the Word document or as a hard copy mark-up.

(d) Review comments shall contain these principal elements:

- a clear statement of the concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
- the basis for the concern, such as law, policy, or guidance – cite the appropriate law, policy, guidance, or procedure that has not been properly followed;
- significance for the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
- specific actions needed to resolve the comment – identify the action(s) that the PDT must take to resolve the concern.

(e) The "Critical" comment flag in DrChecks shall not be used unless the comment is discussed with the ATR manager and/or the Technical Project Leader first.

(2) PDT Team responsibilities are as follows:

(a) The team shall review comments provided by the ATR Team in DrChecks and provide responses to each comment using "*Concur*", "*Non-Concur*", or "*For Information Only*". *Concur* responses shall state what action was taken and provide revised text from the report if applicable. *Non-Concur* responses shall state the basis for the disagreement or clarification of the concern and suggest actions to negotiate the closure of the comment.

(b) Team members shall contact the PDT and ATR Team managers to discuss any "Non-Concur" responses prior to submission.

g. Resolution.

(1) Reviewers shall back check PDT responses to the review comments and either close the comment or attempt to resolve any disagreements. Conference calls shall be used to resolve any conflicting comments and responses.

(2) Reviewers may "agree to disagree" with any comment response and close the comment with a detailed explanation. If reviewer and responder cannot resolve a comment, it should be brought to the attention of the ATR team leader and, if not resolved by the ATR team leader, it should be brought to the attention of the Engineering chief, who will need to sign the certification. ATR Team members shall keep the ATR team leader informed of problematic comments. The vertical team will be informed of any policy variations or other issues that may cause concern during HQ review.

h. Certification. To fully document the ATR process, a statement of technical review will be prepared.

Certification by the ATR team leader and the Technical Project Leader will occur once issues raised by the reviewers have been addressed to the review team's satisfaction. Indication of this concurrence will be documented by the signing of a certification statement (Appendix B).

5. INDEPENDENT EXTERNAL PEER REVIEW PLAN (WRDA 2007 Section 2035 Safety Assurance Review or SAR)

a. General. EC 1165-2-209 provides implementation guidance for both Sections 2034 and 2035 of the Water Resources Development Act (WRDA) of 2007 (Public Law (P.L.) 110-114). The EC addresses QM procedures for both the planning and PED phases and incorporates requirements for conduct of Type II IEPR/SAR. The EC defines Section 2035 Safety Assurance Review, Type II Independent External Peer Review (IEPR).

Per EC 1165-2-209, a Type II Safety Assurance Review shall be conducted on design and construction activities when a project:

- addresses hurricane and storm risk management or flood risk management;
- involves existing and potential hazards that pose a significant threat to human life;
- uses innovative materials or techniques;
- lacks redundancy, resilience, or robustness in the design; or has unique construction sequencing or a reduced or overlapping design/construction schedule

This applies to new projects and to the major repair, rehabilitation, replacement, or modification of existing facilities. External panels will review the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed.

6. WORK PRODUCTS TO BE REVIEWED

a. Project Phases. To date, construction schedules of the project phases are as follow:

1. Phase 1A - Flood Control North Levee: Construction completed in 2007.
2. Phase 1B - Flood Control North levee: Construction completed in 2008.
3. Phase 2 - Flow Regulating Wetlands and Overbank Wetlands (FRW & OBW):
    a) FRW: Construction completed in 2009.
    b) OBW: Construction completed in 2010.
4. Phase 2 - In Plant Secondary Effluent Pump Station (IPSEPS): Construction is underway and about 65% completion.
5. Phase 3 - Environmental Restoration (ER):
    a) Phase 3A: Design –Build currently about 70% completion.
    b) Phase 3B: Design-Build scheduled for October 2011.
    c) Phase 3C: Design-Build scheduled for FY13.
6. Phase 4 - Recreation Phase - Construction scheduled for FY13
7. Phase 5 - Open Water Marsh: Construction expected for FY14

