SUBMITTAL TO THE FLOOD CONTROL AND WATER CONSERVATION DISTRICT BOARD COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

110B

FROM: General Manager-Chief Engineer

SUBMITTAL DATE: June 16, 2009

SUBJECT: West Desert Hot Springs Master Drainage Plan
Project No. 6-0-00831
Consulting Services Agreement

RECOMMENDED MOTION:

1) Approve the multi-year Consulting Services Agreement between the District and Pacific Advanced Civil Engineering, Inc.
2) Authorize the Chairman to execute the Agreement documents on behalf of the District; and
3) Direct the Purchasing Department to issue the appropriate purchase order on behalf of the District.

BACKGROUND: see page 2

The Agreement sets forth the terms and conditions by which Pacific Advanced Civil Engineering, Inc. will perform professional and engineering services to prepare a comprehensive plan for District's West Desert Hot Springs Master Drainage Plan. The District is funding all costs for these services.

JPS:blj

WARREN D. WILLIAMS
General Manager-Chief Engineer

FISCAL PROCEDURES APPROVED
IVAN M. CHAND, FINANCE DIRECTOR
BY: IVAN M. CHAND 5/22/09

FORM APPROVED COUNTY COUNSEL
BY: NEAL R. KIPNIS DATE

FINANCIAL DATA	**Current F.Y. District Cost:**	$5,000.00	**In Current Year Budget:**	Yes
	Current F.Y. County Cost:	N/A	**Budget Adjustment:**	No
	Annual Net District Cost:	$843,480.00	**For Fiscal Year:**	FY 08-09, 09-10, 10-11 & 11-12

SOURCE OF FUNDS: Zone 6 Engineering Services 524820 25160 947500

Positions To Be Deleted Per A-30 ☐

Requires 4/5 Vote ☐

C.E.O. RECOMMENDATION:

County Executive Office Signature

APPROVE
BY: Alex Gann
Alex Gann

Dep't Recomm.: ☐ Consent ☐ Policy

Per Exec. Ofc.: ☐ Consent ☐ Policy

09 OCT 10 PM 8:51

Prev. Agn. Ref.: | **District:** 5th | **Agenda Number:** 11.2

ATTACHMENTS FILED WITH THE CLERK OF THE BOARD

FLOOD CONTROL AND WATER CONSERVATION DISTRICT BOARD SUBMITTAL
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

SUBJECT: West Desert Hot Springs Master Drainage Plan
Project No. 6-0-00831
Consulting Services Agreement

SUBMITTAL DATE: June 16, 2009
Page 2

BACKGROUND (continued):

County Counsel has approved the Agreement as to legal form and Pacific Advanced Civil Engineering, Inc. has executed the Agreement.

FINANCIAL:

Sufficient funding is available in District's Zone 6 budget for FY 2008-2009 and will be included in the proposed budget for FY 2009-2010, 2010-2011 and 2011-2012.

JPS:blj

CONSULTING SERVICES AGREEMENT

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, hereinafter called "DISTRICT", and PACIFIC ADVANCED CIVIL ENGINEERING, INC., hereinafter called "CONSULTANT", hereby agree as follows:

1. PROJECT - CONSULTANT shall perform professional engineering services for DISTRICT'S West Desert Hot Springs Master Drainage Plan, Project No. 6-0-00831, hereinafter called "PROJECT".

2. SCOPE OF SERVICES – DISTRICT hereby retains CONSULTANT, as an independent contractor, to perform all technical and professional services including but not limited to expertise, labor, equipment, tools, facilities, materials, supervision, and other incidental services necessary to fully and adequately perform and complete in a skillful and professional manner those services set forth in Attachment "A" attached hereto and made a part hereof.

3. TIME FOR PERFORMANCE - CONSULTANT agrees that it will diligently and responsibly pursue the performance of work and services in accordance with the Project Schedule attached hereto as Attachment "D" and made a part hereof.

CONSULTANT shall not commence performance of any work or services, for any reason whatsoever, until DISTRICT has provided CONSULTANT with written Notice to Proceed authorizing CONSULTANT to initiate work pursuant to this Agreement. CONSULTANT shall diligently perform the services to full completion through August 1, 2011 or upon DISTRICT's submittal of PROJECT to the Board of Supervisors for adoption whichever is the later. No payment will be made for any work or services performed prior to issuance of said Notice to Proceed.

4. COMPENSATION – CONSULTANT'S compensation shall be for services performed and expenses incurred in accordance with Engineering Fee Estimate Project Worksheet set forth in Attachment "B", and Deliverable List with Payment Schedule set forth in Attachment "C", each attached hereto and made a part hereof. CONSULTANT'S compensation for time and material items described in Attachment "A", shall be in accordance with the standard rates for CONSULTANT, and Bonterra Consulting, hereinafter called "SUBCONSULTANT", as set forth in Attachments "E" and "F" respectively, each attached hereto and made a part hereof.

The total amount of compensation paid to CONSULTANT under this Agreement shall not exceed the sum of eight hundred forty-eight thousand, four hundred eighty dollars ($848,480.00) unless a written amendment to this Agreement is executed by both parties prior to performance of additional services.

5. PAYMENT – Payment to CONSULTANT shall be paid by DISTRICT following satisfactory performance of the services as set forth herein and within thirty days (30) after DISTRICT'S receipt of appropriate monthly invoice(s) from CONSULTANT. Upon performance of each task and submittal of deliverable items, CONSULTANT shall invoice DISTRICT as shown in Attachment "C" based on a lump sum not to exceed for each deliverable item except for tasks identified as time and material. CONSULTANT shall keep employee and expense records according to customary accounting methods and such records shall, upon request, be made available for inspection by DISTRICT to verify CONSULTANT'S invoices. All invoices shall itemize charges to conform to the items of work as set forth in Attachments "A", "B" and "C".

6. LICENSES - CONSULTANT, SUBCONSULTANT, their employees, agents, contractors and subcontractors shall maintain professional licenses required by the laws of the State of California at all times while performing services under this Agreement.

7. SUBCONTRACTING - CONSULTANT may, at CONSULTANT'S own expense, employ special consultants to accomplish the work covered by this Agreement however, except as specifically provided in Attachment "A" or as expressly identified in this Agreement, no portion of the services pertinent to this Agreement shall be subcontracted without prior written approval and authorization by the DISTRICT.

In the event CONSULTANT subcontracts any portion of CONSULTANT'S duties under this Agreement, CONSULTANT shall require its subcontractors to comply with the terms of this Agreement in the same manner as required of CONSULTANT. The fact that CONSULTANT employs special consultants not in his regular employ shall not relieve CONSULTANT of any responsibility regarding the adequacy of the special consultant's designs or other work performed pursuant to this Agreement. DISTRICT acknowledges that CONSULTANT will subcontract with JLC Engineering and Bonterra Consulting to complete the work pursuant to this Agreement.

8. PERMITS AND RIGHTS OF ENTRY – All permits and rights of entry as may be required from any and all privately-owned properties or other affected public entities shall be obtained by CONSULTANT. Sufficient evidence of having obtained such permits and/or rights of entry shall be furnished to DISTRICT by CONSULTANT.

9. NOTICES - Any and all notices sent or required to be sent to the parties of this Agreement will be mailed by first class mail, postage prepaid to the following addresses:

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT
1995 Market Street
Riverside, CA 92501

PACIFIC ADVANCED CIVIL
ENGINEERING, INC. (PACE)
Attn.: Bruce Phillips
17520 Newhope Street
Fountain Valley, CA 92708

10. REQUIRED INSURANCE

Without limiting or diminishing CONSULTANT'S obligation to indemnify or hold the DISTRICT harmless, CONSULTANT shall procure and maintain or cause to be maintained, at its sole cost and expense, the following insurance coverages during the term of this Agreement:

Workers' Compensation:

If CONSULTANT has employees as defined by the State of California, CONSULTANT shall maintain Workers' Compensation Insurance (Coverage A) as prescribed by the laws of the State of California. Policy shall include Employer's Liability (Coverage B) including Occupational Disease with limits not less than $1,000,000 per person per accident. Policy shall be endorsed to waive subrogation in favor of DISTRICT and, if applicable, to provide a Borrowed Servant/Alternate Employer endorsement.

Commercial General Liability:

Commercial General Liability insurance coverage, including but not limited to, premises liability, contractual liability, completed operations, personal and advertising injury covering claims which may arise from or out of CONSULTANT'S performance of its obligations hereunder. Policy shall name the Riverside County Flood Control and Water Conservation District, the County of Riverside, special districts, their respective directors, officers, Board of Supervisors, elected officials, employees, agents or representatives as additional insureds. Policy's limit of liability shall not be less than $1,000,000 per occurrence combined single limit. If such insurance contains a general aggregate limit, it shall

apply separately to this Agreement or be no less than two (2) times the occurrence limit.

