



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SOUTH PACIFIC DIVISION, CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1399

16 Feb 2015

CESPD-DE

MEMORANDUM FOR Commander, US Army Corps of Engineers, Los Angeles District, (ATTN: CESPL-ED-DB, Mr. Stephen Vaughn)

Subject: Sespe Creek Levee, (SC-2) Rehabilitation Project, Ventura County Watershed Protection District, located City of Fillmore, CA, 33 USC 408, Review Plan Approval

1. Sespe Creek Levee, (SC-2) Rehabilitation Project, Ventura County Watershed Protection District, 33 USC 408, Review Plan that is enclosed is in accordance with Engineering Circular (EC) 1165-2-214, Review of Decision Documents, dated 15 Dec 2012. The South Pacific Division, Planning and Policy Division, Regional Business Technical Division, and Los Angeles District Support Team have reviewed the Review Plan that has been submitted. The South Pacific Division approves the Sespe Creek Levee, (SC-2) Rehabilitation Project, 33 USC 408, Review Plan.

2. With 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. The Review Plan includes Independent External Peer Review Type II (SAR) and the panel members have been identified in the Review Plan. The Risk Management Center endorsed the Review Plan on 20 Feb 2015.

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

4. Points of contact for this action are Mr. Marc Goodhue, CESPD-RBT, 415-503-6568, marc.j.goodhue@usace.army.mil and Mr. Paul Bowers, CESPD-PDC, 415-503-6556, paul.w.bowers@usace.army.mil.

BUILDING STRONG and Taking Care of People!

Encls


R. MARK TOY
Brigadier General, USA
Commanding

**Review Plan
U.S. Army Corps of Engineers
South Pacific Division
Los Angeles District**

**SESPE CREEK LEVEE (SC-2)
REHABILITATION PROJECT:**

Section 408 Permit Application



**US Army Corps
of Engineers®**

9 February 2015

ENCL

**REVIEW PLAN
SESPE CREEK LEVEE (SC-2) REHABILITATION
VENTURA COUNTY WATERSHED PROTECTION DISTRICT**

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REVIEW PLAN
SESPE CREEK LEVEE (SC-2) REHABILITATION
VENTURA COUNTY

February 9, 2015

1. INTRODUCTION.

a. General. The Los Angeles District is reviewing a proposal to alter/modify a completed U.S. Army Corps of Engineers (USACE) project in accordance with 33 U.S.C § 408 (Section 408). This Review Plan was developed in accordance with EC 1165-2-216, "Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408" (31 July 2014), and also in accordance with EC 1165-2-214, "Civil Works Review" (15 December 2012), to establish the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision and implementation documents through independent review. This Alteration-Specific Review Plan describes the scope of review for Sespe Creek Levee (SC-2) Rehabilitation proposed by the Ventura County Watershed Protection District. All appropriate levels of review (ATR, SAR) are included in this review plan. The review plan identifies the most important skill sets needed in the reviews, the objective of the review, and the specific advice sought, thus setting the appropriate scales and scope of review for the individual project.

b. Purpose. This review plan defines the scope and level of quality management activities and peer review for the SC-2 Rehabilitation project. The Review Plan consists of 3 parts:

- (1) The Quality Control Plan (QCP) documents the quality control and quality assurance processes planned by Ventura County Watershed Protection District (VCWPD) for the design documents to ensure that USACE requirements have been met;
- (2) Agency Technical Review (ATR) Plan documents the review by the USACE Los Angeles District to ensure the quality and credibility of the scientific information presented and;
- (3) Safety Assurance Review (SAR) Plan informs the Chief of Engineers of the adequacy, appropriateness and acceptability of the design and construction activities in assuring public health, safety, and welfare for the project.

c. References.

- (1) Engineering Circular (EC) 1165-2-216, Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408, 31 Jul 2014
- (2) Engineering Circular (EC) 1165-2-214, Civil Works Review, 15 Dec 2012
- (3) 33 U.S.C § 2344. Safety Assurance Review
- (4) Water Resources Development Act of 2007, Sections 2034 & 2035, Pub. L. 110-114. Privacy Act, 5 U.S.C. § 522a as amended
- (5) ER 1110-1-12, Quality Management
- (6) ER 1110-2-1150, Engineering and Design for Civil Works Projects

- (7) ER 1105-2-101, Risk Analysis for Flood Damage Reduction Studies
- (8) EM 1110-2-1913, Design and Construction of Levees
- (9) EM 1110-2-2104, Strength Design for Reinforced Concrete Hydraulic Structures
- (10) ETL 1110-2-571, Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures
- (11) P2 Project Number: 396628

2. PROJECT DESCRIPTION

The Sespe Creek Levee (SC-2) Rehabilitation project modifies an existing USACE levee located in the City of Fillmore. Currently, a 50-year event would overtop portions of the Levee downstream of Old Telegraph Road affecting over 1,000 homes and businesses. The project consists of raising the levee height one to 6 feet higher by adding earthen fill on the landward side of the existing levee along an approximately 1,543-foot segment between Old Telegraph Road and State Route (SR) 126 and constructing a 321-foot long retaining wall along the landward side of a portion of the levee. See figure below.



Figure 1 – Sespe Creek Levee: Location of Proposed Modifications

3. WORK PRODUCTS TO BE REVIEWED

- Basis of Design and Technical Analyses
- Plans & Specification
- Environmental Documents

4. SCOPE OF REVIEW

The Section 408 review will follow the nine-step procedures listed in EC 1165-2-216. USACE Los Angeles District Levee Safety Officer (LSO) and Levee Safety Program Manager (LSPM) require involving pre-coordination with the requester and are responsible to inform the requestor of any current levee safety modification studies. District LSO will review ATR's recommendations and endorse approval or recommend denial. The Levee Senior Oversight Group (LSOG) will review the SPRA or higher level risk assessments information and a description of proposed alteration.

a. Quality Control and Assurance (QA/QC). QA/QC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Quality Control Plan (QCP). The QCP is prepared by, and will be implemented by the Ventura County Watershed Protection District. See Part A of this document. The Independent Review function will be assumed by the ATR and IEPR processes.

b. Agency Technical Review. Agency Technical Review (ATR) is undertaken to ensure the quality and credibility of the presented scientific information is in compliance with published Corps policy. Reviewers shall review the submitted 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. The team shall also review the responses to the SAR panel's recommendation and determine when changes are necessary.

c. Safety Assurance Review (SAR). A Type II IEPR, Safety Assurance Review, shall be conducted on design and construction activities for hurricane and storm risk management and flood risk management projects, as well as, other projects where potential hazards pose a significant threat to human life. 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. The charges to the IEPR panels will complement the ATR process and not duplicate it. See Part C of this document.

d. MSC and HQUSACE Policy Compliance Review. The MSC will review the District's package for policy compliance and legal sufficiency; quality assurance and completeness; identification of conflicts with ongoing studies; and confirmation of the need for HQUSACE review and decision. Upon approval, the MSC will forward recommendation to the appropriate HQUSACE Regional Integration Team (RIT).

In accordance with EC 1165-2-214, the District has determined that modifications to the Sespe Creek levee system, which protects over 1,000 homes in the City of Fillmore, CA, would warrant that a Type II IEPR SAR be conducted on design and construction activities to ensure public safety.

Risk Management Center (RMC) has determined the Levee Senior Oversight Group (LSOG) will review the levee alteration. The RMC will inform the Division to prepare the LSOG review within the approval memorandum, in accordance with EC 1165-2-214, for the Requester Review Plan to the District.

5. REVIEW TEAM

a. Agency Technical Review. The ATR team will be established per ER 1110-1-12 and EC 1165-2-214. The LA District will manage the ATR and the team will mirror the disciplines involved in the accomplishment of the work. The ATR Team Leader will be a Corps of Engineers employee in the Los Angeles District. The required disciplines are described in Part B.

b. IEPR Panels and Members. To insure independence and to obtain the required expertise, the IEPR panels will be made up of independent, recognized experts in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. Panel members will be selected using the National Academies of Science (NAS) policy for selecting reviewers. Panel members will submit and comply with National Academy of Sciences, Background Information and Confidential Conflict Of Interest Disclosure, BI/COI FORM 3, May 2003.

6. PUBLIC COMMENT

To ensure that the peer review approach is responsive to the wide array of stakeholders and customers, both within and outside the Federal Government, this Review Plan will be published on the district’s public internet site following approval by SPD at <http://spl.usace.army.mil/missions/civil works/review plans>. This is not a formal comment period and there is no set timeframe for the opportunity for public comment. If and when comments are received, the PDT will consider them and decide if revisions to the review plan are necessary. The public is invited to review and submit comments on the plan as described on the web site.

7. REVIEW SCHEDULE

a. Schedule. The applicant coordinated with SPL to prepare a review schedule which incorporates milestones for the QA/QC, ATR and IEPR processes. The 30 and 60 percent Plans and Specs package will be reviewed by IEPR and ATR. The 60 percent Plans and Specs submittal will be reviewed by ATR to ensure the comments are addressed and conform to USACE guidance and regulations and the decision document is expected from USACE for the 408 permit. The decision document will be sent to MSC and HQUSACE for Policy Compliance Review. The final 100 percent Plans and Specs will be back checked for completeness and approved. The key milestones are listed in the table below:

Table 1: Review Milestone Schedule

Task Description	Review Start	Review Finish
QC/QA, IEPR,ATR Review, 30% design package (completed)	6/30/13 (A)	11/28/13 (A)

QC/QA Review, 60% plans & specs (by applicant)	3/31/14 (A)	6/1/14 (A)
IEPR Review, 60% plans & specs	3/31/14 (A)	10/26/14 (A)
ATR Review, 60% plans & specs	10/24/14 (A)	2/28/15
MSC and HQUSACE Policy Compliance Review	3/1/15	6/1/15
Submittal of 100% package	8/1/15	10/1/15
LSOG Review	TBD	TBD

b. Funding. The funding for all the reviews shall be provided by VCWPD. The funding cost estimates for the ATR is included in Part B.

8. DOCUMENTATION OF REVIEW

The method for the documentation of Review is set forth in each of the Parts.

9. POINTS OF CONTACT

Questions about this Review Plan may be directed to the following:

Name/Title	Organization	Email/Phone
Huma Nisar, Permit Coordinator	CESPL-ED-DB	Huma.M.Nisar@usace.army.mil , (213) 452-3665
Richard Leifield, Chief, Engineering Division	CESPL-ED	Richard.J.Leifield@usace.army.mil , (213) 452-3629
Kirk Norman Project Manager	VCWPD	kirk.norman@ventura.org (805) 654-2017
Stephen Vaughn, 408 Permit Coordinator	CESPL-ED-DB	Stephen.H.Vaughn@usace.army.mil , (213) 452-3654
Paul Bowers, Major Subordinate Command (MSC)	CESPD-PDC	Paul.W.Bowers@usace.army.mil/ (415) 503-6556
John Clarkson, RMO POC	CEIWR-RMC-WD	John.D.Clarkson@usace.army.mil , (304) 399-5217

10. REVIEW PLAN APPROVAL

In summary, VCPWD intends to fully comply with all existing guidance, including the ATR and Type II IEPR in accordance with EC 1165-2-214. In order to ensure the Review Plan is in

compliance with the principles of EC 1165-2-214, the Review Plan must be reviewed and approved by the applicable MSC, in this case the Commander, South Pacific Division (SPD).

The Review Management Office for 408 Permits is the Risk Management Center (RMC). As this permit request seeks to modify an existing levee, the RMC serves as the RMO for Dam and Levee Safety Modification projects. SPL will coordinate the review and approval of this review plan with the RMC.

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.

The Los Angeles District requests that the South Pacific Division approve this Review Plan as described in Appendix B of EC 1165-2-214.

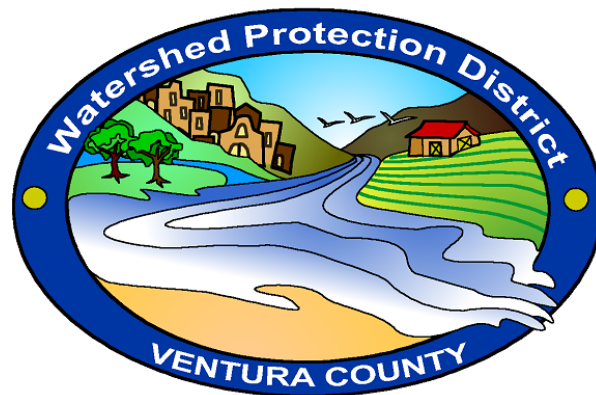
PART A

**VCWPD Quality Control Plan
Sespe Creek Levee (SC-2) Rehabilitation**

**QUALITY CONTROL PLAN FOR THE
PREPARATION OF DESIGN DOCUMENTATION
REPORT and PLANS, SPECIFICATIONS, &
COST ESTIMATE**

SESPE CREEK LEVEE – REACH 2

VENTURA COUNTY, CALIFORNIA



January 2015

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Attachment A: Memorandum of Agreement Between Ventura County Watershed Protection District and U.S. Army Corps of Engineers Los Angeles District

1. DESCRIPTION OF THE PROJECT

The Ventura County Watershed Protection District (VCWPD) is in the process of designing and constructing improvements to the Sespe Creek levee system that protects over 1,000 homes in the City of Fillmore, CA. The levee system consists of two reaches along the east bank of Sespe Creek, a tributary of the Santa Clara River. SC-1 begins at Goodenough Rd. and extends south to Old Telegraph Rd. SC-2 extend from Old Telegraph Rd. to Highway 126. A detailed hydraulic analysis was prepared based on recent topography of the creek system and the results indicate that portions of SC-2 would be overtopped during a storm event in excess of approximately 100,000 cfs. This flow rate is equivalent to approximately a 50-year storm event.

The project consists of raising the existing SC-2 levee height between one and six feet along a 1,543-foot segment by adding earthen fill on the landward side of the existing facility and providing rock slope protection on the riverward side on the new fill slope. A 321-foot-long retaining wall will be constructed along the landward side due to limited right-of-way once the levee is raised.

2. PRODUCTS TO BE DEVELOPED

VCWPD has retained the services of a Technical Development Team (TDT) consisting of PACE, RFB, and FUGRO to prepare the necessary technical studies, engineering design work, and document preparation to rehabilitate and certify that SC-2 meets Federal Emergency Management Agency (FEMA) regulatory requirements as identified in Title 44 of the Code of Federal Regulations (44 CFR 65.10). The project manager at PACE is Bruce Phillips. He has over 30 years of experience in stormwater management, river engineering, hydraulic analysis and hydrology.

VCWPD will solicit bids, and provide construction contract services, construction management and inspection. VCWPD will also provide internal reviews and design checks for each milestone and deliverable product beginning from initial planning, through design and construction, to operations and maintenance. VCWPD will have internal design review at 30%, 60%, and 100% design as outlined below as well as ongoing project comment and review between these milestones. Quality checks will be performed by qualified senior staff from the VCWPD's five divisions: Planning & Regulatory, Design & Construction, Water & Environmental Resources, Operations & Maintenance, and Water Resources & Technology. Overall management of the project is the responsibility of Kirk Norman, P.E., Project Manager. He will have the responsibility of ensuring quality control through the full project lifecycle and ensure compliance with the 408 permit process.

3. NAMES AND LOCATIONS

Local Project Sponsor:

Ventura County Watershed Protection District
800 S. Victoria Avenue
Ventura CA 93009-1610

Kirk Norman, P.E.
(805) 654-2017

PACE
17520 Newhope St., Suite 200
Fountain Valley, CA 92708

RBF Consulting, Inc.
14725 Alton Parkway
Irvine, CA 92618

Fugro Consultants, Inc
4820 McGrath St., Suite 100
Ventura, CA 93003-7778

Bruce Phillips, P.E.

John McCarthy, P.E.

Samuel M. Bryant, P.E., G.E.

4. MANAGEMENT APPROACH

The elements of this quality control plan will include the following:

- A. Actively involve all elements of project management
- B. Ensure that quality control is an integral part of the project and not just an “end of job” review
- C. Consider quality objectives and standards as equal or superior to budget and schedule considerations in all project management decisions
- D. Ensure that the scope of work is technically complete and workable in consideration of budgetary and scheduling constraints
- E. Commit necessary resources to achieve the project objectives
- F. Ensure frequent communication on progress of the work and problems and accomplishments
- G. Provide periodic review of project performance related to the planned schedule and budget goals

5. INDEPENDENT TECHNICAL REVIEW (ITR) GUIDELINES

Independent technical reviewers will have expertise in all of the same technical disciplines required on the Technical Development Team for the preparation of the products. VCWPD will coordinate between the TDT and the ITR team. As each product is completed, copies will be provided by VCWPD to the Corps of Engineers for their review. The ITR team will

review each product and provide comments. The TDT team will revise the products accordingly. The written comments and responses for all ITRs will be maintained in DrChecks until the project is completed. After the ITR is completed, the reviewers will sign a certification form indicating completion of their reviews and satisfactory resolution of their comments. VCWPD will serve as gatekeeper and maintain the documents.

Reviewers shall be registered professional engineers in the United States with engineering degrees and a minimum of 20 years experience in the each of three fields to be reviewed; Geotechnical Engineering, River Mechanics, and Structure/Soil Interaction.

6. INDEPENDENT TECHNICAL REVIEWERS

The Independent Technical Review will be performed by senior VCWPD engineers with the necessary experience.

7. MAJOR MILESTONES

30% Design

The 30% Design includes analysis of existing conditions, hydrology, hydraulics, sediment transport, right-of-way needs, existing utilities, benefit cost, alternatives, environmental constraints, regulatory permit assessment, a complete geotechnical investigation, schedules, cost estimates, plans, and preparation of a Preliminary Design Report.

During the 30% Design, VCWPD and the ITR team will conduct detailed review of supporting data including reports, calculations, plans and project constructability.

VCWPD and the ITR team will review the reports, project geometry, utility locations and land acquisition with the Real Estate Services (RES) section, coordinate with the County Surveyor for legal descriptions, ground survey, and survey control, and confer with the VCWPD Environmental Services Division about the environmental documents.

60% Design

The 60% Design includes the completed geotechnical report, hydrologic analysis, sediment transport, preliminary structural calculations, draft construction drawings showing plan, profile, cross sections, details, right-of-way drawings (showing existing property lines and any land needed for temporary work area), cost estimates and completed NEPA/CEQA Environmental documents.

VCWPD and the ITR team performs a complete review of reports (including the Environmental Document), analyses, calculations, plans, profile, cross sections, structural sections for consistency and constructability.