This Review Plan is intended to cover the design process and work products for the phases described above.

b. Products for Review. As indicated above, construction of all phases of the overall project, except Phases 3B, 3C, 4 and 5 had been completed or near completion prior to initiation of the Review Plan. It should be noticed that Phases 3B, 3C, 4 and 5 involve only environmental restoration, these phases don't contain any flood risk features and therefore, they will not be subject to the requirements for a Type II Independent External Peer Review (IEPR)/Safety Assurance Review (SAR) as described in EC 1165-2-209. However, an ATR and Cost Review will be needed for phases 3B, 3C, 4 and 5. All these four phases will have to undergo a Cost Review by a certified ATR member from Walla Walla District.

Design products require for Phases 3B, 3C, 4 and 5 include Design Documentation Report (DDR), plans and specifications (P&S) and Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R) manuals. The proposed review level for each of the project features is identified in the feature appendix.

c. Authorization & Reference Materials. Electronic versions of the documents, including, DDR, plans and specifications and OMRR&R manuals and all relevant information available shall be posted in Adobe Acrobat PDF format for the ATR Reviewers to review.

d. The District Quality Control (DQC) activities for Phase 1A, Phase 1B, Phase 2- FRW&OBW, Phase 2-IPSEPS and Phase 3A.
The DQC activities have been completed under the previous Corps of Engineers policy Independent Technical Review (ITR). The PDT team used the Document Review and Checking System (DrChecks) to document the review process. Reviewers were responsible for backchecking responses to the review comments and either close the comment or attempt to resolve any disagreements. The local sponsor and project stake holders also played

As mentioned in item No. 6 - Work Products to Be Reviewed.
Phases 1A and 1B construction was completed prior to initiation of the Review Plan (RP). The newly completed phases 1A & 1B were turned over to the Local Sponsor.
Phase 2-FRW&OBW construction was also completed prior to initiation of the RP and the project was turned over to the Local Sponsor.
Phase 2-IPSEPS construction is about to be completed. Design was finished before implementation of the new WRDA Policy.
Phase 3A is a design-built contract. Construction of this phase is about to complete.

Due to the extensive review process that has been carried out for those phases described above and construction completion schedules, any additional reviews are not likely to develop new processes that will change prevailing practices, present complex challenges for interpretation, or result in controversial recommendations. The peer expertise for this type of design project lies with the local entities and their engineering staffs already identified as primary peer reviewers for these project features.

Copies of the DrChecks comments and responses for the above project phases including Statement of Quality Assurance, District's Quality Control Certifications and Contractor Statement of Quality Control are available upon request. Copies of DrChecks comments and responses from the Local

Sponsor and project stake holders are also available upon request.

It is also noted that the Design Build Contractor and the A/E's were required to have all the design drawings sealed and stamped by a registered professional engineer.

e. The District Quality Control activities for Phases 3B, 3C, 4 and 5

Environmental/habitat features pose no threat in regard to flood risk management, therefore, construction plans and specifications will not be subject to the requirements for a Type II Independent External Peer Review (IEPR) /Safety Assurance Review (SAR) as described in the EC 1165-2-209. However, DQC will be needed for the mentioned phases.

7. OPPORTUNITIES FOR PUBLIC INPUT INTO PEER REVIEW PROCESS

To ensure that the peer review approach is responsive to the wide array of stakeholders and customers, both within and outside the Federal Government, the review plan for this project is published on the District's website: http://www.usace.army.mil/. The public is invited to review and submit comments on the plan as described.

8. SUMMARY AND PLAN APPROVAL

In summary, SPL proposes to fully comply with all existing guidance and to add ATR in accordance with EC 1165-2-209. Approval of this plan for both the Design Phase and Construction Phase of the project features as outlined above will help facilitate SPL's completion of the Tres Rios Environmental Restoration Project within the authorized schedule.