Vehicle Liability:

If CONSULTANT'S vehicles or mobile equipment are used in the performance of the obligations under this Agreement, CONSULTANT shall maintain liability insurance for all owned, non-owned or hired vehicles in an amount not less than $1,000,000 per occurrence combined single limit. If such insurance contains a general aggregate limit, it shall apply separately to this Agreement or be no less than two (2) times the occurrence limit. If CONSULTANT does not own vehicles, CONSULTANT shall maintain coverage for non-owned or hired vehicles in an amount not less than $1,000,000 per occurrence combined single limit. Such non-owned or hired coverage may be included on the Commercial General Liability policy. Policy shall name the Riverside County Flood Control and Water Conservation District, the County of Riverside, special districts, their respective directors, officers, Board of Supervisors, elected officials, employees, agents or representatives as additional insureds.

PROFESSIONAL LIABILITY

CONSULTANT shall maintain Professional Liability Insurance providing coverage for CONSULTANT'S performance of work included within this Agreement, with a limit of liability of not less than $1,000,000 per occurrence and $3,000,000 annual aggregate. If CONSULTANT'S Professional Liability Insurance is written on a claims made basis rather than an occurrence basis, such insurance shall continue through the term of this Agreement and CONSULTANT shall purchase at his sole expense either 1) an Extended Reporting Endorsement (also known as Tail Coverage) or; 2) Prior Dates Coverage from a new insurer

with a date retroactive to the date of, or prior to, the inception of this Agreement or; 3) demonstrate through Certificates of Insurance that CONSULTANT has maintained continuous coverage with the same or original insurer. Coverage provided under items; 1), 2) or 3) will continue for a period of three (3) years beyond the termination of this Agreement.

General Insurance Provisions – All Lines:

a. Any insurance carrier providing insurance coverage hereunder shall be admitted to the State of California and have an A.M. BEST rating of not less than an A: VIII (A: 8) unless such requirements are waived, in writing, by the County Risk Manager. If the County's Risk Manager waives a requirement for a particular insurer such waiver is only valid for the specific insurer and only for one policy term.

b. CONSULTANT'S insurance carrier(s) must declare its insurance deductibles or self-insured retentions. If such deductibles or self-insured retentions exceed $500,000 per occurrence such deductibles and/or retentions shall have the prior written consent of the County Risk Manager before the commencement of operations under this Agreement. Upon notification of deductibles or self-insured retentions which are deemed unacceptable to the DISTRICT, at the election of the County's Risk Manager, CONSULTANT'S carriers shall either; 1) reduce or eliminate such deductibles or self-insured retentions with respect to this Agreement with DISTRICT, or 2) procure a bond which guarantees payment of losses and related investigations, claims administration, defense costs and expenses.

c. CONSULTANT shall cause their insurance carrier(s) to furnish DISTRICT 1) a properly executed original certificate(s) of insurance and original

certified copies of endorsements effecting coverage as required herein; or 2) if requested to do so orally or in writing by the County Risk Manager, provide original certified copies of policies including all endorsements and all attachments thereto, showing such insurance is in full force and effect. Further, said certificate(s) and policies of insurance shall contain the covenant that the insurance carrier(s) shall provide no less than thirty (30) days written notice be given to DISTRICT prior to any material modification or cancellation of such insurance. In the event of a material modification or cancellation of coverage, this Agreement shall terminate forthwith, unless DISTRICT receives, prior to such effective date, another properly executed original certificate of insurance and original copies of endorsements or original certified policies, including all endorsements and attachments thereto, evidencing coverages and the insurance required herein is in full force and effect. Individual(s) authorized by the insurance carrier to do so on its behalf shall sign the original endorsements for each policy and the certificate of insurance.

CONSULTANT shall not commence operations until DISTRICT has been furnished with original certificate(s) of insurance and original certified copies of endorsements or policies of insurance including all endorsements and any and all other attachments as required in this Section.

d. It is understood and agreed by the parties hereto and CONSULTANT'S insurance company(ies), that the certificate(s) of insurance and policies shall so covenant and shall be construed as primary insurance, and the DISTRICT'S insurance and/or deductibles and/or self-insured retentions or self-insured programs shall not be construed as contributory.

e. If, during the term of this Agreement or any extension thereof, there is a material change in the scope of services; or there is a material change in the equipment to be used in the performance of the scope of work which will add additional exposures (such as the use of aircraft, watercraft, cranes, etc.); or the term of this Agreement, including any extensions thereof, exceeds five (5) years, the County reserves the right to adjust the types of insurance required under this Agreement and the monetary limits of liability for the insurance coverage's currently required herein, if, in the County Risk Manager's reasonable judgment, the amount or type of insurance carried by the CONSULTANT has become inadequate.

f. CONSULTANT shall pass down the insurance obligations contained herein to all tiers of subcontractors working under this Agreement.

g. The insurance requirements contained in this Agreement may be met with a program(s) of self-insurance acceptable to DISTRICT.

h. CONSULTANT agrees to notify DISTRICT of any claim by a third party or any incident or event that may give rise to a claim arising from the performance of this Agreement.

11. INDEMNIFICATION – CONSULTANT shall indemnify and hold harmless DISTRICT (including its Board of Supervisors, elected and appointed officials, employees, agents and representatives) from any liability, claim, damage, proceeding or action, present or future, based upon, arising out of or in any way relating to CONSULTANT'S (including its officers, employees, subcontractors and agents) actual or alleged negligent, reckless or willful misconduct, acts or omissions related to this Agreement, performance under this Agreement, or failure to comply with the requirements of this Agreement, including

but not limited to: (a) property damage; (b) bodily injury or death; or (c) any other element of any kind or nature whatsoever.

CONSULTANT shall defend, at its sole expense, including all costs and fees (including but not limited to attorney fees, cost of investigation, defense and settlements or awards), DISTRICT, (including its Board of Supervisors, elected and appointed officials, employees, agents and representatives) in any claim, proceeding or action for which indemnification is required.

With respect to any of CONSULTANT'S indemnification requirements, CONSULTANT shall, at its sole cost, have the right to use counsel of their own choice and shall have the right to adjust, settle, or compromise any such claim, proceeding or action without the prior consent of DISTRICT; provided, however, that such adjustment, settlement or compromise in no manner whatsoever limits or circumscribes CONSULTANT'S indemnification obligations to DISTRICT.

CONSULTANT'S indemnification obligations shall be satisfied when CONSULTANT has provided to DISTRICT the appropriate form of dismissal (or similar document) relieving DISTRICT from any liability for the claim, proceeding or action involved.

The specified insurance limits required in this Agreement shall in no way limit or circumscribe CONSULTANT'S obligations to indemnify and hold harmless DISTRICT from third party claims.

In the event there is conflict between this section and California Civil Code Section 2782, this section shall be interpreted to comply with Civil Code 2782. Such interpretation shall not relieve the CONSULTANT from indemnifying DISTRICT to the fullest extent allowed by law.

12. WORK PRODUCT – CONSULTANT shall provide DISTRICT with all power point presentations, data, materials, drawings, logs and reports as described in Attachment

"A", "B" and "C". All provided items shall be and remain the sole property of DISTRICT. CONSULTANT shall not publish or transfer any material produced by CONSULTANT or resulting from activities supported by this Agreement without the written consent of the General Manager-Chief Engineer. If any such material is subject to copyright or trademark, the parties agree that the right to any and all copyright and/or trademark in and to the material is expressly reserved to DISTRICT. If any such material is copyrighted, the parties hereto understand and agree that DISTRICT reserves a royalty-free, non-exclusive, and irrevocable license to reproduce, publish and use such material, in whole or in part, and to authorize others to do so, provided written credit is given the author.

13. TERMINATION - At any time during the term of this Agreement, DISTRICT may:

a. Terminate this Agreement without cause upon providing CONSULTANT thirty (30) days written notice stating the extent and effective date of termination; or

b. Upon five (5) days written notice, terminate this Agreement for CONSULTANT default, if CONSULTANT refuses or fails to comply with the provisions of this Agreement or fails to make progress so as to endanger performance and does not cure such failure within a reasonable period of time. In the event of such termination, the DISTRICT may proceed with the work in any manner deemed proper to DISTRICT.

In the event DISTRICT issues a Notice of Termination, CONSULTANT shall (i) Stop all work under this Agreement on the date specified in the Notice of Termination; and (ii) Transfer to DISTRICT and deliver in the manner, and to the extent, if any, as directed by DISTRICT, any equipment, data or reports which, if the Agreement had been completed, would have been required to be furnished to DISTRICT.