100% Design

The 100% design includes all reports and drawings including all calculations, notes, and data prepared as part of the 60-percent design, updated and revised accordingly based on

the ITR team comments. All applicable permits including federal, state, local, railroad, and other agencies are included in the package. All right-of-way acquisitions have been negotiated and close to completion. Utility relocation procedures have been determined.

100% Design includes a complete set of Special Provisions to cover all items of construction by bid item, both for the materials and for the construction that is required. Standard Special Provisions are maintained by the VCWPD for construction. Special Provisions not covered by District Standard Special Provisions are written specifically for the purpose of these levee improvements.

Construction Inspection

A VCWPD inspector will be responsible for providing daily reports of construction activities including labor, equipment, testing and materials. The daily reports give assurance that the construction activities comply with the approved plans and specifications.

Contract Change Orders

Modifications to the design, if required, will be made through Contract Change Orders (CCOs) in accordance with the Public Contract Code (PCC), the Project Processing and Procedures Manual (PPPM) adopted by the Board of the VCWPD, once the proposed CCO has been reviewed and accepted by the appropriate authority of the Los Angeles District or their designee.

Material Testing

VCWPD will provide a private consultant materials laboratory to perform sampling, inspection and testing to determine compliance with the Specifications for such tests as compaction, gradation, concrete compressive strength, slump, ect. The materials laboratory shall be under the responsible management of a California Registered Engineer with experience in sampling, inspection and testing of construction materials. Testing methods will be in accordance of USACE and national recognized ASTM standards.

Contractor Submittals

Submittals are generated by the Contractor and may include shop drawings, test samples, letters of certification, reports, and as-built drawings. The submittals are reviewed and approved by the Project Manager for compliance with the specifications. Submittals not approved shall be revised and resubmitted prior of use on site. They will be consecutively numbers and maintained in the project file.

8. COMMUNICATIONS

Communications between VCWPD and the TDT team is conducted on a regular basis as the work is being performed. Extensive communications will be required between the civil designers, the structural designers, geotechnical engineers and the cost estimating designers.

A Memorandum of Agreement was signed July 2012 between the Corps of Engineers and VCWPD. The memorandum outlines interagency communication and party responsibilities. See Attachment A.

9. RISK INHERENT IN THE PROJECT

SC-2 has freeboard deficiencies. These deficiencies will be resolved as part of the project conditions by raising the levee crest to satisfy FEMA minimum freeboard requirements. The project conditions represent a worst-case flow scenario, which assumes the entire Sespe Creek is initially confined to the east fork immediately below the Old Telegraph Road Bridge. While the reliability at several cross sections are marginally below 95 percent, their performance appears acceptable due to the extreme unlikelihood that the modeled flow conditions would ever occur, as documented in the Risk and Uncertainty Analysis completed by RBF Consulting in August 2011.

During construction, the top of the levee will be reduced by 1.5 feet for benching and scarifying for placement of the new material to raise the levee and the width of the levee prism on the landward side will be reduced by 30%. The Contractor will be restricted from removing any portion of the levee unless there is a two week clear weather forecast. Because this modification will raise only the deficient portion of the levee which is less than one third of the total levee reach, there is no increase to the long term risk for the reach.

10. DOCUMENTS TO BE REVIEWED BY THE ITR TEAM

Sespe Creek Levee (SC – 2) Rehabilitation, Improvement Project, Alternative Evaluation

Preliminary Engineering Design Report, Sespe Creek Levee (SC-2) Rehabilitation Improvement Project


Transient Seepage Analysis prepared by Fugro

Geotechnical Study, Sespe Creek (SC-2) Levee Rehabilitation, Old Telegraph Road to Highway 126 Fillmore, California, Prepared by Fugro

Sespe Creek Levee Rehabilitation Plans & Specification by PACE

11. REVIEW OF PRODUCTS

VCWPD will provide all design documents to the Corps for development of the 408 permit. Any discrepancies between the documents and actual site conditions noted by VCWPD during the development of the project will be reported to the COE.


Kirk Norman, P.E., Project Manager
Ventura County Watershed Protection District

1 - 31 - 14
(Date)

**MEMORANDUM OF AGREEMENT
BETWEEN
VENTURA COUNTY WATERSHED PROTECTION DISTRICT
AND
U.S. ARMY CORPS OF ENGINEERS LOS ANGELES DISTRICT**

AGREEMENT NO. WPD-2-2012-3

THIS AGREEMENT is entered into as of this 13th day of JULY, 2012, between the Ventura County Watershed Protection District, (hereinafter "Agency") and the Los Angeles District of the United States Army Corps of Engineers (hereinafter "Corps"), collectively referred to as "the Parties."

RECITALS

WHEREAS, the Corps has jurisdiction over requests to alter or modify completed Corps projects, including but not limited to, federal flood risk management facilities;

WHEREAS, Section 214 of the Federal Water Resources Development Act of 2000, Public Law 106-541 ("WRDA 2000"), as amended by Public Law 111-120, provides as follows:

(a) IN GENERAL. - The Secretary [of the Army], after public notice, may accept and expend funds contributed by non-Federal public entities to expedite the evaluation of permits under the jurisdiction of the Department of the Army.

(b) EFFECT ON PERMITTING. - In carrying out this section, the Secretary shall ensure that the use of funds accepted under subsection (a) will not impact impartial decision-making with respect to permits, either substantively or procedurally.

WHEREAS, the authority provided under section 214 of the WRDA 2000 is presently in effect until December 31, 2016;

WHEREAS, the Secretary of the Army has delegated the responsibility of carrying out section 214 of the WRDA 2000 to the Chief of Engineers and his delegated representatives;

WHEREAS, the Chief of Engineers, by memorandum dated June 18, 2010, authorized the District and Division Engineers of the Corps to accept and expend funds contributed by non-Federal public entities subject to certain limitations;

WHEREAS, the Corps has indicated it is not able, without additional resources, to expedite the evaluation of Agency projects;

WHEREAS, Agency believes it is in the best interests of the taxpayers of Ventura County to provide funds to the Corps pursuant to this MOA to streamline and expedite Corps permit review under section 14 of the Rivers and Harbors Act of 1899, as amended, codified at 33 U.S.C. § 408 (hereinafter "Section 408") for Agency-designated priority projects as more fully described in Article II.D. of this MOA; and

WHEREAS, this MOA is intended to: (1) enable the Parties to fully consider, address, and protect environmental resources, including but not limited to impacts to existing and completed Corps' projects or improvements, early in the development of proposed actions; (2) avoid conflicts late in project development through close coordination during early planning and development stages; (3) provide sufficient information to the Corps for timely analysis of project effects and to assist Agency in developing appropriate avoidance, minimization or mitigation measures; (4) maximize the effective use of limited Corps resources by focusing attention on projects that would have the most effect on completed Corps' project or improvements; (5) provide a mechanism for expediting project coordination when necessary; and (6) provide procedures for resolving disputes in this resource partnering effort.

NOW, THEREFORE, the Parties agree as follows:

AGREEMENT

Article I. - PURPOSE AND AUTHORITIES

A. This MOA is entered into by the Parties for the purpose of establishing a mutual framework governing the respective responsibilities of the Parties for the acceptance and expenditure of funds contributed by Agency to provide expedited permit evaluation-related services for Agency-designated priority projects under the jurisdiction of the Corps. This MOA is not intended as the exclusive means of obtaining review of projects proposed by Agency. This MOA is a vehicle by which Agency will obtain expedited permit evaluation related services, outside of the ordinary Corps review process.

B. Agency enters into this MOA pursuant to Chapter 46 of the California Water Code Appendix. The Corps enters into this MOA pursuant to its authority under section 214 of the WRDA 2000, as amended.

C. This MOA is specific to Section 408 permit application review only. A separate agreement may be required between Agency and the Corps to expedite environmental technical assistance, coordination services, review, and concurrence of documentation prepared to comply with Section 404 of the Clean Water Act of 1972 (as amended).

Article II. - SCOPE OF WORK

A. Agency will provide funds to the Corps to expedite permit evaluation related services for Agency-designated priority projects under the jurisdiction of the Corps.

B. The Corps' operations and maintenance expenses are funded as a Congressionally appropriated line item in the annual Federal budget. Funds received from Agency will be added to the Corps' Operations budget in accordance with the provisions of section 214 of WRDA 2000. The Corps will provide staffing resources dedicated to expediting permit evaluation related services, as described in Article II.D., below, for Agency-designated priority projects and/or other programmatic efforts to support efficient decision-making related to Agency's Section 408 permitting needs.

C. The Corps will establish a separate internal financial account to track receipt and expenditure of the funds associated with its review of permit applications submitted by Agency. Corps' personnel will charge their time and expenses against the account when they perform work to either expedite Section 408 permit evaluation related requests designated by Agency as a priority or undertake other programmatic efforts to support efficient decision-making related to Agency's permitting needs. Corps personnel will focus on the work as prioritized by the Agency, and if no or few projects are designated by the Agency as a priority, Corps personnel will then work on other programmatic efforts for the Agency.

D. Funds contributed by Agency hereunder will be expended by the Corps to defray the costs of its staff (including salary, associated benefits, overhead and travel expenses) and other costs in order to expedite the evaluation of priority permit applications designated by the Agency. The Corps may expend Agency funds to perform select duties, including but not limited to technical analyses and writing, Agency Technical Review, real estate evaluation, risk analysis, copying or other clerical/support tasks, acquisition of data, site visits, training, travel, coordination activities, additional personnel (including support/clerical staff), contracting for technical services (e.g., structural risk evaluation, geotechnical analysis, hydraulic and hydrological engineering review), environmental documentation preparation and review; any other permit evaluation related responsibilities that may be mutually agreed upon; and meeting coordination for the purpose of augmenting resources available to the Corps for expediting priority projects and activities designated by the Agency.

E. The Corps will *not* expend Agency's funds for costs of supervisor labor associated with the review of the Corps' work or for review by other persons or elements of the Corps in the decision-making chain of command. However, if a supervisor is performing staff work and not supervisory oversight, funds may be used.

F. If the funds provided by the Agency are expended and not replenished, any remaining priority permit applications will be handled like those of any permit applicant.

Article III. - INTERAGENCY COMMUNICATIONS

To provide for consistent and effective communication between the Parties, each party will appoint a Principal Representative to serve as its central point of contact on matters relating to this MOA. Additional representatives may also be appointed to serve as points of contact on specific actions or issues. Each party will issue a letter to the other designating the Principal Representative for each party within fifteen (15) days of MOA execution. The Principal Representative for each party may be changed upon written notification to the other party.

Article IV. - RESPONSIBILITIES OF THE PARTIES

A. Agency will provide adequate resources, to fund existing or additional Corps personnel for the purpose of timely review of designated priority projects and other identified activities. To facilitate the Corps' reviews and activities, the Agency will:

1. Provide adequate information regarding projects, scheduling requirements, and other specific activities to initiate permit evaluation. Information required for the Corps to

initiate the permit review process can be found in applicable section 408 guidance, including but not limited to the Memorandum for Subordinate Commands, *Policy and Procedural Guidance for the Approval of Modification and Alteration of Corps of Engineer Projects*, dated October 23, 2006, and the Memorandum for Major Subordinate Commands, *Clarification Guidance on the Policy and Procedural Guidance for the Approval of Modification and Alteration of Corps of Engineer Projects*, dated November 17, 2008, copies of which have been provided to the Agency. Upon request, the Agency shall provide supplemental information necessary to complete the permit application. Additional information required to complete the permit evaluation process may exceed what is needed to initiate the process. On a case-by-case basis, if requested by the Corps, the Agency shall provide such additional information so as to ensure the Corps can effectively accomplish the required review.

2. In consultation with the Corps, schedule the Corps' involvement in the priority projects identified by the Agency. The project(s) designated as a priority by the Agency are listed in **Appendix A** to this MOA. The list may be changed by the Agency's Principal Representative without requiring an amendment to this MOA. Such changes shall be submitted to the Corps' Principal Representative in writing and will be effective upon receipt thereof.

3. To the best of its ability, ensure the participation of all essential personnel during the permit evaluation process.

4. Work closely with the Corps to adjust priorities and schedules in order to optimize available Corps staff resources. If overlaps or conflicts occur among priority projects, then the Agency will work with the Corps to identify procedures to handle such overlaps or resolve the conflicts.

5. To the best of its ability, ensure the participation of all essential personnel during the permit evaluation process.

B. The Corps shall assign qualified personnel to evaluate the Agency's priority permit applications and prioritized associated tasks within projected funding levels provided under this MOA. The Corps shall use the funds provided to defray the costs of salaries and associated benefits and to reimburse travel expenses in order to:

1. Expedite review of Agency's priority projects in accordance with the purpose, terms, and conditions of this MOA or any amendments thereto. The Corps shall not redirect resources from, or otherwise postpone, other non-priority projects submitted by the Agency through the standard Corps review process.

2. Following any pre-application meetings and/or discussions to clarify the scope of anticipated permit application review processes, provide Agency with an estimated schedule to complete the permit evaluation process for each application submitted. Agency shall be able to comment on these schedules and adjust their priorities per Appendix A, or provide additional resources per Article V. C, below.

3. Consult on a monthly basis with the Agency regarding an adjustment of priorities or establishment of relative priorities if the current and/or projected workload of

priority projects and activities exceeds the Corps' ability to provide the services specified herein or negotiate additional funding in accordance with Article V.C, below.

4. Provide the Agency a brief quarterly summary report of progress made under this MOA, or in accordance with the alternative schedule as agreed by the Parties to this MOA. Progress will be itemized for each permit application review completed during the quarter for each permit application pending at the end of the quarter. This report will describe achievements, including any improvements the Corps has documented in coordinating and improving the efficiency of the environmental reviews, and will summarize expenditures to date. The report also will identify any recommendations for improving consultation and coordination among the Parties to this MOA. The fourth quarter report shall include a summary of the annual progress made under this MOA. All reports shall not exceed five (5) pages per report.

5. Meet with the Agency as needed to discuss progress under this MOA.

6. Prior to expiration of the MOA, hold a final meeting with the Agency's Principal Representative to review a summary of permit streamlining and other activities under this MOA, as well as provide recommendations for future coordination between the Parties.

Article V. - FUNDING

A. Within thirty (30) days of the execution of this MOA, Agency shall submit funding to the Corps in the amount of \$155,000.00, to cover the Corps' anticipated costs of permit evaluation activities, which is expected to be incurred by the Corps on or before December 31, 2013 in association with Agency's priority projects listed in Appendix A.

B. Expediting of permit evaluation related activities as specified in this MOA will be undertaken by the Corps only after funds have been transferred to the Corps. Prior to the start of each funding period, the Agency shall send a check, or provide by electronic fund transfer, the amount specified in paragraph C of this Article, payable to:

U.S. Army Corps of Engineers, Los Angeles District
Finance and Accounting Officer
P.O. Box 532711
Los Angeles, CA 90053-2325
Attn: Phil Serpa

C. The Corps will provide the Agency a written notice when 80% of the funding has been expended. If the Corps' actual costs for providing the agreed upon level of service will exceed the amount of funds available, the agency will either initiate an amendment to this MOA to increase the funding amount, or agree to a reduced level of service. If the Agency opts to increase the funding level, the Corps will expeditiously process the amendment and use the Corps' best efforts to ensure that there is no interruption to the Corps work on the Agency's priority projects.

D. Additional payments by the Agency to the Corps, in an amount and schedule mutually agreed to by the Parties, may be made when priority projects are added to Appendix A.

E. The Corps will carry over any unexpended funds from year to year, or will refund such unobligated funds if this MOA is terminated or expires.

F. The Agency may elect to extend the services of the Corps beyond December 31, 2013, subject to 1) additional funding being provided by the Agency and 2) written amendment to this MOA.

Article VI. - APPLICABLE LAWS

The applicable statutes, regulations, policies, directives, and procedures of the United States will govern this MOA and all documents and actions pursuant to it. Unless otherwise required by law, all expediting of permit applications undertaken by the Corps will be governed by Corps regulations, policies and procedures.

Article VII.- DISPUTE RESOLUTION

In the event of a dispute, the Parties agree to use their best efforts to resolve the dispute in an informal fashion through consultation and communication, or other forms of non-binding alternative dispute resolution mutually acceptable to the Parties. The Parties agree that, in the event such measures fail to resolve the dispute, they shall refer the dispute for resolution to an appropriate forum in accordance with Federal law.

Article VIII. - PUBLIC INFORMATION

Justification and explanation of Agency's programs or projects before other agencies, departments and offices will not be the responsibility of the Corps. The Corps may provide, upon request from the Agency, any assistance necessary to support justification or explanations of activities conducted under this MOA. In general, the Corps is responsible only for public information regarding Corps regulatory activities. The Agency will give the Corps, as appropriate, advance notice before making formal, official statements regarding activities funded under this MOA.

Article IX – AMENDMENT, MODIFICATION, AND TERMINATION

A. This MOA may be modified or amended only by written, mutual agreement of the Parties.

B. Either party reserves the right to terminate its participation in this MOA without cause upon thirty (30) days' written notice to the other parties. In the event of termination, the Agency will continue to be responsible for all costs incurred by the Corps in performing expedited environmental permit review services up to the time of notice and for the costs of closing out or transferring any ongoing contracts in support of the provision of services by the Corps under this MOA.

C. Within ninety (90) calendar days of termination of the MOA, or the expiration of the MOA, the Corps shall provide Agency with a final statement of expenditures. Within sixty (60) calendar days after submittal of the Corps' final statement of expenditures, the Corps shall

directly remit to Agency the unexpended balance of the advance payment, if any. Funds may be provided to the Agency either by check or electronic funds transfer.

Article X. - MISCELLANEOUS

A. This MOA will not affect any pre-existing or independent relationships or obligations between Parties.

B. The Corps' participation in this MOA does not imply endorsement of the Agency's projects nor does it diminish, modify, or otherwise affect Corps statutory or regulatory authorities.

C. Under the provisions of section 214 of the WRDA 2000 as extended, no funds may be accepted or expended by the Corps pursuant to this MOA after December 31, 2016.

D. If any provision of this MOA is determined to be invalid or unenforceable, the remaining provisions will remain in force and unaffected to the fullest extent permitted by law and regulation.

E. This MOA, including any documents incorporated by reference or attachments thereto, constitute the entire agreement between the Parties. All prior or contemporaneous agreements, understandings, representations and statements, oral or written, are merged herein and shall be of no further force or effect.