In order to ensure the Review Plan is in compliance with the principles of EC 1165-2-209, the Review Plan must be approved by the applicable MSC, in this case the Commander, South Pacific Division (SPD). Once the Review Plan is approved, the District will post it to its district public website and notify SPD. If necessary, any changes to the review plan will be approved by following the process used for initially approving the plan.

9. POINTS OF CONTACT

Questions about this Review Plan may be directed to the Los Angeles District Project Delivery Team, Engineering contact, David Pham at (213) 452-3648, or to the Project Manager, Gwen Myer at (602) 230-6935or cell at (602) 300-5820.

APPENDIX A

LIST OF THE IN-HOUSE DISTRICT QUALITY CONTROL (DQC) MEMBERS FOR PHASE 3 ENVIRONMENTAL RESTORATION AND RECREATION PHASE

MEMBER	DISCIPLINE	EXPERIENCE	PHONE #
Roxanne Vidaurre	Civil Engineer	9 yrs with the USACE	(213) 452-3643
Van Crisostomo, P.E.	Hydraulic Engineer	17 yrs with the USACE	(213) 452-3558
Mylene Guron	Hydraulic Engineer	8 yrs with the USACE	(213) 452-3551
Tony Wong, P.E.	Structural Engineer	21 yrs with the USACE	(213) 452-3700
Paul Beaver, P.E.	Geotechnical Engineer	15 yrs with the USACE	(213) 452-3588
Phillip Eng, P.E.	Cost Engineer	19 yrs with the USACE	(213) 452-3744
Amy Holmes (213) 452-3855	Biologist/Environmentalist	10 yrs with private & 5 yrs with USACE	
Michael Fink	Environmental Specialist	22 yrs with the USACE	(602) 640-2003 X232
Steven Gale	Real Estate Specialist	15 yrs with the USACE	(602) 640-2016 X265

LIST OF THE A-E (GENTERRA) PROJECT DELIVERY TEAM (PDT) MEMBERS FOR PHASE 3 ENVIRONMENTAL RESTORATION AND RECREATION PHASE

MEMBER	DISCIPLINE	EXPERIENCE	PHONE #
Joseph Kulikowski, P.E.	Company President & Principal in Charge	45 yrs	(949) 753-8766
Douglas Harriman, P.E.	Project Manager	21 yrs	(949) 753-8766
Kristina Mohos	Geologist	7 yrs	(949) 753-8766
Joseph Dluzak	Civil Engineer	4 yrs	(949) 753-8766
Soma Balachandran, Ph.D.	Civil Engineer	20 yrs	(949) 753-8766
Andrew Shinnefield, P.G.	Geotechnical Engineer	6 yrs	(949) 753-8766
Jeff Engelmann	Landscape Architect	20 yrs	(602) 438-2221
John McCarthy, P.E., CFM	Lead Civil Engineer	25 yrs	(949) 855-5759
Jonathan Fuller, P.E., PH.D.	Hydrologist	15 yrs	(480) 222-5710
Allen Haden	Ecologist	19 yrs	(928) 774-2336
Aaron Allan, RLA	Landscape Architect	15 yrs	(602) 438-2221
Andrew Reape	Cost Estimator	12 yrs	(404) 275-5483

APPENDIX B

STATEMENT OF TECHNICAL REVIEW

COMPLETION OF AGENCY TECHNICAL REVIEW FOR THE TRES RIOS ENVIRONMENTAL RESTORATION PROJECT, PHOENIX, ARIZONA

The Los Angeles District has completed the project design documents of the Tres Rios Phase 3 Environmental Restoration and Recreation Phase. Notice is hereby given that an agency technical review, that is appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the Review Plan. During the agency technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level obtained; and reasonableness of the result, including whether the product meets the customer's needs consistent with law and existing Corps policy. The ATR was accomplished by an agency team composed of staff from multiple districts. All comments resulting from the ATR have been addressed and resolved.

TBD _____ _____

NAME Date

Project Leader,

Tres Rios Environmental Restoration

Agency Technical Review Team