In the event DISTRICT terminates this Agreement, DISTRICT shall make payment for all services performed in accordance with this Agreement to the date of termination, a total amount which bears the same ratio to the total maximum fee otherwise payable under this Agreement as the services actually bear to the total services necessary for performance of this Agreement. Notwithstanding any of the other provisions of this Agreement, CONSULTANT'S rights under this Agreement shall terminate (except for fees accrued prior to the date of termination) upon dishonesty, or a willful or material breach of this Agreement by CONSULTANT, or in the event of CONSULTANT'S unwillingness or inability for any reason whatsoever to perform the duties hereunder, or if Agreement is terminated pursuant to Section 22 herein, titled NON-DISCRIMINATION. In such event, CONSULTANT shall not be entitled to any further compensation under this Agreement. The rights and remedies of DISTRICT provided in this section shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Agreement.

14. ASSIGNMENT - Neither this Agreement nor any part thereof shall be assigned by CONSULTANT without the prior written consent of DISTRICT.

15. CONFLICT OF INTEREST – CONSULTANT covenants that it presently has no interest in, including but not limited to, other projects or independent contracts and shall not acquire any such interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement. CONSULTANT further covenants that in the performance of this Agreement, no person having any such interest shall be employed or retained by it under this Agreement.

16. PREVAILING WAGE – All workers shall be paid not less than the general prevailing wage rate of wages and benefits for work of a similar character in the locality in which the work is performed, as provided in Labor Code Sections 1770 et seq. Pursuant to the

Labor Code, DISTRICT has obtained for the Board of Supervisors of the DISTRICT from the Director of the Department of Industrial Relations, State of California, his determinations of general prevailing rates of per diem wages applicable to the work and for holiday and overtime work, including employer payments for health and welfare, pension, vacation, apprentices and similar purposes for each craft, classification or type of workman needed, as set forth on the schedule which is on file at DISTRICT'S office and which will be made available to any interested person upon request.

17. CONFIDENTIALITY OF DATA - All financial, statistical, personal, technical or other data and information which is designated confidential by DISTRICT and subsequently made available to CONSULTANT shall not be disclosed (in whole or in part) by CONSULTANT to any third parties and shall be protected by CONSULTANT from unauthorized use and disclosure. The only exception to this shall be if disclosure is approved in advance in writing by DISTRICT or if the disclosure is made to CONSULTANT'S subcontractors as anticipated by this Agreement.

CONSULTANT shall not issue any news release or public relations item regarding designated confidential information or CONSULTANT'S work under this Agreement, without prior review of the contents and written approval by DISTRICT.

These same requirements shall be applicable to any of CONSULTANT'S subcontractors. CONSULTANT shall include the requirements stated in this section in the agreement with any of its subcontractors.

18. INDEPENDENT CONTRACTOR – CONSULTANT and the agents and employees of CONSULTANT shall act at all times in an independent capacity during the term of this Agreement and in the performance of the services to be rendered hereunder and shall not act as or shall not be and shall not in any manner be considered employees or agents of DISTRICT.

19. EXTRA WORK – CONSULTANT shall not perform extra work beyond the scope of services described in Attachment "A" without the prior written approval of the DISTRICT. Failure to obtain such prior written approval may result in CONSULTANT not receiving any additional payment for such extra work.

CONSULTANT must immediately identify and notify DISTRICT in writing of any extra work, and propose a revised scope, cost and schedule for PROJECT. DISTRICT'S approval of such extra work shall be in the form of an amendment to this Agreement.

20. JURISDICTION/LAW/SEVERABILITY – This Agreement is to be construed in accordance with the laws of the State of California. If any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions shall be declared severable and shall be given full force and effect to the extent possible.

Any legal action, in law or equity related to the performance or interpretation of this Agreement shall be filed only in the Superior Court for the State of California located in Riverside, California and the parties waive any provision of law providing for a change of venue to another location. Prior to the filing of any legal action, the parties shall be obligated to attend a mediation session with a neutral mediator to try to resolve the dispute.

21. WAIVER – Any waiver by DISTRICT of any breach of any one or more of the terms of this Agreement shall not be constructed to be a waiver of any subsequent or other breach of the same or any other term thereof. Failure on the part of DISTRICT to require exact, full and complete compliance with any terms of this Agreement shall not be construed as in any manner changing the terms hereof, or estopping DISTRICT from enforcement hereof.

22. NON-DISCRIMINATION - In the performance of the terms of this Agreement, CONSULTANT shall not engage in nor permit others he may employ to engage in discrimination in the employment of persons because of the race, color, national origin or ancestry, religion, physical handicap, disability as defined by the Americans with Disabilities Act (ADA), medical condition, marital status or sex of such persons, in accordance with the provision of California Labor Code Section 1735.

23. NON-APPROPRIATION OF FUNDS – It is mutually agreed and understood that the obligations of DISTRICT are limited by and contingent upon the availability of DISTRICT funds for the reimbursement of CONSULTANT'S fees. In the event that such funds are not forthcoming for any reason, DISTRICT shall immediately notify CONSULTANT in writing. This Agreement shall be deemed terminated and have no further force and effect immediately on receipt of DISTRICT'S notification by CONSULTANT. In the event of such termination, CONSULTANT shall be entitled to payment for work already performed in accordance with this Agreement.

//

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on

_____.
(to be filled in by Clerk of the Board)

RECOMMENDED FOR APPROVAL:

By _____
WARREN D. WILLIAMS
General Manager-Chief Engineer

APPROVED AS TO FORM:

PAMELA J. WALLS
County Counsel

By _____
NEAL KIPNIS
Deputy County Counsel

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

By _____
MARION ASHLEY, Chairman
Board of Supervisors, Riverside County Flood Control and Water Conservation District

ATTEST:

KECIA HARPER-IHEM
Clerk of the Board

By _____
Deputy

(SEAL)

PACIFIC ADVANCED CIVIL ENGINEERING, INC.

By _____
BRUCE PHILLIPS
Senior Vice-President

Consulting Services Agreement
Project No 6-0-00831
5/21/2009
IMG:blj

SCOPE OF WORK – DETAILED TASK DESCRIPTIONS

Master Drainage Plan – West Desert Hot Springs

May 7, 2009

PHASE 1 – BASELINE DATA INVENTORY

1.1 Data Collection and Review of Existing Database Resources

Obtain and perform cursory of the existing available technical studies from the District or Cities related to the floodplain hydraulics, regional watershed investigations, sediment transport studies, hydrologic data, and environmental data. The researched information that has been reviewed will serve as the foundation to perform the engineering technical analysis. The additional specific items included in the research and data collection process include the following:

- Research available data / information
- Technical data
- Environmental data
- Research existing electronic mapping data
- Research existing GIS data
- City / County Staff Interviews Historical Needs
- Research additional technical data
- Research additional environmental data
- Review collected data
- Summarize critical data for MDP
- Field Reconnaissance / Research

Deliverables: 1. Draft data inventory catalogue spreadsheet

1.2 Review of Prior Consultant's Work / Engineering & Environmental Studies

Review the previous engineering MDP studies and environmental for the West Desert Hot Springs area specifically related to evaluating the (1) proposed drainage facilities, and (2) environmental/biological constraints. The original MDP technical/engineering data will include the digital mapping of the hydrologic information, facilities planning data, environmental constraints, sediment transport, alluvial fan analysis, watershed planning data, and assumptions on the MDP. In addition, obtain and review previous studies related to biological and environmental resources for the area. These studies may be associated with other projects; in particular the database for the Coachella Valley MSHCP will be reviewed. Assess accuracy and use of this information to reflect the actual current conditions.

- Review Previous Technical Studies
- Review Previous Environmental Studies
- Catalogue and compile data

1.3 Initial Needs and Data Gap Assessment

Compile an organized database of the existing available information and determine areas where additional technical data is required. The initial technical review of the data will include summarizing the existing data based upon the research to generate a baseline data base of the existing study conditions. An inventory of the existing available will be developed and the information reviewed in order to identify the pieces of data that can be utilized for the engineering analysis. A "data management tracking" spreadsheet will be utilized that has been pre-assembled with the different minimum categories and subcategories of information typically required for watershed planning and environmental requirements. The tracking will quickly identify "data gaps" necessary to provide additional information in order to initiate the planning studies. A qualitative "data gap" evaluation will be performed to assess additional field or reference information that may be required through supplemental investigation. The researched

information that has been reviewed will serve as the foundation to perform the initial assessments and request additional investigations or analysis. The database will be compiled in an organized report format for both the District and City review.