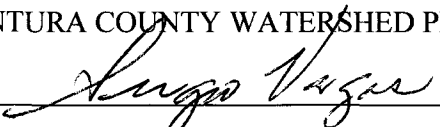
Article XI. - EFFECTIVE DATE AND DURATION

This MOA will be effective on the date of signature by the last Party. This MOA shall remain in force until whichever of these events occurs first: 1) December 31, 2013; or 2) the MOA is terminated pursuant to Article IX.B.

[REMAINDER LEFT INTENTIONALLY BLANK]

IN WITNESS WHEREOF, this MOA is executed by Corps acting by and through its authorized officer and by the Los Angeles District of the U.S. Army Corps of Engineers through its authorized officer.

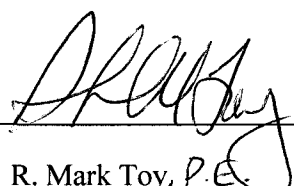
VENTURA COUNTY WATERSHED PROTECTION DISTRICT

By: 

Date: 6/25/2012

Sergio Vargas
Interim Director

U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT

By: 

Date: 13 JUL 2012

R. Mark Toy, P.E.
Colonel, US Army
District Commander

Appendix A: Agency's Priority Projects

(Dated: May 4, 2012)

The list of Agency's Priority Projects under this MOA includes the following proposed projects:

1. Sespe Creek Levee from California State Highway 126 to Old Telegraph Road (SC-2)



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY

LOS ANGELES DISTRICT CORPS OF ENGINEERS
P.O. BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

**FIRST AMENDMENT
TO
MEMORANDUM OF AGREEMENT BETWEEN
VENTURA COUNTY WATERSHED PROTECTION DISTRICT AND
U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT**

AGREEMENT NO. WPD-2-2012-3

SUBJECT: First Amendment to Memorandum of Agreement (“MOA”) between the Ventura County Watershed Protection District and the U.S. Army Corps of Engineers, Los Angeles District

This First Amendment to Memorandum of Agreement (“FIRST AMENDMENT”) is entered into by the Ventura County Watershed Protection District (hereinafter “Agency”) and the Los Angeles District of the United States Army Corps of Engineers (hereinafter “Corps”), collectively referred to as the “Parties.”

RECITALS

WHEREAS, the United States Army Corps of Engineers (“Corps”) has jurisdiction pursuant to Section 14 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. 408) (“Section 408”) regarding taking possession of, use of, injury to harbor and river improvement projects constructed by the Corps;

WHEREAS, the Parties entered into a MOA, effective July 13, 2012, for expedited and priority permit application reviews of Agency-designated priority projects by the Corps;

WHEREAS, section 214 of the Federal Water Resources Development Act of 2000, Public Law 106-541 (“WRDA 2000”) as amended by Public Law 111-315, authorizes the Secretary of the Army, after public notice, to accept and expend funds contributed by a non-federal public entity to expedite the evaluation of a permit application of that entity related to a project or activity for a public purpose under the jurisdiction of the Corps;

WHEREAS, under the provisions of section 214 of the WRDA 2000 as extended, no funds may be accepted or expended by the Corps after December 31, 2016. However, this date may be extended by Federal law;

WHEREAS, the MOA is set to expire December 31, 2013;

WHEREAS, the Parties desire to modify the MOA to extend the duration of the MOA;
and

SUBJECT: First Amendment to Memorandum of Agreement between the Ventura County Watershed Protection District and the U.S. Army Corps of Engineers' Los Angeles District

WHEREAS, the Corps has determined additional funding from the Agency is not necessary to continue to fund the section 214 of WRDA 2000 activities through December 31, 2016.

NOW, THEREFORE, the Parties agree as follows:

FIRST AMENDMENT

1. Article I. – PURPOSE AND AUTHORITIES. Article I.C. is modified in its entirety to read:

“C. This MOA is specific to Section 408 permit application reviews only. A separate agreement may be required between the Agency and the Corps to expedite environmental technical assistance, coordination services, review, and concurrence of documentation prepared to comply with section 404 of the Clean Water Act of 1972, as amended, and/or section 10 of the Rivers and Harbors Act of 1899, as amended.”

2. Article V- FUNDING. Article V.A is modified in its entirety to read:

“A. Funding periods.

1. First funding period: July 13, 2012 - December 31, 2013

2. Second funding period: January 1, 2014 - December 31, 2016”

3. Article V. – FUNDING. Article V.F. is modified in its entirety to read:

“The Agency may not extend the services of the Corps beyond December 31, 2016 unless the sunset clause of section 214 of WRDA 2000 is extended in which case the Agency may request to extend services subject to 1) additional funding being provided by the Agency and 2) written amendment to this MOA.”

4. Article XI- EFFECTIVE DATE AND DURATION. Article XI is modified in its entirety to read:

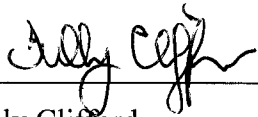
“This MOA and any amendments will become effective on the date of signature by the last party. Unless amended or modified pursuant to Article IX.A., this MOA shall remain in force until whichever of these events occurs first: 1) December 31, 2016, or 2) the MOA is terminated pursuant to Article IX.B.”

5. Integration. This FIRST AMENDMENT represents the entire understanding of the Agency and the Corps regarding the MOA and changes to the MOA. All other terms and conditions of the MOA remain in full force and effect.

SUBJECT: First Amendment to Memorandum of Agreement between the Ventura County Watershed Protection District and the U.S. Army Corps of Engineers' Los Angeles District

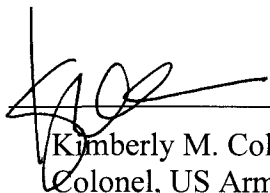
IN WITNESS WHEREOF, this FIRST AMENDMENT is executed by the Ventura County Watershed Protection District, acting by and through its authorized officer, and by the U.S. Army Corps of Engineers' Los Angeles District, through its authorized officer.

VENTURA COUNTY WATERSHED PROTECTION DISTRICT

By: 
Tully Clifford
Director

Date: 11/27/2013

U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT

By: 
Kimberly M. Colloton, PMP
Colonel, US Army
Commander and District Engineer

Date: 12/20/2013

PART B

**Agency Technical Review (ATR) Plan
Sespe Creek Levee (SC-2) Rehabilitation**

PART B
Agency Technical Review (ATR) Plan
Sespe Creek Levee (SC-2) Rehabilitation

1. Introduction

In accordance with EC 1165-2-216, the ATR is conducted to ensure the quality and credibility of the presented scientific information. The ATR team will include the necessary expertise to address compliance with applicable published policy.

2. Project Description

The Sespe Creek Levee (SC-2) Rehabilitation project involves an existing Corps levee located in the City of Fillmore. The VCWPD will submit a Section 408 Proposal requesting approval to implement an alteration or modification that would eliminate structural and non-structural deficiencies as identified along the SC-2 Levee in the Periodic Inspection Report consistent with the design criteria described in 44 CFR 65.10. Specifically, an approved and implemented alteration/modification would need to withstand 0.1 exceedance storm flows and to facilitate FEMA certification to provide eligibility under the National Flood Insurance Program. The proposed project includes raising the levee height one to 6 feet higher by adding earthen fill on the landward side of the existing levee along an approximately 1,543-foot segment between Old Telegraph Road and State Route (SR) 126 and constructing a 321-foot long retaining wall along the landward side of a portion of the levee. The proposed modifications or improvements require a 408 permit from the Los Angeles District.

Since the original levee was completed in 1983, the peak flowrate has increased by 35% and the dominant and active streambeds have shifted. The creek behaves as a braided river during moderate to high flows, increasing the difficulties in sediment modeling. However, most of the challenges are geotechnical in nature. Existing guidelines regarding seepage, slope stability, and fill bank materials are not site-specific.

3. Scope of Review

The Agency Technical Review (ATR) for this Section 408 proposal will examine the Sespe Creek Levee (SC-2) Rehabilitation design documents, focusing on compliance with established policy, principles and procedures using clearly justified and valid assumptions. As part of the proposal, final engineering design and analyses that are based on different technical analyses will provide the technical foundation for the recommended levee rehabilitation design, which many of these are previous independent studies and include (1) hydrology, (2) hydraulics, (3) geomorphology/sediment transport, (4) geotechnical, (5) economic flood damage, (6) levee local interior drainage, and (7) engineering alternatives feasibility analyses.

The review of all work products will be in accordance with the guidelines established within this review plan. For the purposes of Section 408, the ATR team will make the following determinations:

- (1) Impair to the Usefulness of the Project Determination. The objective of this determination is to ensure that the proposed alteration will not limit the ability of the project to function as authorized and will not compromise or change any authorized project conditions, purposes or outputs.
- (2) Injurious to the Public Interest Determination. Proposed alterations will be reviewed to determine the probable impacts, including cumulative impacts, on the public interest. The decision whether to approve an alteration will be determined by the consideration of whether benefits are commensurate with risks.
- (3) Legal and Policy Compliance Determination. A determination will be made as to whether the proposed alteration meets all legal and policy requirements.
- (4) Verify Appropriate Decision Level. Verify whether or not HQUSACE review and decision is required.

For each Agency Technical Review (ATR) event, the ATR team will examine, as part of its ATR activities, relevant QC records and provide written comment in the ATR report as to the apparent adequacy of the QC effort for the associated product or service. The ATR team shall also review the responses to the SAR panel's recommendation and determine when changes are necessary.

(1) ATR Team responsibilities are as follows:

- (a) Reviewers shall review the submitted 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 that 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. The ATR manager shall provide these comments to the Study Manager.
- (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 be 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 VCWPD must take to resolve the concern.

(2) VCWPD 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 VCWPD and ATR managers to discuss any “Non-Concur” responses.

4. Review Team

a. Agency Technical Review Team Qualifications. The ATR team for the Sespe Creek Levee (SC-2) Rehabilitation project should be comprised of the following disciplines:

Hydrology and 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: river engineering, hydrologic analysis, flood plain analysis, hydraulic design of channels and levees, and river sedimentation. Active participation in related professional societies is encouraged.

Geotechnical Engineering. The team member should have 15 or more years of experience in geotechnical engineering. Team member must demonstrate significant experience in the geotechnical aspects of analysis, design and construction of embankment dams and levees on alluvial foundation. Experience with subsurface investigations, liquefaction analyses, earthquake induced deformations, seepage and slope stability analysis.

Structural Engineer. The team member shall have 10 or more years of experience in structural engineering. The Structural Engineer shall have extensive experience in design and evaluations of large complex hydraulic structures associated with flood risk management projects as well as experience in design of hydraulic structures such as side drains constructed through levees. A practical knowledge of construction methods and techniques as it relates to structural portions of projects is encouraged.

Landscape Architect. The team member should have 10 or more years experience as a landscape architect with experience in the evaluation and design of irrigation systems, pedestrian circulation and site development. Experience is needed for levee system projects.

Civil Engineer. The team member must have experience with structure/soil interaction especially the analysis, design and construction of structures penetrating embankment dams and levees.

Environmental. The team member should have 10 or more years of 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. (Review work products, as necessary).

Real Estate. The team member will be experienced in federal civil works real estate laws, policies, and guidance. (Review work products, as necessary).

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

b. Agency Technical Review Team Roster. The ATR team for the Sespe Creek Levee (SC-2) Rehabilitation project is listed in Appendix A.

5. Review Schedule

- ATR will be conducted at 60% and 100% design. The start dates for these reviews are TBD at this time.
- Estimated funding for the ATR is \$155,000. This includes design documents review, and the review of the QA/QC & SAR comments.

6. Documentation of Review

a. ATR Communication and Documentation. The communication and documentation plan for the ATR is as follows:

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

(2) VCWPD 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) VCWPD shall host an ATR kick-off meeting virtually to orient the ATR team during the first week of the comment period. A site visit shall be held for those members of the ATR team not familiar with the Sespe Creek project. At a minimum, VCWPD 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 provided for use during back checking of the comments.

(6) VCWPD 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 VCWPD members directly via email or phone to clarify any confusion. DrChecks shall not be used to post questions needed for clarification.

b. ATR Dispute Resolution.

(1) Reviewers shall back check VCWPD 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. If the ATR team leader is unable to resolve the issue, the ATR team leader will follow steps as described below.

(3) When resolution is not readily achievable, the RMO should engage the PCX or MSC subject matter experts (SMEs) to help facilitate resolution, and they in turn may choose to engage HQUSACE SMEs. If a specific concern still remains unresolved, the district is to pursue resolution through the policy issue resolution processes described in Appendix H, ER 1105-2-100; ER 1110-1-12, or other applicable guidance. HQUSACE may choose to defer the issue to the policy compliance review process or address it directly. The ATR shall be certified in accordance with ER 1110-1-12 when all ATR concerns are documented as either resolved or deferred by HQUSACE to a separate process.

(4) The Agency Technical Review team will identify significant issues that they believe are not satisfactorily resolved and will note these concerns in the Technical Review Certification documentation. The ATR team will prepare a Review Report which includes a summary of each unresolved issue. Review Reports will be considered an integral part of the ATR documentation.

(5) Significant unresolved ATR concerns that are documented by the RMO will be forwarded through the MSC to the HQUSACE RIT, including basic research of USACE guidance and an expression of desired outcome, for further resolution in accordance with the policy issue resolution process described in either ER 1110-2-12 or Appendix H, ER 1105-2-100, as appropriate. HQUSACE may choose to defer the issue to the policy compliance review process or address it directly. At this point the ATR documentation for the concern may be closed with a notation that the concern has been elevated for resolution by HQUSACE. Subsequent submittals of reports for MSC and/or HQUSACE review and approval shall include documentation of the issue resolution process.

c. ATR Certification. To fully document the ATR process, a statement of technical review will be prepared for each product reviewed. The ATR documentation will include the text of each ATR comment, the VCWPD response, a brief summary of the pertinent points in the ensuing

discussion, including any vertical coordination, and the agreed upon resolution. 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.

7. Model Certification and Approval

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to QA/QC, ATR, and IEPR (if required).

EC 1105-2-412 does not address engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to QA/QC, ATR, and IEPR (if required).

a. Planning Models. The following planning models are anticipated to be used in the development of the decision document: N/A

b. Engineering Models. Four technical studies were prepared to evaluate the Sespe Creek including a (1) Hydrologic Analysis, (2) Geomorphic Assessment, (3) Hydraulic Analysis, and (4) Sediment Transport Analysis. The modeling package selected for the Hydrologic Analysis is the US EPA Hydrological Simulation Program – FORTRAN (HSPF). The Geomorphic Assessment is a combination of field observations and literature values utilized in a GIS-based analysis. Two hydraulic models were developed due to the complexity of the system. The 2-D flood-routing model was constructed in FLO-2D Version 2007. The 1-D steady-state model is prepared in HEC-RAS Version 4.0. Cross-Sections were generated in HEC-GeoRAS. HEC-6T is used to evaluate the sediment transport behavior to maintain consistency with previous performed and ongoing modeling efforts in the Santa Clara River Watershed.

ATTACHMENT 1

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the Section 408 Permit Request for the Sespe Creek Levee (SC-2) Rehabilitation Improvement Project in Ventura County, California.

The ATR was conducted as defined in the Alteration-Specific Review Plan to comply with the requirements of EC 1165-2-216. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included the determination whether the proposed alteration would impair the usefulness of the federal project or was injurious to the public interest. All comments resulting from the ATR have been resolved.

Huma M. Nisar
Permit Coordinator
CESPL-ED-DB

Date

Jody L. Fischer, P.E.
Levee Safety Program Manager
CESPL-ED-GL

Date

Nathan Snorteland, P.E.
Director of Risk Management Center

Date

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows:

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

Richard J. Leifield, P.E.
Chief, Engineering Division
CESPL-ED

Date

APPENDIX A

AGENCY TECHNICAL REVIEW TEAM

Agency Technical Review Team Roster. The ATR team for the Sespe Creek Levee (SC-2) Rehabilitation project will be made up of the following personnel:

Discipline	Name	Phone
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

Note: All review team members will be provided a copy of this Review Plan

PART C

**Safety Assurance Review (SAR) Plan
Sespe Creek Levee (SC-2) Rehabilitation**

SAFETY ASSURANCE REVIEW (SAR) PLAN

INTRODUCTION

- 1. PROJECT BACKGROUND**
- 2. PURPOSE**
- 3. REFERENCES**
- 4. SAR REVIEW EXPERTISE AND MANAGEMENT**
- 5. SAR REVIEW PANEL EXPERTISE**
- 6. COMMENT TRACKING**
- 7. SCHEDULE**
- 8. ADEQUACY OF THE SAR**

BACKGROUND INFORMATION & CONFLICT OF INTEREST FORMS FOR SAR TEAM MEMBERS

**Review Plan
Sespe Creek Levee (SC-2) Rehabilitation
Ventura County Watershed Protection District**

Prepared for US Army Corps of Engineers, Los Angeles District

September 2012

This document is to satisfy the Safety Assurance Review (SAR) requirements for the Sespe Creek Levee (SC-2) Rehabilitation Project as required by Section 2035 in the Water Resource Development Act (WRDA) of 2007 as described in the U. S Army Corps of Engineers' EC 1165-2-214, Civil Works Review Policy.

The Ventura County Watershed Protection District (VCWPD) is in the process of designing and constructing improvements to the levee system that protects over 1,000 homes in the City of Fillmore CA VCWPD needs to perform additional levee alterations to the Sespe Creek levees to ensure public safety for citizens of Ventura County. VCWPD is currently developing a project specific NEPA/CEQA document to support the improvements proposed as part of the SC-2 project. Safety Assurance Reviews ensure that good science, sound engineering, and public health, safety, and welfare are the most important factors in guiding the engineering design and implementation of the SC-2. VCWPD is planning to begin construction of the SC-2 in 2013.

VCWPD is proactively working to ensure independent review of its SC-2 design and implementation and the proposed actions in this Safety Assurance Plan should satisfy Section 2035 in WRDA 2007. This document outlines how the SAR will be performed and identifies the independent consultants who will comprise the SAR Review Panel that will be charged with executing an adequate SAR for the SC-2.

1. Project Background

The Federal Emergency Management Agency (FEMA) recently developed Digital Flood Insurance Rate Maps (DFIRMs) for Sespe Creek as a part of its Flood Map Modernization. As a part of its map modernization program, FEMA requires levee owners to certify their levees meet the criteria of the Code of Federal Regulations. That study found the USACE levee along Sespe Creek did not meet the required federal criteria, and FEMA remapped the floodplain assuming the levee failed. This assumption resulted in the delineation of floodplain and floodway special flood hazard areas (SFHAs) through the City of Fillmore affecting over 1,000 homes and businesses. A detailed hydraulic analysis of the creek was prepared based on recent topography of the creek system and the results of the analysis indicate that portions of the USACE levee below Old Telegraph road would be overtopped during a storm event in excess of approximately 100,000 cfs. This flow rate is equivalent to approximately a 50-year storm event.