- Compilation of Project Technical/Environmental Database
- Compilation of Base Map Information
- Summary of Database items
- Database Spreadsheet Checklist
- Review and Identify data gaps with summary memo

Deliverables: 1. data gap analysis memo and spreadsheet

1.4 Stakeholder Technical Steering Committee Initiation

Provide for the development and management of the "Stakeholder" technical steering committee or specialized work group. The formulation process which will include a separate "partnering" kick-off meeting at the very beginning of the project that includes the key ranking officials from the County, agencies, watershed landowners, and other relevant stakeholders specifically invited to be part of the technical steering committee. The kick-off meeting would establish a memorandum of understanding among all team members agreeing on the importance of master plan for the stream stabilization program and integration with other future watershed projects, mutual goals and objectives, and a commitment to fostering cooperative teamwork to resolve local issues in a timely manner. This committee will be composed of key participants that have specialized technical knowledge related to watershed restoration processes and related technical fields, ecosystems and environmental regulatory processes. This is a technical advisory committee that would be composed of members with interdisciplinary technical backgrounds related to the study goals and objectives. Stakeholders who wish to participate on the steering committee are asked to commit to attend meetings regularly and participate actively in discussion. Steering committee members are relied on to contribute their time, intellectual and creative energy, credibility, and organizational resources to develop and implement the project. They are also asked to review and accept the ground rules that will be proposed, discussed and amended under a separate document, and sign a participation agreement to indicate concurrence. The function of this advisory group is to provide advice to assist in the decision making process. As a result, it is important that all members of this advisory group understand the issues, develop practical and well thought-out recommendations, and achieve consensus in support of their recommendations.

- Committee Objectives – Definition / Process
- Formation of Technical Steering Committee

Deliverables: 1. Technical steering committee procedures memo

1.5 Engineering Design Criteria and Objectives

Provide preliminary engineering services to establish the study objectives and to perform a design criteria review to evaluate the necessary hydraulic and hydrologic design requirements prior to initiating the engineering study process. The criteria and objectives are established initially set the governing guidelines for the entire study process and defines the ultimate objectives needed at the end of the study. Establish the necessary planning criteria and standards. The criteria will establish the baseline requirements to ensure that the required level of flood protection is provided which will meet the various jurisdictional agency requirements. The project objectives will be defined, as well as the project stakeholders. The objectives of the stakeholders will be evaluated which include flood protection, environmental, and community benefits. Identification of the objectives will allow evaluation of the alternative to assess how well they meet the objectives. A summary document will be prepared summarizing the recommended design criteria and guidelines for review and approval. This document will serve as a reference framework to base decisions as work progresses and guidance related to required minimum requirements of the engineering analysis.

- Hydrology Criteria
- Hydraulics Criteria

- Environmental Criteria
- Alternative aesthetic channel facilities
- Water Quality Criteria
- City / Stakeholder's Objectives
- District Plan Check Procedures

Deliverables: 1. Objectives and criteria memo

PHASE 2 – PROJECT DRAINAGE DEFICIENCY AND CONSTRAINTS IDENTITIFCATION

2.1 Hydrologic Parameters Assessment and Analysis

Review the previous regional and local hydrology analysis performed as part of the previous MDP for the West Desert Hot Springs area. The previous "regional" watershed study is assumed to be adequate and will be used as a technical basis in the MDP. The previous modeling will be reviewed in order to utilize data from the model and make potential adjustments depending on the final local systems. Perform technical review and assessment of these studies and corresponding hydrology analysis. Input for watershed computer models will be evaluated including parameters characterizing the watershed based on the proposed analysis empirical methods applied. In addition, perform an analysis in order to update the local and subregional watershed parameters which include the rainfall and infiltration values. A key feature of the assessment is the determination of the watershed size where the rational method model should be changed to the unit hydrograph method. Determine the hydrologic parameters that are characteristic of the individual subareas from the available digital mapping of the hydrologic soil types and landuse overlays. Digital mapping of the hydrologic parameters will be developed in GIS for the localized watershed area within the study (excluding regional offsite) which will include hydrologic soils types, landuse, and rainfall isohyetals.

- Review previous hydrology models/upload model
    - Regional
    - Local
- GIS Landuse /soil data overlay loss coefficient / Rainfall isohyetals
- Additional Hydrology Parameters analysis

2.2 Existing Drainage Facility Hydraulic Capacities

Perform hydraulic capacity analysis of the existing culverts and bridges with the use of Geo-RAS which will be better suited to the existing facility hydraulic constraints. The existing culvert and bridges will be checked using hand hydraulic calculations and confirmed the detailed Geo-RAS analysis. Data for all the facilities in question will be based on plan information provided by the County, but a field reconnaissance will be performed at each of the locations to verify the information, including a ground photo inventory at each of the facilities. The existing topography and as-built elevation information for the facilities will be used in developing the hydraulic model in Geo-RAS for the facilities to accurately assess the upstream and downstream hydraulic characteristics of the natural floodplain. A sensitivity analysis of varying flowrates will be used in order to determine the hydraulic capacity through the development of a rating curve within Geo-RAS.

- Existing drainage facility inventory (size / location)
- Bridges/Culverts Hand Calcs Hydraulics
- Bridges/Culvert HEC-RAS model and analysis
- Summary table of existing facility hydraulic capacity

Deliverables: 1. Culvert and bridge hydraulic capacity analysis / summary table / ground photo inventory

2.3 Watershed Hydrology Runoff Yield Estimates

Develop watershed planning tools for the generation approximate "planning level" flowrate/runoff estimates. These values will assist in the conceptual sizing of the alternative facilities through the use of "runoff yield" values generated for different watershed parameters which will allow estimate approximate design flowrates. Runoff yields will be generated as a flowrate/unit area (cfs/acre) based on evaluating different (1) time of concentrations, (2) size of watershed, and (3) average landuse within the watershed. Planning level "rational method" hydrology models will be developed for different parts of the watershed reflecting average landuse densities and concentration points with different "time of concentrations" and drainage areas. In addition, several different unit hydrographs will also be generated with different acreage and average landuse for the local watershed in order to develop planning level flowrates for the concentration points with larger tributary acreages. Graphs will be generated with a family of curves that establish flowrate yields as a function of time of concentration and will serve as the basis for planning level watershed hydrology discharges.

- Multiple rational method analysis (3 development watershed areas)
- Planning Level UH models different acreages
- Runoff Yield Calc - multiple Tc (3 areas)
    - Runoff Yield Graph

Deliverables: 1. Runoff yield estimates / planning curves & backup analysis

2.4 Sediment Bulking Factor Estimates

Develop estimates for the "bulking factors" that can be applied to the "clear water" hydrology flowrates to account for sediment delivery from the watersheds and increase the design discharges. The bulking factor estimates will be performed for the "regional" offsite watershed west of Freeway 62. The previous watershed sediment yield analysis will be utilized as the initial technical basis to establish the sediment yield used in the bulking factor calculation. Procedures will be applied to estimate the offsite tributary watershed sediment yield. Evaluate the offsite tributary watershed characteristics to assess the erosion potential to generate sediment which incorporates other factors such as vegetation, topography, and soil conditions. The potential sediment yield of the watershed will be estimated through the application of the Modified Uniform Soil Loss Equation or similar empirical procedure.

- Review existing sediment yield values
- GIS mapping approximate sediment yield parameters
- Sediment yield calc
    - Offsite
- Bulking Factor calc

Deliverables: 1. Bulking factor estimate

2.5a Existing Floodplain Mapping & Hydraulics Database

Compile the available floodplain hydraulic modeling from FEMA, County, and private consultants for the study area in order to accurately assess the existing floodplain boundaries and the hydraulic characteristics for Morongo Wash and Mission Creek. The review includes conventional HEC-RAS model, approximate floodplain hydraulic procedures, and two-dimensional hydraulic models. A solid technical understanding of the existing floodplain hydraulics for the regional creeks is critical since these are the controlling facilities for the sub-regional drainage systems. The existing hydraulic analysis of the regional floodplains will be used in order to (1) provide the basic data for use in the engineering and hydraulic analyses, (2) identify the floodplain boundary limits, (3) characteristics of the alluvial fan, and (4) obtain average and localized hydraulic characteristics for the study portion of the floodplain. The previous floodplain hydraulic analysis will provide an accurate analysis of the ***baseline floodplain condition*** reflecting the natural floodplain in its existing condition and the associated boundaries or limits of the floodplain. The baseline hydraulic analysis will be utilized as the hydraulic engineering basis in evaluating changes or modifications to the floodplain. Potential impacts will be evaluated and requirements for facility sizing will be based on the baseline hydraulic model information.

- Existing Floodplain studies review models
    - Review FEMA floodplain models / hazard boundaries
        - Supporting FEMA technical documentation
    - Review existing FLO-2D analysis
        - RCFCD Analysis
        - Exponent Analysis
- Summarize baseline floodplain hydraulic data

2.5b Existing Floodplain Historical Mapping

Perform evaluation of the historical trends, and floodplain limits on the alluvial fan. Research of available historical aerial photographs after larger rainfall events will be researched through the District archive of photographs and those available through the Fairchild Collection (Whittier College). The photographs will be digitally rectified and the drainage patterns digitized. The digital drainage patterns will be overlaid in GIS and compared with the digital topographic data. A composite of the floodplain patterns will be overlaid with the mapped floodplain modeling for comparison, and resulting summary exhibit will be prepared.

Deliverables: 1. Existing floodplain database summary

2.6 Drainage Constraints Map Compilation

Compilation of the available baseline information primary items, which encompasses the available data related to physical and regulatory constraints, into a digital "constraints map" that will serve as a tool to assist in guiding the formulation of alternatives. The information for the drainage constraints map will be based upon the data provided by the District, or research, and will include information for four general categories which include (1) drainage facilities, (2) watershed data, (3) flood hazards, and (4) environmental constraints. The summary mapping will include descriptive information of all the existing drainage facilities which includes culverts, bridges, and channels. This available information in these categories will be generated through GIS mapping layers and combined together to identify areas available for proposed drainage facilities/solutions. Summarize on the identified project related constraints from the initial technical review. The constraints will also include any regulatory and design criteria limitations. The constraints will include the information determined during the reconnaissance and data collection, including illustration of the existing right-of-way or property ownership provided by the District, utilities, or other physical constraints impacting the alternatives, and vegetative coverage from aerial photographs.

- GIS - Facility data
- GIS - Environmental constraints data
- GIS - Floodplain data
- Master Constraints Maps

Deliverables: 1. Drainage opportunities / constraints map

PHASE 3 – PLANNING LEVEL ALTERNATIVE DRAINAGE SYSTEM EVALUATION

3.1 Regional System - Conceptual Alternatives Formulation and Layout

Develop a range of conceptual alternative approaches and solutions which will serve as a toolkit to draw from in order to formulate the different "systems" alternatives. A variety of horizontal and vertical alignments will be developed as part of the alternative formulation subject to hydraulic and topographic constraints. The systems will include incorporation of naturalized solutions for the desert and minimizing impacts to environmental constraints. Develop conceptual engineering horizontal layouts and alignments of the proposed facilities for each alternative. The alternative formulation process will conceptually identify the range of potential alternatives that can be screened to the most feasible alternatives. The concepts for the proposed drainage facility solutions will be identified at a low-level of detail to sufficient for preliminary

planning level horizontal layouts. The general hydraulic operation for facility sizing will also be identified. The alternatives identified are based upon compatibility with the existing physical constraints. These regional facilities can include (1) incised open channels, (2) levee systems, (3) combination of levees and channels, and (4) alternative inlet and outlet facilities. The layouts will be prepared at 1"=100' scale for the different alternatives and identify the approximate horizontal location of the primary facilities. The preliminary "conceptual" layouts will serve as the foundation for the planning level hydraulics and facility locations.

- Develop different alternative system horizontal layouts –Different Major Categories
    - Flood Control / Channelization & Levee
    - Water Conservation / Environmental
    - Hybrid
- Conceptual location of Debris Basins
- Upstream Training Headworks – Alternative Systems Layout
- Downstream Outlet works – Alternative Systems Layout

Deliverables: 1. Summary conceptual regional alternatives / layouts

3.2 Local System - Conceptual Alternative Formulation

Review the previous "local" and "sub-regional drainage" facilities layout in order to evaluate the configuration and optimize the horizontal layout from a costs and efficiency perspective. Layout several alternative modifications to the original proposed system in horizontal alignment only, in order to evaluate different benefits. The benefits will include (1) minimizing environmental impacts to jurisdictional waters, (2) compatibility with future development, (3) minimizing size, (4) optimizing use of regional detention and water quality facilities, and (5) additional benefits. No hydraulic sizing or hydrology will be performed only gross level tributary drainage area will be evaluated. Layouts will be performed in GIS to quickly assess the optimized system which will be reviewed by the District for additional study/refinement. In addition, a "suite" of different types of conveyance facilities will be developed which can be interchangeably used as the proposed facility. A total of five different types of facilities can be developed which can be used and a table of approximate sizes will be generated for different flowrates and corresponding longitudinal slopes based on normal depth calculations. The alternative for sub-regional detention basins will define the optimized locations for these proposed facilities.

- Review and adjust previous AEI-CASC alignment to optimize system
- Interchangeable Conveyance Facilities (5 alternative facility types)
    - Open channel
    - Pipe / RCB
    - Aesthetic channel
    - Detention
    - Hybrid

Deliverables: 1. Summary conceptual local alternatives / layouts

3.3 Local System - Planning Level Hydrology and Hydraulics Conceptual Alternatives

Utilize the "optimized" layout of the proposed "local" drainage system in order to map the tributary area to major segments of the drainage conveyance system and determine "planning level" flowrates for sizing of the facilities. Low-level engineering analysis will be performed to initially size the conceptual planning alternatives facilities utilizing "runoff yield" values and approximate hydrologic routing to determine volume requirements. The tributary drainage areas will be delineated based on surface drainage patterns from the topography and physical constraints such as roadways and the proposed interception of future drainage facilities. The mapping of the subareas will be based on the "ultimate" collection, interception, and conveyance facilities in-place using large size subareas for planning level analysis. The subareas will be delineated to major collection points such as major confluences using large areas. Flowrates will be approximated using estimated time of concentration to calculated runoff yields and multiplying by the total area at a concentration point. The sizing of the facilities will be performed using normal depth. The system will be divided into long segments or "reaches" with a common slope and flowrate with large

changes in drainage area between reaches. A matrix will be developed which defines the sizes for each of the five types of conveyance facilities which can be used for the different segments. Locations defined for detention basins will be approximately sized using simplified methods (for example TR-55 graphical procedure)

- Conceptual watershed subarea delineation map
- Planning level flowrates using runoff yields
- Local drain / channel normal depth size
- Conceptual Detention Basin Sizing Table / Chart
- Facility Map with flowrates and matrix of sizes

Deliverables: 1. Facility exhibits with matrix

3.4 Regional System – Planning Level Hydraulics Conceptual Alternatives

Prepare preliminary level hydraulics of the regional alternatives facilities identified to provide the desired level of flood protection associated with the recommended flood control system alignments. The facilities can include channel enlargement or relocation, culvert or bridge crossings, various forms of channel lining systems, composite channel geometry, levees, and naturalized channel system. The preliminary facility sizing will focus on the geometry and basic requirements of the improvements. The initial facility sizing will be based upon "normal" depth analysis and the application of the appropriate design criteria. The culvert or bridge facilities can utilize inlet control hydraulics for initial sizing or "normal" depth depending upon the hydraulic operation. Appropriate Manning's roughness values and design longitudinal slopes will be based on the existing map slopes for use in the hydraulic sizing. Approximate hydraulics will be performed for the inlet / outlet system to evaluate the preliminary hydraulic operation and feasibility of the system.

- Regional Channel normal depth calc/size
    - Drainage facility sizing (channel, culverts, bridges, levees)
    - Headworks / outlet facilities

Deliverables: 1. Facility exhibits with sizes

3.5 Planning Level R.O.M Cost Analysis

Prepare a Rough Order Magnitude (ROM) construction cost estimate of the flood protection facilities and features. Rough Order Magnitude (ROM) construction cost estimate for the different facilities will be prepared based (upon the proposed alternative evaluations) on an initial quantity estimate from the "conceptual layouts" for each alternative. Preliminary estimates of construction quantities will be based the concept plan layout and the cross section geometry used in the hydraulic analysis. The cost estimate will be based on current unit cost estimate and include appropriate "allowances" for this level of planning and screening cost estimate. The costs will include a contingency for this level of estimate and costs for the final engineering and permits. Environmental mitigation costs will be assessed by either construction of replacement habitat or purchase of mitigation credits. Cost will include estimates for land Right of Way based on unit cost provided by the District.

- Preliminary quantity estimates
    - Local
    - Regional
- Cost estimate spreadsheet estimates

Deliverables: 1. Alternative ROM cost analysis with R/W

3.6 Regional Alternative Feasibility Analysis and Comparison

A feasibility analysis will be performed to screen the number of conceptual regional alternatives to select the recommended alternative which meets the project objectives. This process will qualify the alternatives different levels of feasibility in order to rank the alternatives. The "feasibility" evaluation will address the (1) economic suitability, (2) constructability, (3) acceptability so that many of the conceptual alternatives can be eliminated from further investigation. A **decision matrix** will be prepared for the flood control alternatives which identify the (1) advantages, (2) disadvantages, (3) preliminary construction costs, (4) design constraints, (5) physical constraints, (6) implementation requirements, (7) flood protection, and (8) economic factors including intangible costs. The alternatives are weighted and ranked through this process to identify the most suitable alternatives. A typical decision matrix which presents the alternatives based upon the degree of satisfying the various project objectives facilitates the decision process.