The project would consist of raising the existing SC-2 Levee height by one to six feet along an approximately 1,543-foot segment between Old Telegraph Road and State Route (SR) 126 by adding earthen fill on the landward side of the existing levee with rock slope protection on the riverward side of the added fill slope, adding a 321-foot-long retaining wall along the landward side of a portion of the levee by two residences, and appurtenances as shown on the enclosed Figure 1.

2. Purpose

This document outlines the Review Plan for the Sespe Creek Levee (SC-2) Rehabilitation project. The Ventura County Watershed Protection District (VCWPD) is the local sponsor. EC 1165-2-214, Civil Works Review Policy, dated 15 December 2012, outlines the policy on review of decision documents, particularly with regards to Independent External Peer Review (IEPR) and Safety Assurance Review (SAR), which is also referred to as a Type II IEPR.

A Type I IEPR is not required. The project is a rehabilitation of an existing federally authorized facility operated and maintained by the VCPWD for flood protection purposes and does not involve a decision document phase. However, a Type II IEPR/SAR will be provided.

The purpose of a SAR is to ensure that good science, sound engineering, and public health, safety, and welfare are the most important factors that determine a project's fate and is achieved by independent and impartial review. The SARs are used to inform the USACE 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.

The Safety Assurance Review will address the following questions:

- 1) Are the models used to assess hazards appropriate?
- 2) Are the assumptions made for the hazards appropriate?
- 3) Is the quality and quantity of the surveys, investigations, and engineering for the concept design sufficient to support the models and assumptions made for determining the hazards?
- 4) Does the analysis adequately address the uncertainty given the consequences associated with the potential for loss of life for this type of project?
- 5) Do the assumptions made during the planning phase for hazards remain valid through the completion of design as additional knowledge is gained and the state-of-the-art evolves?
- 6) Do the project features adequately address redundancy, robustness, and resiliency with an emphasis on interfaces between structures, materials, members, and project phases?

- 7) Do the assumptions made during design remain valid through construction?
- 8) For O&M manuals, do the requirements adequately maintain the conditions assumed during design and validated during construction; and will the project monitoring adequately reveal any deviations from assumptions made for performance and is sufficient to evaluate the change in project effectiveness?

3. References

EC 1165-2-214, Civil Works Review Policy, dated 15 December 2012

Section 2035 in the Water Resource Development Act (WRDA) of 2007 as described in the U. S Army Corps of Engineers' EC 1105-2-410, Civil Works Review Policy.

ER 1110-1-8159, Implementing the Design Review and Checking System (DrChecks)

4. SAR Review Expertise and Management

The VCWPD will identify and select three (3) experts of varied professional disciplines to serve on the SAR. Selection will be based on availability, technical credentials, and absence of perceived or actual conflict of interest. A panel lead shall be chosen by VCWPD. The IEPR expert reviewers shall not have any financial or litigation association with USACE, VCWPD, VCWPD's engineering design team, subcontractors or construction contractors. The IEPR expert reviewers shall fully disclose any known or potential conflict of interest that may arise from the performance of the work. Areas of conflict may include current employment by the Federal or County governments, participation in developing the subject project, a publicly documented statement advocating for or against the subject project, current or future interests in subject project.

The panel shall consist of a geotechnical engineer, a hydraulic & hydrology (H&H) engineer and a structure/soil interaction engineer familiar with construction practices related to flood control facilities. The geotechnical engineer will be a recognized expert in the analysis, design and construction of embankment dams and levees on alluvial foundations with extensive experience in subsurface investigations, liquefaction analyses, earthquake induced embankment deformations, seepage and slope stability analysis. The H&H engineer shall have extensive experience in river engineering related to flood control and geomorphology and have performed work in hydrologic analysis, floodplain analysis, hydraulic design of channels and levees using various channel and bank protection works, and river sedimentation. The structure/soil interaction engineer will be a recognized expert in the analysis, design and construction of structures penetrating embankment dams and levees with extensive experience in the design loads and analyses of these structures.

The SAR Review Panel shall:

- a) Conduct the review for the subject project in a timely manner in accordance with the study and SAR Plan schedule;
- b) Follow the "charge," but when deemed appropriate by the panel lead, feel free to request other products relevant to the project and the purpose of the review;
- c) Receive from USACE any public written and oral comments provided on the project;
- d) Provide timely written and oral comments throughout the development of the project, as requested;
- e) Submit reports in accordance with the review plan milestones; and
- f) The panel lead shall be responsible for ensuring that comments represent the group, be non-attributable to individuals, and where there is lack of consensus, note the non-concurrence and why.

5. SAR Review Panel Expertise

Per EC 1165-2-214, selection of SAR panel members for Independent External Peer Review efforts will adhere to the National Academy of Science (NAS) Policy on Committee Composition and Balance and Conflicts of Interest, which sets the standard for "independence" in review process and complexity in a national context.

Panel members shall be registered professional engineers in the United States. The peer reviewers must also have an engineering degree. A Master's degree in engineering is preferable, but not required, as hands-on relevant engineering experience in the listed disciplines is more important. Peer reviewers shall have a minimum of 20 years experience in the each of three fields to be reviewed; Geotechnical Engineering, River Mechanics, and Structure/Soil Interaction.

6. Comment Tracking

The panel will provide written comments and recommendations to the Design team for response. Based on the panels review of the design team responses, the issues commented on will either be closed for items resolved satisfactorily, or remain open for items that remain to be resolved. DrChecks will be used by the USACE ATR in accordance with USACE ER 1110-1-8159.

Upon completion of each stage of the review, VCWPD shall prepare a response detailing any actions undertaken or not taken in response to the comments. Comments

that lack consensus will be clarified to explain the nonconcurrence. All comments will be addressed. The SAR reports will be made available to the public upon request.

7. Schedule

SARs will be conducted on an as-needed basis but, at a minimum, will occur at:

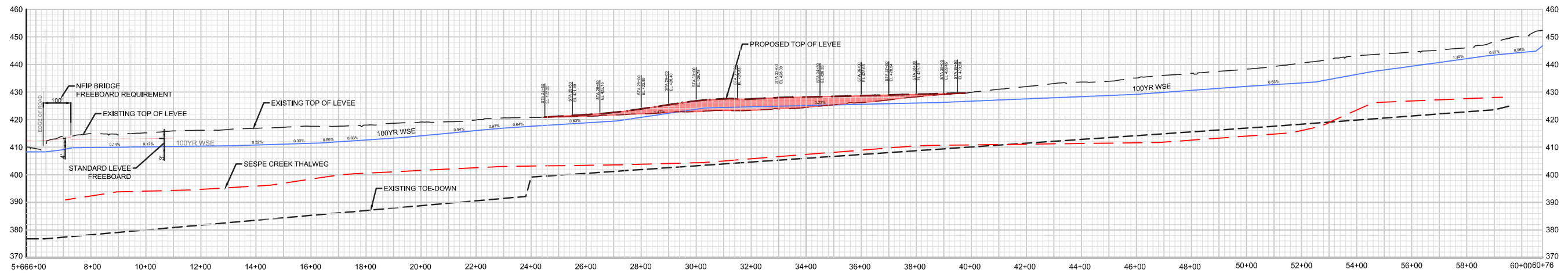
- 60% design,
- 100% design,
- Start of construction, and
- During construction.

The SAR panel will have the option to request additional or alternate milestones where warranted and reasonable.

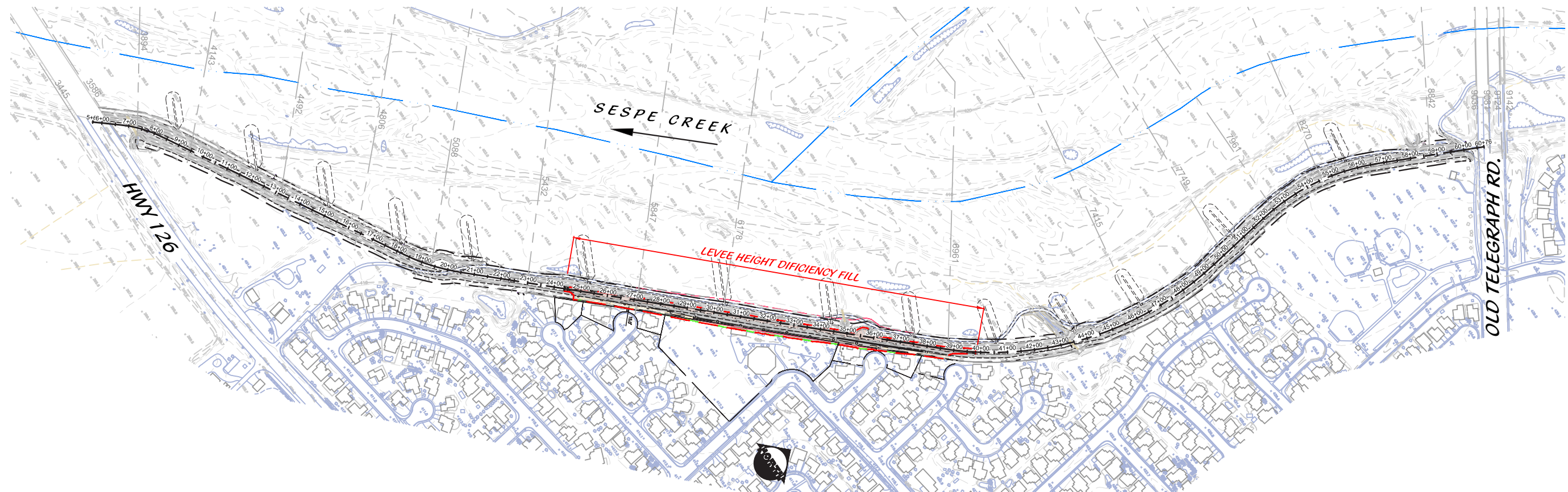
In advance of the SAR review, VCWPD will prepare an agenda containing important topics, questions for the Panel, etc., as well as provide supporting reports and project briefing meeting materials.

8. Adequacy of the SAR

The information provided in this document demonstrates VCWPD's effort to ensure good science, sound engineering, and public welfare are the most important considerations during development of the SC-2. VCWPD feels that the planned actions, as carried out in the future, outlined in this document satisfy the intent of Section 2035 of WRDA 2007. While specifics of any future HQUSACE guidance on the Safety Assurance Review are not known at this time, VCWPD is confident the plan presented in this document is adequate to allow the USACE to approve the Section 408 proposals. This SAR Plan is a living document and as presented and can be modified in the future, as needed.



PROFILE
 scale: horiz. 1"=400'
 vert. 1"=40'



PLAN VIEW

**BACKGROUND INFORMATION &
CONFLICT OF INTEREST FORMS FOR SAR TEAM MEMBERS**

BI/COI FORM 3

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Academy of Sciences
National Academy of Engineering

Institute of Medicine
National Research Council

BACKGROUND INFORMATION
AND
CONFIDENTIAL CONFLICT OF INTEREST DISCLOSURE
For General Scientific and Technical Studies and Assistance

NAME: David T. Williams TELEPHONE: 619-823-4778

ADDRESS: 1112 Oakridge Dr.
Fort Collins, CO 80525

EMAIL ADDRESS: david@dtwassoc.com

CURRENT EMPLOYER: David T. Williams and Associates, Engineers,
LLC

NAS/NAE/IOM/NRC COMMITTEE: NA

There are two parts to this form, Part I Background Information, and Part II Confidential Conflict of Interest Disclosure. Complete both parts, **sign** and **date** this form on the last page, and return the form to the responsible staff officer for *The National Academies* project and committee activity to which this form applies. **Retain a copy for your records.**

PART I

BACKGROUND INFORMATION

INSTRUCTIONS

Please provide the information requested below regarding **relevant** organizational affiliations, government service, public statements and positions, research support, and additional information (if any). Information is "relevant" if it is related to -- and might reasonably be of interest to others concerning -- your knowledge, experience, and personal perspectives regarding the subject matter and issues to be addressed by the committee activity for which this form is being prepared. If some or all of the requested information is contained in your curriculum vitae, you may if you prefer simply attach your CV to this form, supplemented by additional responses or comments below as necessary.

I. ORGANIZATIONAL AFFILIATIONS. Report your relevant business relationships (as an employee, owner, officer, director, consultant, etc.) and your relevant remunerated or volunteer non-business relationships (e.g., professional organizations, trade associations, public interest or civic groups, etc.).

See attached resume.

II. GOVERNMENT SERVICE. Report your relevant service (full-time or part-time) with federal, state, or local government in the United States (including elected or appointed positions, employment, advisory board memberships, military service, etc.).

See attached resume.

III. RESEARCH SUPPORT. Report relevant information regarding both public and private sources of research support (other than your present employer), including sources of funding, equipment, facilities, etc.

No research support.

IV. PUBLIC STATEMENTS AND POSITIONS. List your relevant articles, testimony, speeches, etc., by date, title, and publication (if any) in which they appeared, or provide relevant representative examples if numerous. Provide a brief description of relevant positions of any organizations or groups with which you are closely identified or associated.

See attached resume.

V. ADDITIONAL INFORMATION. If there are relevant aspects of your background or present circumstances not addressed above that might reasonably be construed by others as affecting your judgment in matters within the assigned task of the committee or panel on which you have been invited to serve, and therefore might constitute an actual or potential source of bias, please describe them briefly.

All information has been provided

PART II CONFIDENTIAL CONFLICT OF INTEREST DISCLOSURE

INSTRUCTIONS

It is essential that the work of committees of the institution used in the development of reports not be compromised by any significant conflict of interest. For this purpose, **the term "conflict of interest" means any financial or other interest which conflicts with the service of the individual because it (1) could significantly impair the individual's objectivity or (2) could create an unfair competitive advantage for any person or organization.** Except for those situations in which the institution determines that a conflict of interest is unavoidable and promptly and publicly discloses the conflict of interest, no individual can be appointed to serve (or continue to serve) on a committee of the institution used in the development of reports if the individual has a conflict of interest that is relevant to the functions to be performed.

The term "conflict of interest" means something more than individual bias. There must be an *interest*, ordinarily financial, that could be directly affected by the work of the committee.

Conflict of interest requirements are *objective* and *prophylactic*. They are not an assessment of one's actual behavior or character, one's ability to act objectively despite the conflicting interest, or one's relative insensitivity to particular dollar amounts of specific assets because of one's personal wealth. Conflict of interest requirements are objective standards designed to eliminate certain specific, potentially compromising situations from arising, and thereby to protect the individual, the other members of the committee, the institution, and the public interest. The individual, the committee, and the institution should not be placed in a situation where others could reasonably question, and perhaps discount or dismiss, the work of the committee simply because of the existence of conflicting interests.

The term "conflict of interest" applies only to *current interests*. It does not apply to past interests that have expired, no longer exist, and cannot reasonably affect current behavior. Nor does it apply to possible interests that may arise in the future but do not currently exist, because such future interests are inherently speculative and uncertain. For example, a pending formal or informal application for a particular job is a current interest, but the mere possibility that one might apply for such a job in the future is not a current interest.

The term "conflict of interest" applies not only to the personal interests of the individual but also to the *interests of others* with whom the individual has substantial common financial interests if these interests are relevant to the functions to be performed. Thus, in assessing an individual's potential conflicts of interest, consideration must be given not only to the interests of the individual but also to the interests of the individual's spouse and minor children, the individual's employer, the individual's business partners, and others with whom the individual has substantial common financial interests. Consideration must also be given to the interests of those for whom one is acting in a fiduciary or similar capacity (e.g., being an officer or director of a corporation, whether profit or nonprofit, or serving as a trustee).

Much of the work of this institution involves scientific and technical studies and assistance for sponsors across a broad range of activities. Such activities may include, for

example: defining research needs, priorities, opportunities and agendas; assessing technology development issues and opportunities; addressing questions of human health promotion and assessment; providing scientific and technical assistance and supporting services for government agency program development; assessing the state of scientific or technical knowledge on particular subjects and in particular fields; providing international and foreign country science and technology assessments, studies and assistance. Such activities frequently address scientific, technical, and policy issues that are sufficiently broad in scope that they do not implicate specific financial interests or conflict of interest concerns.

However, where such activities address more specific issues having significant financial implications -- e.g., funding telescope A versus telescope B, government development or evaluation of a specific proprietary technology, promotion or endorsement of a specific form of medical treatment or medical device, connecting foreign research facilities to specific commercial interests, making recommendations to sponsors regarding specific contract or grant awards, etc. -- careful consideration must be given to possible conflict of interest issues with respect to the appointment of members of committees that will be used by the institution in the development of reports to be provided by the institution to sponsoring agencies.

The overriding objective of the conflict of interest inquiry in each case is to identify whether there are interests -- primarily financial in nature -- that conflict with the committee service of the individual because they could impair the individual's objectivity or could create an unfair competitive advantage for any person or organization. The fundamental question in each case is does the individual, or others with whom the individual has substantial common financial interests, have identifiable interests that could be directly affected by the outcome of the project activities of the committee on which the individual has been invited to serve? For projects involving advice regarding awards of contracts, grants, fellowships, etc., this institution is also guided by the principle that an individual should not participate in any decision regarding the award of a contract or grant or any other substantial economic benefit to the individual or to others with whom the individual has substantial common financial interests or a substantial personal or professional relationship.

The application of these concepts to specific scientific and technical studies and assistance projects must necessarily be addressed in each case on the basis of the particular facts and circumstances involved. The questions set forth below are designed to elicit information from you concerning possible conflicts of interest that are relevant to the functions to be performed by the particular committee on which you have been invited to serve.

1. FINANCIAL INTERESTS.

(a) Taking into account stocks, bonds, and other financial instruments and investments including partnerships (but excluding broadly diversified mutual funds and any investment or financial interests valued at less than \$10,000), do you or, to the best of your knowledge others with whom you have substantial common financial interests, have financial investments that could be affected, either directly or by a direct effect on the business enterprise or activities underlying the investments, by the outcome of the project activities of the committee on which you have been invited to serve?

(b) Taking into account real estate and other tangible property interests, as well as intellectual property (patents, copyrights, etc.) interests, do you or, to the best of your knowledge others with whom you have substantial common financial interests, have property interests that could be directly affected by the outcome of the project activities of the **Sespe Creek Levee Project for Ventura County Watershed Protection District** on which you have been invited to serve?

(c) Could your employment or self-employment (or the employment or self-employment of your spouse), or the financial interests of your employer or clients (or the financial interests of your spouse's employer or clients) be directly affected by the outcome of the project activities of the committee on which you have been invited to serve?

(d) Taking into account research funding and other research support (e.g., equipment, facilities, industry partnerships, research assistants and other research personnel, etc.), could your current research funding and support (or that of your close research colleagues and collaborators) be directly affected by the outcome of the project activities of the committee on which you have been invited to serve?

(e) Could your service on the committee on which you have been invited to serve create a specific financial or commercial competitive advantage for you or others with whom you have substantial common financial interests?

If the answer to all of the above questions under FINANCIAL INTERESTS is either "no" or "not applicable," check here X (NO).

If the answer to any of the above questions under FINANCIAL INTERESTS is "yes," check here _____ (YES), and briefly describe the circumstances on the last page of this form.

2. OTHER INTERESTS.

(a) Is the central purpose of the project for which this disclosure form is being prepared a critical review and evaluation of your own work or that of your employer?

(b) Do you have any existing professional obligations (e.g., as an officer of a scientific or engineering society) that effectively require you to publicly defend a previously established position on an issue that is relevant to the functions to be performed in this committee activity?

(c) To the best of your knowledge, will your participation in this committee activity enable you to obtain access to a competitor's or potential competitor's confidential proprietary information?

(d) If you are or have ever been a U.S. Government employee (either civilian or military), to the best of your knowledge are there any federal conflict of interest restrictions that may be applicable to your service in connection with this committee activity?

(e) If you are a U.S. Government employee, are you currently employed by a federal agency that is sponsoring this project? If you are not a U.S. Government employee, are you an employee of any other sponsor (e.g., a private foundation) of this project?

(f) If the committee activity for which this form is being prepared involves reviews of specific applications and proposals for contract, grant, fellowship, etc. awards to be made by sponsors, do you or others with whom you have substantial common financial interests, or a familial or

substantial professional relationship, have an interest in receiving or being considered for awards that are currently the subject of the review being conducted by this committee?

(g) If the committee activity for which this form is being prepared involves developing requests for proposals, work statements, and/or specifications, etc., are you interested in seeking an award under the program for which the committee on which you have been invited to serve is developing the request for proposals, work statement, and/or specifications -- or, are you employed in any capacity by, or do you have a financial interest in or other economic relationship with, any person or organization that to the best of your knowledge is interested in seeking an award under this program?

If the answer to all of the above questions under OTHER INTERESTS is either "no" or "not applicable," check here (NO).

If the answer to any of the above questions under OTHER INTERESTS is "yes," check here (YES), and briefly describe the circumstances on the last page of this form.

EXPLANATION OF "YES" RESPONSES:

Not Applicable

During your period of service in connection with the activity for which this form is being completed, any changes in the information reported, or any new information, which needs to be reported, should be reported promptly by written or electronic communication to the responsible staff officer.

David T. Williams

YOUR SIGNATURE

March 14, 2013

DATE

Reviewed by:

Kirk Norman

DATE

4/11/13

David T. Williams and Associates, Engineers

Hydrology, Hydraulics, Sediment Transport, Channel Stability

Ph. (619) 823-4778

david@dtwassoc.com

Fluvial Geomorphology, Flood Control Design

1112 Oakridge Dr., Suite 104

PMB 236

Fort Collins, CO 80525

Kirk Norman, P.E.
Ventura County Watershed Protection District
800 South Victoria Ave.
Ventura CA, 93009-1610

November 5, 2012

Re: Consultant Candidate Selection of Peer Reviewers for IEPR Type II, Safety Assurance Review (SAR) as Required By the USACE EC 1165-2-209, Sespe Creek Levee (SC-2), Highway 126 to Old Telegraph Rd., Fillmore, CA, Project No. 83309

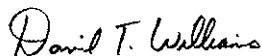
Dear Mr. Norman and Selection Committee:

Excellence. Dedication. Pride in our work. Enthusiasm. Attributes which David T. Williams and Associates (DTW) bring to every project and traits most desired by your selection committee for the Safety Assurance Review (SAR) Panel. DTW is interested in providing services for the above subject Safety Assurance Panel Review and recommends **Dr. David T. Williams, P.E., CFM, PH, CPESC, F.ASCE, D.WRE** to be on the Safety Review Panel (SAR). His resume is attached below. David is a nationally and internationally recognized water resources engineer with vast experience in the water resources industry. Highly reputed as a leader who integrates traditional methods with innovative techniques, he has shown a high level of leadership from his military experience as a combat engineer officer with the 7th Special Forces Group (Green Berets), to Chief of the Hydrology and Hydraulics Branch of the Baltimore District Corps of Engineers, and to the present – President of David T. Williams and Associates.

Dr. Williams, a Licensed Professional Civil Engineer in numerous states, including California, is ideally qualified to be on the Safety Assurance Review Panel. He is presently on 4 such SAR panels for projects in California and Texas (chairing 3 of them) and has shown a level of expertise that has saved virtually millions of dollars for these projects as documented by the owners of these projects. His expertise in hydrology, hydraulics, streambank stability and bridge scour analysis is national recognized and his contributions to the understanding of these topics are numerous, well received and practiced by many water resources engineers. DTW commits Dr. Williams' time to meet the required schedule and perform the services as needed.

DTW is registered with the State of Colorado as a DBE, MBE, and an SBE business. DTW is also a Disabled Veteran owned business enterprise.

Sincerely,



David T. Williams
President, David T. Williams and Associates

Resume of:

David T. Williams, Ph.D., P.E., P.H., CPESC, CFM, F.ASCE, D.WRE

President, David T. Williams and Associates

Email: david@dtwassoc.com Cell: 619.823.4778

“David brings seasoned wisdom, perspective, and professionalism to projects he is involved with. His breadth of technical knowledge of water resources is remarkable. He is an excellent communicator.”
John Shearer, former Assistant Secretary, Florida Department of Environmental Protection

“David is an expert in his field and explains difficult concepts in a way that makes them easier to understand. He provided great training for Public Works on sediment transport and rip-rap design processes on several occasions.” Ben Willardson, Water Resources Division – Operations at Los Angeles County Department of Public Works

Education

Ph.D., Civil Engineering, Colorado State University

M.S., Civil Engineering, University of California, Davis

B.S., Civil Engineering, University of California, Davis

Registrations and Certifications

Professional Engineer (Civil) license number and date:

Arizona 24349, 1990

California 57020, 1997

Colorado 42353, 2008

Hawaii 7796, 1993

Louisiana, 34075, 2009

Mississippi 08242, 1981

New Mexico 12187, 1993

Oregon 16963, 1993

Texas 80003, 1994

Washington 27190, 1990

Registered Professional Hydrologist (PH: 96-H-1146)

Certified Professional, Erosion and Sediment Control (CPESC: #703)

Certified Floodplain Manager (CFM; US-08-03224)

Professional Societies

American Society of Civil Engineers (Fellow)

International Erosion Control Association (IECA – past president)

American Society of Testing and Materials (ASTM)

American Institute of Hydrology (Chair, Board of Registration: Member, Executive Board)

American Academy of Water Resources Engineers (founding member)

Work History

2008 – 2012; President, David T. Williams and Associates, Engineers, LLC, Fort Collins, CO
2005 - 2008; National Technical Director for Water Resources, PBS&J, Fort Collins, CO
2002 - 2005; National Director for Hydrology and Hydraulics, HDR Engineering, San Diego, CA
1988 - 2002; President and co-founder of WEST Consultants, a premier water resources engineering firm
1979 - 1988; Research Hydraulic Engineer, Hydraulics Lab, Engineering and Research Development Center (formerly Waterways Experiment Station), Vicksburg, MS
1983 - 1984; Acting Chief, Hydrology and Hydraulics Section, Baltimore District Corps of Engineers
1977 - 1979; Civil Engineer, Hydrology Branch, Nashville District Corps of Engineers
1975 - 1977; Research Hydraulic Engineer, Planning Branch and Research Branch, Hydrologic Engineering Center (HEC), Davis, CA
1972 - 1975; Infantry Platoon Officer and Combat Engineering Unit Officer, 7th Special Forces Group, Fort Bragg, NC

Summary

Dr. David Williams has over 35 years of experience in the water resources industry and is known nationally and internationally for his contributions to the industry. Dr. Williams is also a nationally recognized expert in sedimentation engineering and in developing innovative solutions to difficult hydraulic and hydrologic design problems in rivers and estuaries.

Dr. Williams previously served as a two time President of the International Erosion Control Association. He has served as chair of the ASCE Task Committee on Analysis of Laboratory and Field Sediment Data Accuracy and Availability. He is also a past chair of the ASCE Sedimentation Committee as well as the Computational Hydraulics Committee and currently serves on the ASCE Stream Restoration Committee. He served as a committee member of ASTM A05.12 (Wire specifications), where he helped develop the standards for both welded and twisted (woven) gabions. He also served on ASTM D18.25 (Erosion Control Products), where he helped develop a variety of standards related to erosion control. While chair of the Federal Interagency Technical Committee on Sedimentation when Dr. Williams was with the U.S. Army Corps of Engineers, he worked with hydraulic and sedimentation experts from the Federal Highway Administration, Bureau of Reclamation, U.S. Geological Survey, Bureau of Land Management, Forest Service, TVA, Bureau of Land Management and the Agricultural Research Service. His work with the Committee involved developing sediment sampling equipment and sediment data collection methods. He is the author of more than 100 technical papers and reports on hydraulics and sedimentation. Dr. Williams was formerly an Associate Editor of the ASCE Journal of Hydraulic Engineering, as well as a reviewer.

His professional experience includes more than eighteen years as a hydraulic engineer with the U.S. Army Corps of Engineers at the Waterways Experiment Station (WES) in Vicksburg, Mississippi, both the Nashville and Baltimore Districts, and the Hydrologic Engineering Center (HEC) in Davis, California. While at WES, Dr. Williams worked on research applications of sediment transport in rivers and reservoirs and the solution of unusual hydraulic and sediment related problems using computer models and other state-of-the-art techniques. He also worked on the development of the cohesive and network versions of the HEC-6 sediment transport computer model and wrote the Reservoir Sedimentation Chapter in the U.S. Corps of Engineering Manual on Sedimentation Investigations. At the

Nashville District, Dr. Williams performed erosion control and sedimentation studies for the Tennessee-Tombigbee Waterway Project and also conducted sedimentation and floodplain information studies of proposed flood control projects. He was acting Chief of the Hydrology and Hydraulics Section at the Baltimore District Corps of Engineers. During the mid 1970's, Dr. Williams worked at HEC, helping in the development of spatial data management techniques, evaluation of the economic benefits of flood control projects, and sedimentation in rivers and reservoirs.

Dr. Williams has been a frequent short course instructor for ASCE, Federal and State Agencies for computer training workshops on using HEC-2, HEC-RAS, HEC-HMS and HEC-6. In addition, he has taught short courses on channel bed scour for toe protection design, sediment transport, bridge scour and streambank protection.

Selected Relevant Projects

Chair and member, Safety Assurance Review Panel (Type II), Trinity River Corridor Levee Improvement Project, City of Dallas, TX – Dr. Williams is chair of the Safety Assurance Review Panel where he provides expert advice on the risk and uncertainty analysis, plan formulations, erosion control, sediment transport analyses, fluvial geomorphology, hydrology and hydraulic aspects of the project. This project involves the design of approximately 10 miles of levees, pumping stations as well as design of bridge crossings over the Trinity River.

Contact: Elizabeth Fernandez, City of Dallas, Director, Trinity Watershed Management, (214) 671-9500

Chair and member, Safety Assurance Review Panel (Type II), Southport Levee Project, City of West Sacramento, CA

Dr. Williams is chair of the Safety Assurance Review Panel where he provides expert advice on the risk and uncertainty analysis, plan formulations, erosion control, sediment transport analyses, fluvial geomorphology, hydrology and hydraulic aspects of the project. This project involves the design of levees up to the 200 year flood and complicated hydraulics due to the interactions of connecting conveyance systems.

Contact: Michael Bessette, Floodplain Manager, City of West Sacramento, CA, (916) 617-4500

Member, Safety Assurance Review Panel (Type II) and Board of Senior Consultants (SAFCA), Natomas Levee Project, Sacramento Area Flood Control Agency, CA

Dr. Williams is on the Safety Assurance Review Panel where he provides expert advice on the risk and uncertainty analysis, plan formulations, erosion control, sediment transport analyses, fluvial geomorphology, hydrology and hydraulic aspects of the project. This project involves the design of over 40 miles of levees, pump stations, hydraulic interactions between the Sacramento and American Rivers, and significant coordination with the Corps of Engineers, Sacramento District, and the California Department of Water Resources.

Contact: John Bassett, Director of Engineering, SAFCA, (916) 874-7606

Chair and member, Safety Assurance Review Panel (Type II), Three Rivers Levee Improvement Agency, Marysville, CA

Dr. Williams is on the Board of Senior Consultant and Safety Assurance Review Panel where he provides expert advice on the risk and uncertainty analysis, plan formulations, erosion control, sediment transport analyses, fluvial geomorphology, hydrology and hydraulic aspects of the project. This project involves the design to the 200 year flood for about 4 miles of levees with complicated hydraulics upstream of the project.

Contact: Paul Brunner, Executive Director, TRLIA, (530) 749-7841

Member, FEMA's Scientific Resolution Panel (SRP), Washington DC.

The Federal Emergency Management Agency makes available an independent scientific body referred to as the Scientific Resolution Panel (SRP) that can be convened when deemed necessary by FEMA or upon a joint agreement between FEMA and a community. SRPs are independent panels of experts organized, administered, and managed by the National Institute of Building Sciences. They are established for the purpose of reviewing and resolving conflicting scientific and technical data submitted by a community challenging FEMA's proposed flood elevations. Dr. Williams is on a pre-qualified roster of national experts on FEMA regulations and procedures and was recently appointed to a Panel for a dispute in Texas.

Contact: Dominique Fernandez, Executive Director, National Institute of Building Sciences, (202) 289-7800 ext 119

NCHRP 24 – 34, Risk Based Approach for Bridge Scour Prediction, U.S Department of Transportation, Transportation Research Board, Washington DC.

Dr. Williams, due to his expertise in bridge scour analysis and risk and uncertainty, is on the technical advisory committee for this research. The project objective is to develop a risk-based methodology that can be used in calculating bridge pier, abutment, and contraction scour at waterway crossings of bridges so that scour estimates can be linked to a probability. The developed probabilistic procedures would be consistent with LRFD approaches used by structural and geotechnical engineers.

Contact: Waseem Dekelbab, Senior Program Officer, Federal Highway Administration, (202) 334-1409

QA/QC, 50 Bridge Scour Analyses, California Department of Transportation (CalTrans), California

As Principal in Charge and Senior Project Manager, Dr. Williams was responsible for quality control and assurance for over 50 bridge scour analyses that were required under CalTrans seismic retrofit program. The projects ranged state-wide but were concentrated mostly in desert environments in southern

California. Dr. Williams also acted as project manager for complicated situations that involved innovative channel designs or scour protection requirements to minimize the impacts of the bridge retrofit on channel scour. Several of these projects involved fluvial geomorphic analyses.

Contact: Catherine Crossett-Avila, Avila and Associates (formerly with CalTrans), (415) 576-1230

Humboldt Bay Highway Seismic Retrofit Bridge Scour Evaluation Study, Humboldt, CA

Caltrans planned to seismically retrofit the highway bridge crossing Humboldt Bay near Eureka in Northern California. The bridge is approximately 8,000 feet long, and crosses the bay in three sections with two islands. The proposed retrofit would substantially increase the number of piles at each pier and the size of the pile caps. Dr. Williams studied the seismically retrofit using a 2-dimensional hydrodynamic model (using RMA-2) and a 2-dimensional sediment transport model (using SED2D) study was conducted to: (1) determine if the larger bridge foundation might alter circulation patterns in the northern part of the bay, (2) to evaluate the scour at the modified individual bridge piers, and (3) determine if sediment transport processes in the bay might change sufficiently to cause increased sedimentation in sensitive areas, such as a nearby marina. A 100-year storm surge was used to evaluate pier scour at the modified bridge.

Contact: Catherine Crossett-Avila, Avila and Associates (formerly with CalTrans), (415) 576-1230

Santa Clara River Emergency Streambank Protection for Ventura County Watershed Protection District, California

As the lead technical advisor, Dr. Williams and his team identified potential alternatives to the streambank erosion problem along the Santa Clara Creek which included a No-Action plan, as well as non-structural and structural solutions. The consensus alternative was the use of river training structures such as spur dikes along with minor bank protection. This alternative involved design considerations using geomorphic and natural channel design procedures, determining the dimensions of the low flow channel, scour analyses for preventing undermining of the spur dikes, and the orientation, spacing and dimensions of the spur dikes.

Contact: Peter Sheydayi, Deputy Director, Ventura County Watershed Protection District, (805) 654-2001

FEMA Studies of 27 Streams in the Unincorporated Areas of San Diego County, California

Dr. Williams was the principal-in-charge for this project for FEMA. He also took on some of the studies as the project manager. The studies involved over 50 miles of streams using FEMA standards for surveying, hydraulic modeling and floodplain and floodway delineations which and resulted in new and updated FIRM maps.

Contact: Ray Lenaburg, Risk Analysis Branch Chief, FEMA, (510) 627-7181

IDIQ for Los Angeles District Corps of Engineers

Under this IDIQ contract for hydrology and hydraulics with the Los Angeles District, Dr. Williams and his team completed multiple work orders. A spillway inundation study was conducted for Carbon Canyon simulating dam break using HEC-RAS. A two-dimensional link node model was applied to Mission Creek in Santa Barbara to evaluate flooding due to overspilling of the channels to lower elevations and connector streams. In the Santa Margarita river watershed study, HEC-1, HEC-2 and HEC-6 were used to evaluate flooding extents and sedimentation problems in the river. Two channel restoration and environmental enhancement plans were developed in Phoenix area for the Tres Rios and Rio Salado projects. Tres Rios involved HEC-6 modeling and Rio Salado had both HEC-RAS and HEC-6 models developed for the Salt River. A major flood map revision study and levee analysis report was conducted for the Los Angeles River and Compton Creek, resulting in hundreds of thousands people taken out of the 100 year regulatory floodplain. During this study, numerous HEC-2 models were modified to reflect levee system changes made by the Los Angeles District. Overbank models were also modified to analyze split flow conditions.