- Evaluate advantage /disadvantage each alt
    - Local
    - Regional
- Calculate Cost / benefit ratio based on Area
- Summary compaction matrix
- Feasibility matrix for ranking / scoring alts
- Exhibits – Alternatives Layout
    - Local
    - Regional

3.7 Recommended Alternative Selection

The "recommended alternative" will be identified through planning level plan formulation and screening process to determine the proposed alternative system which best meets the project objectives. Additional selection criteria will be evaluation in addition to the feasibility ranking matrix developed. The additional selection criteria may consider the ability to meet other objectives of the watershed stakeholders or timing issues associated with projects within the watershed. The different factors analyzed will be utilized in formulation of the recommended alternative.

- Selection of recommended alternative
- Presentation of feasibility ranking to the Stakeholder Committee

Deliverables: 1. Alternative feasibility analysis and ranking matrix / stakeholder presentation

PHASE 4 – RECOMMENDED PLAN REFINED ENGINEERING ANALYSIS

4.1 Local Watershed Delineation and Hydrology Analysis

Prepare watershed mapping and refined planning level hydrology analysis/modeling of the local watershed based on the ultimate watershed conditions with the proposed drainage systems. The delineation of the various subwatersheds will be defined by the major primary drainage systems and surface drainage patterns. The work effort also includes definition of critical hydrologic concentration points. Major subwatersheds will be identified and then key concentration points will be defined based on junctions/confluences or hydrologic processes. Subarea boundaries and minimum hydrologic concentration points will also be defined by the minimum data requirements for the storm drain system hydraulic sizing. The hydrologic parameters that are characteristic of the individual subareas will be determined from the available hydrologic soil types and landuse overlays. The lengths, slopes and representative elevation differentials for each of the subareas will be measured for time of concentration estimates. Runoff yields will be used to determine flowrates for watershed areas under one square mile. These runoff yield flowrates will be refined from the previous initial assessment. Watershed areas that exceed the defined maximum amount for the rational method analysis will be evaluated using the "unit hydrograph" procedure. These procedures will be applied for concentration points at the lower portion of the watershed which have larger tributary areas than the maximum amount previously determined from

the sensitivity analysis for the watershed. The hydrology analysis will be performed for a single "return period" defined by the required level of flood protection.

- Refined runoff yield based flowrate estimates
- Concentration point identification
- Subwatershed and watershed detailed delineation
- GIS calc subwatershed parameters
- UH model parameters
- UH model analysis
- Review results and adjust models

Deliverables: 1. Local systems hydrology analysis

4.2 Regional System – Refine Alignment and Facility Size

Adjust and modify the regional flood control facilities to reflect the initial results from the recommended concept level regional drainage masterplan model and analysis. Refinements will include (1) reduction of the required drainage system facilities, (2) improved horizontal alignment, (3) adjustments in channel dimensions , (4) additional facility requirements, (5) minimizing impacts, (6) additional environmental benefits, and (5) optimizing the cost and configuration of the proposed system. Revised facility sizing will be prepared using simplified normal depth or alluvial fan equations for depth/velocity to provide conservative sizing. Preliminary sediment transport analysis / capacity will be prepared to evaluate potential changes from the existing or natural conditions based on the previous sediment transport studies prepared. This will assess if there will be the potential for future degradation or aggradation that may require grade stabilization structures or additional features to be incorporated into the regional system. The inlet headworks hydraulics will be evaluated in more detail to ensure the correct operation. Water quality basin sizing will be evaluated for the existing urbanized areas.

- Review horizontal and vertical alignment and adjust
- Refined facility sizing
- Sediment Transport Capacity / mitigation features

Deliverables: 1. Recommended regional system hydraulics / finalized layout

4.3 Local System - Preliminary Hydraulics and Facility Sizing

Perform preliminary hydraulic sizing of the local drainage facilities based on the refined alignment and facility locations using the results of the refined planning hydrology analysis. The facility sizing will be performed based on normal depth hydraulics using the approximate invert longitudinal slopes and alignment. Local flood control "detention" facilities will be sized in more detail using the initial conceptual planning level analysis and a hydrologic reservoir routing analysis will be performed to verify the approximate sizes and outflow requirements. The hydraulic sizing will be performed on smaller study segments or "reaches" of the system compared to the conceptual planning level analysis. The matrix of conveyance system "alternatives" with the different suite of conveyance facilities will be modified to reflect the adjusted facility sizing.

- Preliminary normal depth sizing of channel/pipe
- Preliminary flowline elevation of channel
- Review results and adjust facility / system
- Detention basins preliminary – routing analysis
- Debris basin preliminary storage volume / sediment yield analysis (optional)

Deliverables: 1. Recommended local system hydraulics / finalized layout

4.4 Preliminary Construction Cost Estimate

Provide engineering services for the preparation of a preliminary engineer's estimate of the drainage facility improvement quantities and costs. The quantities will be developed from the preliminary drainage facility improvement exhibits. Unit costs will be based upon the most current cost information for recent similar projects in the area compiled by the Consultant and approved by the District. In addition, intangible costs for alternative systems can be investigated, such as environmental mitigation, if these are determined to be critical for a particular system. Major physical constraints will be included in the estimate that can include (1) land acquisition right of way, (2) street paving, and (3) utility relocation or protection. Construction costs shall include an estimate of channel grading requirements. Costs will be presented in tabular form for review by the District using the standard planning estimate form and unit costs spreadsheet.

- Preliminary quantity estimate
    - Regional systems
    - Local systems
- Cost Estimate spreadsheets
- R/W estimates

Deliverables: 1. Preliminary facility cost estimate

4.5 Phasing and Implementation Program

Provide technical guidance for developing phasing strategies related to project implementation of the masterplan flood control facilities and local/sub-regional drainage improvements. Phasing limitations and constraints will be identified based on hydraulic and potential watershed limitations. Critical areas of high flood hazard potential will be identified based on the results of the floodplain analysis and assessment of the existing hazards/opportunities. A prioritization scheme will be developed to quantify the importance of different improvements to ensure that the initial phases of improvements have the greatest impact. A recommended prioritization will be provided for implementing the required flood control facilities to correct existing hydraulic and flood control deficiencies. The prioritization will consist of establishing a weighting or ranking system of the various system improvements. The suggested ranking will utilize a prioritization equation incorporating a (1) simplified cost/benefit analysis, (2) the level of hydraulic deficiency, (3) existing operational problems, and (4) erosion potential based on future channel response. The different indicators can be utilized in developing a numerical ranking of the facility implementation since they are generally independent and have unequal weighing and the different factors can be given weighting such as operational deficiencies can have a higher weighting. A summary decision matrix will be generated to facilitate use by non-technical staff in developing recommendations regarding facility priorities and their numerical weighted ranking.

- Cost / benefit phasing analysis
- Prioritization matrix ranking of elements
    - Regional
    - Local

Deliverables: 1. Phased implementation program analysis

PHASE 5 – PROJECT REPORTS AND EXHBIITS

5.1 Preparation Draft - MDP Report

Provide the engineering services for the compilation of a new *Master Plan of Drainage Report* to support the proposed recommended municipal drainage and flood control facilities. The written report and appendices can serve as the technical documentation for the preliminary engineering design and selection of the recommend watershed improvements. The report shall follow the minimum requirements outlined by the District for technical content in a MDP. This report shall include the background for the hydraulics, watershed investigation, hydrologic modeling, hydrologic analysis, design criteria, constraints, design assumptions, references, floodplain evaluation, channel design and sizing, flood protection

requirements. The written report will serve as the technical documentation for the preliminary engineering design and operation of the drainage / onsite flood protection facilities, including the flood control operation of the flood control system and compatibility with the regional watershed. The report will identify the physical project constraints, technical criteria, assumptions, and guidelines in the preliminary engineering phase of the project. The primary focus of the report is to present the basis for the logical selection of the recommended combined regional flood control systems and local sub-regional drainage systems. This document will serve to reference the design assumptions, guidelines, and criteria developed during the overall initial preliminary engineering design phase of the project. The text of the document will be prepared on MS WORD. In addition, a multi-media CD presentation of the entire masterplan document, exhibits, and appendices will be generated.

- Report TOC outline development
- Report Text preparation
- Additional report analysis
- Report graphics / additional exhibits
- MDP digital database development
- MDP multimedia CD software formulation
- Compilation MDP multimedia CD

Deliverables: 1. Draft MDP report

5.2 Final MDP Report

Provide engineering services to develop the "final" MDP report which will present the results of the technical analysis and the recommended flood control/drainage system based on the review of the District and the watershed stake holders. The comments from the external review of the initial draft document will be incorporated into the final work product. The format of the report will be prepared so that it can be utilized by non-technical staff in developing capital project budgets or public discussions. The report will summarize the master plan development for drainage and serve to document the engineering assessment. The report will include documentation of hydrology, hydraulics, design criteria, constraints, cost estimates, deficiencies, and implementation priority. This report will serve as a reference document for the master plan and can be utilized during the review process for various agencies. The final report will follow the minimum requirements defined by the District for a MDP document.