Contact: Rene Vermeeren, Chief of Hydrology and Hydraulics Branch, LA Corps of Engineers, (213) 452-3547

Lead Instructor and Course Notes Author

Dr. Williams developed short course notes for and taught HEC-RAS, HEC-HMS, HEC-6, Bridge Scour, Fluvial Geomorphology, Sediment Transport and Streambank Protection short courses for such entities as the Floodplain Management Association of California and Nevada, Association of State Floodplain Managers, American Society of Civil Engineers, Federal Highway Administration, Flood Control District of Maricopa County, Riverside County Flood Control and Water Conservation District, Ventura County Watershed Protection District, the International Erosion Control Agency and numerous other state and federal agencies. The courses were very technically oriented and geared to immediate implementation of the subjects taught. Certain subjects were enhanced according to the location of the course - local problems and situations. The courses ran from 2 to 3 days.

Contact: Iovanka Todt, Executive Director, Floodplain Management Association (one of many contacts with many organizations), (619) 204-4380

Uncertainty Analyses Using Simplified Methods for the Flood Control District of Maricopa Co.

The study developed simplified methods to evaluate the uncertainty for flood control projects using cutting edge techniques that are not usually seen in flood control projects. This involved automated execution of hydrologic and hydraulic models with varying inputs to develop probability density functions for use in Monte Carlo simulations. The probability distributions of hydrologic and hydraulic inputs were developed based upon experience and technical literature. The results were the determination of the uncertainty in the outputs so that decisions could be made such as the height of freeboard, operation schemes for reservoir operation, etc. Dr. Williams was the chief technical advisor for this effort.

Contact: Bing Zhao, Technical Advisor, Flood Control District of Maricopa County, (602) 506-3293

Professional Society Activities

American Society for Testing and Materials, Member - D18.25, Committee on Erosion and Sediment Control Technology, 2001 - present

American Society for Testing and Materials, Member – A05.12, Committee on Wire products, 1990 - present

American Society for Testing and Materials, Member - D19 Committee on Water, 1983 – present

American Society of Civil Engineers (ASCE), Past Chair, Sedimentation Committee, 1992 - 1996

American Society of Civil Engineers (ASCE), Past Chair, Computational Hydraulics Committee, 1999 - present

American Society of Civil Engineers (ASCE), Member, Committee on Management Practice for Control of Erosion and Sediment (MPCES), 2005 – 2008

American Society of Civil Engineers (ASCE), Past Chair, Committee on River Restoration, 2006 - present

American Society of Civil Engineers (ASCE), Vice Chair, Committee Probabilistic Approaches, 2009 - present

American Society of Civil Engineers (ASCE), Past Chair - Task Committee; Analysis of Laboratory/Field Sediment Data Accuracy and Availability, 1987-1991

American Institute of Hydrology, Chair of the Board of Registration, 2005 - present

International Erosion Control Association, Board of Directors, 1990-1999

International Erosion Control Association, President, 1994-1995 and 1998-1999

International Erosion Control Association, Vice President, 1995 - 1997

Instructional Experience

- Ethics for Engineers and Academics; 2010 EWRI/ASCE Conference, Providence, RI
- Fluvial Geomorphology & Alluvial Fans, Floodplain Management Association, May 2010
- Streambank Stabilization and Erosion Control Design, Floodplain Management Association, July 2009
- So You Have Been Asked To Be An Expert Witness? Now What?; 2010 EWRI/ASCE Conference, Providence, RI
- P.E. Review Course, Hydrology and Hydraulics; University of California, San Diego
- Use of Fluvial Geomorphology Principles in the Design of Natural Channels, for ASFPM
- HEC-RAS, Basic and Advanced, taught for various organizations and ASCE
- HEC-HMS, taught for various organizations and agencies at various locations
- HEC-2, Basic and Advanced (Unsteady), taught for ASCE at various locations
- Fluvial Geomorphology, for various organizations
- Stream Restoration, for numerous agencies
- Streambank Protection, for numerous agencies
- Bridge Scour Analysis, taught for ASCE at various locations
- Hydrology and Hydraulics for non-Engineers, various locations
- Open Channel Hydraulics, San Diego State University, San Diego, California

- FESWMS-2DH, WEST Consultants, San Diego, California
- Numerical Modeling for Engineers, WES, Vicksburg, Mississippi
- Hydraulic Design of Flood Control Channels, WES, Vicksburg, Mississippi

Selected Publications (out of 105)

Williams, David T., Harder, Leslie, Jr., Sills, George, and Martin, Ray, "The Value Added to Flood Control Projects By Use of External Review Panels," *Proceedings*, World Environmental & Water Resources Congress 2010, Environmental & Water Resources Institute, ASCE, Providence, RI, May 16 - 20, 2010

Depue, Michael, Williams, David T., and Esterson, Kris, "Planning for Climate Change in the Technical Analysis of Floodplain Mapping and Flood Control Projects," Association of State Floodplain Managers Conference, Orlando, FL, June 2009

Williams, David T., and Countryman, Joseph, "Uncertainty Analysis: You Need to Know What You Don't Know," *Proceedings*, World Environmental and Water Resources Congress 2009, Kansas City, MO

Kreymborg, Leo, R., and Williams, David T., "The PBS&J Scour Spreadsheet: A Tool for Stream Restoration, Utility Crossings and Streambank Protection Projects," *Proceedings*, World Environmental and Water Resources Congress 2008, Honolulu, Hawaii, May 12-16, 2008.

Williams, David T., "So You Have Been Asked to Be an Expert Witness? Now What?" Floodplain Management Association Annual Conference, San Diego, CA, Sept., 2008

Williams, David T., "Tips on Using the Dambreak Option in HEC-RAS," *Proceedings*, Arid Regions and CASFM Conference, Breckenridge, CO, 2007.

Thomas, Iwan M., and Williams, David T., "Common Modeling Mistakes Using HEC-RAS," *Proceedings*, World Environmental and Water Resources Congress 2007: Restoring our Natural Habitat, Tampa, Florida, May 15-19, 2007.

Williams, David T., Marcy, Jennifer K., and DePue, Michael, "FEMA Levee Analysis Requirements for Floodplain Mapping," *Proceedings*, Association of State Floodplain Managers Conference, Norfolk, VA, 2007.

Desai, Harshal, Baird, Matt, and Williams, David T., "2-D Floodplain Hydraulic Modeling using 1-D Hydraulic Models," *Proceedings*, Association of State Floodplain Managers Conference, Norfolk, VA, 2007.

Williams, David T., and Kreymborg, Leo R., "Are You Double Counting, Over Conservative, or Misapplying Safety Factors for Stream Scour Analyses?" Floodplain Management Association Annual Conference, Coronado, CA, September 5-8, 2006

Williams, David T., and Doeing, Brian J., "Variation in Depth of Toe Scour Computations For Stream Restoration Bank Protection Design," *Proceedings*, International Erosion Control Annual Conference and Exposition, Las Vegas, NV, February 24-28, 2003.

Williams, David T., Hu, Henry H., and Stefanovic, Dragoslav, "Sediment Flushing From a Flood Control Channel Outlet Into the Pacific Ocean", Proceedings, EWRI 2002 Conference on Water Resources Planning and Management, Symposium on Managing the Extremes: Floods and Droughts, First Symposium on Environmental and Water Resources Systems Analysis, Roanoke, Virginia, May 19-22, 2002.

Doering, Brian J., M. ASCE, and Williams, David T., F. ASCE, "Development, Calibration, Confirmation, Project Production Runs and Sensitivity Analyses of One Dimensional Sediment Transport Models", Proceedings, World Water and Environmental Resources Congress Conference, Orlando, Florida, May 20-24, 2001.

Williams, David T., and Teal, Martin J., "Between A Rock And A Soft Place: Which Riprap Method Should I Use for My Project?" Proceedings, ASCE and EWRI 2000 Joint Conference On Water Resources Engineering and Water Resources Planning & Management, Minneapolis, MN, July 30-Aug 2, 2000.

Chintala, Ramesh S., Williams, David T., Allen, Peter M., "Channel Response and Sediment Yields in Brooken Creek, Central Texas", Proceedings of the International Erosion Control Association (IECA) Conference, Palm Springs, California, 2000

Mohammed, Ejaz; Williams, David T.; Crossett-Avila, Catherine; and McBride, Dennis, "HEC-RAS Hydraulic and Scour Analysis of Ten Mile River Bridge Under the Caltrans Seismic Retrofit Program", Proceedings, ASCE Water Resources Engineering Conference, Memphis, Tennessee, August 2-7, 1998.

Williams, David T., and Teal, Martin J., "Design Consideration and Recommendations for Seven Commonly Used Riprap Design Methods", Management of Landscapes Disturbed by Channel Incision, edited by Sam S. Y. Yang, Eddy J. Langendoen, and F. Douglas Shields, Jr., The University of Mississippi, May 19-23, 1997.

Williams, David T., "Industry Standards for Erosion Control Products - Future Tools for Civil Engineers," Proceedings, ASCE North American Water and Environmental Congress, Anaheim, California, June 22-28, 1996.

Williams, David T., Austin, Deron N., and Thiesen, Marc S., "Erosion Protection of Using Permanent Geosynthetic Reinforcement Mattings," Proceedings, Sixth Federal Interagency Sedimentation Conference, Las Vegas, Nevada, March 10-14, 1996.

Williams, David T. and Passarelli, Peter, "Equivalencing Rock Riprap and Gabions for Stream Channel Protection," Proceedings, ASCE First International Conference on Water Resources, San Antonio, Texas, August 14-18, 1995.

BI/COI FORM 3

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**BACKGROUND INFORMATION
AND
CONFIDENTIAL CONFLICT OF INTEREST DISCLOSURE**
For General Scientific and Technical Studies and Assistance

NAME: George Sills TELEPHONE: 601- 638- 0436

ADDRESS: 470 Dogwood Lake Dr
Vicksburg, MS 39183

EMAIL ADDRESS: georgesills@bellsouth.net

CURRENT EMPLOYER: George Sills Geotechnical Engineering Consultant,
LLC

NAS/NAE/IOM/NRC COMMITTEE: NA

There are two parts to this form, Part I Background Information, and Part II Confidential Conflict of Interest Disclosure. Complete both parts, **sign** and **date** this form on the last page, and return the form to the responsible staff officer for *The National Academies* project and committee activity to which this form applies. **Retain a copy for your records.**

PART I BACKGROUND INFORMATION

INSTRUCTIONS

Please provide the information requested below regarding **relevant** organizational affiliations, government service, public statements and positions, research support, and additional information (if any). Information is "relevant" if it is related to -- and might reasonably be of interest to others concerning -- your knowledge, experience, and personal perspectives regarding the subject matter and issues to be addressed by the committee activity for which this form is being prepared. If some or all of the requested information is contained in your curriculum vitae, you may if you prefer simply attach your CV to this form, supplemented by additional responses or comments below as necessary.

I. ORGANIZATIONAL AFFILIATIONS. Report your relevant business relationships (as an employee, owner, officer, director, consultant, etc.) and your relevant remunerated or volunteer non-business relationships (e.g., professional organizations, trade associations, public interest or civic groups, etc.).

Professional Engineer, Mississippi

Professional Engineer, Texas

Professional Engineer, Louisiana

American Society of Civil Engineers (ASCE)

Association of State Flood Plain Managers (ASFPM)

United States Society on Dams (USSD)

Association of State Dam Safety Officials (ASDSO)

Flood Management Association (FMA)

Deep Foundation Institute

Member, Embankment Dams and Slopes Committee of Geotechnical Engineering Division of ASCE, 2005-2008.

II. GOVERNMENT SERVICE. Report your relevant service (full-time or part-time) with federal, state, or local government in the United States (including elected or appointed positions, employment, advisory board memberships, military service, etc.).

I am retired from the U.S. Army Corps of Engineers (Corps) where I worked for over 36 years. I was employed by the Vicksburg District for 32 of those years and the Engineer Research & Development Center (ERDC) for 4 years. I have extensive experience in the evaluation, design, and construction of dams and levees. I have led several investigations into the causes and mechanisms of seepage distress along levees and have helped the Corps develop a comprehensive understanding of these issues. I have lectured and published numerous technical papers on levee seepage distress and levee design.

Sespe Creek Levee Project IEPR, SAR Panel

While at ERDC, I led the joint Corps and Bureau of Reclamation (Reclamation) team that developed a toolbox for use in performing Probabilistic Risk Assessments (PRAs) on Corps and Reclamation dams with regard to seepage and piping distress. Much of this effort involved leading a diverse group to resolve complex and conflicting guidance criteria to create useable tools for practitioners from different agencies. I have also served on the Corps' National Levee Safety Program to help set policy/methodology for Corps levee assessments in the future. I have also led the team assigned to rewrite the Corps Levee Design Engineering Manual, which instructs engineers in proper design procedures for levee underseepage. This document is currently in draft form and undergoing review.

I have recently served on a team to provide Independent Technical Review of the design for repairs to the Herbert Hoover Dike in Florida. This 145-mile-long dam/dike was constructed over peat and limestone which created seepage problems. Currently, I am a member of the Independent Consulting Board reviewing the ongoing design work for urban and non-urban levees in the Central Valley of California. I am also serving on the Senior Board of Consultants for the review of levee designs for the Natomas Levee Improvement Program for the Sacramento Area Flood Control Agency and also serve on a similar Board for the City of West Sacramento reviewing their levee program. I also serve on the Senior Board of Consultants for Sutter Butte Flood Control Agency and Three Rivers Levee Improvement Project. I serve on the SAR Board for the City of Dallas and for the North Texas Council of Governments. I am currently serving as a member of the California Levee Vegetation Research Team which works with the USACE Roundtable effort, studying the effects of woody vegetation to levees.

In 2005, I was selected to serve on the Corps' Interagency Performance Evaluation Task Force (IPET) following Hurricane Katrina as a member of the Perishable Data Team and also as a member of the Performance Analysis Team. I have made major contributions to these efforts and to the IPET document that summarized the team's findings. I have also testified in court about their efforts on this study.

III. RESEARCH SUPPORT. Report relevant information regarding both public and private sources of research support (other than your present employer), including sources of funding, equipment, facilities, etc.

See Answer for Question II.

IV. PUBLIC STATEMENTS AND POSITIONS. List your relevant articles, testimony, speeches, etc., by date, title, and publication (if any) in which they appeared, or provide relevant representative examples if numerous. Provide a brief description of relevant positions of any organizations or groups with which you are closely identified or associated.

Expert Witness for Litigation

- 2006 testified on IPET forensic work for New Orleans in: Colleen Berthelot, et al., v. BOH Brothers Construction Co., LLC, et al., Civil Action No. 05-4182, May 4, 2006, United States District Court, E.D. Louisiana.
- Calion Lock and Dam - dewatering and differing site condition construction claim - a second claim for rock in the outlet channel.
- Felsenthal Lock and Dam - dewatering construction claim
- John H. Overton Lock and Dam - access road construction claim differing site conditions

Sespe Creek Levee Project IEPR, SAR Panel

- Lock and Dam No. 3 - access road claim - differing site conditions construction claim
- Lock and Dam No. 4 - differing site conditions construction claim - rock in the inlet channel evaluation of difficult driving of sheep pile in rock
- Provided technical assistance to EPA in trial conducted in Texas (1995).
- Provided testimony and assistance concerning “sudden drawdown failures” in lawsuit defended by the Red River Waterway Commission
- Provided numerous depositions in the above listed cases and disputes.
- Provided geotechnical expert opinion, comments, and furnished written report for lawsuit Bluegreen vs. MACTEC civil suit in Dallas, TX.
- Provided geotechnical expert opinion, comments, written report and deposition testimony for civil lawsuit Miller vs KCPL in Kansas City
- Provided geotechnical expert opinion, comments, and written report for civil lawsuit Jeld-Wen vs PacifiCorp in Orgeon

Publications

- Sills, G. (1983), “Long Term Strength Reduction and Slough Slides in Mississippi River Levees”, Technical Report, USACE, Vicksburg MS.
- Sills, G.L.(1984), “Long Term Failure in Compacted Clay Slopes”, International Conference on Case Histories in Geotechnical Engineering, University of Missouri at Rolla, St. Louis, MO.
- Sills, G.L. and Fleming, R. L. (1992), “Slide Stabilization with Stone-Fill Trenches”, Proceedings, Stability and Performance of Slopes and Embankments-II, ASCE.
- Sills, G. L. and Stewart, E (1992), “Lime Stabilization of Levee Slopes”, Second Interagency Symposium on Stabilization of Soils and Other Materials, New Orleans, LA
- Sills, G. L. (1994), “Lime Stabilization of Levees”, Proceedings, REMR Workshop, Vicksburg, MS
- Sills, G. L. (1994), “Stabilization with Stone-Fill Trenches”, Proceedings, REMR Workshop, Vicksburg, MS
- Sills, G. L. (1997), “Slurry Trench Quality Control”, USACE, WES, Proceedings, REMR Workshop, Vicksburg, MS
- Singh, V. P., Ojha, C. S. P., Adrian, D. D., Ozkan, S. and Sills, G.L., (2002), "Role of Sand Boil Formation in Levee Failure," Proceedings of XXIX International Association for Hydraulic Research Congress: Forecasting and Mitigation of Water-Related Disasters, Edited by G. Li, pp. 226-231, Beijing, China
- Sills, G. L, Harder, L. F., Duncan, J. M., Groves, C. B., Wolff, T. F., Al-Hussaini, M., Hess, J. R.(2003), Recommendations for Seepage Design Criteria, Evaluation and Design Practices,” Report prepared for the Sacramento District, (USACE), July.