- Report Text preparation
- Additional report analysis
- Report graphics / additional exhibits
- MDP digital database development
- MDP multimedia CD software formulation
- Compilation MDP multimedia CD

Deliverables: 1. Final MDP report

5.3 Hydrology Map Exhibits

The watershed hydrology maps will be prepared on the digital base sheets which will reflect the ultimate hydrology and drainage facilities. The hydrology maps shall include the hydrologic concentration points or nodes clearly identified and the associated design discharge. A summary hydrologic information table will be prepared for each sheet in addition to schematic node diagrams of that portion of the watershed show on the sheet. The hydrology maps will summarize the mapping of the hydrologic data and calculated results of the hydrology models based on the ultimate system. The maps will be developed so they can be "stand-alone" exhibits with the minimum information. A summary hydrologic information table will be prepared for each sheet in addition to schematic node diagrams of that portion of the watershed shown on the sheet.

- Watershed parameters maps (soil/landuse/rain)

Deliverables: 1. Draft hydrology map exhibits with report

2. Final hydrology map exhibits with report

5.4 Facilities Exhibits – Plan Layouts

Prepare *Drainage Facility Exhibits* which define the size and alignment of the proposed (1) regional flood control systems and (2) local/subregional drainage facilities. The drainage facility exhibit will identify approximate inlet locations, outlet, storm drain alignments, overland flow paths, drainage storage features, facility lengths, elevations, and approximate sizes. The different systems will be divided into reaches and the approximate conveyance sections will be defined in a matrix on the exhibits along with typical sections.

- Local Systems - facility Exhibit
- Regional – Facilities Exhibit

Deliverables: 1. Draft drainage facility exhibits with report
2. Final facility exhibits with report

5.5 Additional Exhibits

Prepare additional exhibits for the technical report that had not previously been generated as part of the analysis. These will include exhibits will include graphics for the main body of the report text and additional illustration or large format exhibits.

- Floodplain Exhibits
- Additional Exhibits

Deliverables: 1. Draft additional exhibits with report
2. Final additional exhibits with report

5.6 Report Appendices

Compile the *Technical Appendices* associated with the report which include all the technical backup for the hydrology and hydraulics modeling that support the results of the MDP formulation. All this information will also be compiled digitally onto a CD that will be included in the final report.

- Compile hydrology appendices
- Compile hydraulics appendices
- Additional appendices
- Compile facility quantity and cost appendices

Deliverables: 1. Draft technical appendices with report
2. Final technical appendices with report

PHASE 6 – ENVIRONMENTAL IMPACT REPORT

6.1 EIR Kick-Off Meeting

BonTerra Consulting will participate in a kick-off meeting to initiate the process for preparation of the MDP CEQA document. As the environmental constraints, jurisdictional delineation, and preferred project description will have been prepared under earlier tasks in Phase 4, the purpose of this meeting is to discuss the status of the preferred project, any remaining data needs required to complete a thorough environmental impact analysis, coordination of project mailing lists for noticing purposes, and overall EIR schedule.

Deliverables: 1. Minutes of the EIR Kick-Off Meeting
2. Draft Project Description

6.2 Plan, Coordinate and Participate in Initial Public Scoping

BonTerra Consulting will support District staff throughout the CEQA public review process by conducting the required scoping meeting. The scoping meeting during public review of the IS/NOP would be located at the RCFCD offices or at a location in the Master Drainage Plan study area, at the discretion of the District. BonTerra Consulting will prepare meeting minutes after the scoping meeting that summarizes the EIR issues raised by each commenter. If the District would like to hold multiple scoping meetings, a budget amendment would be required.

A pre-scoping meeting "briefing session" is proposed with the resource agencies to summarize the approach being undertaken by the District to solicit early input from the regulatory agencies (e.g., Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game, and Regional Water Quality Control Board). Consultation with Native American tribal representatives would also occur at this briefing session. This approach would facilitate incorporation of agency feedback into the Initial Study and NOP process prior to scoping meetings, at which the resource agencies can be identified as active participants in the MDP planning process. The revised draft IS/NOP would be updated with agency feedback received at this session, submitted to the District for final approval, and subsequently distributed.

BonTerra will prepare a recap memorandum after the scoping meeting that lists the names of meeting attendees, identifies which attendees provided EIR scoping input, and summarizes the EIR issues raised by each commenter.

Deliverables:
1. Participation in planning, organizing, and discussions at one Scoping Meeting.
2. Scoping Meeting Minutes that lists the names of the attendees, identifies which individuals provided comments, and summarizes the EIR issues raised.

6.3 Prepare Initial Study/Notice of Preparation (IS/NOP)

BonTerra Consulting will prepare a draft IS with text explanations for all topical issue areas, as required by CEQA. A draft of the IS and proposed IS/NOP will be provided to the District for review and comment. One round of comments will be incorporated into a revised draft IS for presentation at the pre-scoping agency briefing session discussed below in Task 6.3. The IS will be re-submitted to the District for final approval after District and City feedback has been incorporated from this briefing session.

Upon approval of the final IS/NOP, BonTerra Consulting will distribute a copy of the IS/NOP to each responsible agency through the State Clearinghouse, pursuant to CEQA Guidelines Section 15082, as well as to other interested parties, as determined by the District. It is assumed that a digital mailing list for recipients of the IS/NOP will be provided by the District. BonTerra Consulting will develop these mailing lists into a Master Mailing List for all public noticing purposes. The mailing of the NOP will start the mandatory 30-day NOP review period.

Deliverables:
1. Draft and Revised Draft IS/NOP for project team review
2. Mailing of the Final IS/NOP by certified mail, return receipt, of up to 50 copies of the IS/NOP using the mailing list provided by the District.
3. Attendance at one pre-scoping briefing session with regulatory agency staff to receive input on issues to be addressed in the Draft Program EIR and provide minutes of the meeting.

6.4 Evaluate Comments on NOP/Scope Screencheck Program EIR

At the conclusion of the NOP review period and after receipt of all comments from the State Clearinghouse, BonTerra Consulting will prepare a memorandum that documents the agencies, organizations, and individuals who submitted comments on the IS and NOP for submittal to the District and Cities. A meeting will be held if necessary to discuss this feedback with the project team and adjust the EIR approach accordingly

Deliverables: 1. Memorandum summarizing comments received on the NOP.
2. Attendance at one project team meeting

6.5 Prepare Three Drafts of the Administrative Draft Program EIR

The Program EIR will include a comprehensive evaluation of the Master Drainage Plan Preferred Alternative for each of the topic areas listed in the CEQA Checklist. The following topics would be addressed:

- Aesthetics/Visual
- Agricultural Resources
- Air Quality/Global Climate Change
- Biological Resources
- Cultural Resources
- Geology/Soils
- Hazards & Hazardous Materials
- Hydrology/Water Quality
- Land Use/Planning
- Mineral Resources
- Noise
- Population/Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities/Service Systems
- Alternatives to the Proposed Master Plan
- Other CEQA mandated sections (e.g., growth inducing)

In order to ensure that the Program EIR is as comprehensive as possible, BonTerra Consulting will work closely with the project team to obtain as much detailed information as possible about the project phasing and planned infrastructure construction. This information will be included in the EIR project description section, along with the project description information concerning the proposed Master Drainage Plan facilities.

Within each technical topic (e.g., biological resources, hydrology/water quality) addressed in the Program EIR, subsections will address existing setting, significance thresholds, potential impacts, proposed mitigation measures, level of significance after mitigation, and cumulative impacts. Additional details on the approaches, methods, and technical scopes for the assessment of impacts to biological resources, cultural resources, air quality and global climate change, and jurisdictional resources are provided in Appendix A to this scope of work. As required by CEQA, the alternatives section of the Program EIR will include a description of the No Project Alternative as well as the three other alternatives considered and evaluated within the MDP Design Report (Phase 4).

Other CEQA mandated sections will be included in the Program EIR such as growth-inducing and cumulative impacts. Particular attention will be given to Coachella Valley MSHCP commitments and the Tribal HCP for the Agua Caliente Indian Reservation. An executive summary section and table will be included at the front of the EIR to facilitate review.

As specified in the RFP, we have assumed that three reviews of the Administrative Draft EIR by the District, Cities, and project team. Upon receipt of comments on the first, second, and third administrative drafts, BonTerra Consulting will produce the Draft Program EIR and submit it to the District for a final review prior to printing for public review.

Deliverables: 1. Ten copies of the first Administrative Screencheck Draft Program EIR for team review, including the document on a CD.
2. Ten copies of the second Administrative Draft Screencheck Program EIR for \ team review, including the document on a CD.
3. Ten copies of the third Administrative Draft Screencheck Program EIR for team review prior to printing of the Draft EIR for Public Review, including the document on a CD.