Sespe Creek Levee Project IEPR, SAR Panel

- Hess, J. R. and Sills, G. L. (2004), "A Review of Corps of Engineers Levee Seepage Practices in the Central California Flood Control System", USSD, 24th USSD Annual Meeting and Conference Proceedings.
- Dunbar, J. B., and Sills, G., 2004. "Geotechnical Investigation Work Plan of Selected Areas, Lower Rio Grande Valley Flood Control Project, South Texas," Open-File Report, Engineer Research and Development Center, Waterways Experiment Station, Vicksburg, MS
- Dunbar, J. B., and Sills, G., 2004. "Geotechnical Assessment of Presidio Levees, Presidio, Texas," Letter Report, Engineer Research and Development Center, Waterways Experiment Station, Vicksburg, MS
- Sills, G. L. (2005), Published new USACE ETL, "Engineering and Design, Design Guidance for Levee Underseepage", Engineer Technical Letter (ETL), ETL 1110-2-569, Dated May 05
- Hess, J.R., Sills, G.L., Costa, R., and Shewbridge, S.E. (2005) "Fixing California's Levees" The Military Engineer, Society of Military Engineers, Nov/Dec 2005, Vol. 97, #638
- Shewbridge, S. E., Hess, J.R., Sills, G.L., Costa, R., (2006) "The Evolving Approach to Fixing California's Levees" Journal of Dam Safety, Association of State Dam Safety Officials, Vol. 4, Issue 4, Fall, 2006, p28-35.
- Shewbridge, S. E., Hess, J.R., Sills, G.L., Costa, R., (2006) "The Evolving Approach to Fixing California's Levees" Geo-Strata, Geo-Institute, Vol.7, Issue 6, p24-28.
- Wibowo, J., Pinkard, F., Sills, G., Ward, D., Taylor, P. (2006), "Testing of Flood Fighting Structures", ASCE Journal of Hydraulic Engineering.
- IPET Team, Sills, G. L. (major contributor) and others, "Interagency Performance Evaluation Taskforce (IPET), (2006). "Performance Evaluation of the New Orleans and Southeast Louisiana Hurricane Protection System Vol. V," U.S. Army Corps of Engineers, Draft Final Report.
- Sills, G. L. and Vroman, N. D. (2006), "Performance of New Orleans' Hurricane Protection System: The Good, The Bad, and The Ugly", Australian National Committee on Large Dams (ANCOLD), Annual Conference.
- Dunbar, J. B., Llopis, J. L., Sills, G. L., Smith, E. W., "Flood Simulation Study of Retamal Levee, Lower Rio Grande Valley, Texas, Using Seismic and Electrical Geophysical Methods", (2006), Technical Report No. ERDC/GSL TR-03-4, Report 5. Engineer Research and Development Center, Waterways Experiment Station, Vicksburg, MS
- Sills, G. L., (2006), "Levee Design and Emergency Response", George L. Sills, Fire Engineering, Magazine
- Sills, G.L. and Vroman, N. D. (2007), "A Review Of Corps Of Engineers Levee Seepage Practices In The United States", Workshop On Internal Erosion And Piping Of Dams And Foundations (Aussois, France), Internal Erosion of Dams and their Foundations, Editors R. Fell and J.J Fry. Taylor and Francis, London, p 209-218.
- Sills, G. L. (2007), "New Orleans vs. Katrina Overview & USACE Preliminary Response (Emergency Operations), ASCE, GEO-Denver, Conference.

Sespe Creek Levee Project IEPR, SAR Panel

- Sills, G. L., Vroman, N. D., Wahl, R. E., Schwanz, N. T. (2007), “Lessons Learned From The Levee Failures In The New Orleans Area And Their Impact On Levee Design And Assessment Across The Nation”, ASCE, GEO-Denver, Conference.
- Vroman, N. D., Sills, G. L., Cyganiewicz, J., Fell, R., Foster, M., Davidson, R. R., (2007), “A Unified Method for Estimating Probabilities of Failure of Embankment Dams by Internal Erosion and Piping”, New Zealand Society of Large Dams (NZSOLD), Nov. Bulletin
- Cyganiewicz, J. and Sills, G. L. (2007), “Development of a Unified Method for Estimating Probabilities of Failure of Embankment Dams by Internal Erosion and Piping”, Association of State Dam Officials (ASDSO)
- Pinkard, F., Pratt, T., Ward, D., Holmes, T., Kelley, J., Landris, T. L., Sills, G. L., Smith, E., Taylor, P., Torres, N., Wakeley, L., Wibowo, J. (2007), “Flood-Fighting Structures Demonstration and Evaluation Program: Laboratory and Field Testing in Vicksburg, Mississippi”, Technical Report No. ERDC/GSL TR-07-3, Engineer Research and Development Center, Waterways Experiment Station, Vicksburg, MS
- Davidson, R. R., McDaniel, T. N., Sills, G.L., (2007). Report of Findings No. 1, “A. V. Watkins Dam, Seepage/Internal Erosion Investigation and Proposed Repair, Utah”, Bureau of Reclamation, September 6, 2007.
- Galloway, G. E., Jr., Independent Review Panel, Sills, G.L., member, (2007). “A California Challenge-Flooding in the Central Valley”, report from an Independent Review Panel to Department of Water Resources (DWR), State of CA, 10/15/2007.
- Sills, G. L., Vroman, N. D., Wahl, R. E., Schwanz, N. T. (2008), “An Overview of New Orleans Levee Failures: Lessons Learned and Their Impact on National Levee Design and Assessment”, ASCE, JGGE Special Issue: Performance of Geo-Systems during Hurricane Katrina, May 2008, Vol. 134, Number 5, p 556-565.
- Groves, C. B. and Sills, G. L. (2008), “The Development of Piping in Levee Foundations”, ASCE, Geo-New Orleans, March 2008
- Fell, R., Foster, M., Davidson, R., Cyganiewicz, J., Sills, G., Vroman, N. (2008), “Seepage and Piping Toolbox-Initiation of Internal Erosion”, United States Society on Dams (USSD), Portland, OR, April 2008
- Cyganiewicz, J., Sills, G., Fell, R., Davidson, R., Foster, M., Vroman, N. (2008), “Seepage and Piping Toolbox-Overview”, United States Society on Dams (USSD), Portland, OR, April 2008
- Vroman, N., Cyganiewicz, J., Sills, G., Fell, R., Davidson, R., Foster, M., (2008), “Seepage and Piping Toolbox-Beta Trial Case Histories”, United States Society on Dams (USSD), Portland, OR, April 2008
- Foster, M., Fell, R., Vroman, N., Cyganiewicz, J., Sills, G., Davidson, R., (2008), “Seepage and Piping Toolbox – Continuation, Progression, Intervention and Breach”, United States Society on Dams (USSD), Portland, OR, April 2008
- Dunbar, J.B. and Sills, G.L., (2008). Letter Report: “Geotechnical Inspection of US IBWC Levees at Presidio, TX”, Engineer Research Development Center, Waterways Experiment Station, Geotechnical and Structures Laboratory, Vicksburg, MS. September 29-30, 2008.

Sespe Creek Levee Project IEPR, SAR Panel

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- Williams, D. T., Sills, G. L., Stanley, M. H., (2012). “Levee Design Short Course”, Floodplain Management Association (FMA), Sacramento, CA, January 17-19, 2012.

V. ADDITIONAL INFORMATION. If there are relevant aspects of your background or present circumstances not addressed above that might reasonably be construed by others as affecting your judgment in matters within the assigned task of the committee or panel on which you have been invited to serve, and therefore might constitute an actual or potential source of bias, please describe them briefly.

PART II CONFIDENTIAL CONFLICT OF INTEREST DISCLOSURE

INSTRUCTIONS

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The term "conflict of interest" means something more than individual bias. There must be an *interest*, ordinarily financial, that could be directly affected by the work of the committee.

Conflict of interest requirements are *objective* and *prophylactic*. They are not an assessment of one's actual behavior or character, one's ability to act objectively despite the conflicting interest, or one's relative insensitivity to particular dollar amounts of specific assets because of one's personal wealth. Conflict of interest requirements are objective standards designed to eliminate certain specific, potentially compromising situations from arising, and thereby to protect the individual, the other members of the committee, the institution, and the public interest. The individual, the committee, and the institution should not be placed in a situation where others could reasonably question, and perhaps discount or dismiss, the work of the committee simply because of the existence of conflicting interests.

The term "conflict of interest" applies only to *current interests*. It does not apply to past interests that have expired, no longer exist, and cannot reasonably affect current behavior. Nor does it apply to possible interests that may arise in the future but do not currently exist, because such future interests are inherently speculative and uncertain. For example, a pending formal or informal application for a particular job is a current interest, but the mere possibility that one might apply for such a job in the future is not a current interest.

The term "conflict of interest" applies not only to the personal interests of the individual but also to the *interests of others* with whom the individual has substantial common financial interests if these interests are relevant to the functions to be performed. Thus, in assessing an individual's potential conflicts of interest, consideration must be given not only to the interests of the individual but also to the interests of the individual's spouse and minor children, the individual's employer, the individual's business partners, and others with whom the individual has substantial common financial interests. Consideration must also be given to the interests of those for whom one is acting in a fiduciary or similar capacity (e.g., being an officer or director of a corporation, whether profit or nonprofit, or serving as a trustee).

Much of the work of this institution involves scientific and technical studies and assistance for sponsors across a broad range of activities. Such activities may include, for example: defining research needs, priorities, opportunities and agendas; assessing technology development issues and opportunities; addressing questions of human health promotion and assessment; providing scientific and technical assistance and supporting services for government agency program development; assessing the state of scientific or technical knowledge on particular subjects and in particular fields; providing international and foreign country science and technology assessments, studies and assistance. Such activities frequently address scientific, technical, and policy issues that are sufficiently broad in scope that they do not implicate specific financial interests or conflict of interest concerns.

However, where such activities address more specific issues having significant financial implications -- e.g., funding telescope A versus telescope B, government development or evaluation of a specific proprietary technology, promotion or endorsement of a specific form of medical treatment or medical device, connecting foreign research facilities to specific commercial interests, making recommendations to sponsors regarding specific contract or grant awards, etc. -- careful consideration must be given to possible conflict of interest issues with respect to the appointment of members of committees that will be used by the institution in the development of reports to be provided by the institution to sponsoring agencies.

The overriding objective of the conflict of interest inquiry in each case is to identify whether there are interests -- primarily financial in nature -- that conflict with the committee service of the individual because they could impair the individual's objectivity or could create an unfair competitive advantage for any person or organization. The fundamental question in each case is does the individual, or others with whom the individual has substantial common financial interests, have identifiable interests that could be directly affected by the outcome of the project activities of the committee on which the individual has been invited to serve? For projects involving advice regarding awards of contracts, grants, fellowships, etc., this institution is also guided by the principle that an individual should not participate in any decision regarding the award of a contract or grant or any other substantial economic benefit to the individual or to others with whom the individual has substantial common financial interests or a substantial personal or professional relationship.

The application of these concepts to specific scientific and technical studies and assistance projects must necessarily be addressed in each case on the basis of the particular facts and circumstances involved. The questions set forth below are designed to elicit information from you concerning possible conflicts of interest that are relevant to the functions to be performed by the particular committee on which you have been invited to serve.

1. FINANCIAL INTERESTS.

(a) Taking into account stocks, bonds, and other financial instruments and investments including partnerships (but excluding broadly diversified mutual funds and any investment or financial interests valued at less than \$10,000), do you or, to the best of your knowledge others with whom

you have substantial common financial interests, have financial investments that could be affected, either directly or by a direct effect on the business enterprise or activities underlying the investments, by the outcome of the project activities of the committee on which you have been invited to serve?

(b) Taking into account real estate and other tangible property interests, as well as intellectual property (patents, copyrights, etc.) interests, do you or, to the best of your knowledge others with whom you have substantial common financial interests, have property interests that could be directly affected by the outcome of the project activities of the committee on which you have been invited to serve?

(c) Could your employment or self-employment (or the employment or self-employment of your spouse), or the financial interests of your employer or clients (or the financial interests of your spouse's employer or clients) be directly affected by the outcome of the project activities of the committee on which you have been invited to serve?

(d) Taking into account research funding and other research support (e.g., equipment, facilities, industry partnerships, research assistants and other research personnel, etc.), could your current research funding and support (or that of your close research colleagues and collaborators) be directly affected by the outcome of the project activities of the committee on which you have been invited to serve?

(e) Could your service on the committee on which you have been invited to serve create a specific financial or commercial competitive advantage for you or others with whom you have substantial common financial interests?

If the answer to all of the above questions under FINANCIAL INTERESTS is either "no" or "not applicable," check here X (NO).

If the answer to any of the above questions under FINANCIAL INTERESTS is "yes," check here _____ (YES), and briefly describe the circumstances on the last page of this form.

2. OTHER INTERESTS.

(a) Is the central purpose of the project for which this disclosure form is being prepared a critical review and evaluation of your own work or that of your employer?

(b) Do you have any existing professional obligations (e.g., as an officer of a scientific or engineering society) that effectively require you to publicly defend a previously established position on an issue that is relevant to the functions to be performed in this committee activity?

(c) To the best of your knowledge, will your participation in this committee activity enable you to obtain access to a competitor's or potential competitor's confidential proprietary information?

(d) If you are or have ever been a U.S. Government employee (either civilian or military), to the best of your knowledge are there any federal conflict of interest restrictions that may be applicable to your service in connection with this committee activity?

(e) If you are a U.S. Government employee, are you currently employed by a federal agency that is sponsoring this project? If you are not a U.S. Government employee, are you an employee of any other sponsor (e.g., a private foundation) of this project?

(f) If the committee activity for which this form is being prepared involves reviews of specific applications and proposals for contract, grant, fellowship, etc. awards to be made by sponsors, do you or others with whom you have substantial common financial interests, or a familial or substantial professional relationship, have an interest in receiving or being considered for awards that are currently the subject of the review being conducted by this committee?

(g) If the committee activity for which this form is being prepared involves developing requests for proposals, work statements, and/or specifications, etc., are you interested in seeking an award under the program for which the committee on which you have been invited to serve is developing the request for proposals, work statement, and/or specifications -- or, are you employed in any capacity by, or do you have a financial interest in or other economic relationship with, any person or organization that to the best of your knowledge is interested in seeking an award under this program?

If the answer to all of the above questions under OTHER INTERESTS is either "no" or "not applicable," check here (NO).

I authored the Engineer Technical Letter, "Engineering and Design, Design Guidance for Levee Underseepage", ETL 1110-2-569, Dated May 05 during my service with the USACE.

If the answer to any of the above questions under OTHER INTERESTS is "yes," check here (YES), and briefly describe the circumstances on the last page of this form.

EXPLANATION OF "YES" RESPONSES:

Not Applicable

During your period of service in connection with the activity for which this form is being completed, any changes in the information reported, or any new information, which needs to be reported, should be reported promptly by written or electronic communication to the responsible staff officer.

George L. Gith

YOUR SIGNATURE

DATE

11/12/2012

Reviewed by:

Karl Norman

DATE

4/11/13

BI/COI FORM 3

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

National Academy of Sciences
National Academy of Engineering

Institute of Medicine
National Research Council

**BACKGROUND INFORMATION
AND
CONFIDENTIAL CONFLICT OF INTEREST DISCLOSURE**
For General Scientific and Technical Studies and Assistance

NAME: George Filz TELEPHONE: 540-558-8651

ADDRESS: 705 York Drive
Blacksburg, VA 24060

EMAIL ADDRESS: filz@vt.edu

CURRENT EMPLOYER: George Filz Consulting, LLC

NAS/NAE/IOM/NRC COMMITTEE: NA

There are two parts to this form, Part I Background Information, and Part II Confidential Conflict of Interest Disclosure. Complete both parts, **sign** and **date** this form on the last page, and return the form to the responsible staff officer for *The National Academies* project and committee activity to which this form applies. **Retain a copy for your records.**

PART I BACKGROUND INFORMATION

INSTRUCTIONS

Please provide the information requested below regarding **relevant** organizational affiliations, government service, public statements and positions, research support, and additional information (if any). Information is "relevant" if it is related to -- and might reasonably be of interest to others concerning -- your knowledge, experience, and personal perspectives regarding the subject matter and issues to be addressed by the committee activity for which this form is being prepared. If some or all of the requested information is contained in your curriculum vitae, you may if you prefer simply attach your CV to this form, supplemented by additional responses or comments below as necessary.

I. ORGANIZATIONAL AFFILIATIONS. Report your relevant business relationships (as an employee, owner, officer, director, consultant, etc.) and your relevant remunerated or volunteer non-business relationships (e.g., professional organizations, trade associations, public interest or civic groups, etc.).

Registered Professional Engineer, Oregon
American Society of Civil Engineers (ASCE)
See my attached résumé for additional information

II. GOVERNMENT SERVICE. Report your relevant service (full-time or part-time) with federal, state, or local government in the United States (including elected or appointed positions, employment, advisory board memberships, military service, etc.).

I am a full-time employee of the Commonwealth of Virginia in my capacity as a professor at Virginia Tech.

See my attached résumé for additional information.

III. RESEARCH SUPPORT. Report relevant information regarding both public and private sources of research support (other than your present employer), including sources of funding, equipment, facilities, etc.

See my attached résumé.

IV. PUBLIC STATEMENTS AND POSITIONS. List your relevant articles, testimony, speeches, etc., by date, title, and publication (if any) in which they appeared, or provide relevant representative examples if numerous. Provide a brief description of relevant positions of any organizations or groups with which you are closely identified or associated.

See my attached résumé.

V. ADDITIONAL INFORMATION. If there are relevant aspects of your background or present circumstances not addressed above that might reasonably be construed by others as affecting your judgment in matters within the assigned task of the committee or panel on which you have been invited to serve, and therefore might constitute an actual or potential source of bias, please describe them briefly.

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EXPLANATION OF "YES" RESPONSES:

Not Applicable

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George Filz

YOUR SIGNATURE

March 11, 2013

DATE

Reviewed by:

Kud Norman

4/12/13

DATE

George M. Filz

Abbreviated resume with focus on retaining walls, dams, levees, floodwalls, and seepage barriers.

Contact Information:

Via Department of Civil and Environmental Engineering
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061
Ph: 540-231-7151 Fax: 540-231-7532 Mobile: 540-558-8651 Email: filz@vt.edu

Education:

Ph.D., Civil Engineering, Virginia Tech, 1992
M.S., Civil Engineering, Oregon State University, 1982
B.S., Civil Engineering, Oregon State University, 1979
B.S., Mathematics, University of Oregon, 1979

Experience:

Charles E. Via, Jr., Professor of Civil and Environmental Engineering, Virginia Tech, 2007 to present
Assistant Professor to Professor, Virginia Tech, 1992 to 2007
Via Fellow, Graduate Research Assistant, and Instructor, Virginia Tech, 1988 to 1992
Geotechnical Engineer, CH2M Hill, Inc., Corvallis, Oregon, 1985 to 1988
Geotechnical Engineer, L.R. Squier Associates, Inc., Portland, Oregon, 1981 to 1985
Graduate Research Assistant, Oregon State University, Corvallis, Oregon, 1980 to 1981
Staff Engineer, Willamette Geotechnical, Corvallis, Oregon, 1980
Field Engineer, Chicago Bridge and Iron Company, Berri, Saudi Arabia, 1979

Professional Registration:

Registered professional engineer in Oregon, since 1983

Selected Consulting Projects Involving Retaining Walls, Dams, Levees, Floodwalls, and Seepage Barriers:

1. Project Description: Linville Dam, Bridgewater Hydroelectric Project
Project Location: Nebo, North Carolina
Task: Design support and review of proposed deep mixing for seismic stabilization
Client: Duke Energy
Years: 2012 and 2013
2. Project Description: Elliot Bay Seawall stabilization and renovation
Project Location: Seattle, Washington
Task: Design review board
Client: Parsons, for City of Seattle
Years: 2012
3. Project Description: Deep mixing support of operations and storage buildings at recycling yard
Project Location: Burnaby, British Columbia
Task: Provide advice on mix design, deep mixing layout, and QC/QA activities
Client: Condon-Johnson & Associates, Inc.
Years: 2012
4. Project Description: Deep mixing stabilization of Newby Island Landfill
Project Location: San Francisco, California
Task: Geotechnical Review Board for deep mixing design, construction, and QC/QA
Client: Geo-Logic Associates
Years: 2012
5. Project Description: Remediation of Kingston Ash Recovery Project
Project Location: Near Kingston, Tennessee
Task: Value engineering panel
Client: Stantec, TVA
Years: 2012

6. Project Description: Kitimat LNG Terminal
Project Location: Kitimat, British Columbia
Task: Geotechnical Review Board for deep mixing design, construction, and QC/QA
Client: Golder Construction
Years: 2011 and 2012
7. Project Description: Herbert Hoover Dike cutoff wall, Reach 1C, Task Order 7
Project Location: Lake Okeechobee, Florida
Task: Assess causes of cutoff wall cracking at core holes, recommend remedial measures
Client: Trevilcos
Year: 2011
8. Project Description: Retaining walls at The Colony at White Pine Canyon
Project Location: Utah
Task: Reliability analysis of retaining wall stability
Client: The Collin Group
Years: 2010 through 2013
9. Project Description: Renovation of CW Bill Young Regional Reservoir
Project Location: Tampa, Florida
Task: Review panel member
Client: Tampa Bay Water
Years: 2010 through 2012
10. Project Description: Cement grouting at Center Hill Dam
Project Location: Tennessee
Task: Review of quality control procedures
Client: Geosystems, LP
Year: 2010
11. Project Description: Deep mixing support of Orleans Avenue floodwall
Project Location: New Orleans, Louisiana
Task: Stability and deformation analyses
Client: Burns Cooley Dennis, for the US Army Corps of Engineers
Years: 2010 and 2011
12. Project Description: Deep mixing support of 17th Street floodwall
Project Location: New Orleans, Louisiana
Task: Stability and deformation analyses
Client: URS, for the US Army Corps of Engineers
Years: 2010 and 2011
13. Project Description: Deep mixing support of earthen levee LPV 111
Project Location: New Orleans, Louisiana
Task: Design and specification review, QC/QA data analysis, and construction documentation
Client: Archer Western Alberici, and Trevilcos
Years: 2009 through 2012
14. Project Description: Deep mixing support of IHNC Reach IIIB floodwall
Project Location: New Orleans, Louisiana
Task: Stability and deformation analyses
Client: Burns Cooley Dennis, for the US Army Corps of Engineers
Years: 2009 and 2010
15. Project Description: Design guide for deep mixing support of levees and floodwalls
Project Location: Any
Task: Develop design guidance document for use US Army Corps of Engineers and its consultants
Client: Burns Cooley Dennis, for the US Army Corps of Engineers
Years: 2009 through 2011
16. Project Description: Analysis of a geosynthetic-reinforced, column-supported roadway
Project Location: Virginia Avenue, Charleston, South Carolina
Task: Determine the cause of differential settlements of the pavement surface
Client: South Carolina DOT
Year: 2008

17. Project Description: Design guide for deep mixing support of transportation embankments
Project Location: Any
Task: Develop design guidance document for use by state DOTs and their consultants
Client: Geotechnica, for the US Federal Highway Administration
Years: 2007 through 2012
18. Project Description: Deep mixing support of Home Place earthen levee and Gainard-Woods floodwall
Project Location: Plaquemines Parrish, Louisiana
Task: Stability and deformation analyses
Client: Arcadis, for the US Army Corps of Engineers
Years: 2007 through 2010
19. Project Description: Geosynthetic-reinforced, column-supported embankment
Project Location: Highway SR 20, Putnam County, Florida
Task: Analyses and design support
Client: Hayward Baker
Year: 2006
20. Project Description: Retaining wall on US Highway 19E
Project Location: Cherokee, North Carolina
Task: Design support
Client: S&ME
Year: 2005
21. Project Description: Deep mixing foundation support for 15, 310-ft diameter petroleum storage tanks
Project Location: Galliano, Louisiana
Task: Analysis, design, and construction support
Client: Hayward Baker
Years: 2001 through 2011
22. Project Description: Demonstration project for deep mixing support of excavations
Project Location: Texas A&M University
Task: Stability and deformation analyses
Client: GeoCon
Year: 1998
23. Project Description: Deep mixing support for I-15 embankments
Project Location: Salt Lake City, Utah
Task: Stability and deformation analyses
Client: GeoCon
Year: 1997
24. Project Description: Plastic-concrete cutoff wall at La Esperanza Dam
Project Location: Ecuador
Task: Analysis of stresses and deformations in the cutoff wall
Client: Dragados
Years: 1995 through 1996
25. Project Description: Guadarranque Dam Raise
Project Location: Spain
Task: Concept development and stability analyses
Client: Dragados
Year: 1992

Research Projects Involving Retaining Walls, Dams, Levees, Floodwalls, and Seepage Barriers:

1. Project: GRS Bridge Abutments
Sponsor: Virginia Center for Transportation Innovation and Research
Years: 2011 through 2013
2. Project: Geotechnical Solutions for Soil Improvement, Rapid Embankment Construction, and Stabilization of the Pavement Working Platform
Sponsor: Strategic Highway Research Program II (through Iowa State University)
Years: Phase 1, 2007 through 2008; Phase 2, 2008 through 2011; Phase 3, 2011 through 2013

3. Project: Interaction of Integral Abutment Piling and MSE Walls
Sponsor: Virginia Center for Transportation Innovation and Research
Years: 2007 through 2010
4. Project: IGERT: Exploring Interfaces through Graduate Education and Research
Sponsor: National Science Foundation
Years: 2005 through 2012
5. Project: Deformation-Based Design of Geotechnical Composite Foundation Systems Incorporating Columnar Support with or without Geosynthetic Reinforcement
Sponsor: National Science Foundation
Years: 2004 through 2008
6. Project: Simplified Reliability-Based Procedures for Design and Construction Quality Control Assurance of Foundations Improved by the Deep Mixing Method
Sponsor: National Deep Mixing Program FHWA
Years: 2004 through 2006
7. Project: Laboratory Procedure for Preparing and Curing Soil-Cement Specimens
Sponsor: Schnabel Foundation Company
Years: 2003 through 2004
8. Project: Columnar Reinforcement of Soft Ground beneath Roadway Embankments
Sponsor: Virginia Transportation Research Council
Years: 2002 through 2005
9. Project: Lime-Cement Columns: Mix Design and Laboratory Testing
Sponsor: Virginia Transportation Research Council
Years: 2001 through 2002
10. Project: Water-Filled Tubes: An Alternative to Stacking Sandbags for Fighting Floods
Sponsor: National Science Foundation
Years: 1999 through 2003
11. Project: Development of an Improved Numerical Model for Concrete-to-Soil Interfaces
Sponsor: US Army Corps of Engineers
Years: 1997 through 2000
12. Project: Soil-Bentonite Cutoff Walls: Trench Stresses and Adjacent Ground Settlements
Sponsor: National Science Foundation
Years: 1995 through 2000
13. Project: Vertical Shear Loads on Walls Founded on Rock
Sponsor: US Army Corps of Engineers
Years: 1994 through 1997
14. Project: New Design Methods for Cellular Cofferdams
Sponsor: US Army Corps of Engineers
Years: 1993 through 1996

Publications Related to Retaining Walls, Dams, Levees, Floodwalls, and Seepage Barriers:

1. Arenas, A.E., and Filz, G.M. (2013). "Thermal Response of Integral Bridge Abutments with Mechanically Stabilized Earth Walls," Final Contract Report for Virginia Center for Transportation Innovation and Research, Charlottesville, in final review.
2. Filz, G.M., and Sloan, J.A. (2013). "Load Distribution on Geosynthetic Reinforcement in Column-Supported Embankments," *Proc. Geo-Congress 2013*, ASCE Geo-Institute, accepted.
3. Templeton, A.E., Boehm, D.W., McGuire, M.P., and Filz, G.M. (2013). "Design and Construction of Deep Mixing at Orleans Avenue Canal, New Orleans," *Proc. Geo-Congress 2013*, ASCE Geo-Institute, accepted.
4. Bruce, D.A., and Filz, G.M. (2013). "Quality Control and Quality Assurance Methods for Cutoff Walls in Dams and Levees," *Proc. Geo-Congress 2013*, ASCE Geo-Institute, accepted.
5. Filz, G., Templeton, A.E., and Adams, T. (2012). "Integrated Design and QC/QA for Deep Mixing Support of Levees and Floodwalls," *Proc. Int. Conf. Ground Improvement and Ground Control*, Wollongong, Australia, to be published in October.
6. Bruce, M.E., Berg, R.R., Filz, G.M., Collin, J.G., Terashi, T., and Yang, D.S. (2012). "FHWA Design Manual: Deep Mixing for Embankment and Foundation Support," a report by Geotechnica, s.a., Inc.,

Venetia PA, to the Federal Highway Administration, Washington DC, under Contract No. DTFH61-06-C-00039, in final review.

7. Filz, G., Adams, T., Navin, M., and Templeton, A.E. (2012). "Design of Deep Mixing for Support of Levees and Floodwalls," *Proc. Int. Conf. Grouting and Deep Mixing 2012*, to be published in August.
8. Bertero, A., Leoni, F.M., Filz, G., Nozu, M., and Druss, D. (2012). "Bench-Scale Testing and Quality Control / Quality Assurance Testing for Deep Mixing at Levee LPV 111," *Proc. Int. Conf. Grouting and Deep Mixing 2012*, to be published by ASCE in August.
9. Cooling, T., Boeckmann, A., Cali, P., Evans, J., Leoni, F., and Filz, G. (2012). "Deep Mixing Design for Raising Levee Section, LPV 111, New Orleans, Louisiana," *Proc. Int. Conf. Grouting and Deep Mixing 2012*, to be published by ASCE in August.
10. Cali, P., Lelong, B., Bruce, D., Valaguusa, S., Beckerle, J., Gardner, J., and Filz, G. (2012). "Overview of Deep Mixing at Levee LPV 111, New Orleans, Louisiana," *Proc. Int. Conf. Grouting and Deep Mixing 2012*, to be published by ASCE in August.
11. McGuire, M., Templeton, E., and Filz, G. (2012). "Stability Analyses of a Floodwall with Deep-Mixed Ground Improvement at Orleans Avenue Canal, New Orleans," *Recent Research, Advances & Execution Aspects of Ground Improvement Works*, Belgian Building Research Institute, Brussels, Vol. III, 481-490.
12. McGuire, M., Sloan, J., Collin, J., and Filz, G. (2012). "Critical Height of Column-Supported Embankments from Bench-Scale and Field-Scale Tests," *Recent Research, Advances & Execution Aspects of Ground Improvement Works*, Belgian Building Research Institute, Brussels, Vol. III, 199-209.
13. Bruce, D.A., and Filz, G.M. (2012). "Quality Control and Quality Assurance in Cut-Off Walls," *Innovative Dam and Levee Design and Construction for Sustainable Water Management*, U.S. Society on Dams, Denver, 1595-1606.
14. Filz, G.M., Sloan, J., McGuire, M.P., Collin, J., and Smith, M. (2012). "Column-Supported Embankments: Settlement and Load Transfer." *Proc., Geotechnical Engineering State of the Art and Practice: Keynote Lectures from GeoCongress 2012*, ASCE, Reston, VA, 54-77.
15. Filz, G.M., Templeton, A.E., and Adams, T.E. (2011). "Stability Analyses for Levees on Deep-Mixed Shear Walls," *Ground Improvement*, 164(1), 1-11.
16. Sloan, J., Filz, G., and Collin, J. (2011). "A Generalized Formulation of the Adapted Terzaghi Method of Arching in Column-Supported Embankments," *Geo-Frontiers: Advances in Geotechnical Engineering*, GSP 211, ASCE, Reston, 798-805.
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18. Plaut, R.H., and Filz, G.M. (2010). "Analysis of Geosynthetic Reinforcement in Pile-Supported Embankments. Part III: Axisymmetric Model," *Geosynthetics International*, 17(2), 77-85.
19. Halvordon, K.A., Plaut, R.H., and Filz, G.M. (2010). "Analysis of Geosynthetic Reinforcement in Pile-Supported Embankments. Part II: 3D Cable-net Model," *Geosynthetics International*, 17(2), 68-76.
20. Jones, B.M., Plaut, R.H., and Filz, G.M. (2010). "Analysis of Geosynthetic Reinforcement in Pile-Supported Embankments. Part I: 3D Plate Model," *Geosynthetics International*, 17(2), 59-67.
21. Adams, T.E., Filz, G.M., Cali, P.R., Woodward, M.L., and Schwanz, N.T. (2010). "Optimization of Deep Mixed Shear Walls for Stabilization of a Pile-Supported Flood Wall on Level Ground," *Ground Improvement and Geosynthetics*, GSP 207, ASCE, Reston, 119-124.
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25. Filz, G.M. (2009). "Design of Deep Mixing Support for Embankments and Levees," *Proc. Int. Symp. Deep Mixing & Admixture Stabilization*, on CD-ROM, Japanese Port and Airport Research Institution, Tokyo, 23 p.
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28. McGuire, M.P., Filz, G.M., and Almeida, M.S.S. (2009). "Load-Displacement Compatibility Analysis of a Low-Height Column-Supported Embankment," *Contemporary Topics in Ground Modification, Problem Soils, and Geo-Support*, GSP No. 187, ASCE, Orlando, FL, 225-232.
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30. Hodges, D.K., Filz, G.M., and Weatherby, D.E. (2008). "Laboratory Mixing, Curing, and Strength Testing of Soil-Cement Specimens Applicable to the Wet Method of Deep Mixing," CGPR Report #48, Virginia Tech Center for Geotechnical Practice and Research, Blacksburg, 60 p. plus appendices.
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34. Adams, T.E., Filz, G.M., Cali, P.R., and Woodward, M.L. (2008). "Stability Analyses of a Levee on Deep-Mixed Columns, Plaquemines Parish, Louisiana," *Geosustainability and Geohazard Mitigation*, Geotechnical Special Publication No. 178, ASCE, Reston, 708-715.
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38. Baxter, D.Y., and Filz, G.M. (2007). "Deformation Predictions of Ground Adjacent to Soil-Bentonite Cutoff Walls using the Finite Element Method," *Geoenvironmental Engineering*, GSP 163, (on CD-ROM), ASCE, Reston, VA, 10 p.
39. Filz, G.M., and Navin, M.P. (2006). "Stability of Column-Supported Embankments," Virginia Transportation Research Council, Charlottesville, Virginia, 64 p.
40. Filz, G.M., and Smith, M.E. (2006). "Design of Bridging Layers in Geosynthetic-Reinforced, Column-Supported Embankments," Virginia Transportation Research Council, Charlottesville, Virginia, 46 p.
41. Navin M.P., and Filz, G.M. (2006). "Numerical stability analyses of embankments supported on deep mixed columns," *GeoShanghai 2006*, GSP 152, (on CD-ROM), ASCE, Reston, 8 p.
42. Navin M.P., and Filz, G.M. (2006). "Reliability of Deep Mixing Method Columns for Embankment Support," *Geotechnical Engineering in the Information Technology Age, Proc. Of GeoCongress 2006*, (on CD-ROM), ASCE, Reston, 6 p.
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Keynote and State-of-the-Art Lectures:

1. State-of-the-art lecture on deep mixing, ICGI Wollongong 2012.
2. State-of-the-art lecture on column-supported embankments, GeoCongress 2012, Oakland, California
3. State-of-the-art lecture on design of deep mixing, Grouting and Deep Mixing Conference, New Orleans 2012
4. Keynote lecture on deep mixing support of embankments and levees, International Symposium on New Construction Techniques on Soft Clay, Guarujá, Brazil, 2010
5. Keynote lecture on design of deep mixing, International Symposium on Deep Mixing, Okinawa, 2009
6. State-of-the-Art Presentation on column-supported embankments, Sowers Symposium, Georgia Tech, 2008

Notable Awards:

1. Florida ASCE Project-of-the-Year Award, 2011
2. J. James R. Croes Medal, ASCE, 2006
3. Elected to Fellow membership grade in ASCE, 2005
4. Thomas A. Middlebrooks Award, ASCE, 2003
5. National Science Foundation CAREER Award, 1995



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
RISK MANAGEMENT CENTER
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LAKEWOOD, CO 80228

REPLY TO
ATTENTION OF

CEIWR-RMC

20 February 2015

MEMORANDUM FOR: Commander, Los Angeles District, ATTN: CESPL-ED-GD

SUBJECT: Risk Management Center Endorsement – Sespe Creek Levee (SC-2)
Rehabilitation Project: Section 408 Permit Application Review Plan

1. The Risk Management Center (RMC) has reviewed the Review Plan (RP) Sespe Creek Levee (SC-2) Rehabilitation Project: Section 408 Permit Application Review Plan, dated 9 February 2015, and concurs that this RP complies with the current peer review policy requirements outlined in EC 1165-2-214 "Civil Works Review Policy", dated 15 December, 2012.
2. This review plan was prepared by CESPL-ED-GD Los Angeles District, reviewed by SPD, and the RMC, and all review comments have been satisfactorily resolved.
3. The RMC endorses this document to be approved by the MSC Commander. Upon approval of the RP, please provide a copy of the approved RP, a copy of the MSC Commander's approval memorandum, and a link to where the RP is posted on the District website to the RMC Senior Review Manager (rmc.review@usace.army.mil).
4. Thank you for the opportunity to assist in the preparation of this RP. Please coordinate all aspects of the Agency Technical Review and the Independent External Review (as appropriate) efforts defined in the RP. For further information, please contact me at 304-399-5217.

Sincerely,

JOHN D. CLARKSON, P.E.
Senior Review Manager
Risk Management Center

CF:
CEIWR-RMC (Mr. Snorteland)
CESPD-RBT (Division Quality Manager)