6.6 Complete and Distribute Draft Program EIR

Upon approval of the Third Draft Screencheck Program EIR by the District and Cities, BonTerra Consulting will print and distribute the Draft EIR for public review. It is assumed that 50 copies of the Draft EIR and 50 copies of one technical appendix volume would be printed and distributed. Distribution will include the State Clearinghouse and other agencies, organizations, and individuals who received the NOP, as well as those who attended the Scoping Meeting, provided comments on the NOP, or who requested the EIR from the District or the Cities. EIRs will be mailed certified mail, return receipt unless otherwise specified by CLWA. A 45-day EIR review period will be necessary due to the involvement of State agencies. Production and distribution of a digital CD that contains the EIR and Technical Appendix can be provided to the District in lieu of a portion of the paper copies noted above as a cost saving measure.

A Notice of Completion (NOC) will be filed with the State Clearinghouse and posted at the District and at the Cities. We have assumed that any newspaper notices regarding the availability of the EIR and the start of the 45- day review period would be placed by the District.

BonTerra Consulting will provide the Draft EIR electronically for upload to District and City web sites if desired. Further, email comments on the Draft EIR could be accepted if they are provided within previously established guidelines (i.e., they must make specific reference to the page of the document and identify the specific EIR analysis text they are commenting upon). This approach could reduce the number of hard copy documents that would need to be printed, as well as providing much broader availability of the EIR for public review and comment.

Deliverables:
1. Production/printing of 50 copies of the Draft Master Drainage Plan Program EIR and 50 single volume EIR Appendix volumes, three loose unbound copies of each, and one electronic PDF file.
2. Completion and filing of a Notice of Completion with the State Clearinghouse and posting at the District and within the Cities.
3. Mailing of DEIR copies by certified mail, return receipt or equivalent.

6.7 Response to Comments on Draft Program EIR

BonTerra Consulting will compile all comments received on the Draft EIR during the public review period and will assess them to develop an appropriate response strategy. This information will be compiled into a memorandum that will be provided to the District for consideration and discussion. One project team meeting will be held to review the comments received on the draft EIR, discuss the response strategy, and ensure a consistent direction for preparation of Responses to Comments. Response to Comment format, contributors, reviewers and completion schedule will be determined at this meeting. Any adjustments to the budget for this task will be agreed upon during this early evaluation.

BonTerra Consulting will lead the responses to comments preparation effort and will prepare most of the responses as appropriate. As noted above, it is expected that other members of the project team will also be preparing responses to selected technical comments and issues and providing these to BonTerra Consulting for compilation. BonTerra Consulting will also prepare draft findings of fact and appropriate draft statements of overriding considerations, if necessary. These EIR certification documents will be prepared using the District's format and provided to the District and its legal counsel for review. Two rounds of revision are assumed. Upon receipt of District and City(s) comments on the Response to Comments document, BonTerra will finalize the Response to Comments and prepare the draft final findings of fact and statements of overriding consideration for use by the District and Cities during decision-making processes.

Deliverables:
1. Initial memorandum compiling comments received on the DEIR during public review and recommending a response strategy
2. Two rounds of revision for the Response to Comments documentation.
3. Two rounds of revision for the Findings of Fact and Statements of Overriding

Considerations.

Printing and mailing of Response to Comments document by certified mail, return receipt.

6.8 Preparation of Mitigation/Monitoring Plan

The California Public Resources Code §21081.6 (AB 3180) requires that a lead or responsible agency adopt a Mitigation Monitoring Program (MMP) when approving or carrying out a project where an environmental document, either an environmental impact report (EIR) or a mitigated negative declaration (MND), has identified measures to reduce potential adverse environmental impacts to levels that are less than significant. The RCFC&WCD, in partnership with the Cities of Desert Hot Springs and Palm Springs is the lead agency for the MDP Project and, therefore, is responsible for implementation of the MMP. As an EIR will be prepared for this project which addresses the potential environmental impacts and, where appropriate, recommends measures to mitigate these impacts, an MMP is therefore required to ensure that adopted mitigation measures are successfully implemented.

The MMP includes Standard Conditions and Mitigation Measures, all of which have been identified as measures to reduce potential adverse environmental impacts. The RCFC&WCD will adopt the MMP in its capacity as the lead agency in accordance with the provisions of the CEQA (Cal. Pub. Res. Code §§21000, et seq.) and its implementing guidelines (14 Cal. Code Regs. §§15000, et seq.) (the *CEQA Guidelines*).

Deliverables: 1. Three copies and one CD of the MMP

6.9 Preparation of Final Program EIR

Upon completion of the certification process, BonTerra Consulting will prepare the Notice of Determination (NOD). We have assumed that the District, as lead agency, will take the EIR certification action and approve the Master Drainage Plan; the City would be responsible agencies under CEQA and would be responsible for taking their own EIR certification and approval actions. Support of the Cities' CEQA actions is not a part of this scope of work.

A copy of the NOD will also be sent to the State Clearinghouse. Preparation of the CEQA Final EIR administrative record for use by the District and Cities is not included in this scope of work; we can prepare this under a separate agreement if the District and Cities choose to not use their own staff for this work. BonTerra will provide a copy of the Response to Comments received on the Draft EIR, the Mitigation Monitoring Program, and Findings of Fact to complete the Final EIR documentation. A total of 30 hours of staff time has been assumed for these efforts.

Deliverables:
1. Staff support services as requested up to 20 hours.
2. Attendance at two Board Meetings/Public Hearings.
3. One copy of the Draft EIR, Responses to Comments Document, Mitigation Monitoring and Reporting Program, and Findings of Fact Document which constitute the basic elements of a Final EIR under CEQA.

6.10 Meetings – Environmental

BonTerra Consulting will attend up to six (6) meetings with District and City staff to review and brief the project team on project progress, issues resolution, and technical feedback.

Deliverables: 1. Attendance at up to six (6) project team meetings in Riverside, or Desert Hot Springs.

ADMINISTRATIVE

A.1 Internal Team Meeting and Consultant Coordination (T&M)

Provide regularly scheduled internal project team technical meetings and coordination with the other consultant team members. This will provide for discussion of technical issues and to review overall project status and progress. This task shall also include telephone conferences necessary with the same parties for the above-mentioned purposes. This task item is a budget amount estimated on biweekly conference calls over a 14 month period and includes meeting preparation; travel time, if any, is not included. If the budget amount is exceeded then additional meeting attendance and consulting services will be completed, if required, on an hourly basis for an additional fee with the approval of the District.

- Biweekly conference Calls

Deliverables: 1. Meeting Agenda / Notes

A.2 Client and Agency Project Meetings (T&M)

Perform coordination, communication, and technical consultation with the District/watershed stakeholders during the technical investigation and planning process for the development of the MDP. This item includes meetings at regular intervals to discuss the progress of the study and provide clarifications to assist the project planning. This item provides for regular phone discussion and correspondences to update the status of the project. This task item is a budget fee amount since the precise amount of work effort cannot be determined. This fee is based on monthly client and agency project meetings over a 14 month period and includes meeting preparation; travel time, if any, is not included. If the budget amount shown in the fee section is to be exceeded and additional work is still required to complete the task, then additional work will be completed on either a time and materials basis or separate contract addendum.

- Monthly Agency Meetings
- Stakeholder Steering Committee Meetings

Deliverables: 1. Meeting Agenda / Notes

A.3 Agency Presentations

Perform formalized presentations for the Client and watershed stakeholder group for specific milestones along the project schedule in order to share the results in the plan formulation. The work effort includes developing the presentation in a Powerpoint format and preparing the exhibits/additional items required for the presentation. This task item is a budget fee amount since the precise amount of work effort cannot be determined. This fee is based four (4) milestone meetings which includes preparation and presentation time; travel time, if any, is not included. If the budget amount shown in the fee section is to be exceeded and additional work is still required to complete the task, then additional work will be completed on either a time and materials basis or separate contract addendum. Based on 4 milestone which includes presentation & preparation

- Milestone presentation - Alternatives analysis
- Milestone presentation - Draft MDP

Deliverables: 1. Meeting Agenda / Notes

A.4 Change Order Scoping and Administration

Provide time for coordination and administration of contract adjustments associated with changes in scope or additions requested by the District during the project. This task is for the time associated with developing the change order scope, estimating manpower costs, administration, and processing with the District. This item is a budget fee amount. If the budget amount shown in the fee section is to be exceeded and additional work is still required to complete the task, then additional work will be completed on either a time and materials basis or separate contract addendum.

BonTerra
CONSULTING

FEE SCHEDULE

PROFESSIONAL CLASSIFICATION	HOURLY BILLING RATE
Environmental Services	135
Biological/Regulatory	120
Cultural Resources	120
GIS	90
Administrative	70

Reimbursable Costs

Mileage	$ 0.55 per mile
Copying/Reprographics	cost plus 10%
Delivery/Overnight Mail	cost plus 10%
Other out-of-pocket expenses	cost plus 10%
Subconsultants	cost plus 10%

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